Oracle® Financial Services Profitability Analytics

User Guide

Release 5

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Oracle Financial Services Profitability Analytics User Guide, Release 5

Part No. E29298-01

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Contents

A How to add a new dimension

B How to add a new measure

C How to Add or Remove Reporting Lines

D How to Develop a New Cube

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Preface

Intended Audience

Welcome to Release 5 of the *Oracle Financial Services Profitability Analytics User Guide.*

This guide is intended for the Business Analysts who are instrumental in supporting and affecting analytical decisions (Profitability Analytics).

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

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Structure

1 Introduction

2 Overview of the Process Flow

3 Dimension Loading Process

4 Time Dimension Population

Business data commonly represents information as of a point in time (for example, a balance as of a point in time) or as of a particular span of time (for example, income for the month of March). Time dimension makes it possible to report the balances by Year, Quarter or Month using the rollup functionality of Essbase cubes. Essbase makes it possible to rollup the monthly balances to a quarter and then to a year level. For example, the monthly data for January, February and March gets rolled up to Quarter 1 and the Quarter 1, 2, 3 and 4 data get rolled up to, say Year 2011. The rollup of a particular balance depending on their nature could be a simple additive rollup wherein the child member balances are added up to arrive at the parent node balance (for example, Ending Balance) or non additive rollups wherein a node formula is used to specify how to rollup the child member balances (for example, 3 month rolling average).

5 Fact Ledger Population

Fact Ledger population involves populating the FCT_LEDGER_STAT table from the LEDGER_STAT table.

6 Account Summary Population

Account Summary tables in Oracle Financial Services Profitability Analytics (OFSPA) data model are loaded from the Enterprise Performance Management (EPM) Instrument tables using the Table to Table (T2T) component of Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) framework.

7 Cube Build Process

Oracle Financial Services Profitability Analytics (OFSPA) is built on Hyperion Essbase Multi-dimensional databases (that is, cubes). Multi-dimensional databases store aggregated data for better performance and provide mechanisms for performing non-additive rollup within a hierarchy and defining complex derived measures using cross-dimensional operations. Oracle Financial Services Analytical Applications (OFSAA) Infrastructure is used for defining metadata about the cube and for building the cubes.

8 Overview of OFSPA reports

A How to add a new dimension

B How to add a new measure

C How to Add or Remove Reporting Lines

D How to Develop a New Cube

Related Information Sources

- Oracle Financial Services Analytical Applications Infrastructure User Guide
- Oracle Financial Services Analytical Applications Data Model Data Dictionary
- Oracle Financial Services Cash Flow Engine Reference Guide
- Oracle Financial Services Asset Liability Management (OFSALM) User Guide
- Oracle Financial Services Profitability Management (OFSPM) User Guide
- Oracle Financial Services Funds Transfer Pricing User Guide

1

Introduction

Overview of Oracle Financial Services Profitability Analytics (OFSPA)

Oracle Financial Services Profitability Analytics (OFSPA) is a complete end-to-end web-based Business Intelligence solution for Profitability Analytics. It provides tools for data integration and includes customizable, pre-built dashboards and reports, a reporting data model, and user friendly functional subject areas for ad-hoc reporting. The OFSPA solution is built using:

- OFSAA Infrastructure 7.1 for ETL, Data Integration and Cube Build activities
- OBIEE 10.1.3.4.1 for Dashboard & Reports activities
- Essbase 11.1.1.3 for multi-dimensional cube storage

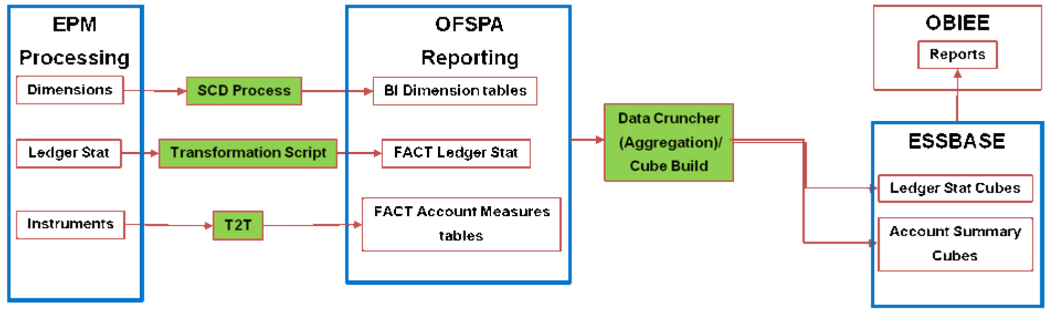
This manual deals with essential Oracle Financial Services Analytical Applications (OFSAA) Infrastructure required for OFSPA activities, process flow for the data transformation and cube building processes, and functional details about the dash boards and reports. Also it includes subject areas which could be used for ad-hoc reporting using OBIEE Answers tool.

2

Overview of the Process Flow

Introduction

Oracle Financial Services Profitability Analytics (OFSPA) 5.1 utilizes OBIEE technology to present financial accounting, managerial accounting and product profitability reports. For details on OFSPA reports and how OBIEE is being utilized, see Overview of OFSPA reports. OFSPA5.1 is designed for OBIEE reading Essbase cubes which stores aggregated ledger and account data. The OLAP cubes are generated from consolidated and aggregated fact data and from flattened hierarchy data in the BI data model. The OFSPA BI data model has been designed in a manner such that it can receive fact and dimension data from EPM (Enterprise Performance Management data model, which is installed either through OFSPM 5.2 or OFSTP 5.2) through seeded data flow processes or from other systems. The seeded data flow processes from the processing area of EPM to the BI data model of OFSPA utilizes the transformation and load components of OFSAAI 7.2. OFSPA 5.1 can be independently licensed and installed to work on top of the OFSAAI 7.2 infrastructure or can be licensed along with OFSPM 5.2 (or with OFSTP 5.2) to work in an integrated manner. The following diagram shows the high-level data flow when both EPM and OFSPA are installed.



- T2T/Transformation Script – Data movement component of the OFSAA Infrastructure.
- SCD – Slowly changing dimension process of the OFSAA Infrastructure
- Data Cruncher/Cube Build – Data Aggregation and Cube build component of the OFSAA Infrastructure

Data Flow: EPM Processing Area to OFSPA Reporting Area

The EPM processing area holds dimension data and fact data. Fact data is held primarily in the management ledger table (referred to as Ledger Stat in this document) and product-line specific account tables (referred to as Instrument Tables in this document). A set of seeded (standard) instrument tables are part of the EPM installation (licensed through OFSPM 5.2 and/or OFSTP 5.2) and the seeded data flow processes outlined in this section are for the seeded instrument tables and the management ledger table. Similarly the seeded dimension data movement process definitions are for the standard processing dimensions which come with the EPM AMHM.

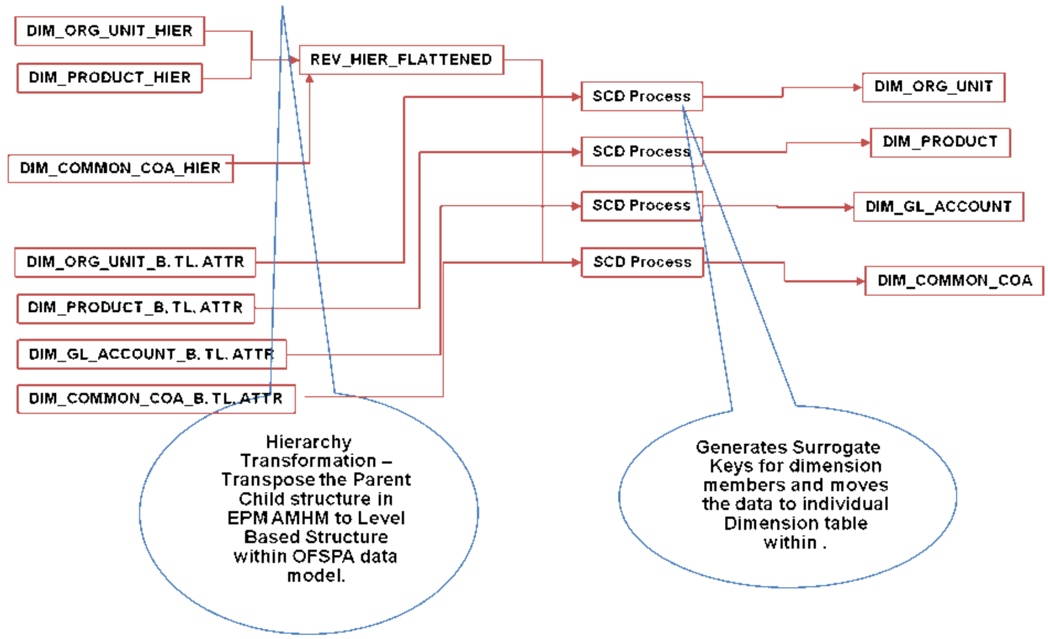
- Dimension data movement: For details see, Dimension Loading Process , page 3-1 and Time Dimension Population, page 4-1
- Ledger Stat transformation: For details see, Fact Ledger Population , page 5-1
- Instruments to Account Summary: For details see, Account Summary Population, page 6-1

Similar data movement process definitions can be created for any additional user-defined dimensions or custom instrument tables. These extensions are also described in this document.

The data movements from the EPM processing area to the OFSPA reporting area utilize the data transfer component of OFSAAI 7.2. Data transformation and loading is done with the data integrator module and is metadata driven. For more information on the Usage of the Data Integrator Component, refer *Oracle Financial Services Analytical Applications Infrastructure User Guide.*

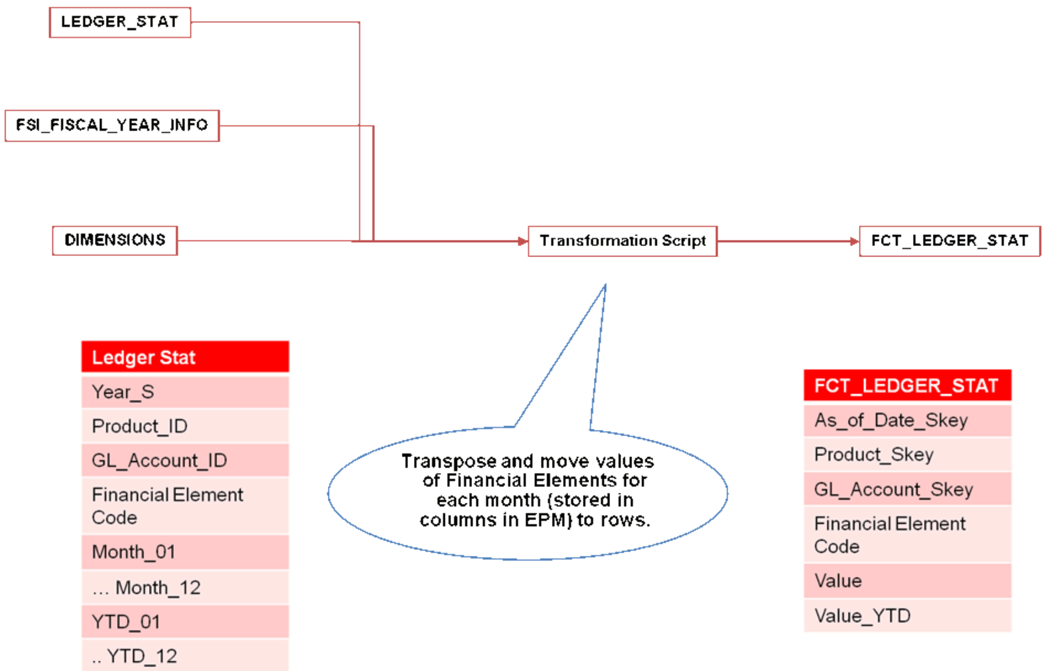
Dimension data flow

Dimension data used for processing is stored in individual member, attribute and hierarchy tables for each dimension and is part of the EPM AMHM data model. For more information on dimension management, refer to the *Oracle Financial Services Profitability Management (OFSPM) User Guide.* Hierarchies in EPM AMHM have a parent-child storage structure. These are flattened to a level-based structure as part of the data movement process. The flattened hierarchies for each dimension along with the member and attribute data undergo an SCD process to move data to the OFSPA dimension tables. The following diagram shows this process outline.



Ledger Stat Data flow

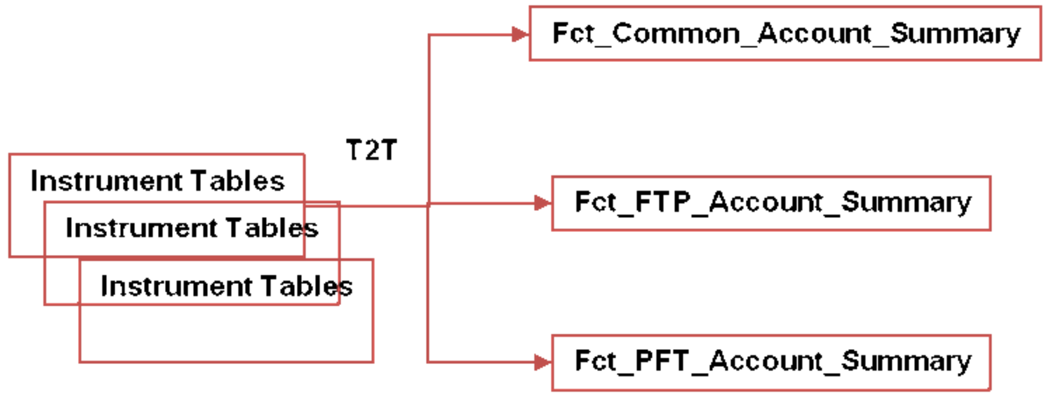
The ledger transformation program moves data from the management ledger table in the EPM processing area to fact ledger stat of OFSPA. The transformation program joins data for all the required dimensions. The following diagram gives a high-level overview of this process. For more details on the process and its execution, refer Fact Ledger Population , page 5-1.



Account Summary Data flow

In the OFSPA data model, a single account fact table is sourced from multiple processing instrument tables. The single account fact table across product line specific instrument tables from the processing area is referred to as account summary tables. Account summary tables are vertically partitioned based on each OFSAA application, for performance reasons. All account level profitability cubes are built on these tables. The list of account summary tables in the OFSPA data model for which seeded data movement processes from EPM are installed are:

- FCT_COMMON_ACCOUNT_SUMMARY
- FCT_PFT_ACCOUNT_SUMMARY
- FCT_FTP_ACCOUNT_SUMMARY

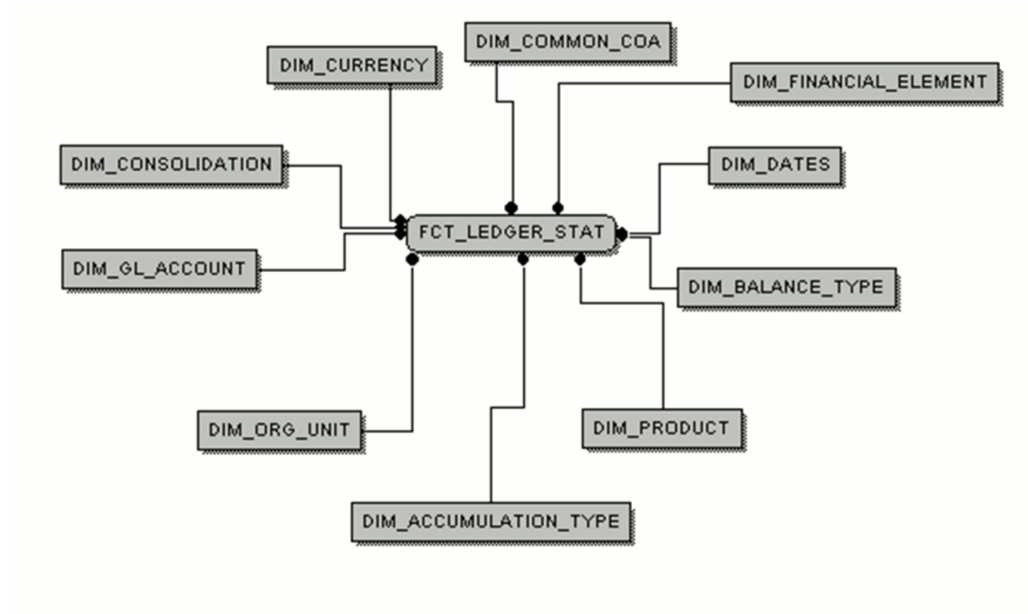


The EPM installation seeds a standard set of instrument tables. Each of the seeded instrument tables has a seeded T2T (table to table transformation rule, created through OFSAAI Data Integrator component) to move relevant data to each of FCT_COMMON_ACCOUNT_SUMMARY/ FCT_PFT_ACCOUNT_SUMMARY / FCT_FTP_ACCOUNT_SUMMARY as given in the preceding diagram. Any custom instrument tables added to the processing area of EPM will need additional custom-written T2Ts to move data to the account summary tables of the OFSPA data model. For more details on the process and its execution, refer Account Summary Population, page 6-1.

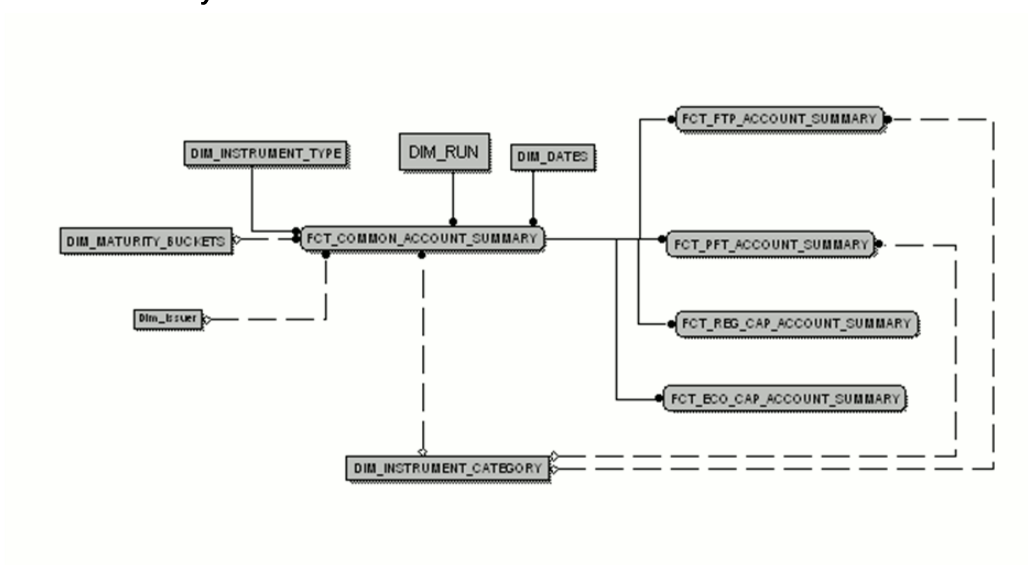
BI Data Model

The BI data model is a star schema for the fact tables FCT_LEDGER_STAT and FCT_<Application>_ACCOUNT_SUMMARY. Following are the entity diagrams for the BI data model:

Ledger Dimensional Model



Account Summary Dimensional Model



Data Flow: OFSPA Reporting Mart to Essbase Cubes

OFSPA uses Essbase cubes to hold aggregated data which is then reported on through OBIEE. Ledger and Account summary data that is moved to the BI reporting area (as explained in Data Flow: EPM Processing Area to OFSPA Reporting Area, page 2-2) is aggregated into twelve standard or seeded cubes, for use in the standard reports. Two of these are cubes built on FCT_LEDGER_STAT, one each for financial accounting and management accounting. Ten other cubes are built on the account summary tables and are used for product profitability reports (including RAPM reports). For details on usage of the seeded cubes in standard reports, refer Overview of OFSPA Reports, page 8-1.

Essbase cubes are built using cube metadata created through the Unified Metadata Manager module of OFSAAI. Cube metadata definitions source data from FCT_LEDGER_STAT and the account summary tables and process it to create Essbase cubes. This processing comprises of the following steps:

- Aggregation of data
- Cube Outline
- Cube Build

These processes can be run on pre-created seeded cube metadata definitions or on additional cube metadata defined by the customer. Seeded cube metadata are pre-built as business metadata using the Unified Metadata Manager component of OFSAAI 7.2. Building cube metadata, in turn requires the definition of business measures, computed measures, formulae, dimensions and data sets. For details on building cube metadata, refer*Oracle Financial Services Analytical Applications Infrastructure User Guide.*

Cube metadata is processed through OFSAAI batch definitions. Batches need to specify two tasks. The first task is the aggregate data task and creates a data file with data sourced from FCT_LEDGER_STAT or account summary tables. The second task is the create cube task which uses the cube metadata definition to create an Essbase cube outline and then loads the aggregated data and rolls up data across levels.

For more details on the processing steps, including the creation and execution of tasks in a batch, refer Cube Build Process, page 7-1.

3

Dimension Loading Process

Overview of Dimension Loading Process

The cube build component of Oracle Financial Services Analytical Applications (OFSAA) Infrastructure does not support parent child hierarchies and hence, the parent child hierarchy data in Enterprise Performance Management (EPM) needs to be converted to a level based format for use in Oracle Financial Services Profitability Analytics (OFSPA). Within the Dimension Management component of OFSAA Infrastructure, hierarchy data is natively stored in a parent-child structure. Dimension population involves moving dimension data from processing dimension tables (maintained by dimension management component of Oracle Financial Services Analytical Applications Infrastructure (OFSAAI)) to the reporting dimension tables used in Business Intelligence (BI) applications. This data movement process is applicable only when

- Oracle Financial Services (OFS) Profitability Analytics application is installed along with OFS Profitability Management application.
- OFS Profitability Analytics application is installed along with OFS Funds Transfer Pricing application.

Dimension loading process has two components:

1. Hierarchy Transformation
2. Dimension tables population

The Dimension loading process for the different hierarchies is discussed in the following sections:

- General Ledger:

  The members of this hierarchy are stored within the infrastructure metadata tables for OFSPA. Hence the hierarchy needs to be maintained separately for EPM and OFSPA. This hierarchy need not be included as part of the hierarchy transformation process but should be part of the SCD process to move the General Ledger (GL) dimension members from EPM to OFSPA. The GL Account identifier for the leaf members of the GL Account Hierarchy in EPM which gets moved by the SCD component has to be in the series 9000 to 9050. If this is not the case then the node identifier for Non BI hierarchy on GL Account in OFSPA should be modified. (For more details, see How to Add a New Dimension, page A-1.)

- General Ledger in Non-BI Hierarchy:

  Non-BI Hierarchy have rollup properties like addition, subtraction, multiplication, division, and so on. This is used for generating Net Interest Revenue. In the GL Non-BI hierarchy, leaf level node expressions can refer to actual GLs or rolled up GLs depending on configuration. You can create node expressions using IN, LIKE, = operators. For example, items like 'Deposit from bank' can have following expressions:

  - GL_ACCOUNT_ID in (1213232,12121211,12121214)
  - GL_ACCOUNT_ID like 121%
  - GL_ACCOUNT_ID = 12131313

  This column GL_ACCOUNT_ID can either be a leaf level column or node level column.

  In this way, using the node expressions, node identifiers for a large amount of GLs can be created quickly and the hierarchy can be built on it.

- Financial Element:

  The members of this hierarchy are inserted through RDBMS insert scripts by the OFSPA solution installer. This hierarchy has to be maintained separately for EPM and OFSPA.

- Organization Unit:

  This hierarchy in EPM first gets flattened by the Hierarchy Transformation and is then moved to the hierarchy table for Organization Unit (DIM_ORG_UNIT) by the Dimension table population component (Explained in Dimension Tables Population, page 3-8). The EPM and OFSPA hierarchies can be kept in sync by using the above two components.

- Product:

  This hierarchy in EPM first gets flattened through Hierarchy Transformation and is then moved to the hierarchy table for Product (DIM_PRODUCT) by the Dimension table population component(Explained in Dimension Tables Population, page 3-8). The EPM and OFSPA hierarchies can be kept in sync by using the above two components.

- Time:

  The hierarchy table (DIM_DATES) for this hierarchy is loaded by the Time dimension population process (For more details, see Time Dimension Population, page 4-1).

- Consolidation, Currency and Instrument Type:

  The hierarchy data for these hierarchies are loaded through RDBMS insert scripts by the OFSPA solution installer. These hierarchies have to be maintained separately for EPM and OFSPA.

- Business Type and Amount:

  The members of these hierarchies are stored within the infrastructure metadata tables for OFSPA.

- Hierarchies on other user defined dimensions:

  In addition if the user creates hierarchies on any other dimension and intends to include it in OFSPA cubes then the hierarchy data in EPM needs to be moved to OFSPA using the two components mentioned. The details on how to move this data is discussed in the subsequent sections.

Details of the above components and the execution details are explained in the following sections:

Hierarchy Transformation

The following topics are covered in this section:

Overview of Hierarchy Flattening Process

Hierarchy Flattening Transformation is used to move the hierarchy data from the parent child storage structure in EPM AMHM (Attribute, Member and Hierarchy Management) model to a level based storage structure in OFS Profitability Analytics. In EPM AMHM model, hierarchy data for any hierarchy created on seeded or user defined dimensions using the AMHM is stored within hierarchy tables of respective dimensions. This is moved to the REV_HIER_FLATTENED table in OFS Profitability

Analytics after flattening by the Hierarchy flattening process.

Example

The hierarchy data of one or more Product Hierarchies created on Product dimension (a seeded dimension) will be stored in DIM_PRODUCTS_HIER table. Similarly, assuming there is a user defined dimension, Legal Entity and a hierarchy has been defined on this dimension, then the hierarchy data would be stored in DIM_LE_HIER (assuming this is the hierarchy table created in the EPM AMHM model for this hierarchy).

The hierarchy data in the preceding example would be moved to REV_HIER_FLATTENED in the OFS Profitability Analytics model by the Hierarchy Flattening Process.

Database components used by this transformation are:

1. REV_BATCHHIERFLATTEN – Oracle database function

2. REV_HIER_TRANSFORMATON_BIAPPS – Oracle database Package called by the preceding function.

Some of the features of the Hierarchy Flattening Transformation are:

- The user has the choice to process a single hierarchy or all hierarchies belonging to a particular dimension as part of a single execution.

- Any change made in the hierarchy using the AMHM Hierarchy maintenance screen will change the flattened_rows_completion_code flag in REV_HIER_DEFINITIONS to 'Pending'. This improves processing efficiency since the Transformation process will avoid hierarchies that have not been modified.

Prerequisites

1. All the post install steps mentioned in the *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration guide* and the solution installation manuals of *Profitability Management* and *Profitability Analytics* have to be completed successfully.

2. Hierarchy is maintained in the Dimension Management component of OFSAAI. (Financial Services Application >Master Maintenance > Dimension Management > Hierarchies screen). The 3 steps mentioned subsequently in this section (1,2,3) are essentially debugging steps and must be checked only if the hierarchy flattening process has failed. Seeded Hierarchies which come with the install and any hierarchy created using the OFSAAI framework should have proper data in the tables used by the Hierarchy Flattening Transformation, page 3-5.

    1. Check in the database (atomic schema) if the flattened_rows_completion_code column in the REV_HIER_DEFINITIONS table has value 'PENDING' for the Hierarchy Id to be processed. This column will have the value 'Pending' for any new hierarchy created or modified using the OFSAAI Hierarchy Management

User Interface (UI).

2. Check if the REV_DIMENSIONS_B table has a row for the dimension that is being processed. (Database Structured Query Language (SQL) Query to check this is available in Executing the Hierarchy Flattening Transformation, page 3-6.)

3. Check if the REV_HIERARCHIES table has a row for the hierarchy id that is being processed. (Database SQL Query to check this is available in Executing the Hierarchy Flattening Transformation, page 3-6.)

3. Application User must be mapped to a role that has seeded batch execution function (BATPRO).

4. Before executing a batch check if the following services are running on the application server (For more information on how to check if the services are up and on, and how to start the services if you find them not running, see *Oracle Financial Services Analytical Applications Infrastructure User Guide.*)

   1. Iccserver
   2. Router
   3. AM Server
   4. Messageserver
   5. Olapdataserver

5. Batches will have to be created for executing. This is explained in Executing the Hierarchy Flattening Transformation, page 3-6.

Tables Used by the Hierarchy Flattening Transformation

- REV_HIERARCHIES – This is the master table for hierarchies with one row per hierarchy.
- REV_DIMENSIONS_B – This is the master table for dimensions with one row per dimension.
- REV_HIER_DEFINITIONS – flattened_rows_completion_code column is checked to determine whether the hierarchy is to be processed.
- DIM_<DIMENSIONNAME>_HIER – This table stores the hierarchy data and is the source for the transformation.

Example

Dim_Products_Hier

- REV_HIER_FLATTENED – This is the output table for the transformation into which the flattened hierarchy data gets populated.

Executing the Hierarchy Flattening Transformation

To execute the function from OFSAAI Information Command Center (ICC) create a batch according to the following steps:

> **Note:** For a more comprehensive coverage of configuration and execution of a batch, see*Oracle Financial Services Analytical Applications Infrastructure User Guide.*

- From the **Home** menu, select **Operations**, then select **Batch Maintenance**.
- Click **New Batch** ('+' symbol in Batch Name container) and enter the Batch Name and Description.
- Click **Save.**
- Select the Batch you created in the earlier step by clicking on the check box in the Batch Name container.
- Click **New Task** ('+' symbol in Task Details container).
- Enter the Task ID and Description.
- Select **Transform Data**, from the Components list.
- Select the following from the Dynamic Parameters List and then click **Save**:
    - Datastore Type - Select the appropriate datastore from the list
    - Datastore Name - Select the appropriate name from the list
    - IP address - Select the IP address from the list
    - Rule Name - Select **batch_hierTransformation** from the list of all available transformations. (This is a seeded Data Transformation which is installed as part of the OFSPA Solution Installer. If you don't see this in the list, contact Oracle Support.)
    - Parameter List – Dimension ID, Hierarchy ID (Refer the following section for details on Parameter list)

For the Parameter List earlier mentioned, the values are:

- Dimension ID – Execute the following query in the database to find the value and use the value in the dimension id column for the dimension name / description to be processed.

  ```
  Select b.dimension_id,t.dimension_name,t.description from
  rev_dimensions_b b inner join rev_dimensions_tl t on
  b.dimension_id = t.dimension_id and t.dimension_name like
  '<dimension name>'
  ```

  Replace <dimension name> in the preceding query with the Dimension Name you find in the UI (Financial Services Application > Master Maintenance > Dimension Management) for the dimension on which the Hierarchy you want to flatten is configured on.

- Hierarchy ID - If all the hierarchies belonging to a dimension are to be processed, then provide **null** as the parameter value. Else, provide the System Identifier of the hierarchy that needs to be transformed.

  Execute the following query in the database, if only a single hierarchy is to be processed, and use the value in hierarchy_id column as parameter for the hierarchy to be processed.

  ```
  select b.object_definition_id,short_desc,long_desc from
  fsi_m_object_definition_b b inner join
  fsi_m_object_definition_tl t on b.object_definition_id =
  t.object_definition_id and b.id_type = 5
  ```

  Example

  If all the hierarchies for GL Account dimension must be processed, the parameter list should be given as follows (where '2' is the dimension id for the seeded dimension GL Account):

  '2',null

  Example

  If a particular hierarchy with code 1000018112 must be processed (you can obtain this code by executing the preceding query in the database), the parameter list should be given as follows:

  '2', '1000018112'

- Execute the batch from Batch Execution by choosing the batch created following the steps mentioned in the preceding sections. For more details, see *Oracle Financial Services Analytical Applications Infrastructure User Guide.*

Hierarchy Transformation can also be executed directly on the database through SQLPLUS. The details are:

Function Name: rev_batchHierFlatten

Parameters: batch_run_id, mis_date, pDimensionId, pHierarchyId

Sample parameter values: 'Batch1','20091231','2','1000018112'

Note: Execute the Hierarchy Transformation batch when a new Hierarchy is created or there is a change made to an existing Hierarchy.

Checking the Execution Status

The status of execution can be monitored using the Batch Monitor screen.

The status messages in batch monitor are :

N - Not Started

O - On Going

F - Failure

S – Success

The Event Log window in Batch Monitor provides logs for execution with the top row being the most recent. If there is any error during execution, it will get listed here. Even if you see Successful as the status in Batch Monitor it is advisable to go through the Event Log and re-check if there are any errors.

Alternatively, the execution log can be accessed on the application server in the following directory $FIC_DB_HOME/log/date. The file name will have the batch execution id.

The database level operations log can be accessed by querying the FSI_MESSAGE_LOG table. The batch run id column can be filtered for identifying the relevant log. (This is the same log you see in the Event Log Window.)

Check the **.profile** file in the installation home if you are not able to find the paths mentioned earlier.

Dimension Tables Population

Dimensional data changes are handled by OFSPA solution using the SCD Slowly Changing Dimension component.

The following topics are covered in this section:

Overview of SCD process

SCDs are dimensions that have data that changes slowly, rather than changing on a time-based, regular schedule.

