Oracle® Financial Services Retail Customer Analytics

User Guide

Release 6

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ORACLE

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Preface

Intended Audience

Welcome to Release 6 of the *Oracle Financial Services Retail Customer Analytics User Guide.*

Forward

This user guide documents OFSAA Retail Customer Analytics for all versions of release 6. Some functional improvements have been introduced in various service packs and point releases within release 6.

This section documents the levels at which various functional enhancements to the Institutional Performance Analytics application were first introduced.

Retail Customer Analytics 6.0.2.0.0

- Addition of new stage product processor for commitment contracts. The flow from staging moves to the common account summary and crm account summary.
- Bridge for loading financial data elements from Profitability (PFT) into Customer insight if the user system has PFT application.
- Standardization of Metadata
- System is enabled for rate triangulation and rate validation for currency conversion.

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

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Structure

1 Introduction
2 Overview of 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 cubes. Cubes 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 Account Dimension Population
6 Exchange Rate History Population
7 Account Summary Population

Account Summary tables are loaded from the staging product processor tables using the Table to Table (T2T) component of Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) framework.

8 Customer Summary Population

This chapter explains the process flow for populating Fact Common Customer Summary table.

9 Fact Data Population
10 Statistical Model Creation and Execution
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Related Information Sources

Oracle Financial Services Channel Analytics (OFSCA) User Guide

Oracle Financial Services Institutional Performance Analytics (OFSIPA) User Guide

Oracle Financial Services Retail Performance Analytics (OFSRPA) User Guide

1

Introduction

Overview of Oracle Financial Services Retail Customer Analytics (OFSRCA)

Oracle Financial Services Retail Customer Analytics (OFSRCA) is a complete end-to-end web-based Business Intelligence solution for Customer 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.

It enables you to actively plan, manage, and track marketing investments with pre-built reports, dashboards, and underlying data structures.

The OFSRCA solution is built using:

- OFSAA Infrastructure 7.3.3.3 for ETL and Data Integration
- OBIEE 11.1.1.7.1 for Dashboard and Reports activities
- Essbase 11.1.2.2 for multi-dimensional cube storage

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

2

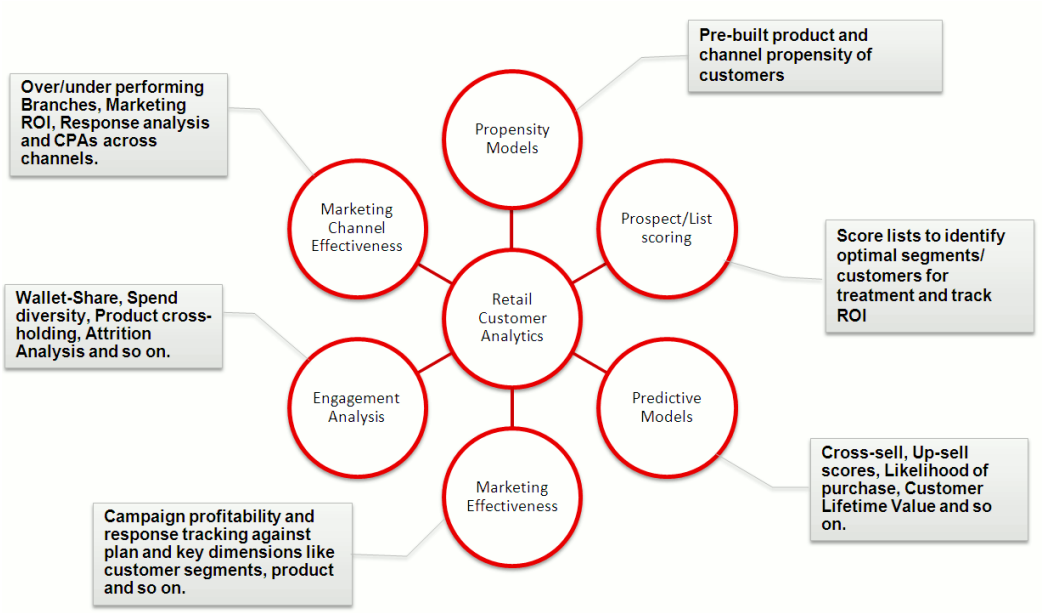
Overview of Process Flow

Introduction

Oracle Financial Services Retail Customer Analytics (OFSRCA) 6.0 utilizes OBIEE technology to present:

- Performance tracking of current campaigns across key measures like Sales, Asset and Liability balances, Fee-based product subscriptions and sustained performance over time, Credit score distribution of new accounts sourced, and early alerts on any negative skews.
- Predictive analysis to determine cross sell/up sell scores, product, and channel propensities leveraging transactional/behavioral data.
- Return On Investment (ROI) of campaigns over time (transaction performance needs to be measured for at least over 12 months for accurate Lifetime Value (LTV) predictions).
- Prospect/list scoring leveraging any internal/bureau information, cluster analysis, and projected Net Present Value (NPV).
- Customer Segmentation.
- Wallet Share (spend diversity, activation, and so on) and Attrition analysis.

Following explains the product objectives of OFSRCA 6.0:



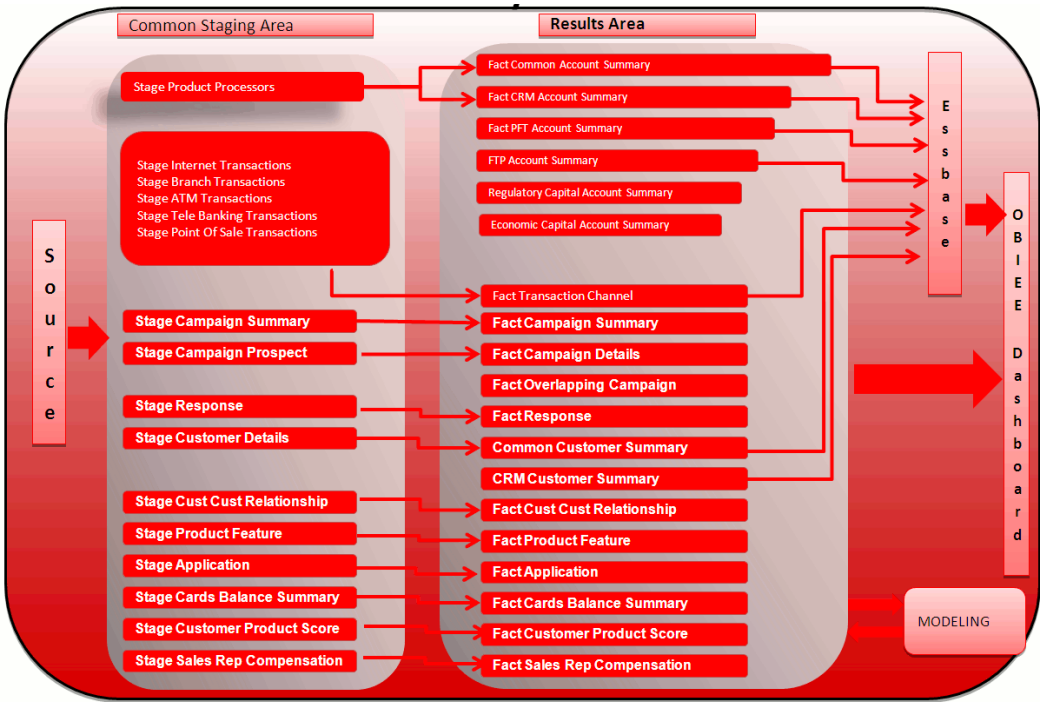
For details on OFSRCA reports and how OBIEE is being utilized, see Overview of OFSRCA Reports, page 14-1.

OFSRCA is designed for OBIEE reading data from relational database. The relational database comprises of various dimensions and facts in the BI data model. OFSRCA is also designed for OBIEE reading data from Essbase cubes, which stores aggregated data. The Essbase cubes are built from the fact data of the BI data model.

OFSRCA 6.0 can be independently licensed and installed to work on top of the OFSAA 7.3 Infrastructure.

Data Flow

Retail Customer Analytics data model contains the staging tables from which data is loaded in to the dimensions and fact tables. Staging tables include the master staging tables, detail staging tables, staging product processor tables, etc. The user has to populate data into these staging tables.



Dimension Data Flow

Dimension data in OFSRCA application is loaded from staging master tables using the Slowly Changing Dimensions (SCD) process. Data from source systems can be loaded into staging through flat file or source system interfaces. SCD process tracks the changes in the dimensional attributes and loads data into dimension tables. Examples of dimension tables that follow the SCD process are Product, Customer Type, Customer, Campaign, and so on.

Some dimensions are static or maintained internally within the application and are not expected as a download from source system (for example, Reporting Line). These dimensions are maintained through the AMHM (Attribute Member Hierarchy Maintenance) component of OFSAAI or through other framework components like DEFI.

Following are the list of dimensions used in OFSRCA:

Dimension Entity Name	Staging Entity Name(s)	Loading/Maintenance method
Account Status Dimension	Stage Account Status Master	SCD
Application Reject Reasons Dimension	Stage Application Reject Reason Master	SCD

Dimension Entity Name	Staging Entity Name(s)	Loading/Maintenance method
Application Status Dimension	Stage Application Status Master	SCD
Application Type Dimension	Stage Application Type Master	SCD
Attrition Dimension	Stage Attrition Reason Master	SCD
Authorization Decision Reasons Dimension	Stage Auth Decision Reason Master	SCD
Balance Category Dimension	Stage Credit Card Balance Category Master	SCD
Campaign Channel Dimension	Stage Campaign Channel Master	SCD
Campaign Dimension	Stage Campaign Master	SCD
Campaign Source Type Dimension	Stage Campaign Source Type Master	SCD
Campaign Status Dimension	Stage Campaign Status Master	SCD
Campaign Type Dimension	Stage Campaign Type Master	SCD
Card Type Dimension	Stage Card Type Master	SCD
Contact Dimension	Stage Contact Master	SCD
Country Dimension	Stage Country Master	SCD
Credit Center Dimension	Stage Credit Center Master	SCD
Credit Officer Dimension	Stage Credit Officer Master	SCD
Customer Dimension	Stage Customer Master	SCD
Customer Type Dimension	Stage Customer Type Master	SCD
Decision Status Dimension	Stage Decision Status Master	SCD
Deviation Reasons Dimension	Stage Deviation Reason Master	SCD

Dimension Entity Name	Staging Entity Name(s)	Loading/Maintenance method
Education Dimension	Stage Customer Education Master	SCD
Geography Dimension	Stage Geography Master	SCD
Home Ownership Dimension	Stage Home Ownership Master	SCD
Household Dimension	Stage Household Master	SCD
Industry Dimension	Stage Industry Master	SCD
Loan Product Category Dimension	Stage Product Category Master	SCD
LoB Dimension	Stage LOB Master	SCD
Management Dimension	Stage Account Mgmt Master	SCD
Marketing Program Dimension	Stage Marketing Program Master	SCD
Merchant Category Dimension	Stage Merchant Category Master	SCD
Merchant Dimension	Stage Merchant Master	SCD
Migration Reasons Dimension	Stage Migration Reason Master	SCD
Offer Dimension	Stage Offer Master	SCD
Organization Structure Dimension	Stage Organization Structure Dimension	SCD
Partner Dimension	Stage Partner Master	SCD
Pool Identification Dimension	Stage Pool Identification Master	SCD
Prepayment Reason Dimension	Stage Prepayment Reason Master	SCD
Product Dimension	Stage Product Master	SCD
Product Feature Dimension	Stage Product Feature Master	SCD

Dimension Entity Name	Staging Entity Name(s)	Loading/Maintenance method
Product Type Dimension	Stage Product Type Master	SCD
Prospect Dimension	Stage Prospect Master	SCD
Purchase Category Dimension	Stage Purchase Category Master	SCD
Rejection Reason Dimension	Stage Rejection Reason Master	SCD
Response Type Dimension	Stage Response Type Master	SCD
Retention Offer Type Dimension	Stage Retention Offer Master	SCD
Sales Representative Dimension	Stage Sales Rep Master	SCD
Terminal Dimension	Stage Terminal Master	SCD
Terminal Type Dimension	Stage Terminal Type Master	SCD
Transaction Channel Dimension	Stage TXN Channel Master	SCD
Transaction Dimension	Stage Transaction Master	SCD
Transaction Status Dimension	Stage Transactions Status Master	SCD
Treatment Dimension	Stage Treatment Master	SCD
Txn Failure Reason Dimension	Stage Transactions Failure Reason Master	SCD
Vendor Dimension	Stage Vendor Master	SCD
Vintage Dimension	Stage Vintage Master	SCD
Wave Dimension	Stage Campaign Wave Master	SCD
Band Dimension	Band Dimension Members,	AMHM/SCD
	Band Member Translation,	

Dimension Entity Name	Staging Entity Name(s)	Loading/Maintenance method
	Band Member Attributes	
Region Dimension		Direct Load
Acquisition Channel Dimension		Direct Load
Instrument Category Dimension		Seeded
Currency Dimension		Seeded
Gender Dimension		Seeded
Marital Status Dimension		Seeded
Calendar Dimension		DT
Account Dimension	Staging Product Processor Tables like	DT
	Stage Annuity Contracts,	
	Stage Bill Contracts,	
	Stage Borrowings,	
	Stage Cards,	
	Stage CASA Accounts,	
	Stage Guarantees,	
	Stage Investments,	
	Stage LC Contracts,	
	Stage Leases Contracts,	
	Stage Loan Contracts,	

Dimension Entity Name	Staging Entity Name(s)	Loading/Maintenance method
	Stage Money Market Contracts,	
	Stage Over Draft Accounts,	
	Stage Term Deposit Contracts,	
	Stage Trusts,	
	Stage Swaps Contracts,	
	Stage Repo Contracts,	
	Stage Option Contracts,	
	Stage Mutual Funds,	
	Stage Futures And Forwards	

Some of the stage data can also come from master data management interfaces. In such cases, data from interface is loaded into staging interface tables and SCD is run on the interface tables. Mapping of dimensional attributes to staging can be obtained by querying SYS_STG_JOIN_MASTER and SYS_TBL_MASTER tables in the atomic schema.

Fact Data Flow

Most of the Fact tables are mapped to staging counterparts through Table to Table (T2T) mappings. Data from source systems can be loaded into staging through flat file or source system interfaces. T2T process then loads data to fact tables. Examples include Fact Common Account Summary, Fact CRM Account Summary, and so on.

Some of the Fact tables are loaded with processed fact information from other fact tables. Examples include Fact CRM Customer Summary, and so on.

Fact Entity Name	Source	Source Entities	Method of populating measures
Fact Common Account Summary	Stage	Stage Annuity Contracts	T2T

Fact Entity Name	Source	Source Entities	Method of populating measures
		Stage Bill Contracts	
		Stage Borrowings	
		Stage Cards	
		Stage CASA Accounts	
		Stage Guarantees	
		Stage Investments	
		Stage LC Contracts	
		Stage Leases Contracts	
		Stage Loan Contracts	
		Stage Money Market Contracts	
		Stage Over Draft Accounts	
		Stage Term Deposit Contracts	
		Stage Trusts	
Fact CRM Account Summary	Stage	Stage Commitment Contracts	T2T
		Stage Mutual Funds	
		Stage Annuity Contracts	

Fact Entity Name	Source	Source Entities	Method of populating measures
		Stage Bill Contracts,	
		Stage Borrowings	
		Stage Cards	
		Stage CASA Accounts	
		Stage Guarantees	
		Stage Investments	
		Stage LC Contracts	
		Stage Leases Contracts	
		Stage Loan Contracts	
		Stage Money Market Contracts	
		Stage Over Draft Accounts	

Fact Entity Name	Source	Source Entities	Method of populating measures
Fact PFT Account Summary	Instrument	Annuity Contracts Borrowings Checking and Savings Account Credit Cards Credit Lines Guarantees Investments and Leases Loan Contracts Mortgages Term Deposits Trusts	T2T
Fact FTP Account Summary	Instrument	Annuity Contracts Borrowings Checking and Savings Account Credit Cards Credit Lines Guarantees Investments Leases Loan Contracts Money Market Contracts Mortgages Term Deposits Trusts	T2T

Fact Entity Name	Source	Source Entities	Method of populating measures
Fact Common Customer Summary	Stage	Stage Commitment Contracts	T2T
		Stage Mutual Funds	
		Stage Customer Details	
		Stage Party Rating Details	
		Stage Party Financials	
Fact CRM Customer Summary	Stage and Fact	Stage Customer Master	T2T/DT
		Stage Customer Details	
		Fact Common Account Summary	
		Fact Transaction Channel	
Fact Application	Stage	Stage Applications	T2T
Fact Account Feature Map	Stage	Stage Account Feature Map	T2T
Fact Customer to Customer Relationship	Stage	Stage Customer to Customer Relationships	T2T
Fact Campaign Details	Stage	Stage Campaign Prospect	T2T
Fact Campaign Execution Summary	Stage	Fact Campaign Details	T2T

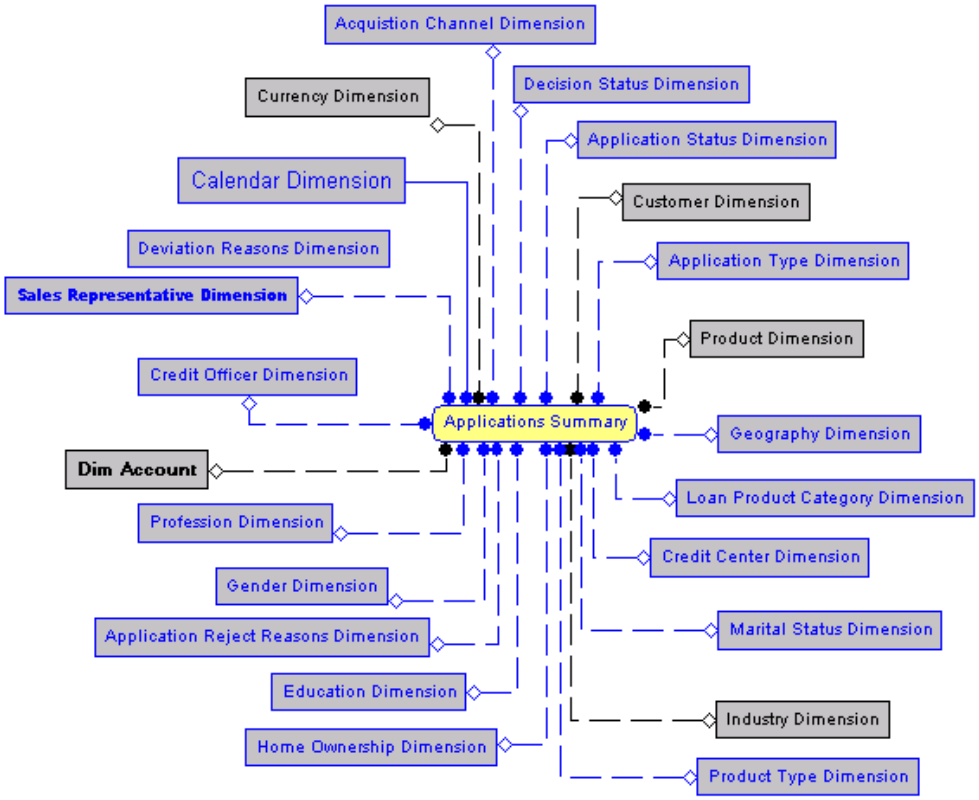
Fact Entity Name	Source	Source Entities	Method of populating measures
Campaign Summary Facts	Stage	Stage Campaign Summary	T2T
Fact Overlapping Campaign	Stage	Fact Campaign Detailst	T2T
Response Facts	Stage	Stage Responses	T2T
Fact Cross Sell Score	Fact	Fact Common Account Summary	T2T
Exchange Rate History	Stage	Stage Exchange Rates	T2T

BI Data Model

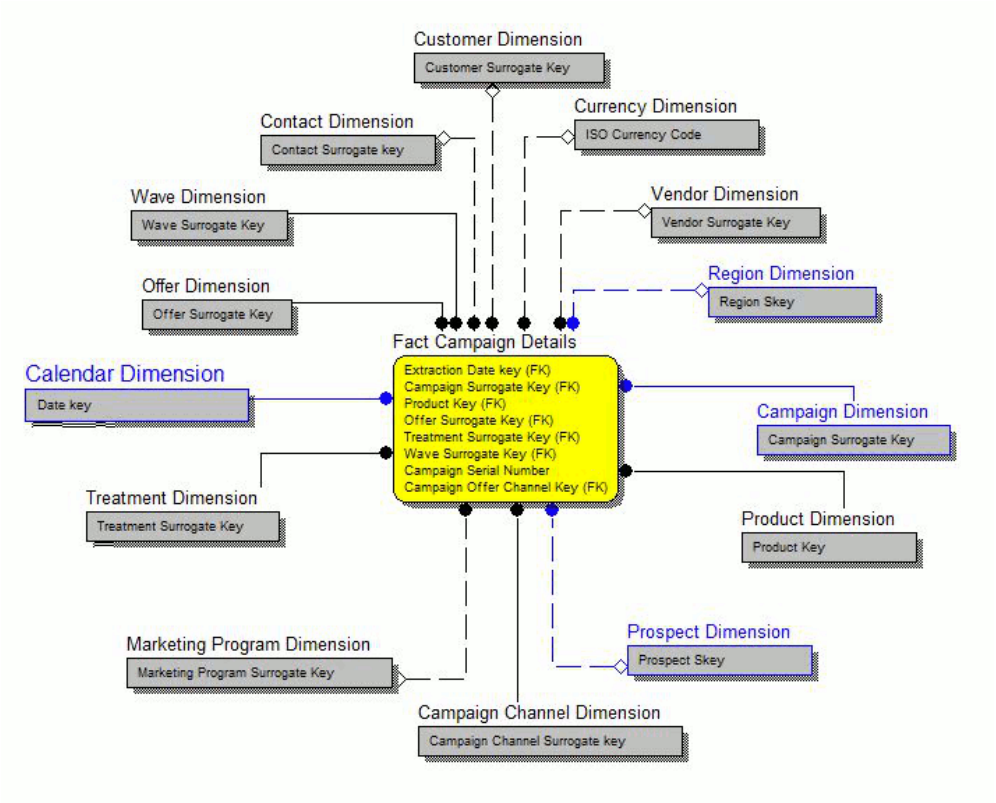
The BI data model is a star schema for the fact tables, FCT_COMMON_CUSTOMER_SUMMARY, FCT_CRM_CUSTOMER_SUMMARY, and FCT_<Application>_ACCOUNT_SUMMARY.

Following are the subject areas in ERwin data model:

