

# Oracle® Financial Services Enterprise Financial Performance Analytics User Guide



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# 1

## Preface

This section provides information about the Oracle Financial Services Enterprise Financial Performance Analytics Application User Guide.

Topics:

- [Intended Audience](#)
- [Access to Oracle Support](#)
- [Related Information Sources](#)
- [Additional Documents to Read](#)
- [Conventions](#)
- [Abbreviations](#)

### 1.1 Intended Audience

This user guide is intended for the users of the Oracle Financial Services Enterprise Financial Performance Analytics application.

See [Related Information Sources](#) for more Oracle product information.

### 1.2 Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For more information, visit [My Oracle Support](#) or visit [Oracle Accessibility Learning and Support](#) if you are hearing impaired.

### 1.3 Related Information Sources

We strive to keep this and all other related documents updated regularly; visit the [OHC Documentation Library](#), to download the latest version available there. The list of related documents is provided here.

- [OFS Performance Analytics Pack Installation and Configuration Guide Release 8.1.2.0.0](#)
- [OFS Enterprise Financial Performance Analytics Security Guide Release 8.1.0.0.0](#)
- [OFS Enterprise Financial Performance Analytics Cloning Reference Guide Release 8.1.0.0.0](#)

### 1.4 Additional Documents to Read

Oracle Financial Services Profitability Analytics Applications Pack is built on the Oracle Financial Services Advanced Analytical Applications Infrastructure (OFS AAI).

See the following [OFS AAI Documents](#) as no separate documents are required at the pack or application level for Oracle Financial Services Profitability Analytics Applications Pack:

- OFS Analytical Applications Infrastructure (OFS AAAI) Application Pack Installation and Configuration Guide Release 8.1.2.0.0
- OFS Analytical Applications Infrastructure Administration Guide Release 8.1.x
- OFS Analytical Applications Infrastructure User Guide Release 8.1.2.0.0
- OFS Analytical Applications Infrastructure Cloning Reference Guide Release 8.1.x
- OFS Analytical Applications Infrastructure Security Guide Release 8.1.x

You can access the common document from the OHC Documentation Library:

- [OFSAA Licensing Information User Manual](#)
- [OFS Analytical Applications 8.1.2.0.0 Technology Matrix](#)

## 1.5 Conventions

The following text conventions are used in this document:

**Table 1-1 Conventions Used in this Guide**

| Convention                | Meaning  |
|---------------------------|--|
| boldface                  | Boldface type indicates graphical user interface elements associated with an action or terms defined in text or the glossary.                      |
| italic                    | Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.                                      |
| monospace                 | Monospace type indicates commands within a paragraph, URLs, code in examples, file names, text that appears on the screen, or text that you enter. |
| <a href="#">Hyperlink</a> | Hyperlink type indicates the links to external websites, internal document links to sections.  |

## 1.6 Abbreviations

The following table lists the abbreviations used in this document:

| Abbreviation | Meaning                            |
|--------------|------------------------------------|
| BDP          | Big Data Processing                |
| DBA          | Database Administrator             |
| DDL          | Data Definition Language           |
| DEFQ         | Data Entry Forms and Queries       |
| DML          | Data Manipulation Language         |
| EAR          | Enterprise Archive                 |
| EJB          | Enterprise JavaBean                |
| ERM          | Enterprise Resource Management     |
| FTP          | File Transfer Protocol             |
| HDFS         | Hadoop Distributed File System     |
| HTTPS        | Hypertext Transfer Protocol Secure |



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| <b>Abbreviation</b> | <b>Meaning</b>   |
|---------------------|--|
| J2C                 | J2EE Connector   |
| J2EE                | Java 2 Enterprise Edition  |
| JCE                 | Java Cryptography Extension  |
| JDBC                | Java Database Connectivity   |
| JDK                 | Java Development Kit   |
| JNDI                | Java Naming and Directory Interface  |
| JRE                 | Java Runtime Environment   |
| JVM                 | Java Virtual Machine   |
| LDAP                | Lightweight Directory Access Protocol  |
| LHS                 | Left Hand Side   |
| MFA                 | Multi-Factor Authentication  |
| MOS                 | My Oracle Support  |
| OFSAA               | Oracle Financial Services Analytical Applications  |
| OFSAAI              | Oracle Financial Services Analytical Application Infrastructure                            |
| OFSAAAI             | Oracle Financial Services Advanced Analytical Applications Infrastructure Application Pack |
| OHC                 | Oracle Help Center   |
| OLAP                | On-Line Analytical Processing  |
| OLH                 | Oracle Loader for Hadoop   |
| ORAAH               | Oracle R Advanced Analytics for Hadoop   |
| OS                  | Operating System   |
| RAM                 | Random Access Memory   |
| RDBMS               | Relational Database Management System  |
| RHEL                | Red Hat Enterprise Linux   |
| SFTP                | Secure File Transfer Protocol  |
| SID                 | System Identifier  |
| SSL                 | Secure Sockets Layer   |
| TNS                 | Transparent Network Substrate  |
| URL                 | Uniform Resource Locator   |
| VM                  | Virtual Machine  |
| WAR                 | Web Archive  |
| XML                 | Extensible Markup Language   |

---

# 2

## OFS Enterprise Financial Performance Analytics

Oracle Financial Services Enterprise Financial Performance Analytics (OFS EFPA) (previously, Oracle Financial Services Profitability Analytics (OFS PA)) is a complete end-to-end web-based Business Intelligence application for generating and analyzing Financial and Management Reports. It provides tools for data integration and includes customizable, pre-built dashboards and reports, a reporting data model, and user-friendly functional subject areas for ad-hoc reporting.

The OFS EFPA is built using:

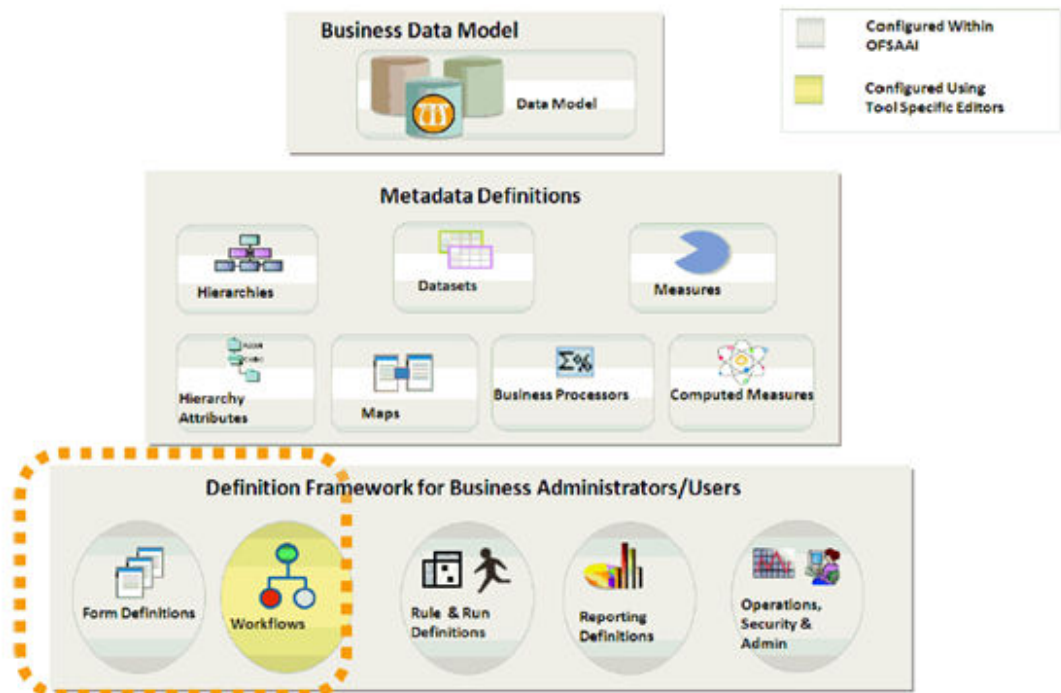
- OFSAAI for ETL and Data Integration
- OBIEE for Dashboard and Reports activities

OFS EFPA supports generating reports from Relational Database

This manual deals with OFSAAI, required for OFS EFPA activities, process, and functional details about the dashboards and reports. Also, it includes subject areas that could be used for ad-hoc reporting using the OBIEE Answers tool.

### 2.1 OFS EFPA Configurability in OFSAAI

Figure 2-1 OFS EFPA Configuration



## 2.2 OFS EFPA Run Chart

Run chart, as the name suggests helps the consultant understand the sequence of tasks to be performed to ensure the correctness of data flow in the product. It contains the details about Data loading for all mandatory tables for the product and the sequence of execution of seeded tasks/batches.

OFS EFPA provides the Run Chart listing the tasks required for the population of data for OFS EFPA Reports. This covers the following tasks:

- Stage Dimension Load
- Common data Population (for example Exchange Rate)
- Set up table population
  - Dimensions
  - Facts
- Model Execution
- Derived Entity Refresh

Download the OFS EFPA Run Chart from the [OFS Performance Analytics Pack Other Documents](#).

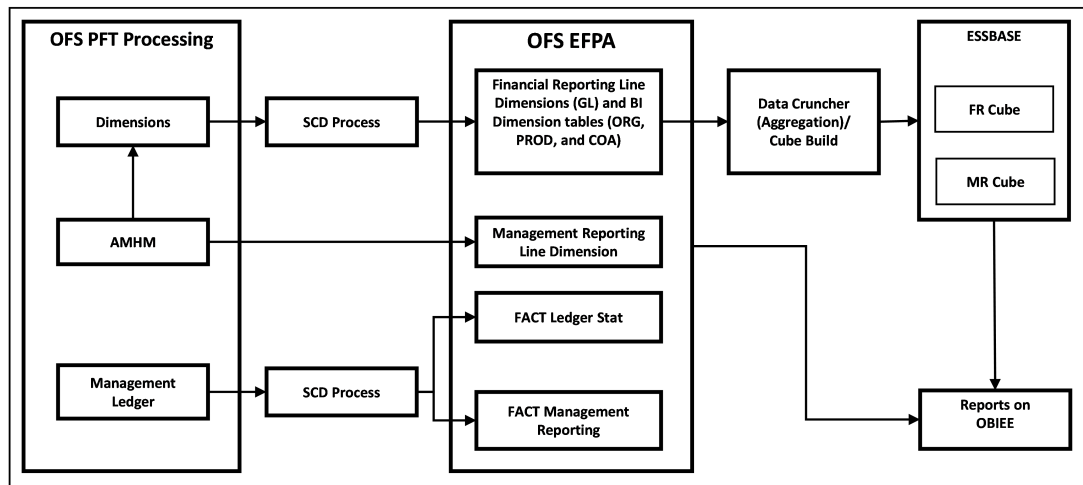
# 3

## Overview of Process Flow

OFS EFPA utilizes OBIEE technology to present financial reporting and management reporting. For details on OFS EFPA reports and how OBIEE is being utilized, see Overview of OFS EFPA Reports. The OFS EFPA data model has been designed in such a way that it can receive fact and dimension data from the OFSAA Enterprise Performance Management (EPM) data model, which is installed through Oracle Financial Services Profitability Management (OFS PFT) seeded data flow processes or from other systems. The seeded data flow processes from the processing area of OFS PFT to the data model of OFS EFPA utilizes the transformation and load components of OFSAAI. OFS EFPA can be independently licensed and installed to work on top of the OFSAAI infrastructure or can be licensed along with OFS PFT to work in an integrated manner.

The following diagram depicts the high-level data flow of OFS EFPA when both OFS PFT and OFS EFPA are installed.

**Figure 3-1 OFS EFPA Data Flow**



 **Note:**

From Release 8.1, the Management Ledger replaces the Ledger/Stat table as the central repository for management accounting within OFSAA solutions. Ledger/Stat will continue to be supported for existing or upgrading customers, but it will not be included as part of a new installation.

## 3.1 Data Flow: OFS PFT Processing Area to OFS EFPA Reporting Area

The OFS PFT processing area holds dimension data and fact data. Fact data is held primarily in the management ledger table (referred to as Ledger Stat in this document). The seeded data flow processes outlined in this section are for the management ledger table. Similarly, the seeded dimension data movement process definitions are for the standard processing dimensions which come with the OFS PFT Attributes Members Hierarchies Module (AMHM).

For more details on:

- Dimension data movement, see Dimension Loading Process and Time Dimension Population
- Ledger Stat transformation, see Fact Ledger Population

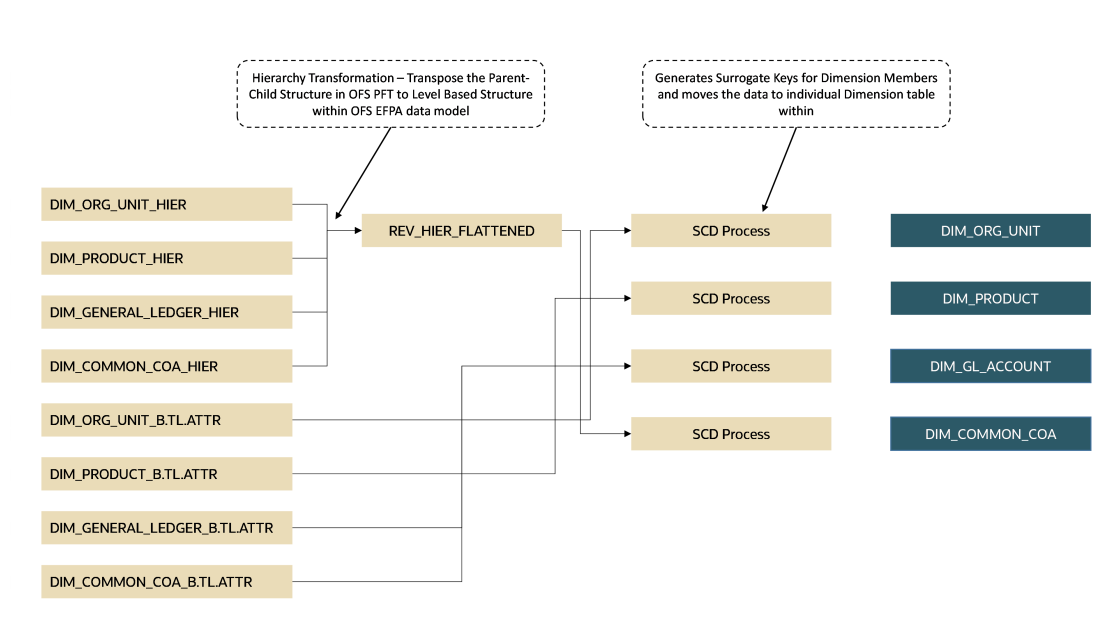
Similar data movement process definitions can be created for any additional user-defined dimensions or custom tables. These extensions are also described in this document.

The data movements from the OFS PFT processing area to the OFS EFPA reporting area utilize the data transfer component of OFSAAI. Data transformation and loading is done with the Data Integrator module and is metadata-driven. For more information on the *Usage of the Data Integrator Component*, see [OFS Analytical Applications Infrastructure User Guide](#).