For more information on SCDs, see

- *Oracle Data Integrator Best Practices for a Data Warehouse* at

  <http://www.oracle.com/technetwork/middleware/data-integrator/overview/odi-bestpractices-datawarehouse-whi-129686.pdf >

- *Oracle® Warehouse Builder Data Modeling, ETL, and Data Quality Guide* at

  <http://download.oracle.com/docs/cd/E16338_01/owb.112/e10935/dim_objects.htm>

Additional online sources include:

- <http://en.wikipedia.org/wiki/Slowly_changing_dimension>
- <http://www.oracle.com/webfolder/technetwork/tutorials/obe/db/10g/r2/owb/owb10gr2_gs/owb/lesson3/slowlychangingdimensions.htm>
- <http://www.oraclebidwh.com/2008/11/slowly-changing-dimension-scd/>
- <http://www.informationweek.com/news/software/bi/showArticle.jhtml?articleID=204800027&pgno=1>
- <http://www.informationweek.com/news/software/bi/showArticle.jhtml?articleID=59301280>

An excellent published resource that covers SCD in detail is *"The Data Warehouse Toolkit: The Complete Guide to Dimensional Modeling"* by Ralph Kimball and Margy Ross.

The SCD component of the platform is delivered via a C++ executable. The types of SCD handled by the OFSAAI SCD component for OFSPA solution are Type 1 and Type 2.

Type 1

The Type 1 methodology overwrites old data with new data, and therefore does not track historical data. This is useful for making changes to dimension data.

Example

N_Product_Skey	V_Product_Name	D_Start_Date	D_End_Date	F_Latest_Record_Indicator
1	PL	5/31/2010	12/31/9999	Y

In this example,

N_Product_Skey is the surrogate key column which is a unique key for each record in the dimension table.

V_Product_Name is the product name.

D_Start_Date indicates the date from which this product record is valid.

D_End_Date indicates the date till which this product record is valid.

F_Latest_Record_Indicator: A value 'Y' indicates this is the latest record in the dimension table for this product and 'N' indicates it is not.

If the V_Product_Name column is set as a Type 1 SCD column and if there is a change in the product name to 'Personal Loan' from 'PL' in the above example in the next processing period, then when SCD is executed for the new processing period the record in the above example would be changed to

N_Product_Skey	V_Product_Name	D_Start_Date	D_End_Date	F_Latest_Record_Indicator
1	Personal Loan	6/30/2010	12/31/9999	Y

Type 2

The Type 2 method tracks historical data by creating multiple records for a given natural key in the dimensional tables with separate surrogate keys. With Type 2, the historical changes in dimensional data are preserved. In the above example for the change in product name from 'PL' to 'Personal Loan' if history has to be preserved, then the V_Product_Name column has to be set as Type 2 in which case when SCD is processed for the processing period in which the change happens it will insert a new record as shown in the following example.

Example

N_Product_Skey	V_Product_Name	D_Start_Date	D_End_Date	F_Latest_Record_Indicator
1	PL	5/31/2010	12/31/9999	N
1	Personal Loan	6/30/2010	12/31/9999	Y

A new record is inserted to the product dimension table with the new product name and the latest record indicator for this is set as 'Y' indicating this is the latest record for the personal loan product and the same flag for the earlier record is set to 'N'.

Prerequisites

1. The Hierarchy Flattening Transformation should have been executed successfully.

2. The SCD executable should be present under <installation home>ficdb/bin. The file name is **scd.**

3. The user executing the SCD component should have execute rights on the file mentioned as prerequisite in point 2.

4. The setup tables accessed by SCD component namely – SETUP_MASTER, SYS_TBL_MASTER, SYS_STG_JOIN_MASTER should have the required entries. The SETUP_MASTER table DOES NOT come seeded with the installation; the required entries must be added manually. The required columns are mentioned in the Tables Used by the SCD Component, page 3-11. The tables SYS_TBL_MASTER and SYS_STG_JOIN_MASTER are seeded for the Org unit, GL Account, Product, Common COA (Chart of Accounts) dimensions with the solution install and you must only add entries in these tables, if you add new dimensions.

5. Database Views with name DIM_<Dimension Name>_V come seeded, for the seeded dimensions which come as part of install. These views source data from the Profitability dimension tables as well as the flattened hierarchy data.

   Example
   DIM_PRODUCT_V is the view available for the product dimension.

   New views will have to be added for any new dimension, added in addition to the seeded dimensions.

Tables Used by the SCD component

The database tables used by the SCD component are:

- SETUP_MASTER
  - V_COMPONENT_CODE – This column is not used by the OFSPA solution.
  - V_COMPONENT_DESC – This column has the hierarchy name used within the database view for a flattened hierarchy. This cannot be changed for the hierarchies which come seeded with the install.
  - V_COMPONENT_VALUE – This is the hierarchy id to be processed and this can be obtained by executing the following query:

    ```
    select b.object_definition_id,short_desc,long_desc from
    fsi_m_object_definition_b b inner join fsi_m_object_definition_tl
    t on b.object_definition_id = t.object_definition_id and
    b.id_type = 5
    ```

Sample

V_COMPONENT_CODE	V_COMPONENT_DESC	V_COMPONENT_VALUE
22	PRODUCT_HIER1	1000018711
88	ORG_UNIT_HIER1	100573

Note: *For any new hierarchy added, a row will have to be inserted to this table manually for SCD to process that hierarchy.*

- SYS_TBL_MASTER

  The solution installer will populate one row per dimension for the seeded dimensions in this table.

Column Name	Data Type	Column Description
MAP_REF_NUM	NUMBER(3) NOT NULL	The Mapping Reference Number for this unique mapping of a Source to a Dimension Table.
TBL_NM	VARCHAR2(30) NOT NULL	Dimension Table Name
STG_TBL_NM	VARCHAR2(30) NOT NULL	Staging Table Name
SRC_PRTY	NUMBER(2) NULL	Priority of the Source when multiple sources are mapped to the same target.
SRC_PROC_SEQ	NUMBER(2) NOT NULL	The sequence in which the various sources for the DIMENSION will be taken up for processing.

Column Name	Data Type	Column Description
SRC_TYP	VARCHAR2(30) NULL	The type of the Source for a Dimension, that is, Transaction Or Master Source.
DT_OFFSET	NUMBER(2) NULL	The offset for calculating the Start Date based on the Functional Requirements Document (FRD).
SRC_KEY	NUMBER(3) NULL	

Sample Data: This is the row put in by the solution installer for the product dimension.

MAP_REF_NUM	6
TBL_NM	DIM_PRODUCT
STG_TBL_NM	DIM_PRODUCT_V
SRC_PRTY	
SRC_PROC_SEQ	1
SRC_TYP	MASTER
DT_OFFSET	0

> **Note:** *For any new dimension added, a row will have to be inserted to this table manually.*

- SYS_STG_JOIN_MASTER

  The solution installer will populate this table for the seeded dimensions.

Column Name	Data Type	Column Description
MAP_REF_NUM	NUMBER(3) NOT NULL	The Mapping Reference Number for this unique mapping of a Source to a Dimension Table.
COL_NM	VARCHAR2(30) NOT NULL	Name of the column in the Dimension Table.
COL_TYP	VARCHAR2(30) NOT NULL	Type of column. The possible values are given in the following section.
STG_COL_NM	VARCHAR2(60) NULL	Name of the column in the Staging Table.
SCD_TYP_ID	NUMBER(3) NULL	SCD type for the column.
PRTY_LOOKUP_REQD_FLG	CHAR(1) NULL	Column to determine whether Lookup is required for Priority of Source against the Source Key Column or not.
COL_DATATYPE	VARCHAR2(15) NULL	The list of possible values are VARCHAR, DATE, NUMBER based on the underlying column datatype.
COL_FORMAT	VARCHAR2(15) NULL	

The possible values for column type (the COL_TYPE column) in SYS_STG_JOIN_MASTER are –

1. PK – Primary Dimension Value (may be multiple for a given "Mapping Reference Number")
2. SK – Surrogate Key

3. DA – Dimensional Attribute (may be multiple for a given "Mapping Reference Number")

4. SD – Start Date

5. ED – End Date

6. LRI – Latest Record Indicator (Current Flag)

7. CSK – Current Surrogate Key

8. PSK – Previous Surrogate Key

9. SS – Source Key

10. LUD – Last Updated Date / Time

11. LUB – Last Updated By

Sample Data: This is the row put in by the solution installer for the product dimension.

MAP_REF_NUM	6
COL_NM	V_PRODUCT_NAME
COL_TYP	DA
STG_COL_NM	V_PRODUCT_NAME
SCD_TYP_ID	2
PRTY_LOOKUP_REQD_FLG	N
COL_DATATYPE	VARCHAR
COL_FORMAT	

> **Note:** *For any new dimension added, the column details will have to be inserted to this table manually.*

- DIM_<dimensionname>_V – The database view which SCD uses as the source.

  Example
  Dim_products_V

These views come as part of install for the dimensions seeded with the application.

> **Note:** *For any new dimension added, a view will have to be created similar to DIM_PRODUCTS_V.*

- DIM_<dimensionname> – Output table to which SCD writes the dimension data. These tables are used for building OFSPA cubes.

A sequence should be added for every user-defined dimension.

Example

```
create sequence SEQ_DIM_<DIM>  minvalue 1
maxvalue 9999999999999999999999999999
increment by 1
```

Executing the SCD Component

To execute the SCD component from OFSAAI ICC framework create a batch according to the following steps:

> **Note:** For a more comprehensive coverage of configuration and execution of a batch, see*Oracle Financial Services Analytical Applications Infrastructure User Guide.*

- From the **Home** menu, select **Operations**, then select **Batch Maintenance**.
- Click **New Batch** ('+' symbol in Batch Name container) and enter the Batch Name and Description.
- Click **Save.**
- Select the Batch you created in the earlier step by clicking the check box in the Batch Name container.
- Click **New Task** ('+' symbol in Task Details container).
- Enter the Task ID and Description.
- Select **Run Executable**, from the Component ID list.
- Click **Parameters.** Select the following from the Dynamic Parameters List and then click **Save**:
  - Datastore Type - Select the appropriate datastore from the list
  - Datastore Name - Select the appropriate name from the list

- IP address - Select the IP address from the list
- Executable - scd,<map ref num>

  Example

  scd,2 (Refer the following sections for details)
- Wait: When the file is being executed you have the choice to either wait till the execution is complete or proceed with the next task. Click the list box of the field provided for Wait in the Value field to select 'Yes' or 'No'. Clicking **Yes** confirms that you wish to wait for the execution to be complete. Clicking **No** indicates that you wish to proceed.

  > **Important:** Always select **N** in Wait Parameter.

- Batch Parameter: Clicking **Yes** would mean that the batch parameters are also passed to the executable being started; else the batch parameters will not be passed to the executable.

  > **Important:** Always select **Y** in Batch Parameter.

For the Parameter Executable earlier mentioned, the map ref num values are

- -1 (if you want to process all the dimensions). The *Executable* parameter mentioned earlier would be

  scd,-1
- If you want to process for a single dimension, query the database table SYS_TBL_MASTER and give the number in the map_ref_num column for the dimension you want to process. These are the ones which come seeded with the install. If you want to process for Product dimension, the *Executable* parameter mentioned earlier would be

  scd,6

Map_ref_num	Tbl_nm
4	DIM_ORG_UNIT
5	DIM_GL_ACCOUNT
6	DIM_PRODUCT

Map_ref_num	Tbl_nm
7	DIM_COMMON_COA

- Execute the batch from Batch Execution by choosing the batch created following the steps mentioned in the preceding sections.

Checking the Execution Status

The status of execution can be monitored using the Batch Monitor screen. You can access this from the Left Hand Side (LHS) menu as follows:

From the **Home** menu, select **Operations**, then select **Batch Monitor.**

> **Note:** For a more comprehensive coverage, see *Oracle Financial Services Analytical Applications Infrastructure User Guide.*

The status messages in Batch Monitor are :

N - Not Started

O - On Going

F - Failure

S – Success

The ICC execution log can be accessed on the application server in the following directory $FIC_DB_HOME/log/ficgen.

The file name will have the batch execution id.

Sample

/dbfiles/home/oracle/OFSAAI/ficdb/log/ficgen

The detailed SCD component log can be accessed on the application server in the directory $FIC_HOME, go one folder up from there and then accessing the following path /ftpshare/<infodom name>/logs

The file name will have the batch execution id.

Sample

/dbfiles/home/oracle/ftpshare/OFSAADEMO/logs

Check the **.profile** file in the installation home if you are not able to find the paths mentioned earlier.

4

Time Dimension Population

Business data commonly represents information as of a point in time (for example, a balance as of a point in time) or as of a particular span of time (for example, income for the month of March). Time dimension makes it possible to report the balances by Year, Quarter or Month using the rollup functionality of Essbase cubes. Essbase makes it possible to rollup the monthly balances to a quarter and then to a year level. For example, the monthly data for January, February and March gets rolled up to Quarter 1 and the Quarter 1, 2, 3 and 4 data get rolled up to, say Year 2011. The rollup of a particular balance depending on their nature could be a simple additive rollup wherein the child member balances are added up to arrive at the parent node balance (for example, Ending Balance) or non additive rollups wherein a node formula is used to specify how to rollup the child member balances (for example, 3 month rolling average).

This chapter covers the following topics:

- Overview of Time dimension population
- Prerequisites
- Tables used by the Time dimension population transformation
- Executing the Time dimension population transformation
- Checking the execution status

Overview of Time dimension population

The twelve Month Columns in ledger_stat of Profitability solution are replaced by a single n_as_of_date_skey column in Oracle Financial Services Profitability Analytics's (OFSPA) fct_ledger_stat with each month value stored in n_value column. Similarly, the YTD column value is stored in n_value_ytd. This is done to make reporting easier considering Time is a dimension for most of the OFSPA reports. Time dimension population transformation is used to populate the dim_dates table with values between two dates specified by the user.

The database components, used by the transformations are:

1. Database function FN_DIM_DATES

2. Database procedure PROC_DIM_DATES_POPULATION that is called by the function fn_dim_dates mentioned earlier.

Prerequisites

1. All the post install steps mentioned in the *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration guide* and the solution installation manuals of *Profitability Management* and *Profitability Analytics* have to be completed successfully.

2. Application User must be mapped to a role that has seeded batch execution function (BATPRO).

3. Before executing a batch check if the following services are running on the application server (For more information on how to check if the services are up and on and how to start the services if you find them not running, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*).

    1. Iccserver

    2. Router

    3. AM Server

    4. Messageserver

    5. Olapdataserver

4. Batches will have to be created for executing the function. For more details see, Executing the Time dimension population transformation, page 4-2.

Tables used by the Time dimension population transformation

- DIM_DATES – This table stores the date details to be used for building the OFSPA cubes.

For more details on viewing the structure of earlier tables, see *Oracle Financial Services Analytical Applications Data Model Data Dictionary* or the *OFSPA Erwin Data Model.*

Executing the Time dimension population transformation

To execute the function from OFSAAI Information Command Center (ICC) frame work, create a batch by performing the following steps:

Note: For a more comprehensive coverage of configuration and execution of a batch, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

1. From the **Home** menu, select **Operations**, then select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container) and enter the Batch Name and description.
3. Click **Save**.
4. Select the Batch you have created in the earlier step by clicking on the checkbox in the Batch Name container.
5. Click **New Task** ('+' symbol in Task Details container).
6. Enter the Task ID and Description.
7. Select **Transform Data**, from the components list.
8. Select the following from the Dynamic Parameters List and then click **Save**:
   - Datastore Type - Select appropriate datastore from the list
   - Datastore Name - Select appropriate name from the list
   - IP address - Select the IP address from the list
   - Rule Name - Select **Dim_Dates_Population** from the list of all available transformations. (This is a seeded Data Transformation which is installed as part of the OFSPA solution installer. If you don't see this in the list, contact Oracle support)
   - Parameter List – Start Date, End Date (Refer the following for details on Parameter list)

     Explanation for the parameter list is:

     - Start Date – This is the date starting from which the Transformation will populate Dim_Dates table. Date should be specified in the format 'YYYYMMDD'.
     - End Date - This is the date up to which the Transformation will populate Dim_Dates table. Date should be specified in the format 'YYYYMMDD'.

       Sample parameter for this task is '20081131','20091231'.
9. Execute the batch.

The function can also be executed directly on the database through SQLPLUS. Details are:

Function Name : FN_DIM_DATES

Parameters : p_batch_run_id, p_as_of_date, P_ST_DT, P_ED_DT

Sample parameter values : 'Batch1','20091231', '20081131','20091231'

Checking the execution status

The status of execution can be monitored using the batch monitor screen.

> **Note:** For a more comprehensive coverage of configuration & execution of a batch, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

The status messages in batch monitor are :

N - Not Started

O - On Going

F - Failure

S – Success

The Event Log window in Batch Monitor provides logs for execution with the top row being the most recent. If there is any error during execution, it will get listed here. Even if you see Successful as the status in Batch Monitor it is advisable to go through the Event Log and re-check if there are any errors. The execution log can be accessed on the application server by going to the following directory $FIC_DB_HOME/log/date. The file name will have the batch execution id.

The database level operations log can be accessed by querying the FSI_MESSAGE_LOG table. The batch run id column can be filtered for identifying the relevant log.

Check the **.profile** file in the installation home if you are not able to find the paths mentioned earlier.

5

Fact Ledger Population

Fact Ledger population involves populating the FCT_LEDGER_STAT table from the LEDGER_STAT table.

This chapter covers the following topics:

- Overview of Fact Ledger Population Transformation
- Prerequisites
- Tables used by the Fact Ledger Population transformation
- Executing the Fact Ledger Population Transformation
- Checking the execution status

Overview of Fact Ledger Population Transformation

The LEDGER_STAT table is optimized for processing purposes, but is not a convenient structure for reporting purposes. In preparation for building cubes from data in the LEDGER_STAT table and to establish a convenient structure for relational reporting, data from LEDGER_STAT is transformed into an alternate structure in a table called FACT_LEDGER_STAT. In generating FACT_LEDGER_STAT, time from LEDGER_STAT is transformed into an explicit dimension in FACT_LEDGER_STAT.

Fact Ledger Population transformation is used to populate the FCT_LEDGER_STAT table from the Profitability LEDGER_STAT table. The horizontally structured MONTH and YTD columns in Ledger/Stat are transposed to a vertical structure. The horizontally structured MONTH and YTD columns in Ledger/Stat are transposed to a vertical structure. The twelve Month Columns in ledger_stat are replaced by a single n_as_of_date_skey column in fct_ledger_stat with each month value stored in n_value column. Similarly, the YTD column value is stored in n_value_ytd. This is done to make reporting easier considering Time is a dimension in most of the reports.

The database components, used by the transformations are:

1. Database function fsi_ledger_stat_trm

2. Database function ledger_stat_trm which is called by the function fsi_ledger_stat_trm as mentioned earlier.

Prerequisites

1. All the post install steps mentioned in the *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration guide* and the solution installation manuals of *Profitability Management* and *Profitability Analytics* have to be completed successfully.

2. Application User must be mapped to a role that has seeded batch execution function (BATPRO).

3. Ensure that your fiscal year information is configured properly. It has 2 columns.

    1. Fiscal_period : This gives the number of months in the given fiscal period

    2. Start_month : This indicates which month of the calendar year is the fiscal starting month. For example, a value '1' for this column means fiscal year starts from January and value of '4' indicates that the fiscal year starts from April.

4. Before executing a batch, check if the following services are running on the application server (For more information on how to check if the services are up and on and how to start the services if you find them not running, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*).

    1. Iccserver

    2. Router

    3. AM Server

    4. Messageserver

    5. Olapdataserver

5. Batches will have to be created for executing the function. For more details see, Executing the Ledger Stat Transformation, page 5-4.

Tables used by the Fact Ledger Population transformation

- FSI_FISCAL_YEAR_INFO – This table has the fiscal year info. The entries required in this table are mentioned in the Pre requisites section earlier.

- FSI_BI_SETUP_TABLE – This table has the setup information used by the

Transformation. They are :

- Target_Table_Name: The destination table name for transformation
- Target_Column_Name: Destination column name in FCT_LEDGER_STAT
- Member_Col_Name: Column Name in LEDGER_STAT
- Source_Dim_Table_Name: Dimension table name to which Ledger data has to be joined to get the surrogate key value
- Source_Column_Name: Column in the dimension table to which the ledger stat ID column is joined
- Skey_Column_Name: Column in the dimension table which has the surrogate key value
- Join_Required: Whether the column to be moved to FCT_LEDGER_STAT is directly available in LEDGER_STAT or a join has to be taken with dimension table to get the skey.

Sample data for this table is available as follows.

TARGET_TABLE_NAME	TARGET_COL_NAME	MEMBER_COL_NAME	SOURCE_DIM_TABLE_NAME	SOURCE_COLUMN_NAME	SKEY_COLUMN_NAME	JOIN_REQUIRED
FCT_LEDGER_STAT	N_IDENTITY_CODE	IDENTITY_CODE	LEDGER_STAT	IDENTITY_CODE	IDENTITY_CODE	N
FCT_LEDGER_STAT	N_ORG_UNIT_SKEY	ORG_UNIT_ID	DIM_ORG_UNIT	N_ORG_UNIT_ID	N_ORG_UNIT_SKEY	Y
FCT_LEDGER_STAT	N_GL_ACCOUNT_SKEY	GL_ACCOUNT_ID	DIM_GL_ACCOUNT	N_GL_ACCOUNT_ID	N_GL_ACCOUNT_SKEY	Y
FCT_LEDGER_STAT	N_PRODUCT_SKEY	PRODUCT_ID	DIM_PRODUCT	N_PRODUCT_ID	N_PRODUCT_SKEY	Y

TARGET_TABLE_NAME	TARGET_COL_NAME	MEMBER_COL_NAME	SOURCE_DIM_TABLE_NAME	SOURCE_COLUMN_NAME	SKEY_COLUMN_NAME	JOIN_REQUIRED
FCT_LEDGER_STAT	N_COMMON_COA_SKEY	COMMON_COA_ID	DIM_COMMON_COA	N_COMMON_COA_ID	N_COMMON_COA_SKEY	Y
FCT_LEDGER_STAT	V_ISO_CURRENCY_CD	ISO_CURRENCY_CD	LEDGER_STAT	ISO_CURRENCY_CD	ISO_CURRENCY_CD	N
FCT_LEDGER_STAT	N_CONSOLIDATION_CD	CONSOLIDATION_CD	LEDGER_STAT	CONSOLIDATION_CD	CONSOLIDATION_CD	N
FCT_LEDGER_STAT	V_ACCUMULATION_TYPE_CD	ACCUM_TYPE_CD	LEDGER_STAT	ACCUM_TYPE_CD	ACCUM_TYPE_CD	N
FCT_LEDGER_STAT	N_BALANCE_TYPE_CD	BALANCE_TYPE_CD	LEDGER_STAT	BALANCE_TYPE_CD	BALANCE_TYPE_CD	N

- LEDGER_STAT - This table is the source for the transformation.
- DIM_<dimension Name> - The flattened dimension tables used in Business Intelligence (BI) reporting are accessed to obtain the surrogate key to be populated to FCT_LEDGER_STAT dimension columns. for example, DIM_ORG_UNIT, DIM_PRODUCT and so on.
- FCT_LEDGER_STAT – This is the output table for the transformation.

For more details on viewing the structure of earlier tables, see *Oracle Financial Services Analytical Applications Data Model Data Dictionary* or the *Oracle Financial Services Profitability Analytics (OFSPA) Erwin Data Model*.

Executing the Fact Ledger Population Transformation

To execute the function from OFSAAI Information Command Center (ICC) frame work, create a batch by performing the following steps:

> **Note:** For a more comprehensive coverage of configuration and

execution of a batch, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

1. From the **Home** menu, select **Operations**, then select **Batch Maintenance**.

2. Click **New Batch** ('+' symbol in Batch Name container) and enter the Batch Name and description.

3. Click **Save**.

4. Select the Batch you have created in the earlier step by clicking on the checkbox in the Batch Name container.

5. Click **New Task** ('+' symbol in Task Details container).

6. Enter the Task ID and Description.

7. Select **Transform Data**, from the components list.

8. Select the following from the Dynamic Parameters List and then click **Save**:

   - Datastore Type - Select appropriate datastore from the list

   - Datastore Name - Select appropriate name from the list

   - IP address - Select the IP address from the list

   - Rule Name - Select **FSI_LEDGER_STAT_TRM** from the list of all available transformations. (This is a seeded Data Transformation which is installed as part of the OFSPA solution installer. If you don't see this in the list, contact Oracle support)

   - Parameter List – pStart_Month , pEnd_Month , pYears , pIdentity_Code , pSource_Type , pRe_Run_Flg (Refer the following for details on Parameter list)

     Explanation for the parameter list is:

     pStart_Month – This is an optional parameter that indicates the Starting Month.

     pEnd_Month – This is an optional parameter that indicates the Ending Month.

     pYears – This is a mandatory parameter that indicates the Year value.

     pIdentity_Code – This is an optional parameter that indicates the Identity Code (This is the identity code in EPM LEDGER_STAT table, in the sample below a value '0' is passed, which indicates only the rows in LEDGER_STAT with identity code '0' should get processed. Identity code '0' indicates rows in LEDGER_STAT loaded by the ledger load program. This would result in movement of only the rows loaded by ledger load program to be moved to

FCT_LEDGER_STAT in OFSPA solution. Similarly, any particular allocation output values can be moved by filtering on the identity code).

pSource_Type – This is an optional parameter that indicates the Source Type. (Source Type indicates which process populated a row in LEDGER_STAT of profitability solution. For example, '0' indicates it was loaded by the Ledger Load program , '100' indicates allocation rule populated it and so on).

pRe_Run_Flg – This is an optional parameter that indicates Re-run Flag (If 'Y', data will be removed and re-loaded if the data exists in the fact table).

Sample list of parameters to the task is 1,8,2009,0,0,'Y'.

9. Execute the batch.

Ledger Stat Transformation can also be directly executed on the database through SQLPLUS. Details are:

Function Name : fsi_ledger_stat_trm

Parameters : pBatch_Id, pAs_of_date, pStart_Month , pEnd_Month, pYears , pIdentity_Code, pSource_Type, pRe_Run_Flg

Sample parameter values : 'Batch1','20091231', 1,8,2009,0,0,'Y'

Checking the execution status

The status of execution can be monitored using the batch monitor screen.

> **Note:** For a more comprehensive coverage of configuration & execution of a batch, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

The status messages in batch monitor are :

N - Not Started

O - On Going

F - Failure

S – Success

The Event Log window in Batch Monitor provides logs for execution with the top row being the most recent. If there is any error during execution, it will get listed here. Even if you see Successful as the status in Batch Monitor it is advisable to go through the Event Log and re-check if there are any errors. The execution log can be accessed on the application server by going to the following directory $FIC_DB_HOME/log/date. The file name will have the batch execution id.

The database level operations log can be accessed by querying the FSI_MESSAGE_LOG table. The batch run id column can be filtered for identifying the relevant log.

Check the **.profile** file in the installation home if you are not able to find the paths mentioned earlier.

6

Account Summary Population

Account Summary tables in Oracle Financial Services Profitability Analytics (OFSPA) data model are loaded from the Enterprise Performance Management (EPM) Instrument tables using the Table to Table (T2T) component of Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) framework.

This chapter covers the following topics:

- Overview of Account Summary Tables
- Overview of Account Summary Population
- Prerequisites
- Tables used by the Account Summary Population T2T
- Executing the Account Summary Population T2T
- Checking the Execution Status
- Account Summary T2Ts

Overview of Account Summary Tables

Prior to generating cubes, customer account level data from the Oracle Financial Services Analytical Applications (OFSAA) Instrument tables must be consolidated into a standardized relational Business Intelligence (BI) data model. This consolidation is done to have all the instrument table data in a single Fact table to be used for building cubes which allow rollup of data from different instrument tables for a dimension or a combination of dimensions. This is done at the cost of sparse data in certain columns depending on the extent to which the column is applicable to different instrument tables. This means, if a column in the Fact table is relevant only to a single Instrument and hence populated by the T2T definition for that instrument only, then this column will have null values for records in the Fact table populated from the other instrument tables. This relational BI model consists of 3 vertically partitioned Account Summary tables that are organized by application subject area. Each of these 3 Account Summary tables share the same primary key.

- FCT_COMMON_ACCOUNT_SUMMARY – This table has the measures used by all the EPM apps.
- FCT_PFT_ACCOUNT_SUMMARY – This table has Profitability Management (PFT) specific measures.
- FCT_FTP_ACCOUNT_SUMMARY – This table has Funds Transfer Pricing (FTP) specific measures.

Yet another two Account Summary tables have been designed to store Enterprise Risk Management (ERM) data.

- FCT_ECO_CAP_ACCOUNT_SUMMARY
- FCT_ECO_CAP_ACCOUNT_SUMMARY_B

These two tables are part of the OFSPA BI data model but there are no seeded T2T definitions available to populate these tables. T2T processes must be custom configured to populate these tables to use measures defined on these tables for reporting.

Overview of Account Summary Population

On installation of the OFSPA product, you will see one T2T definition for each EPM processing table (also referred to as instrument table). Each T2T maps EPM instrument table data to the 3 EPM Account Summary tables. T2T definitions mostly have direct column to column mapping from Instrument to Fact table and in certain cases might have expressions which apply Structured Query Language (SQL) functions or do arithmetic operations on instrument columns before moving them to the Fact table.

Example

Data base functions are used for conversion if there is a data type difference between the mapped columns of Instrument (such as, TO_NUMBER(TO_CHAR(NEXT_PAYMENT_DATE,'YYYYMMDD'))) and Fact tables, or an arithmetic operation if a currency conversion is required for a balance column (such as, FSI_D_CREDIT_CARDS.GROSS_FEE_INCOME * FSI_EXCHANGE_RATE_HIST.EXCHANGE_RATE).

In addition the surrogate key is populated in the Fact table dimension columns by doing a SQL join between the Instrument and Dimension tables on ID column and populating the surrogate key from the Dimension table for each Instrument dimension ID.

While moving data using the T2T component, the account number linkage between Staging, Instrument and Fact table records is preserved, since the movement happens at the account level. In addition, Account Number links data flowing into Fact table from EPM and ERM applications.

Prerequisites

1. All the post install steps mentioned in the *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration guide* and the solution installation manuals of *Profitability Management* and *Profitability Analytics* have to be completed successfully.

2. Application User must be mapped to a role that has seeded batch execution function (BATPRO).

3. Before executing a batch, check if the following services are running on the application server (For more information on how to check if the services are up and on, and how to start the services if you find them not running, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.)

    1. Iccserver

    2. Router

    3. AM Server

    4. Messageserver

4. Batches will have to be created for executing. This is explained in Executing the Account Summary Population T2T, page 6-4.

5. Dimension Population should have been done before you execute the T2T batch. (See Dimension Loading Process, page 3-1 and Time Dimension Population, page 4-1.)

Tables used by the Account Summary Population T2T

The source table for the T2T component is the Profitability instrument table - FSI_D_<instrument name>

Example

FSI_D_TERM_DEPOSITS

There is a separate T2T object configured for each instrument table which will populate all the 3 Account Summary tables discussed earlier.

All 3 Account Summary tables have the following column combination as Primary Key:

- N_RUN_SKEY – This is the unique numeric key generated for each Run. A numeric value '0' will be populated to this column in the Fact tables mentioned earlier, since this column is not applicable for EPM instrument tables and is included for synchronizing EPM and ERM data. For more details, see *Oracle Financial Services*

Analytical Applications Infrastructure User Guide.

- N_ACCT_SKEY – The ID_NUMBER column from the instrument table is moved to this column in the Fact table. This account number will be used to synchronize data between ERM and EPM applications.
- N_INSTRUMENT_TYPE – This is the instrument type code from instrument table.
- N_MIS_DATE_SKEY – This is the AS_OF_DATE for the instrument data which is converted to 'YYYYMMDD' format and populated in this column of the Fact table.

The 3 tables mentioned earlier are linked by this 4 column combination.

For more details on viewing the structure of the Account Summary tables, see *Oracle Financial Services Analytical Applications Data Model Data Dictionary.*

Executing the Account Summary Population T2T

To execute the T2T component from OFSAAI ICC framework (accessed through the application Batch Operations screen), create a batch according to the following steps:

1. From the **Home** menu, select **Operations**, then select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container) and enter the Batch Name and Description.
3. Click **Save.**
4. Select the Batch you created in the earlier step by clicking the check box in the Batch Name container.
5. Enter the Task ID and Description.
6. Select **Load Data,** from the Components list.
7. Select the following from the Dynamic Parameters List and then click **Save**:
   - Datastore Type - Select the appropriate datastore from the list
   - Datastore Name - Select the appropriate name from the list
   - IP address - Select the IP address from the list
   - Load Mode - Select **Table to Table** from the list
   - Source Name - Select **RESULT AREA T2T** from the list. (This is seeded with the OFSPA Solution Install.)

- File Name - Select the T2T name for the instrument you want to process.

8. Data file name will be blank for any T2T transaction.

   Default value refers to currency calculation.

   If there is any need for currency conversion in T2T transactions, Default value is provided.

   Example
   Default value is [DRCY]='USD' ;Here 'USD' acts as currency parameter to T2T transaction.

9. Execute the batch created in the preceding steps.

   While executing the batch, the following chronological order must be followed:

   1. Firstly, execute T2T for Common Account Summary.

   2. Secondly, execute T2T for FTP Account Summary.

   3. Lastly, execute T2T for PFT Account Summary.

   > **Note:** For each of these 3 T2T tasks, Step 4 to 8 must be repeated.