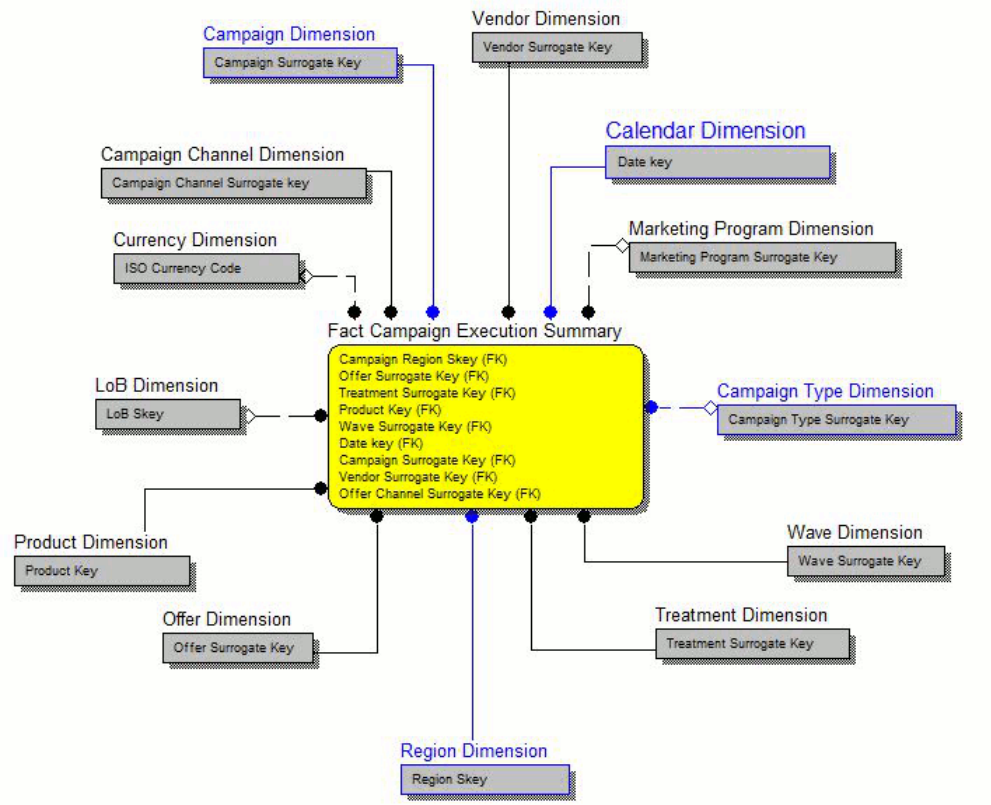
- Application



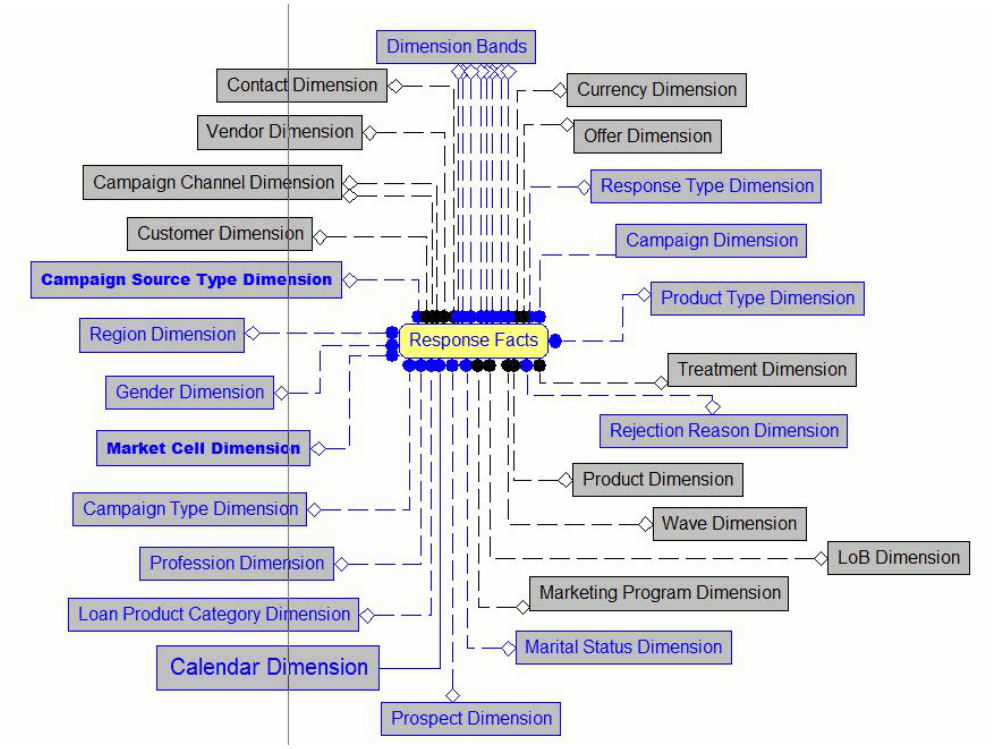
- Campaign Details



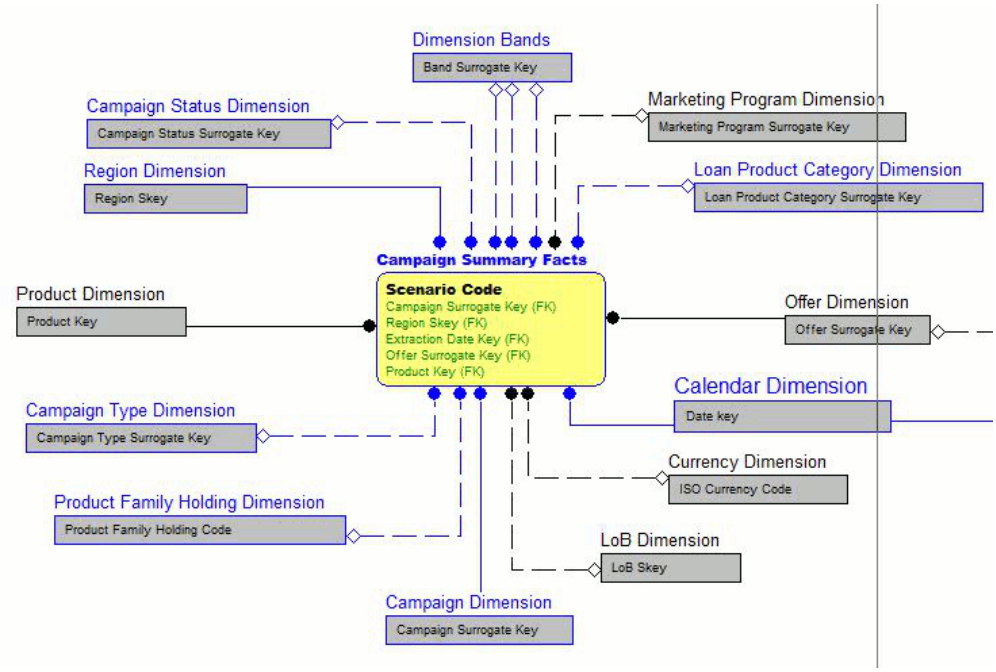
- Campaign Execution Summary



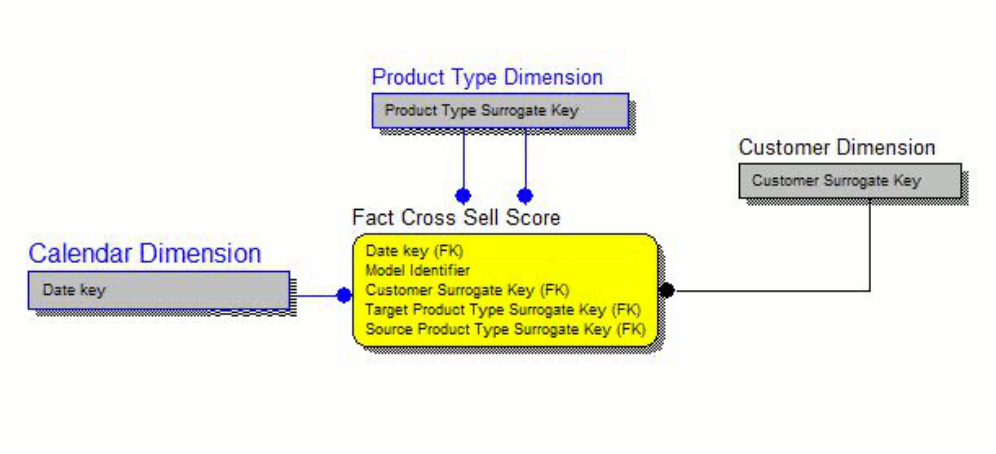
- Campaign Response



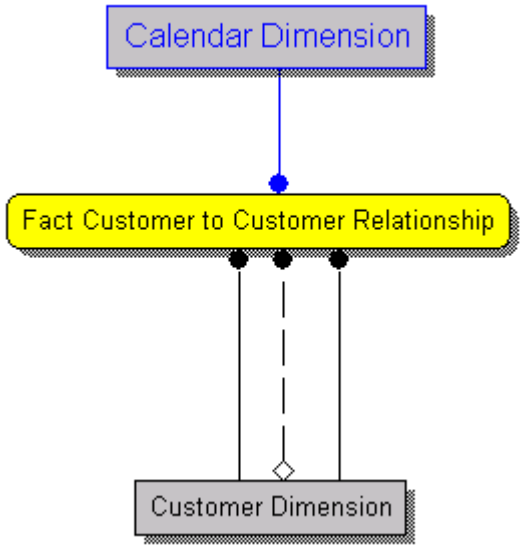
- Campaign Summary



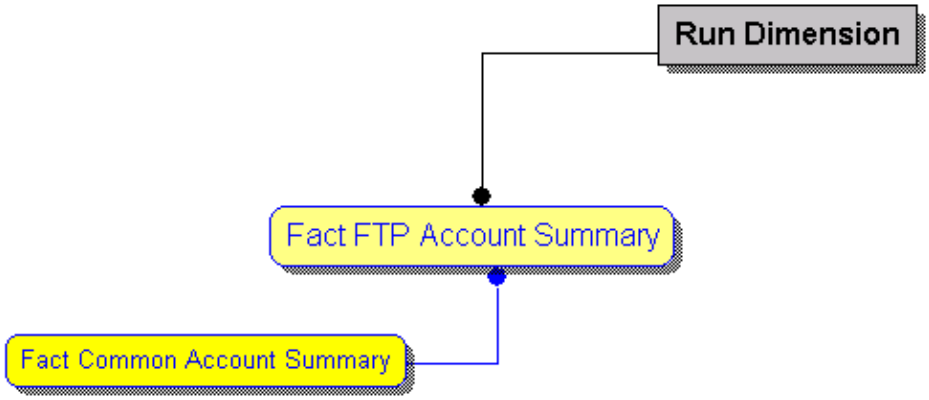
- Cross Sell Score



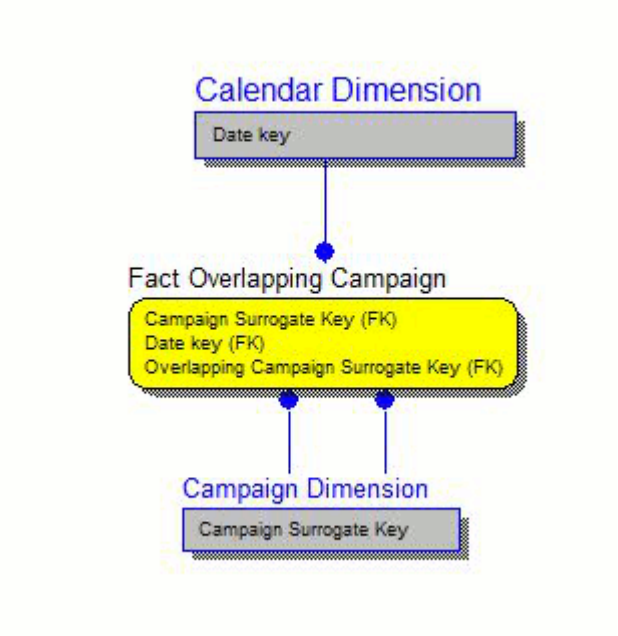
- Customer to Customer Relationship



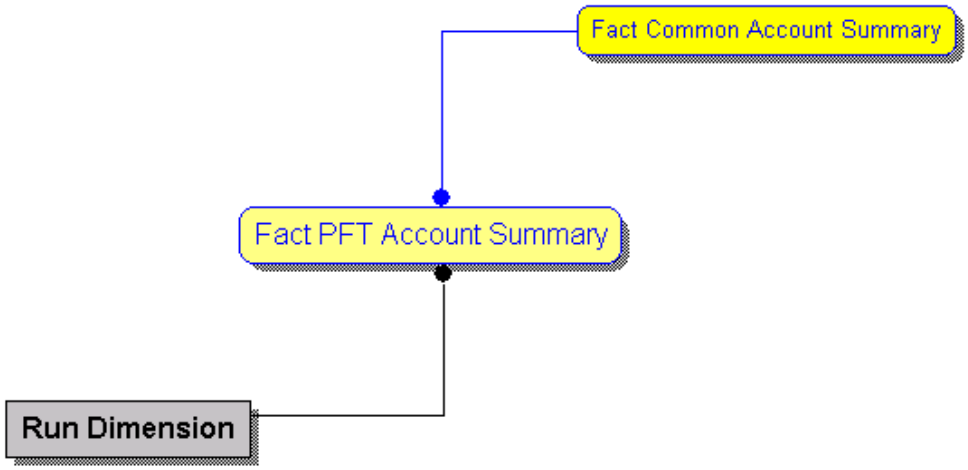
- FTP Account Summary



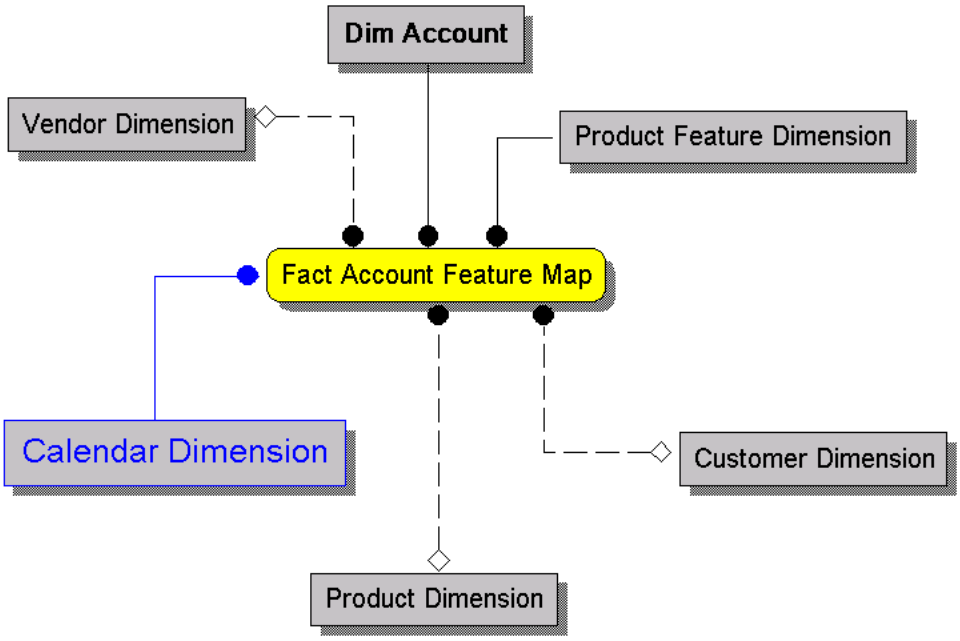
- Overlapping Campaign



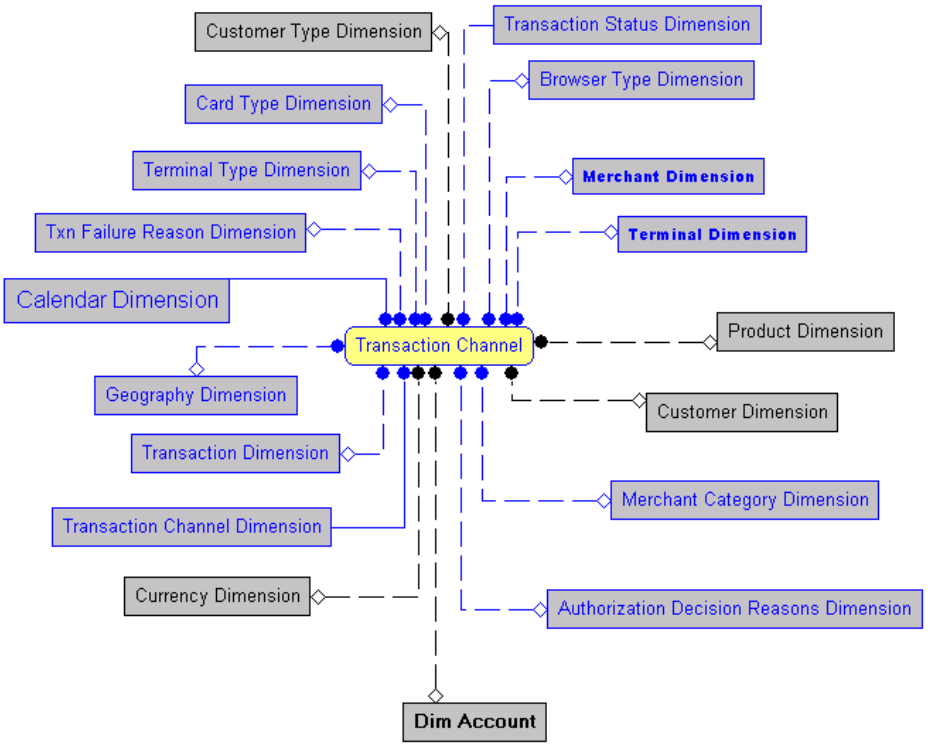
- PFT Account Summary



- Product Feature



- Transaction Channel



Data Flow: OFSRCA BI Data Model to Essbase Cubes

Reports of OFSRCA application can be configured to work on Relational database or 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. OFSAA Infrastructure is used for defining metadata about the cube and for building the Essbase cubes. Essbase cubes can be built out of reporting fact entities to improve performance.

OFSRCA application has the following seeded cube metadata:

Cube Code	Cube Name	Fact Entities in dataset
ADCRM002	Retail Analysis	Fact Common Account Summary
		Fact CRM Account Summary
		Fact Common Customer Summary
		Fact CRM Customer Summary
		Fact FTP Account Summary
		Fact PFT Account Summary
ADCRM004	Channel Analysis	Fact Transaction Channel
ADCRM011	Customer Summary	Fact Common Customer Summary
		Fact CRM Customer Summary

3

Dimension Loading Process

Dimension Tables Population

OFSRCA solution use the SCD component to handle dimensional data changes.

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-best practices-datawarehouse-whi-129686.pdf

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

  http://docs.oracle.com/cd/E14072_01/owb.112/e10935.pdf

Additional online sources include:

- http://en.wikipedia.org/wiki/Slowly_changing_dimension
- http://www.oracle.com/webfolder/technetwork/tutorials/obe/db/10g/r2/owb/owb10 gr2_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=2 04800027&pgno=1
- http://www.informationweek.com/news/software/bi/showArticle.jhtml?articleID=5 9301280

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.

Prerequisites

1. The SCD executable should be present under <installation home>ficdb/bin. The file name is **scd.**
2. The user executing the SCD component should have execute rights on the file mentioned as prerequisite in point 2.
3. The setup tables accessed by SCD component are SYS_TBL_MASTER and SYS_STG_JOIN_MASTER.

   SYS_TBL_MASTER stores the information like which is the source stage table and the target dimension tables. The source sometimes can be the database views which could be simple or a complex view.

   SYS_STG_JOIN_MASTER stores the information like which source column is mapped to which column of a target dimension table. It makes use of data base sequence to populate into surrogate key columns of dimension tables.

Tables Used by the SCD Component

The database tables used by the SCD component are:

- 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

Column Name	Data Type	Column Description
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.
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 Line of Business dimension.

MAP_REF_NUM	6
TBL_NM	DIM_LOB
STG_TBL_NM	STG_LOB_MASTER
SRC_PRTY	
SRC_PROC_SEQ	23
SRC_TYP	MASTER

DT_OFFSET	0
SRC_KEY	

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.

Column Name	Data Type	Column Description
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 Line of Business dimension.

MAP_REF_NUM	6

COL_NM	V_LOB_CODE
COL_TYP	PK
STG_COL_NM	V_LOB_CODE
SCD_TYP_ID	
PRTY_LOOKUP_REQD_FLG	N
COL_DATATYPE	VARCHAR
COL_FORMAT	61

> **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_Bands_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_BANDS_V.*

- DIM_<dimensionname> – Output table to which SCD writes the dimension data.