### 3.1.1 Dimension Data Flow

The Dimension data used for processing is stored in individual Member, Attribute, and Hierarchy tables for each dimension, and is part of the OFS PFT AMHM data model. Hierarchies in OFS PFT AMHM have a parent-child storage structure. These are flattened to a level-based structure as part of the data movement process. The flattened Hierarchies for each Dimension along with the Member and Attribute data undergo Slowly Changing Dimension (SCD) to facilitate the movement of data to OFS EFPA dimension tables. The following diagram depicts the process flow:

Figure 3-2 Dimension Data Flow

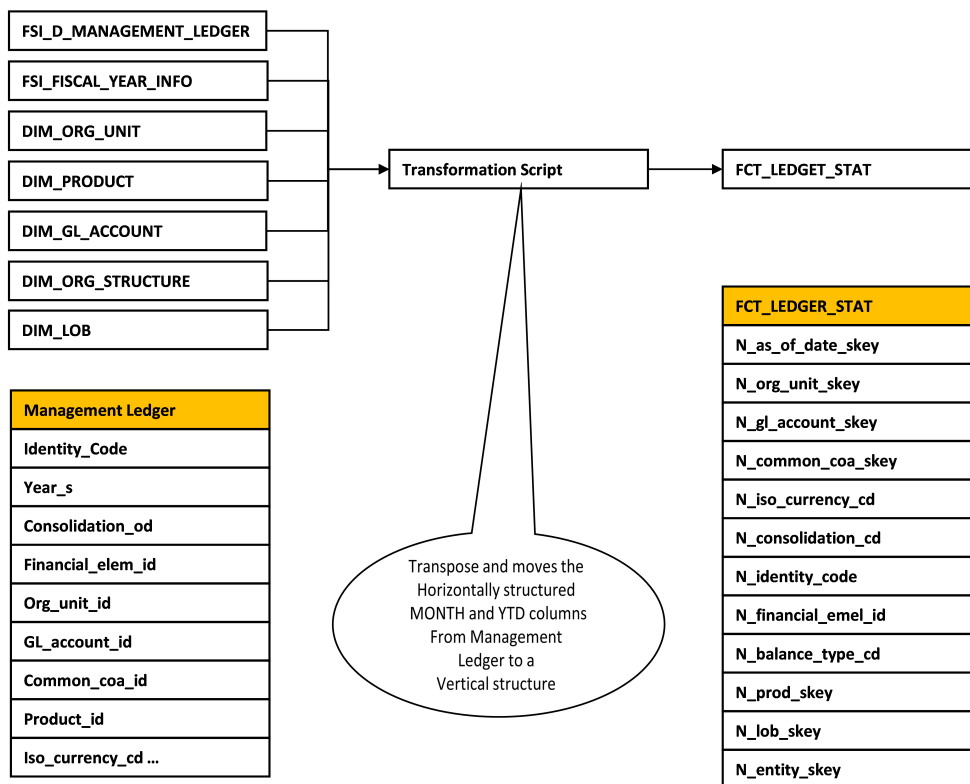


For more information on dimension management, see the [OFS Profitability Management User Guide](#).

### 3.1.2 Management Reporting Data Flow

The management transformation program moves data from the `FSI_D_MANAGEMENT_LEDGER` table in the OFS PFT processing area to the Fact Management Reporting Entity of OFS EFPA. The transformation program joins data for all the required dimensions. The following diagram provides a high-level overview of this process. For more details on the process and its execution, see Fact Management Reporting Population from `FSI_D_MANAGEMENT_LEDGER` Table.

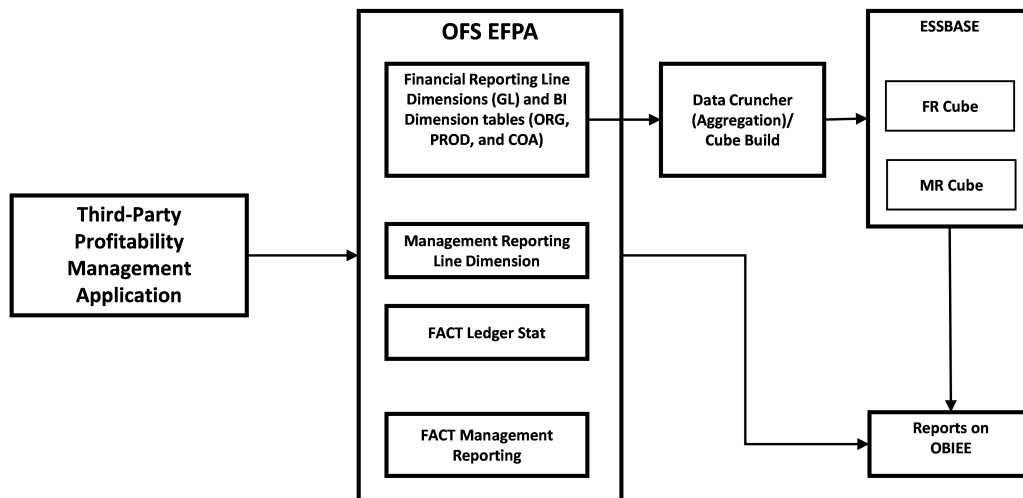
Figure 3-3 Management Reporting Data Flow



## 3.2 OFS EFPA Data Flow: Third-Party Profitability Management Applications to OFS EFPA Reporting Area

The following illustration depicts the data flow between third-party profitability management applications and EFPA reporting area.

**Figure 3-4 Third-Party Profitability Management Applications to OFS EFPA Reporting Area**



### 3.3 Data Model

The data model of OFS EFPA is a star schema for the `FCT_LEDGER_STAT` and `FCT_MGMT_REPORTING` fact tables. The Entity diagrams of the data model are provided below:

**Figure 3-5 Fact Ledger Stat**

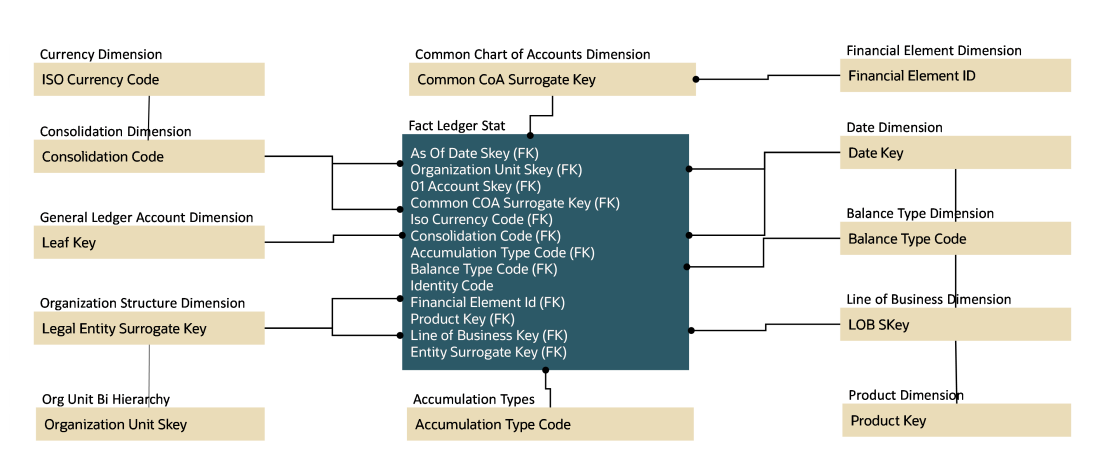
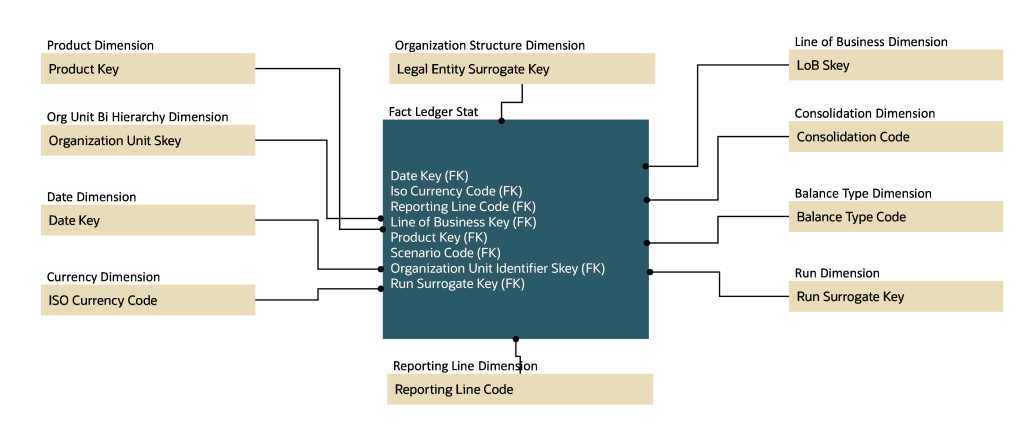




Figure 3-6 Fact Management Reporting



## 3.4 Hierarchy

Standard dimensions such as Product, Organization, Common COA, and General Ledger are populated through the AMHM layer of Profitability Management application (OFS PFT). OFS EFPA assumes that only one hierarchy is present for each dimension in the AMHM layer. This Hierarchy of data for each Dimension is populated in the Dimension Tables through SCDs.

An Entry in the `SETUP_MASTER` table is required for the hierarchy for which the members are to be loaded in the dimension tables. One properly constructed Hierarchy ID should be given in the `COMPONENT_VALUE` column for each dimension.

# 4

## Dimension Loading Process

The hierarchy data is natively stored in a parent-child structure within the Dimension Management component of OFSAAI. Dimension population involves the movement of dimension data from processing dimension tables (maintained by dimension management component of OFSAAI) to the reporting dimension tables used in Business Intelligence (BI) applications.

This data movement process is applicable only when OFS EFPA is installed along with the OFS PFT application. Dimension loading process has the following two components:

- Hierarchy Transformation
- Dimension Tables Population

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

- **General Ledger:** The members of this hierarchy are stored within the infrastructure metadata tables for OFS EFPA. Hence the hierarchy needs to be maintained separately for OFS PFT and OFS EFPA. This hierarchy need not be included as part of the hierarchy transformation process but should be part of the SCD process to move General Ledger (GL) dimension members from OFS PFT to OFS EFPA.
- **Financial Element:** The members of this hierarchy are seeded through RDBMS insert scripts by the OFS EFPA application installer. This hierarchy has to be maintained separately for OFS PFT and OFS EFPA.
- **Organization Unit:** This hierarchy in OFS PFT first gets flattened by the Hierarchy Transformation and is then moved to the hierarchy table for Organization Unit (`DIM_ORG_UNIT`) by the Dimension table population component (as explained in chapter Dimension Tables Population). The OFS PFT and OFS EFPA hierarchies can be kept in sync using the above two components.
- **Product:** This hierarchy in OFS PFT first gets flattened through Hierarchy Transformation and is then moved to the hierarchy table for Product (`DIM_PRODUCT`) by the Dimension table population component (as explained in chapter Dimension Tables Population). The OFS PFT and OFS EFPA hierarchies can be kept in sync by using the above two components.
- **Time:** The hierarchy table (`DIM_DATES`) for this hierarchy is loaded by the Time dimension population process (for more details, see Time Dimension Population).
- **Consolidation and Currency:** The hierarchy data for these hierarchies are seeded through RDBMS insert scripts by the OFS EFPA application installer. These hierarchies have to be maintained separately for OFS PFT and OFS EFPA.
- **Legal Entity:** The hierarchy data of Legal Entity is loaded through insert scripts based on the user-defined hierarchy. The above components in detail and the execution methods are explained in the following sections.

## 4.1 Hierarchy Transformation

Hierarchy Flattening Transformation is used to move the hierarchy data from the parent-child storage structure in OFS PFT AMHM model to a level based storage structure in OFS EFPA. In the OFS PFT AMHM model, hierarchy data for any hierarchy created on seeded or user-defined dimensions using the AMHM is stored within hierarchy tables of respective dimensions. These are moved to the `REV_HIER_FLATTENED` table of OFS EFPA after flattening by the Hierarchy flattening process.

For example, the hierarchy data of one or more Product Hierarchies created on the Product dimension (a seeded dimension) are stored in the `DIM_PRODUCTS_HIER` table.

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

Database components used by this transformation are:

- `REV_BATCHHIERFLATTEN`: Oracle database function
- `REV_HIER_TRANSFORMATON_BIAPPS`: Oracle database Package called by the preceding function.

Some of the features of the Hierarchy Flattening Transformation are:

- The user has the choice to process a single hierarchy or all hierarchies belonging to a particular dimension as part of a single execution.
- Any changes made in the hierarchy using the AMHM Hierarchy Maintenance screen will change the `FLATTENED_ROWS_COMPLETION_CODE` flag in `REV_HIER_DEFINITIONS` table to 'Pending'. This improves the processing efficiency since the Transformation process will avoid hierarchies that have not been modified.

### 4.1.1 Prerequisites

The following are the prerequisites for Hierarchy Flattening Transformation:

- All the post-installation steps mentioned in the [OFS Advanced Analytical Applications Infrastructure Installation Guide](#) and the [OFS Profitability Management Pack Installation and Configuration Guide](#) (only if OFS PFT is installed) must be completed.
- Seeded Hierarchies that come with the installation and any hierarchy created using the OFSAAI framework must have proper data in the Tables used by the Hierarchy Flattening Transformation. Hierarchy is maintained in the Dimension Management component of OFSAAI. (Navigate to **Master Maintenance**, select **Dimension Management**, and then select **Hierarchies**).

The following debugging steps need to be performed only if the hierarchy flattening process has failed.

- Check in the database (atomic schema) if the `FLATTENED_ROWS_COMPLETION_CODE` column of the `REV_HIER_DEFINITIONS` table has a value 'Pending' for the Hierarchy ID to be processed.  
This column will have the value 'Pending' for any new hierarchy created or modified using the OFSAAI Hierarchy Management User Interface.

- Check if the REV\_DIMENSIONS\_B table has a row for the dimension that is being processed.  
Execute the following query in the database to find the value and use the value in the dimension ID column for the dimension name/description to be processed.

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

- Check if the REV\_HIERARCHIES table has a row for the hierarchy id that is being processed.

```
SELECT * FROM rev_hierarchies rh where dimension_id = <dimension id>
```

- Map the application user to the BATPRO role, which has seeded batch execution function.
- Create a Batch. For more information refer to Executing the Hierarchy Flattening Transformation.
- Before executing a batch check if the following services are running on the application server.
- Iccserver
- Router
- AM Server
- Messageserver
- Olapdataserver

#### Note:

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 the [OFS Analytical Applications Infrastructure User Guide](#).

## 4.1.2 Tables Used by the Hierarchy Flattening Transformation

The following tables are used by the Hierarchy Flattening Transformation process:

- REV\_HIERARCHIES: This is the master table for hierarchies with one row per hierarchy.
- REV\_DIMENSIONS\_B: This is the master table for dimensions with one row per dimension.
- REV\_HIER\_DEFINITIONS: FLATTENED\_ROWS\_COMPLETION\_CODE column is checked to determine whether the hierarchy is to be processed.
- DIM\_<DIMENSIONNAME>\_HIER: This table stores the hierarchy data and is the source for the transformation.

Example:

- DIM\_PRODUCTS\_HIER: This table stores the hierarchy data of one or more Product Hierarchies created on the Product dimension (a seeded dimension).

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

### 4.1.3 Execute the Hierarchy Flattening Transformation

You can execute the Data Transformation from the Operations module of OFSAAI.