   For more details, see*Oracle Financial Services Analytical Applications Infrastructure User Guide.*

Checking the Execution Status

The status of execution can be monitored using the Batch Monitor screen.

> **Note:** For a more comprehensive coverage of configuration and execution of a batch, see*Oracle Financial Services Analytical Applications Infrastructure User Guide.*

The status messages in Batch Monitor are :

N - Not Started

O - On Going

F - Failure

S – Success

The execution log can be accessed on the application server in the following directory $FIC_DB_HOME/log/t2t.

The file name will have the batch execution id.

The following tables can be queried for errors:

- FCT_COMMON_ACCOUNT_SUMMARY$
- FCT_PFT_ACCOUNT_SUMMARY$
- FCT_ALM_ACCOUNT_SUMMARY$
- FCT_FTP_ACCOUNT_SUMMARY$

Account Summary T2Ts

T2T definitions can be retrieved as an excel document for reference from the metadata browser of the Unified Metadata Manager (UMM) component of OFSAAI.

7

Cube Build Process

Oracle Financial Services Profitability Analytics (OFSPA) is built on Hyperion Essbase Multi-dimensional databases (that is, cubes). Multi-dimensional databases store aggregated data for better performance and provide mechanisms for performing non-additive rollup within a hierarchy and defining complex derived measures using cross-dimensional operations. Oracle Financial Services Analytical Applications (OFSAA) Infrastructure is used for defining metadata about the cube and for building the cubes.

This chapter covers the following topics:

- Structure and Detail of Cubes Seeded within OFSPA
- Process for Building Cubes

Structure and Detail of Cubes Seeded within OFSPA

OFSPA has the following seeded cubes:

- Ledger Cube for Financial Accounting
- Ledger Cube for Management Accounting
- Account Level Profitability
- Account Level Profitability with Origination Month
- Account Level Profitability with Next Repricing
- Account Level Profitability with Last Reprice Month
- Account Level Profitability with Maturity Month
- Account Level Profitability in Reporting Currency
- Account Level Profitability with Origination Month in Reporting Currency

- Account Level Profitability with Next Repricing in Reporting Currency
- Account Level Profitability with Last Reprice Month in Reporting Currency
- Account Level Profitability with Maturity Month in Reporting Currency

Ledger Cube for Financial Accounting

Overview

- Purpose – The purpose of this cube is to provide a balance sheet and income statement reporting line view of the unallocated ledger data that is loaded from GL systems.
- Dataset – This cube is based on the FCT_LEDGER_STAT fact table.
- Dimensions – The dimensions of the cube include Organization Unit, Scenario, Currency, Reporting Line (Non-Business Intelligence hierarchy constructed on GL dimension members) and Time. Since the reporting line is based on GL dimension members and GL dimension members are not seeded, this hierarchy must be changed post-install to reflect the actual GL dimension members that will be part of the client's environment. If GL dimension members are maintained within OFSAA Profitability application, then these can be moved to the respective dimension tables referred within Business Intelligence (BI) layer through seeded dimension loading process. For more details on modifying reporting line hierarchy, see How to Add or Remove Reporting Lines, page C-1.
- Measures – End Balance, Average Balance, Interest, Charge or Credit, Non Interest Income and Non Interest Expense.

Design

FCT_LEDGER_STAT contains N_VALUE column that holds the value of each row comprising other columns such as GL account, Organization unit, Scenario, Time, Financial Element and so on.

The following table provides a snapshot of dataset – Fact table FCT_LEDGER_STAT joined with other Dimension tables to provide a logical view of data that is read by the Cube building process.

IDENTITY_CODE	AS_OF_DATE	ORG_UNIT_ID	GL_ACCOUNT_ID	PRODUCT_ID	COMMON_COA_ID	CONSOLIDATION_CD	ISO_CURRENCY_CODE	FINANCIAL_ELEMENT_CODE	N_VALUE
0	30-NOV-2010	1100	9030	90	1250	100	USD	100	250000
0	30-NOV-2010	1100	9039	91	1251	100	USD	100	100000
0	30-NOV-2010	1100	9030	90	1250	100	USD	140	164592
0	30-NOV-2010	1100	9039	91	1251	100	USD	140	82380
0	30-NOV-2010	1100	9000	90	1250	100	USD	420	2500
0	30-NOV-2010	1100	9006	91	1251	100	USD	420	1000
0	30-NOV-2010	1100	9012	90	1250	100	USD	455	250
0	30-NOV-2010	1100	9012	91	1250	100	USD	455	100
0	30-NOV-2010	1100	9017	0	0	100	USD	457	25

- GL ACCOUNT ID has values – 9000 for Interest Income for Loans, 9006 for Interest Expense for Deposits, 9012 for Fees and Commissions, 9017 for Salaries, 9030 for Consumer loans and 9039 for Interest-bearing Deposits.
- FINANCIAL ELEMENT CODE has values – 100 for Ending Balance, 140 for Average Balance, 420 for Interest, 455 for Non Interest Income and 457 for Non Interest Expense.

Measures are constructed out of this column based on the value of the financial element in the row. For example,

Example

End Balance represents the value stored in column N_VALUE for a row that contains financial element code as 100. Similarly, Average Balance represents the value stored in column N_VALUE for a row that contains financial element code as 140.

These measures are included in a hierarchy of type 'MEASURE'.

Aggregation method is specified for each of these measures, that indicate the method for aggregating the measure value at the leaf level.

Example

Aggregation method for 'End Balance' measure will be SUM indicating that the measure is aggregated across all dimensions. Similarly, aggregation method for 'Average Balance' method will be AVERAGE indicating that the measure will be averaged across all dimensions.

The following table provides a view of the output of the Data Cruncher, after aggregating data for all the measures across the relevant dimensions. This data will be loaded into cube and rollup is performed in the cube to compute/store the value of the measures for each node.

TIME	ORG_UNIT_ID	SCENARIO	REPORTING LINE	CURRENCY	END BALANCE	AVERAGE BALANCE	INTEREST	NON-INTEREST INCOME	
30-NOV-2010	1100	100	GL9030	USD	250000	164592			
30-NOV-2010	1100	100	GL9039	USD	82380	82380			
30-NOV-2010	1100	100	GL9000	USD			2500		
30-NOV-2010	1100	100	GL9006	USD			1000		
30-NOV-2010	1100	100	GL9012	USD				350	
30-NOV-2010	1100	100	GL9017	USD					25

TIME BALANCE property is specified for each of these measures to indicate the type of rollup that ESSBASE must perform for this measure over time.

Example

'End Balance' measure cannot be aggregated over time and the value of the measure for a node within the TIME hierarchy is the value of the measure for its last child. Similarly, 'Average Balance' measure cannot be aggregated over time and the value for the measure for a node within the TIME hierarchy is the average of the value of the measure for all its children under the node.

Reporting Line hierarchy is configured as Non-BI hierarchy with non-additive rollup specified for some of the nodes. Extended SpreadSheet Database (ESSBASE) uses the non-additive rollup property to compute the value of the node.

This cube is imported into Oracle Business Intelligence Enterprise Edition (OBIEE) physical layer and Income Statement / Balance Sheet reports for financial accounting are constructed in OBIEE by pulling data from this cube.

Ledger Cube for Management Accounting

Overview

- Purpose – The purpose of this cube is to provide a risk adjusted view of balance sheet and income statement using allocated ledger data. Allocations are done by the OFSAA Profitability Management application.

- Dataset – This cube is based on the FCT_LEDGER_STAT fact table.

- Dimensions – The dimensions of the cube include Organization Unit, Scenario, Currency, Reporting Line (Non-Business Intelligence hierarchy constructed on Financial Element dimension members) and Time. Since the reporting line is based on Financial Element dimension members and Financial Element dimension members are seeded, OFSAA Profitability Management application should output allocation results using the seeded financial elements specific to reporting line. If allocation results are written as different financial elements, this hierarchy must be changed post-install to reflect the actual financial elements that will be part of the client's environment. For more details on modifying reporting line hierarchy, see How to Add or Remove Reporting Lines, page C-1.

- Measures – Measures of the cube are Ledger value, TB Last, TB Average and TB First. 'Ledger value' measure corresponds to the value of each row comprising of dimensions like GL account, Org Unit, Financial element, Time and so on. The other measures – TB Last, TB Average and TB First are created to set TIME BALANCE property for measure value corresponding to Ending Balance, Average Balance and Opening Balance Reporting Line dimension members. TIME BALANCE property cannot be set for 'Ledger value' measure, because value of this measure corresponding to 'Ending Balance' financial element will have different TIME BALANCE property compared to the value of this measure for 'Average Balance' financial element. Hence, there is a need to create additional measures like TB Last, TB Average and TB First and set specific TIME BALANCE property against these measures. Within the measure hierarchy in ESSBASE, a node level formula replaces the value of 'Ledger Value' measure with the values of TB Last, TB Average or TB First depending on the member of the Reporting Line dimension.

Design

FCT_LEDGER_STAT contains N_VALUE column that holds the value of each row comprising other columns such as GL account, Organization unit, Scenario, Time, Financial Element and so on.

The following table provides a snapshot of dataset – Fact table FCT_LEDGER_STAT joined with other Dimension tables to provide a logical view of allocated data that is read by the Cube building process.

IDENTITY_CODE	AS_OF_DATE	ORG_UNIT_ID	GL_ACCOUNT_ID	PRODUCT_ID	COMMON_COA_ID	CONSOLIDATION_CD	ISO_CURRENCY_CODE	FINANCIAL_ELEMENT_CODE	N_VALUE
101	30-NOV-2010	1100	9030	90	1250	100	USD	9036	250000
101	30-NOV-2010	1100	9039	91	1251	100	USD	9036	100000
101	30-NOV-2010	1100	9030	90	1250	100	USD	9035	164592
101	30-NOV-2010	1100	9039	91	1251	100	USD	9035	82380
101	30-NOV-2010	1100	9000	90	1250	100	USD	9001	2500
101	30-NOV-2010	1100	9006	91	1251	100	USD	9019	1000
101	30-NOV-2010	1100	9000	90	1250	100	USD	9013	2200
101	30-NOV-2010	1100	9006	91	1251	100	USD	9007	900
101	30-NOV-2010	1100	9012	90	1250	100	USD	9027	250

IDENTITY_CODE	AS_OF_DATE	ORG_UNIT_ID	GL_ACCOUNT_ID	PRODUCT_ID	COMMON_COA_ID	CONSOLIDATION_CD	ISO_CURRENCY_CODE	FINANCIAL_ELEMENT_CODE	N_VALUE
101	30-NOV-2010	1100	9012	91	1250	100	USD	9027	100
101	30-NOV-2010	1100	9017	0	0	100	USD	9034	25

- Complete list of FINANCIAL ELEMENT CODE values can be referred in DIM_FINANCIAL_ELEMENT table. In the preceding example, FINANCIAL ELEMENT CODE has the values – 9036 for Ending Balance, 9035 for Average Balance, 9001 for Interest Income, 9007 for Transfer Pricing Credit, 9019 for Interest Expense, 9013 for Transfer Pricing Charge, 9027 for Gross Fee Income, 9034 for Other Indirect Non-Interest Expense.
- GL ACCOUNT ID has values – 9000 for Interest Income for Loans, 9006 for Interest Expense for Deposits, 9012 for Fees and Commissions, 9017 for Salaries, 9030 for Consumer loans and 9039 for Interest-bearing Deposits.

The following table provides a view of the output of the Data Cruncher, after aggregating data for all the measures across the relevant dimensions. This data will be loaded into cube and rollup is performed in the cube to compute/store the value of the measures for each node.

TIME	ORG_UNIT_ID	REPORTING LINE	CURRENCY	VALUE
30-NOV-2010	1100	FE9036	USD	350000
30-NOV-2010	1100	FE9035	USD	246972
30-NOV-2010	1100	FE9001	USD	2500
30-NOV-2010	1100	FE9019	USD	1000
30-NOV-2010	1100	FE9013	USD	2200

TIME	ORG_UNIT_ID	REPORTING LINE	CURRENCY	VALUE
30-NOV-2010	1100	FE9007	USD	900
30-NOV-2010	1100	FE9027	USD	350
30-NOV-2010	1100	FE9034	USD	25

Reporting Line hierarchy is configured as Non-BI hierarchy with non-additive rollup specified for some of the nodes. ESSBASE uses the non-additive rollup property to compute the value of the node.

In Measure hierarchy, node level formula for 'Ledger Value' measure replaces the value of the measure with that of TB Last, TB Average or TB First, depending on the member of the Reporting Line dimension.

This cube is imported into OBIEE physical layer and Income Statement / Balance Sheet reports for managerial accounting are constructed in OBIEE by pulling data from this cube.

Account Level Profitability

Overview

- Purpose – The purpose of this cube is to view profitability measures across products, organization units, currency and business type with data rolled up from customer accounts.

- Dataset – This cube is based on the FCT_COMMON_ACCOUNT_SUMMARY, FCT_PFT_ACCOUNT_SUMMARY and FCT_FTP_ACCOUNT_SUMMARY fact tables.

- Dimensions – The dimensions of the cube include Organization Unit, Product, Currency, Reporting Line (Measure hierarchy constructed using base measures), Instrument Type, Business Type, Amount and Time. For more details on modifying reporting line hierarchy to include / exclude measures, see How to Add or Remove Reporting Lines, page C-1. Reporting Line hierarchy is configured as a multilevel Measure hierarchy with non-additive rollup to depict Income Statement reporting line view. Even though ESSBASE supports multilevel Measure hierarchy, OBIEE does not import multilevel Measure hierarchy. OBIEE flattens the members of the Measure hierarchy during import. In order to resolve this, Reporting Line hierarchy is imported as a REGULAR hierarchy within OBIEE and instead, another hierarchy AMOUNT that contains a flat list of members is imported as a Measure hierarchy. Hence, these members will be represented as measures within OBIEE. Members of

AMOUNT hierarchy include Value, No of accounts and Rolling 3/6 months. The members 'No of accounts' and 'Rolling 3/6 months' have dummy node-level expressions set in the Non-Business Intelligence hierarchy and are overwritten later with node-level formulas to arrive at meaningful values.

- Measures – Several account level measures are computed by OFSAA Profitability application and OFSAA Funds Transfer Pricing application like Interest Income, Interest Expense, Customer Break Funding Fees, Credit for Liquidity and so on. Relevant TIME BALANCE property is set for these measures. Derived metrics like Return on Assets, Risk Adjusted Return On Capital (RAROC), Net Income After Cost of Capital (NIACC) and so on, are configured as Node-level formulas on the Reporting Line Measure hierarchy.

Design

Data set specifies the JOIN between various fact tables and dimension tables.

The following table provides a snapshot of dataset – Fact tables joined with other Dimension tables to provide a logical view of allocated data that is read by the Cube building process.

The following table is a sample representation of the dataset output.

ACCOUNT SKEY	AS_OF_DATE	ORG_UNIT_ID	PRODUCT_ID	INSTRUMENT TYPE	ACCOUNT NEW INDICATOR	ISO_CURRENCY_CODE	EOP BALANCE	INTEREST INCOME	INTEREST EXPENSE
101	30-NOV-2010	1100	90	A	0	USD	50000	500	0
102	30-NOV-2010	1100	91	L	0	USD	20000	0	190
103	30-NOV-2010	1100	90	A	0	USD	35000	300	0
104	30-NOV-2010	1100	91	L	0	USD	15000	0	125
105	30-NOV-2010	1100	90	A	0	USD	60000	650	0
106	30-NOV-2010	1100	91	L	0	USD	30000	0	360

ACCOUNT SKEY	AS_OF_DATE	ORG_UNIT_ID	PRODUCT_ID	INSTRUMENT TYPE	ACCOUNT NEW INDICATOR	ISO_CURRENCY_CODE	EOP BALANCE	INTEREST INCOME	INTEREST EXPENSE
107	30-NOV-2010	1100	90	A	1	USD	75000	650	0
108	30-NOV-2010	1100	91	L	1	USD	30000	0	280
109	30-NOV-2010	1100	90	A	1	USD	30000	400	0
110	30-NOV-2010	1100	91	L	1	USD	5000	0	45

The following table provides a view of the output of the Data Cruncher, after aggregating data for all the measures across the relevant dimensions. This data will be loaded into cube and rollup is performed in the cube to compute/store the value of the measures for each node.

TIME	ORG_UNIT_ID	PRODUCT_ID	CURRENCY	INSTRUMENT TYPE	BUSINESS TYPE	EOP BALANCE	INTEREST INCOME	INTEREST EXPENSE
30-NOV-2010	1100	90	USD	A	0	145000	1450	0
30-NOV-2010	1100	91	USD	L	0	65000	0	675
30-NOV-2010	1100	90	USD	A	1	105000	1050	0
30-NOV-2010	1100	91	USD	L		35000	0	325

Reporting Line hierarchy is configured as Non-BI Measure hierarchy with non-additive rollup specified for some of the nodes. ESSBASE uses the non-additive rollup property to compute the value of the node.

This cube is imported into OBIEE physical laye. Reporting line views from account summary across various dimensions like product, organization unit and so on, are constructed in OBIEE by pulling data from this cube.

Account Level Profitability in Reporting Currency

Overview

- Purpose – The purpose of this cube is to view profitability measures in reporting currency across products, organization units and business type with data rolled up from customer accounts.

- Data set and Dimensions remain the same as that of 'Account Level Profitability' cube.

- Measures – Several account level measures computed by OFSAA Profitability application and OFSAA Funds Transfer Pricing application like Interest Income, Interest Expense, Customer Break Funding Fees, Credit for Liquidity and so on, will be converted into reporting currency equivalent during data movement from instrument tables to account summary tables by looking up into exchange rate history table. Relevant TIME BALANCE property is set for these measures. Derived metrics like Return on Assets, RAROC, NIACC and so on, are configured as Node-level formulas on the Reporting Line Measure hierarchy.

Design for the cube is same as that of the 'Account Level Profitability' cube.

Account Level Profitability with Origination Month / Next Repricing / Last Reprice Month / Maturity Month

Overview

- Purpose – The purpose of these cubes is to view profitability measures across products, organization units, currency, business type and one of the four dimensions (Origination Month / Next Repricing / Last Reprice Month / Maturity Month) with data rolled up from customer accounts.

- Dataset – This cube is based on the FCT_COMMON_ACCOUNT_SUMMARY, FCT_PFT_ACCOUNT_SUMMARY and FCT_FTP_ACCOUNT_SUMMARY fact tables.

- Dimensions – The dimensions of the cube include Organization Unit, Product, Currency, Reporting Line (Measure hierarchy constructed using base measures), Instrument Type, Amount, Time and one of the four dimensions (Origination Month / Next Repricing / Last Reprice Month / Maturity Month). Each of these four dimensions are based on different DATE columns of FCT_COMMON_ACCOUNT_SUMMARY.

Example

'Origination Month' hierarchy is based on N_ORIGINATION_DATE_SKEY column of FCT_COMMON_ACCOUNT_SUMMARY, while 'Next Repricing Month' hierarchy is based on N_NEXT_REPRICE_DATE_SKEY column of FCT_COMMON_ACCOUNT_SUMMARY.

For more details on modifying reporting line hierarchy to include / exclude measures, see How to Add or Remove Reporting Lines, page C-1. Reporting Line hierarchy is configured as a multilevel Measure hierarchy with non-additive rollup to depict Income Statement reporting line view. Even though ESSBASE supports multilevel Measure hierarchy, OBIEE does not import multilevel Measure hierarchy. OBIEE flattens the members of the Measure hierarchy during import. In order to resolve this, Reporting Line hierarchy is imported as a REGULAR hierarchy within OBIEE and instead, another hierarchy AMOUNT that contains a flat list of members is imported as a Measure hierarchy. Hence, these members will be represented as measures within OBIEE. Members of AMOUNT hierarchy include Value, No of accounts and Rolling 3/6 months. The members 'No of accounts' and 'Rolling 3/6 months' have dummy node-level expressions set in the Non-Business Intelligence hierarchy and are overwritten later with node-level formulas to arrive at meaningful values.

- Measures – Several account level measures are computed by OFSAA Profitability application and OFSAA Funds Transfer Pricing application like Interest Income, Interest Expense, Customer Break Funding Fees, Credit for Liquidity and so on. Relevant TIME BALANCE property is set for these measures. Derived metrics like Return on Assets, RAROC, NIACC and so on, are configured as Node-level formulas on the Reporting Line Measure hierarchy.

Design for the cube is same as that of the 'Account Level Profitability' cube except that, the dimensions that are part of the rollup will vary for each of these four cubes.

Example

'Account Level Profitability With Origination Month' will roll up on 'Origination Month' hierarchy instead of 'Business Type' hierarchy. Similarly, 'Account Level Profitability With Next Repricing Month' will roll up on 'Next Repricing Month' hierarchy instead of 'Business Type' hierarchy. .

Account Level Profitability in Reporting Currency with Origination Month / Next Repricing / Last Reprice Month / Maturity Month

Overview

- Purpose – The purpose of these four cubes is to view profitability measures in reporting currency across products, organization units, currency, business type and one of the four dimensions (Origination Month / Next Repricing / Last Reprice Month / Maturity Month) with data rolled up from customer accounts.

- Dataset – These cubes are based on the FCT_COMMON_ACCOUNT_SUMMARY, FCT_PFT_ACCOUNT_SUMMARY and FCT_FTP_ACCOUNT_SUMMARY fact tables.

- Dimensions – The dimensions of the cube include Organization Unit, Product, Currency, Reporting Line (Measure hierarchy constructed using base measures), Instrument Type, Amount, Time and one of the four dimensions (Origination Month / Next Repricing / Last Reprice Month / Maturity Month). Each of these four dimensions are based on different DATE columns of FCT_COMMON_ACCOUNT_SUMMARY.

  Example

  'Origination Month' hierarchy is based on N_ORIGINATION_DATE_SKEY column of FCT_COMMON_ACCOUNT_SUMMARY, while 'Next Repricing Month' hierarchy is based on N_NEXT_REPRICE_DATE_SKEY column of FCT_COMMON_ACCOUNT_SUMMARY.

  For more details on modifying reporting line hierarchy to include / exclude measures, see How to Add or Remove Reporting Lines, page C-1. Reporting Line hierarchy is configured as a multilevel Measure hierarchy with non-additive rollup to depict Income Statement reporting line view. Even though ESSBASE supports multilevel Measure hierarchy, OBIEE does not import multilevel Measure hierarchy. OBIEE flattens the members of the Measure hierarchy during import. In order to resolve this, Reporting Line hierarchy is imported as a REGULAR hierarchy within OBIEE and instead, another hierarchy AMOUNT that contains a flat list of members is imported as a Measure hierarchy. Hence, these members will be represented as measures within OBIEE. Members of AMOUNT hierarchy include Value, No of accounts and Rolling 3/6 months. The members 'No of accounts' and 'Rolling 3/6 months' have dummy node-level expressions set in the Non-Business Intelligence hierarchy and are overwritten later with node-level formulas to arrive at meaningful values.

- Measures – Several account level measures computed by OFSAA Profitability application and OFSAA Funds Transfer Pricing application like Interest Income, Interest Expense, Customer Break Funding Fees, Credit for Liquidity and so on, will be converted into reporting currency equivalent during data movement from instrument tables to account summary tables by looking up into exchange rate history table. Relevant TIME BALANCE property is set for these measures. Derived metrics like Return on Assets, RAROC, NIACC and so on, are configured as Node-level formulas on the Reporting Line Measure hierarchy.

Design for the cube is same as that of the four cubes described earlier – Account Level Profitability with Origination Month / Next Repricing Month / Last Reprice Month / Maturity Month.

Building of Cubes

The Cube Build process in OFSAAI involves the following steps:

- Generating an aggregate DATA file containing the measure values for each dimension leaf that is part of the cube definition.
- Creating the cube outline on Essbase server.
- Loading the data to the cube.

Process for Building Cubes

Prerequisites

1. All the post install steps mentioned in the *Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) Installation and Configuration guide* and the solution installation manuals of *Profitability Management* and *Profitability Analytics* have to be completed successfully.

2. OFSAAI Application User must have the required functions mapped to the user for doing Resave Metadata, for accessing the Home> Unified Metadata Manager > Business Metadata Management screens and executing a batch from Application Batch Operations screen. (For more information on the functions required to be mapped to the user for performing this, see *Oracle Financial Services Analytical Applications Infrastructure User Guide.*)

3. Navigate to Home > Administration > Save Metadata screen on the Left Menu of OFSAAI framework. Execute **Save Metadata.**
   - Choose all the available metadata under Hierarchy.
   - Move it to the right by using '>>'.
   - Click **Save**. It might take a few minutes for the Save operation to complete.
   - Click **Show Details** to view the log for the Save operation.

   For more details on the Resave Metadata feature, see *Oracle Financial Services Analytical Applications Infrastructure User Guide.*)

   Saving metadata creates all the parentage files required for building cubes.

4. Navigate to Home > Unified Metadata Manager > Business Metadata Management > Cubes screen on the Left Menu of OFSAAI framework.
   1. Click **Search.**
   2. Check if you are able to see the cubes in the window that opens on clicking Search.

3. Click the cube that needs to be built and click **OK** to return to the cube definition screen.

4. Click **Save** to save the cube.

   Note: Cube definition will be saved only when the UI component detects any change event. In order to trigger the change event, enter a space in the **Long Description** field and remove the same.

5. **Operation Successful** message is displayed.

5. Before doing a cube build, check if the following services are running on the application server (For more information on how to check if the services are up and on, and how to start the services if you find them not running, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*).

   1. Iccserver

   2. Router

   3. AM Server

   4. Messageserver

   5. Olapdataserver

6. Batches will have to be created for executing. This is explained in Executing the Cube Build, page 7-16.

7. All the required tables for dataset must be populated.

8. Dimension Population, Time Dimension Population, Account Summary Population and Fact Ledger Population should have been done before you execute the cube batches.

9. The dataset for the cube should return some rows in the database for the cube build to happen. To check this do the following steps:

   1. Navigate to **Home** >**Unified Metadata Manager** >**Business Metadata Management** >**Data Sets.**

   2. Click **Search** on the screen.

   3. Click a dataset on the window that opens.

4. Click **OK** to return to the data set screen.

5. Click the button to the right of **Ansi Join.** Take out the Ansi Join you see in the box.

6. Click **OK** to return to the data set screen.

7. Take out the Join/Filter Condition and Date Filter parts the same way as mentioned earlier for Ansi Join.

8. Frame a SQL query as follows:

```
Select count(1) from <Enter the part you obtained from Ansi Join
part> where <Enter the part you obtained from Join/Filter
Condition and Date Filter parts>
```

   This query should show record count greater than zero when you fire this from SQL prompt in the database.

10. The seeded cube details are given at the end of this chapter in two embedded excel objects.

Tables Used by the Cube Build Component

Tables that are part of the data set must be populated before executing the Cube Build component. In addition, REV_BIHIER table in atomic database schema stores the hierarchy data for Business Intelligence-enabled hierarchies for cube build. This table gets populated when a hierarchy is saved using **Save Metadata** screen.

Executing the Cube Build

To execute the Cube Build process from OFSAAI Information Command Center (ICC) framework (accessed through the application Batch Operations screen), create a new Batch with two tasks – one for performing data crunching (component is Aggregate Data) operations and another for building cube (component is Build Cube). This batch must be created for each of the cubes, according to the following steps:

1. Aggregate Data Task

   - From the **Home** menu, select **Operations**, then select **Batch Maintenance**.

   - Click **New Batch** ('+' symbol in Batch Name container) and enter the Batch Name and Description.

   - Click **Save.**

   - Select the Batch you created in the earlier step by clicking the check box in the Batch Name container.

- Click **New Task** ('+' symbol in Task Details container).
- Enter the Task ID and Description.
- Select **Aggregate Data**, from the Components list.
- Select the following from the Dynamic Parameters List and then click **Save**:
  - Datastore Type - Select the appropriate datastore from the list
  - Datastore Name - Select the appropriate name from the list
  - IP address - Select the IP address from the list
  - Cube Parameter - Select the cube code to be built from the list
  - Operation - Select **All** from the list

2. Create Cube Task
   - Select the Batch you earlier created in the Aggregate Data task .
   - Click **New Task** ('+' symbol in Task Details container).
   - Enter the Task ID and Description.
   - Select **Create Cube,** from the Components list.
   - Select the following from the Dynamic Parameters List and then click **Save**:
     - Datastore Type - Select the appropriate datastore from the list
     - Datastore Name - Select the appropriate name from the list
     - IP address - Select the IP address from the list
     - Cube Parameter - Select the cube code to be built from the list
     - Operation - Select **All** from the list

3. Execute the batch created in the preceding steps.

   Note: For a more comprehensive coverage of configuration and execution of a batch, see*Oracle Financial Services Analytical Applications Infrastructure User Guide.*

Note: A common issue in the Aggregate Data task is, Data Set not having records for which the steps mentioned in the prerequisites have to followed or the SQL query in Data Cruncher log file has to be checked on the database (Location of log file is mentioned in 'Checking the Execution Status').

In the Create Cube task, one common error is the hierarchy member being the same for two different dimensions which are part of the same cube. (Error message: 'Duplicate Alias' in the Create Cube log file). In this case you can try appending a string to the Hierarchy member code so that it is unique across the cube or changing the hierarchy data to make the node unique across the cube.

Checking the Execution Status

The status of execution can be monitored using the Batch Monitor screen. You can access this from the Left Hand Side (LHS) menu as follows:

From the **Home** menu, select **Operations**, then select **Batch Monitor.**

Note: For a more comprehensive coverage, see *Oracle Financial Services Analytical Applications Infrastructure User Guide.*

The status messages in Batch Monitor are :

N - Not Started

O - On Going

F - Failure

S – Success

The execution log can be accessed on the application server in the following directory $FIC_DB_HOME/log/dc for Aggregate Data Task). The file name will have the batch execution id.

The execution log can be accessed on the application server in the following directory $FIC_DB_HOME/log/olap for Create Cube Task). The file name will have the batch execution id.

Note: For more details on how to add a new cube or modify existing ones, see How to Develop a New Cube, page D-1.

For any new cube added using the OFSAAI framework Cube screen, the tasks for execution are the same as mentioned in Executing the Cube Build.

Seeded Cubes As Part of Install

Business Metadata - Ledger

The following Business Metadata - Ledger excel has details of the 2 Ledger Cubes which come seeded with the install.

Business Metadata - Account Summary

The following Business Metadata - Account Summary excel has details of the 10 Account Summary Cubes which come seeded with the install.

8

Overview of OFSPA reports

Dashboards

Oracle Financial Services Profitability Analytics (OFSPA) offers the following dashboards that organize different kinds of reports by subject area.

- Balance – Base Currency
- Balance – Reporting Currency
- Contribution – Base Currency
- Contribution – Reporting Currency
- Financial Accounting
- Managerial Accounting
- Risk Adjusted Performance Management – Base Currency
- Risk Adjusted Performance Management – Reporting Currency

Base Currency vs. Reporting Currency Dashboards

Recall from Structure and Detail of Cubes Seeded within OFSPA, page 7-1 that each of the Account Level cubes comes with two forms: base and reporting currency. The two types of cubes support two types of substantially identical dashboards: Base Currency dashboards and Reporting Currency dashboards.

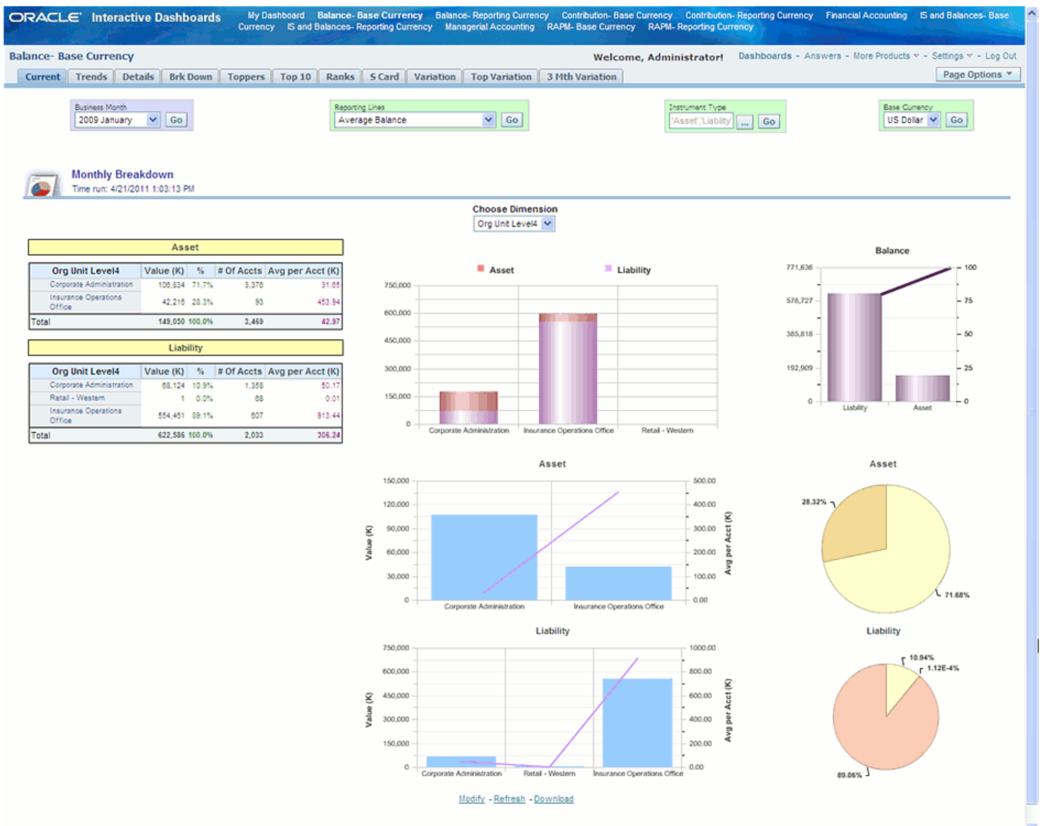
Only Base Currency dashboards are included in this chapter.