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

Example

```
create sequence SEQ_DIM_<DIM>  minvalue 1
maxvalue 999999999999999999999999999
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, 61 (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.
  - 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.

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

  Note: Seeded batch <Infodom>_FTP_PFT_Reqd_Dim is provided FTP or PFT application is installed which can be executed for populating FTP/PFT required dimensions.

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 cubes. Cubes 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

Time dimension population transformation is used to populate the DIM_DATES table with values between two dates specified by the user as a batch parameter.

The database components, used by the transformations are:

1. Database function - FN_DIM_DATES
2. Database procedure - PROC_DIM_DATES_POPULATION, which is called by the function FN_DIM_DATES.

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 manual of *Oracle Financial Services Retail Customer 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 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 cubes.

For more details on viewing the structure of earlier tables, refer to*Oracle Financial Services Analytical Applications Data Model Data Dictionary* or the *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 OFSRCA 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. You can execute the batch in two ways:

   1. Execute the batch from Batch Execution by choosing the batch created following the steps mentioned in the preceding sections for a date.

      Note: A seeded batch <INFODOM>_aCRM_CommonTasks - Task2 is provided so that the user can just modify the

parameters and execute the batch.

2. 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

Account Dimension Population

Populating Accounts Dimension

Account Number is an alphanumeric unique identifier within each staging instrument tables. Hence, there is a need to generate a numeric surrogate key for each of the account number. This information is stored in DIM_ACCOUNT table.

Function **fn_popDimAccount** is a function to populate numeric surrogate key for each account number. The function performs the following:

- In case, surrogate key generation is required, then it uses a sequence to populate DIM_ACCOUNT table.
- In case, surrogate key generation is not required, then it expects that the account number to be numeric and populates DIM_ACCOUNT with that information.

FSI_DIM_ACCOUNT_SETUP_DETAILS

Account dimension population makes use of setup table FSI_DIM_ACCOUNT_SETUP_DETAILS.

It would have seeded entries from the application installation. This stores the account number column of the staging product processor tables

Column Name	Data Type	Column Description
TABLE_NAME	VARCHAR2(30)	This is the name of the Staging Product Processor Table.

Column Name	Data Type	Column Description
ACCOUNT_NUMBER_ COLUMN_NAME	VARCHAR2(30)	This is the Account Number Column Name of the staging Product Processor table .
LEG_TYPE_FLAG	CHAR(1)	In case, if the Pay Leg & Receive Leg instruments have both same data type then value will be 2.
SQL_TEXT	VARCHAR2(4000)	

Here is a Sample Data:

TABLE_NAME	STG_CASA	STG_TD_CONTRACTS	STG_FUTURES
ACCOUNT_NUMBER_COLUMN_NAME	V_ACCOUNT_NUMBER	V_CONTRACT_CODE	V_CONTRACT_CODE
LEG_TYPE_FLAG			2
SQL_TEXT			

Executing the Account Dimension Population

To execute the account dimension population, create a batch by performing 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 have created in the earlier step by clicking on the check box 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. Generally, it is the infodom name.
   - IP address - Select the IP address from the list
   - Rule Name - **fn_popDimAccount**
   - Parameter List:
     - Surrogate Key Required Flag – Y or N

       Batch run ID and As of Date are passed internally by the ICC to the Data Transformation task.

9. Execute the batch.

Execute the batch from Batch Execution by choosing the batch created following the steps mentioned in the preceding sections for a required date.

> **Note:** A seeded batch <INFODOM>_aCRM_CommonTasks – Task3 is provided so that the user can just modify the parameters and execute the batch.

Checking the Execution Status

The status of execution can be monitored from the *Batch Monitor* screen of *OFSAAI Operations* module.

> **Note:** For a more comprehensive coverage of configuration & execution of a batch, refer to *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 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 above.

6

Exchange Rate History Population

Introduction

Exchange Rate History entity stores the exchange rates between the currencies for an effective date from one or multiple sources.

Exchange Rate History population should be executed before any fact table is populated to ensure exchange rates between currencies are available prior. Exchange Rate History entity is loaded by means of Table to Table Transformation process.

Following is the seeded Table-to-Table definition that loads data into Exchange Rate History:

T2T Definition Name	Source Table(s)	Destination Table
T2T_EXCHANGE_RATE_HIST	STG_EXCHANGE_RATE_HIST	FSI_EXCHANGE_RATE_HIST

Exchange Rate History Population

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the application Batch Operations screen).

A seeded batch, **<INFODOM>_aCRM_CommonTasks - Task4** has to be executed for the required date.

Alternatively, following steps will help to create a new batch task for Loading Historical Exchange Rates:

1. From the **Home** menu, select **Operations**, then select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the Batch Name and

Description.

3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the Batch, you created in the earlier step.
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 appropriate datastore from the list.
   - **Datastore Name** - Select 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 <**T2T Source Name**> from the list.
   - **File Name** - Select the table to table transformation **T2T_EXCHANGE_RATE_HIST**.

     Data file name will be blank for any Table to Table Load mode.
8. Repeat steps 4 to 8 for adding the remaining T2Ts within the same batch definition.
9. Execute the batch created in the preceding steps.

   For more information, see *Oracle Financial Services Analytical Applications Infrastructure User Guide*.
10. Check T2T component logs and batch messages to check the status of load.

    T2T component can fail because of following cases:
    - Unique constraint error – Target table may already contain the primary keys that are part of the staging tables.
    - NOT NULL constraint error – do not have values for NOT NULL columns in the target table.

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 execution log can be accessed on the application server in the **$FIC_DB_HOME/log/t2t** directory: The file name will have the batch execution id.

<INFODOM>_FN_RATEVALIDATION is invoked for exchange rate history. Once data is loaded into fsi_exchange_rate_hist table, run the batch <INFODOM>_FN_RATEVALIDATION.

7

Account Summary Population

Account Summary tables are loaded from the staging product processor 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
- Executing the Account Summary Population T2T
- Checking the Execution Status
- Account Summary T2Ts

Overview of Account Summary Tables

Customer account level data from the Oracle Financial Services Analytical Applications (OFSAA) staging product processor tables must be consolidated into a standardized relational Business Intelligence (BI) data model. This consolidation is done to have all the staging product processor table data in a single Fact table.

The Account Summary table data can be used for building cubes which allow rollup of data for a dimension or a combination of dimensions.

This relational BI model consists of three vertically partitioned Account Summary tables that are organized by application subject area.

- FCT_COMMON_ACCOUNT_SUMMARY – This table is shared by all OFSAA BI applications which contain dimensional values, attributes, and financial measures which are generally applicable to the individual account records. This data is sourced directly from the staging area.
- FCT_CRM_ACCOUNT_SUMMARY – This table has the measures used by all the

Customer Insight applications.

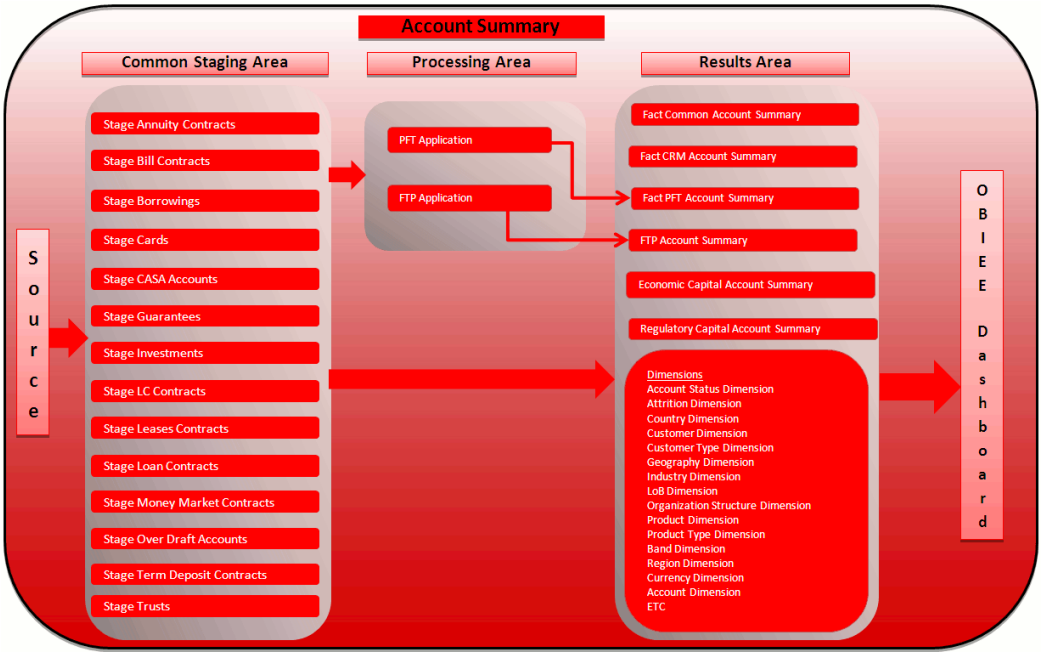
Yet, there are few other Account Summary tables which have been designed to store Enterprise Risk Management (ERM) data:

- 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.
- FCT_REG_CAP_ACCOUNT_SUMMARY – This table has Regulatory Capital specific measures.
- FCT_ECO_CAPITAL_ACCOUNT_SUMMARY – This table has Economic Capital specific measures.

The above mentioned Account Summary tables are part of 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.

Data Flow

The Below diagram depicts the flow of data into account summary tables:



Overview of Account Summary Population

Table to Table seeded definitions are provided for loading data into Common Account Summary and CRM Account summary tables.

Following are the lists for the same:

- Common Account Summary

SL No	Source Table	T2T Definition Name	Destination Table
1	STG_ANNUITY_CONTRACTS	T2T_STG_ANNUITY_CONTRACTS_CAS	FCT_COMMON_ACCOUNT_SUMMARY
2	STG_BILLS_CONTRACTS	T2T_STG_BILLS_CAS	FCT_COMMON_ACCOUNT_SUMMARY
3	STG_BORROWINGS	T2T_STG_BORROWINGS_CAS	FCT_COMMON_ACCOUNT_SUMMARY
4	STG_CARDS	T2T_STG_CARDS_CAS	FCT_COMMON_ACCOUNT_SUMMARY

SL No	Source Table	T2T Definition Name	Destination Table
5	STG_CASA	T2T_STG_CASA_CAS	FCT_COMMON_ACCOUNT_SUMMARY
6	STG_GUARANTEES	T2T_STG_GUARANTEES_CAS	FCT_COMMON_ACCOUNT_SUMMARY
7	STG_INVESTMENTS	T2T_STG_INVESTMENTS_CAS	FCT_COMMON_ACCOUNT_SUMMARY
8	STG_LC_CONTRACTS	T2T_STG_LC_CAS	FCT_COMMON_ACCOUNT_SUMMARY
9	STG_LEASES_CONTRACTS	T2T_STG_LEASES_CONTRACTS_CAS	FCT_COMMON_ACCOUNT_SUMMARY
10	STG_LOAN_CONTRACTS	T2T_STG_LOANS_CAS	FCT_COMMON_ACCOUNT_SUMMARY
11	STG_MM_CONTRACTS	T2T_STG_MM_CAS	FCT_COMMON_ACCOUNT_SUMMARY
12	STG_OD_ACCOUNTS	T2T_STG_OD_CAS	FCT_COMMON_ACCOUNT_SUMMARY
13	STG_TD_CONTRACTS	T2T_STG_TD_CONTRACTS_CAS	FCT_COMMON_ACCOUNT_SUMMARY
14	STG_TRUSTS	T2T_STG_TRUSTS_CAS	FCT_COMMON_ACCOUNT_SUMMARY
15	STG_COMMITMENT_CONTRACTS	T2T_STG_COMMITMENT_CONTRACTS_CAS	FCT_COMMON_ACCOUNT_SUMMARY
16	STG_MUTUAL_FUNDS	T2T_STG_MUTUAL_FUNDS_CAS	FCT_COMMON_ACCOUNT_SUMMARY

- CRM Account Summary

Sl No.	Source Table	T2T Definition Name	Destination Table
1	STG_ANNUITY_CONTRACTS	T2T_STG_CRMAS_ANNUITY_CONTRACTS	FCT_CRM_ACCOUNT_SUMMARY
2	STG_BILLS_CONTRACTS	T2T_STG_CRMAS_BILLS_CONTRACTS	FCT_CRM_ACCOUNT_SUMMARY
3	STG_BORROWINGS	T2T_STG_CRMAS_BORROWINGS	FCT_CRM_ACCOUNT_SUMMARY
4	STG_CARDS	T2T_STG_CRMAS_CARDS	FCT_CRM_ACCOUNT_SUMMARY
5	STG_CASA	T2T_STG_CRMAS_CASA	FCT_CRM_ACCOUNT_SUMMARY
6	STG_GUARANTEES	T2T_STG_CRMAS_GUARANTEES	FCT_CRM_ACCOUNT_SUMMARY
7	STG_INVESTMENTS	T2T_STG_CRMAS_INVESTMENTS	FCT_CRM_ACCOUNT_SUMMARY
8	STG_LC_CONTRACTS	T2T_STG_CRMAS_LC_CONTRACTS	FCT_CRM_ACCOUNT_SUMMARY
9	STG_LEASES_CONTRACTS	T2T_STG_CRMAS_LEASES_CONTRACTS	FCT_CRM_ACCOUNT_SUMMARY
10	STG_LOAN_CONTRACTS	T2T_STG_CRMAS_LOAN_CONTRACTS	FCT_CRM_ACCOUNT_SUMMARY
11	STG_MM_CONTRACTS	T2T_STG_CRMAS_MM_CONTRACTS	FCT_CRM_ACCOUNT_SUMMARY
12	STG_OD_ACCOUNTS	T2T_STG_CRMAS_OD_ACCOUNTS	FCT_CRM_ACCOUNT_SUMMARY
13	STG_TD_CONTRACTS	T2T_STG_CRMAS_TD_CONTRACTS	FCT_CRM_ACCOUNT_SUMMARY
14	STG_TRUSTS	T2T_STG_CRMAS_TRUSTS	FCT_CRM_ACCOUNT_SUMMARY

Sl No.	Source Table	T2T Definition Name	Destination Table
15	STG_COMMITMENT_CONTRACTS	T2T_STG_CRMAS_COMMITMENTS	FCT_CRM_ACCOUNT_SUMMARY
16	STG_MUTUAL_FUNDS	T2T_STG_CRMAS_MUTUAL_FUNDS	FCT_CRM_ACCOUNT_SUMMARY

- FTP Account Summary

Sl No	Source Table	T2T Definition Name	Destination Table
1	FSI_D_ANNUITY_CONTRACTS	T2T_FCT_FTP_ACCOUNT_ANNUITY	FCT_FTP_ACCOUNT_SUMMARY
2	FSI_D_BORROWINGS	T2T_FCT_FTP_ACCOUNT_BORROWINGS	FCT_FTP_ACCOUNT_SUMMARY
3	FSI_D_CASA	T2T_FCT_FTP_ACCOUNT_CASA	FCT_FTP_ACCOUNT_SUMMARY
4	FSI_D_CREDIT_LINES	T2T_FCT_FTP_ACCOUNT_CREDIT_LINES	FCT_FTP_ACCOUNT_SUMMARY
5	FSI_D_CREDIT_CARDS	T2T_FCT_FTP_ACCOUNT_CREDITCARDS	FCT_FTP_ACCOUNT_SUMMARY
6	FSI_D_GUARANTEES	T2T_FCT_FTP_ACCOUNT_GUARANTEES	FCT_FTP_ACCOUNT_SUMMARY
7	FSI_D_INVESTMENTS	T2T_FCT_FTP_ACCOUNT_INVESTMENTS	FCT_FTP_ACCOUNT_SUMMARY
8	FSI_D_LEASES	T2T_FCT_FTP_ACCOUNT_LEASES	FCT_FTP_ACCOUNT_SUMMARY

Sl No	Source Table	T2T Definition Name	Destination Table
9	FSI_D_LOAN_CONTRACTS	T2T_FCT_FTP_ACCOUNT_LOANS	FCT_FTP_ACCOUNT_SUMMARY
10	FSI_D_MM_CONTRACTS	T2T_FCT_FTP_ACCOUNT_MM_CONTRACTS	FCT_FTP_ACCOUNT_SUMMARY
11	FSI_D_MORTGAGES	T2T_FCT_FTP_ACCOUNT_MORTGAGES	FCT_FTP_ACCOUNT_SUMMARY
12	FSI_D_TERM_DEPOSITS	T2T_FCT_FTP_ACCOUNT_TDEPOSITS	FCT_FTP_ACCOUNT_SUMMARY
13	FSI_D_TRUSTS	T2T_FCT_FTP_ACCOUNT_TRUSTS	FCT_FTP_ACCOUNT_SUMMARY
14	FSI_D_MUTUAL_FUNDS	T2T_FCT_FTP_ACCOUNT_MUTUAL_FUND	FCT_FTP_ACCOUNT_SUMMARY

- PFT Account Summary

Sl No	Source Table	T2T Definition Name	Destination Table
1	FSI_D_ANNUITY_CONTRACTS	T2T_FCT_PFT_ACCOUNT_ANNUITY	FCT_PFT_ACCOUNT_SUMMARY
2	FSI_D_BORROWINGS	T2T_FCT_PFT_ACCOUNT_BORROWINGS	FCT_PFT_ACCOUNT_SUMMARY

Sl No	Source Table	T2T Definition Name	Destination Table
3	FSI_D_CASA	T2T_FCT_PFT_ACCOUNT_CASA	FCT_PFT_ACCOUNT_SUMMARY
4	FSI_D_CREDIT_LINES	T2T_FCT_PFT_ACCOUNT_CREDIT_LINES	FCT_PFT_ACCOUNT_SUMMARY
5	FSI_D_CREDIT_CARDS	T2T_FCT_PFT_ACCOUNT_CREDITCARDS	FCT_PFT_ACCOUNT_SUMMARY
6	FSI_D_GUARANTEES	T2T_FCT_PFT_ACCOUNT_GUARANTEES	FCT_PFT_ACCOUNT_SUMMARY
7	FSI_D_INVESTMENTS	T2T_FCT_PFT_ACCOUNT_INVESTMENTS	FCT_PFT_ACCOUNT_SUMMARY
8	FSI_D_LEASES	T2T_FCT_PFT_ACCOUNT_LEASES	FCT_PFT_ACCOUNT_SUMMARY
9	FSI_D_LOAN_CONTRACTS	T2T_FCT_PFT_ACCOUNT_LOANS	FCT_PFT_ACCOUNT_SUMMARY
11	FSI_D_MORTGAGES	T2T_FCT_PFT_ACCOUNT_MORTGAGES	FCT_PFT_ACCOUNT_SUMMARY
12	FSI_D_TERM_DEPOSITS	T2T_FCT_PFT_ACCOUNT_DEPOSITS	FCT_PFT_ACCOUNT_SUMMARY

Sl No	Source Table	T2T Definition Name	Destination Table
13	FSI_D_TRUSTS	T2T_FCT_PFT_ACCOUNT_TRUSTS	FCT_PFT_ACCOUNT_SUMMARY
14	FSI_D_MUTUAL_FUNDS	T2T_FCT_PFT_ACCOUNT_MUTUAL_FUND	FCT_PFT_ACCOUNT_SUMMARY

Note: Currency Exchange Rate History table has to be populated prior loading the Account Summary tables.

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 manual 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 section.
5. Dimension Population should have been done before you execute the T2T batch. (See Dimension Loading Process and Time Dimension Population chapters)

Fact Common Account Summary

Following are the lists of tables used in the population of Fact Common Account Summary & Fact CRM Account Summary tables.

Below mentioned Dimension tables are required to be loaded prior to executing the T2T:

- DIM_DATES
- DIM_ACCOUNT
- DIM_CUSTOMER
- DIM_PRODUCT
- DIM_CHANNEL
- DIM_BANDS
- DIM_ORG_STRUCTURE and so on.

Fact CRM Account Summary

Fact Common Account Summary entity needs to be populated before executing the Fact CRM Account Summary T2Ts.

Following are the list of tables used in the population of Fact CRM Account Summary and these tables are required to be loaded prior to running the T2T:

- DIM_DATES
- DIM_ACCOUNT
- FCT_COMMON_ACCOUNT_SUMMARY
- DIM_ACCT_STATUS
- DIM_BANDS
- DIM_CAMPAIGN
- DIM_CHANNEL
- DIM_CUSTOMER
- DIM_ORG_STRUCTURE

- DIM_LOB
- DIM_OFFER
- DIM_OPPORTUNITY
- DIM_PRODUCT
- DIM_PROSPECT
- DIM_RETENTION_OFFER_TYPE
- DIM_SALES_REPRESENTATIVE
- DIM_TREATMENT
- DIM_VINTAGE

For more information, see Dimension Tables Population, section under *Dimension Loading Process* chapter for details on populating dimension tables like DIM_CUSTOMER, DIM_BANDS, and so on.

For more information on populating account dimension, see Account Dimension Population, page 5-1 chapter.

For more information, see Time Dimension Population, chapter for details on populating DIM_DATES dimension table. See *Download Specification* for identifying fields required in Stage Customer Master and Stage Customer Details for the purpose of Customer Insight Application(s).

For more information on the dimensions, refer to *ERwin Datamodel*.

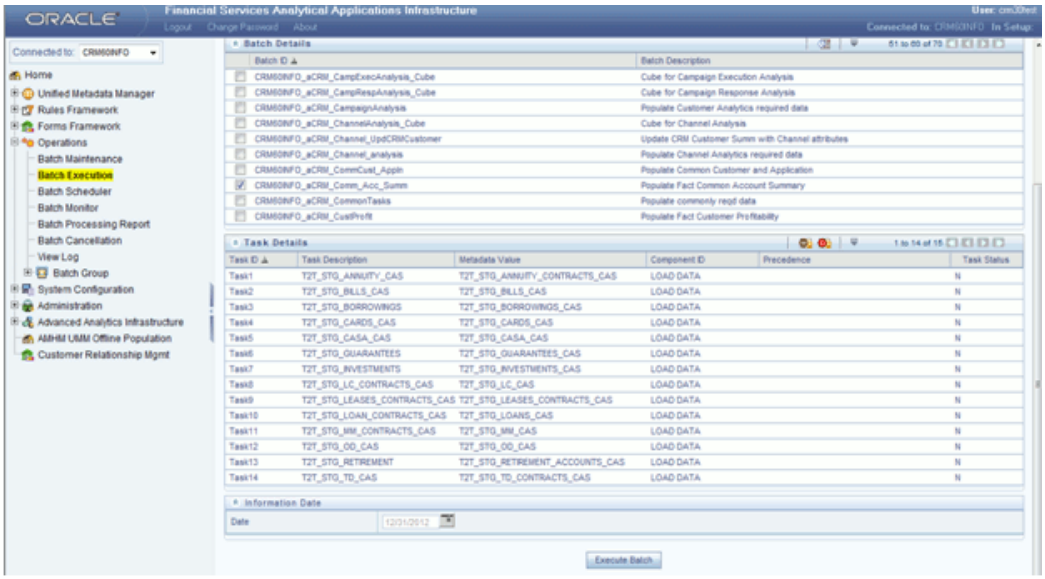
Executing the Account Summary Population T2T

Fact Common Account Summary table has to be loaded prior loading any of the other Account Summary tables.

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the application Batch Operations screen)::

Fact Common Account Summary

A seeded batch, **<Infodom>_aCRM_Comm_Acc_Summ** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the **Home** menu, click **Operations** and select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the **Batch Name** and **Description**.
3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.
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 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 **<T2T Source Name>** from the list.
   - **File Name** - Select the T2T name for the source stage channel table you want to process.

8. Data file name will be blank for any Table to Table Load mode.

   Default value refers to currency calculation. If there is any need for currency conversion in T2T transactions, Default value has to be provided.

   For example, default value is [DRCY]='USD' Here 'USD' acts as reporting currency parameter to T2T.

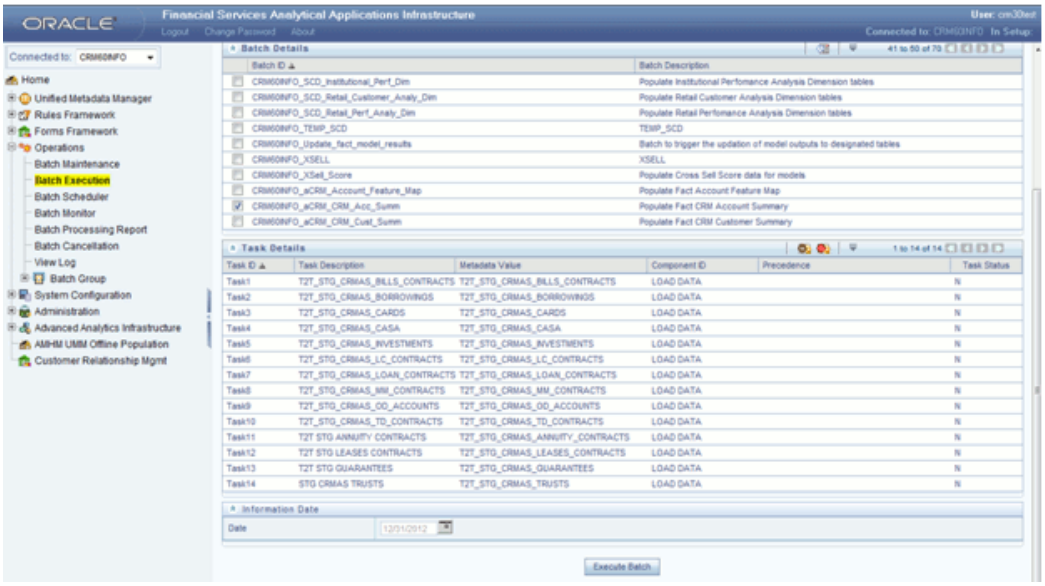
9. Repeat steps 4 to 8 for adding the remaining T2Ts within the same batch definition.

10. Execute the batch created in the preceding steps.

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

Fact CRM Account Summary

A seeded batch, **<Infodom>_aCRM_CRM_Acc_Summ** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

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

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

3. Click **Save**.

4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.

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 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 **<T2T Source Name>** from the list.
   - **File Name** - Select the T2T name for the source stage product processor table you want to process.

8. Data file name will be blank for any Table to Table Load mode.

   Default value refers to currency calculation. If there is any need for currency conversion in T2T transactions, Default value has to be provided.

   For example, default value is [DRCY]='USD' Here 'USD' acts as reporting currency parameter to T2T.

9. Repeat steps 4 to 8 for adding the remaining T2Ts within the same batch definition.

10. Execute the batch created in the preceding steps.

For more information, 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_CRM_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.

8

Customer Summary Population

This chapter explains the process flow for populating Fact Common Customer Summary table.

This chapter covers the following topics:

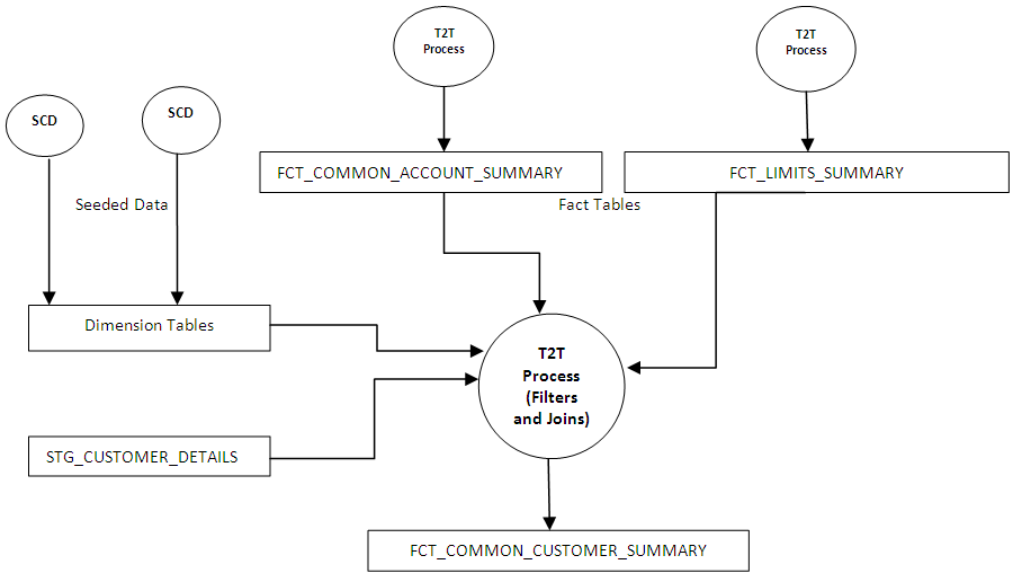
- Overview of Common Customer Summary Tables
- Prerequisites
- Executing the Customer Summary Population T2T

Overview of Common Customer Summary Tables

Fact Common Customer Summary table stores attributes pertaining to customer related data on an 'as-is' basis received from the source system. Data is populated into this table using T2T.

Customer balances are derived from account summary. Customer relationship table drives the relationship between accounts and customers. Common customer summary data is populated for all the active customers in customer dimension.

Following data flow diagram explains the process flow for populating Fact Common Customer Summary table:



Prerequisites

Following are the lists of tables used in the population of Fact Common Customer Summary and these tables are required to be loaded prior to running the T2T:

- DIM_CUSTOMER
- DIM_BANDS
- DIM_EDUCATION
- DIM_CUSTOMER_TYPE
- DIM_GENDER
- DIM_INDUSTRY
- DIM_CHANNEL
- DIM_GEOGRAPHY
- DIM_MARITAL_STATUS
- DIM_MANAGEMENT
- DIM_PROFESSION
- DIM_CREDIT_RATING

- DIM_VINTAGE
- DIM_MIGRATION_REASONS
- FCT_COMMON_ACCOUNT_SUMMARY
- FCT_LIMITS_SUMMARY
- STG_CUSTOMER_DETAILS
- STG_PARTY_RATING_DETAILS
- STG_PARTY_FINANCIALS

Dimensions tables are loaded through the SCD process. The fact tables such as FCT_COMMON_ACCOUNT_SUMMAY and FCT_LIMITS_SUMMARY are loaded from their respective T2T processes.

For more information on SCDs, refer to Dimension Loading Process, chapter.

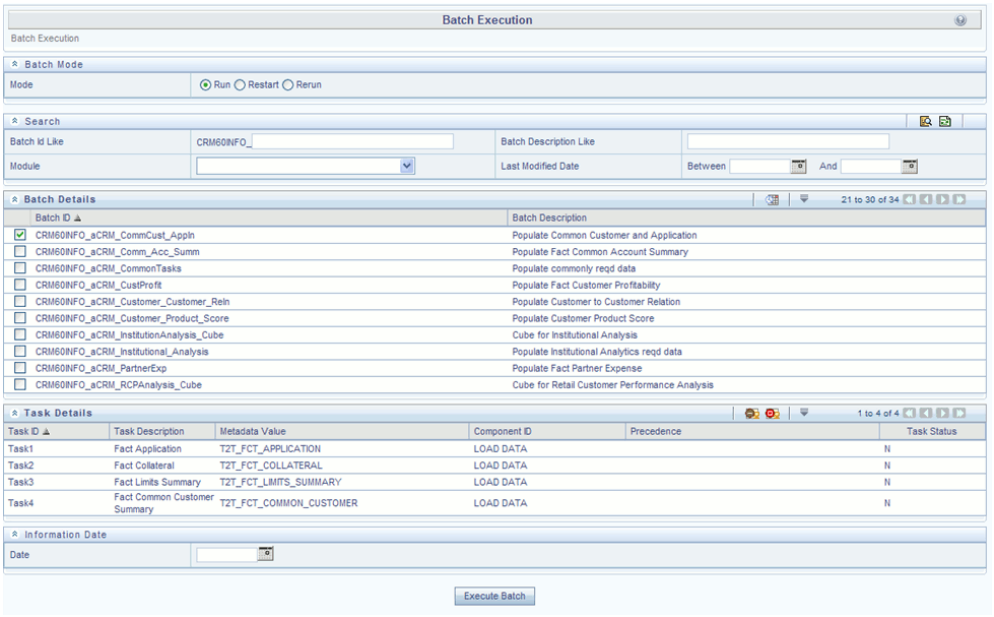
Executing the Customer Summary Population T2T

Fact Common Customer Summary T2T can be executed by executing task present in the seeded batch

<INFODOM>_aCRM_CommCust_Appln.

Following steps will help you to execute the batch:

1. Go to the Batch Execution screen.
2. Select the seeded batch <INFODOM>_aCRM_CommCust_Appln where INFODOM is the information domain where application is installed.
3. Select the AS_OF_DATE for which source customer information is required to be loaded into the table.
4. Click **Execute Batch**.
5. Monitor the status of the batch using Batch Monitor.



Error Messages

Following is the most common error message which will be logged in the T2T log file present in the $FIC_DB_HOME/logs/t2t folder:

- **Unique Constraint Violation** : This occurs when attempting re-load or loading existing records for the already executed AS_OF_DATE.

9

Fact Data Population

Introduction

This chapter explains all the fact tables which within describe about the seeded T2T Definitions with related Source Table and Destination tables. Prerequisites needed in population of the Fact table and tables required to be loaded prior to running the T2T.

Each fact table contains a section on how to execute the T2T component from OFSAA Infrastructure ICC framework and access the execution log to check the execution status.

Fact CRM Customer Summary

Fact CRM Customer Summary entity captures different derived/computed customer attributes pertaining to Customer Insight. Fact Common Customer Summary stores the generic application-agnostic source/raw customer attributes. Fact CRM Customer Summary is a vertical partitioned entity and has relationship to Fact Common Customer Summary.

Load Data into Fact CRM Customer Summary

Customer balances in the Fact CRM Customer Summary entity are derived from account summary. Customer relationship entity drives the relationship between accounts and customers.

Following is the seeded Table-to-Table definitions that loads data related to Fact CRM Customer Summary:

T2T Definition Name	Source Table(s)	Destination Table
T2T_FCT_CRM_CUSTOMER_	STG_CUSTOMER_MASTER	FCT_CRM_CUSTOMER_S

T2T Definition Name	Source Table(s)	Destination Table
SUMMARY	STG_CUSTOMER_DETAILS	UMMARY
	FCT_COMMON_ACCOUNT_ SUMMARY	
	FCT_CRM_ACCOUNT_SUM MARY	

Refer to *Oracle Financial Services Analytical Applications Data Model Data Dictionary* or the *Erwin Data Model* to view the detailed structure of the tables.

Prerequisites

Fact Common Customer Summary entity needs to be populated before executing the Fact CRM Customer Summary T2T. Refer to Fact Common Account Summary chapter for details related to Fact Common Customer Summary T2T.

Following tables that are used in the population of Fact CRM Customer Summary need to have relevant data prior to executing the T2T:

- STG_CUSTOMER_MASTER - Mandatory
- STG_CUSTOMER_DETAILS - Mandatory
- DIM_DATES - Mandatory
- DIM_CUSTOMER - Mandatory
- FCT_COMMON_ACCOUNT_SUMMARY - Mandatory
- FCT_CRM_ACCOUNT_SUMMARY - Mandatory
- DIM_BANDS - Optional

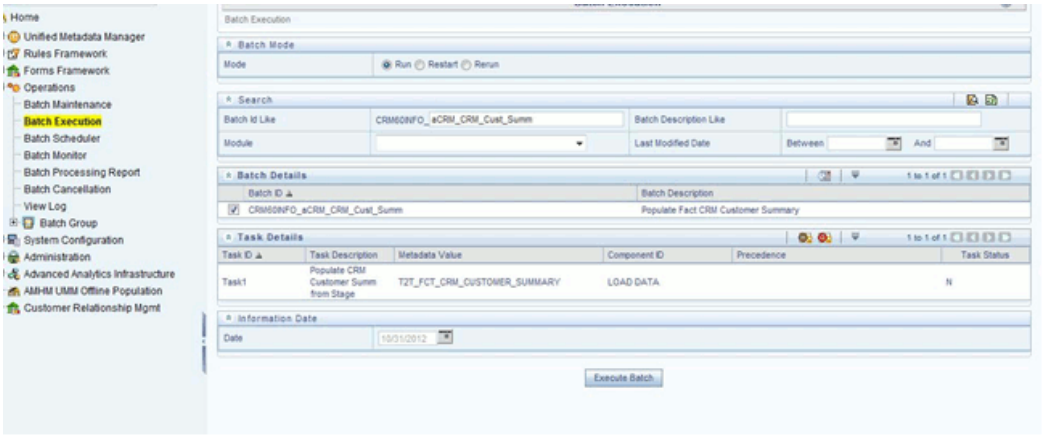
  For more information, see *Dimension Tables Population* section under *Dimension Loading Process* chapter for details on populating dimension tables like DIM_CUSTOMER, DIM_BANDS, and so on.

  For more information, see *Time Dimension Population* chapter for details on populating DIM_DATES dimension table. See *Download Specification* for identifying fields required in Stage Customer Master and Stage Customer Details for the purpose of Customer Insight Application(s).

  Also, see Population of Fact CRM Customer Summary and Fact CRM Account Summary sections for details on populating these fact tables.

Executing the Fact CRM Customer Summary Population T2Ts

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the Operations module of OFSAAI). A seeded batch, **<Infodom>_aCRM_CRM_Cust_Summ** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the **Home** menu, click **Operations** and select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the **Batch Name** and **Description**.
3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.
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 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 **<T2T Source Name>** from the list.

- **File Name** - Select the T2T name "T2T_FCT_CRM_CUSTOMER_SUMMARY" you want to process.

8. Data file name will be blank for any Table to Table Load mode.
9. Default value refers to any parameter that has to be passed to T2T. It has to be blank.
10. Execute the batch created in the preceding steps.

For more information, 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.

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_CRM_CUSTOMER_SUMMARY

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

Update Fact CRM Customer Summary with Transaction Attributes

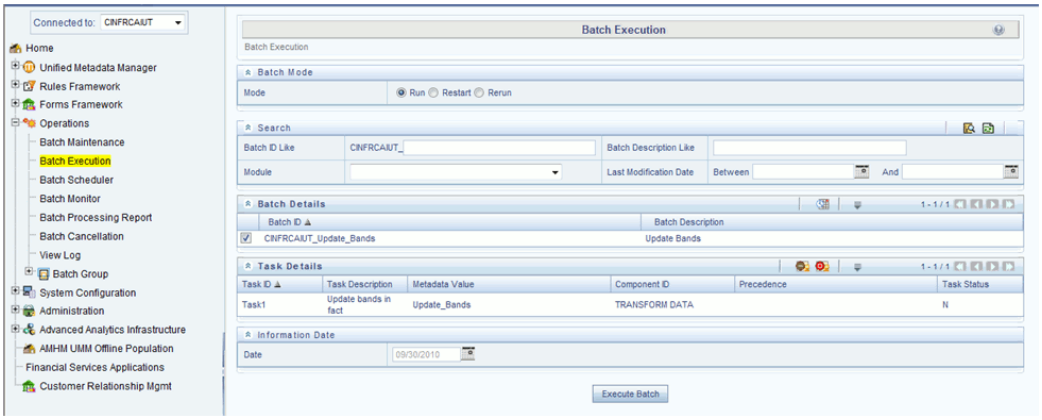
A seeded Data Transformation is provided with the installer which updates the entity Fact CRM Customer Summary with transaction attributes of customer such as ATM usage, Branch usage, net usage, Point of Sale (POS) usage, Number of ATM transactions, transacted amount, and so on.

The following table lists the seeded Post Load Transformation Definition with related

Source Table and Destination tables:

DT Definition Name	Source Tables	Destination Table
FN_UPD_CRM_CUST_CHNL	FCT_TXN_CHANNEL	FCT_CRM_CUSTOMER_SUMMARY

A seeded batch, **<Infodom>_aCRM_Channel_UpdCRMCustomer** has to be executed for the required MIS Date.



Alternatively, a new batch can be created if required by following the below mentioned steps:

1. Select the check box adjacent to the newly created Batch Name in the *Batch Maintenance* screen.
2. Click **Add** (+) button from the *Task Details* grid.

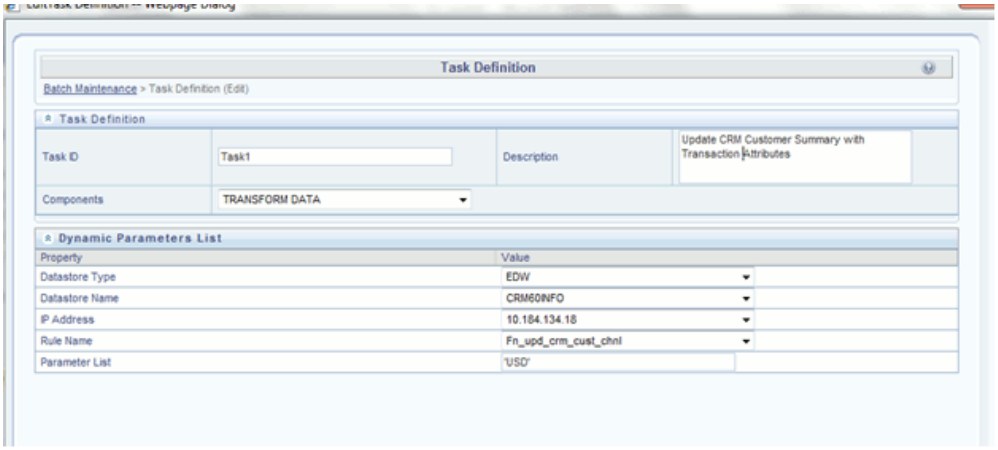
   The *Task Definition* screen is displayed.
3. Enter the **Task ID** and **Description**.
4. Select the **TRANSFORM DATA** component from the **Components** drop down list.
5. In the Dynamic Parameters List, select the appropriate **Datastore Type** from the drop down list.
6. Select the appropriate **Datastore Name** from the drop down list. Usually it is the Information Domain name.
7. Select the **IP Address** from the drop down list.
8. Select the Rule Name **FN_UPD_CRM_CUST_CHNL** from the drop down list.

9. Enter the Parameter List details as mentioned below:

   - Reload Account Profitability table for the given MIS Date flag - can be Y or N within single quotes.
   - Reporting Currency code - This has to be enclosed within single quotes.

   For Example, if reporting currency is in US Dollar, then '**USD**' has to be specified.

   > **Note: Batch run ID** and **As Of Date** are passed internally by the batch to the Data Transformation task.



10. Execute the batch for which the Task has been created.

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

Checking the Execution Status

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

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/date.

The file name will have the batch execution id.

> **Note:** For more information on configuration and execution of a batch, refer to *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

Fact Account Feature Map

A product might be facilitated with its own features. Fact Account Feature Map entity stores the mapping between the Account and Product Feature that is the features of the product availed by the customer account. Product processor tables in staging have information related to customer accounts.

Following table lists the seeded T2T Definitions with related Source Table and Destination tables:

T2T Definition Name	Source Staging Table	Destination Table
T2T_FCT_ACCOUNT_FEATURE_MAP	STG_ACCT_FEATURE_MAP	FCT_ACCOUNT_FEATURE_MAP

For more information, see Customer Insight Erwin Data Model to view the detailed structure of the tables.

Prerequisites

Following are the lists of tables used in the population of Fact Account Feature Map and these tables are required to be loaded prior to executing the T2T:

- DIM_DATES
- DIM_PRODUCT_FEATURE
- DIM_ACCOUNT
- DIM_CUSTOMER
- DIM_PRODUCT
- DIM_VENDOR
- DIM_CAMPAIGN
- DIM_CHANNEL

- STG_ACCT_FEATURE_MAP