The Hierarchy Flattening Transformation for OFS EFPA is seeded with the following processes:

- `PR_DIM_PRODUCT_HIER`
- `PR_DIM_ORG_UNIT_HIER`
- `PR_DIM_COMMON_COA_HIER`
- `PR_DIM_GL_ACCOUNT_HIER`

You can define a new RUN out of these processes and enter Dimension ID and Hierarchy ID in Parameter List.

To define a new task for a Batch definition, follow these steps:

1. Select the check box adjacent to the newly created Batch Name in the Batch Maintenance window.
2. Click the **Add** icon (+) 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 drop-down list.
5. Select the following from the Dynamic Parameters list:
  - **Datastore Type**: Select the appropriate datastore type from the list.
  - **Datastore Name**: Select the appropriate datastore name from the list.
  - **IP address**: Select the IP address from the list.
  - **Rule Name**: Select `BATCH_HIERTRANSFORMATION` from the drop-down list of available transformations. (This is a seeded Data Transformation which is installed as part of the OFS EFPA application Installer. If you don't see this in the list, contact Oracle Support.)
  - **Parameter List**: Enter Dimension ID and Hierarchy ID. For the Parameter List, the values are:
    - **Dimension ID**: Execute the following query in the database to find the value, and use the value in the Dimension ID column for the dimension name/description to be processed.

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

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

- **Hierarchy ID:** If all the hierarchies belonging to a dimension are to be processed, then provide null as the parameter value. Else, provide the System Identifier of the hierarchy that needs to be transformed. Execute the following query in the database, only if a single hierarchy has to be processed, and use the value in HIERARCHY\_ID column as a parameter for the hierarchy to be processed.

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

For OFS EFPA, it is assumed that only one Hierarchy is processed at a time.

Example: If all the hierarchies for GL Account dimension must be processed, the parameter list should be given as: '2', null

Where '2' is the Dimension ID for the seeded dimension GL Account.

Example: If a particular hierarchy with code 1000018112 must be processed, the parameter list should be given as follows: '2', '1000018112'

Where '1000018112' is the code obtained by executing the preceding query in the database.

#### 6. Click **Save**.

The Task definition is saved on the selected Batch.

You can execute the batch from the Batch Execution window by choosing the Batch created following the steps mentioned in the preceding sections. For more details, see the [OFS Analytical Applications Infrastructure User Guide](#).

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

- **Function Name:** REV\_BATCHHIERFLATTEN
- **Parameters:** BATCH\_RUN\_ID, MIS\_DATE, PDIMENSIONID, and PHIERARCHYID
- **Sample Parameter Values:** 'Batch1', '20091231', '2', '1000018112'

#### **Note:**

Execute the Hierarchy Transformation Batch only when a new Hierarchy is defined or an existing Hierarchy is modified.

## 4.1.4 Checking the Execution Status

The Batch execution status can be monitored through the Batch Monitor section of the OFSAAI Operations module.

The status messages in the batch monitor are:

- N: Not Started
- O: On Going
- F: Failure
- S: Success

The Event Log window in the Batch Monitor section provides execution logs, in which the top row is the most recent. Any errors during the Batch execution are listed in the logs.

 **Note:**

It is advisable to check the Event Log for any errors, even if the execution status returns 'Success'.

The execution log can also be accessed on the application server in the directory `$FIC_DB_HOME/log/date`, where the file name will have the Batch Execution ID.

 **Note:**

Check the `.profile` file in the installation home if you are unable to find this path.

The database-level operations log can be accessed by querying the `FSI_MESSAGE_LOG` table. The Batch Run ID column can be filtered for identifying the relevant log. (This is the same log you see in the Event Log window.)

## 4.2 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: <https://www.oracle.com/technetwork/middleware/data-integrator/learnmore/odi-best-practice-data-warehouse-168255.pdf>
- Oracle® Warehouse Builder Data Modeling, ETL, and Data Quality Guide at: [https://docs.oracle.com/cd/E11882\\_01/owb.112/e10935.pdf](https://docs.oracle.com/cd/E11882_01/owb.112/e10935.pdf)

Additional online sources include:

- [http://en.wikipedia.org/wiki/Slowly\\_changing\\_dimension](http://en.wikipedia.org/wiki/Slowly_changing_dimension)
- [http://www.oracle.com/webfolder/technetwork/tutorials/obe/db/10gr2/owb/owb10gr2\\_gs/owb/lesson3/slowlychangingdimensions.htm](http://www.oracle.com/webfolder/technetwork/tutorials/obe/db/10gr2/owb/owb10gr2_gs/owb/lesson3/slowlychangingdimensions.htm)
- 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 OFSAI SCD component for OFSPA solution are Type 1 and Type 2.

## 4.2.1 Type 1 Methodology

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

Example:

The application installer populates one row per dimension for the seeded dimensions in this table.

**Table 4-1 Type 1 Methodology**

| N_PRODUCT_SK<br>EY | V_PRODUCT_NAME | D_START_DATE | D_END_DATE | F_LATEST_RECORD_INDICATOR |
|--------------------|----------------|--------------|------------|---------------------------|
| 1                  | PL             | 5/31/2010    | 12/31/9999 | Y                         |

In this example,

- N\_PRODUCT\_SKEY is the surrogate key column which is a unique key for each record in the dimension table.
- V\_PRODUCT\_NAME is the product name.
- D\_START\_DATE indicates the date from which this product record is valid.
- D\_END\_DATE indicates the date to which this product record is valid.
- F\_LATEST\_RECORD\_INDICATOR with value 'Y', which indicates this is the latest record in the dimension table for this product and 'N' indicates it is not.

If the V\_PRODUCT\_NAME column is set as a Type 1 SCD column and if there is a change in the product name to 'Personal Loan' from 'PL' in the above example, in the next processing period, then when SCD is executed for the new processing period the record in the above example changes to:

**Table 4-2 Type 1 Methodology**

| N_PRODUCT_SK<br>EY | V_PRODUCT_NAME | D_START_DATE | D_END_DATE | F_LATEST_RECORD_INDICATOR |
|--------------------|----------------|--------------|------------|---------------------------|
| 1                  | Personal Loan  | 6/30/2010    | 12/31/9999 | Y                         |

## 4.2.2 Type 2 Methodology

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



**Table 4-3 Type 2 Methodology**

| N_PRODUCT_S<br>KEY | V_PRODUCT_N<br>AME | D_START_DATE | D_END_DATE | F_LATEST_REC<br>ORD_INDICATO<br>R |
|--------------------|--------------------|--------------|------------|-----------------------------------|
| 1                  | PL                 | 5/31/2010    | 12/31/9999 | N                                 |
| 1                  | Personal Loan      | 6/30/2010    | 12/31/9999 | Y                                 |

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

### 4.2.3 Prerequisites

The following are the prerequisites for populating the Dimension Tables:

- The Hierarchy Flattening Transformation should have been executed successfully.
- The SCD executable should be present under <installation home>ficdb/bin. The file name is scd and the user executing the SCD component must have execute rights on this file.
- The setup tables accessed by the SCD component (SETUP\_MASTER, SYS\_TBL\_MASTER and SYS\_STG\_JOIN\_MASTER) should have the required entries. The SETUP\_MASTER table does not come seeded with the installation; the required entries must be added manually. The required columns are mentioned in the Tables Used by the SCD Component. The tables SYS\_TBL\_MASTER and SYS\_STG\_JOIN\_MASTER are seeded for the Org unit, GL Account, Product, Common COA (Chart of Accounts) dimensions along with application installation and you must only add entries in these tables if you add new dimensions.
- Database Views with name DIM\_<Dimension Name>\_V come seeded, for the seeded dimensions which come as part of the installation. These views source data from the Profitability dimension tables as well as the flattened hierarchy data. DIM\_PRODUCT\_V is the view available for the product dimension. New views will have to be added for any new dimension, added in addition to the seeded dimensions.

### 4.2.4 Tables Used by the SCD Component

The following are the database tables and columns used by the SCD component:

- SETUP\_MASTER
  - V\_COMPONENT\_CODE: This column is not used by the OFS EFPA application.
  - V\_COMPONENT\_DESC: This column value is hardcoded in the database view definitions for DIM\_PRODUCT\_V, DIM\_GL\_ACCOUNT\_V, DIM\_COMMON\_COA\_V, and DIM\_ORG\_UNIT\_V to obtain the Hierarchy ID from the REV\_HIER\_FLATTENED table. For this reason, the value for this column should be unique.

 **Note:**

The value in `V_COMPONENT_DESC` must exactly match with the value used in the SQL to create the `DIM_<dimension>_V` view. The View SQL contains a section referencing the `SETUP_MASTER` table. You must use the same upper and/or lower case letters in `V_COMPONENT_DESC` as used in this section of the View SQL.

- `V_COMPONENT_VALUE`: This is the hierarchy ID to be processed and this can be obtained by executing the following query:

```
select b.object_definition_id,short_desc,long_desc from
fsi_m_object_definition_b b inner join fsi_m_object_definition_t1 t on
b.object_definition_id = t.object_definition_id and b.id_type = 5
```

Example:

**Table 4-4 SETUP\_MASTER**

| V_COMPONENT_CODE | V_COMPONENT_DESC | V_COMPONENT_VALUE |
|------------------|------------------|-------------------|
| COMMON_COA_HEIR  | COMMON_COA_HEIR1 | 100063952         |
| GL_ACCOUNT_HEIR  | GL_ACCOUNT_HEIR1 | 200000808         |
| ORG_HIER         | ORG_UNIT_HIER1   | 200282            |
| PRODUCT_HIER     | PRODUCT_HIER1    | 1000004330        |

 **Note:**

For any newly defined Hierarchy, a row must be inserted to this table manually for SCD to process that Hierarchy. You can only specify one Hierarchy for each dimension.

- `SYS_TBL_MASTER`  
The application installer populates one row per dimension for the seeded dimensions in this table.

SCD for GL Dimension fails if `V_COMPONENT_VALUE` is used with `DEFAULT` value. To avoid this failure, run the following query:

```
SELECT
distinct hierarchy_id
FROM
dim_general_ledger_hier;
```

This query fetches the hierarchy IDs (in numbers). You can use any of the fetched hierarchy IDs to update the `SETUP_MASTER` table with the following query:

```
UPDATE setup_master
SET
v_component_value = '<AMHM HierarchyID to be used for SCD>'
```

```
WHERE
v_component_code = 'GL_ACCOUNT_HIER';
```

**Table 4-5 SYS\_TBL\_MASTER**

| COLUMN NAME  | DATA TYPE                | COLUMN DESCRIPTION   |
|--------------|--------------------------|--|
| MAP_REF_NUM  | NUMBER(3)<br>NOT NULL    | The Mapping Reference Number for this unique mapping of a Source to a Dimension Table.         |
| TBL_NM       | VARCHAR2(30)<br>NOT NULL | Dimension Table Name.  |
| STG_TBL_NM   | VARCHAR2(30)<br>NOT NULL | Staging Table Name.  |
| SRC_PRTY     | NUMBER(2)<br>NULL        | The priority of the Source when multiple sources are mapped to the same target.                |
| SRC_PROC_SEQ | NUMBER(2)<br>NOT NULL    | The sequence in which the various sources for the DIMENSION will be taken up for processing.   |
| SRC_TYP      | VARCHAR2(30)<br>NULL     | The type of the Source for a Dimension, that is, Transaction Or Master Source.                 |
| DT_OFFSET    | NUMBER(2)<br>NULL        | The offset for calculating the Start Date based on the Functional Requirements Document (FRD). |
| SRC_KEY      | NUMBER(3)<br>NULL        |  |

Example: This is the row inserted by the application installer for the product dimension.

**Table 4-6 Product Dimension**

|              |               |
|--------------|---------------|
| MAP_REF_NUM  | 128           |
| TBL_NM       | DIM_PRODUCT   |
| STG_TBL_NM   | DIM_PRODUCT_V |
| SRC_PRTY     |               |
| SRC_PROC_SEQ | 1             |
| SRC_TYP      | MASTER        |
| DT_OFFSET    | 0             |

 **Note:**

For any newly defined dimension, a row must be inserted to this table manually.

- `SYS_STG_JOIN_MASTER`  
The application installer populates this table for the seeded dimensions.

**Table 4-7** `SYS_STG_JOIN_MASTER`

| COLUMN NAME          | DATA TYPE                | COLUMN DESCRIPTION  |
|----------------------|--------------------------|---|
| MAP_REF_NUM          | NUMBER(3)<br>NOT NULL    | The Mapping Reference Number for this unique mapping of a Source to a Dimension Table.                      |
| COL_NM               | VARCHAR2(30)<br>NOT NULL | Name of the column in the Dimension Table.  |
| COL_TYP              | VARCHAR2(30)<br>NOT NULL | Type of column.   |
| STG_COL_NM           | VARCHAR2(60)<br>NULL     | Name of the column in the Staging Table.  |
| SCD_TYP_ID           | NUMBER(3)<br>NULL        | SCD type for the column.  |
| PRTY_LOOKUP_REQD_FLG | CHAR(1)<br>NULL          | Column to determine whether Lookup is required for Priority of Source against the Source Key Column or not. |
| COL_DATATYPE         | VARCHAR2(15)<br>NULL     | The possible values are VARCHAR, DATE, and NUMBER, based on the underlying column data type.                |
| COL_FORMAT           | VARCHAR2(15)<br>NULL     |   |


The possible values for column type (the `COL_TYPE` column) in `SYS_STG_JOIN_MASTER` table are:

- PK: Primary Dimension Value (can be the multiple of the given Mapping Reference Number)
- SK: Surrogate Key
- DA: Dimensional Attribute (multiple for a given "Mapping Reference Number")
- SD: Start Date
- ED: End Date
- LRI: Latest Record Indicator (Current Flag)
- CSK: Current Surrogate Key
- PSK: Previous Surrogate Key
- SS: Source Key
- LUD: Last Updated Date/Time
- LUB: Last Updated By
- NN: Not Null

Example: This is the row inserted by the application installer for the product dimension.


**Table 4-8 Product Dimension**

|                      |                |
|----------------------|----------------|
| MAP_REF_NUM          | 128            |
| COL_NM               | V_PRODUCT_NAME |
| COL_TYP              | DA             |
| STG_COL_NM           | V_PRODUCT_NAME |
| SCD_TYP_ID           | 2              |
| PRTY_LOOKUP_REQD_FLG | N              |
| COL_DATATYPE         | VARCHAR        |
| COL_FORMAT           |                |

 **Note:**  
For any newly defined dimension, the column details must be inserted to this table manually.

- DIM\_< dimension name >\_V: The database view which SCD uses as the source. Example: DIM\_PRODUCTS\_V

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

 **Note:**  
For any newly defined dimension, a view must be created, which is similar to that of DIM\_PRODUCTS\_V.

A sequence should be created for every user-defined dimension, using the below query:

Example:

```
create sequence SEQ_< DIMENSION > minvalue 1  
maxvalue 9999999999999999999999999999999  
increment by 1
```

## 4.3 Executing the SCD Component

You can execute the SCD component from the Operations module of OFSAAI.

The SCD component for OFS EFPA has been seeded with the process PR\_EFPA\_DF, which can be executed from the Batch Execution section of OFSAAI.

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, see the [Define a Batch](#) section.