Screenshots

The sections which follow provide screenshots that demonstrate the essential nature of most of the available reports.

Balances – Base Currency

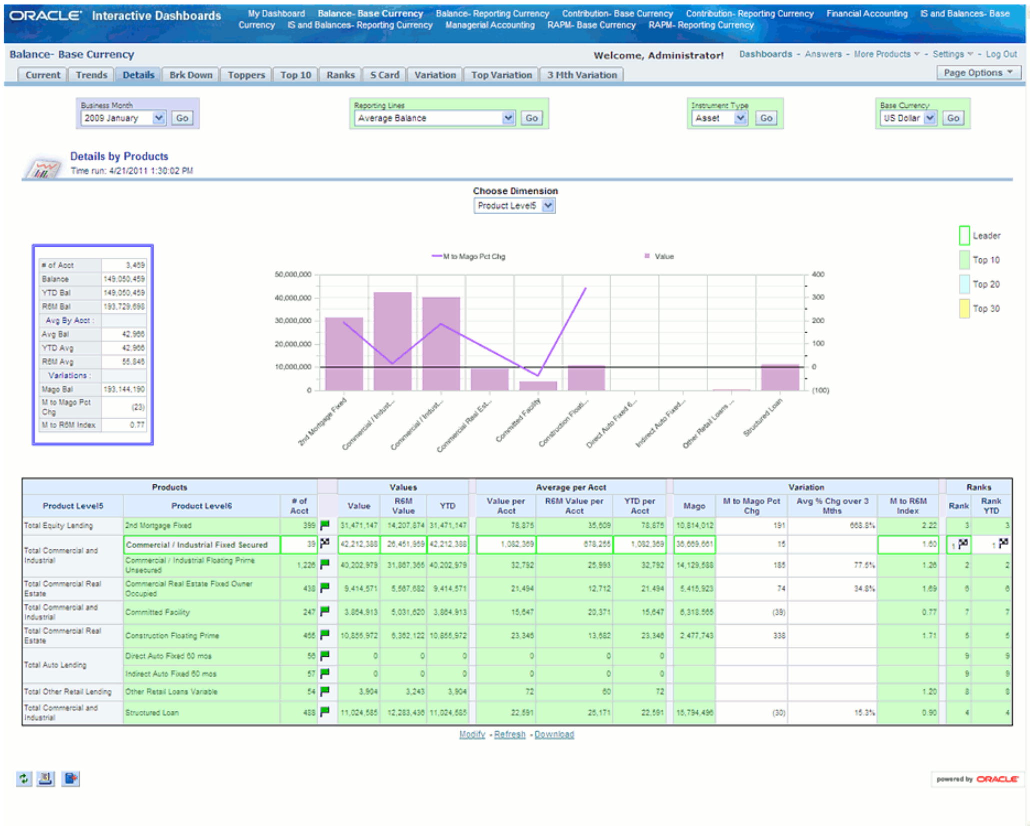
Current



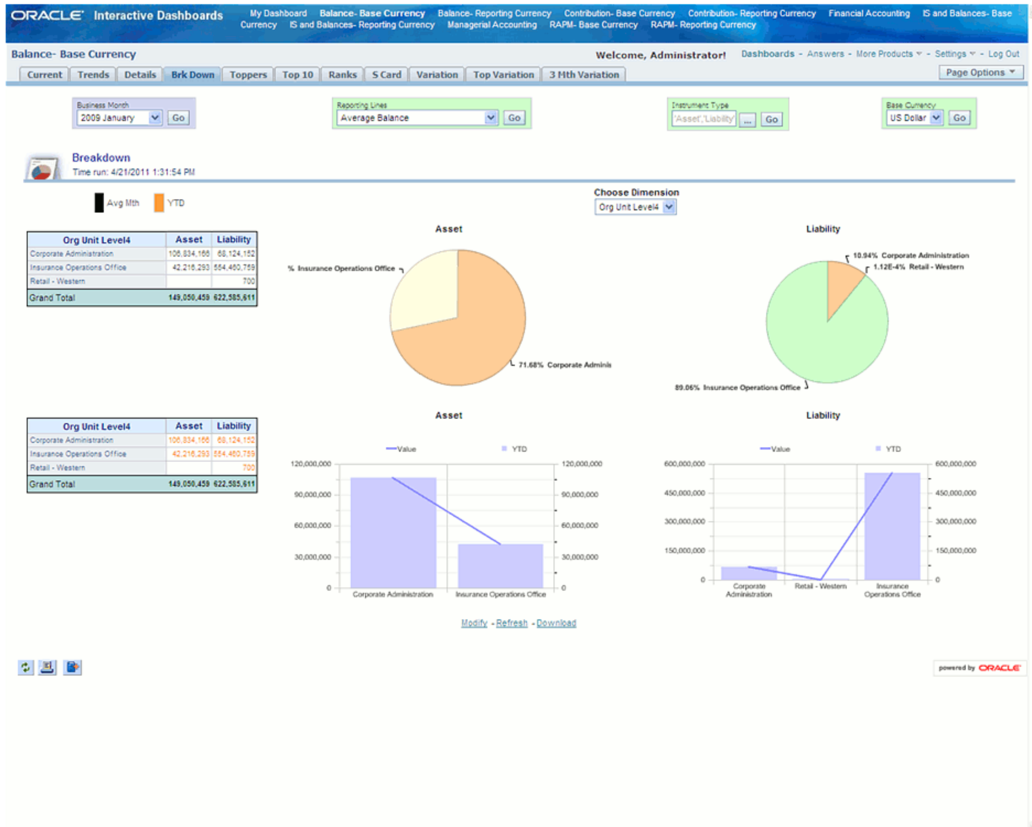
Trends


ORACLE Interactive Dashboards
Balance- Base Currency
Welcome, Administrator!
Current
Trends
Details
Brk Down
Toppers
Top 10
Ranks
S Card
Variation
Top Variation
3 Mth Variation
Page Options
Business Month
Reporting Lines
Average Balance
Instrument Type
Asset
Base Currency
US Dollar
Go
Trend by Period
Time run: 4/21/2011 1:26:40 PM
Corporate Administration
Insurance Operations Office
Retail - Northern
Avg Per Acct (K)
Choose Dimension
Org Unit Level4
Value (K)
Avg per Acct (K)
Org Unit Level4 | 2008 August | 2008 September | 2008 October | 2008 November | 2008 December | 2009 January
Corporate Administration | 43,616 | 148,525 | 180,941 | 33,401 | 82,951 | 106,834
Insurance Operations Office | | 45,304 | 51,168 | | 72,120 | 42,216
Retail - Northern | | | 65,890 | | 21,513 |
Grand Total | 126,742 | 238,535 | 420,414 | 34,492 | 193,144 | 149,050
Avg per Acct (K)
Org Unit Level4 | 2008 August | 2008 September | 2008 October | 2008 November | 2008 December | 2009 January
Corporate Administration | 954.0 | 2274.0 | 3428.0 | 487.0 | 1560.0 | 3376.0
Insurance Operations Office | | 61.0 | 82.0 | | 75.0 | 93.0
Retail - Northern | | | 8.0 | | 61.0 |
Grand Total | 1141.0 | 2622.0 | 4085.0 | 606.0 | 1888.0 | 3469.0
Modify - Refresh - Download

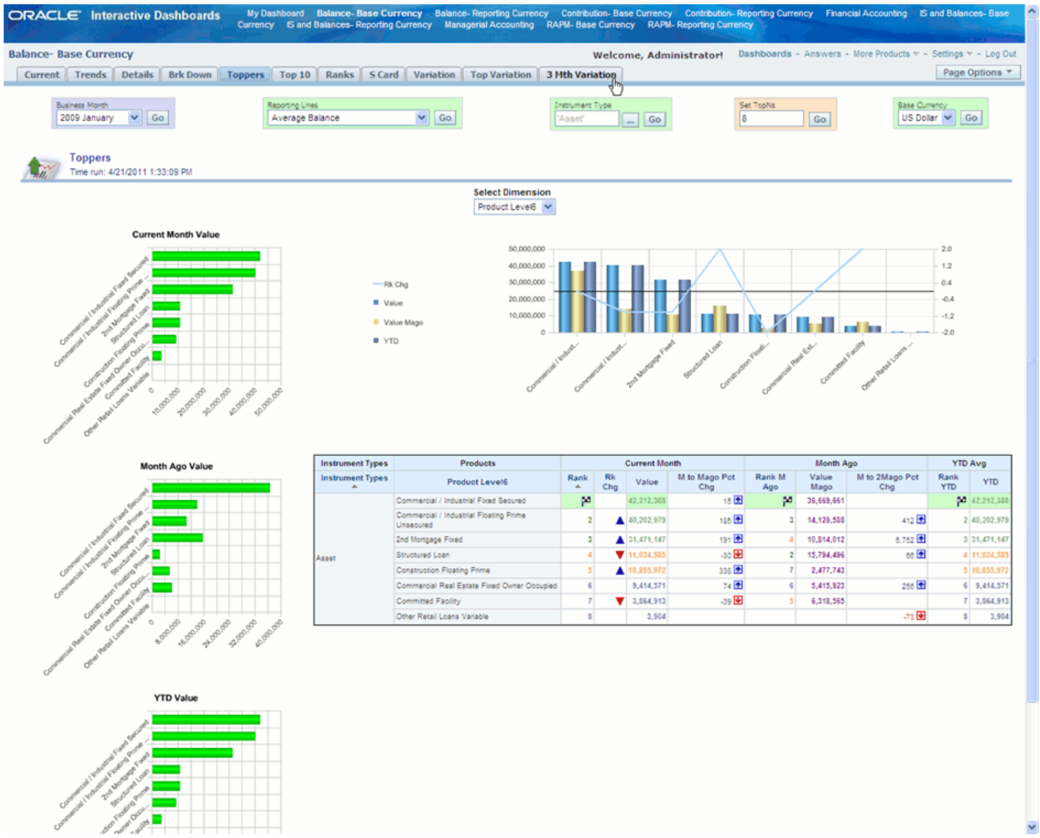
Details



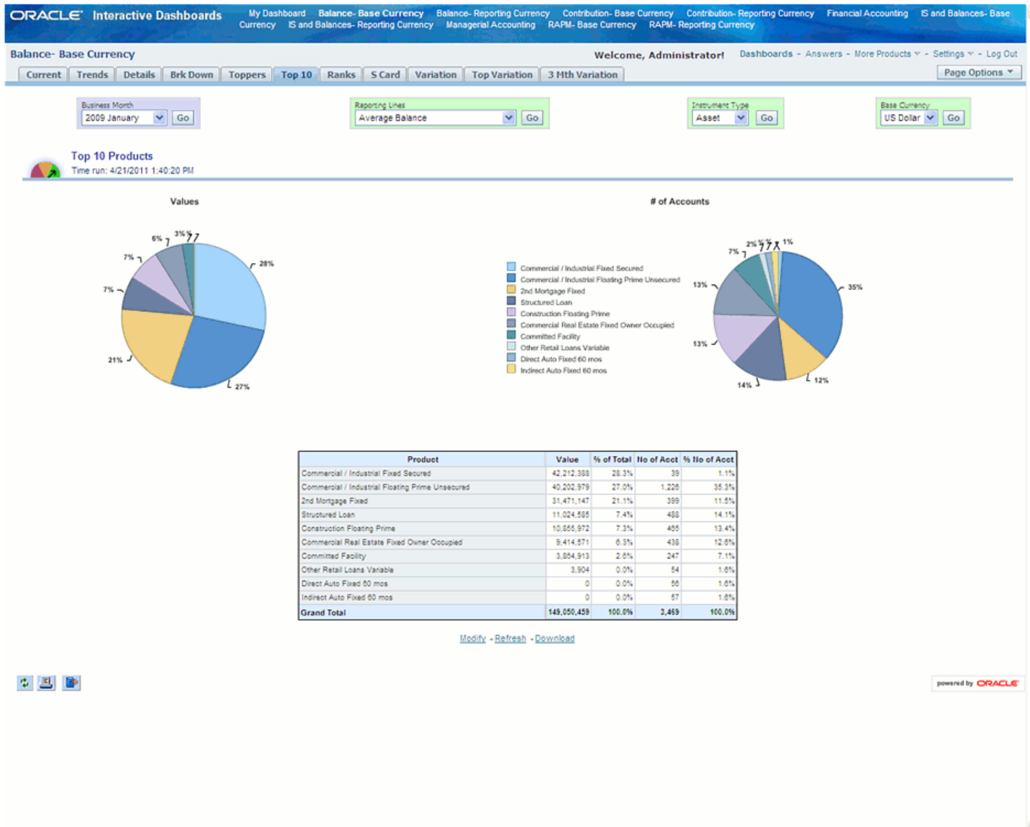
Breakdown


ORACLE Interactive Dashboards
Balance- Base Currency
Welcome, Administrator!
Current
Trends
Details
Brk Down
Toppers
Top 10
Ranks
S Card
Variation
Top Variation
3 Mth Variation
Page Options
Business Month
2009 January
Reporting Lines
Average Balance
Base Currency
US Dollar
Go
Breakdown
Choose Dimension
Org Unit Level4
Avg Mth
YTD
Org Unit Level4
Asset
Liability
Corporate Administration
Insurance Operations Office
Retail - Western
Grand Total
Modify - Refresh - Download
powered by ORACLE

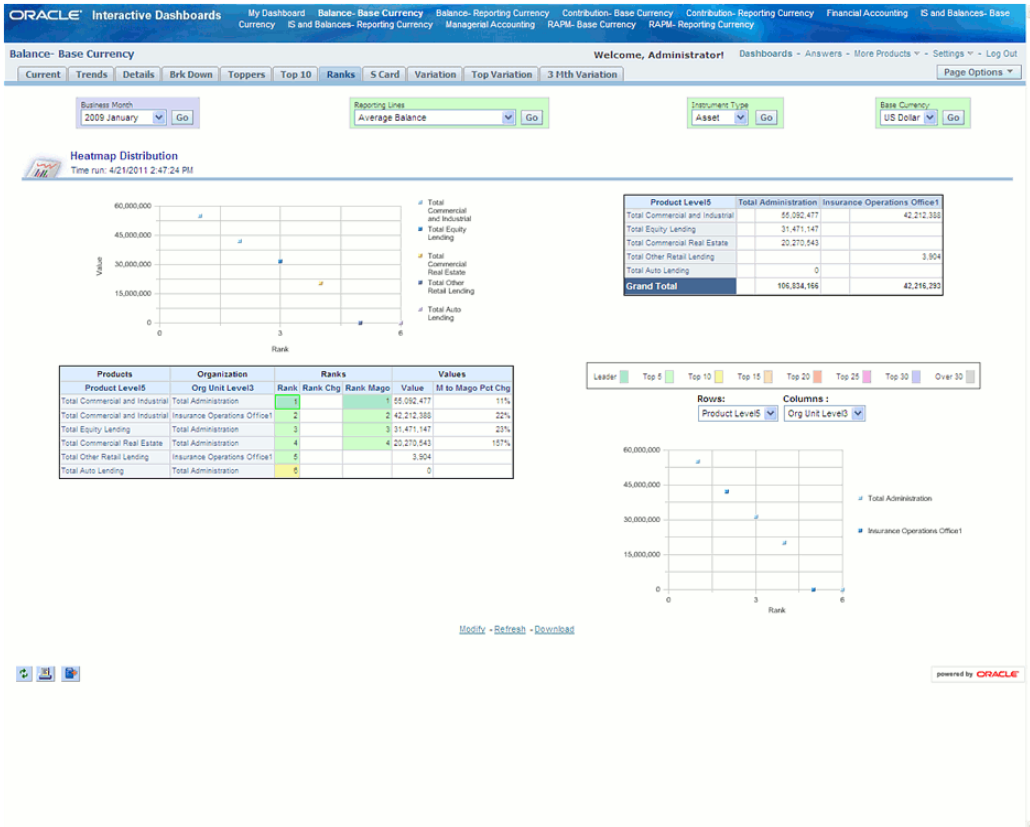
Toppers


ORACLE Interactive Dashboards
Balance- Base Currency
Welcome, Administrator!
Current
Trends
Details
Brk Down
Toppers
Top 10
Ranks
S Card
Variation
Top Variation
3 Mth Variation
Page Options
Toppers
Select Dimension
Current Month Value
Month Ago Value
YTD Value

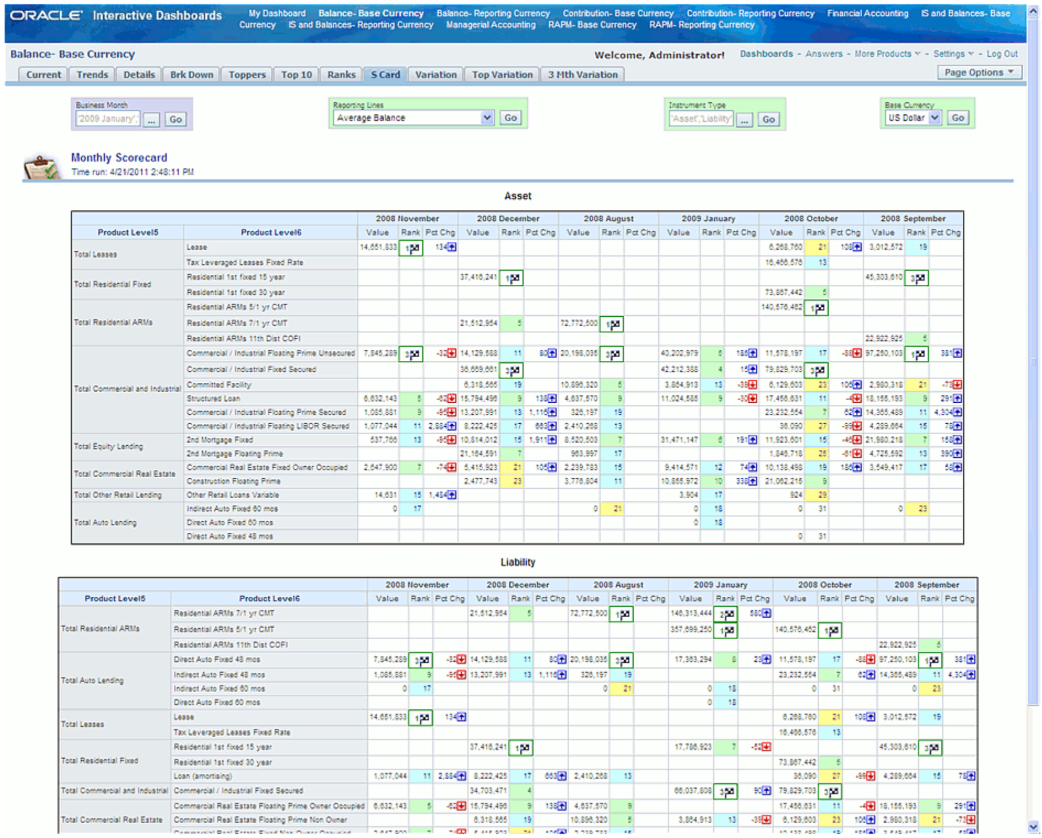
Top Ten


Interactive Dashboards
Balance- Base Currency
Welcome, Administrator!
Current
Trends
Details
Brk Down
Toppers
Top 10
Ranks
S Card
Variation
Top Variation
3 Mth Variation
Page Options
Business Month
2009 January
Go
Reporting Lines
Average Balance
Instrument Type
Asset
Base Currency
US Dollar
Top 10 Products
Time run: 4/21/2011 1:40:20 PM
Values
# of Accounts
Commercial / Industrial Fixed Secured
Commercial / Industrial Floating Prime Unsecured
2nd Mortgage Fixed
Structured Loan
Construction Floating Prime
Commercial Real Estate Fixed Owner Occupied
Committed Facility
Other Retail Loans Variable
Direct Auto Fixed 60 mos
Indirect Auto Fixed 60 mos
Product | Value | % of Total | No of Acct | % No of Acct
Commercial / Industrial Fixed Secured | 42,212,388 | 28.3% | 39 | 1.1%
Commercial / Industrial Floating Prime Unsecured | 40,202,979 | 27.0% | 1,226 | 35.3%
2nd Mortgage Fixed | 31,471,147 | 21.1% | 399 | 11.5%
Structured Loan | 11,024,585 | 7.4% | 488 | 14.1%
Construction Floating Prime | 10,855,972 | 7.3% | 465 | 13.4%
Commercial Real Estate Fixed Owner Occupied | 9,414,571 | 6.3% | 438 | 12.6%
Committed Facility | 3,854,913 | 2.6% | 247 | 7.1%
Other Retail Loans Variable | 3,904 | 0.0% | 54 | 1.6%
Direct Auto Fixed 60 mos | 0 | 0.0% | 56 | 1.6%
Indirect Auto Fixed 60 mos | 0 | 0.0% | 57 | 1.6%
Grand Total | 149,050,459 | 100.0% | 3,469 | 100.0%
Modify - Refresh - Download

Ranks

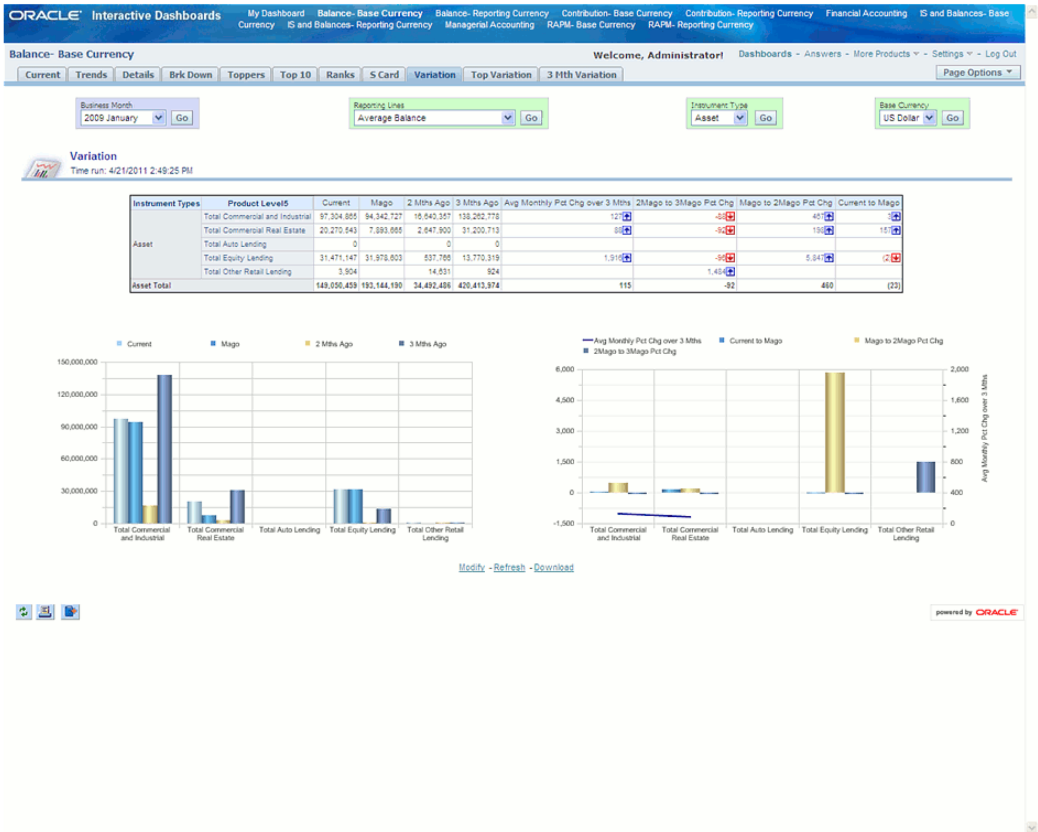


Scorecard

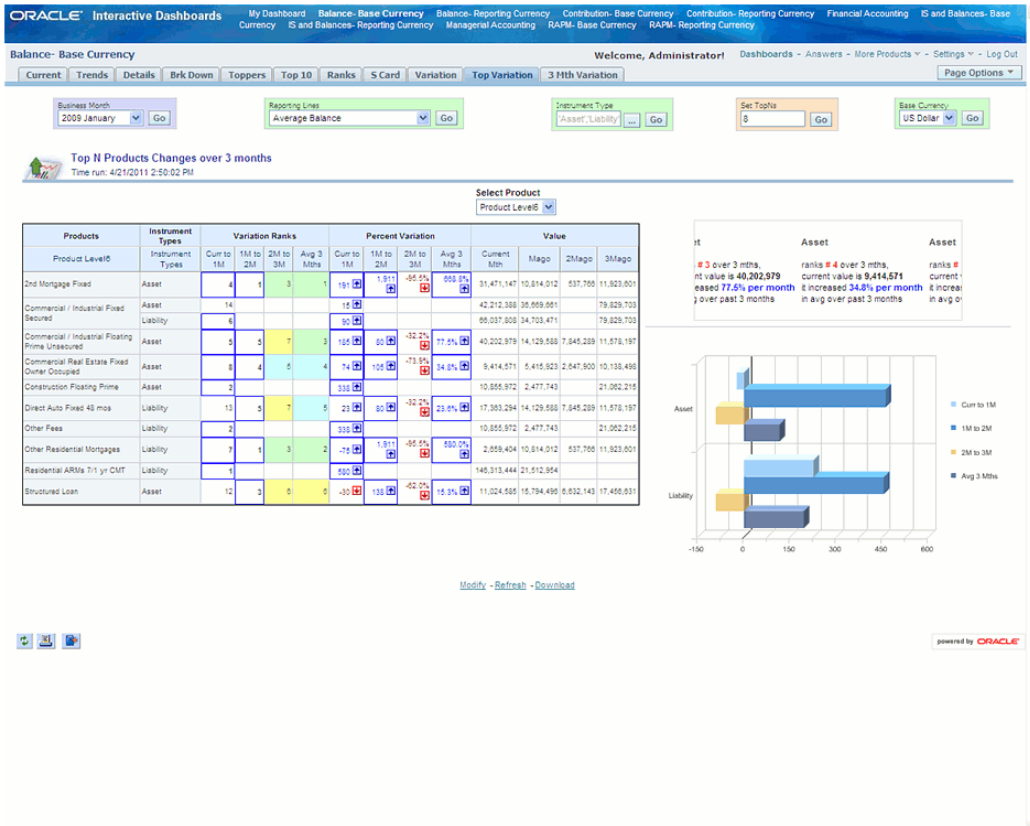


ORACLE Interactive Dashboards
Balance- Base Currency
Welcome, Administrator!
Monthly Scorecard
Asset
Liability

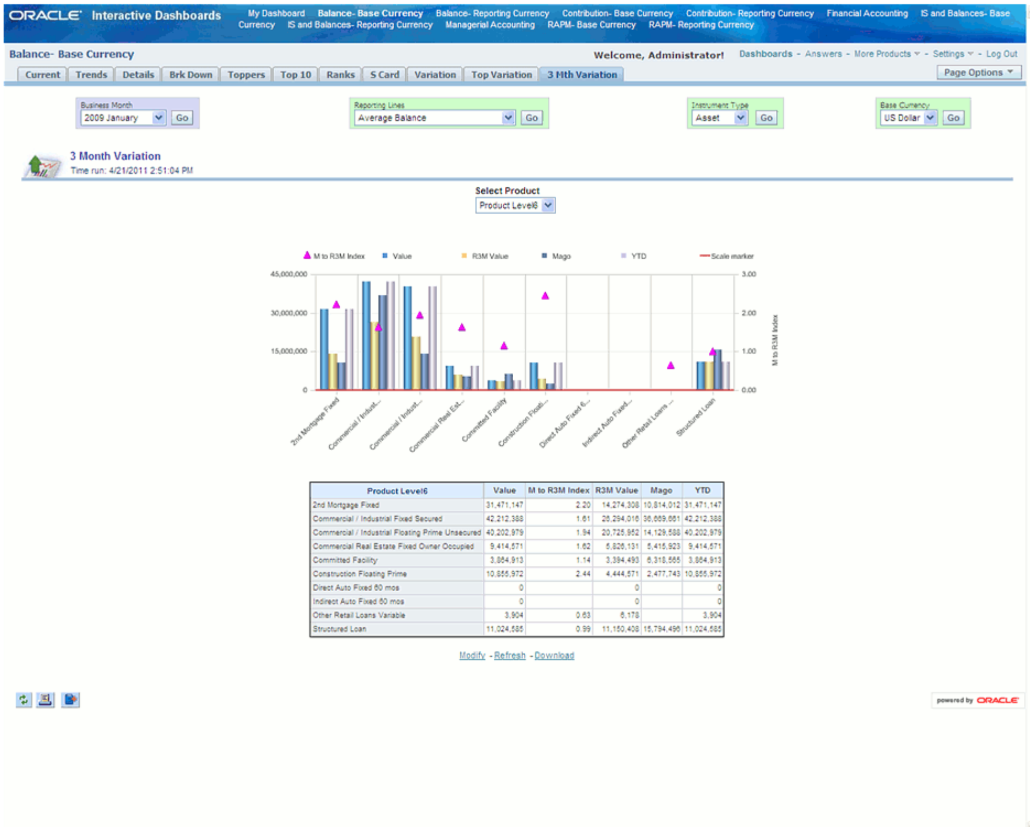
Variation



Top Variation



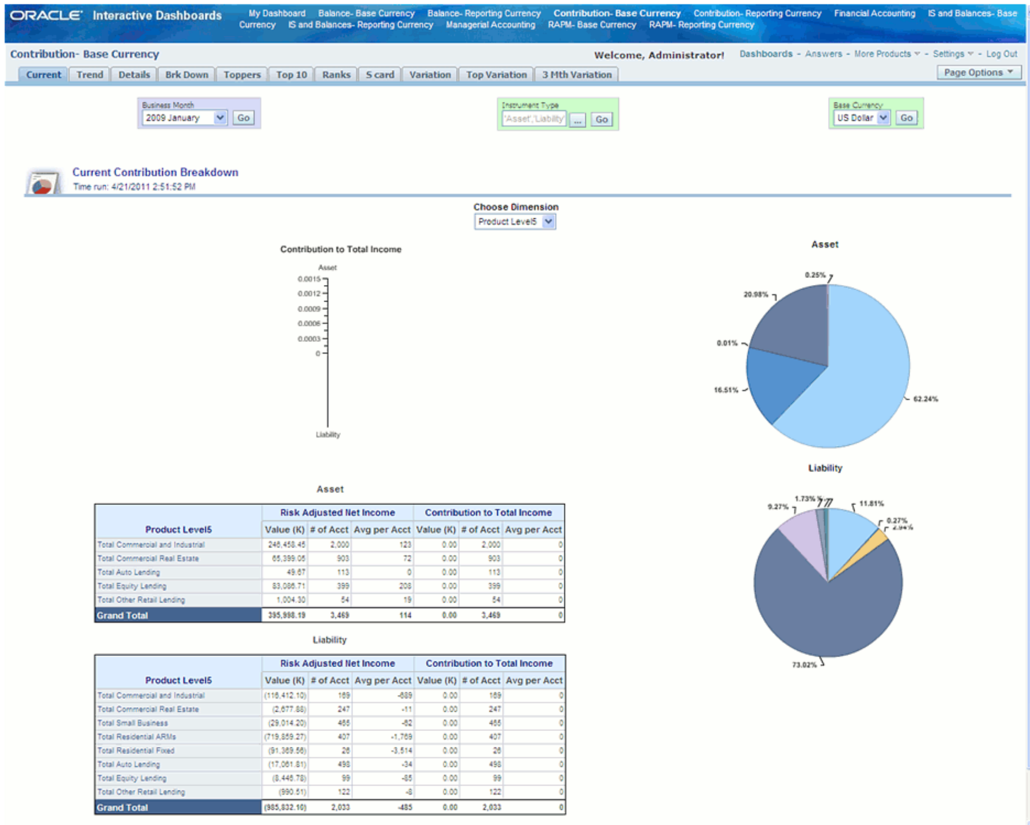
Three Month Variation



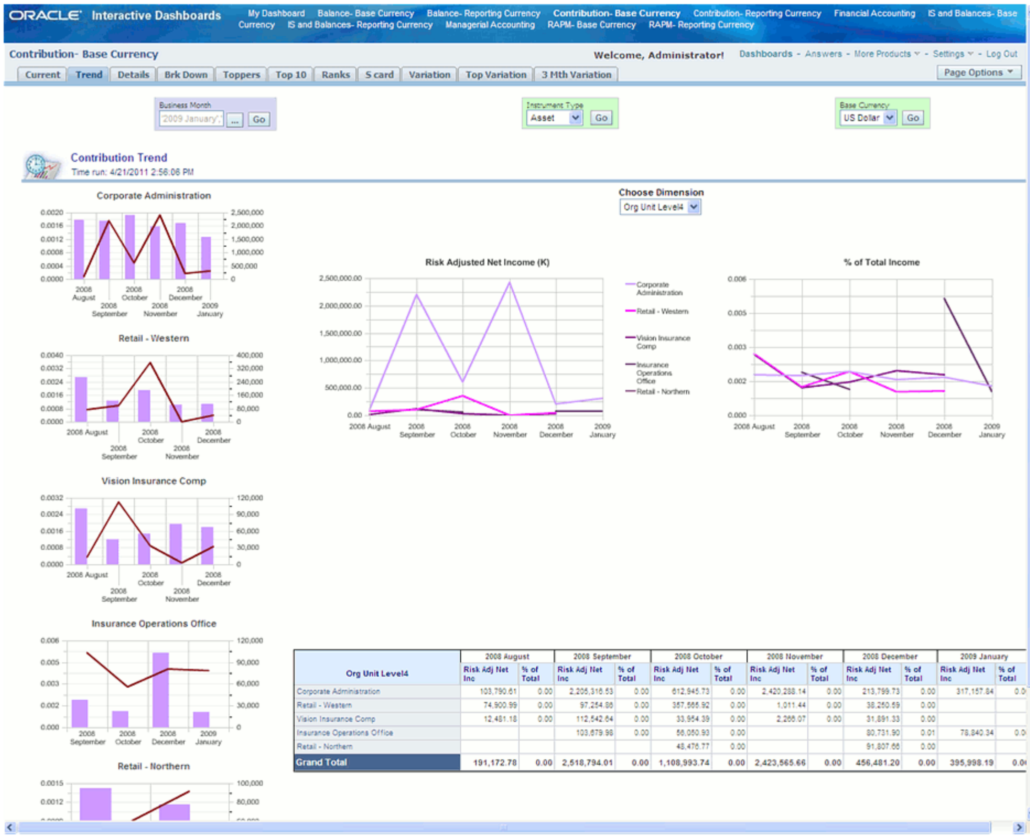
Product Level6	Value	M to R3M Index	R3M Value	Mago	YTD
2nd Mortgage Fixed	31,471,147	2.20	14,274,308	10,814,012	31,471,147
Commercial / Industrial Fixed Secured	42,212,388	1.61	26,294,016	36,669,661	42,212,388
Commercial / Industrial Floating Prime Unsecured	40,202,979	1.94	20,725,952	14,129,588	40,202,979
Commercial Real Estate Fixed Owner Occupied	9,414,571	1.62	5,826,131	5,415,923	9,414,571
Committed Facility	3,864,913	1.14	3,394,493	6,318,565	3,864,913
Construction Floating Prime	10,855,972	2.44	4,444,571	2,477,743	10,855,972
Direct Auto Fixed 60 mos	0		0		0
Indirect Auto Fixed 60 mos	0		0		0
Other Retail Loans Variable	3,904	0.63	6,178		3,904
Structured Loan	11,024,585	0.99	11,150,408	15,794,496	11,024,585