For more information, see *Dimension Tables Population* section under *Dimension Loading Process* chapter for details on populating dimension tables like DIM_CUSTOMER, DIM_BANDS, and so on.

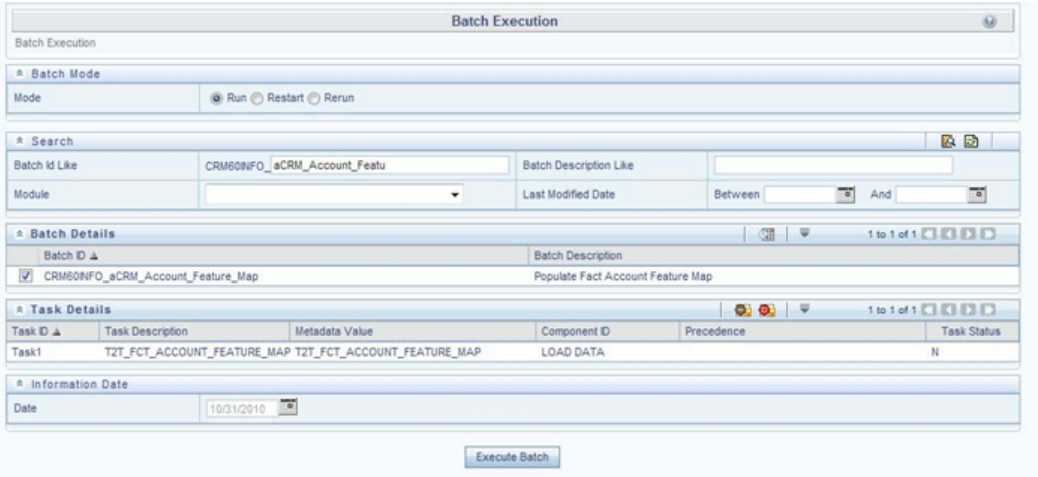
For more information on populating account dimension, see Account Dimension Population chapter.

For more information, see *Time Dimension Population* chapter for details on populating DIM_DATES dimension table. See *Download Specification* for identifying fields required in Stage Customer Master and Stage Customer Details for the purpose of Customer Insight Application(s).

Executing the Fact Account Feature Map Population T2T

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the application Batch Operations screen).

A seeded batch, **<Infodom>_aCRM_Account_Feature_Map** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the **Home** menu, click **Operations** and select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the **Batch Name** and **Description**.
3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.

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 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 **<T2T Source Name>** from the list.
   - **File Name** - Select the T2T name "T2T_FCT_ACCOUNT_FEATURE_MAP" you want to process.

8. Data file name will be blank for any Table to Table Load mode.

   Default value refers to any parameter that has to be passed to T2T. This should be blank.

9. Execute the batch created in the preceding steps.

For more information, 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.

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_ACCOUNT_FEATURE_MAP$

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

Fact Customer to Customer Relationship

Fact Customer to Customer Relationship entity stores the relationship between the customers. Example of relationship amongst customers could be Employer, Employee, Children, Parent, Spouse, and so on.

Following table lists the seeded T2T Definitions with related Source Table and Destination tables:

T2T Definition Name	Source Staging Table	Destination Table
T2T_CUST_CUST_RELATION	STG_CUST_CUST_RELATIONSHIP	FCT_CUST_CUST_RELATIONSHIP

For more information, see Customer Insight Erwin Data Model to view the detailed structure of the tables.

Prerequisites

Following are the lists of tables used in the population of Fact Customer to Customer Relationship and these tables are required to be loaded prior to running the T2T:

- DIM_DATES
- DIM_CUSTOMER
- STG_CUST_CUST_RELATIONSHIP

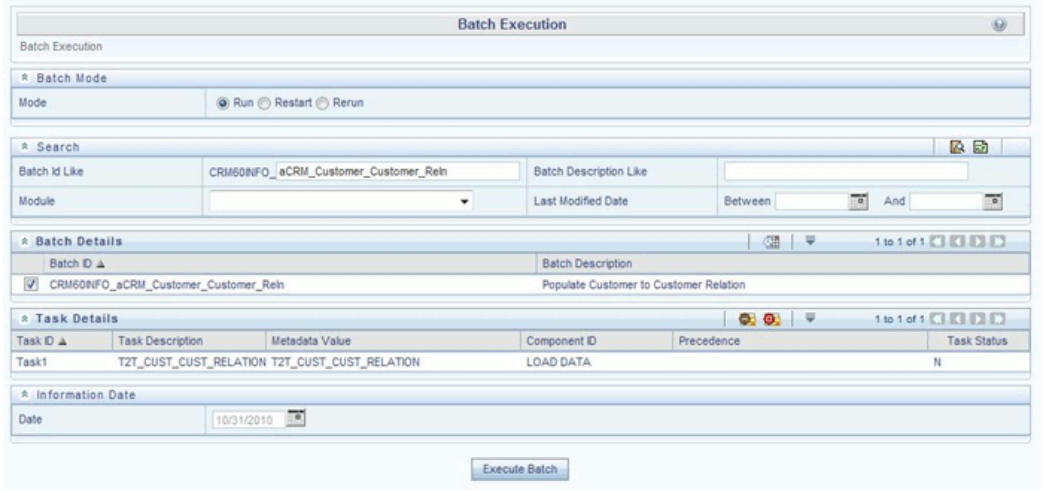
For more information, see *Dimension Tables Population* section under *Dimension Loading Process* chapter for details on populating dimension tables like DIM_CUSTOMER, DIM_BANDS, and so on.

For more information, see *Time Dimension Population* chapter for details on populating DIM_DATES dimension table. See *Download Specification* for identifying fields required in Stage Customer Master and Stage Customer Details for the purpose of Customer Insight Application(s).

Executing the Fact Customer to Customer Relationship Population T2T

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the application Batch Operations screen).

A seeded batch, **<Infodom>_aCRM_Customer_Customer_Reln - Task1** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the **Home** menu, click **Operations** and select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the **Batch Name** and **Description**.
3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.
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 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 **<T2T Source Name>** from the list.
- **File Name** - Select the T2T name "T2T_CUST_CUST_RELATION" you want to process.

8. Data file name will be blank for any Table to Table Load mode.

   Default value refers to any parameter that has to be passed to T2T. This should be blank.

9. Execute the batch created in the preceding steps.

For more information, 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.

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_CUST_CUST_RELATIONSHIP$

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

Fact Transaction Channel

Fact Transaction Channel entity stores the details of all transactions (successful and failed) done through any of the transaction channels offered by the Financial Institutions. This fact entity is loaded from multiple source staging tables.

The following table lists the seeded T2T Definitions with related Source Table and Destination tables:

T2T Definition Name	Source Staging Table	Destination Table
T2T_TEL_FCT_TXN_CHANNEL	STG_SRC_TB_TXNS	FCT_TXN_CHANNEL
T2T_POS_FCT_TXN_CHANNEL	STG_SRC_POS_TXNS	
T2T_NET_FCT_TXN_CHANNEL	STG_SRC_NET_TXNS	
T2T_BRA_FCT_TXN_CHANNEL	STG_SRC_BRANCH_TXNS	
T2T_ATM_FCT_TXN_CHANNEL	STG_SRC_ATM_TXNS	

For more information, see Customer Insight Erwin Data Model to view the detailed structure of the earlier tables.

Prerequisites

Following are the lists of tables used in the population of Fact Transaction Channel and these tables are required to be loaded prior to running the T2T:

- DIM_DATES
- DIM_TXN_CHANNEL
- DIM_ACCOUNT
- DIM_AUTH_DECISION_REASONS
- DIM_BANDS
- DIM_BROWSER_TYPE
- DIM_CARD_TYPE
- DIM_CURRENCY
- DIM_CUSTOMER

- DIM_CUSTOMER_TYPE
- DIM_GEOGRAPHY
- DIM_MERCHANT
- DIM_MERCHANT_CATEGORY
- DIM_PRODUCT
- DIM_TERMINAL
- DIM_TERMINAL_TYPE
- DIM_TRANSACTION
- DIM_TXN_FAILURE_REASON
- DIM_TXN_STATUS
- STG_SRC_ATM_TXNS
- STG_SRC_BRANCH_TXNS
- STG_SRC_NET_TXNS
- STG_SRC_POS_TXNS
- STG_SRC_TB_TXNS

For more information, see *Dimension Tables Population* section under *Dimension Loading Process* chapter for details on populating dimension tables like DIM_CUSTOMER, DIM_BANDS, and so on.

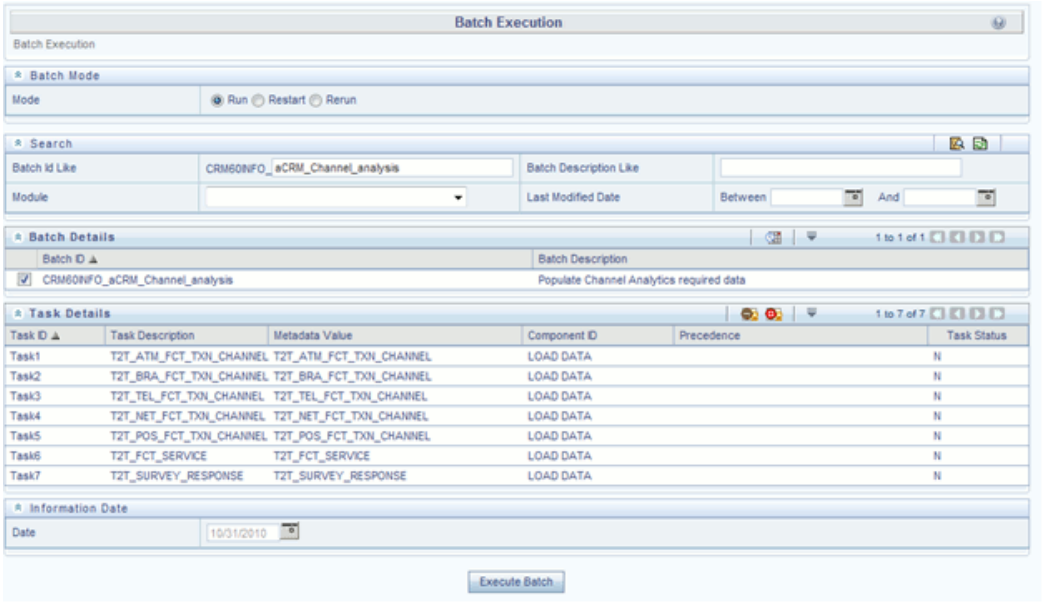
For more information on populating account dimension, see Account Dimension Population chapter.

For more information, see *Time Dimension Population* chapter for details on populating DIM_DATES dimension table. See *Download Specification* for identifying fields required in Channel Transaction tables in staging for the purpose of Customer Insight Application(s).

Executing the Fact Transaction Channel Population T2Ts

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the application Batch Operations screen).

A seeded batch, **<Infodom>Infodom>_aCRM_Txn_Channel Task1 to Task5** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the **Home** menu, click **Operations** and select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the **Batch Name** and **Description**.
3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.
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 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 **<T2T Source Name>** from the list.
    - **File Name** - Select the T2T name for the source stage channel table you want to

process.

8. Data file name will be blank for any Table to Table Load mode.

   Default value refers to currency calculation. If there is any need for currency conversion in T2T transactions, Default value has to be provided.

   For example, default value is [DRCY]='USD', [DLCY]='USD'

   Here, 'USD' acts as currency parameter to T2T.

9. Steps 4 to 8 must be repeated for adding the remaining 4 T2Ts within the same batch definition.

10. Execute the batch created in the preceding steps.

For more information, 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.

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_TXN_CHANNEL$

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

Fact Application

Fact Application entity stores the fact data of applications like application details,

current stage, status, rejection reason, time-taken in each stage, and so on.

The following table lists the seeded T2T Definitions with related Source Table and Destination tables:

T2T Definition Name	Source Staging Table	Destination Table
T2T_FCT_APPLICATION	STG_APPLICATION	FCT_APPLICATION

For more information and to view the detailed structure of the earlier tables, see *Customer Insight Erwin Data Model*.

Prerequisites

Following are the lists of tables used in the population of Fact Application. These tables are required to be loaded prior to running the T2T:

- DIM_DATES
- DIM_APPLICATION_TYPE
- DIM_PRODUCT
- DIM_CREDIT_OFFICER
- DIM_CUSTOMER
- DIM_CHANNEL
- DIM_CREDIT_CENTER
- DIM_DECISION_STATUS
- DIM_GEOGRAPHY
- DIM_INDUSTRY
- DIM_PROFESSION
- DIM_HOME_OWNERSHIP
- DIM_EDUCATION
- DIM_MARITAL_STATUS
- DIM_APPLICATION_REJECT_REASONS

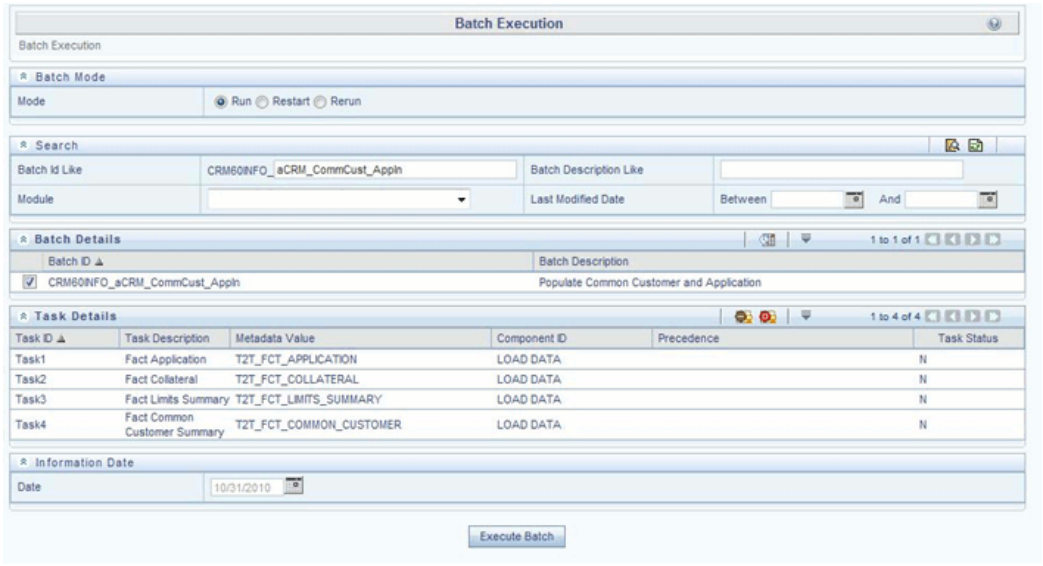
- DIM_DEVIATION_REASONS
- DIM_SALES_REPRESENTATIVE
- DIM_CAMPAIGN
- DIM_ACCOUNT
- DIM_PROSPECT
- DIM_BANDS
- STG_APPLICATION

For details on populating dimension tables like DIM_CUSTOMER, DIM_BANDS, and so on, refer to Dimension Tables Population, section under *Dimension Loading Process* chapter.

For details on populating DIM_DATES dimension table, refer to Time Dimension Population, chapter. For identifying fields required in Channel Transaction tables in staging for the purpose of Customer Insight Application(s), refer to *Download Specification*.

Executing the Fact Application Population T2T

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through *Operations* module), a seeded batch, **<Infodom>_aCRM_CommCust_Appln – Task1** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the **Home** menu, click **Operations** and select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the **Batch Name** and **Description**.
3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.
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 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 **<T2T Source Name>** from the list.
   - **File Name** - Select the T2T name 'T2T_FCT_APPLICATION', you want to process.

8. Data file name will be blank for any Table to Table Load mode.

   Default value refers to any parameter that has to be passed to T2T. If there is any need for currency conversion in T2T transactions, Default value has to be provided.

   For example, default value is [DRCY]='USD'

   Here, 'USD' acts as reporting currency parameter to T2T.

9. Execute the batch created in the preceding steps.

For more information, 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.

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_APPLICATION$

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

Fact Campaign Details

Fact Campaign Details entity stores the information about the details of the campaign like expected 5 year NPV, targeted prospect contact status, days to contact, no of times contacted and so on.

The following table lists the seeded T2T Definitions with related Source Table and Destination tables:

T2T Definition Name	Source Staging Table	Destination Table
T2T_FCT_CAMPAIGN_DETAILS	STG_CAMPAIGN_DETAILS	FCT_CAMPAIGN_DETAILS

For more information, see Customer Insight Erwin Data Model to view the detailed structure of the earlier tables.

Prerequisites

Following are the lists of tables used in the population of Fact Campaign Details and these tables are required to be loaded prior to running the T2T:

- DIM_CAMPAIGN_CHANNEL
- DIM_CAMPAIGN
- DIM_CUSTOMER
- DIM_PROSPECT
- DIM_DATES
- DIM_PRODUCT
- DIM_OFFER
- DIM_TREATMENT
- DIM_WAVE
- DIM_VENDOR
- DIM_CONTACT
- DIM_REGION
- DIM_MKTG_PROGRAM
- STG_CAMPAIGN_DETAILS

For more information, see *Dimension Tables Population* section under *Dimension Loading Process* chapter for details on populating dimension tables like DIM_CUSTOMER, DIM_BANDS, and so on.

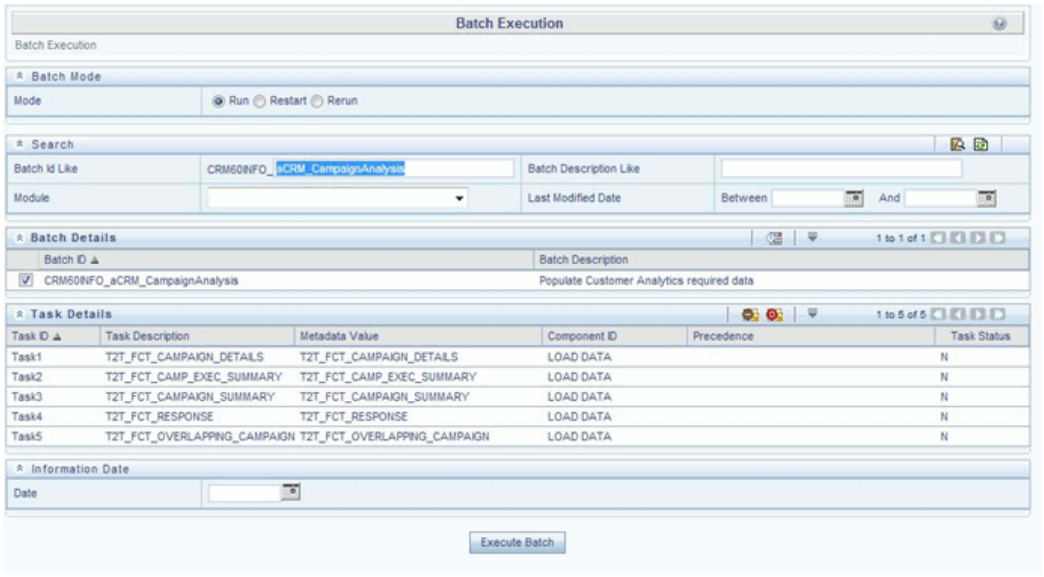
For more information, see *Time Dimension Population* chapter for details on populating DIM_DATES dimension table. See *Download Specification* for identifying fields required

in Channel Transaction tables in staging for the purpose of Customer Insight Application(s).

Executing the Fact Application Population T2T

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the application Batch Operations screen).

A seeded batch, **<Infodom>_aCRM_CampaignAnalysis – Task1** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the **Home** menu, click **Operations** and select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the **Batch Name** and **Description**.
3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.
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 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 **<T2T Source Name>** from the list.
- **File Name** - Select the T2T name 'T2T_FCT_CAMPAIGN_DETAILS', you want to process.

8. Data file name will be blank for any Table to Table Load mode.

   Default value refers to any parameter that has to be passed to T2T. If there is any need for currency conversion in T2T transactions, Default value has to be provided.

   For example, default value is [DRCY]='USD'

   Here, 'USD' acts as reporting currency parameter to T2T.

9. Execute the batch created in the preceding steps.

For more information, 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.

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_CAMPAIGN_DETAILS$

> **Note:** For more information on configuration and execution of a batch, see Oracle Financial Services Analytical Applications Infrastructure

User Guide.

Fact Campaign Execution Summary

Fact Campaign Execution Summary entity is a summary table which stores fact information like mail base, no of campaign prospects contacted, cost incurred, number of opt outs from the campaign, expected 5 year NPV, and so on across dimensions like Campaign Region, Offer, Treatment, Product, Wave, Campaign, Vendor, Offer Channel, and so on.

The following table lists the seeded T2T Definitions with related Source Table and Destination tables:

T2T Definition Name	Source Staging Table	Destination Table
T2T_FCT_CAMP_EXEC_SUMMARY	FCT_CAMPAIGN_DETAILS	FCT_CAMPAIGN_EXEC_SUMMARY

For more information, see Erwin Data Model to view the detailed structure of the earlier tables.

Prerequisites

Fact Campaign Details T2T needs to be executed prior to populating Fact Campaign Execution Summary fact table.

Following are the lists of tables used in the population of Fact Campaign Execution Summary and these tables are required to be loaded prior to running the T2T:

- FCT_CAMPAIGN_DETAILS
- DIM_DATES

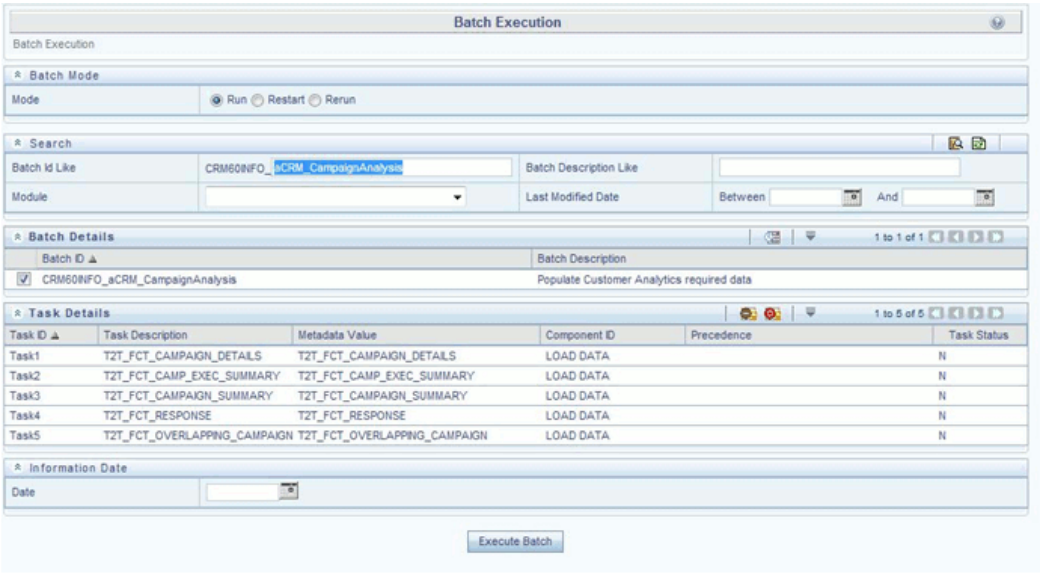
For more information, see *Population of Fact Campaign Details* section on populating campaign details.

For more information, see *Time Dimension Population* chapter for details on populating DIM_DATES dimension table.

Executing the Fact Application Population T2T

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the application Batch Operations screen).

A seeded batch, **<Infodom>_aCRM_CampaignAnalysis – Task2** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the **Home** menu, click **Operations** and select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the **Batch Name** and **Description**.
3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.
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 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 **<T2T Source Name>** from the list.
   - **File Name** - Select the T2T name 'T2T_FCT_CAMP_EXEC_SUMMARY', you want to process.

8. Data file name will be blank for any Table to Table Load mode.

   Default value refers to any parameter that has to be passed to T2T. If there is any need for currency conversion in T2T transactions, Default value has to be provided.

   For example, default value is [DRCY]='USD'

   Here, 'USD' acts as reporting currency parameter to T2T.

9. Execute the batch created in the preceding steps.

For more information, 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.

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_CAMPAIGN_EXEC_SUMMARY$

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

Fact Response

Fact Response entity stores the all the responses for the campaign that was executed. The fact entity stores information such as response type, status, channel, product, offer channel, wave, offer, treatment, and so on.

The following table lists the seeded T2T Definitions with related Source Table and Destination tables:

T2T Definition Name	Source Staging Table	Destination Table
T2T_FCT_RESPONSE	STG_RESPONSE	FCT_RESPONSE

For more information, see Erwin Data Model to view the detailed structure of the earlier tables.

Prerequisites

T2Ts related to Fact Campaign Details, Fact Campaign Summary, Fact Common Customer Summary needs to be executed before loading Fact Response table.

Following are the lists of tables used in the population of Fact Response and these tables are required to be loaded prior to running the T2T:

- FCT_CAMPAIGN_DETAILS
- DIM_CAMPAIGN
- DIM_REGION
- DIM_PRODUCT
- DIM_CAMPAIGN_CHANNEL
- DIM_OFFER
- DIM_TREATMENT
- DIM_WAVE
- DIM_VENDOR
- DIM_DATES
- DIM_MKTG_PROGRAM
- DIM_CONTACT
- DIM_REJECTION_REASON
- DIM_RESPONSE_TYPE
- DIM_CHANNEL
- DIM_MARKET_CELL

- DIM_CUSTOMER
- FCT_COMMON_CUSTOMER_SUMMARY
- DIM_PROSPECT
- DIM_PROFESSION
- DIM_CALL_TYPE
- DIM_CAMPAIGN_SOURCE_TYPE

For more information, see *Population of Fact Campaign Details* section on populating campaign details and see *Population of Fact Campaign Summary* section for details on populating Campaign Summary fact table. See *Population of Fact Common Customer Summary* section for details on populating Common Customer Summary fact table.

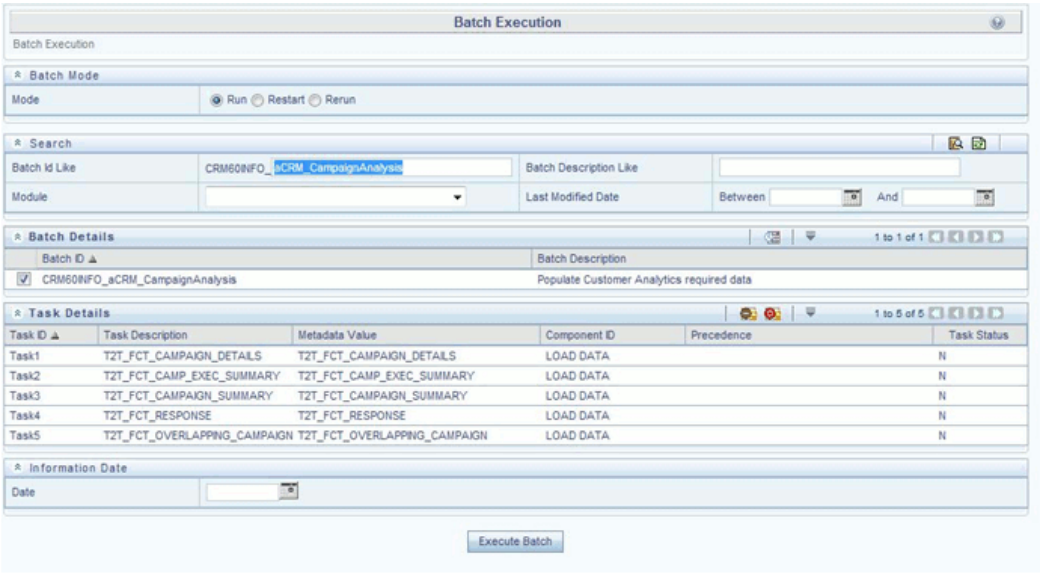
For more information, see *Dimension Tables Population* section under *Dimension Loading Process* chapter for details on populating dimension tables like DIM_CUSTOMER, DIM_BANDS, and so on.

For more information, see *Time Dimension Population* chapter for details on populating DIM_DATES dimension table.

Executing the Fact Application Population T2T

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the application Batch Operations screen).

A seeded batch, **<Infodom>_aCRM_CampaignAnalysis – Task4** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the **Home** menu, click **Operations** and select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the **Batch Name** and **Description**.
3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.
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 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 **<T2T Source Name>** from the list.
   - **File Name** - Select the T2T name 'T2T_FCT_RESPONSE', you want to process.

8. Data file name will be blank for any Table to Table Load mode.

   Default value refers to any parameter that has to be passed to T2T. If there is any need for currency conversion in T2T transactions, Default value has to be provided.

   For example, default value is [DRCY]='USD'

   Here, 'USD' acts as reporting currency parameter to T2T.

9. Execute the batch created in the preceding steps.

For more information, 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.

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_RESPONSE$

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

Fact Overlapping Campaign

Fact Overlapping Campaign entity stores the summary information related to prospects who were targeted by multiple campaigns at a point in time.

The following table lists the seeded T2T Definitions with related Source Table and Destination tables:

T2T Definition Name	Source Staging Table	Destination Table
T2T_OVERLAPPING_CAMPAIGN	STG_OVERLAPPING_CAMPAIGN	FCT_OVERLAPPING_CAMPAIGN

For more information, see Erwin Data Model to view the detailed structure of the earlier tables.

Prerequisites

Following are the lists of tables used in the population of Fact Overlapping Campaign and these tables are required to be loaded prior to running the T2T:

- DIM_DATES
- STG_OVERLAPPING_CAMPAIGN

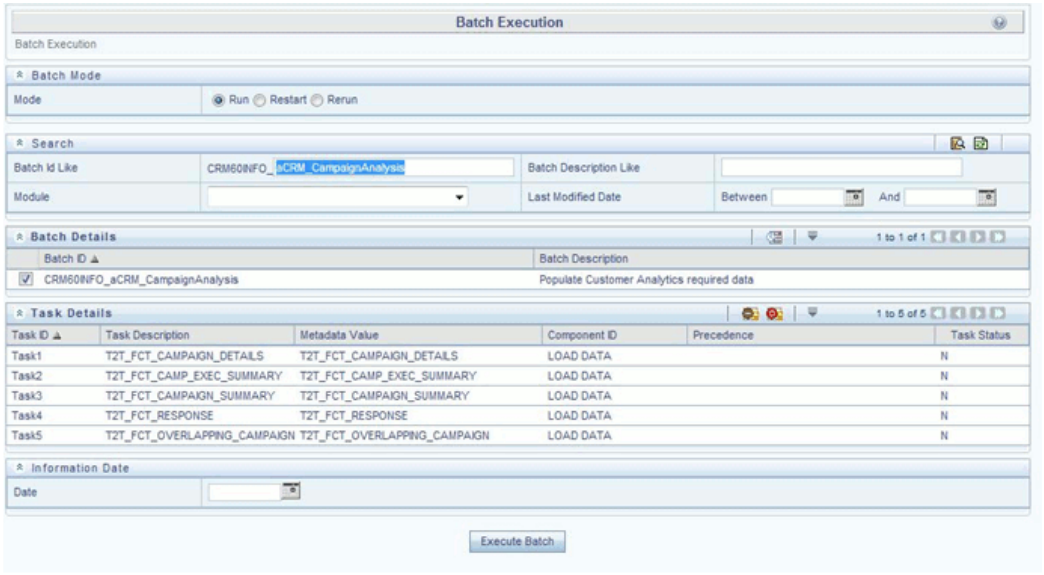
For more information, see *Time Dimension Population* chapter for details on populating DIM_DATES dimension table.

See *Download Specification* for identifying fields required in Stage Customer Master and Stage Customer Details for the purpose of Customer Insight Application(s).

Executing the Fact Application Population T2T

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the application Batch Operations screen).

A seeded batch, **<Infodom>_aCRM_CampaignAnalysis – Task5** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the **Home** menu, click **Operations** and select **Batch Maintenance**.
2. Click **New Batch** ('+' symbol in Batch Name container). Enter the **Batch Name** and **Description**.
3. Click **Save**.
4. Click the check box in the **Batch Name** container to select the **Batch**, you created in the earlier step.
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 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 **<T2T Source Name>** from the list.
   - **File Name** - Select the T2T name 'T2T_OVERLAPPING_CAMPAIGN', you want to process.

8. Data file name will be blank for any Table to Table Load mode.

   Default value refers to any parameter that has to be passed to T2T. It has to be blank.

9. Execute the batch created in the preceding steps.

For more information, 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.

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_OVERLAPPING_CAMPAIGN$

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

Fact Cross Sell Score

Fact Cross Sell Score entity stores Cross Sell Scores of the customers between product types. This fact entity is loaded from Fact Common Account Summary table. The T2T loads data required for predictive models. The predictive models make use of this data for deriving the cross sell score between the product types for a customer and the cross sell scores are updated back in this fact.

The following table lists the seeded T2T Definitions with related Source Table and Destination table:

T2T Definition Name	Source Table	Destination Table
T2T_XSELL_CARDS_TO_CASA	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE
T2T_XSELL_CARDS_TO_CASA_SEG	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE
T2T_XSELL_CARDS_TO_MORT	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE
T2T_XSELL_CARDS_TO_MORT_SEG	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE
T2T_XSELL_CASA_TO_CARDS	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE
T2T_XSELL_CASA_TO_CARDS_SEG	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE
T2T_XSELL_CASA_TO_MORT	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE
T2T_XSELL_CASA_TO_MORT_SEG	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE
T2T_XSELL_MORT_TO_CARDS	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE
T2T_XSELL_MORT_TO_CARDS_SEG	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE
T2T_XSELL_TD_TO_CARDS	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE

T2T_XSELL_TD_TO_CARDS_SEG	FCT_COMMON_ACCOUNT_SUMMARY	FCT_XSELL_SCORE

For detailed structure of the earlier tables, see Customer Insight Erwin Data Model.

Prerequisites

Following are the lists of tables used in the population of Fact Cross Sell Score and these tables are required to be loaded prior to running the T2T:

- FCT_COMMON_ACCOUNT_SUMMARY

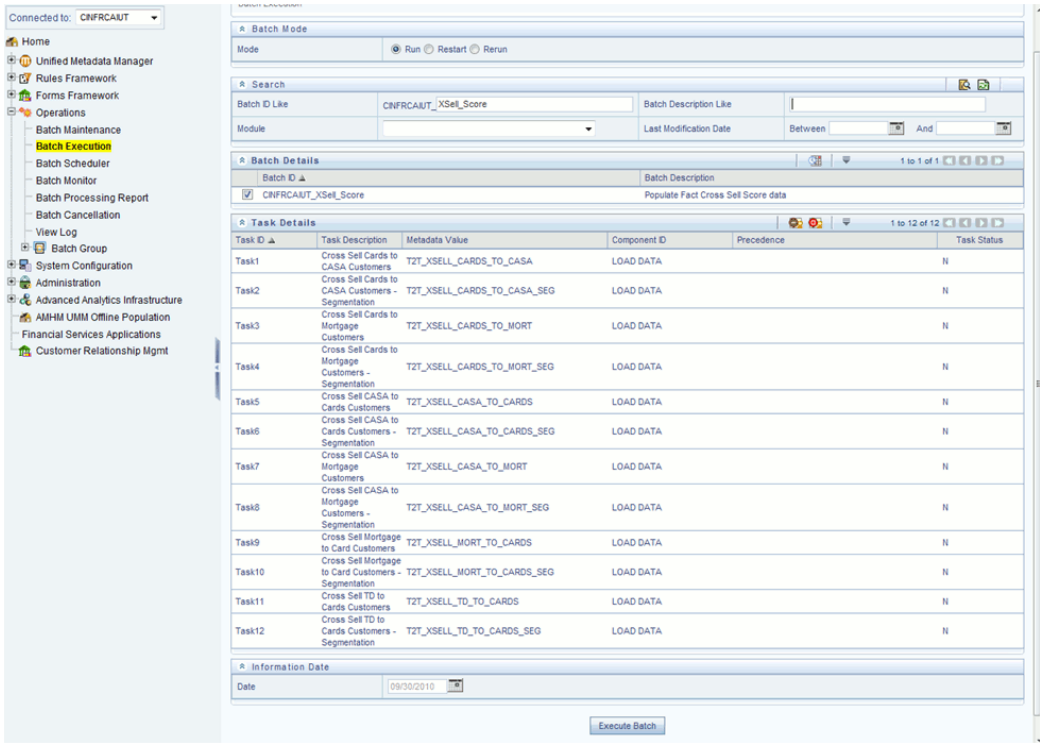
For details on populating dimension tables like DIM_CUSTOMER, DIM_BANDS, and so on, refer to Dimension Tables Population section under Dimension Loading Process chapter.

For more information on populating account dimension, refer to Account Dimension Population, page 5-1 chapter.

For details on populating DIM_DATES dimension table, refer to Time Dimension Population, page 4-1 chapter .

Executing the Fact Cross Sell Score Population T2Ts

To execute the T2T component from OFSAA Infrastructure ICC framework (accessed through the application Batch Operations screen), a seeded batch, **<Infodom>_ XSell_Score Task1 to Task12** has to be executed for the required MIS Date.



Alternatively, following steps will help you create a new batch:

1. From the Home menu, click Operations and select Batch Maintenance.
2. Click New Batch ('+' symbol in Batch Name container). Enter the Batch Name and Description.
3. Click Save.
4. Click the check box in the Batch Name container to select the Batch, you created in the earlier step.
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 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 <T2T Source Name> from the list.
- File Name - Select the T2T name for the source stage channel table you want to process.

Data file name will be blank for any Table to Table Load mode and default value should be null.

8. Steps 4 to 8 must be repeated for adding the remaining 11 T2Ts within the same batch definition.
9. Execute the batch created in the preceding steps.

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

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 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_XSELL_SCORE

> **Note:** For more information on configuration and execution of a batch, refer to *Oracle Financial Services Analytical Applications Infrastructure User Guide*.

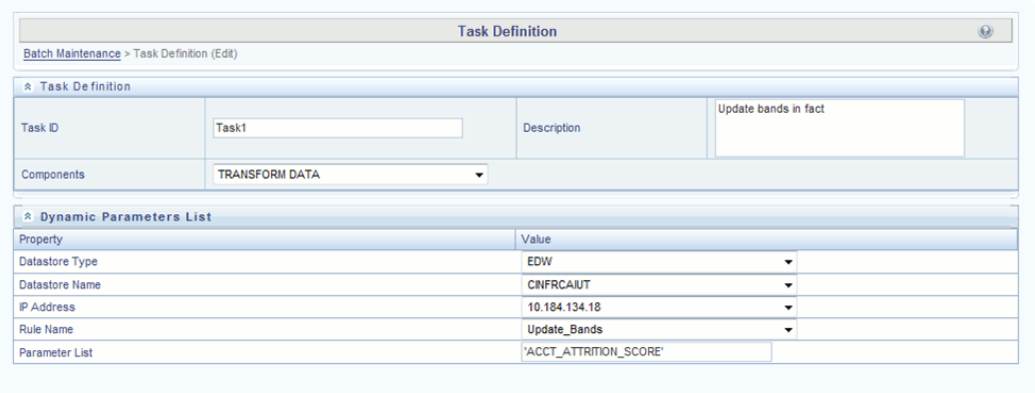
Update Bands in Fact Tables

You have to update the band values based on the scores in certain cases. For instance, a

predictive models execution derive the score values, which are updated to the fact tables. Based on the new score values, it is necessary to have the new band values updated in the fact tables. A Data Transformation "Update_Bands" is seeded to update the bands in fact tables. Update of bands in fact tables make use of a setup table FSI_BAND_SETUP_DETAILS.

Column Name	Data Type	Column Description
TABLE_NAME (PK)	VARCHAR2(30)	This stores the name of the table of the source and the target column.
SRC_COLUMN_NAME (PK)	VARCHAR2(30)	This stores the name of the source column based on which the bands would be updated in the target column.
TGT_COLUMN_NAME (PK)	VARCHAR2(30)	This stores the name of the target column where the bands are updated
BAND_TYPE	VARCHAR2(30)	This stores the band type which has to be used from DIM_BANDS table.

Seeded entries into FSI_BAND_SETUP_DETAILS table are provided with the installer to update attrition score band in the table FCT_CRM_ACCOUNT_SUMMARY and product propensity score band & product propensity segment band in FCT_XSELL_SCORE table.

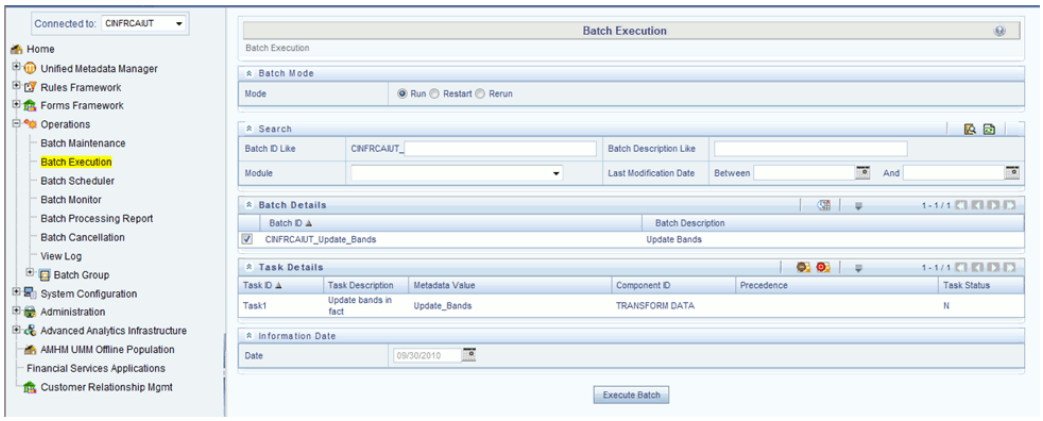


Execute the seeded batch **<Infodom>_Update_Bands**. The parameters passed to DT " Update_Bands" are:

- **Batch Run ID** - This is passed internally to the DT from the Batch in Operations modules of OFSAAI.
- **FIC MIS Date/As of Date** - This is passed internally to the DT from the Batch in Operations modules of OFSAAI.
- **Band Type** - You have to provide the values in Parameter List of *Batch Maintenance* screen.

  The following values can be entered:

Band Type to be updated	Parameter to be passed in DT
Account Attrition Score Band	ACCT_ATTRITION_SCORE
Product Propensity Score Band	PRODUCT_PROP_SCORE
Product Propensity Segment Band	PRODUCT_PROP_SEG



You can also define a new Batch and an underlying Task definition from the *Batch Maintenance* window of OFSAAI.

For more information on defining a new Batch, refer to How to Define a Batch, page E-1 section.

To define a new task for a selected Batch definition:

1. Select the check box adjacent to the newly created **Batch Name** in the *Batch Maintenance* window.
2. Click **Add** (+) button from the *Task Details* grid.

   The *Task Definition* window is displayed.
3. Enter the **Task ID** and **Description**.
4. Select the **TRANSFORM DATA** component from the Components drop down list.
5. In the Dynamic Parameters List, select the appropriate **Datastore Type** from the drop down list
6. Select the appropriate **Datastore Name** from the drop down list. Usually it is the Information Domain name.
7. Select the **IP Address** from the drop down list.
8. Select the Rule Name **Update_Bands** from the drop down list.
9. Enter the **Parameter List** details as mentioned below:
   - **Band Type** - Refer above for the values which can be passed.

     Note: Batch run ID and **As Of Date** are passed internally by the

batch to the Data Transformation task.

10. Click **Save**.

    The Task definition is saved for the selected Batch.

11. Execute the Batch.

    You can execute a Batch definition from the *Batch Execution* section of *OFSAAI Operations* module.

10

Statistical Model Creation and Execution

Introduction

Statistical methods are performed on various customer data to analyze and understand the spending nature of the customer. These relative studies help to reveal any unseen relationship in the data which in turn can be used to achieve competitive advantage. Statistical methods are also used to minimize the customer attrition. This chapter details about Cross sell Models and Attrition Models.