To define a new task for a Batch definition, do the following:

1. Select the check box adjacent to the newly created Batch Name in the Batch Maintenance window.

2. Click the **Add** icon (+) from the Task Details grid.  
The Task Definition window is displayed.
3. Enter the **Task ID** and **Description**.
4. Select **Run Executable** component from the drop-down list.
5. Select the following from the Dynamic Parameters list:
  - **Datastore Type:** Select the appropriate datastore type from the list.
  - **Datastore Name:** Select the appropriate datastore name from the list.
  - **Executable:** Enter scd,<map ref num>  
For example, scd,2
  - **Wait:** Click **Yes** if you want to wait till the execution is complete or click **No** to proceed with the next task.  
Select **Yes** if you want the ICC component to wait for the process to complete the execution and update the status as either Success or Failure. If you select **No**, the component will trigger the processes and update the status as Success.
  - **Batch Parameter:** Click **Yes** in Batch Parameter field if you want to pass the batch parameters to the executable and click **No** otherwise. Always select **Yes** in Batch Parameter.
6. Click **Save**.  
The Task definition is saved for the selected Batch.
7. Click **Parameters**. Select the following from the Dynamic Parameters List and then click **Save**:  
The map ref number values available for the Executable parameter are:
  - **-1**, if you want to process all the dimensions. The Executable parameter mentioned earlier is: **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 that come seeded with the install. If you want to process for the Product dimension, the Executable parameter mentioned earlier is: **scd,6**.

**Table 4-9 Dynamic Parameters**

| MAP_REF_NUM | TBL_NM         |
|-------------|----------------|
| 126         | DIM_ORG_UNIT   |
| 127         | DIM_GL_ACCOUNT |
| 128         | DIM_PRODUCT    |
| 129         | DIM_COMMON_COA |

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

### 4.3.1 Checking the Execution Status

The Batch execution status can be monitored through the Batch Monitor section of the OFSAAI Operations module. The status messages in the batch monitor are:

- N: Not Started

- O: On Going
- F: Failure
- S: Success

The execution log can also be accessed on the application server in the directory `FIC_DB_HOME/log/ficgen`, where the file name will have the Batch Execution ID.

The detailed SCD component log can be accessed on the application server in the directory `$FIC_HOME` by accessing the following path `/ftpshare/<infodom name>/logs`.

 **Note:**

The Event Log window in the Batch Monitor section provides execution logs, in which the top row is the most recent. Any errors during the Batch execution are listed in the logs.

## 4.3.2 Legal Entity

It is a manual upload. Optionally it can be done by using the process `PR_DIM_ORG_STRUCTURE`. The `PR_DIM_ORG_STRUCTURE` process triggers the DT and loads the `DIM_Org_Structure` Table.

**Parameter List:** NULL

DT uses data from the below tables:

- `STG_LEGAL_ENTITY_B_INTF`
- `STG_LEGAL_ENTITY_TL_INTF`
- `STG_LEGAL_ENTITY_ATTR_INTF`
- `STG_LEGAL_ENTITY_HIER_INTF`

## 4.4 Parent-Child Hierarchy

OBIEE can handle Hierarchies in Parent-Child format as well. For this, the Level based Hierarchy of AMHM has to be converted to a Parent-Child Hierarchy to support Hierarchies in reports. Parent-Child hierarchy is applicable for:

- Reporting Line (`DIM_REP_LINE`)
- General Ledger (`DIM_GL_ACCOUNT`)
- Organization Structure (`DIM_ORG_STRUCTURE`)

After the above dimension tables are loaded, their respective Parent-Child Relation tables also must be populated. The following are the dimension tables with their respective Parent-Child Relation tables:

- `DIM_REP_LINE`: `REP_LINE_PARENT_CHILD_RELATION`
- `DIM_GL_ACCOUNT`: `GL_PARENT_CHILD_RELATION`
- `DIM_ORG_STRUCTURE`: `ORG_STR_PARENT_CHILD_RELATION`

The following DTs populate the Parent-Child Relation tables:

**1. FN\_REP\_LINE\_PARENT\_CHILD**

The database components used to populate REP\_LINE\_PARENT\_CHILD\_RELATION are:

- Database function FN\_REP\_LINE\_PARENT\_CHILDWR
- Database function FN\_REP\_LINE\_PARENT\_CHILD, which is called by the function FN\_REP\_LINE\_PARENT\_CHILDWR mentioned above.

Process PR\_DIM\_REP\_LINE triggers the DT and loads the REP\_LINE\_PARENT\_CHILD\_RELATION table.

Parameter List: Hierarchy Name and Folder Name

Example: 'Repline Hierarchy','EPM61SEG'

The following query retrieves the Hierarchy Name and the Folder Name:

```
select distinct FODTL.SHORT_DESC, FODB.FOLDER_NAME
from fsi_m_object_definition_tl FODTL, fsi_m_object_definition_bFODB
where FODTL.object_definition_id in
(select object_definition_id
from fsi_m_object_definition_b
where table_name = 'DIM_REPORTING_LINE_HIER')
and FOLDER_NAME = '<OFSAA segment name>;
```

There is a foreign key (FK) reference from table FCT\_MGMT\_REPORTING (N\_REP\_LINE\_CD column) to table DIM\_REP\_LINE (N\_REP\_LINE\_CD column). This foreign key, FK\_FCT\_MGMT\_REPORTING\_3 should be disabled if the Data Transformation (DT) FN\_REP\_LINE\_PARENT\_CHILD has to run again, as this DT deletes the DIM\_REP\_LINE table and reloads again. You can enable the FK after the successful execution of the DT.

**2. FN\_GL\_PARENT\_CHILD**

The database components used to populate GL\_PARENT\_CHILD\_RELATION are:

- Database function FN\_GL\_PARENT\_CHILDWR
- Database function FN\_GL\_PARENT\_CHILD, which is called by the function FN\_GL\_PARENT\_CHILDWR mentioned above.

Process PR\_DIM\_GL\_ACCOUNT triggers the DT and loads the GL\_PARENT\_CHILD\_RELATION table.

Parameter List: NULL

**3. FN\_ORG\_PARENT\_CHILD**

The database components used to populate ORG\_STR\_PARENT\_CHILD\_RELATION are:

- Database function FN\_ORG\_PARENT\_CHILDWR
- Database function FN\_ORG\_PARENT\_CHILD, which is called by the function FN\_ORG\_PARENT\_CHILDWR mentioned above.

Process PR\_DIM\_ORG\_UNIT triggers the DT and loads the ORG\_STR\_PARENT\_CHILD\_RELATION table.

Parameter List: NULL



 **Note:**

Whenever there are changes to any of the three dimensions mentioned above, the corresponding Parent-Child relation DT should be executed. The OBIEE reports and the Parent-Child relation tables require the Parent ID to be null for the root node of the respective Hierarchy in the corresponding dimension table.

## 4.5 Multiple Hierarchies

The current flow of hierarchy data movement from AMHM tables to Reporting dimension tables considers the following objects:

- Four AMHM tables (<Dimension>\_B/TL/ATTR/HIER)
- REV\_HIER\_FLATTENED table
- SETUP\_MASTER table
- Dimension specific view
- SCD to load data from View to Reporting Dimension table

The out-of-the-box (OOTB) product has been configured to support data movement of not only one hierarchy but also to support more than one hierarchy. The information mentioned specifies the points at a high-level that one has to consider to support more than one hierarchy.

The following steps describe the data movement in two hierarchies (Product dimension is considered as an example):

1. Create two hierarchies for Product dimension in AMHM (For example 200183, 301741).
2. Run Hierarchy Flattening transformation to load the flattened structure of both in REV\_HIER\_FLATTENED.
3. Load SETUP\_MASTER table with two entries identified by V\_COMPONENT\_DESC values PRODUCT\_HIER1 and PRODUCT\_HIER2.

**Table 4-10 SETUP\_MASTER**

| V_COMPONENT_CODE | V_COMPONENT_DESC | V_COMPONENT_VALUE |
|------------------|------------------|-------------------|
| PRODUCT_HEIR     | PRODUCT_HEIR1    | 301741            |
| PRODUCT_HIER2    | PRODUCT_HIER2    | 200183            |

4. Modify the view definition DIM\_PRODUCT\_V to include both hierarchies. Find below both the OOTB and the modified view definitions.
  - DIM\_PRODUCT\_V
  - DIM\_PRODUCT\_\_MULTI\_HIER\_V

In both the hierarchies, level 10 to level 1 represent the first hierarchy and level 20 to level 11 represent the second hierarchy. Both the hierarchies share leaf nodes.

Use the `DIM_PRODUCT_MULTI_HIER_V.sql`, which is a sample view on the product dimension. It can be used in the SCD process to move multiple alternate hierarchies defined in the AMHM to the flattened tables used for BI analytics.

This sample view considers two alternate hierarchies. You can extend this for additional hierarchies that may be required. Also, the sample is based on the Product dimension but can be modified for other dimensions by replacing the relevant tables.

# 5

## 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 time (for example, income for March month). 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 are used to specify how to rollup the child member balances (for example, three months rolling average).

The database components, used by the transformations are:

- Database function `FN_DIM_DATES`
- Database procedure `PROC_DIM_DATES_POPULATION` that is called by the function `FN_DIM_DATES` mentioned earlier.



### Note:

OFS EFPA does not use `D_FISCAL_YEAR_START_DATE`, `D_FISCAL_YEAR_END_DATE`, or `N_DAY_OF_WEEK` columns.

## 5.1 Prerequisites

The following are the prerequisites for Time Dimension Population Transformation:

- All the post-installation steps mentioned in the [OFS Advanced Analytical Applications Infrastructure Installation Guide](#) and the [OFS Profitability Management Pack Installation and Configuration Guide](#) (only if OFS PFT is installed) must be completed.
- The Application User must be mapped to a role that has a seeded batch execution function (BATPRO).
- Before executing a Batch, check if the following services are running on the application server:
  - lccserver
  - Router
  - AM Server
  - Messageserver
  - Olapdataserver



### Note:

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 the [OFS Analytical Applications Infrastructure User Guide](#).

Batches must be created for executing the function. For more details, see [Define a Batch](#).

## 5.2 Tables used by the Time Dimension Population Transformation

For more details on viewing the structure of earlier tables, refer to Oracle Financial Services Analytical Applications Data Model Data Dictionary or the OFS EFPA Erwin Data Model.

## 5.3 Executing the Time Dimension Population Transformation

You can execute the function from the Operations (formerly Information Command Center (ICC) framework) module of OFSAAI.

This component for OFS EFPA is seeded with the Process PR\_DIM\_DATES, which can be executed from the Run Rule Framework by defining a new Run out of the Process given above section of OFSAAI. In the Parameter List, enter the number of months.

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 section [OFS Analytical Applications Infrastructure User Guide](#).

To define a new task for a Batch definition, follow these steps:

1. Select the check box adjacent to the newly created Batch Name in the Batch Maintenance window.
2. Click the **Add** icon (+) 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 drop-down list.
5. Select the following from the Dynamic Parameters list:
  - **Datastore Type:** Select the appropriate datastore type from the list.
  - **Datastore Name:** Select the appropriate datastore name from the list.
  - **IP address:** Select the IP address from the list.
  - **Rule Name:** Select `BATCH_HIERTRANSFORMATION` from the drop-down list of available transformations. (This is a seeded Data Transformation which is installed as part of the OFS EFPA application Installer. If you don't see this in the list, contact Oracle Support.)
  - **Parameter List:** Enter the Start Date and End Date.
  - **Start Date:** This is the starting date, from which the Transformation will populate the DIM\_DATES table. This date should be specified in the YYYYMMDD format. For example, '20081131'.

- **End Date:** This is the end date, to which the Transformation will populate the DIM\_DATES table. This date should also be specified in the YYYYMMDD format. For example, '20091231'.
6. Click **Save**.  
The Task definition is saved on the selected Batch.
  7. Execute the batch.  
You can execute a Batch definition from the Batch Execution section of the OFSAAI Operations module.  
  
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, and P\_ED\_DT
    - Sample Parameter Values: 'Batch1', '20091231', '20081131', and '20091231'This DT should be executed for each year for which data is present in the source table.

## 5.4 Checking the Execution Status

The Batch execution status can be monitored through the Batch Monitor section of the OFSAAI Operations module. The status messages in the batch monitor are:

- N: Not Started
- O: On Going
- F: Failure
- S: Success

The execution log can also be accessed on the application server in the directory `$FIC_DB_HOME/log/date`, where the file name will have the Batch Execution ID.

You can access the database level operations log by querying the FSI\_MESSAGE\_LOG table. Filter the Batch Run ID column for identifying the relevant log.



### Note:

Check the .profile file in the installation home if you are unable to find this path.

# 6

## Modification and Mapping of Reporting Lines

Reporting lines are configured as hierarchies within the Business Metadata of Oracle Financial Services Analytical Applications Infrastructure (OFSAAI). Reporting Line hierarchy originates in the Reporting layer so it is enabled in AMHM. User needs to click on the Application Preferences screen to be able to create a new hierarchy of Reporting Line.

- Reporting Lines for Financial Reporting: Financial Reporting Line is based on the General Ledger dimension. (DIM\_GL\_ACCOUNT table). This reporting line hierarchy is a REGULAR parent-child hierarchy, based on the members of the GL dimension.
- Reporting Lines for Management Reporting: Management Reporting Line is based on the Reporting Line dimension (DIM\_REP\_LINE table). This reporting line hierarchy is a REGULAR parent-child hierarchy based on the members of the Reporting line dimension.

### 6.1 Summary of Configuration for Financial Reporting and Management Reporting

The summary of the configuration required covers Financial Reporting and Management Reporting.

#### 6.1.1 Financial Reporting (FR)

Reporting Line is based on the General Ledger dimension. Therefore, all the GL codes for this subject area should functionally relate to Income Statement line items. The idea of this report is to show the un-allocated data coming in from the source system. The Income Statement General Ledger accounts in the source system need to be understood and be categorized as either income or expense GLs. The tag of income/expense can be achieved by putting in the appropriate Financial Element Code (FE) (for example, 420 for Interest, 455 for Non-Interest Income, and 457 for Non-Interest Expense). Each leaf level GL will be categorized as either Income or Expense with the appropriate FE mapping. Financial Reporting Income Statement hierarchy can then be constructed by using the leaf level GLs and rolling them up to higher-level nodes. Assign the rollup signage (+/-) to each leaf/node while constructing the hierarchy. Data is expected to be present only for the leaf level GL codes. Once the FR Income Statement hierarchy (can also be called as Income Statement from source ledger data) is constructed same can be made visible in Financial Reporting Dashboard by running the hierarchy transformation and SCD of GL dimension.

#### 6.1.2 Management Reporting (MR)

Management Reporting covers Income Statement (MR-IS) and Balance Sheet (MR-BS).