Contribution

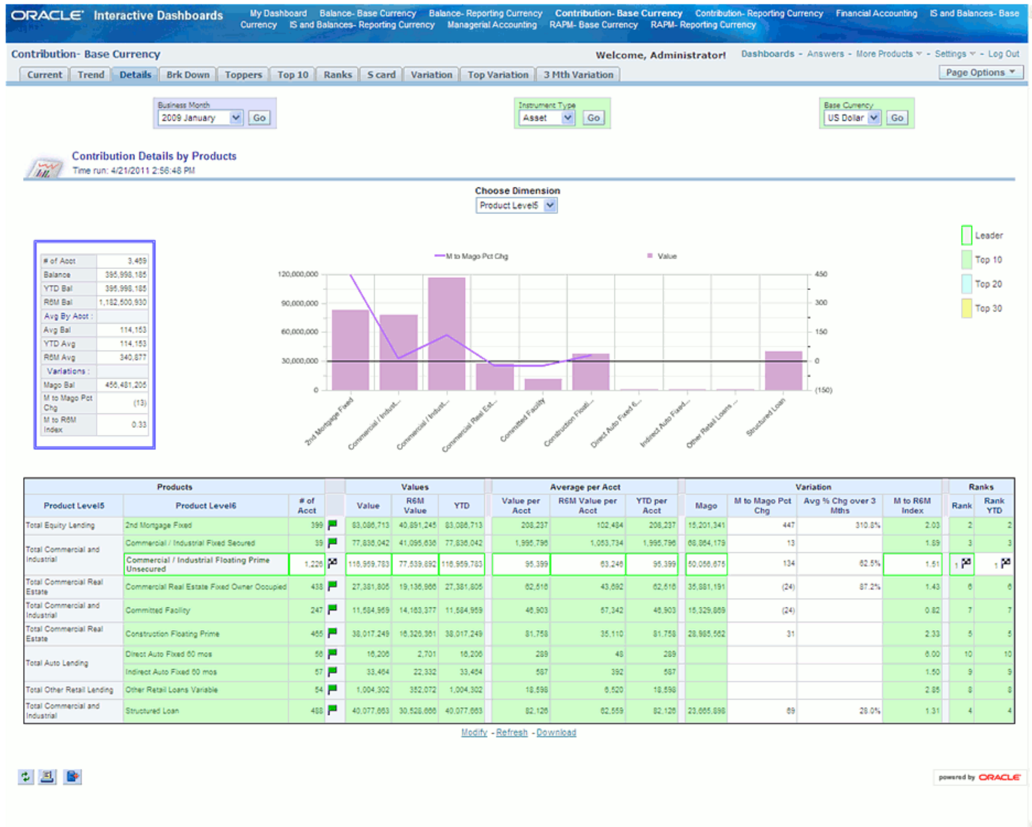
Current



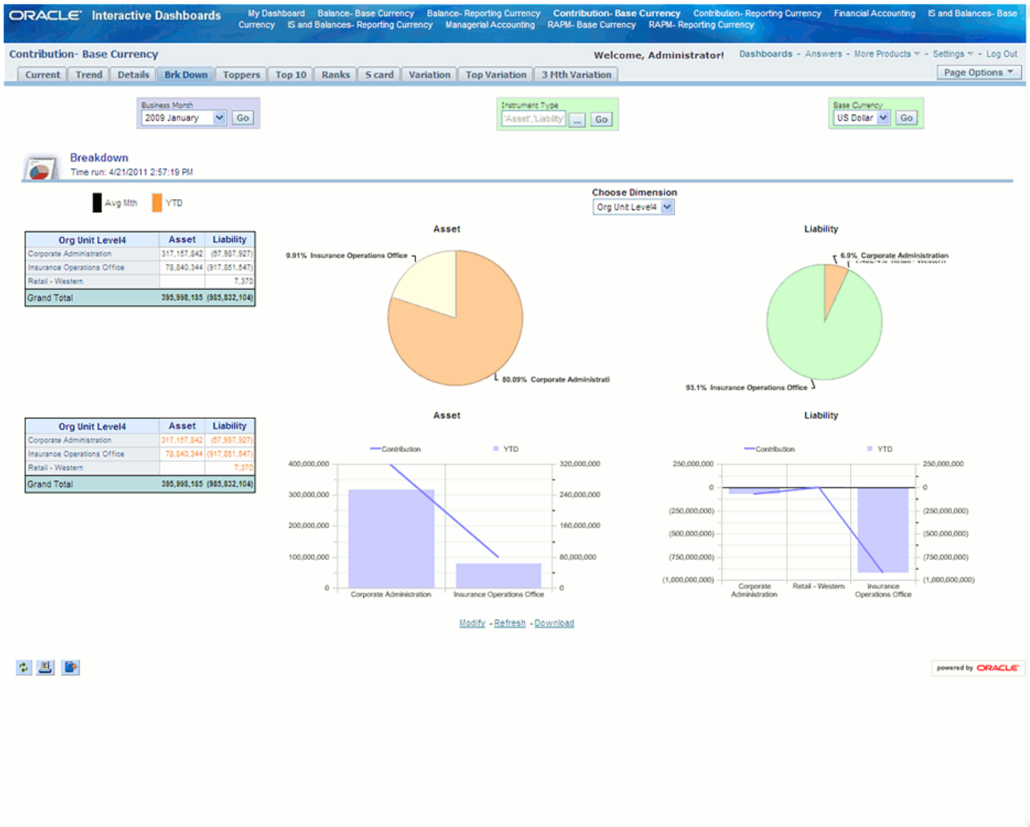
Trend


ORACLE Interactive Dashboards
My Dashboard
Balance- Base Currency
Balance- Reporting Currency
Contribution- Base Currency
Contribution- Reporting Currency
Financial Accounting
IS and Balances- Base Currency
IS and Balances- Reporting Currency
Managerial Accounting
RAPM- Base Currency
RAPM- Reporting Currency
Contribution- Base Currency
Welcome, Administrator!
Dashboards
Answers
More Products
Settings
Log Out
Current
Trend
Details
Brk Down
Toppers
Top 10
Ranks
S card
Variation
Top Variation
3 Mth Variation
Page Options
Business Month
2009 January
Go
Instrument Type
Asset
Base Currency
US Dollar
Contribution Trend
Time run: 4/21/2011 2:56:06 PM
Choose Dimension
Org Unit Level4
Corporate Administration
Retail - Western
Vision Insurance Comp
Insurance Operations Office
Retail - Northern
Risk Adjusted Net Income (K)
% of Total Income
Org Unit Level4
2008 August
2008 September
2008 October
2008 November
2008 December
2009 January
Risk Adj Net Inc
% of Total
Corporate Administration 103,790.61 0.00 2,205,316.53 0.00 612,945.73 0.00 2,420,288.14 0.00 213,799.73 0.00 317,157.84 0.0
Retail - Western 74,900.99 0.00 97,254.86 0.00 357,565.92 0.00 1,011.44 0.00 38,250.59 0.00
Vision Insurance Comp 12,481.18 0.00 112,542.64 0.00 33,954.39 0.00 2,266.07 0.00 31,891.33 0.00
Insurance Operations Office 103,679.98 0.00 56,050.93 0.00 80,731.90 0.01 78,840.34 0.0
Retail - Northern 48,476.77 0.00 91,807.66 0.00
Grand Total 191,172.78 0.00 2,518,794.01 0.00 1,108,993.74 0.00 2,423,565.66 0.00 456,481.20 0.00 395,998.19 0.0

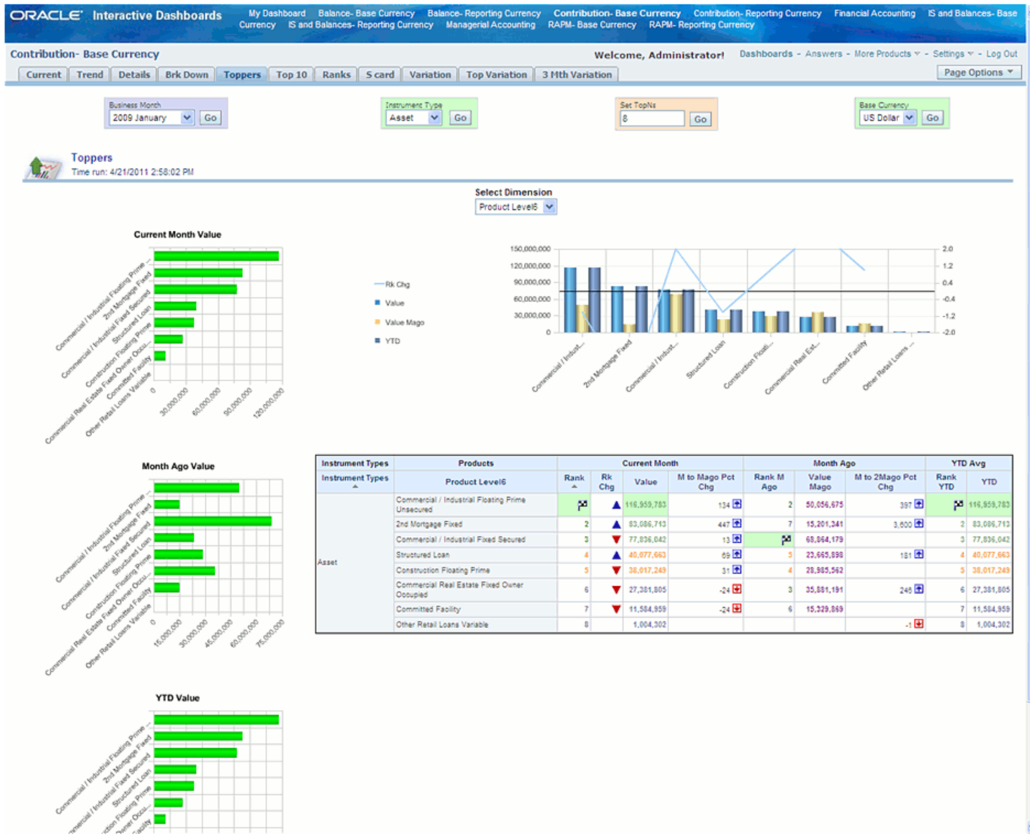
Details


ORACLE Interactive Dashboards
Contribution- Base Currency
Welcome, Administrator!
Current
Trend
Details
Brk Down
Toppers
Top 10
Ranks
S card
Variation
Top Variation
3 Mth Variation
Contribution Details by Products
Choose Dimension
Leader
Top 10
Top 20
Top 30

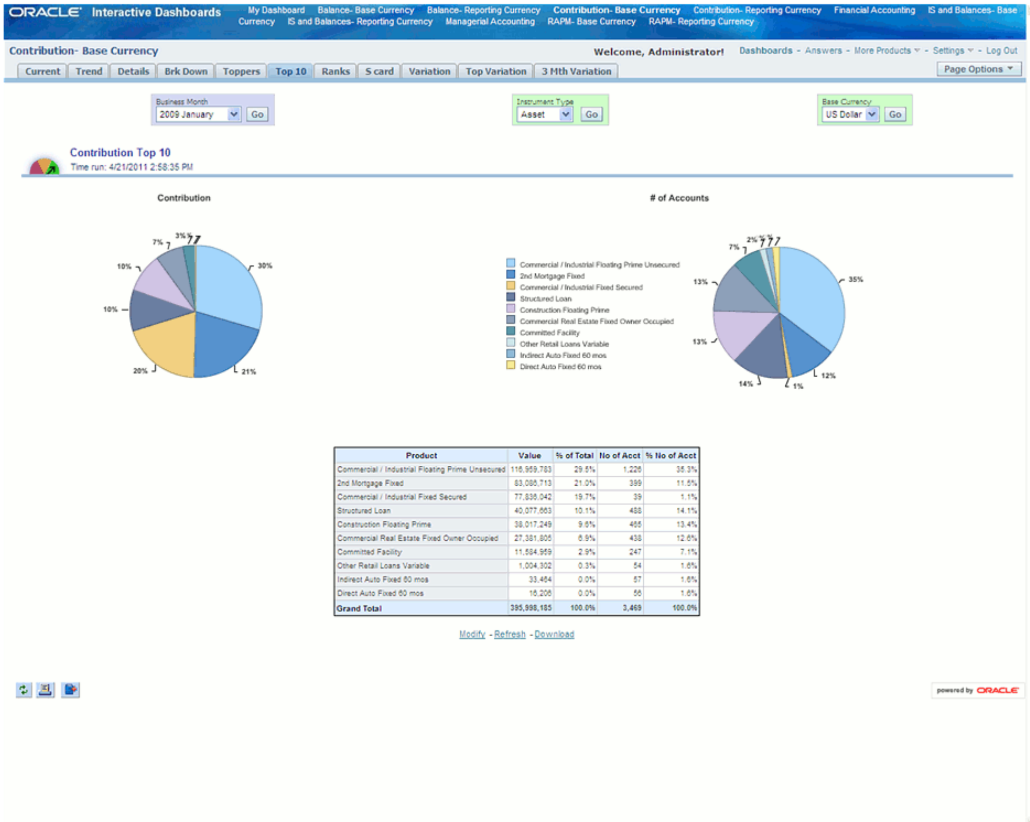
Breakdown


Interactive Dashboards
Contribution- Base Currency
Welcome, Administrator!
Current
Trend
Details
Brk Down
Toppers
Top 10
Ranks
S card
Variation
Top Variation
3 Mth Variation
Page Options
Breakdown
Choose Dimension
Asset
Liability
Org Unit Level4
Corporate Administration
Insurance Operations Office
Retail - Western
Grand Total
Modify - Refresh - Download

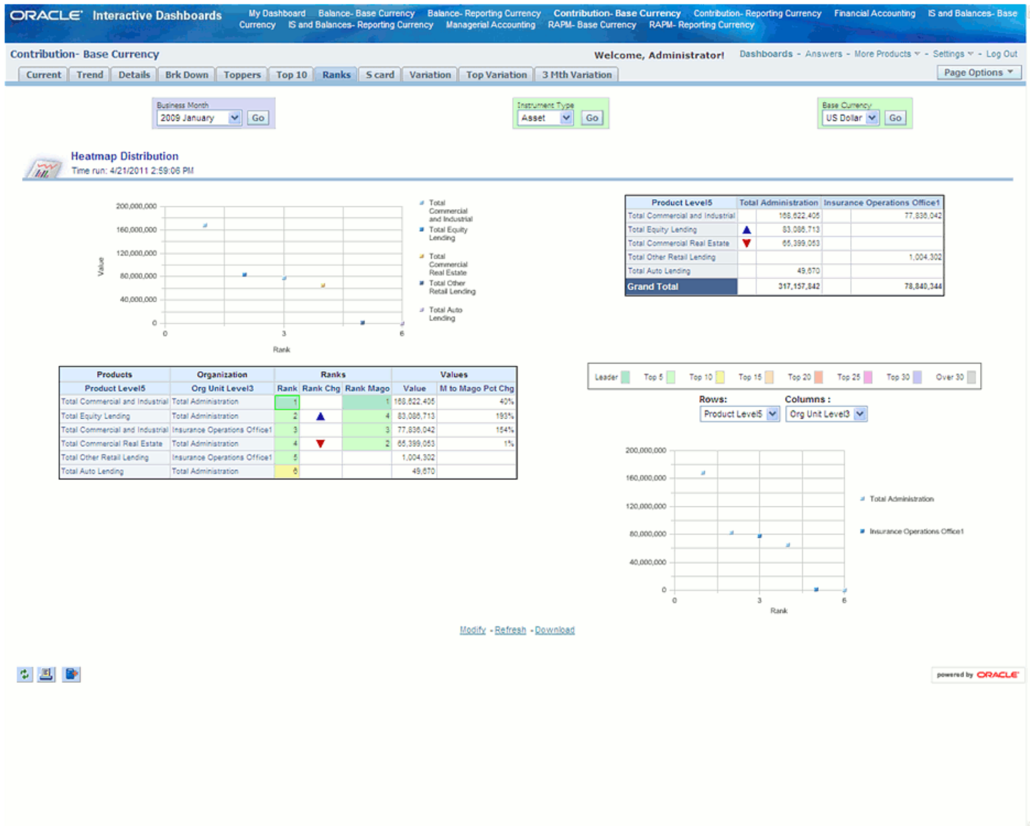
Toppers



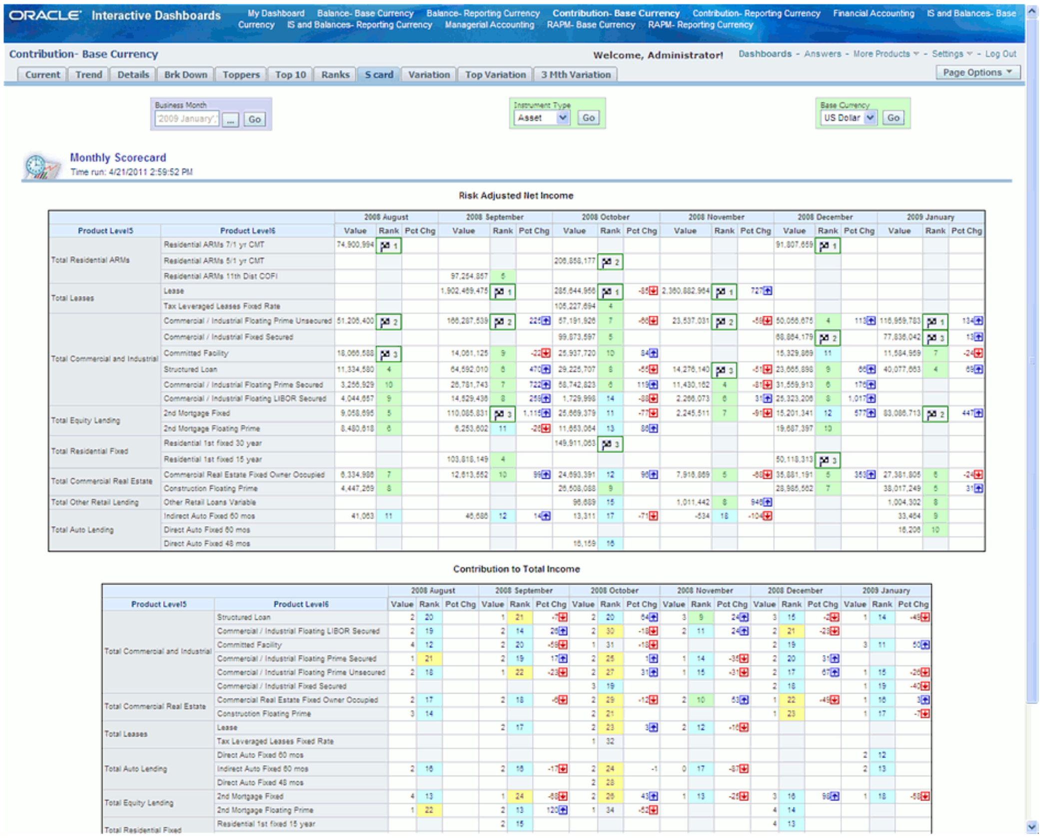
Top Ten


Interactive Dashboards
Contribution- Base Currency
Welcome, Administrator!
Current
Trend
Details
Brk Down
Toppers
Top 10
Ranks
S card
Variation
Top Variation
3 Mth Variation
Page Options
Business Month
2009 January
Instrument Type
Asset
Base Currency
US Dollar
Go
Contribution Top 10
Contribution
# of Accounts
Commercial / Industrial Floating Prime Unsecured
2nd Mortgage Fixed
Commercial / Industrial Fixed Secured
Structured Loan
Construction Floating Prime
Commercial Real Estate Fixed Owner Occupied
Committed Facility
Other Retail Loans Variable
Indirect Auto Fixed 60 mos
Direct Auto Fixed 60 mos
Product | Value | % of Total | No of Acct | % No of Acct
Commercial / Industrial Floating Prime Unsecured | 116,959,783 | 29.5% | 1,226 | 35.3%
2nd Mortgage Fixed | 83,086,713 | 21.0% | 399 | 11.5%
Commercial / Industrial Fixed Secured | 77,836,042 | 19.7% | 39 | 1.1%
Structured Loan | 40,077,663 | 10.1% | 488 | 14.1%
Construction Floating Prime | 38,017,249 | 9.6% | 465 | 13.4%
Commercial Real Estate Fixed Owner Occupied | 27,381,805 | 6.9% | 438 | 12.6%
Committed Facility | 11,584,959 | 2.9% | 247 | 7.1%
Other Retail Loans Variable | 1,004,302 | 0.3% | 54 | 1.6%
Indirect Auto Fixed 60 mos | 33,464 | 0.0% | 57 | 1.6%
Direct Auto Fixed 60 mos | 16,206 | 0.0% | 56 | 1.6%
Grand Total | 395,998,185 | 100.0% | 3,469 | 100.0%
Modify - Refresh - Download

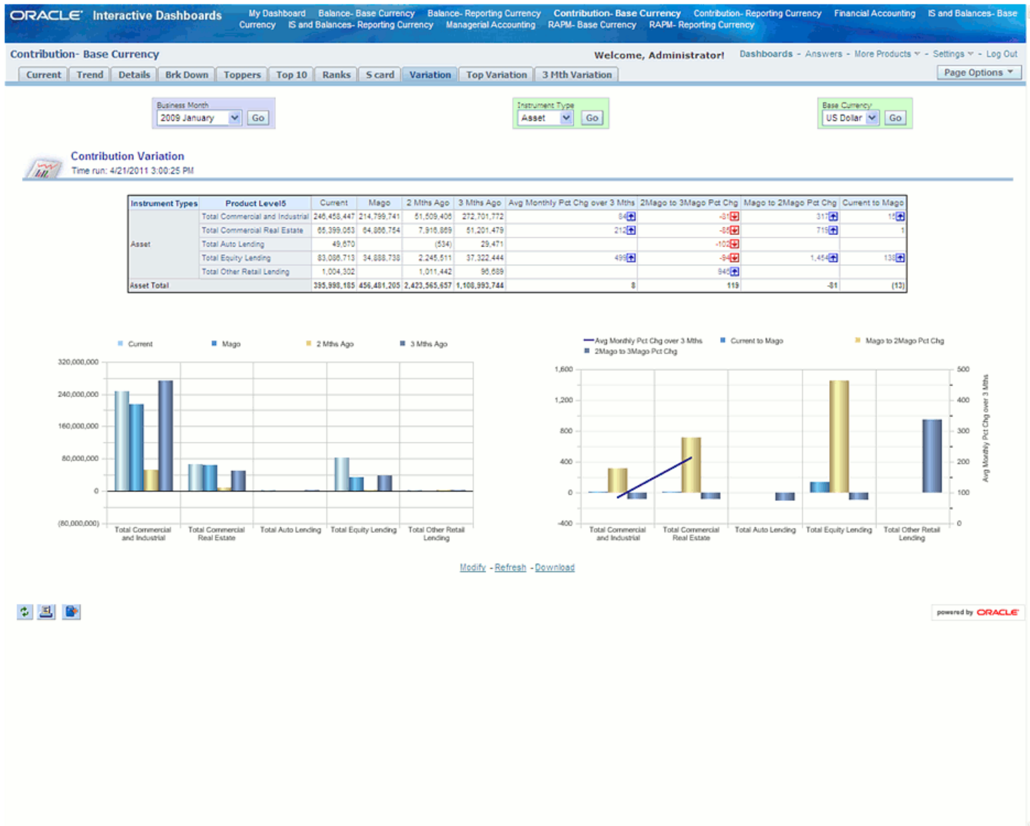
Ranks



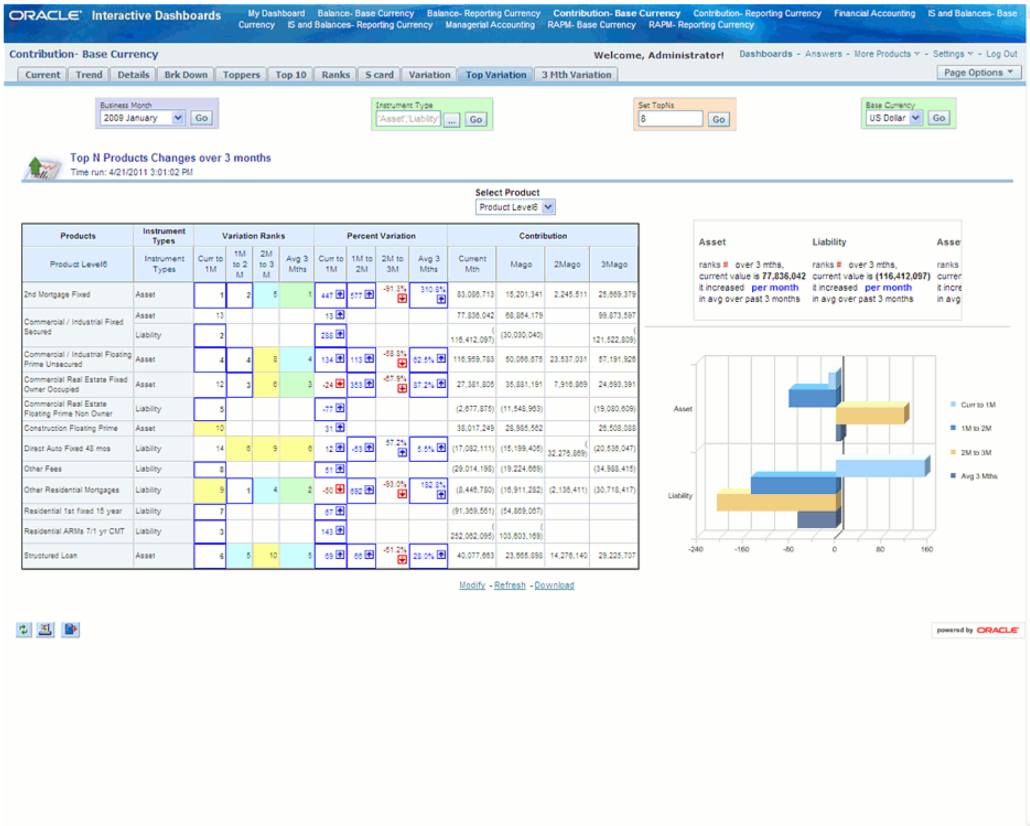
Scorecard


ORACLE Interactive Dashboards
Contribution- Base Currency
Welcome, Administrator!
Current
Trend
Details
Brk Down
Toppers
Top 10
Ranks
S card
Variation
Top Variation
3 Mth Variation
Page Options
Monthly Scorecard
Risk Adjusted Net Income
Contribution to Total Income

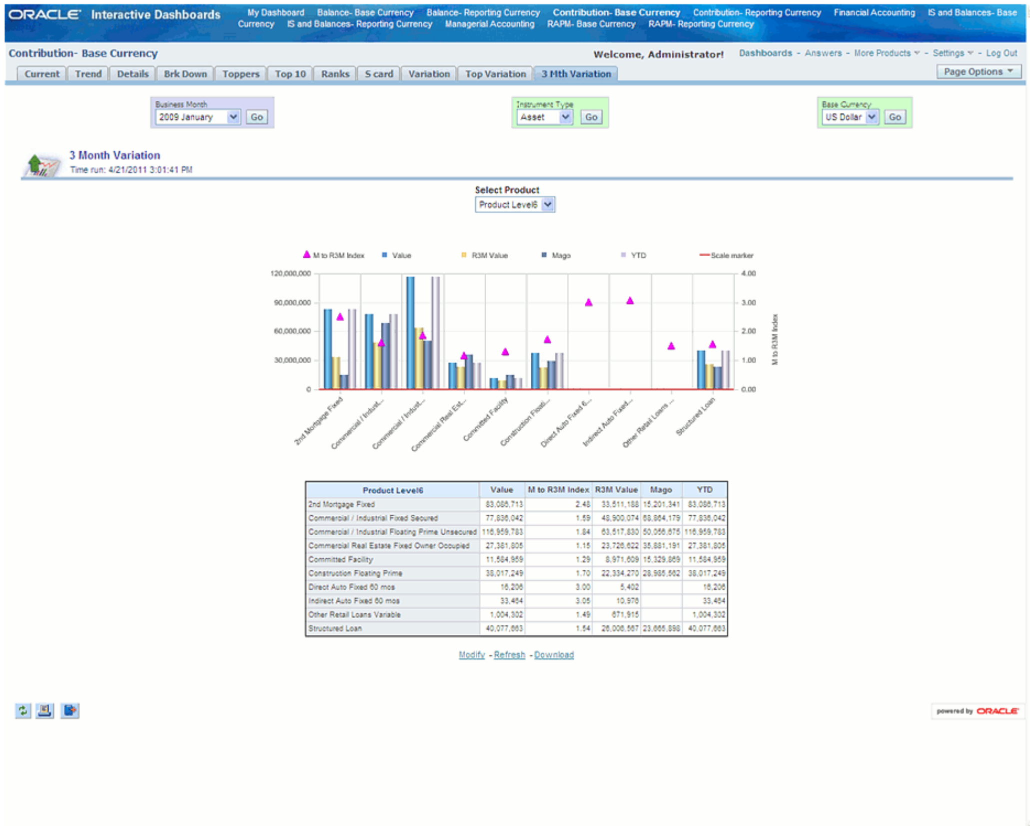
Variation


Interactive Dashboards
Contribution- Base Currency
Welcome, Administrator!
Current
Trend
Details
Brk Down
Toppers
Top 10
Ranks
S card
Variation
Top Variation
3 Mth Variation
Page Options
Business Month
2009 January
Go
Instrument Type
Asset
Go
Base Currency
US Dollar
Go
Contribution Variation
Time run: 4/21/2011 3:00:25 PM
Instrument Types
Product Level5
Current
Mago
2 Mths Ago
3 Mths Ago
Avg Monthly Pct Chg over 3 Mths
2Mago to 3Mago Pct Chg
Mago to 2Mago Pct Chg
Current to Mago
Asset
Total Commercial and Industrial 246,458,447 214,799,741 51,509,406 272,701,772 64 -81 317 15
Total Commercial Real Estate 65,399,063 64,886,754 7,916,869 51,201,479 212 -85 719 1
Total Auto Lending 49,670 (534) 29,471 -102
Total Equity Lending 83,086,713 34,888,738 2,245,511 37,322,444 499 -94 1,454 138
Total Other Retail Lending 1,004,302 1,011,442 96,689 945
Asset Total 395,998,185 456,481,205 2,423,565,657 1,108,993,744 8 119 -81 (13)
Current
Mago
2 Mths Ago
3 Mths Ago
Avg Monthly Pct Chg over 3 Mths
Current to Mago
Mago to 2Mago Pct Chg
2Mago to 3Mago Pct Chg
Total Commercial and Industrial
Total Commercial Real Estate
Total Auto Lending
Total Equity Lending
Total Other Retail Lending
Modify - Refresh - Download