Cross Sell Model

The cross sell modeling identifies customers with a high likelihood of purchasing a selected product.

Cross sell score model

Cross sell score modeling is performed by assigning a probability score to each customer according to the likelihood to purchase identified product type (CASA, CARDS, MORTGAGE, and so on).

The independent variables for cross sell models have generally included transactional data (transaction frequency, amount of transaction, account balance, and so on) and demographic data (age, gender, income, geographic location, and so on). The cross sell models covered in OFSRCA are the following:

- Cross sell CASA to CARDS customers model
- Cross sell CARDS to CASA customers model
- Cross sell CASA to MORTGAGE customers model
- Cross sell CARDS to MORTGAGE customers model
- Cross sell MORTGAGE to CARDS customers model

- Cross sell TERM DEPOSITS to CARDS customers model

The experience in financial industry shows that selling an additional product to an existing customer is much more profitable than selling the same to a new customer. Identifying the target group of existing customers with high likelihood of buying additional product is critical.

> **Note:** CASA, CARDS, MORTGAGE, and TERM DEPOSITS are product types offered to customer. New models can be built similar to the above-mentioned models to cover any other product type.

Techniques

Following are the methods used to implement the cross sell modeling:

- Logistic Regression
- K Means Cluster

Logistic Regression

Logistic regression is a statistical technique for predicting the outcome of a categorical dependent variable (a dependent variable that can take on a limited number of categories) based on one or more predictor variables (independent variables). The probabilities describing the possible outcome of a single trial are modeled, as a function of explanatory variables, using a logistic function.

Logistic regression can be binomial or multinomial. In cross sell score model, binomial logistic regression is used when the dependent variable or observed outcome (for example, CASA customers purchasing Cards) can have only two possible values ('Yes' or 'No'). The independent variables for these models have generally included transactional data and demographic data.

Application of Logistic Regression

1. Identify or derive the dataset, dependent variables, and independent variables for the logistic model.
2. Calibration is a process of fitting regression equation by estimation the coefficients for the logistic model. If the study is to identify the existing customers buying an additional product in next three months, calibration should be applied on the dataset where the customers did not possess the product under study prior to three months. Dependent variable (for example, cross sell Cards to CASA customer) is assigned 1 ('Yes') in cases where the customer had purchased the product type (Cards) in last three months and 0 ('No) elsewhere.
3. Calibrated model should be applied (executed) on current customers (CASA

customers) who do not possess the product under study. The objective is to predict the likelihood of these customers buying the additional product (Cards) in next three months. Cross sell score - Predictive probability (data output) will be used to identify customers with a high likelihood of purchasing additional product. The cross sell score value lies between zero and one and higher the value implies higher the chances of purchasing the additional product.

K Means Cluster

Clustering is the process of grouping the data into classes or clusters, so that the objects within a cluster have high similarity in comparison to one another, but are very dissimilar to objects in other clusters. In data mining, K means clustering is a method of cluster analysis which aims to partition n observations into K clusters in which each observation belongs to the cluster with the nearest mean.

Cross sell segmentation uses K means cluster to group the customers according to similarity in various dimensions and there by identifying customer groups which have high propensity to purchase selected product. The variables (dimensions) for this model have included transactional data and demographic data.

Applications of K Means Cluster

1. One of the prerequisite of cross sell segmentation model is execution of corresponding cross sell score model as the cross sell score is one of the variables (dimension) for cluster analysis.

2. Identify the dimensions or variables to be considered for cluster analysis and also specify the number of clusters required.

3. Model should be applied (executed) on current customers (CASA customers) who do not possess the product (Cards) under study. The output variable, product propensity segmentation will determine the group of the customer. User can name the groups as high propensity customer, medium propensity customer, or low propensity customer based on the average cross sell score of each groups.

Dataset

The cross sell scoring model and corresponding segmentation model works on same dataset. Dataset contains transactional data and demographic data of each customer (say CASA customer). The customers who already possess the target product prior to a period (say three months) are excluded from the dataset. Each of the cross sell models specified below has separate data set.

- Cross sell CASA to CARDS customers model

- Cross sell CARDS to CASA customers model

- Cross sell CASA to MORTGAGE customers model
- Cross sell CARDS to MORTGAGE customers model
- Cross sell MORTGAGE to CARDS customers model
- Cross sell TERM DEPOSITS to CARDS customers model

Variables

This section details about dependent and independent variables used in different scoring and segmentation models.

1. Cross sell CARDS to CASA customers - scoring model
   - Dependent variable is cross sell Cards to CASA customer, which takes value 1 in cases where the customer had purchased cards over a particular period (say last three months) and 0, otherwise.
   - Independent variables are customer annual income, account type, geography, customer profession, frequency of transaction, account average balance, customer age on book, recency, customer age, and account age on book.
2. Cross sell CASA to CARDS customers - score model.
   - Dependent variable is 'cross sell CASA to Cards customer', which takes value 1 in cases where the customer had purchased CASA over a particular period (say last three months) and 0, otherwise.
   - Independent variables for the model are customer annual income, account type, current delinquent status, customer gender, customer marital status, account credit limit, account EOP balance, revolve amount, customer age on book, average utilization rate, number of accounts, customer age, account CNR, customer frequency of purchase, customer credit score, and account age on book.
3. Cross sell CASA to MORTGAGE customers - score model
   - Dependent variable is 'cross sell CASA to Mortgage customer', which takes value 1 in cases where the customer had purchased CASA over a particular period (say last three months) and 0, otherwise.
   - Independent variables for the model is as follows customer annual income, current delinquent status, customer gender, customer marital status, customer profession, customer age on book, number of accounts, customer age, account original balance, account last delinquent date, remaining terms, and account age on book.

4. Cross sell CARDS to MORTGAGE customers - score model

   - Dependent variable is 'cross sell Cards to Mortgage customer', which takes value 1 in cases where the customer had purchased cards over a particular period (say last three months) and 0, otherwise.

   - Independent variables are customer annual income, current delinquent status, customer gender, customer marital status, customer age on book, number of accounts, customer age, account original balance, account last delinquent date, remaining terms, and account age on book.

5. Cross sell MORTGAGE to CARDS customers - score model

   - Dependent variable is 'cross sell Mortgage to Cards customer', which takes value 1 in cases where the customer had purchased mortgages over a particular period (say last three months) and 0, otherwise.

   - Independent variables are customer annual income, account type, current delinquent status, customer gender, customer marital status, account credit limit, account EOP balance, revolve amount, customer age on book, average utilization rate, number of accounts, customer age, account CNR, customer frequency of purchase, customer credit score, account total revenue, and account age on book.

6. Cross sell TERM DEPOSITS to CARDS Customers - score model

   - Dependent variable is 'cross sell TD to Cards customer', which takes value 1 in cases where the cards customer had purchased TD over a particular period (say last three months) and 0, otherwise.

   - Independent variables are customer annual income, account type, current delinquent status, customer gender, customer marital status, account credit limit, account EOP balance, revolve amount, customer age on book, average utilization rate, number of accounts, customer age, account CNR, customer frequency of purchase, customer credit score, account total revenue, and account age on book.

Output

The output for Cross sell score model:

The output variable for cross sell score modeling is cross sell score. Cross sell score is a probability value which indicates the likelihood of a customer purchasing the additional product. The higher the probability values higher the chances of purchasing the additional product.

Customer Attrition

Customer Attrition (Customer Churn) is the loss of clients or customers.

Customer Attrition Score Model

Customer attrition score modeling is performed by assigning a probability score to each customer that predicts the attritional behavior of the customer.

The Attrition models covered in OFSRCA are the following:

- Account Attrition Analysis - CARDS model
- Account Attrition Analysis - CASA model
- Account Attrition Analysis - TD model
- Account Attrition Analysis - AUTO LOAN model

The experience in financial industry shows that cost of retaining a new customer is far less than that of acquiring a new customer. Studies reveal that recovered long-term customers can be worth much more to an organization than the newly recruited clients.

> **Note:** CASA, CARDS, AUTO LOANS, and TERM DEPOSITS (TD) are product types offered to customers. New models can be built similar to the above-mentioned models to cover any other product type.

Technique

Following are the methods used to implement the Customer Attrition modeling:

- Logistic Regression
- K Means Cluster

Logistic Regression

Logistic regression is a statistical technique for predicting the outcome of a categorical dependent variable (a dependent variable that can take on a limited number of categories) based on one or more predictor variables (independent variables). The probabilities describing the possible outcome of a single trial are modeled, as a function of explanatory variables, using a logistic function.

Logistic regression can be binomial or multinomial. In Attrition score model, binomial logistic regression is being used where in the instance in which the dependent variable or observed outcome (for example, CASA customers closing the account) can have only two possible values ('Yes' or 'No). The independent variables for these models have

generally included transactional data and demographic data.

Application of Logistic Regression

1. Identify or derive the dataset, dependent variables, and independent variables for the logistic model.

2. Calibration is a process of fitting regression equation by estimation the coefficients for the logistic model. Dependent variable (account closed) is assigned 1 ('Yes') in cases where the customer had closed the account (CASA account) and 0 ('No') elsewhere.

3. Calibrated model should be applied (executed) on current customers (customers who have closed the account should be excluded from data set). The objective is to identify customers that were at the risk of attrition. Account attrition score - predictive probability (data output) will be used to identify customers with a high likelihood of terminating the relationship with the organization. The attrition score value lies between zero and one and higher the value implies higher the risk of attrition.

K Means Cluster

Clustering is the process of grouping the data into classes or clusters so that objects within a cluster have high similarity in comparison to one another but are very dissimilar to objects in other cluster. In data mining, K means clustering is a method of cluster analysis which aims to partition n observations into K clusters in which each observation belongs to the cluster with the nearest mean. Attrition segmentation uses K means cluster to group the customers according to similarity in various dimensions and there by identifying customer groups customers that were at the risk of attrition. The variables (dimensions) for this model have included transactional data and demographic data.

Application of K Means Cluster

1. One of the prerequisite of attrition segmentation model is execution of corresponding attrition score model as the attrition score is one of the variables (dimension) for cluster analysis.

2. Identify the dimensions or variables to be considered for cluster analysis and also specify the number of clusters required.

3. Model should be applied (executed) on current customers. The customers who have closed the account should be excluded from the dataset. The output variable, account attrition segmentation will determine the group of the customer. User can name the groups as high propensity customer, medium propensity customer, low propensity customer, and so on based on the average attrition score of each groups.

Dataset

The attrition scoring model and corresponding segmentation model works on same dataset. Dataset contains transactional data and demographic data of each customer. Each of the models specified below has separate data set.

- Account Attrition Analysis - CARDS (score and segmentation) model
- Account Attrition Analysis - CASA (score and segmentation) model
- Account Attrition Analysis - TD (score and segmentation) model
- Account Attrition Analysis - AUTO LOAN (score and segmentation) model

Variables

This section details about dependent and independent variables used in different scoring and segmentation models.

1. Account Attrition Analysis - CARDS
   - Dependent variable is 'account closed', which takes value 1 in cases where the customer had closed the Cards account, and 0 otherwise.
   - Independent variables are customer annual income, number of accounts, customer age on book, customer age, account age on book , account total revenue, account CNR, account credit limit, account total fee charged, account EOP balance amount, customer frequency of purchase, pricing, repricing flag, customer marital status, customer gender, customer credit score, customer card utilization percentage, and bill payment indicator.
2. Account Attrition Segmentation - CARDS
   - Variables under study are account customer annual income, number of accounts, customer age on book, customer age, account age on book, account total revenue, account CNR, account credit limit, account total fee charged, account EOP balance amount, customer frequency of purchase, pricing, customer marital status, customer gender, and account closed.
3. Account Attrition Analysis - CASA
   - Dependent variable is 'account attrition', which takes value 1 in cases where the customer had closed CASA account, and 0 otherwise.
   - Independent variables for the model are as follows a customer annual income, account type, customer age on book, customer profession, activity recency, bill payment indicator, account average balance, number of accounts, and account

age on book.

4. Account Attrition Segmentation - CASA

   - Variables under study are account attrition, customer annual income, account type, customer age on book, activity recency, bill payment indicator, account average balance, number of accounts, and account age on book.

5. Account Attrition Analysis - TD

   - Dependent variable is 'account status', which takes value 1 in cases where the customer had closed the TD account, and 0 otherwise.

   - Independent variables for the model is as follows number of account renewals, remaining term, number of accounts, and account closed.

6. Account Attrition Segmentation - TD

   - Variables under study are account status, account renewals, remaining term, number of accounts and account closed.

7. Account Attrition Analysis - AUTO LOANS

   - Dependent variable is 'account closed', which takes value 1 in cases where the customer had closed the auto loan account, and 0 otherwise.

   - Independent variables are as follows customer annual income, current delinquent status, customer gender, customer marital status, customer age on book, number of accounts, customer age, original term, remaining terms, and re-price term.

8. Account Attrition Segmentation - AUTO LOANS

   - Variables under study are account closed, customer annual income, current delinquent status, customer gender, customer marital status, customer age on book, number of accounts, customer age, original term, remaining terms, and re-price term.

Output

1. Attrition Score Model

   The output variable for attrition score modeling is account attrition score. Account attrition score is a probability value which indicates risk of attrition of each customer. The higher the probability values, the higher the risk of attrition.

2. Attrition Segmentation Model

The output variable for attrition segmentation modeling is account attrition segmentation. The output variable, account attrition segmentation will determine the group to which the customer belongs. User can name the groups as high propensity customer group, medium propensity customer group, or low propensity customer group based on the average attrition score of each groups.

11

Predictive Models

Introduction

Oracle Financial Services Retail Customer Analytics (OFSRCA) uses modeling techniques available in Oracle Financial Services Advanced Analytics Infrastructure (OFSAAI).

The predictive models calculation and reporting broadly involves the following activities:

- Sandbox Definition
- Variable Preparation
- Model Definition
- Model Execution
- Model Deployment
- Run Definition
- Run Execution
- Report Generation

Sandbox Definition

Within Production infodom, you have to create sandbox infodom. Sandbox is defined inside the newly created infodom. You have to define the relevant Sandbox Name, Sandbox Description, Sandbox Location and the relevant dataset for the sandbox. The data model is copied to the production once the sandbox is defined. The data would be extracted or imported from Production infodom based on the dataset defined there.

In this step data is received for all raw attributes for a particular time period table. A super data set is created with the help of which all the models are defined.

Variable Preparation

For modeling purposes, you need to select the variables required for modeling. You can select and treat these variables in the **Variable Management** screen. You can define variables on Measures, Hierarchies or Business Processors. A measure refers to the underlying column value in the database and you can consider this as the direct value available for modeling.

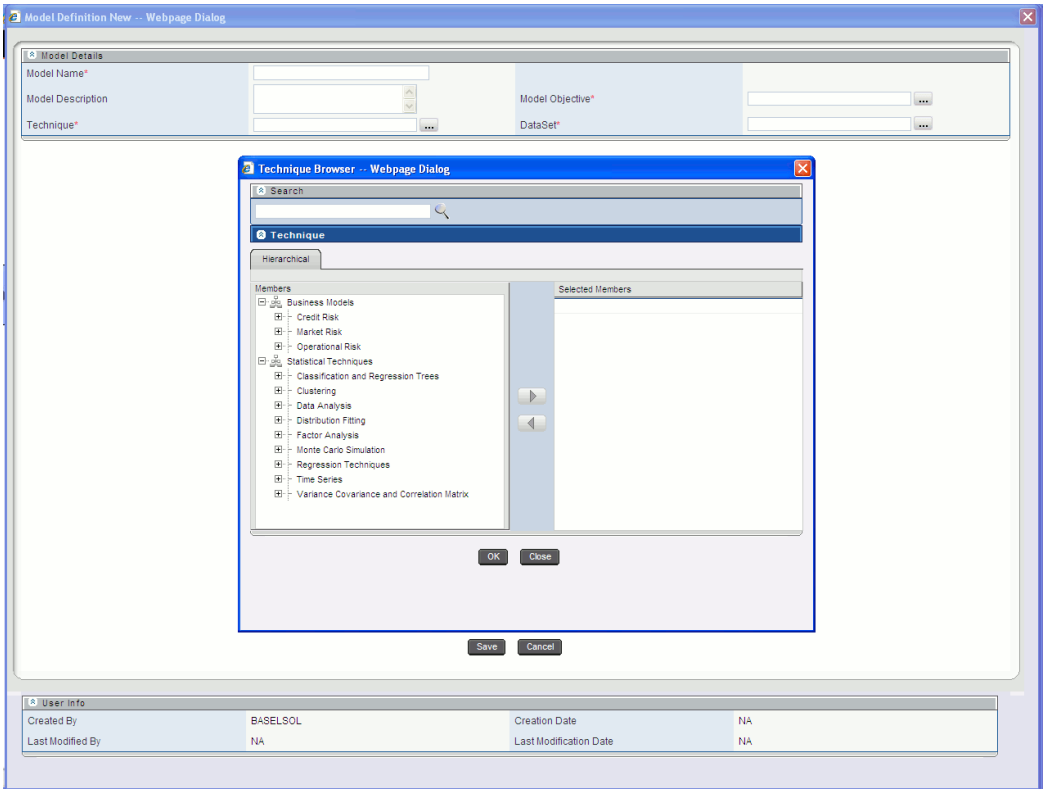
You can select hierarchy for modeling purposes. For modeling purposes, qualitative variables need to be converted to dummy variables and such dummy variables need to be used in model definition. Dummy variables can be created on a hierarchy. Business Processors are used to derive any variable value. You can include such derived variables in model creation.

Model Definition

This section deals with models to be defined in the modeler part of the RCA application. All model definitions are done on a set of exposures affected by the same set of variables. Data set should be selected specific to the model defined. Data set filter is used to group the exposures into one set.

Models are defined leveraging the techniques available within the Modeling Framework to calculate the desired output.

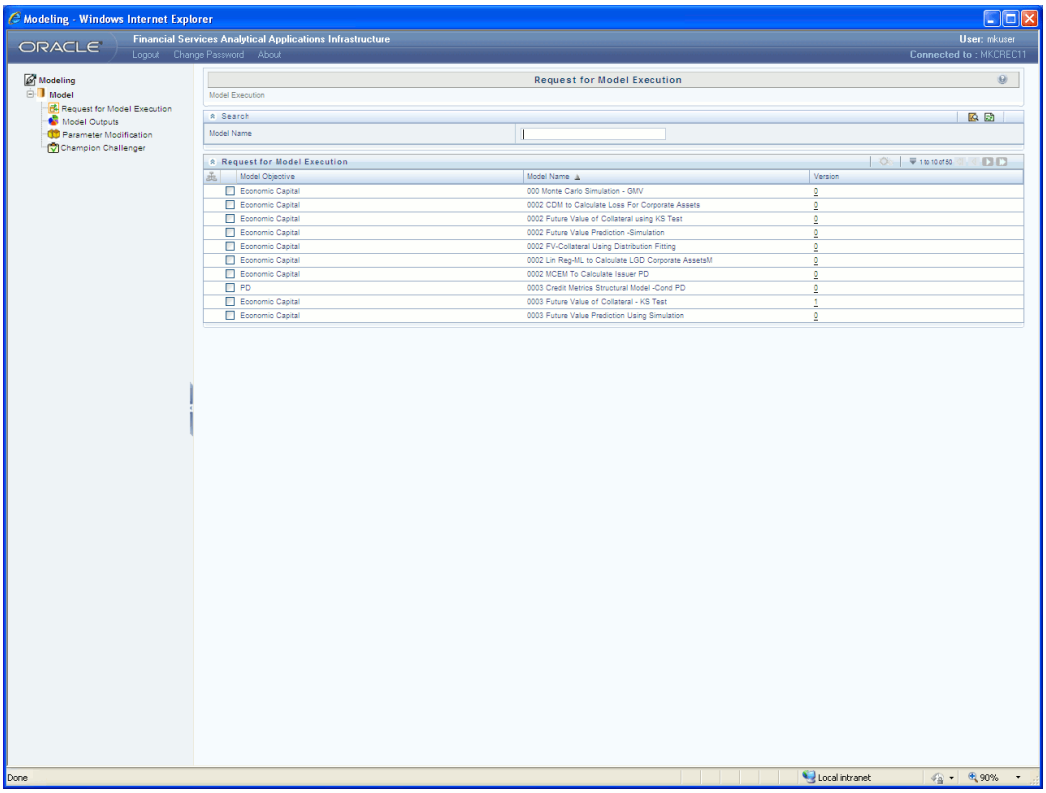
You can define the input and the output variables for the technique (the variables defined in the sandbox are shown in the dropdown list), can add filters and define data and process outputs by selecting the respective tabs as shown in the following figure:



Model Execution

After all the Predictive Models are defined, it is requested for execution. You can define a single model for a technique and execute it. While you **Request for Execution**, a batch is registered in the ICC server with the Model ID.

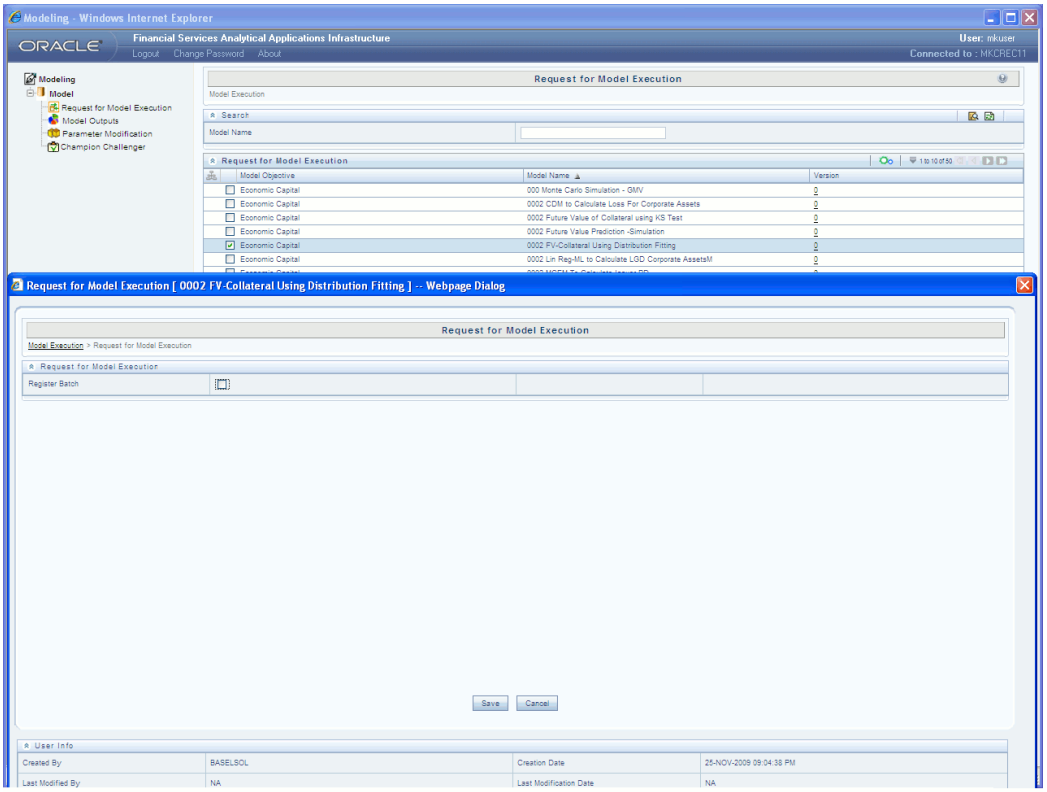
To execute the batch, select the relevant model id to run the relevant model.



Model Deployment

All the models created by the user should be deployed from the sandbox infodom to the production infodom.

To deploy a model, click the relevant model and request for deployment, authorize, deploy and click **Save**.



Important Notes

Sampling

Oracle Financial Services Advanced Analytical Framework also supports sampling. Sampling is an essential and critical part in modeling.

It allows for three-types of samples to be taken:

- Training Sample
- Control Sample
- Test Sample

A training sample is the sample on which the model is configured and a test sample is the sample on which the model gets executed (predicted). Control sample is a sample which can be used for model comparison. Therefore, training sample is called so because it trains the model and the test sample is used to test the model. The framework currently supports random samples or stratified random samples to be taken with or without replacement. Specification of training sample is mandatory. Sample

specifications allows for either absolute value specification or a percentage specification.

Process Output

Process outputs are the set of outputs at a model level. You can choose the links for .csv files in the **Model Output** screen to view these process outputs. These process output provides you with a summary of the model analysis and hence can be used to compare different versions of the same model.

For example, R2 for regression, Coefficients of regression, and so on.

Data Output

Data Outputs are thrown at the record level and stored in the **Rev_Model_Output_Details**.

12

Cube Build Process

Introduction

Reports of OFSRCA application can be configured to work on Relational database or Essbase cubes. Source of data for the reports is determined by the priority set for each Logical Table Source (LTS) in OBIEE RPD. 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. OFSAA Infrastructure is used for defining metadata about the cube and for building the cubes. Cubes are optional source of data for Retail Customer Analytics application.

Overview of Cubes

OFSRCA application has the following seeded cubes:

- Retail Analysis
  - Purpose

    The purpose of this cube is to provide analysis of various Account related measures across dimensions like Product, Line of Business, Vintage, and so on.

  - Dataset

    This cube is based on the FCT_COMMON_ACCOUNT_SUMMARY and FCT_CRM_ACCOUNT_SUMMARY fact tables.

- Channel Analysis
  - Purpose

    The purpose of this cube is to provide analysis of various transactions related measures across dimensions like Product, purchase category, transaction failure reason, and so on.

- Dataset

  This cube is based on the FCT_TXN_CHANNEL fact table.

- Customer Summary
  - Purpose

    The purpose of this cube is to provide analysis of various Customer related measures across customer profile dimensions like Income Band, Age, and so on.

  - Dataset

    This cube is based on the FCT_COMMON_CUSTOMER_SUMMARY and FCT_CRM_CUSTOMER_SUMMARY fact tables.

Creating Configuration Files

Each cube has a configuration file that contains the details of dimensions and measures which are part of the cube. Essbase outline is created using the configuration file. Configuration files for seeded cubes are available as part of the installer. However, if there are any changes to cube definition then configuration files are recreated during saving of the cube definition.

Follow these steps:

1. On the LHS menu of OFSAAI, go to **Home > Unified Metadata Manager > Business Metadata Management > Cubes**.
2. Click **Search** and check if you can see the cubes in the pop up window that opens.
3. Click on the cube that needs to be built and click OK to return to the Cube Definition Screen.
4. Click **Save** to save the cube. A pop up appears saying 'Operation Successful'.

> **Note:** Cube definition will be saved only when the UI component detects any change event. In order to trigger the change event, type a blank space in 'Long Description' text-box and remove the same. Instead, you can remove a dimension from the selected list, re-select the same dimension to apply the variation for the dimension, and save the same.

Building Of Cubes

The Cube build process in OFSAA Infrastructure contains the following steps:

- Generating an aggregate DATA file containing the measure values for each dimension leaf that are part of the cube definition. This is performed by the **AGGREGATE DATA** component task within the batch definition.
- Creating the cube outline on Essbase server. This is performed by the **CREATE CUBE** component task within the batch definition.
- Loading the data to the cube. This is performed by the CREATE CUBE task within the batch definition.

This section covers the following topics:

- Prerequisites
- Tables used by the Cube build component
- Executing the Cube build task
- Checking the execution status

Prerequisites

The following are prerequisites for creating a cube:

- All the post install steps mentioned in the *OFSAA Infrastructure Installation Guide* and *Solution Installation Manual* have been completed successfully.
- Parentage files need to be created for BI hierarchies after dimension data is loaded. 'Resave Metadata' process is used to create the parentage files.
- OFSAAI application user needs to have the required functions mapped to the user for doing Resave Metadata and accessing the Home> Unified Metadata Manager > Business Metadata Management screens and executing a batch from Application batch operations screen.
- Execute Save Metadata by navigating to the following screen on the OFSAAI framework LHS Menu.
- Go to Home > Administration > Save Metadata.
- Choose all the available metadata under Hierarchy and move it to the right by using the '>>' button.
- Click Save and might take a few minutes for the saving to complete.
- Click Show Details to view the log for the Save operation.

  Refer to *System Configuration* and *Administration* chapters in *OFSAAI User Manual*

for details on the Resave metadata feature. Saving metadata creates all the parentage files required for building cubes.

- Ensure that the following services are running on the application server before doing a cube build:
  - Iccserver
  - Router
  - AM
  - Messageserver
  - Olapdataserver
- Batches need to be created for executing, which is explained in the Executing the Cube build section.
- All the required tables for dataset need to be populated before you execute the cube batches, such as Dimension Population, Time Dimension population, Account Summary Population, and Fact Ledger Population.
- The dataset for the cube should return some rows in the database for the cube build to happen.

  To check the same, perform the following steps:
  - Navigate to Home > Unified Metadata Manager > Business Metadata Management > Data Sets.
  - Click Search.
  - Click any dataset in the pop up which opens and click OK to return to the data set screen.
  - Click the button on right of ANSI Join text box. Enter the required expression or click the below button to define an expression using the Expression screen.
  - Click OK to return to the data set screen.

    For more information, refer to Create Expression section in *OFSAA Infrastructure User Guide*.
- Perform the same for Join/Filter Condition and Date filter.
- Frame a SQL query like this:

```
SELECT COUNT(1) FROM <ENTER THE PART YOU OBTAINED FROM ANSI JOIN
PART ABOVE>WHERE<ENTER THE PART YOU OBTAINED FROM JOIN/FILTER
CONDITION & DATE FILTER PARTS>
```

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

Tables Used by the Cube Build Component

Tables that are part of the dataset need to 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 Task

To execute the cube build process from OFSAAI 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). The above batch needs to be created for each of the cubes.

Aggregate Data Task

1. From OFSAAI Home menu, select Operations > 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 on the check box in the Batch Name container.
5. Click New Task ('+' symbol in Task Details container).
6. Enter the Task ID and Description.
7. In the Component drop down, choose Aggregate Data.
8. 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 - Choose the cube code to be built from the drop down list.
- Operation - Choose All from the drop down list.

Create Cube Task

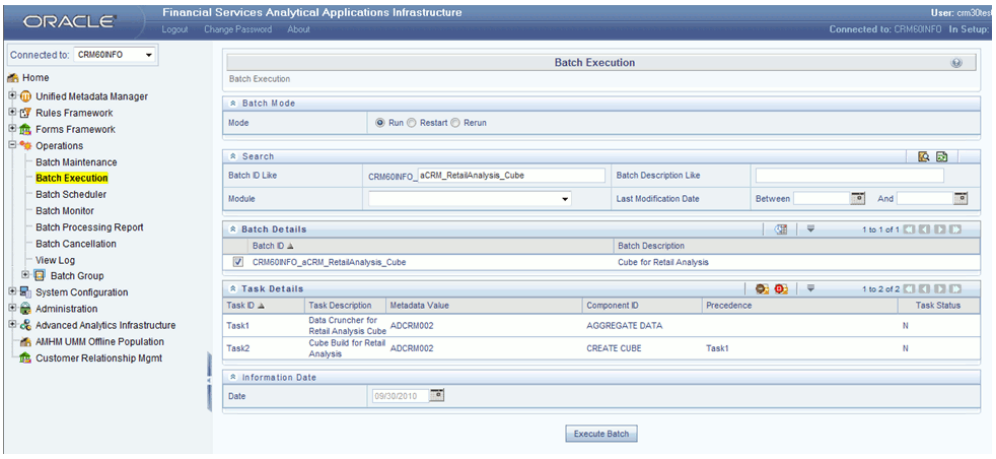
1. In the batch created in Aggregate Data task above, click New Task ('+' symbol in Task Details container).
2. Enter the Task ID and Description.
3. In the Component drop down, choose Create Cube.
4. Select the following from the Dynamic Parameters List and then click Save:
   - Datastore Type - Select 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 - Choose the cube code to be built from the drop down list.
   - Operation - Choose All from the drop down list.
5. Execute the batch created in the above step.

   Note: A common issue in the Aggregate 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 mentioned in the 'Checking the Execution Status' section below). 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.

Seeded batches are provided along with the RCA application installer. The below described are the OFSRCA seeded batches:

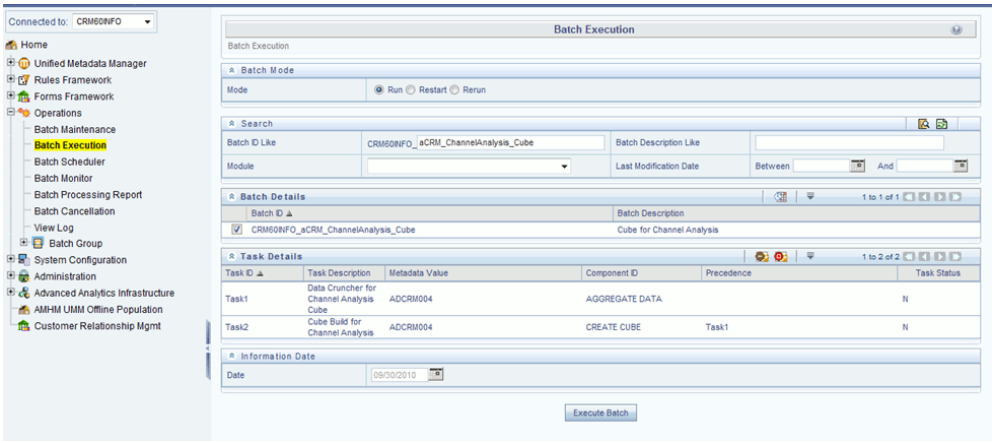
- Retail Analysis

  Seeded batch **<INFODOM>_aCRM_RetailAnalysis_Cube** is provided with the installer. Execute the batch for the required MIS Date.



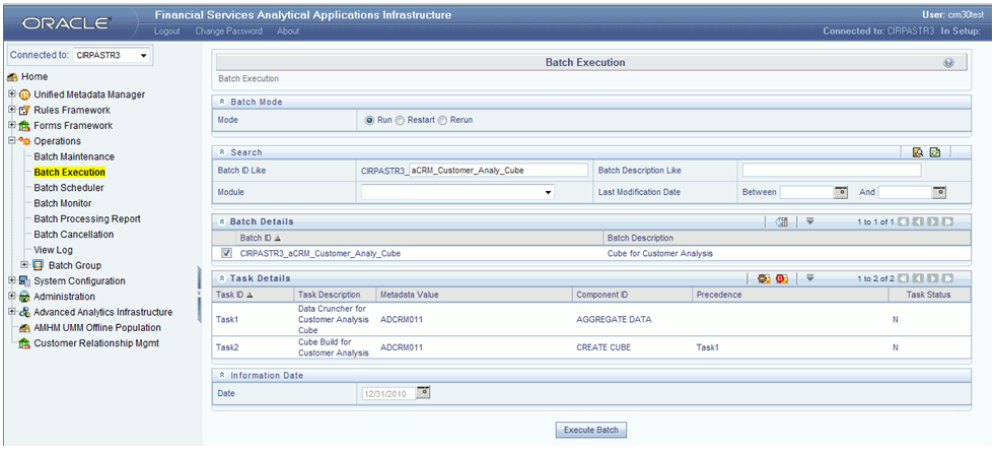
- Channel Analysis

  Seeded batch **<INFODOM>_aCRM_ChannelAnalysis_Cube** is provided with the installer. Execute the batch for the required MIS Date.



- Customer Summary

  Seeded batch **<INFODOM>_aCRM_Customer_Analy_Cube** is provided with the installer. Execute the batch for the required MIS Date.



Checking the Execution Status

The status of execution can be monitored using the Batch Monitor screen. From OFSAAI Home menu, select Operations > Batch Monitor.

> **Note:** For a more comprehensive coverage of configuration and execution of a batch, refer to *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 directory *$FIC_DB_HOME/log/dc* for the Task 1 above (Aggregate Data). The file name will have the Batch Execution ID.

The execution log can be accessed on the application server by going to the following directory *$FIC_DB_HOME/log/olap* for the Task 2 above (Create Cube). The file name will have the Batch Execution ID.

> **Note:** Refer to Appendix on how to Add a New Cube, page C-1 or Modifying existing ones. For any new cube added using the OFSAAI framework Cube screen , the tasks for execution are the same as mentioned above.

13

Model Execution

This chapter covers the following topics:

- Prerequisites
- Model Execution Process

Prerequisites

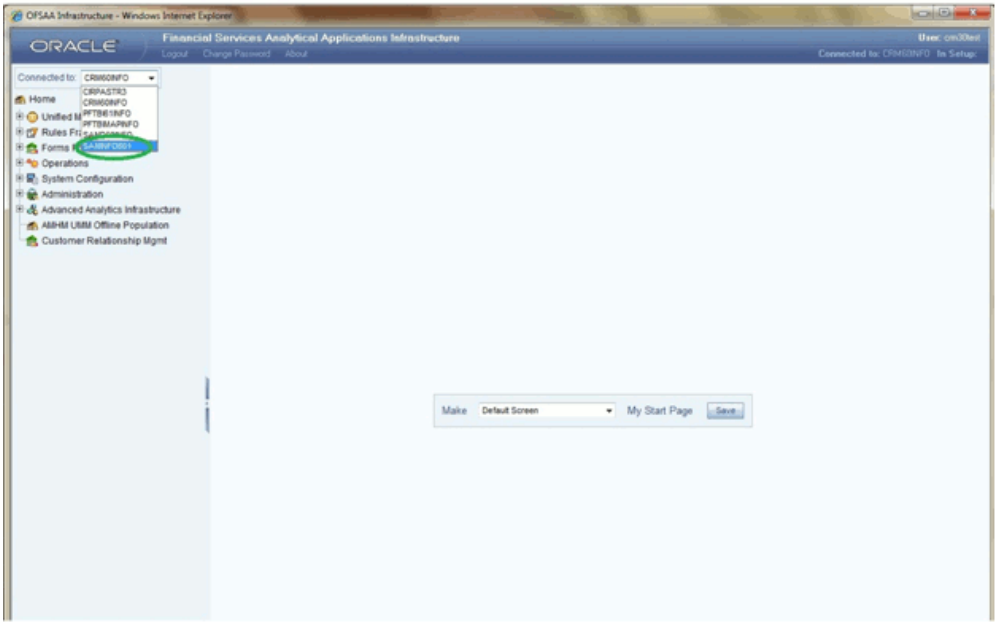
A model execution requires a well defined model with a dataset, that comprises the relevant entities. Both the Sandbox and Production database schema should contain relevant records for the dataset - defined ANSI joins. The variables defined should have existing Business Measures or Business Processors that are defined based on existing database columns. A model execution is typically done on a specific target date. If there are multiple dates, multiple executions are required for each date.

Model Execution Process

Sandbox Calibration

Calibration is a process that gives an initial estimate of the required output for the model. A successful Calibration is a prerequisite for a model execution. Calibration, like model execution, is done on a specific target date. However, calibration is done only on the initial date.

1. In the *OFSAAI Home* page, select the Sandbox Information Domain from the **Connected to** drop down list.



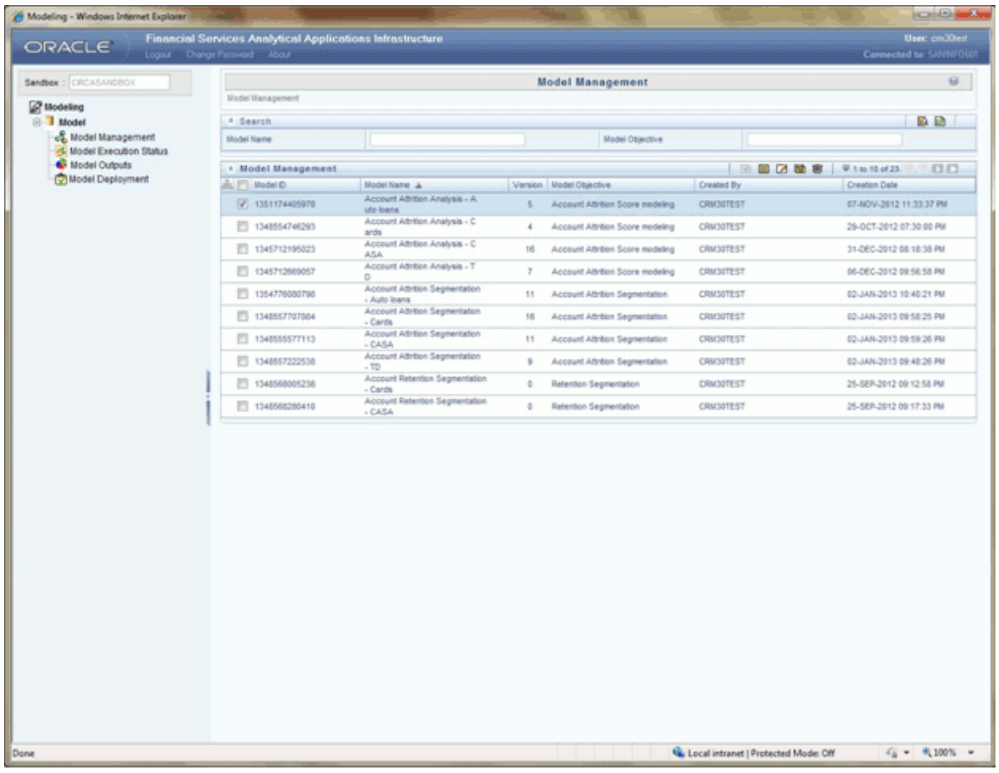
2. From *OFSAAI Home* page, navigate to **Advanced Analytics Infrastructure > Modeling**.

   The *Modeling* window is displayed.

3. Click **Model Management** link on the LHS.

   The *Model Management* window is displayed with the available Model definition details.

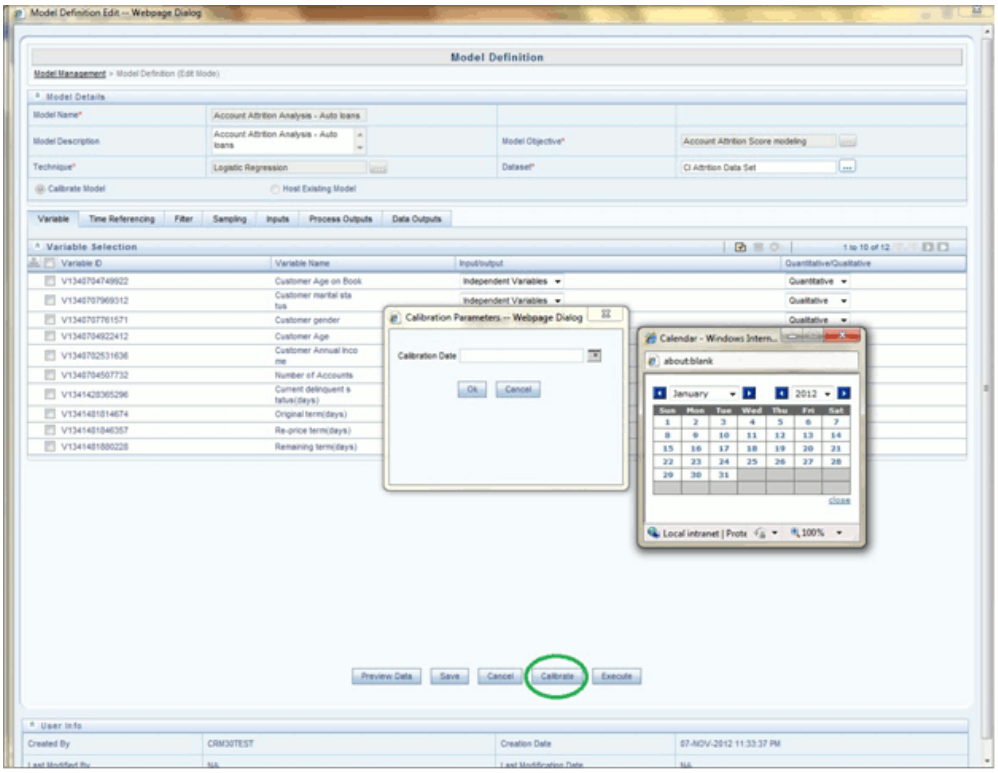
4. Select the desired model definition by selecting the check box adjacent to the Model ID, in the *Model Management* grid.



5. Click **Edit** button in the *Model Management* grid.

   The *Model Definition (Edit Mode)* window is displayed.

6. Click **Calibrate** button and pick an initial date from the calendar.



7. Click **OK**.

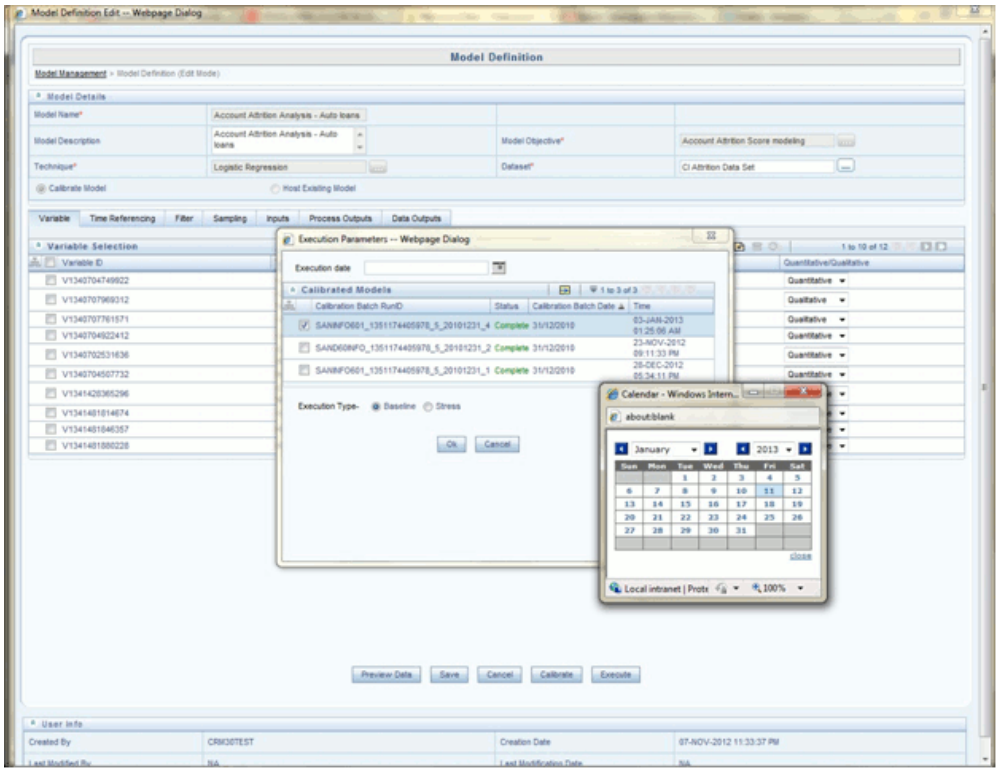
   The calibration details are saved.

Sandbox Execution

A successful Model calibration facilitates the execution on the desired target date. WAn exclusive execution is required for each of the desired dates.

1. In the *Model Definition (Edit Mode)* window, click **Execute** button.

   The *Execution Parameters* window is displayed.



2. Select the check box adjacent to the Calibration Batch Run IDs from the *Calibrated Models* grid.

3. Pick an **Execution date** from the calendar

4. Select the **Execution Type** either as Baseline or as Stress.

5. Click **OK**.

Authorization and Deployment to Infodom

After a successful Model execution, the model becomes available to be deployed into the Infodom. This process is necessary to ensure that all the changes made in the Sandbox are reflecting in the execution done on the Infodom and accurate results are obtained.

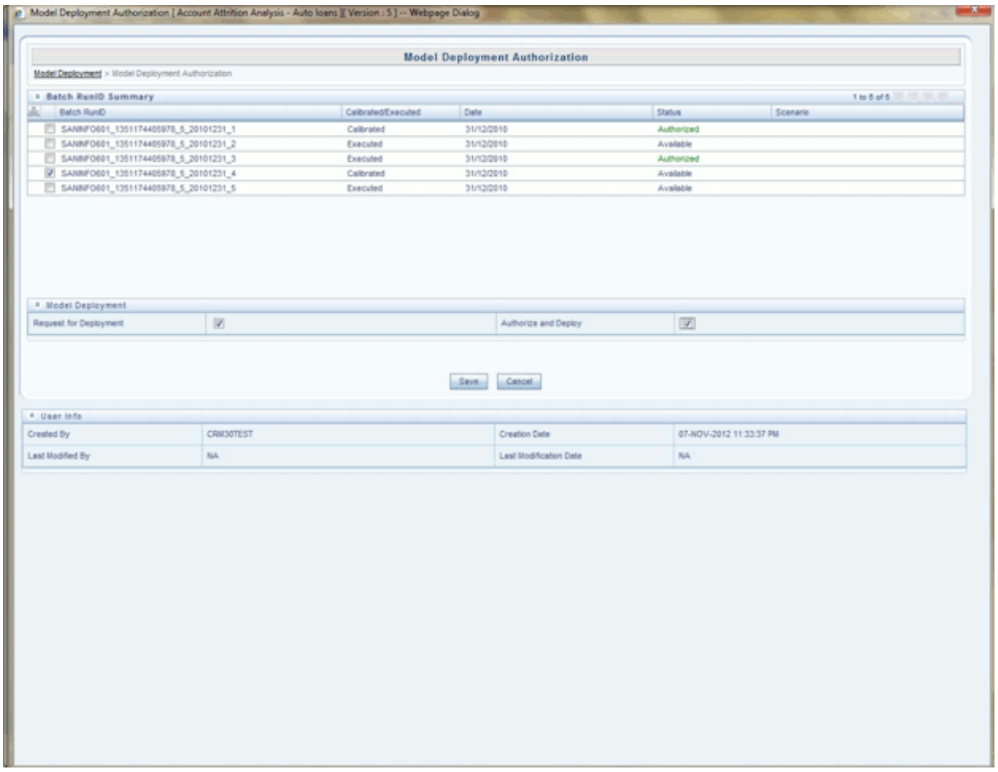
1. In the *Modeling* window, click **Model Deployment**.

   The *Model Deployment* window is displayed.

2. Select the check box adjacent to the Model ID in the *Model Deployment* grid.

3. Click **Deploy/Authorize** button in the *Model Deployment* grid.

   The *Model Deployment Authorization* window is displayed.



4. Select the check boxes in **Request to Deployment** and **Authorize and Deploy** fields.

5. Click **Save**.

   The Model is authorized and deployed.

Infodom Execution

A Model becomes available for execution in the Infodom after it has been authorized and deployed in the sandbox. Once a request is processed for the execution in the Infodom, a Batch is registered for the Model. This relevant Batch can be executed to obtain the results.

1. In the *OFSAAI Home* page, select the Production Information Domain from the **Connected to** drop down list.

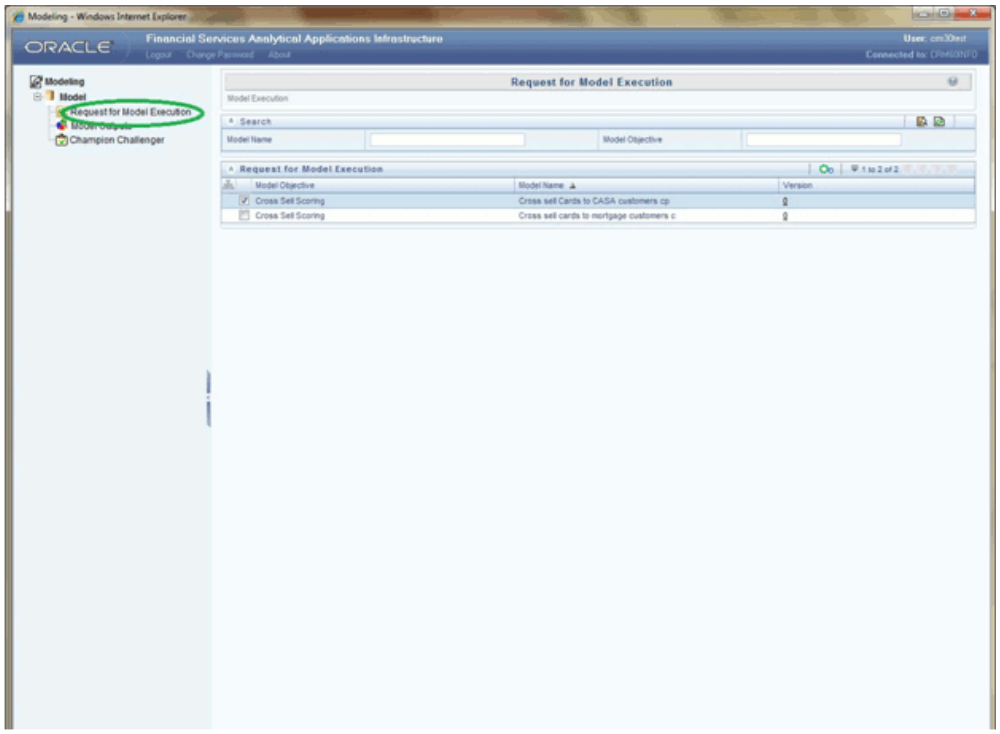
2. From *OFSAAI Home* page, navigate to **Advanced Analytics Infrastructure > Modeling**.

   The *Modeling* window is displayed.

3. In the *Modeling* window, click **Request for Model Execution**.

   The *Request for Model Execution* window is displayed with the available Model

Objectives.



4. Select the check box adjacent to the Model Objective name in the *Request for Model Execution* grid.

5. Click **Action** button in the *Request for Model Execution* grid.

   The *Request for Model Execution* window is opened. Here you can register a Batch.

6. Select the check box in the **Register Batch** field.

7. Click **Save**.

   A Batch ID is created for the Model execution.

Batch Execution

1. From *OFSAAI Home* page, navigate to **Operations > Batch Execution**.

2. Select the check box adjacent to the Batch ID registered for Model execution.

3. Pick a date from the calendar in *Information Date* grid for **Date** field.

4. Click **Execute Batch** button.

Loading Data to the Target Table

Once the Infodom Execution is complete, the results are recorded in the following tables with sequence numbers leading back to the execution process:

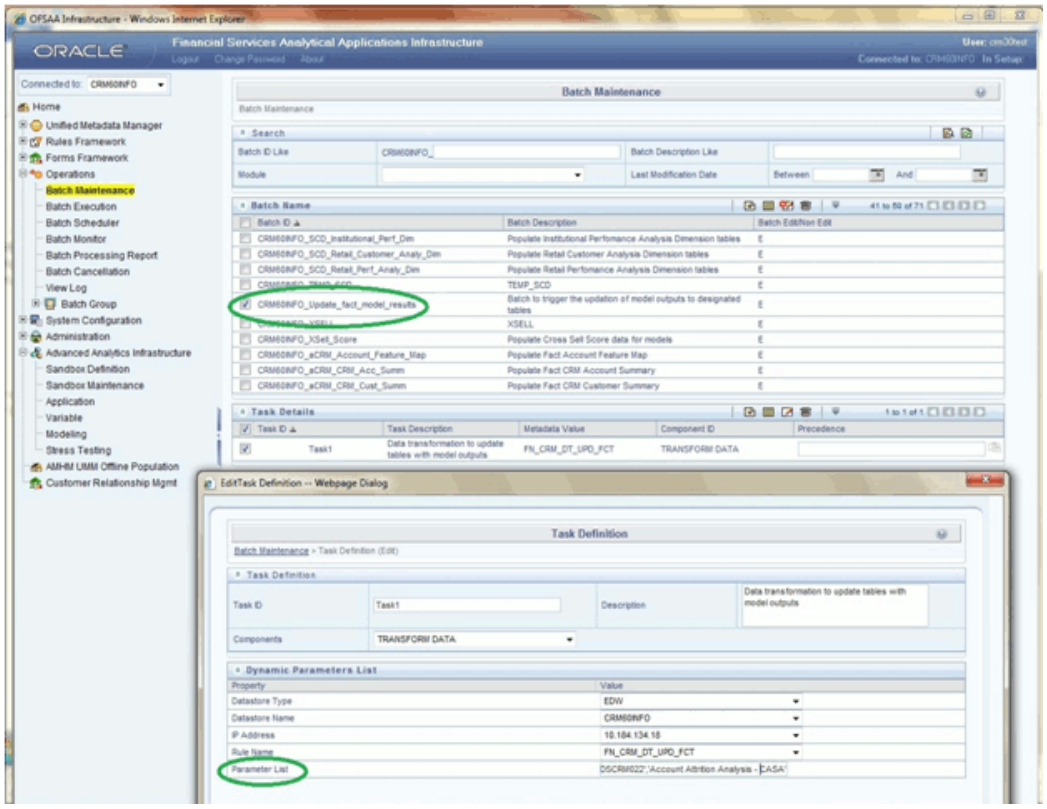
- MF_MODEL_DATA_OUTPUT
- MF_MODEL_DATA_OUTPUT_DETAIL

Based on the sequence and reference numbers in these tables, the target table is updated. For this purpose, a Batch is triggered. The Batch is built on a process that can backtrack the relevant combination of primary keys and update the relevant records in the target table's target column(s). The name of the Batch registered for this purpose is CRM60INFO_Update_fact_model_results. This batch accepts the input parameter list and based on this list it identifies the specific Model to update.

The list of parameters required are the following (This is listed in the exact order) :

- Batch ID
- Execution Date
- Run ID
- Process ID
- Run Execution ID
- Run Key
- Model ID
- Sample ID
- Sequence Number
- Model Version
- Model Description
- Dataset Code
- Model Name

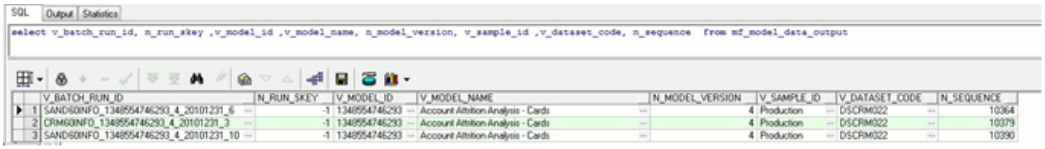
Execute the Batch created to update data in the target table from the temporary table.



The parameters list must be updated with details relevant to the specific Model. These details are obtained from the temporary table - MF_MODEL_DATA_OUTPUT.

Example

The following is an example of a successful model execution from the Infodom CRM60INFO. The details are obtained from the above mentioned temporary table:



V_BATCH_RUN_ID	N_RUN_SKEY	V_MODEL_ID	V_MODEL_NAME	N_MODEL_VERSION	V_SAMPLE_ID	V_DATASET_CODE	N_SEQUENCE
1 SANDI60INFO_1348554746293_4_20101231_6	-1	1348554746293	Account Attrition Analysis - Cards	4	Production	DSCRM022	10364
2 CRM60INFO_1348554746293_4_20101231_3	-1	1348554746293	Account Attrition Analysis - Cards	4	Production	DSCRM022	10379
3 SANDI60INFO_1348554746293_4_20101231_10	-1	1348554746293	Account Attrition Analysis - Cards	4	Production	DSCRM022	10390

The Parameter that you should enter for this Model execution are the following:

Parameter	Value
Batch ID	CRM60INFO_1348554746293_4_20101231_3
Execution Date	20101231
Run ID	

Parameter	Value
Process ID	
Run Execution ID	
Run Key	-1
Model ID	1348554746293
Sample ID	Production
Sequence Number	10379
Model Version	4
Model Description	Account Attrition Analysis - Cards
Dataset Code	DSCRM022
Model Name	Account Attrition Analysis - Cards

Common Reasons for Execution Failure

- Missing Metadata

  One or more of the variables defined are based on columns that do not exist or have not been introduced into the Sandbox or Production schema.

- Null Columns

  One or more of the independent variables which have been left null. A typical regression model requires all the participating variables to have non-null values. However, the output variable however can be left null.

- Procedure Failure

  Erratic or inconsistent data can sometimes lead to a procedural failure. A typical regression model fails when the error calculated with respect to any single variable is too high and the parameters governing the model cannot be estimated based on the provided data.

How to Get a Useful Output

A model is typically defined with all the variables in consideration. This model

definition however is a generic understanding of the practical circumstances. Sometimes there occur situations where the defined model does not give outputs which are significant enough to make an informed decision. In such a case, it is important to identify the variables that are causing the anomaly and disregard said variable for a better output.

14

Overview of OFSRCA Reports

Introduction to Dashboards

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

These reports present:

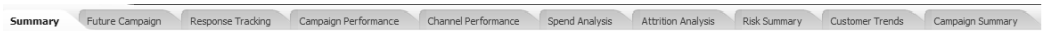
- Predictive analysis to determine cross sell/up sell scores, product, and channel propensities leveraging transactional/behavioral data.
- ROI of campaigns over time (transaction performance needs to be measured for at least over 12 months for accurate LTV predictions)
- Prospect/list scoring leveraging any internal/bureau information, cluster analysis and projected NPV.
- Customer Segmentation.
- Wallet Share (spend diversity, activation, and so on) and Attrition analysis.
- Performance tracking of current campaigns across key measures like Sales, Asset and Liability balances, Fee-based product subscriptions and sustained performance over time, Credit score distribution of new accounts sourced, and early alerts on any negative skews.

Dashboards

Following tabs are present in the Retail Customer Analytics dashboard:

- **Summary**
- **Future Campaign**

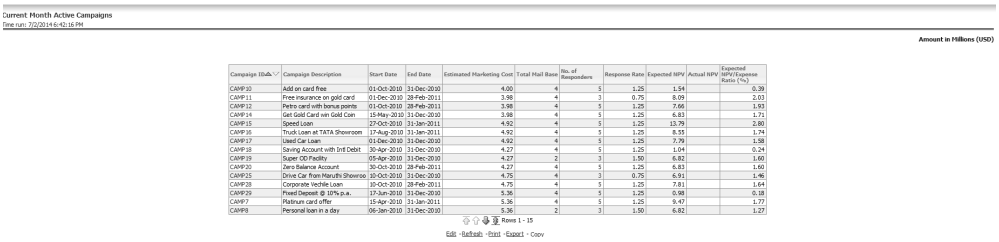
- **Response Tracking**
- **Campaign Performance**
- **Channel Performance**
- **Spend Analysis**
- **Attrition Analysis**
- **Risk Summary**
- **Customer Trends**
- **Campaign Summary**



Summary

- Current Month Active Campaigns

  A list of marketing campaigns that started in the current month along with the early campaign metrics like Response Rate.

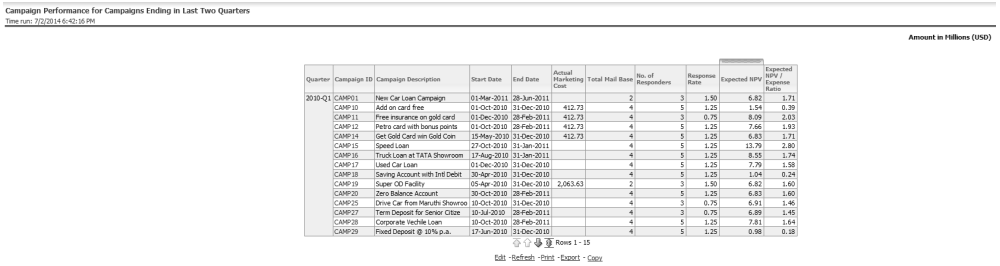


- Upcoming Campaigns

  A summary of the marketing campaigns planned for the future.

- Campaign Performance

Response metrics for campaigns that are currently active (irrespective of start date).



Campaign Performance for Campaigns Ending in Last Two Quarters

Time run: 7/2/2014 6:42:16 PM

Amount in Millions (USD)

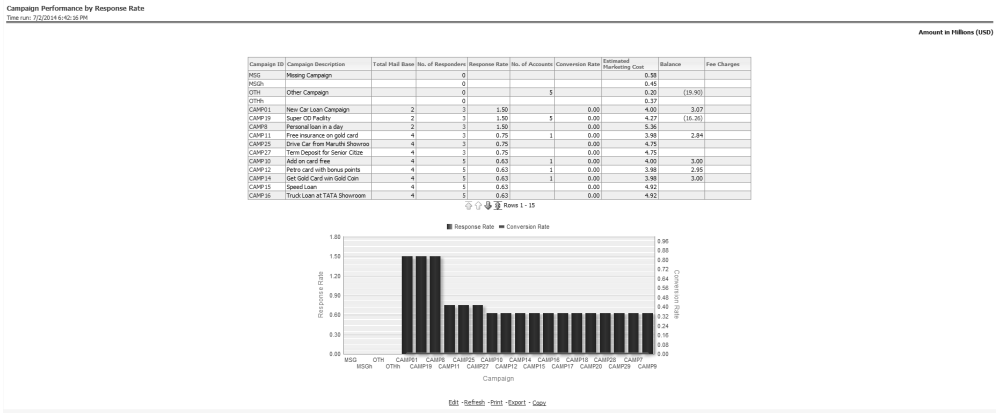
Quarter	Campaign ID	Campaign Description	Start Date	End Date	Actual Marketing Cost	Total Mail Base	No. of Responders	Response Rate	Expected NPV	Expected NPV / Expense Ratio