##### 6.1.2.1 Income Statement (MR-IS)

Management Reporting Income Statement (MR-IS) is seeded in the system and is available in the system using the reporting line codes present in the DIM\_REP\_LINE table. MR-IS line

items are much more granular and data is created for them using the allocation engine (for example, OFS PFT). The allocated data is expected to be present in the FSI\_D\_MANAGEMENT\_LEDGER table. Line items of MR-IS are constructed based on Reporting line codes, but the data availability is expected into the seeded Financial Element Codes. EFPA seeds 9000 series FEs and allocation should be done to this series. Once the allocation engine provides data for these Financial Elements, the MR-IS will show results in the OBIEE dashboards. There is a mapping table DIM\_REPORTING\_LINE\_ATTR that ties up Reporting Line codes and Financial Elements. The seeded Financial Element list is provided in the install guide of OFS EFPA. The mapping between Reporting Lines and Financial Elements is 1:1 and one FE can only be mapped to a single leaf level Reporting Line code of MR Income Statement hierarchy.

### 6.1.2.2 Balance Sheet (MR-BS)

Management Reporting Balance Sheet (MR-BS) is seeded in the system and is available in the system using the reporting line codes present in the DIM\_REP\_LINE table. Mapping of Balance Sheet General Ledger codes to Reporting Lines is explained in section Mapping of Balance Sheet Leaf Nodes to General Ledger.

## 6.2 Addition and Modification of Reporting Lines Using AMHM

This section describes the modification of the Financial Reporting Line and Management Reporting Line.

### 6.2.1 Modify the Financial Reporting Line

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

- **GL member:** When creating a new GL member in AMHM, the signage attribute should be properly mapped to the GL. This signage will be used as rollup signage in the GL hierarchy for node-level calculation.
- **GL Hierarchy:** General ledger Hierarchy is used for Financial Reporting. The hierarchy should build with proper parent and child level mapping from the topmost root to the leaf level. The node-level GL entries should not be present in the source table, which is FSI\_D\_MANAGEMENT\_LEDGER. Only leaf-level GLs are allowed to have data.

New members can be created from the Dimension Management screen of OFSAAI.

### 6.2.2 Modify the Management Reporting Line

Management Reporting line hierarchy can be modified to include new members and modify existing members. As a prerequisite, if the member to be added is a leaf, the Reporting Line dimension table (DIM\_REP\_LINE) needs to have these leaf members.

The table DIM\_REP\_LINE is populated using AMHM tables, which is DIM\_REPORTING\_LINE\_B, DIM\_REPORTING\_LINE\_TL, DIM\_REPORTING\_LINE\_ATTR, and DIM\_REPORTING\_LINE\_HIER. The hierarchy must be modified from the Dimension Management section of OFSAAI so that relevant changes are captured in the AMHM

tables mentioned above. Once the hierarchy is saved, the DT has to be executed to populate DIM\_REP\_LINE and REP\_LINE\_PARENT\_CHILD\_RELATION tables.

Additional reporting line hierarchy can also be created using existing nodes using the AMHM framework of OFSAAI. If there are reporting line codes created, then you should create all such custom reporting lines using a sequence of numbers that is different from the numbers used in the seeded reporting line hierarchy. It is recommended that you should create custom reporting lines with a six-digit number starting with 500000, 500001, and so on.

## 6.3 Map Reporting Line Items

The reporting lines are seeded in the application and are used during hierarchy rollups in OBIEE reports. These reporting lines can be classified broadly into two types, that is Income Statement (IS) reporting lines and Balance Sheet (BS) reporting lines. All reporting lines are part of either IS hierarchy or BS hierarchy.

All reporting line codes of the DIM\_REPORTING\_LINE\_ATTR or REP\_LINE\_GL\_MAP tables must be at leaf level reporting lines. When creating a new Reporting line item in AMHM, the signage attribute must be properly assigned to the Reporting line. This signage will be used as rollup signage in the Reporting Line hierarchy for node-level calculation.

When a new financial element needs to be seeded into the application, you should manually seed the data into the below tables with unique FE IDs:

- DIM\_FINANCIAL\_ELEMENTS\_B
- DIM\_FINANCIAL\_ELEMENTS\_TL
- DIM\_FINANCIAL\_ELEMENTS\_ATTR

After the above tables are loaded, DIM\_FINANCIAL\_ELEMENT must be populated. The database components used to populate the DIM\_FINANCIAL\_ELEMENT are:

- Database function FN\_DIM\_FINANCIAL\_ELEM\_UPDATEWR
- Database function FN\_DIM\_FINANCIAL\_ELEM\_UPDATE, which is called by the function FN\_DIM\_FINANCIAL\_ELEM\_UPDATEWR mentioned above.

The seeded Process PR\_DIM\_FINANCIAL\_ELEMENT triggers the DT that loads the DIM\_FINANCIAL\_ELEMENT table.

- **Parameter List:** OFSAA User  
Example: 'OFSAAUSER'

### 6.3.1 Map Income Statement Leaf Nodes to Financial Elements

IS reporting lines are seeded into the application and a default mapping is provided between Financial Element (FE) and Reporting Lines. The mapping of FE and IS reporting lines are present in the DIM\_REPORTING\_LINE\_ATTR table. This mapping can be enhanced based on the requirements and the data need to be created as tabulated below:

Columns: REPORTING\_LINE\_ID and FINANCIAL\_ELEM\_ID



**Table 6-1 DIM\_REPORTING\_LINE\_ATTR**

| V_COMPONENT_CODE             | V_COMPONENT_DESC  | V_COMPONENT_VALUE  |
|------------------------------|---|--|
| REPORTING_LINE_ID            | Column to stores Reporting Line Identifiers                                 |  |
| ATTRIBUTE_ID                 | Column to store the type of attribute used for Mapping                      | 1-Financial Element<br>2-Signage   |
| DIM_ATTRIBUTE_NUMERIC_MEMBER | Column to store the actual attribute, that is. Financial Element or Signage | <ol style="list-style-type: none"> <li>Actual Financial Element Code is used in this column in case the ATTRIBUTE_ID = 1</li> <li>Signage value 1 or 2 is used in this column to signify positive signage or negative signage. Signage is applicable only when ATTRIBUTE_ID=2</li> </ol> |

- It is not required to process the mapping of financial elements 140 and 100 to reporting lines (Average Bal and End Bal).
- A single reporting line should be mapped only to one financial element.
- IS reporting lines are applicable for allocated data from OFS PFT.
- Management Reporting - Income Statement: The Identity Codes available in the FSI\_D\_MANAGEMENT\_LEDGER table, having source\_type as 100 are considered for populating Income Statement reporting lines in the FCT\_MGMT\_REPORTING table. Select identity\_code from FSI\_DATA\_IDENTITY where source\_type = 100;

## 6.3.2 Map Balance Sheet Leaf Nodes to General Ledger

(Required) <Enter a short description here.>

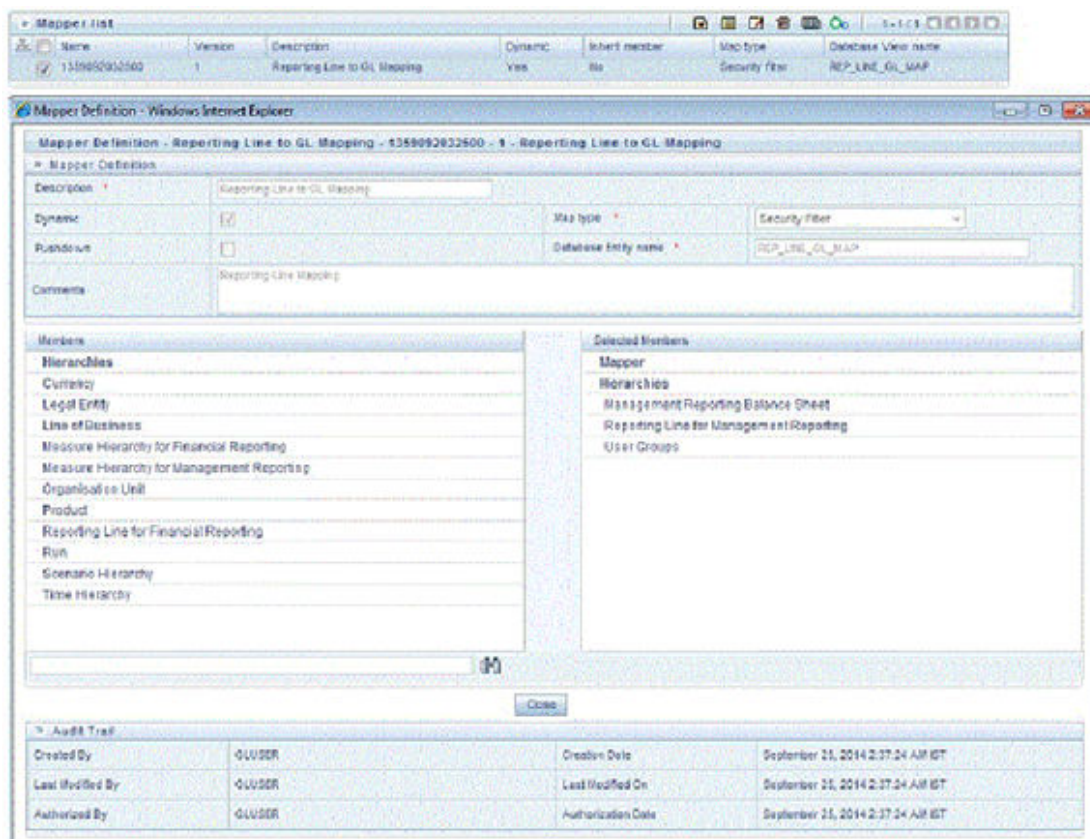
Balance Sheet reporting lines are seeded in OFS EFPA application. The mapping of BS reporting lines is based on General Ledger codes, as they are available to OFS EFPA from Profitability Management. The data considered for BS hierarchy is un-allocated, that is the data available in the OFS PFT in an un-allocated form (for all those IDENTITY\_CODE where SOURCE\_TYPE is '0' in the FSI\_DATA\_IDENTITY table). However, default mapping cannot be provided as the general ledger codes can differ at the customer site. The mapping of BS reporting lines and general ledger codes are done from the Map Maintenance section of OFSAAI. Map definition has been seeded in the OFS EFPA application for users to create the mapping of reporting lines (leaf nodes) of the Reporting Line hierarchy with the general ledger hierarchy (leaf nodes). The general ledger hierarchy is evolved from the DIM\_GL\_ACCOUNT table through HEPMGLBS. In the SETUP\_MASTER table configuration (key-value pair) has been seeded to allow the mapping.

**Table 6-2 SETUP\_MASTER Table**

| V_COMPONENT_CODE   | V_COMPONENT_DESC  | V_COMPONENT_VALUE |
|--------------------|-------------------|-------------------|
| REP_LINE_GL_MAPPER | REP_LINE_GL_MAPPE | R REP_LINE_GL_MAP |

A new map definition can be created from the in Map Maintenance section of OFSAAI and the new table name against the key provided (REP\_LINE\_GL\_MAPPER) in the SETUP\_MASTER table can be used.

Figure 6-1 Reporting Line to GL Mapping



- Mapping of more than one general ledger leaf node can be done to a single reporting line.
- V\_COMPONENT\_VALUE is the column that should be changed in case a new mapper is created on the OFSAAI platform.

You can map the Balance Sheet leaf-level GLs to leaf-level Balance sheet Reporting Lines from the Map Maintenance screen of OFSAAI. However, this mapping can also be done directly in the database table that stores the mapping. Use the following table details to map leaf-level codes in the map table:

- **Table Name:** REP\_LINE\_GL\_MAP
- **GL ID Column:** V\_MEMBER\_1 Leaf level General Ledger ID that needs to be mapped to the leaf level Node of seeded Balance Sheet Reporting Line.
- **Balance Sheet Reporting Line Code:** V\_MEMBER\_2  
Leaf level Balance Sheet Reporting Line Code. The Balance Sheet Reporting line hierarchy is seeded in the application and it starts with node 107003.
- **Map ID:** V\_Map\_ID  
1359092032500 (It is the seeded ID of the mapper that is present after installation).

- **User Group Name:** V\_Member\_3
- **User Group:** It is the user group to which the logged-in user belongs. You can run the following query to find it (in config schema).

```
SELECT * FROM cssms_usr_group_map where v_usr_id = <>
```

Example:

```
Insert into REP_LINE_GL_MAP (V_MAP_ID, N_MAP_ID, N_INHERIT_MAP_ID,  
V_MEMBER_1, V_MEMBER_2, V_MEMBER_3, V_MEMBER_4, V_MEMBER_5,  
V_MEMBER_6, V_MEMBER_7, V_MEMBER_8, V_MEMBER_9)  
Values ('1359092032500', null, null, '12345700000149', '50100',  
'TESTGRP', null, null, null, null, null, null)
```

12345700000149: n\_gl\_account\_id in DIM\_GL\_ACCOUNT table of dev env.

50100: Leaf level node from Balance Sheet hierarchy (Refer to the attached excel).

TESTGRP: test user group.

The Financial Elements (FE) supported for the MR- Balance Sheet are 100 and 140. Therefore, the GL IDs for which FE is either 100 or 140 will be picked up to populate the Balance Sheet reporting line ID in the FCT\_MGMT\_REPORTING table.

 **Note:**

The Identity Codes available in the FSI\_D\_MANAGEMENT\_LEDGER table, having source\_type as 0 are considered for populating Balance Sheet reporting lines in the FCT\_MGMT\_REPORTING table. Select identity\_code from FSI\_DATA\_IDENTITY where source\_type = 0;

### 6.3.3 New Reporting Line (Repline) Hierarchies

Two new replines are introduced, to calculate Net Income Before Tax (NIBT) at selected and desired Repline levels. These are as follows:

- 81000: Other Interest Income  
All children of 82000 now report to 81000. 81000 reports to 82000.
- 81001: Other Interest Expenses  
All children of 82001 now report to 81001. 81001 reports to 82001.

# 7

## Multi-Currency Reporting

A bank may want to represent the reports in different currencies depending on the geographic presence, regulatory requirements, and so on. The functionality of multi-currency reporting enables the reports to be displayed in multiple currencies.

The following three different currency types are supported:

- Local Currency
- Regional Currency
- Reporting Currency

Each currency type must be mapped to a currency and the reports can then be viewed in the corresponding currency. Using the exchange rate prevailing at the time the data is loaded, the conversion from the reporting currency (which is the default currency type) to another currency is done. The selection of the currency in which reports are to be viewed is done through dashboard prompts.

# 8

## Fact Ledger Population

Fact Ledger population involves populating the `FCT_LEDGER_STAT` table from the `FSI_D_MANAGEMENT_LEDGER` table. The `FSI_D_MANAGEMENT_LEDGER` table is optimized for processing purposes but is not a convenient structure for reporting purposes. In generating `FACT_LEDGER_STAT`, time from `LEDGER_STAT` is transformed into an explicit dimension in `FACT_LEDGER_STAT`.

Fact Ledger Population transformation is used to populate the `FCT_LEDGER_STAT` table from the Profitability `FSI_D_MANAGEMENT_LEDGER` table. The horizontally structured `MONTH` and `YTD` columns in the Management Ledger table are transposed to a vertical structure. The twelve Month Columns in `FSI_D_MANAGEMENT_LEDGER` are replaced by a single `N_AS_OF_DATE_SKEY` column in `FCT_LEDGER_STAT` with each month value stored in `N_VALUE` column.

Similarly, the `YTD` column value is stored in `N_VALUE_YTD`. This is done to make reporting easier, considering Time is a dimension in most of the reports.