Top Variation



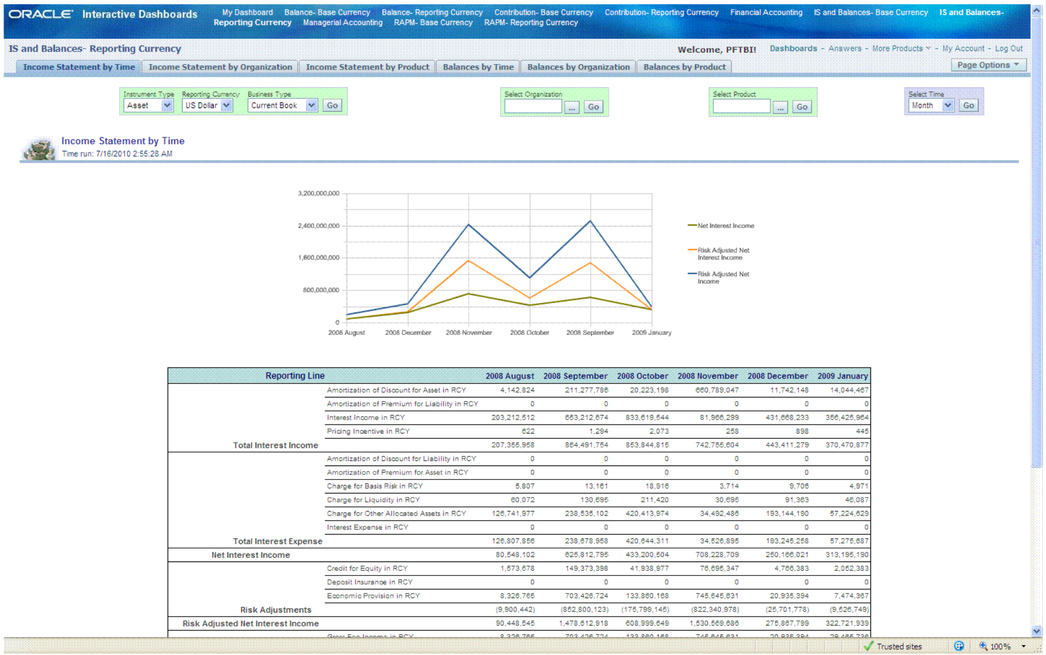
Three Month Variation



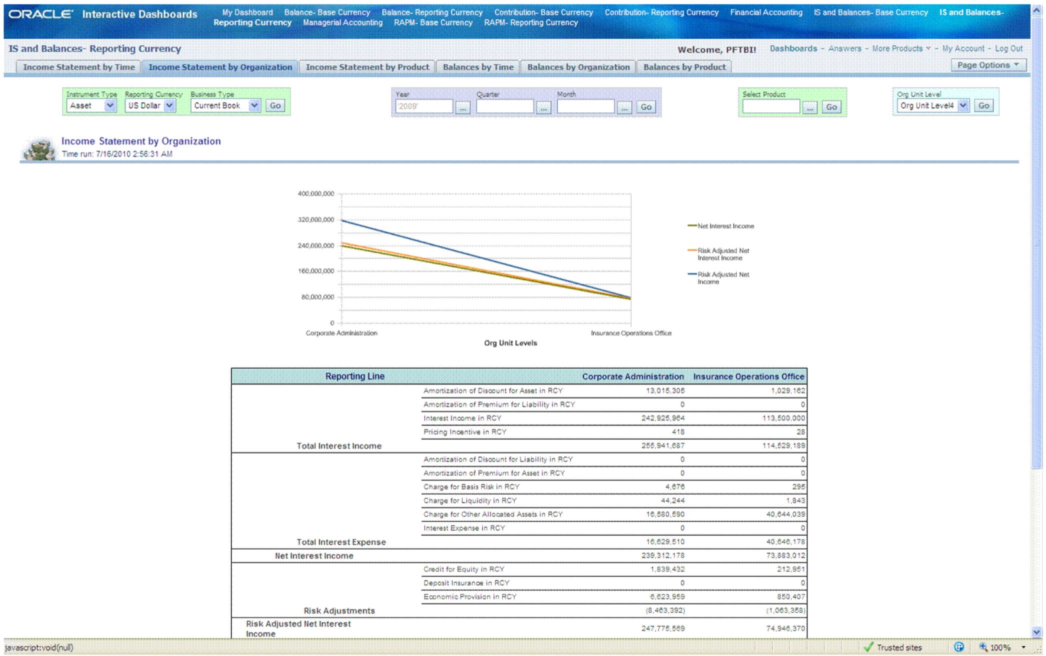
Product Level6	Value	M to R3M Index	R3M Value	Mago	YTD
2nd Mortgage Fixed	83,086,713	2.48	33,511,188	15,201,341	83,086,713
Commercial / Industrial Fixed Secured	77,836,042	1.59	48,900,074	68,864,179	77,836,042
Commercial / Industrial Floating Prime Unsecured	116,959,783	1.84	63,517,830	50,056,675	116,959,783
Commercial Real Estate Fixed Owner Occupied	27,381,805	1.15	23,726,622	35,881,191	27,381,805
Committed Facility	11,584,959	1.29	8,971,609	15,329,869	11,584,959
Construction Floating Prime	38,017,249	1.70	22,334,270	28,985,562	38,017,249
Direct Auto Fixed 60 mos	16,206	3.00	5,402		16,206
Indirect Auto Fixed 60 mos	33,464	3.05	10,976		33,464
Other Retail Loans Variable	1,004,302	1.49	671,915		1,004,302
Structured Loan	40,077,663	1.54	26,006,567	23,665,898	40,077,663

IS and Balances - Reporting Currency

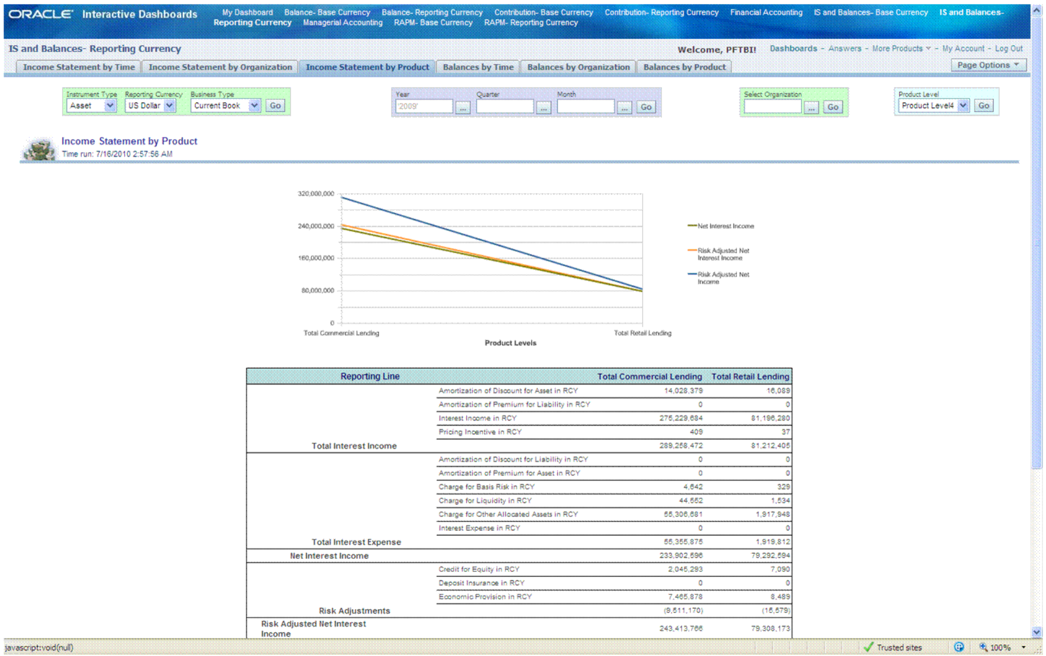
Income Statement by Time



Income Statement by Organization

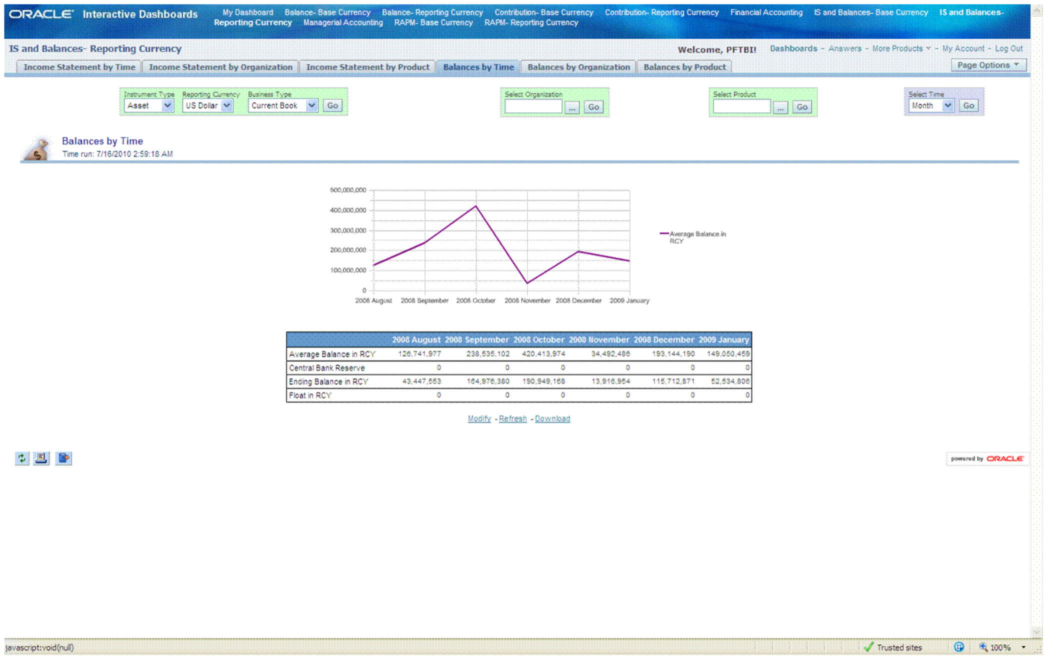


Income Statement by Product

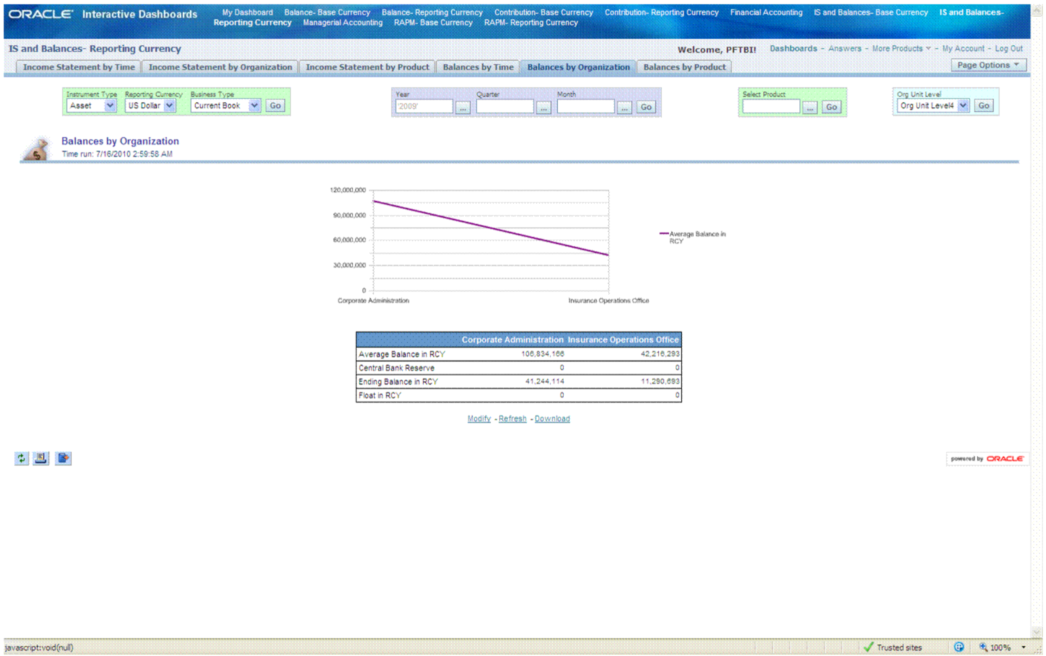


Reporting Line		Total Commercial Lending	Total Retail Lending
	Amortization of Discount for Asset in RCY	14,028,379	16,089
	Amortization of Premium for Liability in RCY	0	0
	Interest Income in RCY	275,229,684	81,196,280
	Pricing Incentive in RCY	409	37
Total Interest Income		289,258,472	81,212,405
	Amortization of Discount for Liability in RCY	0	0
	Amortization of Premium for Asset in RCY	0	0
	Charge for Basis Risk in RCY	4,642	329
	Charge for Liquidity in RCY	44,552	1,534
	Charge for Other Allocated Assets in RCY	55,306,681	1,917,948
	Interest Expense in RCY	0	0
Total Interest Expense		55,355,875	1,919,812
Net Interest Income		233,902,596	79,292,594
	Credit for Equity in RCY	2,045,293	7,090
	Deposit Insurance in RCY	0	0
	Economic Provision in RCY	7,465,878	8,489
Risk Adjustments		(9,511,170)	(15,579)
Risk Adjusted Net Interest Income		243,413,766	79,308,173

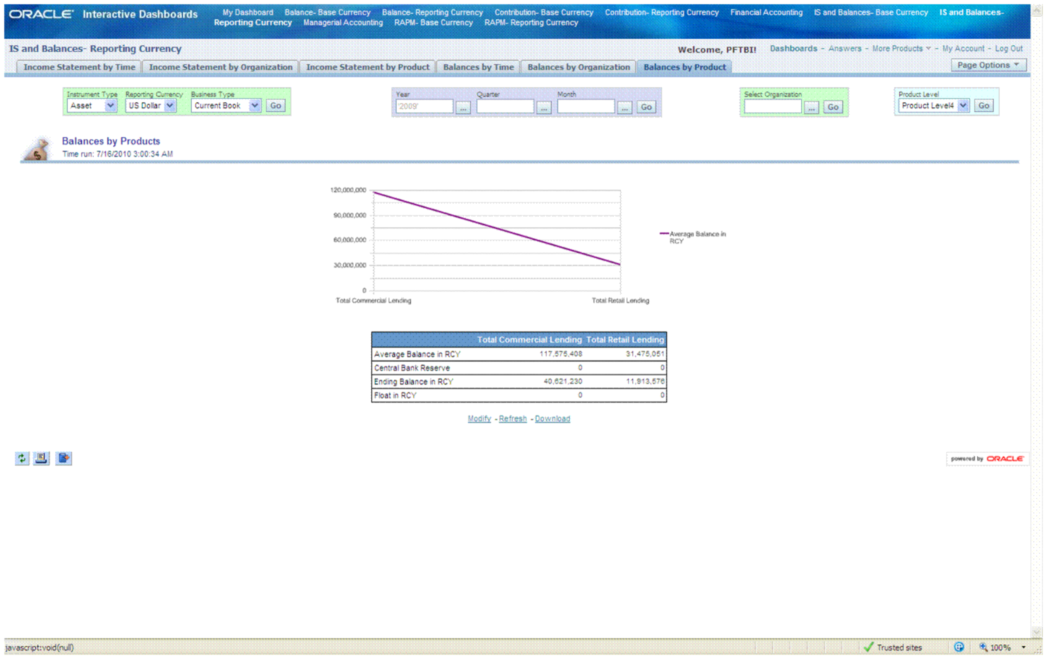
Balances by Time



Balances by Organization

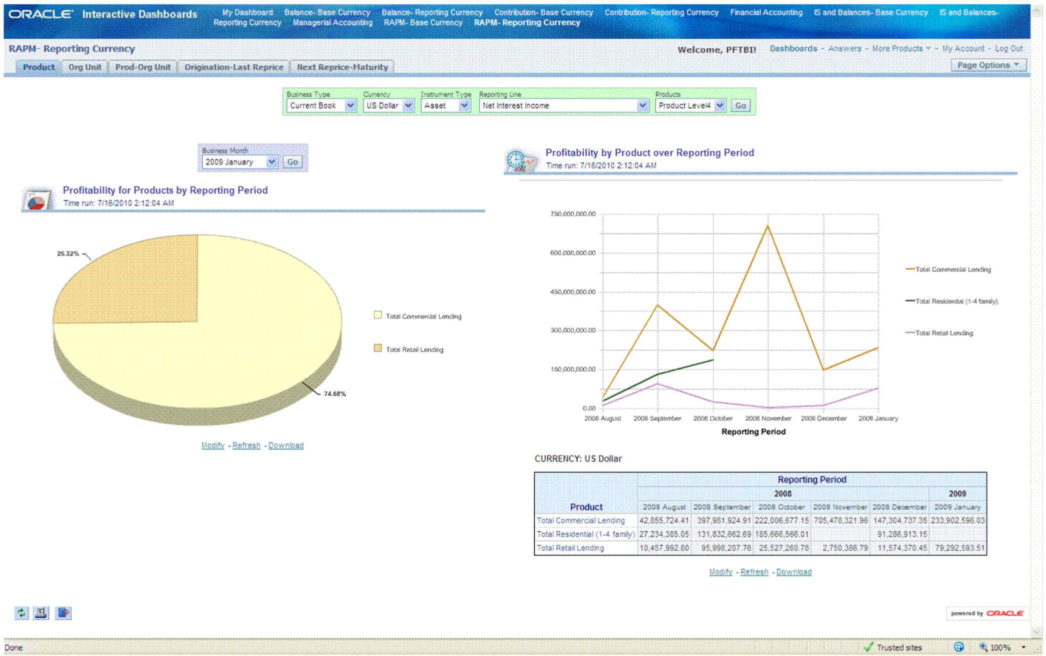


Balances by Product

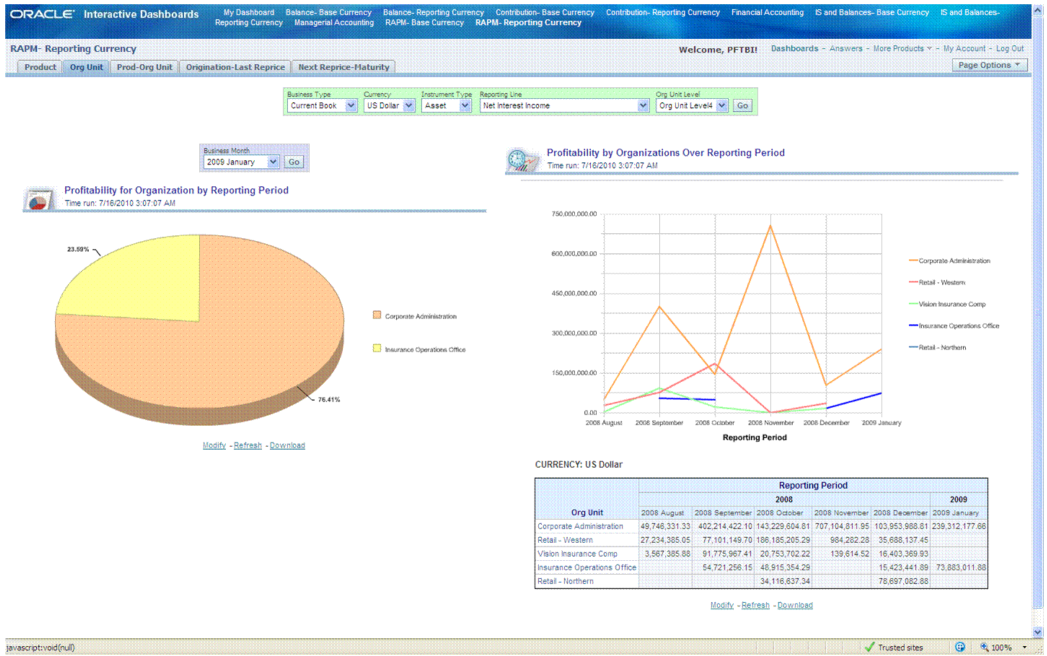


RAPM - Reporting Currency

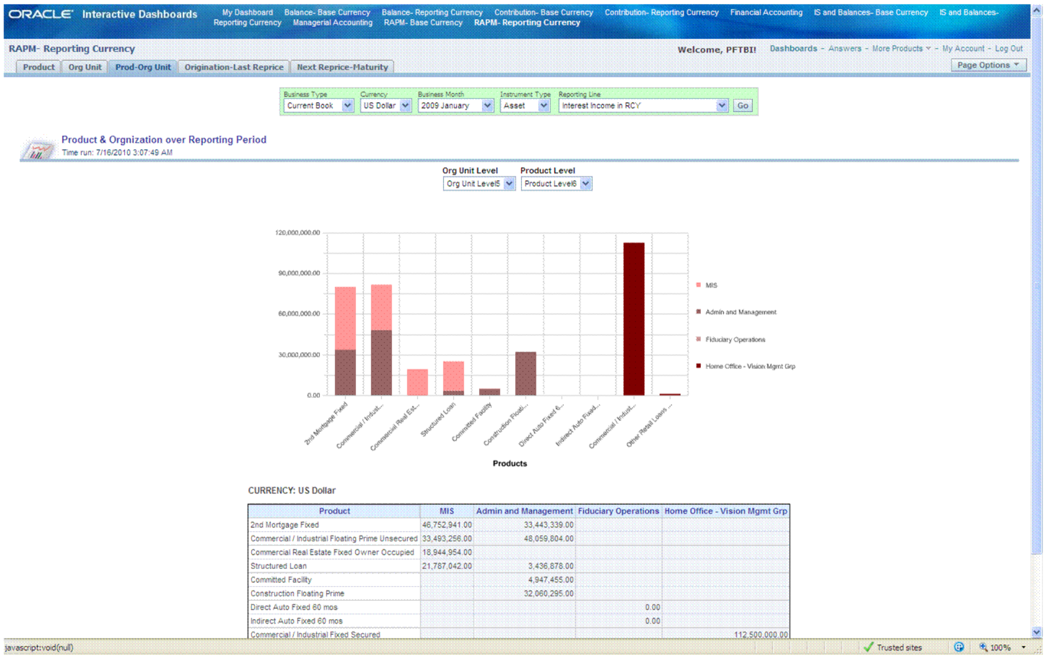
Product



Org Unit

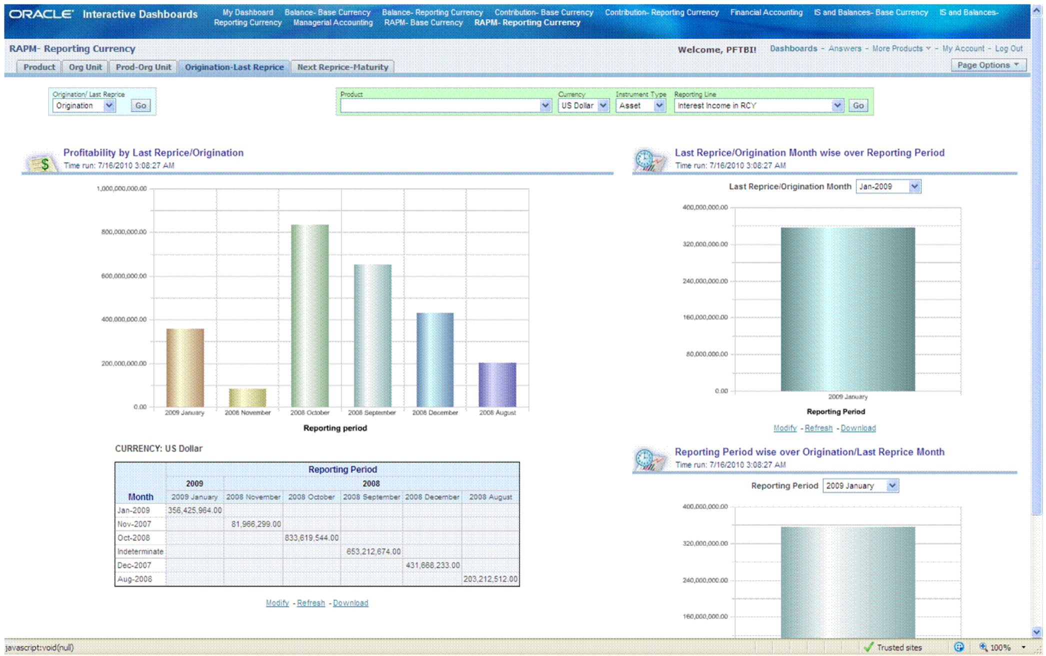

ORACLE Interactive Dashboards
RAPM- Reporting Currency
Welcome, PFTBI!
Product
Org Unit
Prod-Org Unit
Origination-Last Reprice
Next Reprice-Maturity
Page Options
Business Type
Current Book
Currency
US Dollar
Instrument Type
Asset
Reporting Line
Net Interest Income
Org Unit Level
Org Unit Level4
Go
Business Month
2009 January
Profitability for Organization by Reporting Period
Time run: 7/16/2010 3:07:07 AM
23.59%
76.41%
Corporate Administration
Insurance Operations Office
Modify - Refresh - Download
Profitability by Organizations Over Reporting Period
Time run: 7/16/2010 3:07:07 AM
Corporate Administration
Retail - Western
Vision Insurance Comp
Insurance Operations Office
Retail - Northern
Reporting Period
CURRENCY: US Dollar
Org Unit
2008 August
2008 September
2008 October
2008 November
2008 December
2009 January
Corporate Administration 49,746,331.33 402,214,422.10 143,229,604.81 707,104,811.95 103,953,988.81 239,312,177.66
Retail - Western 27,234,385.05 77,101,149.70 186,185,205.29 984,282.28 35,688,137.45
Vision Insurance Comp 3,567,385.88 91,775,967.41 20,753,702.22 139,614.52 16,403,369.93
Insurance Operations Office 54,721,256.15 48,915,354.29 15,423,441.89 73,883,011.88
Retail - Northern 34,116,637.34 78,697,082.88
Modify - Refresh - Download
Trusted sites
100%

Prod - Org Unit



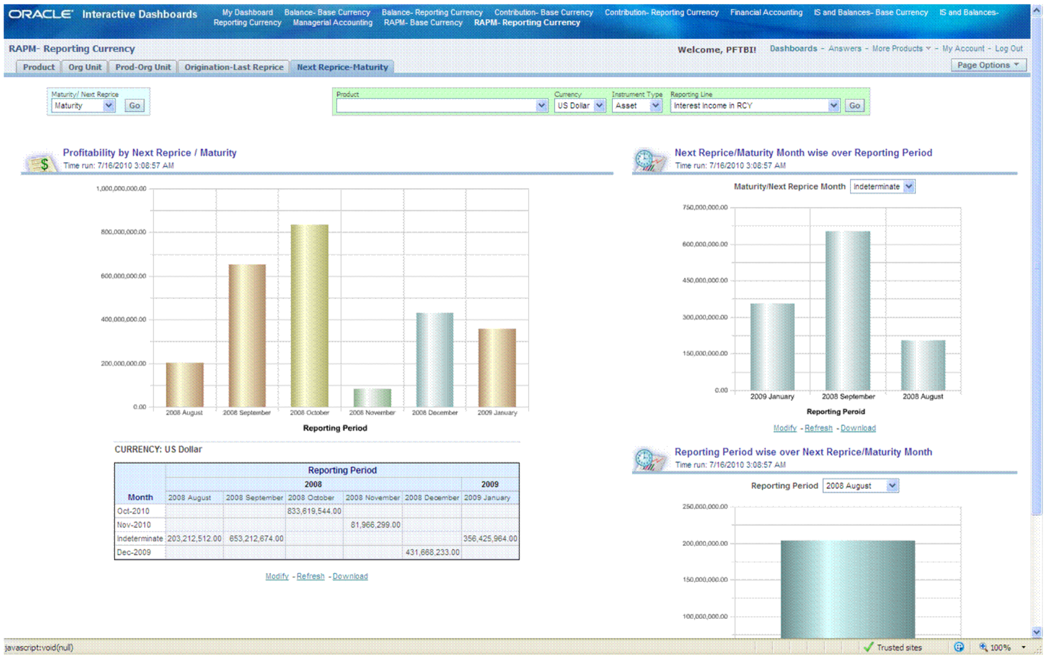
Product	MIS	Admin and Management	Fiduciary Operations	Home Office - Vision Mgmt Grp
2nd Mortgage Fixed	46,752,941.00	33,443,339.00		
Commercial / Industrial Floating Prime Unsecured	33,493,256.00	48,059,804.00		
Commercial Real Estate Fixed Owner Occupied	18,944,954.00			
Structured Loan	21,787,042.00	3,436,878.00		
Committed Facility		4,947,455.00		
Construction Floating Prime		32,060,295.00		
Direct Auto Fixed 60 mos			0.00	
Indirect Auto Fixed 60 mos			0.00	
Commercial / Industrial Fixed Secured				112,500,000.00

Origination - Last Reprice



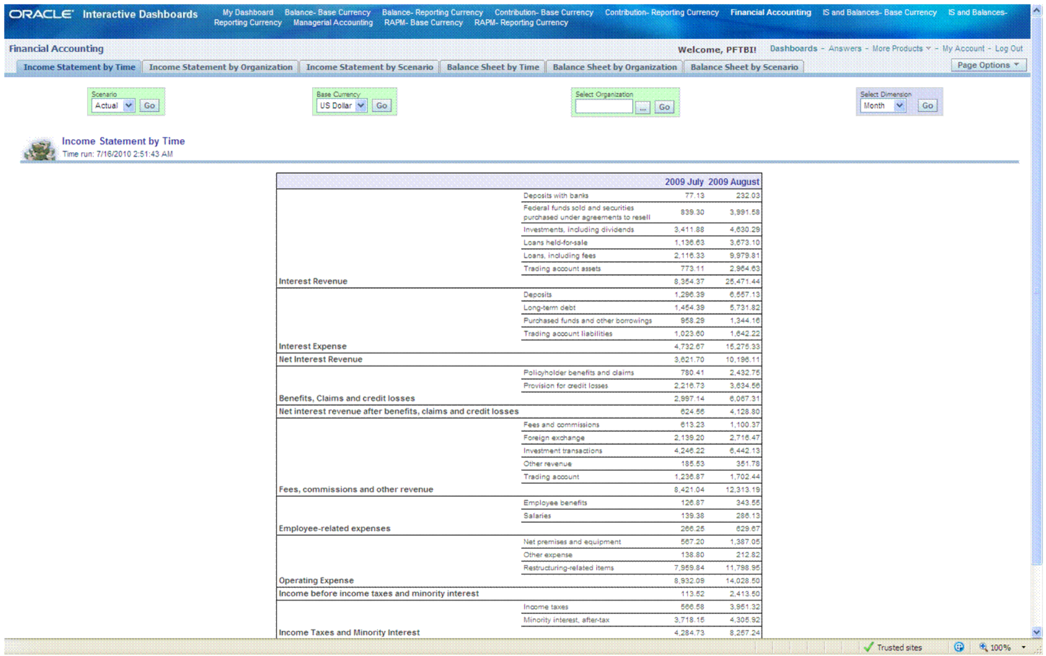
Month	Reporting Period 2009	2008				
	2009 January	2008 November	2008 October	2008 September	2008 December	2008 August
Jan-2009	356,425,964.00					
Nov-2007		81,966,299.00				
Oct-2008			833,619,544.00			
Indeterminate				653,212,674.00		
Dec-2007					431,668,233.00	
Aug-2008						203,212,512.00