2010-Q1	CAMP01	New Car Loan Campaign	01-Mar-2011	28-Jun-2011		2	3	1.50	6.82	1.71
	CAMP10	Add on card free	01-Oct-2010	31-Dec-2010	412.73	4	5	1.25	1.54	0.39
	CAMP11	Free insurance on gold card	01-Dec-2010	28-Feb-2011	412.73	4	3	0.75	8.09	2.03
	CAMP12	Petro card with bonus points	01-Oct-2010	28-Feb-2011	412.73	4	5	1.25	7.66	1.93
	CAMP14	Get Gold Card win Gold Coin	15-May-2010	31-Dec-2010	412.73	4	5	1.25	6.83	1.71
	CAMP15	Speed Loan	27-Oct-2010	31-Jan-2011		4	5	1.25	13.79	2.80
	CAMP16	Truck Loan at TATA Showroom	17-Aug-2010	31-Jan-2011		4	5	1.25	8.55	1.74
	CAMP17	Used Car Loan	01-Dec-2010	31-Dec-2010		4	5	1.25	7.79	1.58
	CAMP18	Saving Account with Intl Debit	30-Apr-2010	31-Dec-2010		4	5	1.25	1.04	0.24
	CAMP19	Super OD Facility	05-Apr-2010	31-Dec-2010	2,063.63	2	3	1.50	6.82	1.60
	CAMP20	Zero Balance Account	30-Oct-2010	28-Feb-2011		4	5	1.25	6.83	1.60
	CAMP25	Drive Car from Maruthi Showroo	10-Oct-2010	31-Dec-2010		4	3	0.75	6.91	1.46
	CAMP27	Term Deposit for Senior Citize	10-Jul-2010	28-Feb-2011		4	3	0.75	6.89	1.45
	CAMP28	Corporate Vechile Loan	10-Oct-2010	28-Feb-2011		4	5	1.25	7.81	1.64
	CAMP29	Fixed Deposit @ 10% p.a.	17-Jun-2010	31-Dec-2010		4	5	1.25	0.98	0.18

Rows 1 - 15

Edit - Refresh - Print - Export - Copy

- Campaign Performance by Response Rate

  Top performing campaigns along with the financial metrics.



Campaign Performance by Response Rate

Time run: 7/2/2014 6:42:16 PM

Amount in Millions (USD)

Campaign ID	Campaign Description	Total Mail Base	No. of Responders	Response Rate	No. of Accounts	Conversion Rate	Estimated Marketing Cost	Balance	Fee Charges
MSG	Missing Campaign		0				0.58		
MSGn			0				0.45		
OTH	Other Campaign		0		5		0.20	(19.90)	
OTHn			0				0.37		
CAMP01	New Car Loan Campaign	2	3	1.50		0.00	4.00	3.07	
CAMP19	Super OD Facility	2	3	1.50	5	0.00	4.27	(16.26)	
CAMP8	Personal loan in a day	2	3	1.50		0.00	5.36		
CAMP11	Free insurance on gold card	4	3	0.75	1	0.00	3.98	2.84	
CAMP25	Drive Car from Maruthi Showroo	4	3	0.75		0.00	4.75		
CAMP27	Term Deposit for Senior Citize	4	3	0.75		0.00	4.75		
CAMP10	Add on card free	4	5	0.63	1	0.00	4.00	3.00	
CAMP12	Petro card with bonus points	4	5	0.63	1	0.00	3.98	2.95	
CAMP14	Get Gold Card win Gold Coin	4	5	0.63	1	0.00	3.98	3.00	
CAMP15	Speed Loan	4	5	0.63		0.00	4.92		
CAMP16	Truck Loan at TATA Showroom	4	5	0.63		0.00	4.92		

Rows 1 - 15

Response Rate Conversion Rate

Response Rate

Conversion Rate

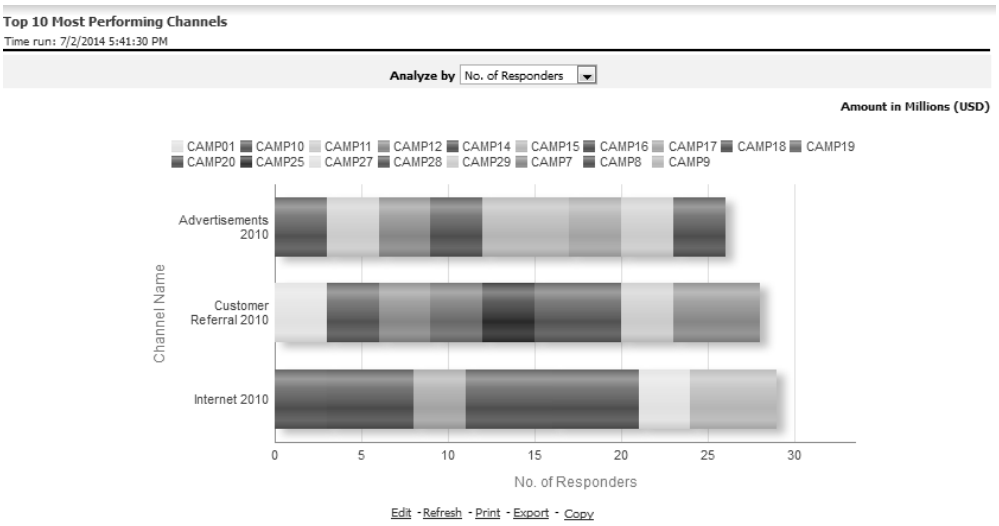
MSG MSGn OTH OTHn CAMP01 CAMP19 CAMP8 CAMP11 CAMP25 CAMP27 CAMP10 CAMP12 CAMP14 CAMP15 CAMP16 CAMP18 CAMP17 CAMP20 CAMP28 CAMP29 CAMP7 CAMP9

Campaign

Edit - Refresh - Print - Export - Copy

- Top 10 Most Performing Channels

  Top Channels that can be ranked by Number of Responders, Number of Conversions, Response Rate, or Conversion Rate. The campaigns that contributed to the ranking are also shown in the bar graph.



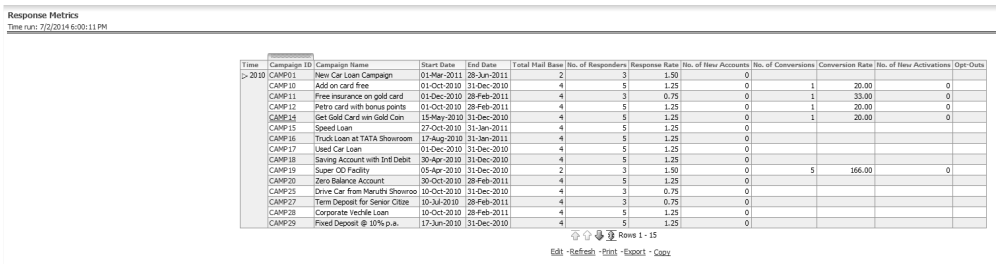
Future Campaign

- Future Campaign Forecast

Time	Campaign ID	Campaign Name	Product	Start Date	End Date	Fixed Cost	Variable Cost	Incentive Cost	No. of Accounts	Total Mail Base	Response Rate	Sales	New Balances	Other Income	Expected NPV
▷ 2010	CAMP01	New Car Loan Campaign	Auto Loan	01-Mar-2011	28-Jun-2011	11.68									
			Cards	01-Mar-2011	28-Jun-2011	7.95				2	1.50				6.82
			Casa	01-Mar-2011	28-Jun-2011	8.80									
			Mortgage	01-Mar-2011	28-Jun-2011	14.76									
			Term Deposits	01-Mar-2011	28-Jun-2011	17.80									

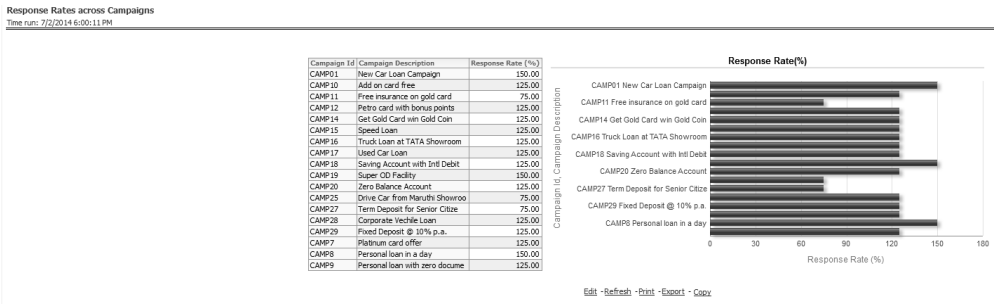
Response Tracking

- Response Metrics



Time	Campaign ID	Campaign Name	Start Date	End Date	Total Mail Base	No. of Responders	Response Rate	No. of New Accounts	No. of Conversions	Conversion Rate	No. of New Activations	Opt-Outs
▷ 2010	CAMP01	New Car Loan Campaign	01-Mar-2011	28-Jun-2011	2	3	1.50	0				
	CAMP10	Add on card free	01-Oct-2010	31-Dec-2010	4	5	1.25	0	1	20.00	0	
	CAMP11	Free insurance on gold card	01-Dec-2010	28-Feb-2011	4	3	0.75	0	1	33.00	0	
	CAMP12	Petro card with bonus points	01-Oct-2010	28-Feb-2011	4	5	1.25	0	1	20.00	0	
	CAMP14	Get Gold Card win Gold Coin	15-May-2010	31-Dec-2010	4	5	1.25	0	1	20.00	0	
	CAMP15	Speed Loan	27-Oct-2010	31-Jan-2011	4	5	1.25	0				
	CAMP16	Truck Loan at TATA Showroom	17-Aug-2010	31-Jan-2011	4	5	1.25	0				
	CAMP17	Used Car Loan	01-Dec-2010	31-Dec-2010	4	5	1.25	0				
	CAMP18	Saving Account with Intl Debit	30-Apr-2010	31-Dec-2010	4	5	1.25	0				
	CAMP19	Super OD Facility	05-Apr-2010	31-Dec-2010	2	3	1.50	0	5	166.00	0	
	CAMP20	Zero Balance Account	30-Oct-2010	28-Feb-2011	4	5	1.25	0				
	CAMP25	Drive Car from Maruthi Showroo	10-Oct-2010	31-Dec-2010	4	3	0.75	0				
	CAMP27	Term Deposit for Senior Citize	10-Jul-2010	28-Feb-2011	4	3	0.75	0				
	CAMP28	Corporate Vechile Loan	10-Oct-2010	28-Feb-2011	4	5	1.25	0				
	CAMP29	Fixed Deposit @ 10% p.a.	17-Jun-2010	31-Dec-2010	4	5	1.25	0				

- Response Rates across Campaigns



Response Rates across Campaigns

Time run: 7/2/2014 6:00:11 PM

Campaign Id	Campaign Description	Response Rate (%)
CAMP01	New Car Loan Campaign	150.00
CAMP10	Add on card free	125.00
CAMP11	Free insurance on gold card	75.00
CAMP12	Petro card with bonus points	125.00
CAMP14	Get Gold Card win Gold Coin	125.00
CAMP15	Speed Loan	125.00
CAMP16	Truck Loan at TATA Showroom	125.00
CAMP17	Used Car Loan	125.00
CAMP18	Saving Account with Intl Debit	125.00
CAMP19	Super OD Facility	150.00
CAMP20	Zero Balance Account	125.00
CAMP25	Drive Car from Maruthi Showroo	75.00
CAMP27	Term Deposit for Senior Citize	75.00
CAMP28	Corporate Vechile Loan	125.00
CAMP29	Fixed Deposit @ 10% p.a.	125.00
CAMP7	Platinum card offer	125.00
CAMP8	Personal loan in a day	150.00
CAMP9	Personal loan with zero docume	125.00

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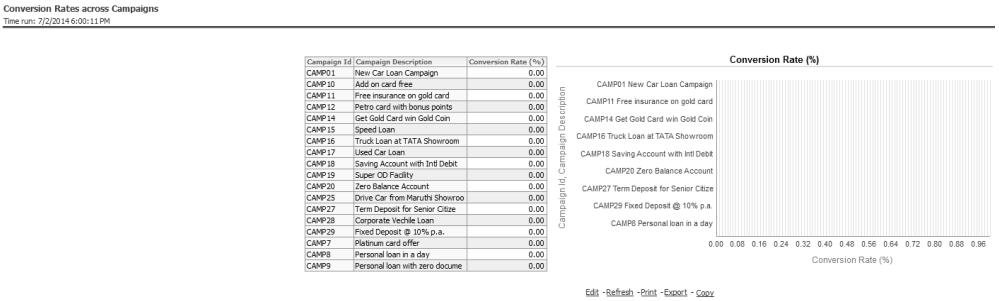
- Conversion Rates across Campaigns



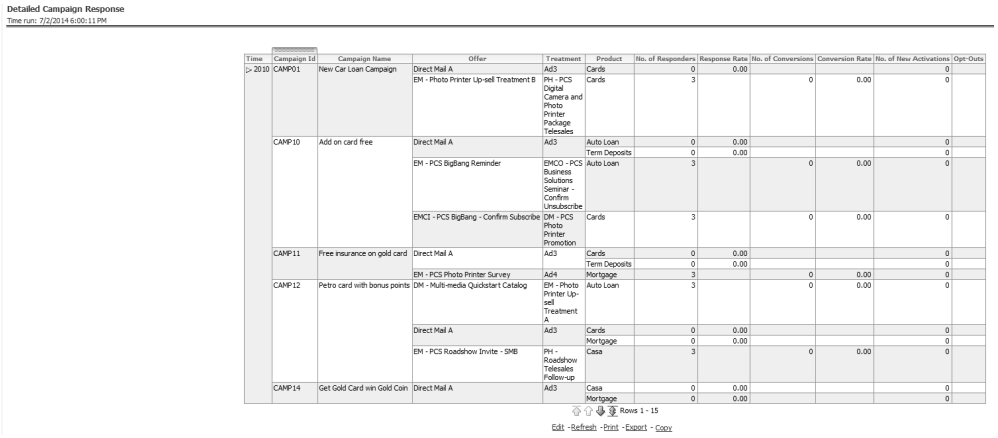
Conversion Rates across Campaigns

Time run: 7/2/2014 6:00:11 PM

Campaign Id	Campaign Description	Conversion Rate (%)
CAMP01	New Car Loan Campaign	0.00
CAMP10	Add on card free	0.00
CAMP11	Free insurance on gold card	0.00
CAMP12	Petro card with bonus points	0.00
CAMP14	Get Gold Card win Gold Coin	0.00
CAMP15	Speed Loan	0.00
CAMP16	Truck Loan at TATA Showroom	0.00
CAMP17	Used Car Loan	0.00
CAMP18	Saving Account with Intl Debit	0.00
CAMP19	Super OD Facility	0.00
CAMP20	Zero Balance Account	0.00
CAMP25	Drive Car from Maruthi Showroo	0.00
CAMP27	Term Deposit for Senior Citize	0.00
CAMP28	Corporate Vechile Loan	0.00
CAMP29	Fixed Deposit @ 10% p.a.	0.00
CAMP7	Platinum card offer	0.00
CAMP8	Personal loan in a day	0.00
CAMP9	Personal loan with zero docume	0.00

Edit -Refresh -Print -Export - Copy

- Detailed Campaign Response



Detailed Campaign Response

Time run: 7/2/2014 6:00:11 PM

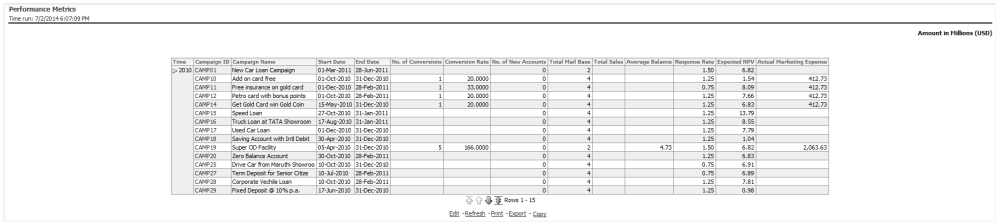
Time	Campaign Id	Campaign Name	Offer	Treatment	Product	No. of Responders	Response Rate	No. of Conversions	Conversion Rate	No. of New Activations	Opt-Outs
▷ 2010	CAMP01	New Car Loan Campaign	Direct Mail A	Ad3	Cards	0	0.00			0	
			EM - Photo Printer Up-sell Treatment B	PH - PCS Digital Camera and Photo Printer Package Telesales	Cards	3		0	0.00	0	
	CAMP10	Add on card free	Direct Mail A	Ad3	Auto Loan	0	0.00			0	
					Term Deposits	0	0.00			0	
			EM - PCS BigBang Reminder	EMCO - PCS Business Solutions Seminar - Confirm Unsubscribe	Auto Loan	3		0	0.00	0	
			EMCI - PCS BigBang - Confirm Subscribe	DM - PCS Photo Printer Promotion	Cards	3		0	0.00	0	
	CAMP11	Free insurance on gold card	Direct Mail A	Ad3	Cards	0	0.00			0	
					Term Deposits	0	0.00			0	
			EM - PCS Photo Printer Survey	Ad4	Mortgage	3		0	0.00	0	
	CAMP12	Petro card with bonus points	DM - Multi-media Quickstart Catalog	EM - Photo Printer Up-sell Treatment A	Auto Loan	3		0	0.00	0	
			Direct Mail A	Ad3	Cards	0	0.00			0	
					Mortgage	0	0.00			0	
			EM - PCS Roadshow Invite - SMB	PH - Roadshow Telesales Follow-up	Casa	3		0	0.00	0	
	CAMP14	Get Gold Card win Gold Coin	Direct Mail A	Ad3	Casa	0	0.00			0	
					Mortgage	0	0.00			0	

Rows 1 - 15

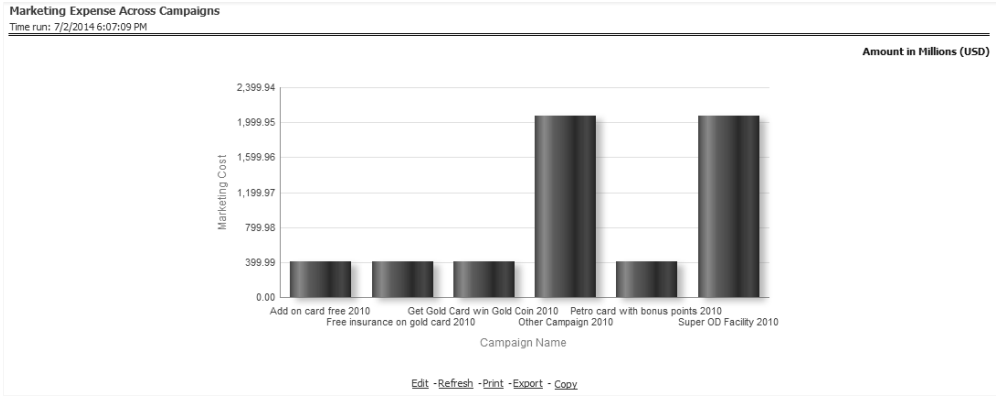
Edit -Refresh -Print -Export - Copy

Campaign Performance

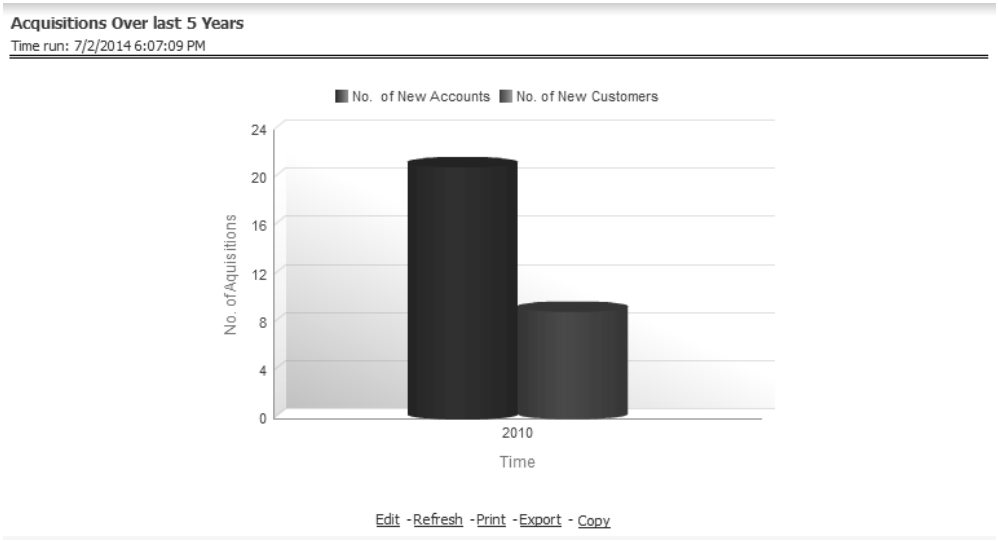
- Performance Metrics



- Marketing Expense Across Campaigns

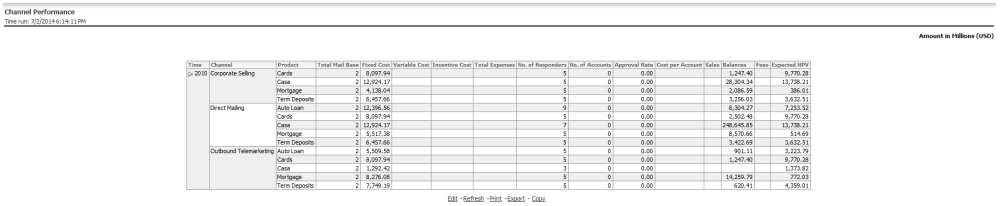


- Acquisitions Over last 5 Years

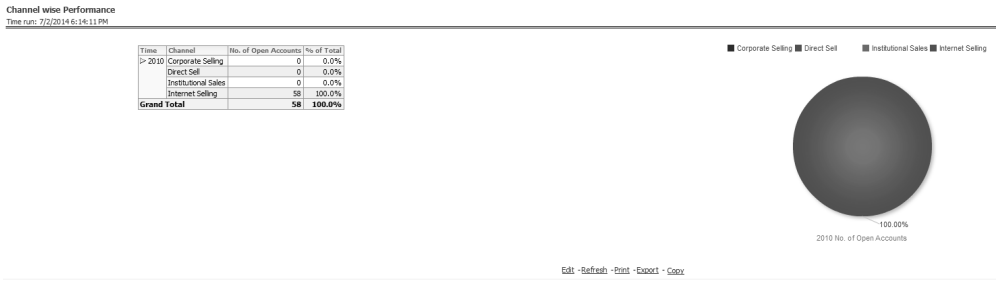


Channel Performance

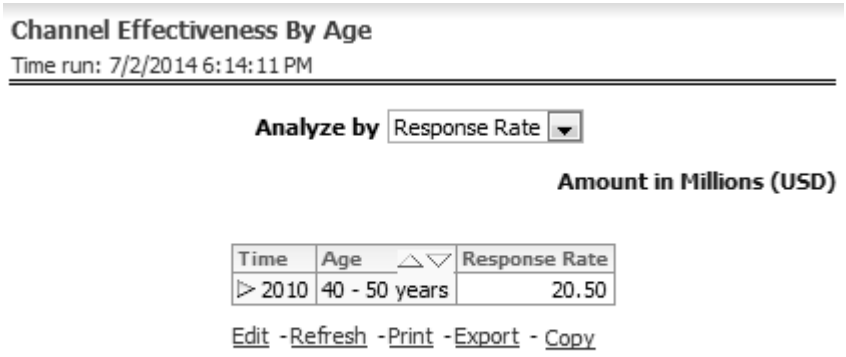
- Channel Performance



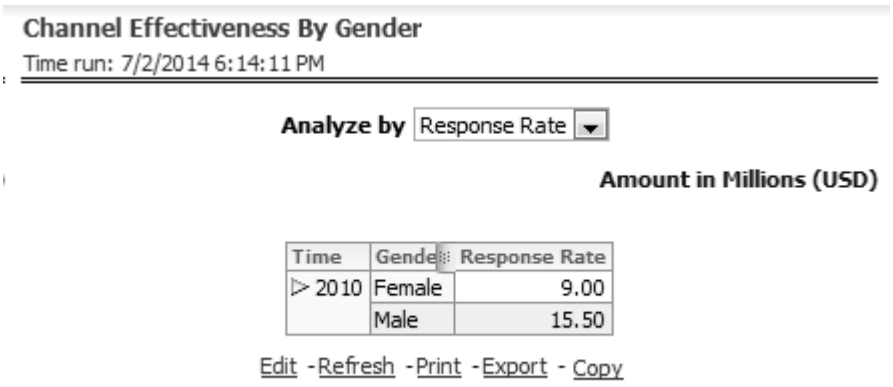
- Channel wise Performance



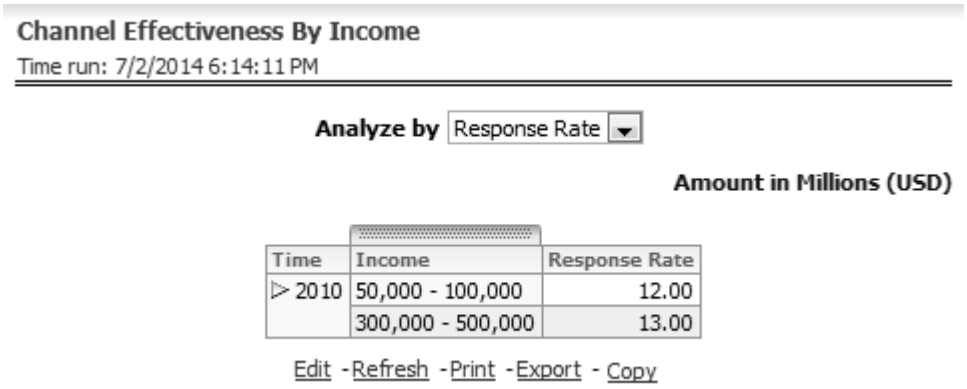
- Channel Effectiveness By Age



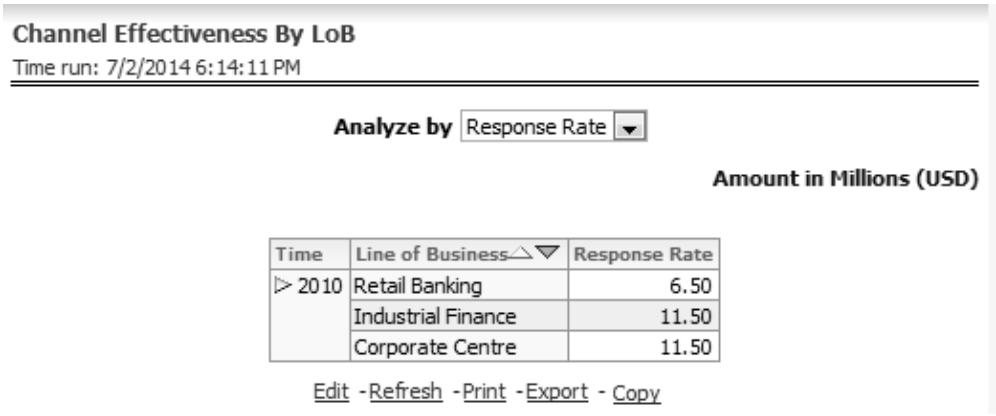
- Channel Effectiveness By Gender



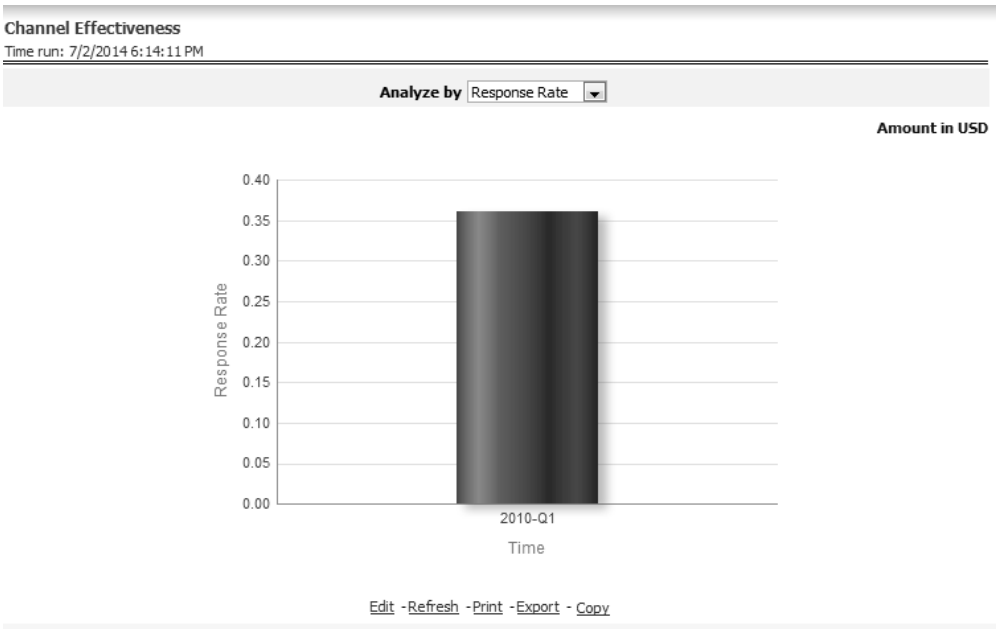
- Channel Effectiveness By Income



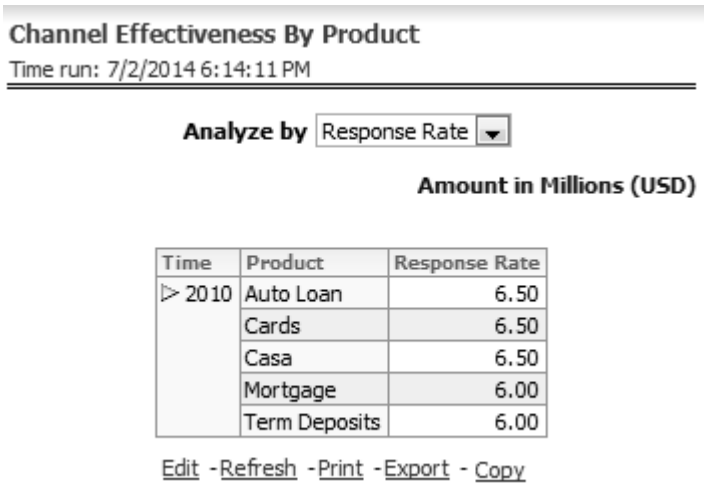
- Channel Effectiveness By LoB



- Channel Effectiveness



- Channel Effectiveness By Product



Channel Effectiveness By Product

Time run: 7/2/2014 6:14:11 PM

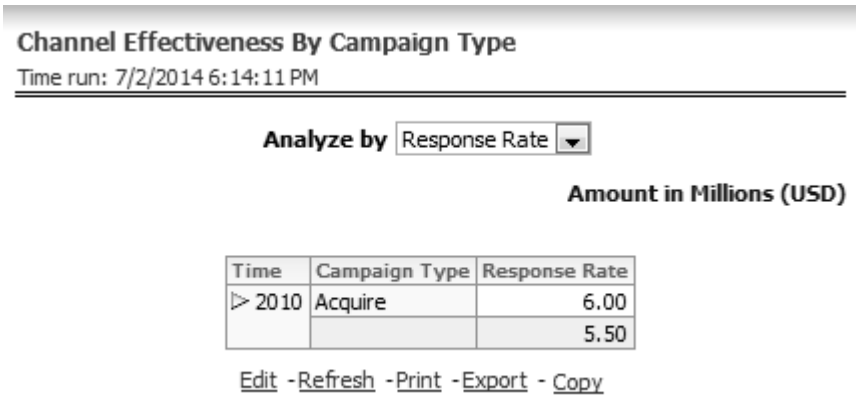
Analyze by Response Rate

Amount in Millions (USD)

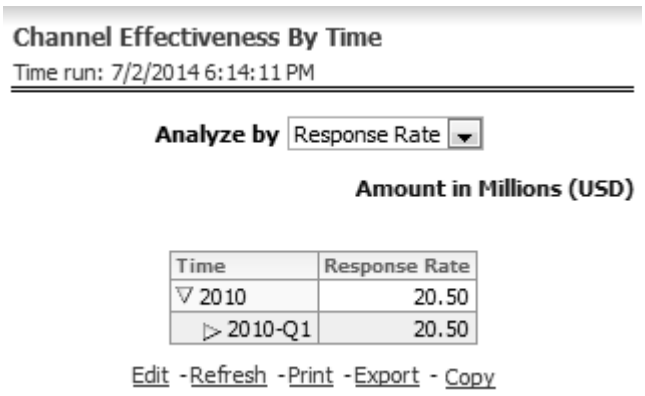
Time	Product	Response Rate
▷ 2010	Auto Loan	6.50
	Cards	6.50
	Casa	6.50
	Mortgage	6.00
	Term Deposits	6.00

Edit -Refresh -Print -Export - Copy

- Channel Effectiveness By Campaign Type

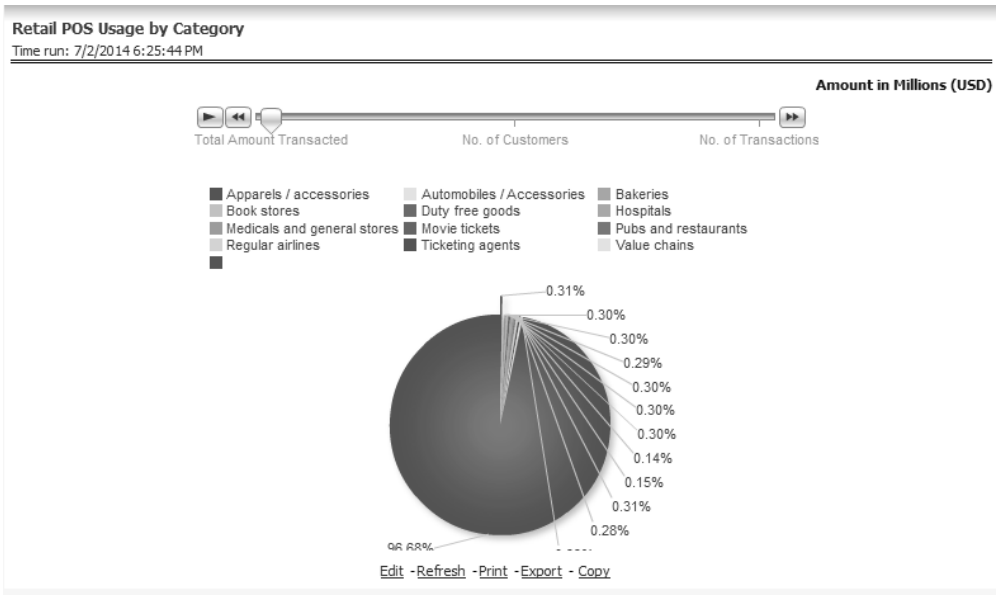


- Channel Effectiveness By Time

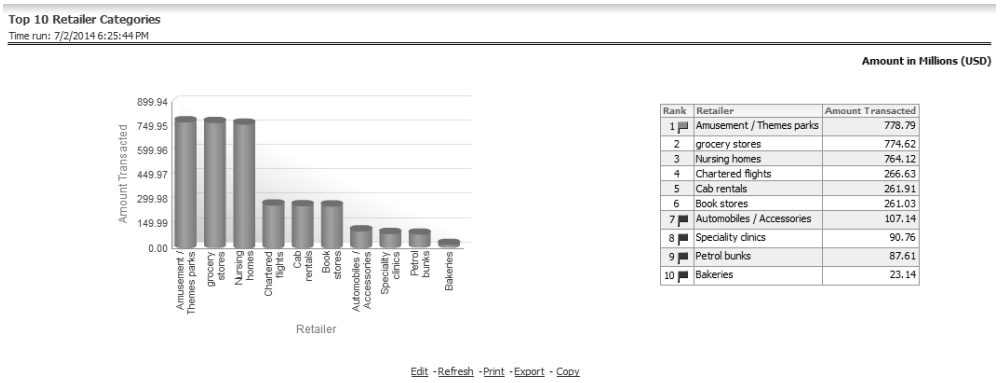


Spend Analysis

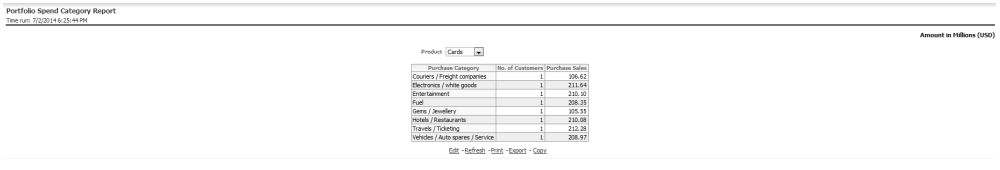
- Retail POS Usage by Category



- Top 10 Retailer Categories

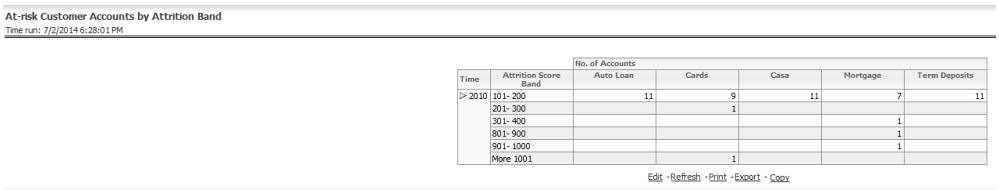


- Portfolio Spend Category Report

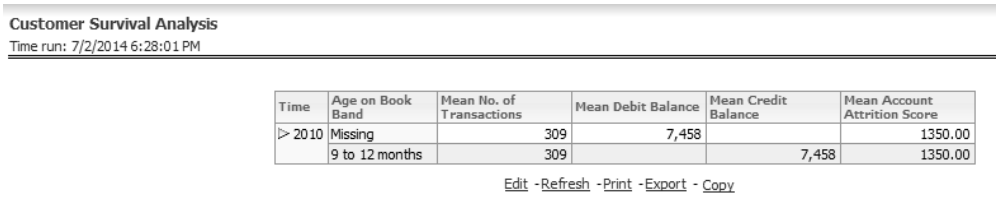


Attrition Analysis

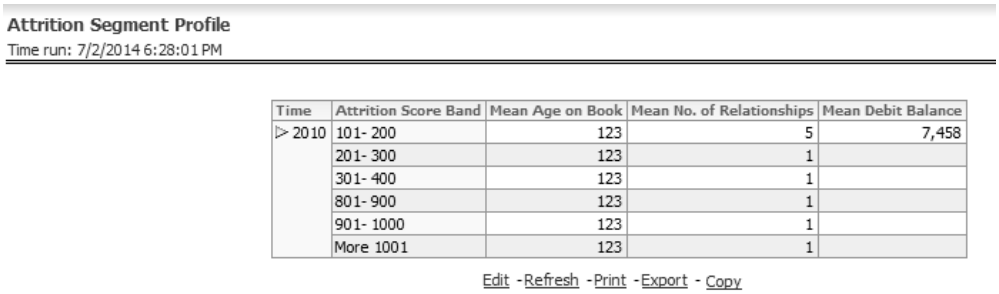
- At-risk Customer Accounts by Attrition Band



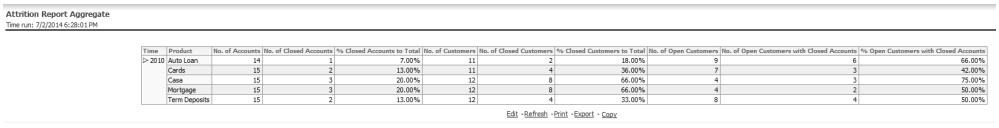
- Customer Survival Analysis



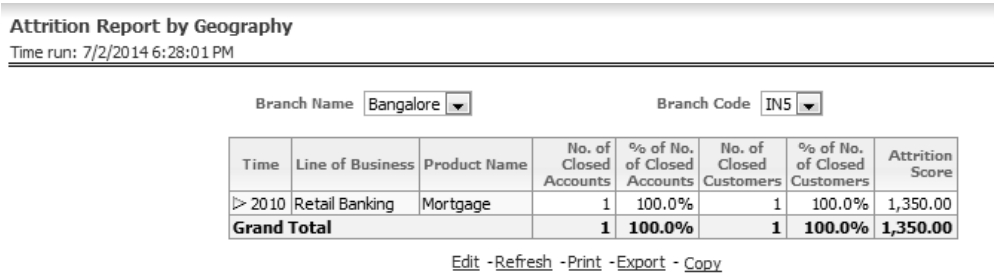
- Attrition Segment Profile



- Attrition Report Aggregate



- Attrition Report by Geography



Attrition Report by Geography

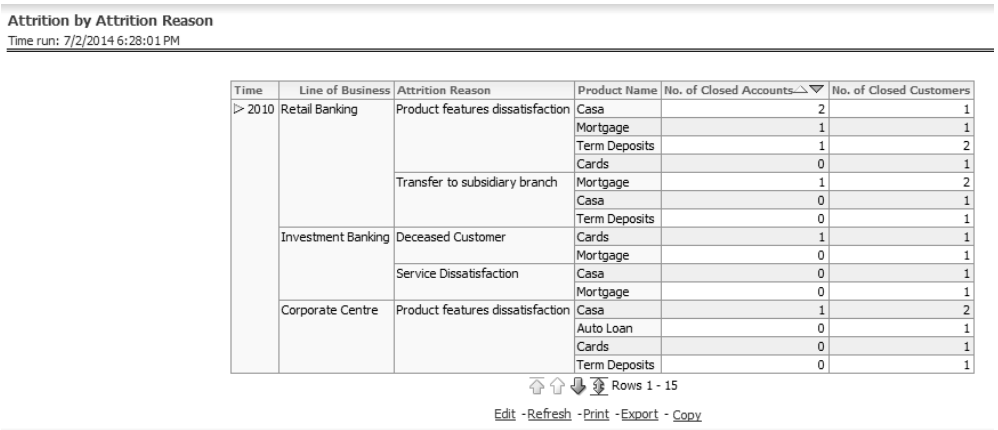
Time run: 7/2/2014 6:28:01 PM

Branch Name: Bangalore Branch Code: IN5

Time	Line of Business	Product Name	No. of Closed Accounts	% of No. of Closed Accounts	No. of Closed Customers	% of No. of Closed Customers	Attrition Score
▷ 2010	Retail Banking	Mortgage	1	100.0%	1	100.0%	1,350.00
Grand Total			**1**	**100.0%**	**1**	**100.0%**	**1,350.00**

Edit -Refresh -Print -Export - Copy

- Attrition by Attrition Reason



Attrition by Attrition Reason

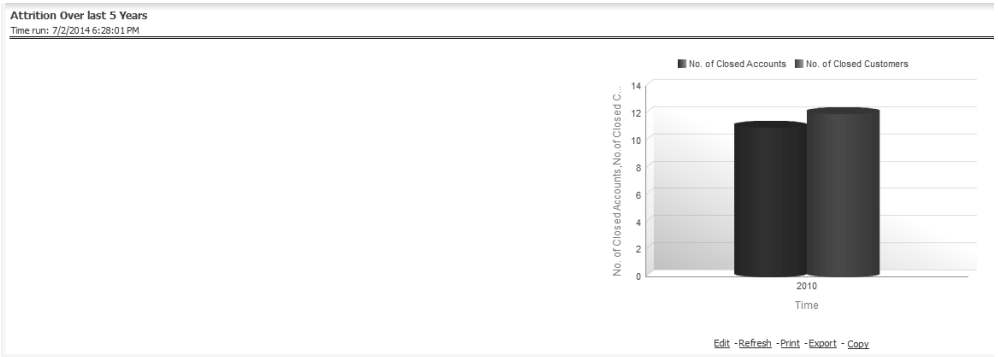
Time run: 7/2/2014 6:28:01 PM

Time	Line of Business	Attrition Reason	Product Name	No. of Closed Accounts	No. of Closed Customers
▷ 2010	Retail Banking	Product features dissatisfaction	Casa	2	1
			Mortgage	1	1
			Term Deposits	1	2
			Cards	0	1
		Transfer to subsidiary branch	Mortgage	1	2
			Casa	0	1
			Term Deposits	0	1
	Investment Banking	Deceased Customer	Cards	1	1
			Mortgage	0	1
		Service Dissatisfaction	Casa	0	1
			Mortgage	0	1
	Corporate Centre	Product features dissatisfaction	Casa	1	2
			Auto Loan	0	1
			Cards	0	1
			Term Deposits	0	1

Rows 1 - 15

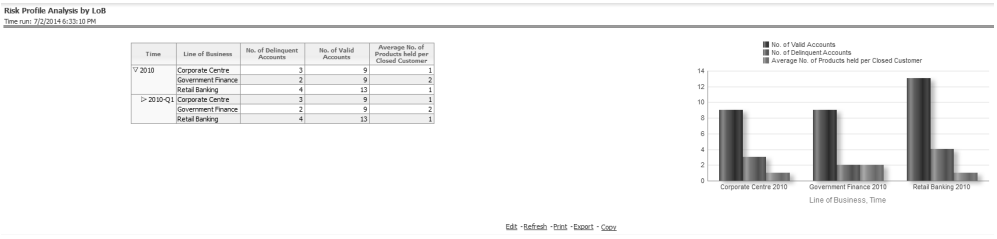
Edit -Refresh -Print -Export - Copy

- Attrition Over last 5 Years

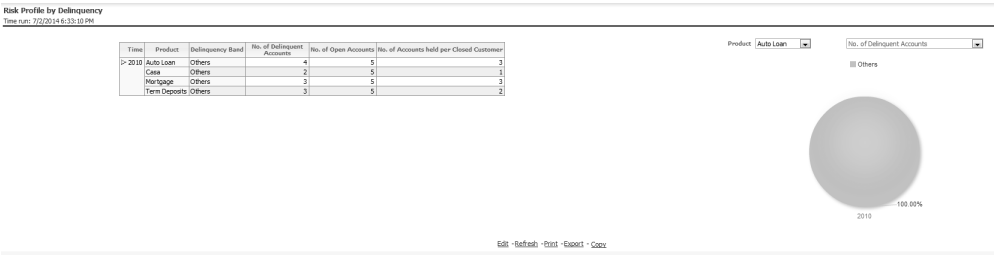


Risk Summary

- Risk Profile Analysis by LoB

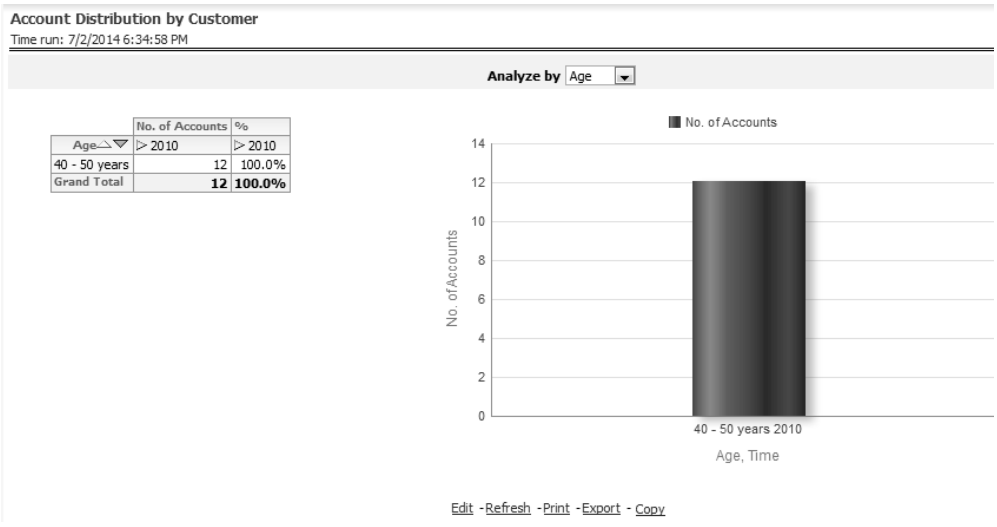


- Risk Profile by Delinquency



Customer Trends

- Account Distribution by Customer

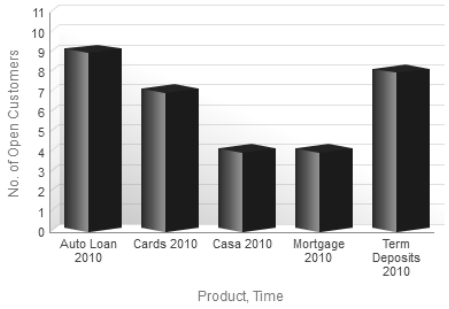


- Product wise No. of Customers

Product wise No. of Customers

Time run: 7/2/2014 6:34:58 PM

Time	Product	No. of Open Customers
▷ 2010	Auto Loan	9
	Term Deposits	8
	Cards	7
	Casa	4
	Mortgage	4



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- Top 10 Products by Customers

Top 10 Products by Customers

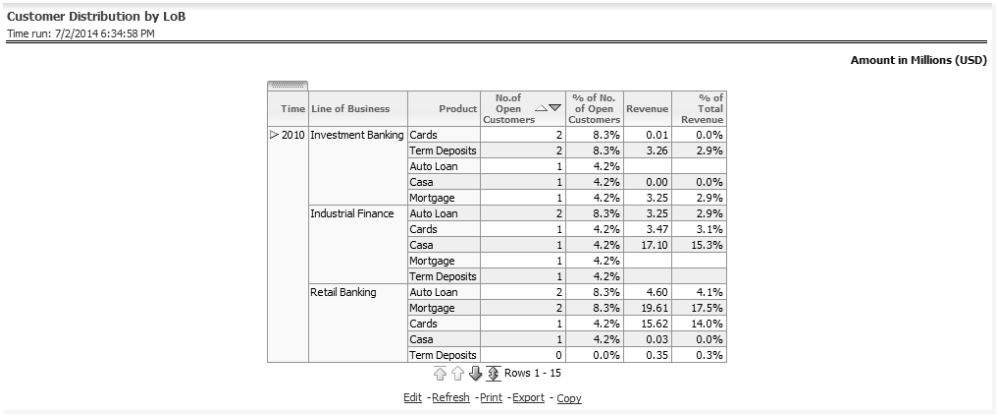
Time run: 7/2/2014 6:34:58 PM

Amount in Millions (USD)

Time	Line of Business	Product	No. of Open Customers	Revenue	% of Revenue
▷ 2010	Industrial Finance	Auto Loan	3	3.23	4.9%
		Cards	2	3.45	5.2%
		Casa	2	17.09	25.7%
		Term Deposits	2	(0.03)	(0.00)
	Investment Banking	Auto Loan	3	(0.06)	(0.00)
		Cards	2	(0.02)	(0.00)
		Casa	2	(0.05)	(0.00)
		Term Deposits	3	3.23	4.9%
	Retail Banking	Auto Loan	3	4.57	6.9%
		Cards	3	15.58	23.4%
		Mortgage	2	19.55	29.4%

Edit -Refresh -Print -Export - Copy

- Customer Distribution by LoB


Customer Distribution by LoB
Time run: 7/2/2014 6:34:58 PM

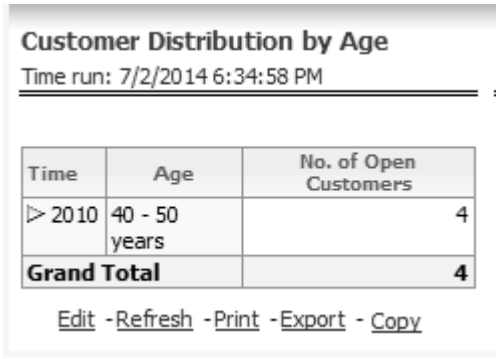
Amount in Millions (USD)

Time	Line of Business	Product	No.of Open Customers	% of No. of Open Customers	Revenue	% of Total Revenue
▷ 2010	Investment Banking	Cards	2	8.3%	0.01	0.0%
		Term Deposits	2	8.3%	3.26	2.9%
		Auto Loan	1	4.2%		
		Casa	1	4.2%	0.00	0.0%
		Mortgage	1	4.2%	3.25	2.9%
	Industrial Finance	Auto Loan	2	8.3%	3.25	2.9%
		Cards	1	4.2%	3.47	3.1%
		Casa	1	4.2%	17.10	15.3%
		Mortgage	1	4.2%		
		Term Deposits	1	4.2%		
	Retail Banking	Auto Loan	2	8.3%	4.60	4.1%
		Mortgage	2	8.3%	19.61	17.5%
		Cards	1	4.2%	15.62	14.0%
		Casa	1	4.2%	0.03	0.0%
		Term Deposits	0	0.0%	0.35	0.3%

Rows 1 - 15

Edit -Refresh -Print -Export - Copy

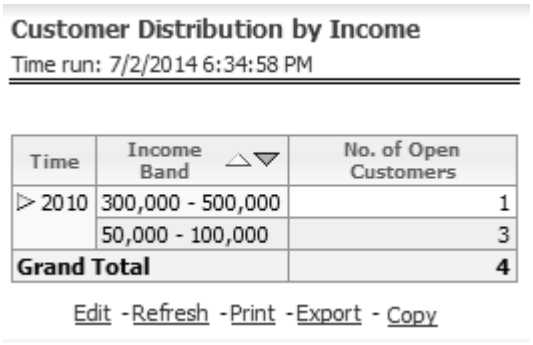
- Customer Distribution by Age


Customer Distribution by Age
Time run: 7/2/2014 6:34:58 PM

Time	Age	No. of Open Customers
▷ 2010	40 - 50 years	4
Grand Total		**4**

Edit -Refresh -Print -Export - Copy

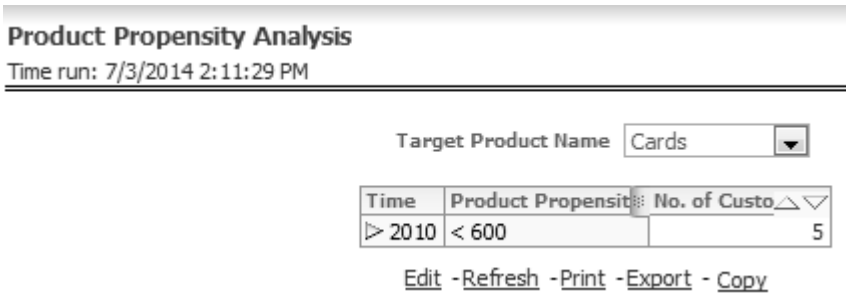
- Customer Distribution by Income


Customer Distribution by Income
Time run: 7/2/2014 6:34:58 PM

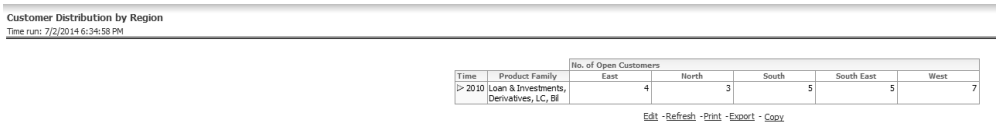
Time	Income Band	No. of Open Customers
▷ 2010	300,000 - 500,000	1
	50,000 - 100,000	3
Grand Total		**4**

Edit -Refresh -Print -Export - Copy

- Product Propensity Analysis



- Customer Distribution by Region