The database components, used by the Fact Ledger Population transformations are:

- Database function `FSI_LEDGER_STAT_TRM`
- Database function `LEDGER_STAT_TRM` which is called by the function `FSI_LEDGER_STAT_TRM` as mentioned earlier.

### 8.1 Prerequisites

The following are the prerequisites for Fact Ledger Population Transformation:

- All the post-installation steps mentioned in the [OFS Advanced Analytical Applications Infrastructure Installation Guide](#) and the [OFS Profitability Management Pack Installation and Configuration Guide](#) (only if OFS PFT is installed) must be completed.
- The Application User must be mapped to a role that has a seeded batch execution function (`BATPRO`).
- Ensure that your `FISCAL` year information is configured properly. It has the following two columns.
  - **FISCAL\_PERIOD**: This gives the number of months in the given `FISCAL` period.
  - **START\_MONTH**: This indicates which month of the calendar year is the `FISCAL` starting month. For example, a value '1' for this column means `FISCAL` year starts from January, and the value of '4' indicates that the `FISCAL` year starts from April.
- Before executing a batch, check if the following services are running on the application server.
  - `Iccserver`
  - `Router`
  - `AM Server`
  - `Messageserver`

- Olapdataserver



#### Note:

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 the [OFS Analytical Applications Infrastructure User Guide](#).

Batches must be created for executing the function. For more details, see [Define a Batch](#).

## 8.2 Tables Used by the Fact Ledger Population Transformation

The Fact Ledger Population Transformation uses the following tables:

- **FSI\_FISCAL\_YEAR\_INFO**: This table has the FISCAL year info. The entries required in this table are mentioned in the Prerequisites.
- **FSI\_BI\_SETUP\_TABLE**: This table has the setup information used by the Transformation. They are:
  - **TARGET\_TABLE\_NAME**: This is the destination table name for transformation.
  - **TARGET\_COLUMN\_NAME**: This is the Destination column name in the `FCT_LEDGER_STAT` table.
  - **MEMBER\_COL\_NAME**: This is the column Name in the `FSI_D_MANAGEMENT_LEDGER` table.
  - **SOURCE\_DIM\_TABLE\_NAME**: This is the dimension table to which the Ledger data has to be joined to get the surrogate key value.
  - **SOURCE\_COLUMN\_NAME**: This is the column in the dimension table to which the `LEDGER_STAT_ID` column is joined.
  - **SKEY\_COLUMN\_NAME**: This is the column in the dimension table which has the surrogate key value.
  - **JOIN\_REQUIRED**: This provides the information, whether the column to be moved to `FCT_LEDGER_STAT` is directly available in `FSI_D_MANAGEMENT_LEDGER` or a join has to be taken with dimension table to get the skey.
- **FSI\_D\_MANAGEMENT\_LEDGER**: This table is the source for the transformation.
- **DIM\_<dimension Name>**: The flattened dimension tables used in Business Intelligence (BI) reporting are accessed to obtain the surrogate key to be populated to `FCT_LEDGER_STAT` dimension columns. For example, `DIM_ORG_UNIT`, `DIM_PRODUCT`, and so on.
- **FCT\_LEDGER\_STAT**: This is the output table for the transformation.

For more details on viewing the structure of these tables, see Oracle Financial Services Analytical Applications Data Model Data Dictionary or the OFS EFPA Erwin Data Model.

## 8.2.1 Map New Dimensions

For user-defined dimensions, a manual update to the DIM\_<DIMENSION>\_V is required. To update manually, follow these steps:

1. Backup the current DIM\_<CUSTOM\_DIM>\_V.
2. Update the following line of the view:

```
INNER JOIN DIM_<CUSTOM_DIM>_TL D ON D.<CUSTOM_DIM_ID>=A.<CUSTOM_DIM_ID>
AND
A.<CUSTOM_DIM_ID> not in (-1,0)
```

With the following:

```
INNER JOIN DIM_<CUSTOM_DIM>_TL D ON D.<CUSTOM_DIM_ID>=A.<CUSTOM_DIM_ID>
AND
A.<CUSTOM_DIM_ID> not in (-1,0)and D.LANGUAGE = A.DEFINITION_LANGUAGE
```

The change required is to add the additional language condition\*\*\*\* AND D.LANGUAGE = A.DEFINITION\_LANGUAGE \*\*\*\*."

The Custom Dimensions can be added to the target table, FCT\_LEDGER\_STAT by updating the configuration table FSI\_BI\_SETUP\_TABLE. DIM\_LOB and Dim\_Org\_Structure can be loaded manually or by using the AMHM tables and batch.



### Note:

All nodes in the FCT\_LEDGER\_STAT table must be part of the respective hierarchies for which the SCDs run.

## 8.2.2 Hierarchy Configuration for LOB and Legal Entity

- **DIM\_ORG\_STRUCTURE:** The hierarchy to be built for the DIM\_ORG\_STRUCTURE is a parent-child hierarchy. The parent node of the root has to be kept blank in the V\_PARENT\_CODE column. The hierarchy can then be built appropriately by putting a child node - parent node combination in the V\_ENTITY\_CODE and V\_PARENT\_CODE columns of the DIM\_ORG\_STRUCTURE table. This metadata setup supports only one hierarchy for Legal Entity.

The new data transformation FN\_ORG\_PARENT\_CHILD has to be re-executed with respect to any change in the DIM\_ORG\_STRUCTURE table. This process loads the ORG\_STR\_PARENT\_CHILD\_RELATION table data, which is sourced from the DIM\_ORG\_STRUCTURE table.

## 8.3 Execute the Fact Ledger Population Transformation

You can execute the function from the Operations (formerly Information Command Center (ICC) framework) module of OFSAAI.

This component for OFS EFPA is seeded with the following Processes `PR_LEDGER_STAT` and `PR_MGMT_REPORTING`, which can be executed from the Run Rule Framework section of OFSAAI. In the Parameter List, include `pstart_month`, `pend_month`, `pyears`, `pidentity_code`, `psource_type`, `pre_run_flg`, and `prcy`. For example, `1,12,1994,'','Y','USD'`.

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 section [OFS Analytical Applications Infrastructure User Guide](#).

To define a new task for a Batch definition, follow these steps:

1. Select the check box adjacent to the newly created Batch Name in the Batch Maintenance window.
2. Click the **Add** icon (+) 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 drop-down list.
5. Select the following from the Dynamic Parameters list:
  - **Datastore Type:** Select the appropriate datastore type from the list.
  - **Datastore Name:** Select the appropriate datastore name from the list.
  - **IP address:** Select the IP address from the list.
  - **Rule Name:** Select `FSI_LEDGER_STAT_TRM` from the drop-down list of available transformations. (This is a seeded Data Transformation which is installed as part of the OFS EFPA application installer. If you don't see this in the list, contact Oracle support).
  - **Parameter List:** Enter `pStart_Month`, `pEnd_Month`, `pYears`, `pIdentity_Code`, `pSource_Type`, `pRe_Run_Flg`, and `pRCY`.
  - **pStart\_Month:** This parameter indicates the starting Month.
  - **pEnd\_Month:** This parameter indicates the ending Month.
  - **pYears:** This is a mandatory parameter that indicates the Year value.
  - **pIdentity\_Code:** This is an optional parameter that indicates the Identity Code.  
This is the identity code in the OFS PFT's `FSI_D_MANAGEMENT_LEDGER` table. The value '0' in this field indicates, only the rows in `FSI_D_MANAGEMENT_LEDGER` with source code '0' should get processed. Source code '0' indicates rows in `FSI_D_MANAGEMENT_LEDGER` loaded by the ledger load program. This results in the movement of rows loaded by ledger load program to `FCT_LEDGER_STAT` in OFS EFPA application. Similarly, any particular allocation output values can be moved by filtering on the identity code.
  - **pSource\_Type:** This is an optional parameter that indicates the Source Type. Source Type indicates which process populated a row in `FSI_D_MANAGEMENT_LEDGER` of Profitability Management application. For example, '0' indicates it was loaded by the Ledger Load program and '100' indicates the allocation rule populated it, and so on.



- **pRe\_Run\_Flg**: This is an optional parameter that indicates the Re-run Flag. If the value is 'Y', the existing data in the fact table will be removed and reloaded.
  - **pRCY**: This indicates the reporting currency with Default Value 'USD'.
6. Click **Save**.  
The Task definition is saved on the selected Batch.
  7. Execute the batch.  
You can execute a Batch definition from the Batch Execution section of the OFSAAI Operations module.

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

Details are:

- Function Name: FSI\_LEDGER\_STAT\_TRM
- Parameters : pBatch\_Id, pAs\_of\_date, pStart\_Month, pEnd\_Month, pYears, pIdentity\_Code, pSource\_Type, pRe\_Run\_Flg, and prcy.

Sample parameter values are 'Batch1', '20091231', 1, 8, 2009, 0, 0, 'Y', and 'GBP' respectively.

## 8.4 Checking the Execution Status

The Batch execution status can be monitored through the Batch Monitor section of the OFSAAI Operations module. The status messages in the batch monitor are:

- N: Not Started
- O: On Going
- F: Failure
- S: Success

The execution log can also be accessed on the application server in the directory `$FIC_DB_HOME/log/date`, where the file name will have the Batch Execution ID.

You can access the database level operations log by querying the `FSI_MESSAGE_LOG` table. Filter the Batch Run ID column for identifying the relevant log.



### Note:

Check the .profile file in the installation home if you are unable to find this path.

## 8.5 Optional Load from Ledger Class Entities for Fact Ledger Population

**Process Name:** PR\_LEDGER\_STAT

**Task1:** Loads data from FSI\_D\_MANAGEMENT\_LEDGER to FCT\_LEDGER\_STAT

**Parameter to be configured:** [DRCY]=To\_Currency\_Code

**Example:** [DRCY]=USD

Data will be loaded for the data selected while running the batch.

## 8.6 Identity Codes Used in Financial Reporting

Financial Reporting reports are used to show the custom-built GL hierarchy. This GL hierarchy is treated as a Reporting Line dimension in Financial Reporting (FR) Dashboard pages. The idea of reports in FR is to show the unallocated data that has been downloaded from the source system and rule out the allocated data records. To filter out the unallocated data, a `SETUP_MASTER` configuration table entry is required with the `V_COMPONENT_DESC` column value as `IDENTITY_CODE_PFTBI_FR_UNALLOCATED_DATA`. The other two columns of `SETUP_MASTER` can be populated as:

- `V_COMPONENT_CODE`: Identity Code corresponding to unallocated data.
- `V_COMPONENT_VALUE`: Identity Code corresponding to unallocated data.

See the `FSI_DATA_IDENTITY` table to find out the `IDENTITY CODES`. Generally, `source_type = 0` highlights the records that are unallocated.

# 9

## Fact Management Reporting Population from FSI\_D\_MANAGEMENT\_LEDGER Table

Fact Management Reporting Population involves populating the `FCT_MGMT_REPORTING` table from the `FSI_D_MANAGEMENT_LEDGER` table.

This transformation populates the `FCT_MGMT_REPORTING` table from `FSI_D_MANAGEMENT_LEDGER`.

The database components used by the Fact Management Reporting transformation are:

- Database function `FN_MGMT_REP_MGMT_LEDGER_TRM`
- Database function `MGMT_REPORTING_MGMT_LEDGER_TRM`, which is called by the function `FN_MGMT_REP_MGMT_LEDGER_TRM` mentioned above.
- Database functions `MGMT_REPORTING_MGMT_LEDGER_TRM` and `FN_MGMT_REP_MGMT_LEDGER_TRM` allow you to specify source table name. This will allow the procedure to run multiple times to load various management Ledger sources into a single FCT table for reporting

### 9.1 Prerequisites

The following are the prerequisites for Fact Management Reporting Transformation:

- All the post-installation steps mentioned in the [OFS Advanced Analytical Applications Infrastructure Installation Guide](#) and the [OFS Profitability Management Pack Installation and Configuration Guide](#) (only if OFS PFT is installed) must be completed.
- The Application User must be mapped to a role that has a seeded batch execution function (BATPRO).
- Ensure that your FISCAL year information is configured properly. It has the following two columns.
  - **FISCAL\_PERIOD**: This gives the number of months in the given FISCAL period.
  - **START\_MONTH**: This indicates which month of the calendar year is the FISCAL starting month. For example, a value '1' for this column means FISCAL year starts from January, and the value of '4' indicates that the FISCAL year starts from April.
- Before executing a batch, check if the following services are running on the application server.
  - Iccserver
  - Router
  - AM Server
  - Messageserver
  - Olapdataserver

 **Note:**

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 the [OFS Analytical Applications Infrastructure User Guide](#).

## 9.2 Tables Used by the Fact Management Reporting Transformation

The Fact Management Reporting Transformation uses the following tables:

- **FSI\_FISCAL\_YEAR\_INFO:** This table has the FISCAL year info. The entries required in this table are mentioned in the Prerequisites section.
- **FSI\_BI\_SETUP\_TABLE:** This table has the setup information used by the Fact Management Reporting Transformation. They are:
  - **TARGET\_TABLE\_NAME:** This is the destination table name for transformation.
  - **TARGET\_COLUMN\_NAME:** This is the Destination column name in the `FCT_MGMT_REPORTING` table.
  - **MEMBER\_COL\_NAME:** This is the column Name in source tables.
  - **SOURCE\_DIM\_TABLE\_NAME:** This is the table to which the Ledger data has to be joined to get the surrogate key value.
  - **SOURCE\_COLUMN\_NAME:** This is the column in the dimension table
  - **SKEY\_COLUMN\_NAME:** This is the column in the dimension table which has the surrogate key value.
  - **JOIN\_REQUIRED:** This provides the information, whether the column to be moved to the `FCT_MGMT_REPORTING` table is directly available in the `FSI_D_MANAGEMENT_LEDGER` table or a join has to be taken with the dimension table to get the skey.
  - **GROUP\_BY\_REQUIRED:** The group by is used to find the unique records of `fsi_d_management_ledger` for which the key column should exist as part of the target table's primary key.
  - **FSI\_D\_MANAGEMENT\_LEDGER:** This table is the source for the transformation.
  - **DIM\_<dimension Name>:** The flattened dimension tables used in Business Intelligence (BI) reporting are accessed to obtain the surrogate key to be populated to `FCT_MGMT_REPORTING` dimension columns. For example, `DIM_ORG_UNIT`, `DIM_PRODUCT`, and so on.
  - **FCT\_MGMT\_REPORTING:** This is the output table for the transformation

For more details on viewing the structure of these tables, see Oracle Financial Services Analytical Applications Data Model Data Dictionary or the OFS EFPA Erwin Data Model.

## 9.3 Map New Dimensions

The dimensions which you can customize during OFS EFPA implementation are known as Custom Dimensions. Custom Dimensions can be added to the target `FCT_MGMT_REPORTING` table by updating the configuration table `FSI_BI_SETUP_TABLE`, `DIM_LOB`, and `DIM_ORG_STRUCTURE` are two Custom Dimension tables, for which the dimension data has to be entered manually during implementation.



### Note:

All nodes in the `FCT_MGMT_REPORTING` table must be part of the respective hierarchies for which the SCDs run.