Next Reprice - Maturity



Financial Accounting

Income Statement by Time

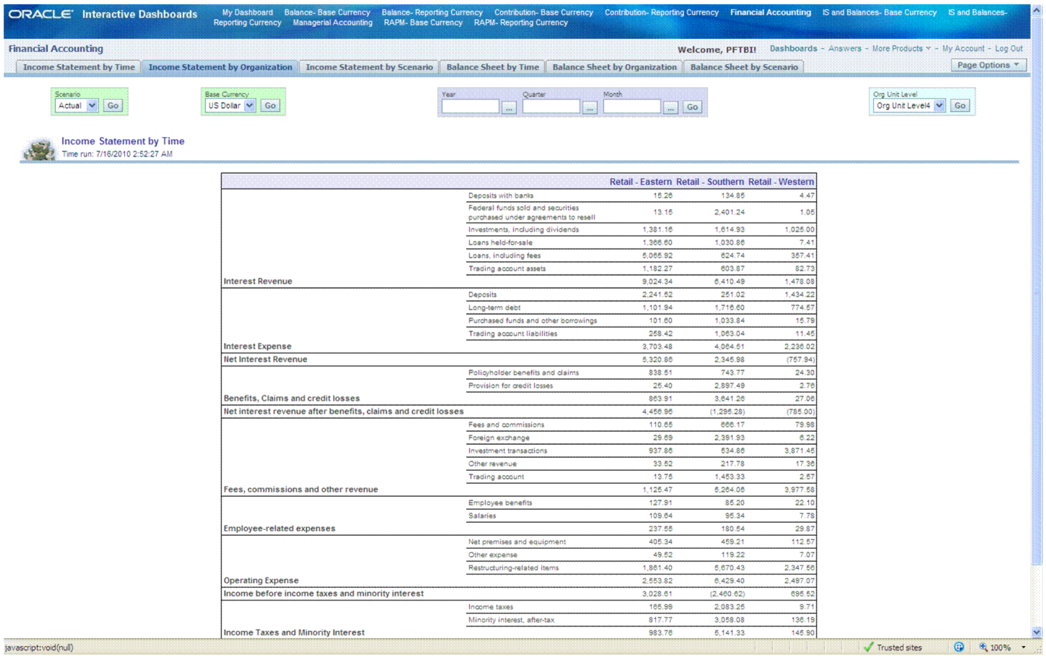


Income Statement by Time

Time run: 7/16/2010 2:51:43 AM

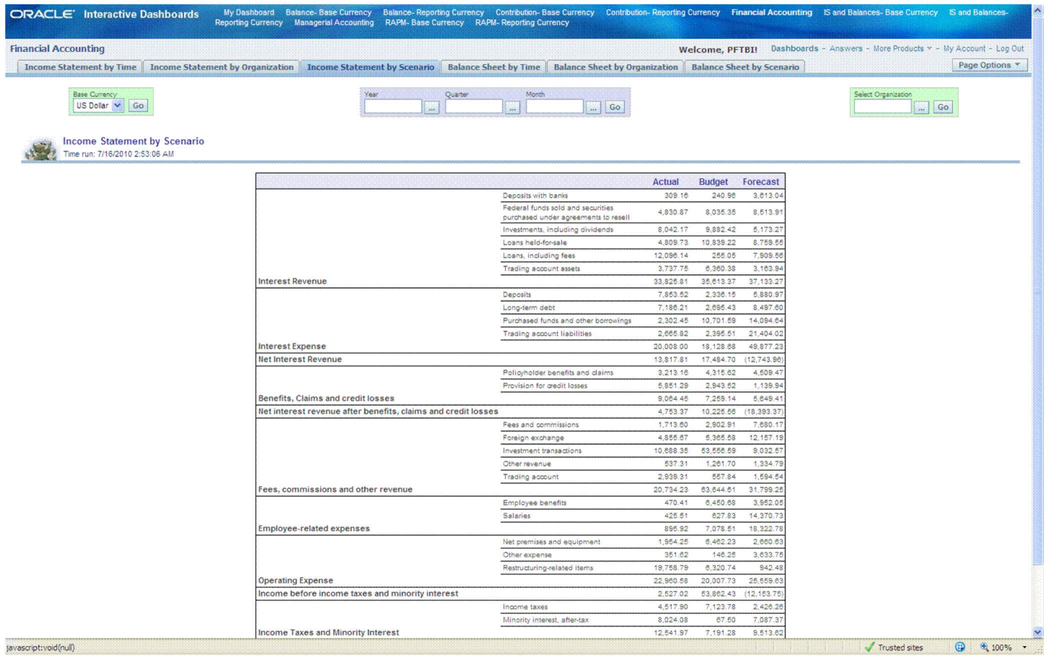
		2009 July	2009 August
	Deposits with banks	77.13	232.03
	Federal funds sold and securities purchased under agreements to resell	839.30	3,991.58
	Investments, including dividends	3,411.88	4,630.29
	Loans held-for-sale	1,136.63	3,673.10
	Loans, including fees	2,116.33	9,979.81
	Trading account assets	773.11	2,964.63
Interest Revenue		8,354.37	25,471.44
	Deposits	1,296.39	6,557.13
	Long-term debt	1,454.39	5,731.82
	Purchased funds and other borrowings	958.29	1,344.16
	Trading account liabilities	1,023.60	1,642.22
Interest Expense		4,732.67	15,275.33
Net Interest Revenue		3,621.70	10,196.11
	Policyholder benefits and claims	780.41	2,432.75
	Provision for credit losses	2,216.73	3,634.56
Benefits, Claims and credit losses		2,997.14	6,067.31
Net interest revenue after benefits, claims and credit losses		624.56	4,128.80
	Fees and commissions	613.23	1,100.37
	Foreign exchange	2,139.20	2,716.47
	Investment transactions	4,246.22	6,442.13
	Other revenue	185.53	351.78
	Trading account	1,236.87	1,702.44
Fees, commissions and other revenue		8,421.04	12,313.19
	Employee benefits	126.87	343.55
	Salaries	139.38	286.13
Employee-related expenses		266.25	629.67
	Net premises and equipment	567.20	1,387.05
	Other expense	138.80	212.82
	Restructuring-related items	7,959.84	11,798.95
Operating Expense		8,932.09	14,028.50
Income before income taxes and minority interest		113.52	2,413.50
	Income taxes	566.58	3,951.32
	Minority interest, after-tax	3,718.15	4,305.92
Income Taxes and Minority Interest		4,284.73	8,257.24

Income Statement by Organization



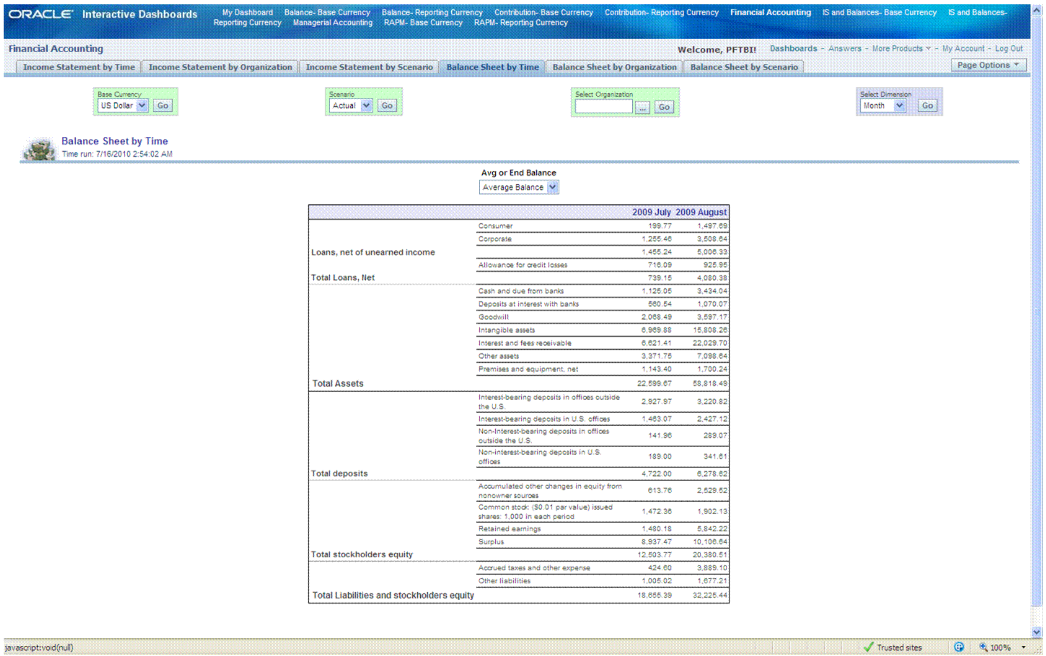
		Retail - Eastern	Retail - Southern	Retail - Western
	Deposits with banks	15.26	134.85	4.47
	Federal funds sold and securities purchased under agreements to resell	13.15	2,401.24	1.05
	Investments, including dividends	1,381.16	1,614.93	1,025.00
	Loans held-for-sale	1,366.60	1,030.86	7.41
	Loans, including fees	5,065.92	624.74	357.41
	Trading account assets	1,182.27	603.87	82.73
Interest Revenue		9,024.34	6,410.49	1,478.08
	Deposits	2,241.52	251.02	1,434.22
	Long-term debt	1,101.94	1,716.60	774.57
	Purchased funds and other borrowings	101.60	1,033.84	15.79
	Trading account liabilities	258.42	1,063.04	11.45
Interest Expense		3,703.48	4,064.51	2,236.02
Net Interest Revenue		5,320.86	2,345.98	(757.94)
	Policyholder benefits and claims	838.51	743.77	24.30
	Provision for credit losses	25.40	2,897.49	2.76
Benefits, Claims and credit losses		863.91	3,641.26	27.06
Net interest revenue after benefits, claims and credit losses		4,456.96	(1,295.28)	(785.00)
	Fees and commissions	110.65	666.17	79.98
	Foreign exchange	29.69	2,391.93	6.22
	Investment transactions	937.86	534.86	3,871.45
	Other revenue	33.52	217.78	17.36
	Trading account	13.75	1,453.33	2.57
Fees, commissions and other revenue		1,125.47	5,264.06	3,977.58
	Employee benefits	127.91	85.20	22.10
	Salaries	109.64	95.34	7.78
Employee-related expenses		237.55	180.54	29.87
	Net premises and equipment	405.34	459.21	112.57
	Other expense	49.52	119.22	7.07
	Restructuring-related items	1,861.40	5,670.43	2,347.56
Operating Expense		2,553.82	6,429.40	2,497.07
Income before income taxes and minority interest		3,028.61	(2,460.62)	695.52
	Income taxes	165.99	2,083.25	9.71
	Minority interest, after-tax	817.77	3,058.08	136.19
Income Taxes and Minority Interest		983.76	5,141.33	145.90

Income Statement by Scenario



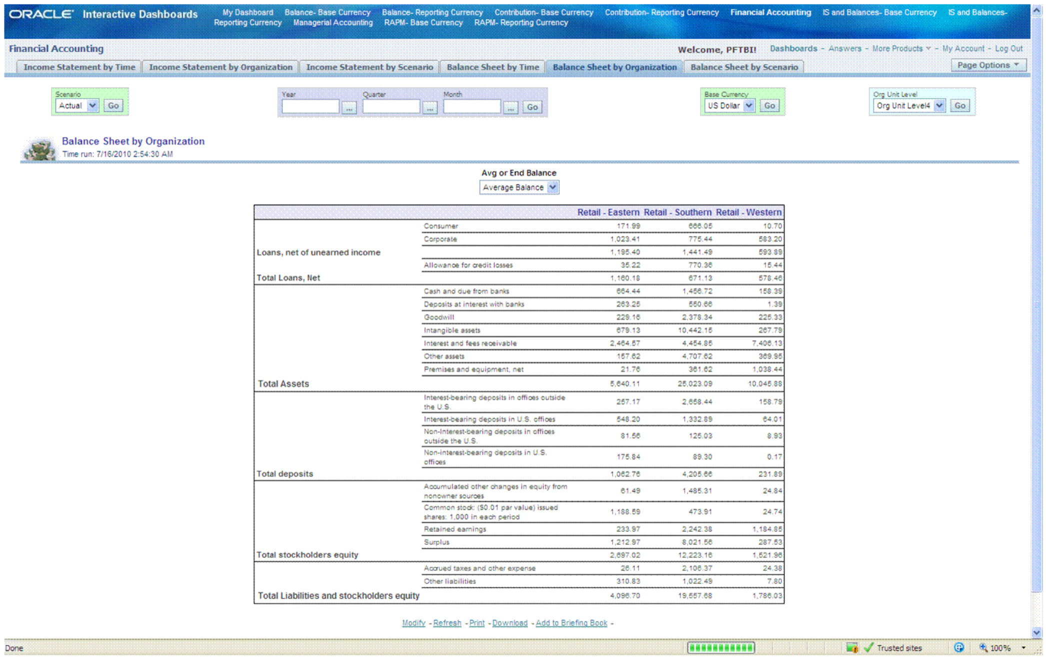
		Actual	Budget	Forecast
	Deposits with banks	309.16	240.96	3,613.04
	Federal funds sold and securities purchased under agreements to resell	4,830.87	8,035.35	8,513.91
	Investments, including dividends	8,042.17	9,882.42	5,173.27
	Loans held-for-sale	4,809.73	10,839.22	8,759.55
	Loans, including fees	12,096.14	255.05	7,909.56
	Trading account assets	3,737.75	6,360.38	3,163.94
Interest Revenue		33,825.81	35,613.37	37,133.27
	Deposits	7,853.52	2,336.15	5,880.97
	Long-term debt	7,186.21	2,695.43	8,497.60
	Purchased funds and other borrowings	2,302.45	10,701.59	14,094.64
	Trading account liabilities	2,665.82	2,395.51	21,404.02
Interest Expense		20,008.00	18,128.68	49,877.23
Net Interest Revenue		13,817.81	17,484.70	(12,743.96)
	Policyholder benefits and claims	3,213.16	4,315.62	4,509.47
	Provision for credit losses	5,851.29	2,943.52	1,139.94
Benefits, Claims and credit losses		9,064.45	7,259.14	5,649.41
Net interest revenue after benefits, claims and credit losses		4,753.37	10,225.56	(18,393.37)
	Fees and commissions	1,713.60	2,902.91	7,680.17
	Foreign exchange	4,855.67	5,365.58	12,157.19
	Investment transactions	10,688.35	53,556.59	9,032.57
	Other revenue	537.31	1,261.70	1,334.79
	Trading account	2,939.31	557.84	1,594.54
Fees, commissions and other revenue		20,734.23	63,644.61	31,799.25
	Employee benefits	470.41	6,450.68	3,952.05
	Salaries	425.51	627.83	14,370.73
Employee-related expenses		895.92	7,078.51	18,322.78
	Net premises and equipment	1,954.25	6,462.23	2,660.63
	Other expense	351.62	146.25	3,633.75
	Restructuring-related items	19,758.79	6,320.74	942.48
Operating Expense		22,960.58	20,007.73	25,559.63
Income before income taxes and minority interest		2,527.02	53,862.43	(12,153.75)
	Income taxes	4,517.90	7,123.78	2,426.26
	Minority interest, after-tax	8,024.08	67.50	7,087.37
Income Taxes and Minority Interest		12,541.97	7,191.28	9,513.62

Balance Sheet by Time



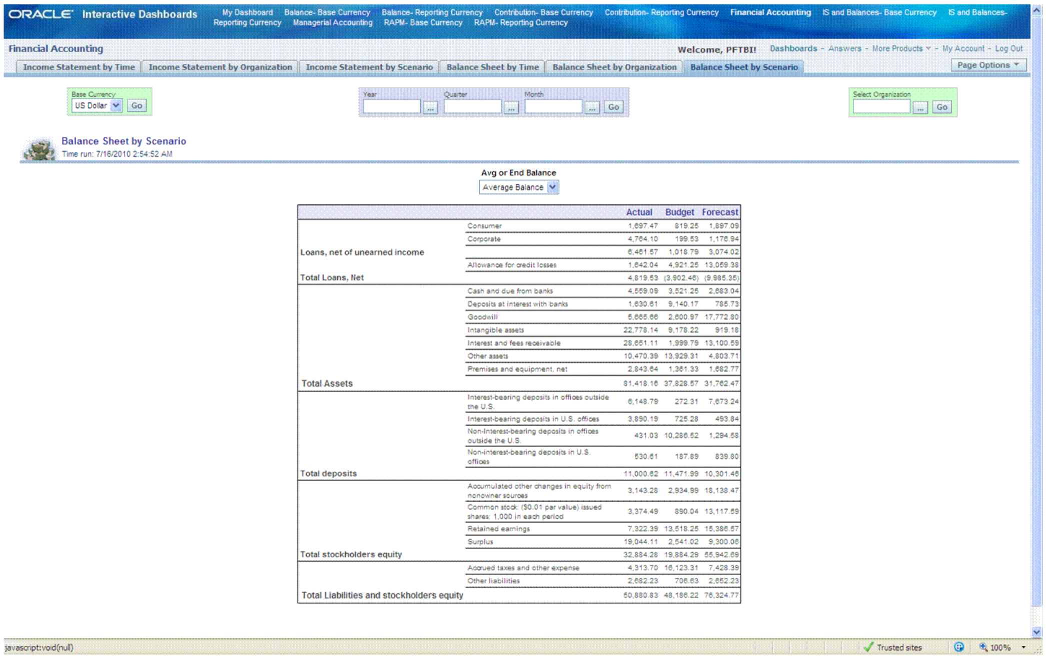
		2009 July	2009 August
	Consumer	199.77	1,497.69
	Corporate	1,255.46	3,508.64
Loans, net of unearned income		1,455.24	5,006.33
	Allowance for credit losses	716.09	925.95
Total Loans, Net		739.15	4,080.38
	Cash and due from banks	1,125.05	3,434.04
	Deposits at interest with banks	560.54	1,070.07
	Goodwill	2,068.49	3,597.17
	Intangible assets	6,969.88	15,808.26
	Interest and fees receivable	6,621.41	22,029.70
	Other assets	3,371.75	7,098.64
	Premises and equipment, net	1,143.40	1,700.24
Total Assets		22,599.67	58,818.49
	Interest-bearing deposits in offices outside the U.S.	2,927.97	3,220.82
	Interest-bearing deposits in U.S. offices	1,463.07	2,427.12
	Non-Interest-bearing deposits in offices outside the U.S.	141.96	289.07
	Non-interest-bearing deposits in U.S. offices	189.00	341.61
Total deposits		4,722.00	6,278.62
	Accumulated other changes in equity from nonowner sources	613.76	2,529.52
	Common stock: ($0.01 par value) issued shares: 1,000 in each period	1,472.36	1,902.13
	Retained earnings	1,480.18	5,842.22
	Surplus	8,937.47	10,106.64
Total stockholders equity		12,503.77	20,380.51
	Accrued taxes and other expense	424.60	3,889.10
	Other liabilities	1,005.02	1,677.21
Total Liabilities and stockholders equity		18,655.39	32,225.44

Balance Sheet by Organization



		Retail - Eastern	Retail - Southern	Retail - Western
Loans, net of unearned income	Consumer	171.99	666.05	10.70
	Corporate	1,023.41	775.44	583.20
		1,195.40	1,441.49	593.89
	Allowance for credit losses	35.22	770.36	15.44
Total Loans, Net		1,160.18	671.13	578.46
	Cash and due from banks	664.44	1,456.72	158.39
	Deposits at interest with banks	263.25	550.66	1.39
	Goodwill	229.16	2,378.34	225.33
	Intangible assets	679.13	10,442.15	267.79
	Interest and fees receivable	2,464.57	4,454.85	7,406.13
	Other assets	157.62	4,707.62	369.95
	Premises and equipment, net	21.76	361.62	1,038.44
Total Assets		5,640.11	25,023.09	10,045.88
	Interest-bearing deposits in offices outside the U.S.	257.17	2,658.44	158.79
	Interest-bearing deposits in U.S. offices	548.20	1,332.89	64.01
	Non-Interest-bearing deposits in offices outside the U.S.	81.56	125.03	8.93
	Non-interest-bearing deposits in U.S. offices	175.84	89.30	0.17
Total deposits		1,062.76	4,205.66	231.89
	Accumulated other changes in equity from nonowner sources	61.49	1,485.31	24.84
	Common stock: ($0.01 par value) issued shares: 1,000 in each period	1,188.59	473.91	24.74
	Retained earnings	233.97	2,242.38	1,184.85
	Surplus	1,212.97	8,021.56	287.53
Total stockholders equity		2,697.02	12,223.16	1,521.96
	Accrued taxes and other expense	26.11	2,106.37	24.38
	Other liabilities	310.83	1,022.49	7.80
Total Liabilities and stockholders equity		4,096.70	19,557.68	1,786.03

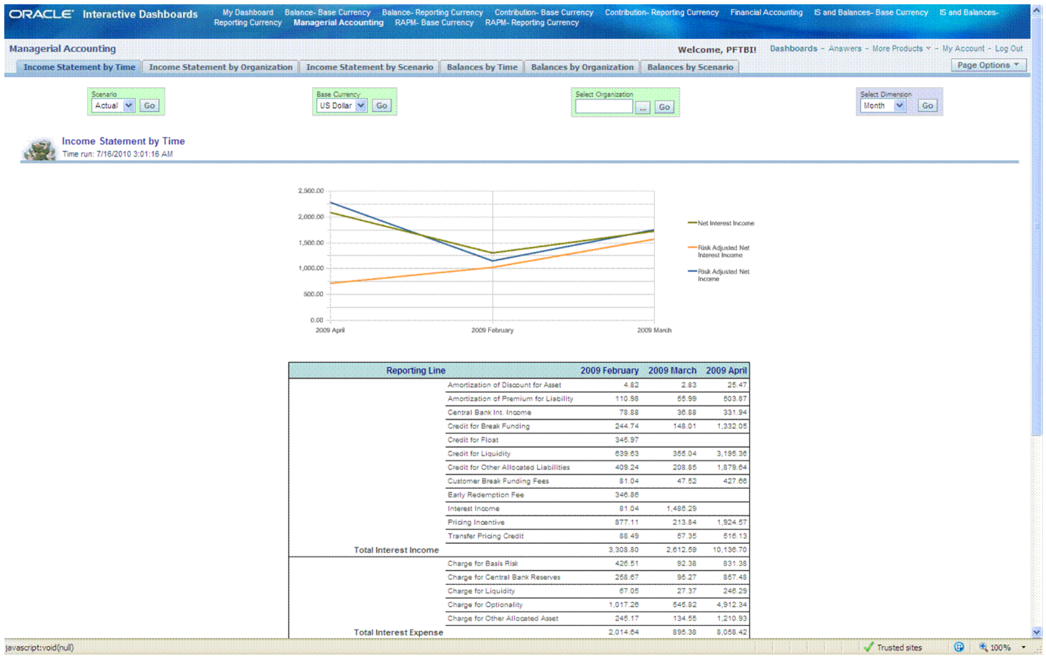
Balance Sheet by Scenario



		Actual	Budget	Forecast
	Consumer	1,697.47	819.25	1,897.09
	Corporate	4,764.10	199.53	1,176.94
Loans, net of unearned income		6,461.57	1,018.79	3,074.02
	Allowance for credit losses	1,642.04	4,921.25	13,059.38
Total Loans, Net		4,819.53	(3,902.46)	(9,985.35)
	Cash and due from banks	4,559.09	3,521.25	2,683.04
	Deposits at interest with banks	1,630.61	9,140.17	785.73
	Goodwill	5,665.66	2,600.97	17,772.80
	Intangible assets	22,778.14	9,178.22	919.18
	Interest and fees receivable	28,651.11	1,999.79	13,100.59
	Other assets	10,470.39	13,929.31	4,803.71
	Premises and equipment, net	2,843.64	1,361.33	1,682.77
Total Assets		81,418.16	37,828.57	31,762.47
	Interest-bearing deposits in offices outside the U.S.	6,148.79	272.31	7,673.24
	Interest-bearing deposits in U.S. offices	3,890.19	725.28	493.84
	Non-Interest-bearing deposits in offices outside the U.S.	431.03	10,286.52	1,294.58
	Non-interest-bearing deposits in U.S. offices	530.61	187.89	839.80
Total deposits		11,000.62	11,471.99	10,301.46
	Accumulated other changes in equity from nonowner sources	3,143.28	2,934.99	18,138.47
	Common stock: ($0.01 par value) issued shares: 1,000 in each period	3,374.49	890.04	13,117.59
	Retained earnings	7,322.39	13,518.25	15,386.57
	Surplus	19,044.11	2,541.02	9,300.06
Total stockholders equity		32,884.28	19,884.29	55,942.69
	Accrued taxes and other expense	4,313.70	16,123.31	7,428.39
	Other liabilities	2,682.23	706.63	2,652.23
Total Liabilities and stockholders equity		50,880.83	48,186.22	76,324.77

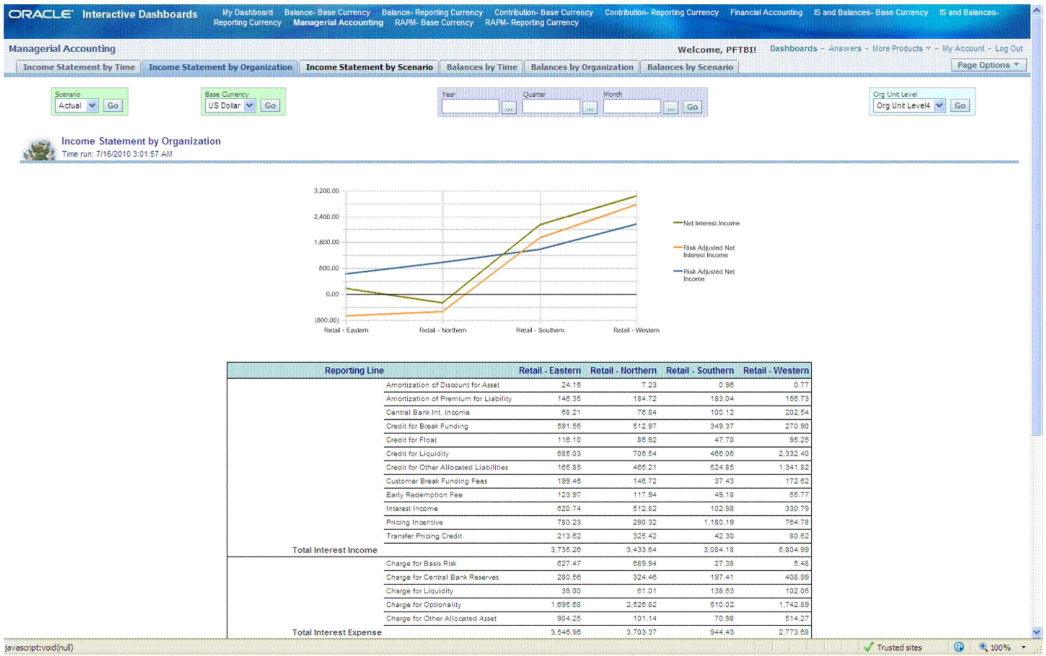
Managerial Accounting

Income Statement by Time



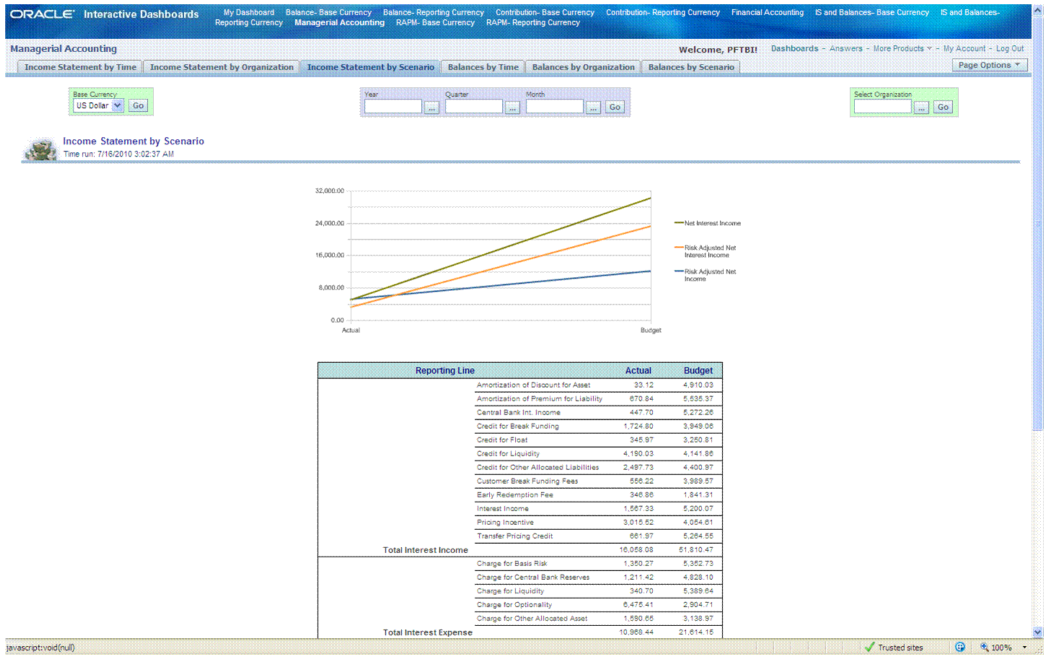
Reporting Line		2009 February	2009 March	2009 April
	Amortization of Discount for Asset	4.82	2.83	25.47
	Amortization of Premium for Liability	110.98	55.99	503.87
	Central Bank Int. Income	78.88	36.88	331.94
	Credit for Break Funding	244.74	148.01	1,332.05
	Credit for Float	345.97		
	Credit for Liquidity	639.63	355.04	3,195.36
	Credit for Other Allocated Liabilities	409.24	208.85	1,879.64
	Customer Break Funding Fees	81.04	47.52	427.66
	Early Redemption Fee	346.86		
	Interest Income	81.04	1,486.29	
	Pricing Incentive	877.11	213.84	1,924.57
	Transfer Pricing Credit	88.49	57.35	516.13
Total Interest Income		3,308.80	2,612.59	10,136.70
	Charge for Basis Risk	426.51	92.38	831.38
	Charge for Central Bank Reserves	258.67	95.27	857.48
	Charge for Liquidity	67.05	27.37	246.29
	Charge for Optionality	1,017.26	545.82	4,912.34
	Charge for Other Allocated Asset	245.17	134.55	1,210.93
Total Interest Expense		2,014.64	895.38	8,058.42

Income Statement by Organization

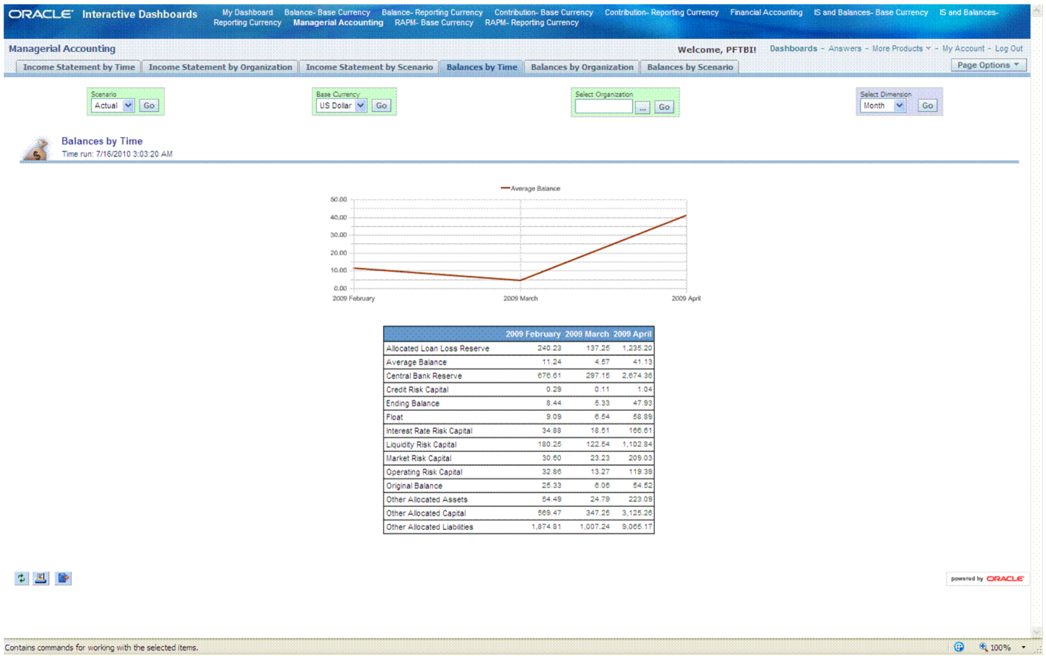


Reporting Line		Retail - Eastern	Retail - Northern	Retail - Southern	Retail - Western
	Amortization of Discount for Asset	24.16	7.23	0.96	0.77
	Amortization of Premium for Liability	146.35	184.72	183.04	156.73
	Central Bank Int. Income	68.21	76.84	100.12	202.54
	Credit for Break Funding	591.55	512.97	349.37	270.90
	Credit for Float	116.10	86.92	47.70	95.25
	Credit for Liquidity	685.03	706.54	466.06	2,332.40
	Credit for Other Allocated Liabilities	165.85	465.21	524.85	1,341.82
	Customer Break Funding Fees	199.46	146.72	37.43	172.62
	Early Redemption Fee	123.97	117.94	49.18	55.77
	Interest Income	620.74	512.82	102.98	330.79
	Pricing Incentive	780.23	290.32	1,180.19	764.78
	Transfer Pricing Credit	213.62	325.42	42.30	80.62
Total Interest Income		3,735.26	3,433.64	3,084.18	5,804.99
	Charge for Basis Risk	627.47	689.94	27.38	5.48
	Charge for Central Bank Reserves	280.56	324.46	197.41	408.99
	Charge for Liquidity	39.00	61.01	138.63	102.06
	Charge for Optionality	1,695.68	2,526.82	510.02	1,742.89
	Charge for Other Allocated Asset	904.25	101.14	70.98	514.27
Total Interest Expense		3,546.96	3,703.37	944.43	2,773.68