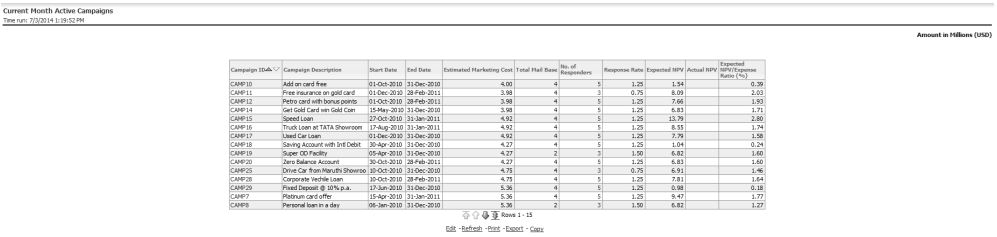


- Customer distribution by Profitability Decile

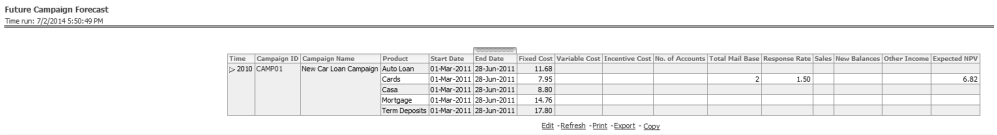
- Customer Distribution by Spend Range

Campaign summary

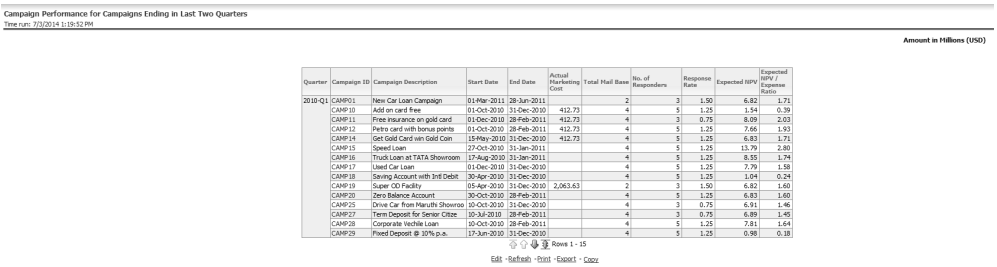
- Current Month Active Campaigns



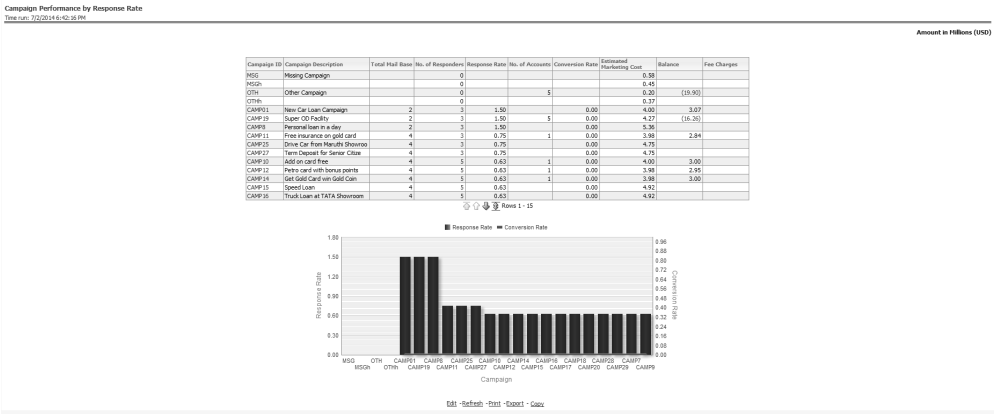
- Future Campaign Forecast



- Campaign Performance for Campaigns Ending in Last Two Quarters



- Campaign Performance by Response Rate



A

How to Add a New Dimension

Introduction

This section explains 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 OFSAAI.

If user intends to maintain the dimension within OFSAAI, see Data Model Utilities Guide for adding dimension tables under "Object Management" chapter.

Procedures to Add a New Dimension

Step 1 – Add Business Hierarchy

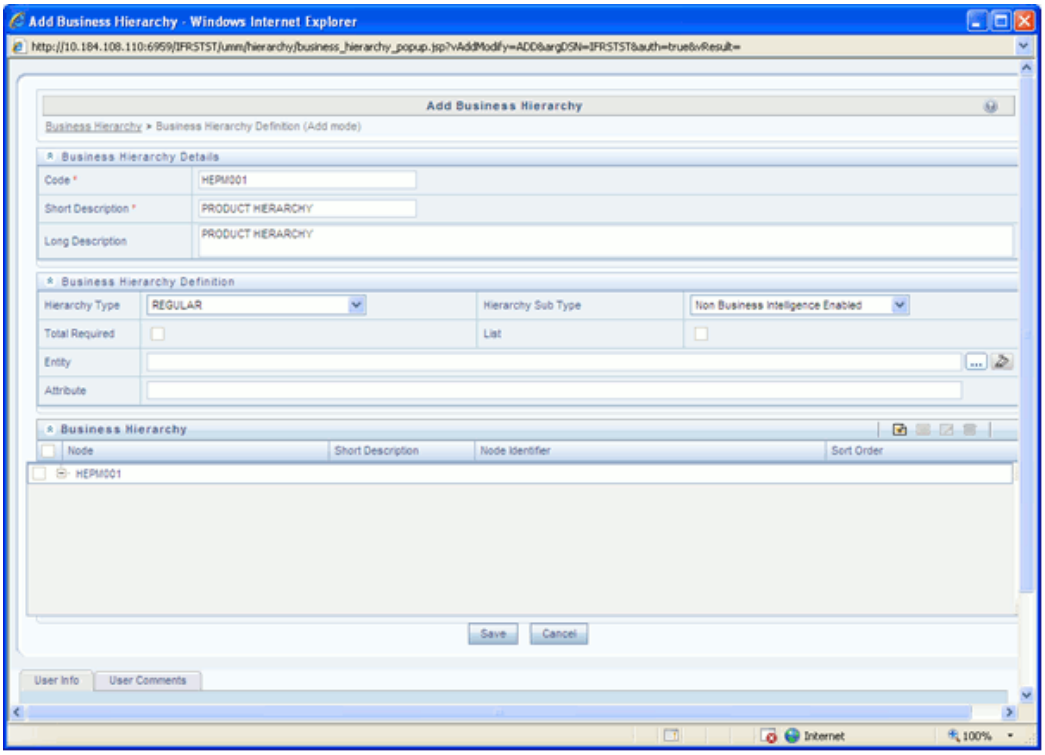
To define a new **Business Hierarchy**, go to **Unified Metadata Manager**, select **Business Metadata Management** and choose the type of hierarchy.

Hierarchy Types are:

- **Regular** – For representing non-time and non-measure dimensions in a hierarchical format. For example, 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 Essbase. An example of this type is Calendar hierarchy.



Choose Hierarchy subtype. Hierarchy SubTypes are:

- **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 subtype 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 subtype is useful for modelling balanced hierarchies.

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

Select the "Total Required" property, if a TOTAL is required to be included as the root node of the hierarch and select the "List" property, if hierarchy is a flat list of members without any levels.

Choose the entity and attribute on which the hierarchy is based. The components for hierarchy definition differ for each subtype of the hierarchy.

If subtype is "Non Business Intelligence Enabled", then the user can add nodes and 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 that contains the child member.

For more details, see *Oracle Financial Services Analytical Applications Infrastructure 7.3 User Guide.*

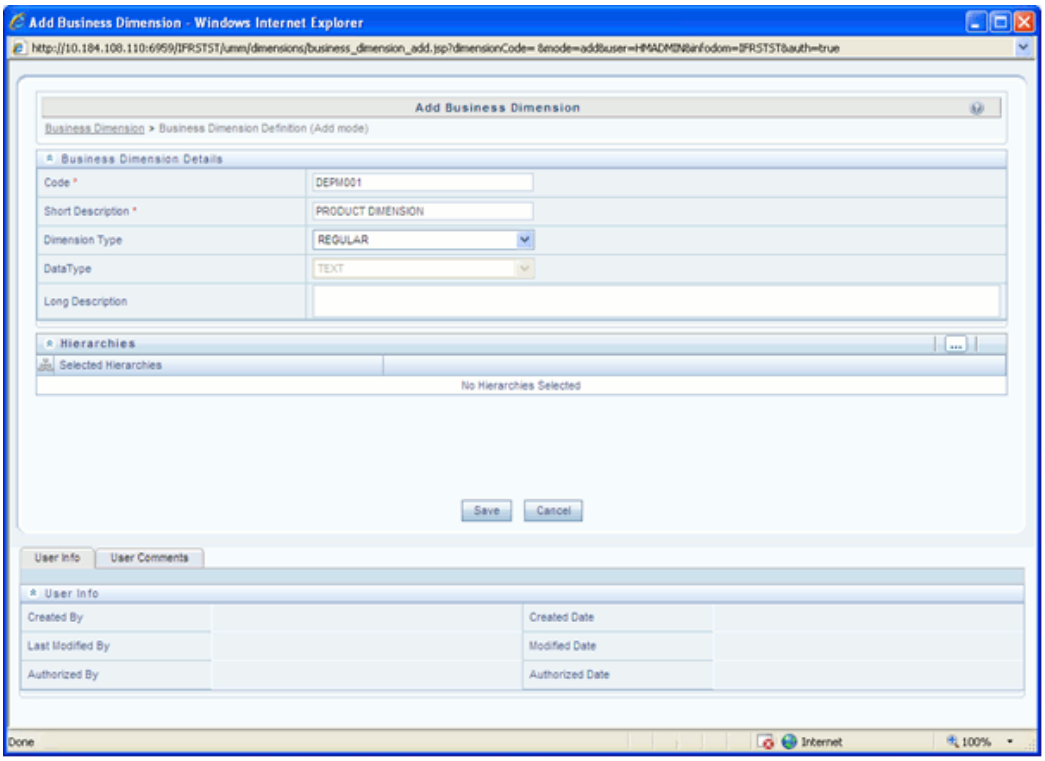
Step 2 – Add Business Dimension

To define a new **Business Dimension,** go to **Unified Metadata Manager**, select **Business Metadata Management**.

Choose the **Dimension Type**. Dimension Type is same as Hierarchy Type and helps to filter the hierarchies that will be part of the dimension. A dimension will contain one or many hierarchies. Choose the hierarchies that are part of the dimension.

The User Info grid at the bottom of the screen displays the metadata information about the Business Dimension created along with the option to add comments.

Click **Save** in **Add Business Dimension** screen to save the details.

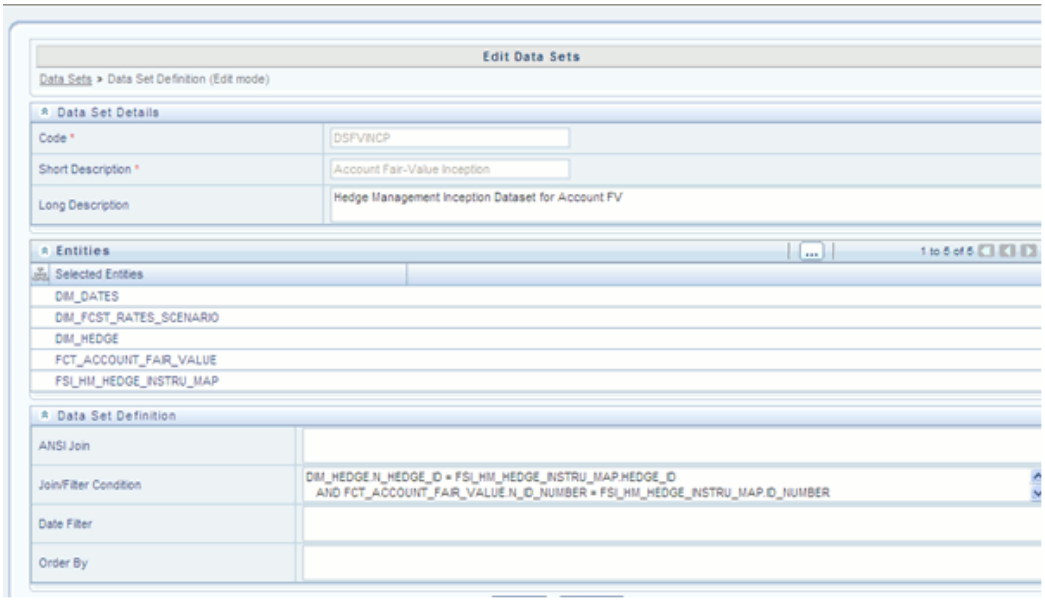


For more details, see *Oracle Financial Services Analytical Applications Infrastructure 7.3 User Guide.*

Step 3 – Modify Data Set

To modify **Data Sets**, go to **Unified Metadata Manager --> Business Metadata Management.**

Identify data sets that are based on the modified fact table. Open the data set definition. Include the new dimension table in the data set. Modify the data set JOIN to include the join clause between the fact table and new dimension table. Save the data set.



For more details, see *Oracle Financial Services Analytical Applications Infrastructure 7.3 User Guide.*

Step 4 – Modify Cube Definition

Modify "Cubes" in **Unified Metadata Manager -> Business Metadata Management**. Identify the cube that needs to be modified. Open the cube definition. Add the new dimension. Map the measures to the newly added dimension and **Save** the cube definition.

For more details, see *Oracle Financial Services Analytical Applications Infrastructure 7.3 User Guide.*

Step 5 – 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 batch, see *Oracle Financial Services Analytical Applications Infrastructure 7.3 User Guide*.

Metadata

Technical Metadata

The attached excel sheet lists the SCD's packaged in the RCA application.

The attached excel sheet lists the Retail Customer Analytics technical metadata.

The attached excel sheet lists the hard coded values used in datasets and models.

Optional Metadata

The following excel sheet lists the technical metadata related to PFT account summary.

The following excel sheet lists the technical metadata related to FTP account summary.

Business Metadata

The attached excel sheet lists the Oracle Financial Services Retail Customer Analytics BI 6.0 Business Metadata.

OFSRCA Business metadata.xlsx

Reporting Metadata

The attached excel sheet lists the Customer Attributes.

Customer Attributes - RCA.xlsx

The attached excel sheet lists the RCA-RPD-Webcat metadata.

RCA-RPD_webcat.xlsx

B

How to Add a New Measure

Introduction

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.

Dimension Definition Process

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.

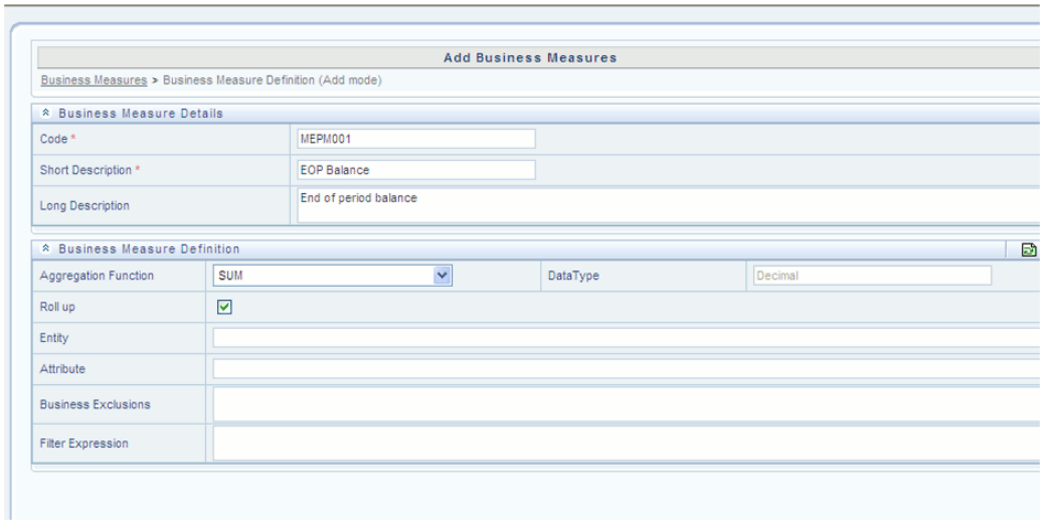
3. Specify if this measure needs to be rolled up against hierarchies.

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.



For more information on Business Measures, see Business Measures under Unified Metadata Manager chapter in *Oracle Financial Services Analytical Applications Infrastructure 7.3 User Guide*.

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 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.

For more information on Cubes, see Cubes under Unified Metadata Manager chapter in *Oracle Financial Services Analytical Applications Infrastructure 7.3 User Guide*.

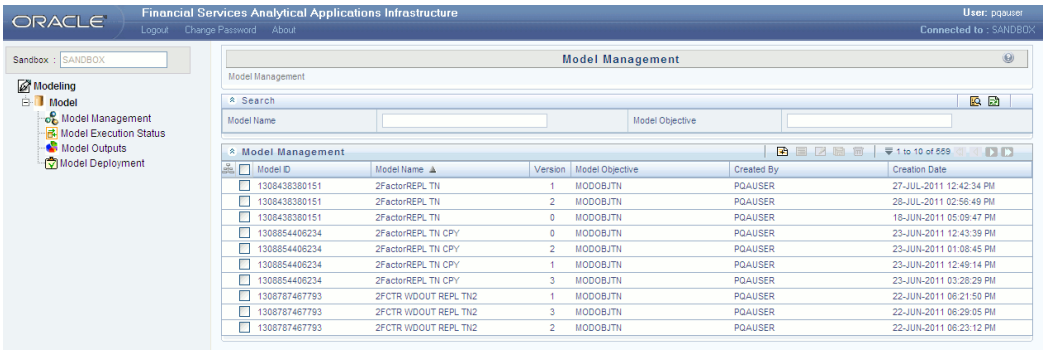
D

How to Add a New Model and Modify Existing Model

Introduction

Models are built based on various techniques associated with executable and related parameters based on the business purpose. In the Infrastructure system models are defined in the metadata abstraction layer using the underlying metadata objects such as Measures, Hierarchies, and Datasets along with statistical techniques.

Model Management in the **Sandbox Information Domain** of Infrastructure system facilitates you to construct multiple models based on the required parameters and output specifications.



The **Model Management** screen displays model definition details such as Model ID, Model Name, Version, Model Objective, Created By and Created Date. You can also view, modify, and delete model definitions.

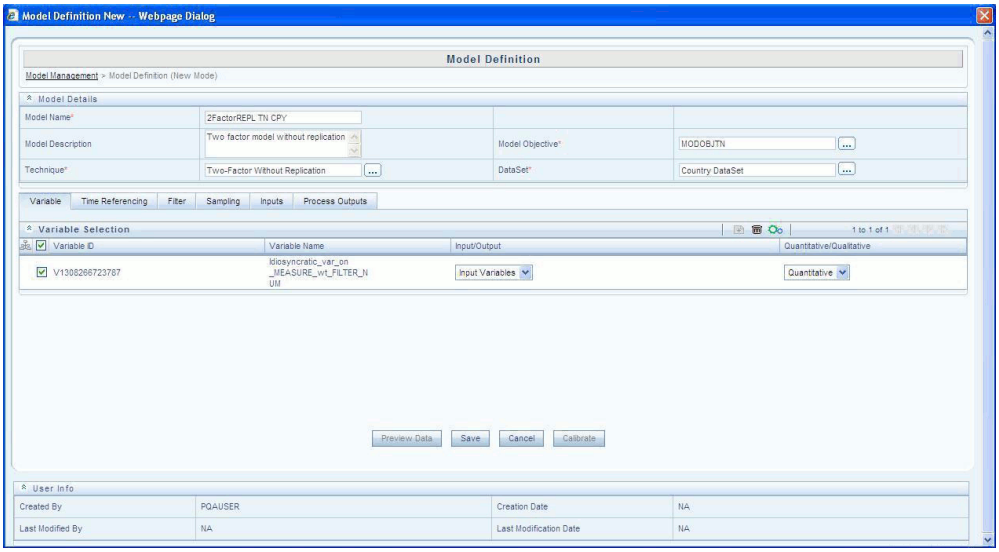
You can also make use of **Search** and **Pagination** options to search for a specific model or view the list of existing model definitions within the system.

To Add a New Model

Create Model Definition

To create a model definition in the **Model Management** screen:

1. Select **Add** button from the Model Management tool bar. **Add** button is disabled if you have selected any Model ID in the grid. The **Model Definition New** screen is displayed.



2. Enter the details as tabulated.

Field	Description
Fields marked in red asterisk (*) are mandatory.	
Model Name	Specify a model name for the model definition. Model Name is case sensitive and does not allow duplication. For example, model name "aaa" is not allowed if a model with the name " AAA" exists.
Model Description	Enter a description for the model.

Field	Description
Model Objective	• Click the below button to open the *Model Objective* browser.  • Select the required Model Objective from the hierarchical members list and click > button. You can also create a Model Objective by clicking **Add** button and specifying Objective Name and Description. You can view a Model Objective by clicking **View** button or search for Model Objective using the **Search** field. • Click **OK**.
Technique	• Click the below button to open the *Technique Browser*.  The various statistical techniques available are listed in the Members pane. Click + and expand the technique heading groups. • Select the required technique in the hierarchical members list and click > button. • Click **OK**. The selected Technique details are displayed in the **Model Definition New** screen.
Data Set	• Click the below button to open the *Dataset Browser*.  The available datasets are listed in the Members pane. • Select the required Dataset based on which the model is to be created and click > button. • Click **OK**.

Field	Description
Calibrate Model / Host Existing Model	The option to choose Calibrate or Host Existing Model depends on the technique selected. Calibrate Model is selected by default. • Selecting Calibrated model, you can calibrate the variable output parameters and process for model execution. • In Host Existing model, Sampling option is not available and model has to be processed through batch execution.

The tabs below the **Model Details** section displays the various parameters available for the selected technique and few of the common input parameter types are explained below.

- Variable
- Time Referencing
- Filter
- Sampling
- Inputs
- Process Outputs
- Data Outputs
- Model Inputs

OFSAAI supports both time homogeneous and non-homogeneous estimates of transition probabilities.

For more information on defining such a statistical technique, see Transition Matrix in references section.

3. Once you have updated all the necessary details in the input parameter tabs, you can:
   - Click **Save** to upload the model definition details.
   - Select **Preview Data** to view the new Model Definition details.
   - Select **Execute** to process the model execution. An information dialog is displayed indicating "successfully triggered the model execution".

The status of model execution can be verified in Model Execution Status option by accessing Advanced Analytics Infrastructure > Modeling > Model > Model Execution Status.

To Modify Existing Model

Modify Model Definition

You can update the model definition details of an existing Model in the **Model Definition** screen:

1. Select the check box adjacent to the Model ID whose details are to be updated.
2. Click **Edit** button in the Model Management tool bar. Edit button is disabled if you have selected multiple Model IDs.
3. Edit the Model Definition details as required. Model Name, Technique, and Model Objective are not editable. You can update the Model Description, Dataset, and variable parameters based on the technique selected.
4. Once you have updated all the necessary details in the **Model Definition Edit** screen, you can:
   - Select **Preview Data** to view the new Model Definition details before upload.
   - Click **Save** to update the model definition details.
   - Click **Save** and select **Execute** to process the model execution. The status of which can be verified in Model Execution Status option by accessing Advanced Analytics Infrastructure > Modeling > Model > Model Execution Status.

For more information, see Model Management under Advanced Analytics Infrastructure Chapter in Oracle Financial Services Analytical Applications Infrastructure User Guide.

E

How to Define a Batch

Introduction

Batch refers to a set of executable processes based on a specified rule. Batch Maintenance framework within OFSAAI facilitates you to create and maintain the Batch Definitions. You can process the Batch scheduled for execution from Batch Maintenance and also from other modules.

You need to have Data Centre Manager function role mapped to access the Operations framework within OFSAAI. You can access Batch Maintenance by expanding Operations section within the tree structure of LHS menu. The *Batch Maintenance* window displays a list of Batches scheduled for maintenance with the other details such as Batch ID, Batch Description, and the editable state of the Batch.

Batch Creation

You can create a batch from the *Batch Maintenance* screen as mentioned below:

1. From the OFSAAI **Home** menu, navigate to **Operations > Batch Maintenance**.
2. In the *Batch Maintenance* window, Select '+' button from the *Batch Name* tool bar.

   The *New Batch Definition* window is displayed.
3. Enter the Batch details as tabulated.

Field	Description
Batch Name	The **Batch Name** is auto generated by the system. You can edit to specify a Batch name based on the following conditions: • The Batch Name should be unique across the Information Domain. • The Batch Name must be alpha-numeric and should not start with a number. • The Batch Name should not exceed 41 characters in length. • The Batch Name should not contain special characters "." and "-".
Batch Description	Enter a description for the Batch based on the Batch Name.
Duplicate Batch	(Optional) Select the checkbox to create a new Batch by duplicating the existing Batch details. On selection, the **Batch ID** field is enabled.
Batch ID (If duplicate Batch is selected)	It is mandatory to specify the Batch ID if Duplicate Batch option is selected. Select the required **Batch ID** from the list.
Sequential Batch	Select the check box if the Batch has to be created sequentially based on the task specified. For example, if there are 3 tasks defined in a Batch, task 3 should have precedence as task 2, and task 2 should have precedence as task 1.

4. Click **Save** to save the Batch definition details.

The new Batch definition details are displayed in the *Batch Name* section of *Batch Maintenance* window with the specified **Batch ID**.

Note: For a more comprehensive coverage of configuration and execution of a batch, refer to the *Operations* Chapter in *Oracle Financial Services Analytical Applications Infrastructure User Guide.*