## 9.4 Executing the Fact Management Reporting Transformation

You can execute the Fact Management Reporting Transformation function from the Operations module of OFSAAI. This component is seeded with the Processes `PR_LEDGER_STAT` and `PR_MGMT_REPORTING`, which can be executed from the Run Rule Framework of OFSAAI. In the Parameter List, include `pstart_month`, `pend_month`, `pyears`, `prcy`, `pre_run_flg`, and `pTable_name`. A detailed description of each parameter is provided under point 5 below.

For example: 1, 8, 2018, 'USD', 'Y', 'FSI\_D\_MANAGEMENT\_LEDGER'

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 section [OFS Analytical Applications Infrastructure User Guide](#).

To define a new task for a Batch definition, follow these steps:

1. Select the check box adjacent to the newly created Batch Name in the Batch Maintenance window.
2. Click the **Add** icon (+) from the Task Details grid. The Task Definition window is displayed.
3. Enter the **Task ID** and **Description**.
4. Select the **Run Executable** component from the drop-down list.
5. Select the following from the Dynamic Parameters list:
  - **Datastore Type:** Select the appropriate datastore type from the list.
  - **Datastore Name:** Select the appropriate datastore name from the list.
  - **IP address:** Select the IP address from the list.
  - **Rule Name:** Select `FCT_MGMT_TRANSFORMATION` from the drop-down list of available transformations. (This is a seeded Data Transformation which is installed as part of the OFS EFPA application installer. If you don't see this in the list, contact Oracle Support).
  - **Parameter List:** Enter `pstart_month`, `pend_month`, `pyears`, `prcy`, `pre_run_flg`, and `pTable_name`.

- **pStart\_Month:** This parameter indicates the starting Month.
  - **pEnd\_Month:** This parameter indicates the ending Month.
  - **pYears:** This is a mandatory parameter that indicates the Year value.
  - **prcy:** This indicates the reporting currency with default value 'USD'.
  - **pRe\_Run\_Flg:** This is an optional parameter that indicates the Re-run Flag. If the value is 'Y', the existing data in the fact table will be removed and reloaded.
  - **pTable\_name:** This is a mandatory parameter that takes the source table 'FSI\_D\_MANAGEMENT\_LEDGER' as a value.
6. Click **Save**.  
The Task definition is saved on the selected Batch.
  7. Execute the batch.  
You can execute a Batch definition from the Batch Execution section of the OFSAAI Operations module. Fact Management Reporting Transformation can also be directly executed on the database through SQLPLUS. Details are:
    - **Function Name:** `fn_mgmt_rep_mgmt_ledger_trm`
    - **Parameters:** `pBatch_Id`, `pAs_of_date`, `pStart_Month`, `pEnd_Month`, `pYears`, `pRCY`, `pRe_Run_Flg`, and `pTable_name`  
Sample Parameter Values are 'Batch1', '20091231', 1, 8, 2009, 'USD', 'Y' and 'FSI\_D\_MANAGEMENT\_LEDGER' respectively.

This transformation deletes only the management ledger data which was loaded earlier for the same reporting date, keeping any other data intact in the table `FCT_MGMT_REPORTING`.

## 9.5 Checking the Execution Status

The Batch execution status can be monitored through the Batch Monitor section of the OFSAAI Operations module. The status messages in the batch monitor are:

- N: Not Started
- O: On Going
- F: Failure
- S: Success

The execution log can also be accessed on the application server in the directory `$FIC_DB_HOME/log/date`, where the file name will have the Batch Execution ID.

You can access the database level operations log by querying the `FSI_MESSAGE_LOG` table. Filter the Batch Run ID column for identifying the relevant log.

You can access the SQL queries fired as part of this transformation in the `FSI_SQL_LOG` table.

# 10

## What-If Analysis

The What-If Analysis report enables the user to account for the change in profitability owing to any probable changes in the projected components of profitability. The probable change can be defined by the user and is termed as 'Variation'. The user could define the parameters to which variation is being applied and the magnitude of variation. The net effect on profitability as a result of these variations can be applied. Certain users should have the authority to save a scenario which can later be accessed by other users for reference. The variations once applied can be applied on the income statement by either of the following two methods:

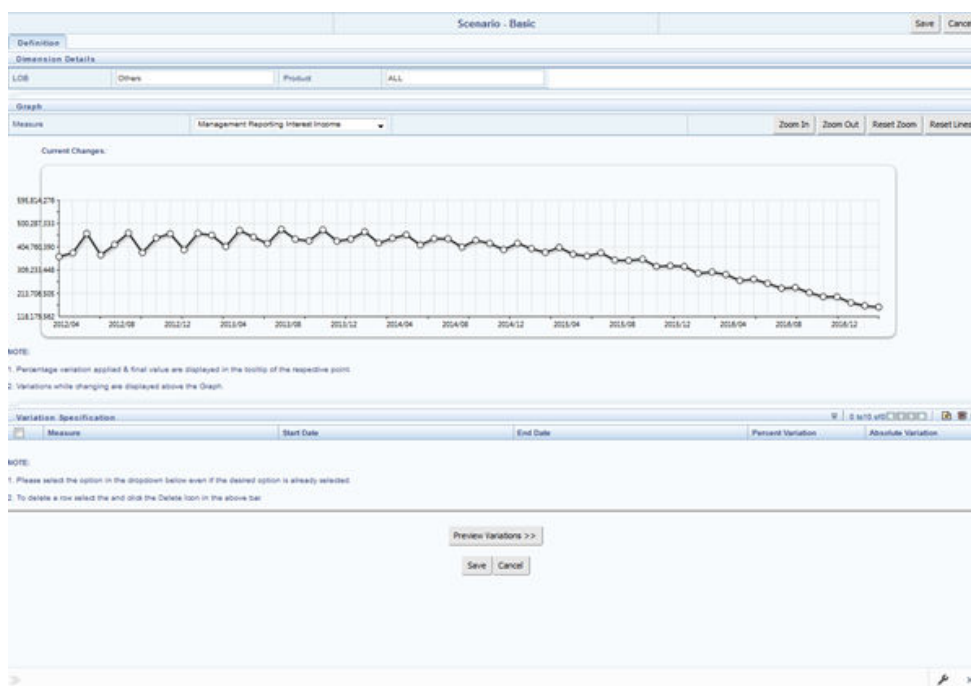
- **Basic:** The variations that are applied get simply aggregated with the modified values of components to show the resulting net income. The basic version supports variations to be applied to multiple parameters at the same time.
- **Advanced:** The variations that are applied also affect the other components it is correlated to and the modified values of all such parameters get aggregated to show the resulting net income. In the Advanced version, variation can be applied to only a single component at a time.

### 10.1 Basic Scenario

To create a variation, follow these steps:

1. Navigate to the **OBIEE Dashboard** page of **What-If Analysis**.
2. Click **Create Scenario** after selecting the relevant dimensions to display the **Scenario - Basic** screen.

Figure 10-1 Basic Scenario



3. Apply the necessary Dimension Details for the following:
  - Account
  - Customer
  - LOB
  - Product
4. Select the relevant repline **Measure** from the drop-down list to which you want to apply the variation.
5. Select a point on the graph and drag to apply the desired variations. Percentage variation and applied, final values in the drop-down are displayed on the graph and as a tooltip on the point that is being changed.
6. Select the relevant details for the following under the **Variation Specification** section of the screen.
  - Measure
  - Start Date
  - End Date
  - Percent Variation: Enter the % value. If you enter this, you cannot enter the Absolute Variation.
  - Absolute Variation: Enter the absolute value. If you enter this, you cannot enter the Percent Variation.

If there is an overlap in dates among various variation specification rows, the same can be overridden to apply the respective change.

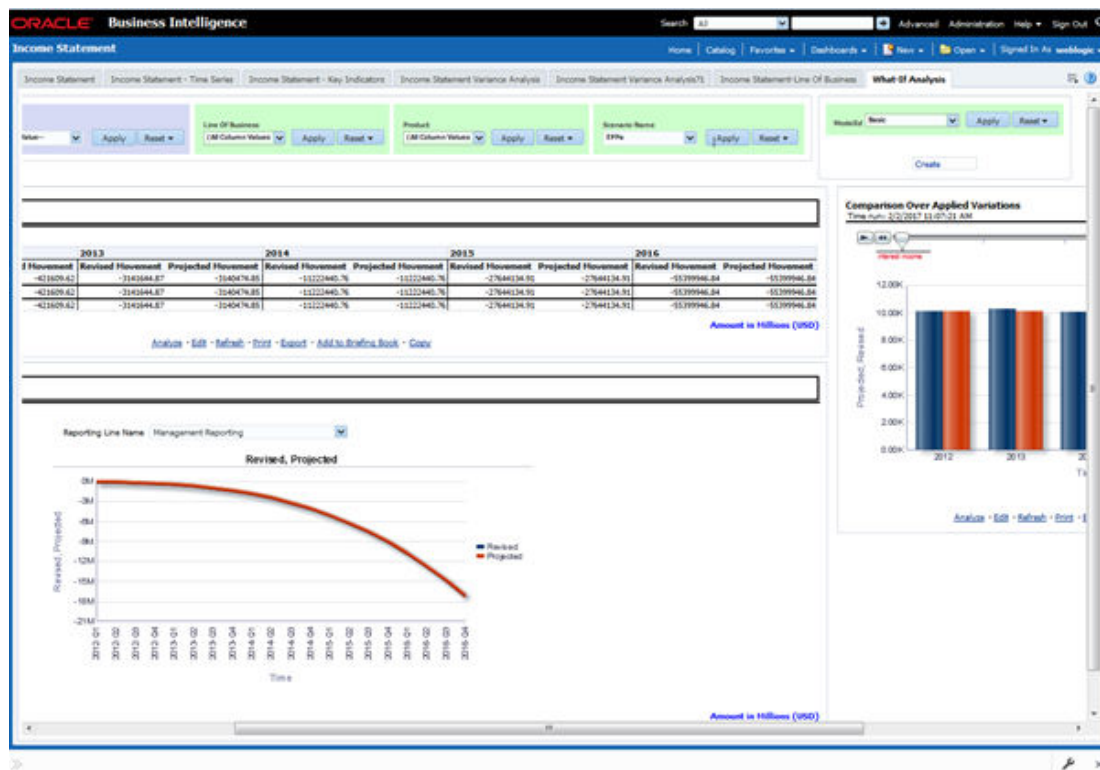
Always the most recent changed value is considered for variation and the other value will be cleared.



7. Click **Preview Variations** to see the results.
8. Click **Save** after confirming the variations. After this, you will be redirected to the OBIEE screen where the applied variations can be seen and analyzed further.

The OBIEE screen is displayed as follows:

**Figure 10-2 OFS EFPA BI – Income Statement Basic**



## 10.2 Advanced Scenario

In the advanced scenario, when a change is applied to a repline, then all its corresponding correlated changes affecting other replines are also made. These correlated changes can be preview in the preview results view by clicking on the Preview Variation button at the bottom of the page.

To create a variation, follow these steps:

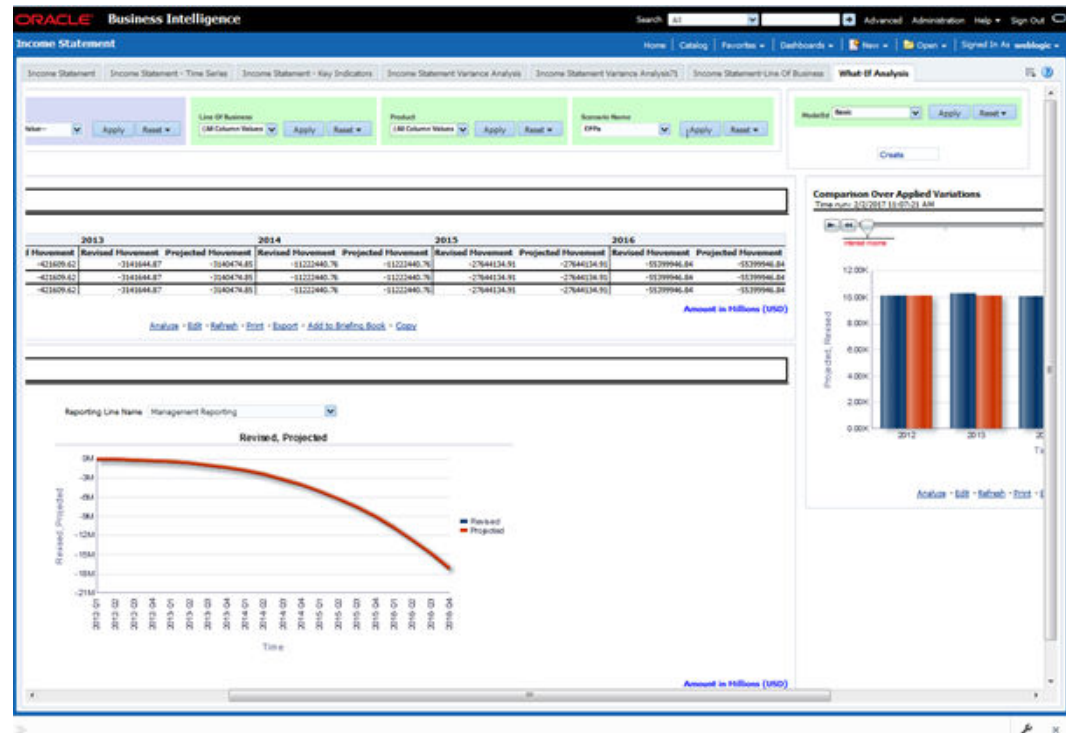
1. Navigate to the **What If Definition** dashboard to display the **Scenario - Advanced** screen.  
This screen allows you to zoom in, zoom out, and reset the zoom.

Figure 10-3 Scenario Advanced



2. Apply the necessary **Dimension Details** for the following:
  - Account
  - Customer
  - LOB
  - Product
3. Select the relevant repline **Measure** to which you want to apply the variation.
4. Select a point on the graph and drag to apply the desired variations.
5. Click **Preview Variations** to see the results.
6. Click **Save** after confirming the variations. After this, you will be redirected to the OBIEE screen where the applied variations can be seen and analyzed further. The OBIEE screen is displayed as follows:

Figure 10-4 OFS EPPA BI – Income Statement



# 11

## Overview of OFS EFPA Reports

OFS EFPA offers the following dashboards that organize different kinds of reports by subject area.