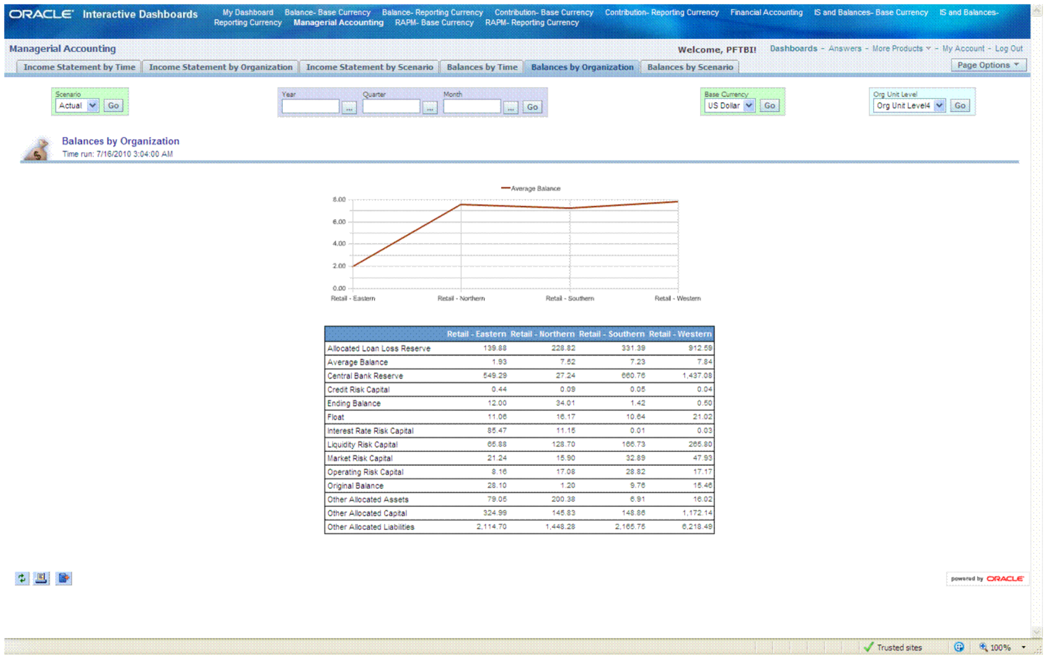
Income Statement by Scenario



Balances by Time

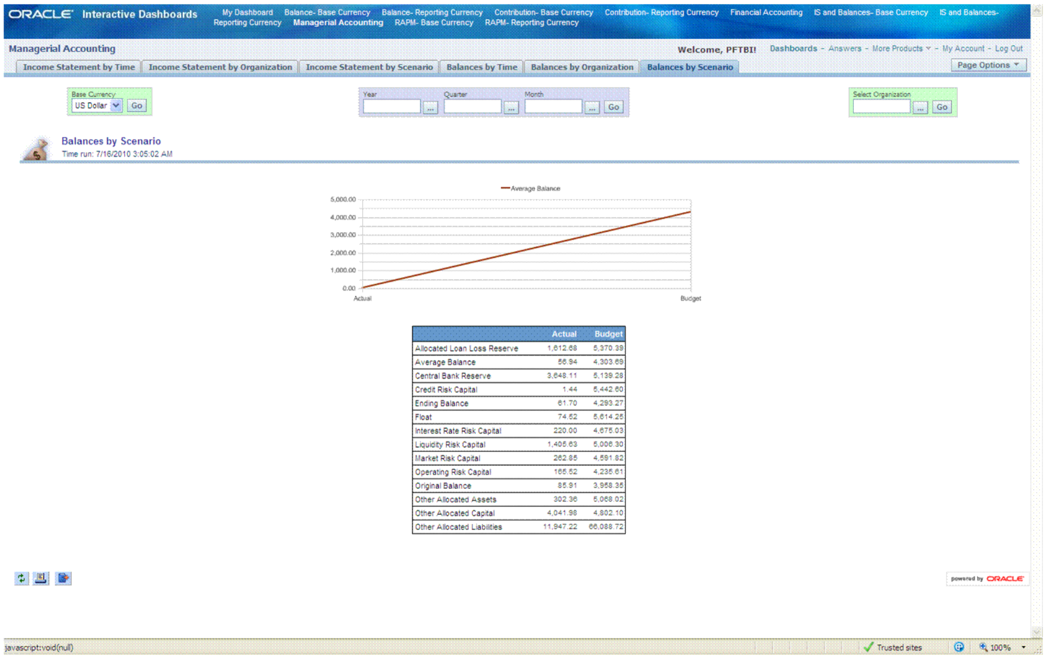


Balances by Organization



	Retail - Eastern	Retail - Northern	Retail - Southern	Retail - Western
Allocated Loan Loss Reserve	139.88	228.82	331.39	912.59
Average Balance	1.93	7.52	7.23	7.84
Central Bank Reserve	549.29	27.24	660.76	1,437.08
Credit Risk Capital	0.44	0.09	0.05	0.04
Ending Balance	12.00	34.01	1.42	0.50
Float	11.06	16.17	10.64	21.02
Interest Rate Risk Capital	85.47	11.15	0.01	0.03
Liquidity Risk Capital	65.88	128.70	166.73	265.80
Market Risk Capital	21.24	15.90	32.89	47.93
Operating Risk Capital	8.16	17.08	28.82	17.17
Original Balance	28.10	1.20	9.76	15.46
Other Allocated Assets	79.05	200.38	6.91	16.02
Other Allocated Capital	324.99	145.83	148.86	1,172.14
Other Allocated Liabilities	2,114.70	1,448.28	2,165.75	6,218.49

Balances by Scenario



Tabular Consolidated List of PFTBI Reports

Data Source	Business Intent	Dashboard	Page Name	Report Name
Initial Loads to the Management Ledger (i.e., exclusive of any data generated by allocation rules and/or transfer pricing rules). Reporting line is **General Ledger Account**	General Ledger Account based Income Statement and Balance Sheet reporting	Financial Accounting	Income Statement by Time	Income Statement by Time
			Income Statement by Organization	Income Statement by Organization
			Income Statement by Scenario	Income Statement by Scenario
			Balance Sheet by Time	Balance Sheet by Time
			Balance Sheet by Organization	Balance Sheet by Organization
			Balance Sheet by Scenario	Balance Sheet by Scenario

Data Source	Business Intent	Dashboard	Page Name	Report Name
Customer Specific Management Accounting Implementation with Seeded Target Financial Elements to Build Out Reporting Line Structures. May Be Customized to Users Choice of Financial Elements and Financial Element Hierarchy. Reporting Line is **Financial Element**	Financial Element based Income Statement and Balance Sheet reporting (management reporting dimensions)	Managerial Accounting	Income Statement by Time	Income Statement by Time
			Income Statement by Organization	Income Statement by Organization
			Income Statement by Scenario	Income Statement by Scenario
			Balances by Time	Balances by Time
			Balances by Organization	Balances by Organization
			Balances by Scenario	Balances by Scenario
Aggregated account level data	To analyze the aggregated account level balances (value, % of accounts and so on.) with their relative and time variances along the management dimensions (product, org, business month, currency)	Balance - Base Currency	Current	Monthly Breakdown
			Trends	Trend by Period
			Details	Details by Products
			Break Down	Breakdown
			Toppers	Toppers
			Top 10	Top 10
			Ranks	Heatmap Distribution
			S Card	Monthly Scorecard
			Variation	Variation
			Top Variation	Top N Products Changes over 3 months
			3 Mth Variation	3 Month Variation
Aggregated account	To analyze the	Balance- Reporting	Current	Monthly Breakdown

Data Source	Business Intent	Dashboard	Page Name	Report Name
level data	aggregated account level balances (value, % of accounts and so on.) with their relative and time variances along the management dimensions (product, org, business month)	Currency	Trends	Trend by Period
			Details	Details by Products
			Break Down	Breakdown
			Toppers	Toppers
			Top 10	Top 10
			Ranks	Heatmap Distribution
			S Card	Monthly Scorecard
			Variation	Variation
			Top Variation	Top N Products Changes over 3 months
			3 Month Variation	3 Month Variation
Aggregated account level data	To analyze the aggregated account level contribution with their relative and time variances along the management dimensions (product, org, business month, currency)	Contribution - Base Currency	Current	Current Contribution Breakdown
			Trends	Contribution Trend
			Details	Contribution Details by Products
			Break Down	Breakdown
			Toppers	Toppers
			Top 10	Contribution Top 10
			Ranks	Heatmap Distribution
			S Card	Monthly Scorecard
			Variation	Contribution Variation

Data Source	Business Intent	Dashboard	Page Name	Report Name
			Top Variation	Top N Products Changes over 3 months
			3 Month Variation	3 Month Variation
Aggregated account level data	To analyze the aggregated account level contribution with their relative and time variances along the management dimensions (product, org, business month, currency)	Contribution - Reporting Currency	Current	Current Contribution Breakdown
			Trends	Contribution Trend
			Details	Contribution Details by Products
			Break Down	Breakdown
			Toppers	Toppers
			Top 10	Contribution Top 10
			Ranks	Heatmap Distribution
			S Card	Monthly Scorecard
			Variation	Contribution Variation
			Top Variation	Top N Products Changes over 3 months
			3 Month Variation	3 Month Variation
Aggregated account level data	To analyze the aggregated account level Income Statement and Balances with their relative and time variances along the management dimensions (product, org, business month, currency)	IS and Balances-Base Currency	Income Statement by Time	Income Statement by Time
			Income Statement by Organization	Income Statement by Organization
			Income Statement by Product	Income Statement by Product
			Income Statement by Currency	Income Statement by Currency

Data Source	Business Intent	Dashboard	Page Name	Report Name
			Balances by Time	Balances by Time
			Balances by Organization	Balances by Organization
			Balances by Product	Balances by Product
Aggregated account level data	To analyze the aggregated account level Income Statement and Balances with their relative and time variances along the management dimensions (product, org, business month)	IS and Balances-Reporting Currency	Income Statement by Time	Income Statement by Time
			Income Statement by Organization	Income Statement by Organization
			Income Statement by Currency	Income Statement by Currency
			Balances by Time	Balances by Time
			Balances by Organization	Balances by Organization
			Balances by Product	Balances by Product
Aggregated account level data	To analyze the aggregated account level profitability (net interest income) with their relative and time variances along the management dimensions (product, org, business month, currency)	RAPM- Base Currency	Product	Profitability for Products by Reporting Period
			Org Unit	Profitability for Organization by Reporting Period
			Prod-Org Unit	Product & Orgnization over Reporting Period
			Origination-Last Reprice	Profitability by Last Reprice/Origination
			Next Reprice-Maturity	Profitability by Next Reprice / Maturity

Data Source	Business Intent	Dashboard	Page Name	Report Name
Aggregated account level data	To analyze the aggregated account level profitability (net interest income) with their relative and time variances along the management dimensions (product, org, business month)	RAPM- Reporting Currency	Product	Profitability for Products by Reporting Period
			Org Unit	Profitability for Organization by Reporting Period
			Prod-Org Unit	Product & Orgnization over Reporting Period
			Origination-Last Reprice	Profitability by Last Reprice/Origination
			Next Reprice-Maturity	Profitability by Next Reprice / Maturity

A

How to add a new dimension

Introduction to adding a new dimension

This section details the steps to be performed by the user for adding a new dimension to the cube. As a prerequisite, dimension tables should be added in the data model and the fact table needs to have the referential key with the dimension table. These dimension tables will hold dimension members and can be level-based or parent-child. Level based dimension tables contain columns for each level of the hierarchy, while parent-child dimension tables contain columns for storing the relationship between the parent and child members. These dimension tables can be loaded from external systems or can be maintained within the Dimension Management component of Oracle Financial Services Analytical Applications Infrastructure (OFSAAI). If user intends to maintain the dimension within OFSAAI for adding dimension tables, see *Oracle Financial Services Analytical Applications Data Model Utilities User Guide*.

Procedures to add a new dimension

Step 1 – Add Business Hierarchy

1. From **Unified Metadata Manager**, select **Business Metadata Management**, then select **Business Hierarchy**.

2. From Business Hierarchy, click **Add** to create a Business hierarchy definition. In the Business Hierarchy Definition (Add mode) window, select the **Hierarchy Type**. Hierarchy Type can be :

    - Regular – for representing non-time and non-measure dimensions in a hierarchical format. Examples of this type are Product, Organization Unit, and so on.

    - Measure – for representing the measures in the hierarchical format. This corresponds to a ACCOUNT hierarchy within the ESSBASE. An example of this type is Management Reporting Line.

- Time – for representing the calendar or date dimension in a hierarchical format. This corresponds to a TIME hierarchy within the ESSBASE. An example of this type is Calendar hierarchy.

3. Select **Hierarchy Sub Type**. Hierarchy Sub Type can be:

    - Non Business Intelligence Enabled – for representing the hierarchy with underlying data store containing just leaves and nodes are built within the metadata of the hierarchy. This sub type is useful for modelling bucket/range, ragged and non-additive hierarchies.

    - Business Intelligence Enabled – for representing the hierarchy with underlying data store as level-based dimension table. This sub-type is useful for modelling balanced hierarchies.

    - Parent Child – for representing the hierarchy with underlying data store as a parent-child dimension table. This sub type is useful for modelling ragged hierarchies.

4. Select **Total Required** property, if a TOTAL is required to be included as the root node of the hierarchy.

5. Select **List** property, if hierarchy is a flat list of members without any levels.

6. Select the **Entity** and **Attribute** on which the hierarchy is based.

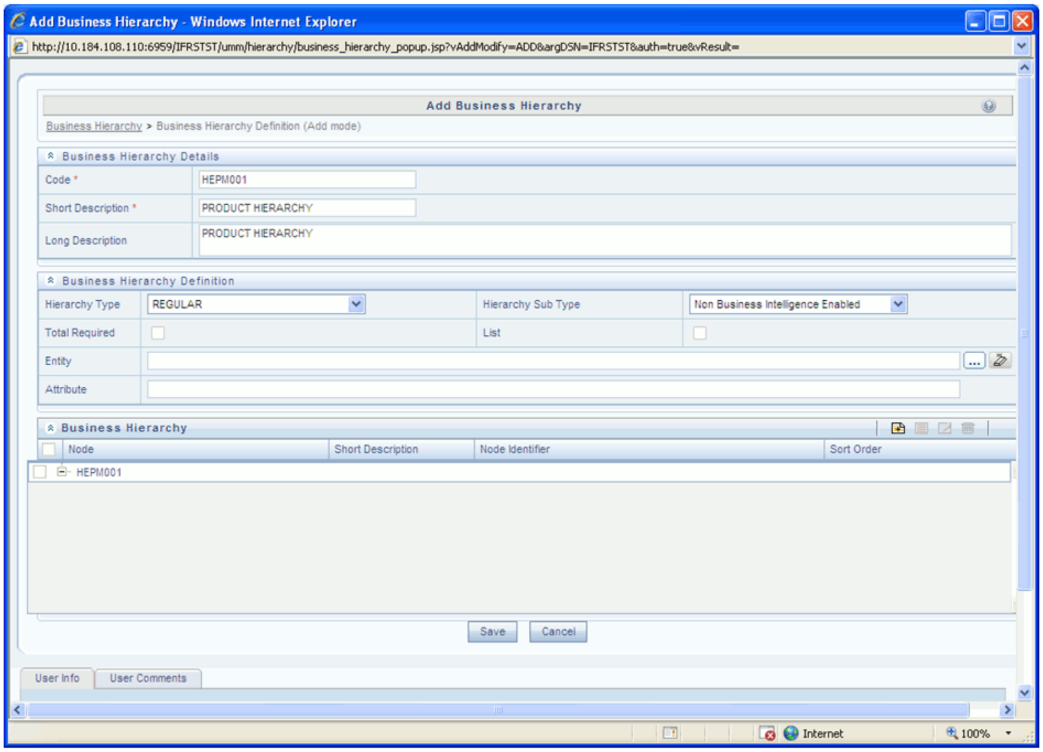
The components for hierarchy definition differ for each sub type of the hierarchy.

- If sub type is **Non Business Intelligence Enabled**, then the user can add nodes and the order in which the node should appear in the hierarchy (sort-order). Node identifiers are SQL expressions that are specified for leaf members and data is classified based on the node identifiers.

- If sub type is **Business Intelligence Enabled**, then the user can specify the levels and SQL expression for each level within the hierarchy.

- If sub type is **Parent Child**, then the user can specify the column that contains the parent member and the column that contains the child member.

For more details, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

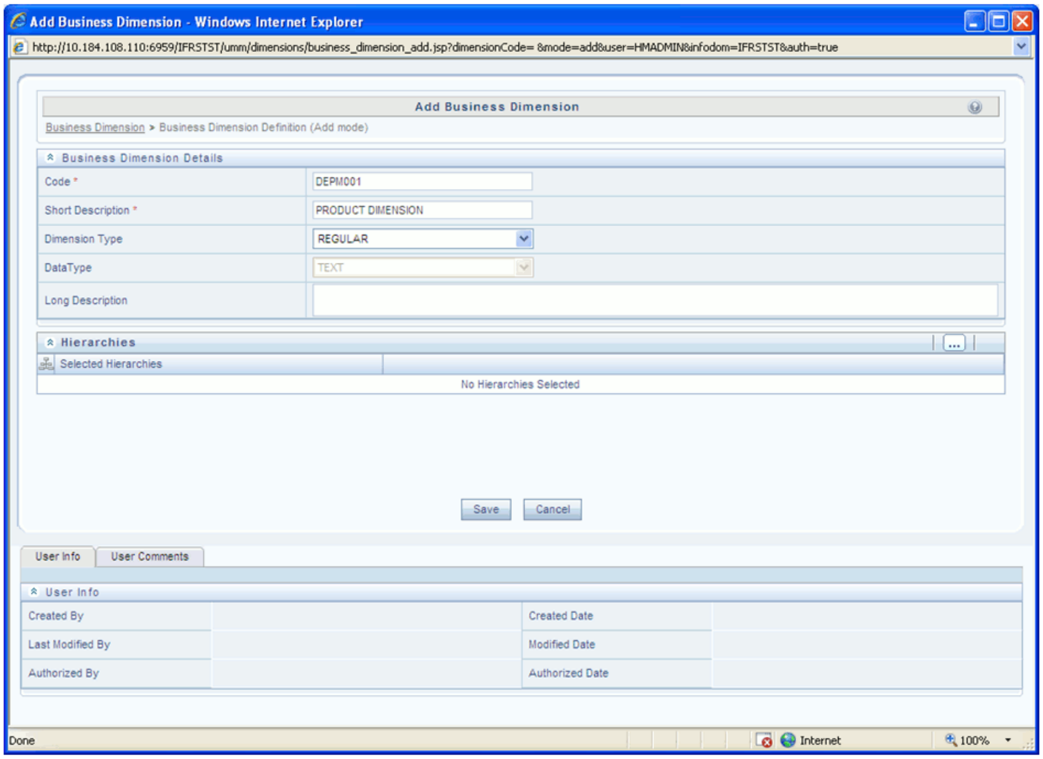


Step 2 – Add Business Dimension

1. From **Unified Metadata Manager**, select **Business Metadata Management**, then select **Business Dimension**.

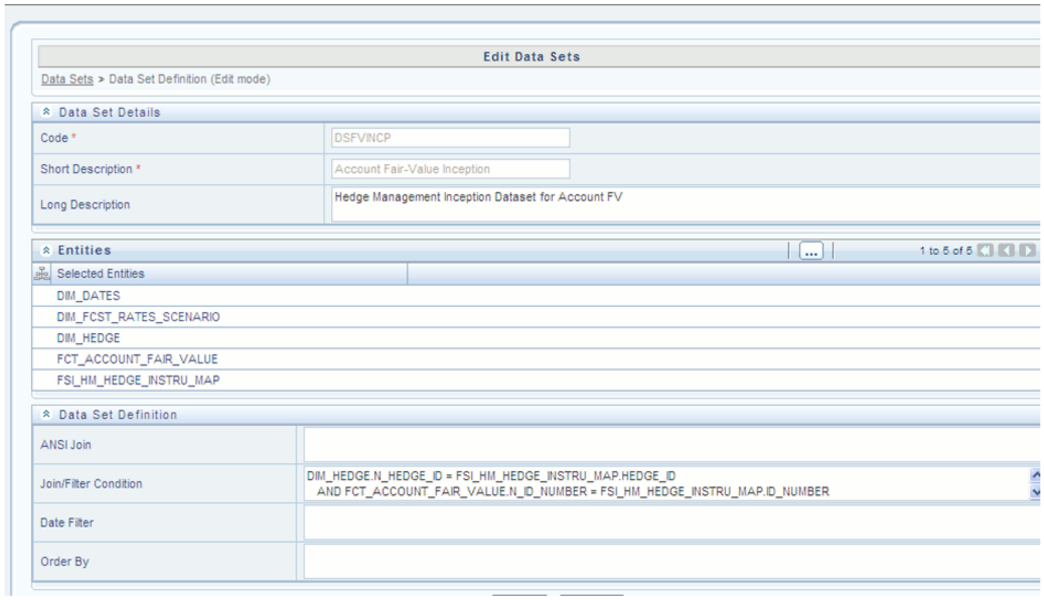
2. From Business Dimension, click **Add** to create a Business dimension definition. In the Business Dimension Definition (Add mode) window, select the **Dimension Type**. Dimension type is same as Hierarchy type and helps to filter the hierarchies that will be part of the dimension.

3. A dimension will contain one or many hierarchies. Select the hierarchies that are part of the dimension.



Step 3 – Modify Dataset

1. From **Unified Metadata Manager**, select **Business Metadata Management**, then select **Data Sets**.
2. Identify data sets that are based on the modified fact table.
3. Edit the data set definition.
4. Include the new dimension table in the data set.
5. Modify the data set JOIN to include the join clause between the fact table and new dimension table.
6. Save the data set.



Step 4 – Modify Cube Definition

1. From **Unified Metadata Manager**, select **Business Metadata Management**, then select **Cube**.

2. Identify the cube that needs to be modified.

3. Edit the cube definition.

4. Add the new dimension.

5. Map the measures to the newly added dimension.

6. Save the cube definition.

Build Cube

Assuming that the dimension table and fact table is loaded with relevant data, cube can be built.

Define batch to execute the CREATE CUBE component that will build the outline and load data in ESSBASE.

For more information on executing the batch, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

B

How to add a new measure

Introduction to adding a new measure

This section details the steps to be performed by the user for adding a new measure to the cube. As a prerequisite, the fact table needs to have the column that holds values for the new measure.

Procedures to add a new dimension

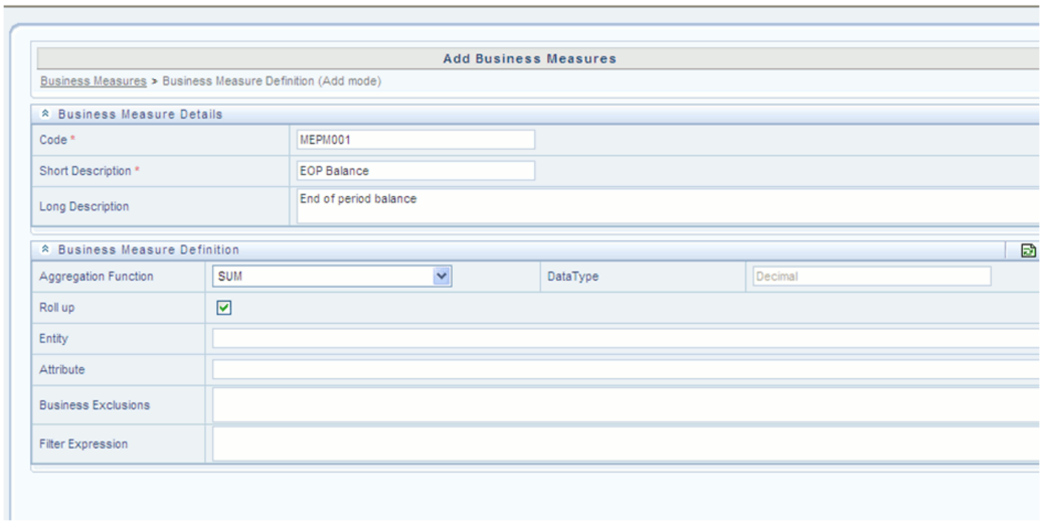
Step 1 – Add Business Measure

1. From **Unified Metadata Manager**, select **Business Metadata Management**, then select **Business Measures**.
2. From Business Measures, click **Add** to create a Business measure definition. In the Business Measure Definition (Add mode) window, Select **Aggregation Function**. Aggregation Function can be:
   - SUM – for summing up the values in the column of the fact table.
   - COUNT – for determining the number of records in the fact table.
   - MAXIMUM – for identifying the maximum value of a column in the fact table.
   - MINIMUM – for identifying the minimum value of a column in the fact table.
   - COUNT DISTINCT – for determining the distinct count of records in the fact table.
3. Specify if this measure needs to be rolled up against hierarchies.
4. Select the fact table as part of the Entity.

5. Select the column of the fact table as part of the Attribute. This column will hold the value of the measure.

6. Specify Business Exclusions and Filters, if required.

7. Save the measure.



Step 2 – Modify Cube Definition

1. From **Unified Metadata Manager**, select **Business Metadata Management**, then select **Cube**.

2. Identify the cube that needs to be modified.

3. Edit the cube definition.

4. Add the new measure.

5. Map the measures to the to the required dimensions.

6. Save the cube definition.

Build Cube

Assuming that the dimension table and fact table is loaded with relevant data, cube can be built.

Define batch to execute the CREATE CUBE component that will build the outline and load data in ESSBASE.

For more information on executing the batch, see *Oracle Financial Services Analytical*

Applications Infrastructure User Guide.

C

How to Add or Remove Reporting Lines

Overview

Reporting lines are configured as hierarchies within the Business Metadata of Oracle Financial Services Analytical Applications Infrastructure (OFSAAI).

- Financial Accounting Reporting Line
  - Financial accounting reporting line is based on General Ledger dimension. (DIM_GL_ACCOUNT table).
  - This reporting line hierarchy is a non-business intelligence enabled hierarchy based on the leaf members of GL dimension.
  - Non-additive rollups are mentioned as node properties.
- Management Accounting Reporting Line
  - Management accounting reporting line is based on Financial Elements dimension. (DIM_FINANCIAL_ELEMENT table).
  - This reporting line hierarchy is a non-business intelligence enabled hierarchy based on the leaf members of Financial Elements dimension.
  - Non-additive rollups are mentioned as node properties.
- Account Summary Reporting Line
  - Account Summary reporting line is configured as a dimension of type MEASURE.
  - This reporting line hierarchy is based on the measures that are defined on Account Summary fact tables.

- Non-additive rollups are mentioned as node properties.

Modifying Financial Accounting Reporting Line

Financial Accounting Reporting line hierarchy can be modified to include new members and modify existing members. As a prerequisite, if the member to be added is a leaf, GL dimension table (DIM_GL_ACCOUNT) needs to have these leaf members.

Step 1 – Modify Business Hierarchy

1. From **Unified Metadata Manager**, select **Business Metadata Management**, then select **Business Hierarchy**.

2. Open the Financial Accounting reporting line hierarchy.

3. Modify the hierarchy structure to add/edit/delete the nodes and add/edit/delete the leaves.

4. For adding a node, add a node code and description. Do not specify any node identifier, since the value of the node is the consolidation of leafs underneath it. Add leaf members as nodes under the node.

5. For adding a leaf, add a node with code, description and node identifier that contains the SQL expression to identify the new leaf member that has been added to the GL dimension table. Example, DIM_GL_ACCOUNT.V_GL_ACCOUNT_ID = '9101', assuming that 9101 is the new member that was included in the GL dimension table. Specify consolidation type attribute for the node. Consolidation type is used to determine the value of the fact for the parent nodes within the dimension. Consolidation type for the reporting line hierarchy can be:

   - Addition – When determining the value of the fact for the parent node, value of the fact corresponding to this member is added with that of other siblings.

   - Subtraction – When determining the value of the fact for the parent node, value of the fact corresponding to this member is subtracted with that of other siblings.

   - Ignore – When determining the value of the fact for the parent node, value of the fact corresponding to this member is ignored during rollup.

Node identifiers help in classifying the fact data against the relevant node codes. Seeded financial accounting reporting line hierarchy is based on GL account dimension members in the range 91000 till 99000. In case the actual GL codes in the GL dimension table are different, node identifiers need to be modified to reflect the changes.

Step 2 – Build Cube

Assuming that the dimension and fact table is loaded with relevant data, cube can be built.

Define batch to execute the CREATE CUBE component that will build the outline and load data in ESSBASE.

For more information on executing the batch, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

Modifying Management Accounting Reporting Line

Management Accounting Reporting line hierarchy can be modified to include new members and modify existing members. As a prerequisite, if the member to be added is a leaf, Financial Elements dimension table (DIM_FINANCIAL_ELEMENT) needs to have these leaf members.

Step 1 – Modify Business Hierarchy

1. From **Unified Metadata Manager**, select **Business Metadata Management**, then select **Business Hierarchy**.

2. Open the Management Accounting reporting line hierarchy.

3. Modify the hierarchy structure to add/edit/delete the nodes and add/edit/delete the leaves.

4. For adding a node, add a node code and description. Do not specify any node identifier, since the value of the node is the consolidation of leafs underneath it. Add leaf members as nodes under the node.

5. For adding a leaf, add a node with code, description and node identifier that contains the SQL expression to identify the new leaf member that has been added to the Financial Elements dimension table. Example,

   DIM_FINANCIAL_ELEMENT.V_FINANCIAL_ELEMENT_CODE = '9101', assuming that 9101 is the new member that was included in the Financial Elements dimension table. Specify consolidation type attribute for the node. Consolidation type is used to determine the value of the fact for the parent nodes within the dimension. Consolidation type for the reporting line hierarchy can be:

   - Addition – When determining the value of the fact for the parent node, value of the fact corresponding to this member is added with that of other siblings.

   - Subtraction – When determining the value of the fact for the parent node, value of the fact corresponding to this member is subtracted with that of other siblings.

- Ignore – When determining the value of the fact for the parent node, value of the fact corresponding to this member is ignored during rollup.

Node identifiers help in classifying the fact data against the relevant node codes. Seeded management accounting reporting line hierarchy is based on seeded Financial Elements dimension members that are in the range 9000 till 9050. In case the actual financial elements in the financial elements dimension table are different, node identifiers need to be modified to reflect the changes.

Step 2 – Build Cube

Assuming that the dimension and fact table is loaded with relevant data, cube can be built.

Define batch to execute the CREATE CUBE component that will build the outline and load data in ESSBASE.

For more information on executing the batch, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

Modifying Reporting Line Measure Hierarchy

Reporting Line measure hierarchy is used in Account Level Profitability cubes. Reporting line hierarchy is configured as a MEASURE hierarchy within the application. Measure hierarchy can be modified in **Unified Metadata Manager** >**Business Metadata Management** >**Business Hierarchy**. As a prerequisite, measure needs to be added/modified using **Unified Metadata Manager** >**Business Metadata Management** > **Measures UI**.

Step 1 – Modify Business Hierarchy

1. From **Unified Metadata Manager**, select **Business Metadata Management**, then select **Business Hierarchy**.

2. Open the Reporting Line hierarchy.

3. Modify the hierarchy structure to add/edit/delete the nodes and add/edit/delete the measures.

4. For adding a node, add a node code and description. Add measures under the node.

5. Specify consolidation type attribute for each of the measure. Consolidation type is used to determine the value of the fact for the parent nodes within the dimension.

Consolidation type for the reporting line hierarchy can be:

- Addition – When determining the value of the fact for the parent node, value of the fact corresponding to this member is added with that of other siblings.
- Subtraction – When determining the value of the fact for the parent node, value of the fact corresponding to this member is subtracted with that of other siblings.
- Ignore – When determining the value of the fact for the parent node, value of the fact corresponding to this member is ignored during rollup.

Step 2 – Build Cube

Assuming that the dimension and fact table is loaded with relevant data, cube can be built.

Define batch to execute the CREATE CUBE component that will build the outline and load data in ESSBASE.

For more information on executing the batch, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

D

How to Develop a New Cube

Introduction to Developing a New Cube

This section details the steps to be performed by the user for developing a new cube. Make sure that the existing cubes do not provide the required analytics / reporting coverage before deciding to define a new cube. In case user would like to see measures against a new dimension that is not part of the existing seeded metadata, then suggest including the new dimension as part of the existing cubes instead of creating a new cube. As a prerequisite, user should have defined datasets, measures, hierarchies and dimensions before defining a cube.

Procedures to Develop a New Cube

Step 1 – Add Cube

From **Unified Metadata Manager**, select **Business Metadata Management**, then select **Cube**. Specify the MDB details that will be created in ESSBASE.

Step 2 – Include Dimensions

Include dimensions that are part of the cube definition. Users mandatorily need to include TIME and MEASURE dimensions.

Step 3 – Specify Variations

Specify variations between each of the measures to the respective dimensions. All the measures that are part of the cube need not vary against all of the dimensions. Depending on business needs, variations can be specified to control the rollup of measures against a set of dimensions.

Step 4 – Specify Dataset

Specify dataset corresponding to the selected dimensions and measures. Data set will supply required data to the cube.

Step 5 – Specify Node Level Formula

If node level formula's are required to be specified for the nodes within the hierarchy, then they can be specified in this UI.

Step 6 – Save and Build

Save the cube. Define and execute batch in ICC to build the cubes.