- Financial Reporting
  - Financial Reporting
- Management Reporting
  - Balance Sheet
  - Income Statement
  - Key Trends
  - Performance Measures

Topics:

- [Consolidated List of OFS EFPA Reports](#)
- [Structure of Reporting Line Items](#)
- [Hard-Coded Dimension Members](#)
- [OBIEE: Catalogs Related Configuration](#)
- [Dashboards](#)

### 11.1 Consolidated List of OFS EFPA Reports

**Table 11-1 Consolidated List of OFS EFPA Reports**

| Data Source  | Business Intent   | Dashboard Name      | Page Name                          | Report Name                        |
|--|---|---------------------|------------------------------------|------------------------------------|
| Initial loads to the management ledger (that is, exclusive of any data generated by allocation rules and/or transfer pricing rules). The reporting line is General Ledger Account. | Represent Income Statement reporting lines across Legal Entity and Time dimension | Financial Reporting | Income Statement                   | Income Statement                   |
|  |   | Financial Reporting | Income Statement-Time Series       | Income Statement-Time Series       |
|  |   | Financial Reporting | Income Statement Variance Analysis | Income Statement Variance Analysis |
|  |   | Financial Reporting | Income Statement Variance Analysis | Income Statement Variance Analysis |

**Table 11-1 (Cont.) Consolidated List of OFS EFPA Reports**

| <b>Data Source</b>  | <b>Business Intent</b>  | <b>Dashboard Name</b> | <b>Page Name</b>                    | <b>Report Name</b>                       |
|---|---|-----------------------|-------------------------------------|--|
| Data from Fact Management table. Reporting line is Reporting Line Dimension | Represent balance sheet and show balances across dimensions                               | Balance Sheet         | Balance Sheet                       | Balance Sheet                            |
|   |   | Balance Sheet         | Balance Sheet-Time Series           | Balance Sheet-Time Series                |
|   |   | Balance Sheet         | Balance Sheet-Key Indicators        | Total Assets                             |
|   |   | Balance Sheet         | Balance Sheet-Key Indicators        | Total Liabilities                        |
|   |   | Balance Sheet         | Balance Sheet-Key Indicators        | Capital                                  |
|   |   | Balance Sheet         | Balance Sheet-Key Indicators        | Total Customer Assets                    |
|   |   | Balance Sheet         | Balance Sheet-Key Indicators        | Total Customer Total Liabilities         |
| Data from Fact Management table. Reporting line is Reporting Line Dimension | Represent Income Statement reporting lines across dimensions                              | Income Statement      | Income Statement                    | Income Statement                         |
|   |   | Income Statement      | Income Statement-Time Series        | Income Statement-Time Series             |
|   |   | Income Statement      | Income Statement - Key Indicators   | Net Interest Income                      |
|   |   | Income Statement      | Income Statement - Key Indicators   | Commission                               |
|   |   | Income Statement      | Income Statement - Key Indicators   | Fees                                     |
|   |   | Income Statement      | Income Statement - Key Indicators   | Net Credit Loss                          |
|   |   | Income Statement      | Income Statement Variance Analysis  | Income Statement Variance Analysis       |
|   |   | Income Statement      | Income Statement-Line Of Business   | Income Statement across Line Of Business |
|   |   | Income Statement      | Income Statement - Line Of Business | Key Statistics from the Balance Sheet    |
|   |   | Income Statement      | Income Statement - Line Of Business | No. of Customers                         |
|   |   | Income Statement      | Income Statement - Line Of Business | Other Key Indicators                     |
| Data from Fact Management table. Reporting line is Reporting Line Dimension | Show trends for balance and movement measures for key line items relevant to the business | Key Trends            | Key Trends                          | Break-up of Total Assets                 |

**Table 11-1 (Cont.) Consolidated List of OFS EFPA Reports**

| Data Source   | Business Intent  | Dashboard Name       | Page Name            | Report Name                                       |
|---|--|----------------------|----------------------|---|
|   |  | Key Trends           | Key Trends           | Break-up of Total Assets                          |
|   |  | Key Trends           | Key Trends           | Break-up of Total Assets by Line of Business      |
|   |  | Key Trends           | Key Trends           | Break-up of Total Liabilities by Line of Business |
|   |  | Key Trends           | Key Trends           | NIM Speedometer                                   |
|   |  | Key Trends           | Key Trends           | Balance Sheet                                     |
|   |  | Key Trends           | Key Trends           | Income Statement                                  |
|   |  | Key Trends           | Net Loss Analysis    | Net Loss Rate Time Series                         |
|   |  | Key Trends           | Net Loss Analysis    | Net Loss Across Line of Business                  |
|   |  | Key Trends           | Net Loss Analysis    | Net Loss Across Products                          |
|   |  | Key Trends           | Net Loss Analysis    | Net Loss Rate Across Scenarios                    |
|   |  | Key Trends           | NII Impact Analysis  | NII at a Glance                                   |
|   |  | Key Trends           | NII Impact Analysis  | Impact of FX Fluctuation                          |
|   |  | Key Trends           | NII Impact Analysis  | Impact of Volume Movement                         |
|   |  | Key Trends           | Balance Trends       | Details By Product                                |
|   |  | Key Trends           | Balance Trends       | Top 10 Products – Balance                         |
|   |  | Key Trends           | Balance Trends       | Top 10 Products - MOM Variance                    |
| Data from Fact Management table. Reporting line is Reporting Line Dimension | Show key performance measures relevant to the business | Performance Measures | Performance Measures | Return on Total Assets                            |
|   |  | Performance Measures | Performance Measures | Return on Equity                                  |
|   |  | Performance Measures | Performance Measures | RAROC   |
|   |  | Performance Measures | Performance Measures | Profitability by Product over Reporting Period    |
|   |  | Performance Measures | Capital Analysis     | Capital Analysis                                  |

## 11.2 Structure of Reporting Line Items

Reporting line items describe the financial meaning of the report.

The following spreadsheet contains the Management versus Financial Reporting Line Item Definitions.

- [EFPA\\_FE\\_Repline\\_mapping\\_MR\\_IS.xlsx](#)

## 11.3 Hard-Coded Dimension Members

The node-level reporting lines (including higher-level nodes) of the reporting line hierarchy that are used in the OBIEE components (Web Catalog and RPD) are mentioned below for reference.

These reporting line codes should not be modified.

**Table 11-2 Reporting Line Dimensions**

| Catalog/RPD | Repline Code | Repline Name                                 |
|-------------|--------------|--|
| catalog     | 107001       | Management Reporting                         |
| catalog     | 107002       | Income Statement                             |
| catalog     | 107003       | Balance Sheet                                |
| catalog     | 98000        | Net Income Before Taxes                      |
| catalog     | 51000        | Cash   |
| catalog     | 54000        | Trading Assets                               |
| catalog     | 61000        | Investments                                  |
| catalog     | 63000        | Fixed Assets                                 |
| catalog     | 64000        | Other Assets                                 |
| catalog     | 60000        | Loans and Advances to Customers              |
| catalog     | 72000        | Total Liabilities                            |
| catalog     | 74900        | Allocated Capital                            |
| catalog     | 77000        | Shareholders Equity                          |
| catalog     | 72000        | Total Liabilities                            |
| catalog     | 75000        | Share Capital                                |
| catalog     | 76000        | Reserves                                     |
| catalog     | 60000        | Loans and Advances to Customers              |
| catalog     | 68000        | Customer Liabilities                         |
| catalog     | 85000        | Net Interest Revenue                         |
| catalog     | 85100        | Commission                                   |
| catalog     | 85200        | Fees   |
| catalog     | 91910        | Credit Losses                                |
| catalog     | 91920        | Recoveries of amounts previously written-off |
| RPD         | 95000        | Operating Income before Taxes                |
| RPD         | 99500        | Provisions for Credit Losses                 |
| RPD         | 91910        | Credit Losses                                |
| RPD         | 107100       | Number of Customers                          |
| RPD         | 52000        | Interest-bearing Assets                      |
| RPD         | 74900        | Allocated Capital                            |
| RPD         | 88000        | Non-Interest Revenue                         |

**Table 11-2 (Cont.) Reporting Line Dimensions**

| Catalog/RPD | Repline Code | Repline Name                                 |
|-------------|--------------|--|
| RPD         | 107120       | Number of Closed Customers                   |
| RPD         | 83000        | Credit for Float                             |
| RPD         | 82100        | Interest Income                              |
| RPD         | 91920        | Recoveries of amounts previously written-off |
| RPD         | 107300       | Attrition Rate                               |
| RPD         | 60000        | Loans and Advances to Customers              |
| RPD         | 85000        | Net Interest Revenue                         |
| RPD         | 83200        | Interest Expenses                            |

**Other Dimensions**

The dimensions other than the hardcoded reporting line dimensions are as follows:

- Run Dimension is hardcoded with a value zero.
- Legal Entity and Line of Business are hardcoded to -1 in the initial load. When the custom dimensions are added into `FSI_D_MANAGEMENT_LEDGER` and `FACT` tables, the corresponding values are used in the reports.

**Reporting Currency Calculation**

The base currency values are converted into reporting currency and are populated to `RCY` columns of Fact table using `FSI_EXCHNG_RATE_DIRECT_ACCESS` or `FSI_EXCHANGE_RATE_HIST` tables. In these tables, data should exist for the available currency combinations for the particular `FIC_MIS_DATE` column, for which the user is running the fact transformations that are `FCT_LEDGER_STAT` and `FCT_MGMT_REPORTING` tables. In EFPA, by default exchange rate is calculated by referring `FSI_EXCHNG_RATE_DIRECT_ACCESS`. However, it can be configured in the `SETUP_MASTER` table to use `FSI_EXCHANGE_RATE_HIST` if needed.

**Currency Type:** OFS EFPA BI reports work for Local, Base, and Reporting currencies.

## 11.4 OBIEE: Catalogs Related Configuration

This section explains the necessary configurations for OBIEE with respect to catalogs.

**Currency Label Modification**

To configure the currency label, follow these steps:

1. Open the **RPD** in online mode.
2. Click the **Variables** option in the **Manage** menu.
3. Change the value of the **RV\_Reporting\_Currency** variable as required. For example, the **Amount in Millions (USD)**.
4. Set the **RV\_Base\_Currency** repository variable to the appropriate Base currency.
5. Update the connection details of the **OFS EFPA Connection Pool** and **OFS EFPA Init Block** in Physical Layer of RPD, to view the Local Currency label.



- Click **Save** and check the global consistency of the RPD.

### Amount Unit Modification

To configure the amount unit, follow these steps:

- Open the **RPD** in online mode.
- Click the **Variables** option in the **Manage** menu.
- Change the value of the variable **ABBREVIATE\_VALUE** as required. For example 100000.
- Click **Save** and check the global consistency of the RPD.

## 11.5 Dashboards

The following sections provide the dashboard screens that demonstrate the OFSEPA reports.

### Financial Reporting

The business intent of the Financial Reporting dashboard is to analyze the General Ledger Account-based Income Statement and Balance Sheet reporting. Currency Type prompt allows data to be viewed for Reporting Currency and Base Currency for Financial Reporting reports.

**Figure 11-1 Financial Reporting - Income Statement**

Income Statement for  
Time run: 3/24/2022 10:49:31 AM

| Income Statement                                    | Actual     | Actual YTD | B(O) Prior Period | B(O) Prior Year | B(O) Plan  | B(O) Forecast |
|---|------------|------------|-------------------|-----------------|------------|---------------|
| Net Income Before taxes                             | 156,062.00 | 156,062.00 | 0.00              | 0.00            | 176,231.95 | 178,495.00    |
| Non Operating expenses                              | 58,083.00  | 58,083.00  | 0.00              | 0.00            | 66,096.70  | 67,074.60     |
| Amortization of Restructuring Expenses              | 19,945.00  | 19,945.00  | 0.00              | 0.00            | 22,044.90  | 22,942.20     |
| Income from Discontinued operationNet of taxes      | 38,138.00  | 38,138.00  | 0.00              | 0.00            | 43,961.80  | 44,132.40     |
| Gain on sale of assets from discontinued operations | 19,073.00  | 19,073.00  | 0.00              | 0.00            | 22,029.90  | 22,070.20     |
| Income from Discontinued Operations                 | 19,065.00  | 19,065.00  | 0.00              | 0.00            | 21,931.90  | 22,062.20     |
| Operating income before taxes                       | 97,979.00  | 97,979.00  | 0.00              | 0.00            | 110,225.25 | 111,420.40    |
| Net Impairments Losses                              | 19,945.00  | 19,945.00  | 0.00              | 0.00            | 22,476.30  | 22,942.20     |
| Operating Expenses                                  | 19,073.00  | 19,073.00  | 0.00              | 0.00            | 21,614.25  | 21,170.20     |
| Total Revenue Net of Interest Expenses              | 39,016.00  | 39,016.00  | 0.00              | 0.00            | 44,089.60  | 44,834.40     |
| Unexpected Losses                                   | 19,945.00  | 19,945.00  | 0.00              | 0.00            | 22,044.90  | 22,473.60     |

Analyze - Edit - Refresh - Print - Export - Add to Briefing Book - Copy

Amount in Millions (USD)

**Figure 11-2 Financial Reporting - Income Statement - Time Series**

Reporting Period: Dec-2011 Apply Reset

Legal Entity: Citicorp Apply Reset

Currency Type: Reporting Currency Apply Reset

Income Statement-Time Series  
Time run: 3/24/2022 10:52:49 AM

| Income Statement                               | Dec-2011   |
|--|------------|
| Net Income Before taxes                        | 156,062.00 |
| Non Operating expenses                         | 58,083.00  |
| Amortization of Restructuring Expenses         | 19,945.00  |
| Income from Discontinued operationNet of taxes | 38,138.00  |
| Operating income before taxes                  | 97,979.00  |

Analyze - Edit - Refresh - Print - Export - Add to Briefing Book - Copy

Amount in Millions (USD)

Figure 11-3 Financial Reporting - Variance Analysis

**Income Statement Variance Analysis for 2011**  
Time run: 3/24/2022 10:54:57 AM

| Income Statement                                    | Actual     | Average Balance | Rate (Actual/Average Balance) | \$/M of Average Balance | \$/M of Income/Expenses | Effect due to Volume Change | Effect due to Rate Change |
|---|------------|-----------------|-------------------------------|-------------------------|-------------------------|-----------------------------|---------------------------|
| Net Income Before taxes                             | 156,062.00 | 0.00            |                               | 0.00                    | (1,402,278.00)          |                             |                           |
| Non Operating expenses                              | 58,083.00  | 0.00            |                               | 0.00                    | (521,892.00)            |                             |                           |
| Amortization of Restructuring Expenses              | 19,945.00  | 0.00            |                               | 0.00                    | (179,220.00)            |                             |                           |
| Income from Discontinued operation                  | 38,138.00  | 0.00            |                               | 0.00                    | (342,672.00)            |                             |                           |
| Gain on sale of assets from discontinued operations | 19,073.00  | 0.00            |                               | 0.00                    | (171,372.00)            |                             |                           |
| Income from Discontinued Operations                 | 19,065.00  | 0.00            |                               | 0.00                    | (171,300.00)            |                             |                           |
| Operation income before taxes                       | 97,979.00  | 0.00            |                               | 0.00                    | (860,386.00)            |                             |                           |
| Net Impairments Losses                              | 19,945.00  | 0.00            |                               | 0.00                    | (179,220.00)            |                             |                           |
| Operating Expenses                                  | 19,073.00  | 0.00            |                               | 0.00                    | (171,372.00)            |                             |                           |
| Total Revenue Net of Interest Expenses              | 39,016.00  | 0.00            |                               | 0.00                    | (350,574.00)            |                             |                           |
| Unexpected Losses                                   | 19,945.00  | 0.00            |                               | 0.00                    | (179,220.00)            |                             |                           |

Amount in Millions (USD)

## 11.5.1 Management Reporting

The business intent of the Management Reporting dashboard is to analyze the Financial Element based on the Income Statement and Balance Sheet reporting (management). Currency Type prompt allows data to be viewed for Reporting Currency, Local Currency, and Base Currency for Management Reporting reports.

### 11.5.1.1 Balance Sheet Dashboard

Figure 11-4 Management Reporting - Balance Sheet - Balance Sheet

Period: 12/31/2011 Apply Reset

Legal Entity: Others Apply Reset

Line Of Business: (All Column Values) Apply Reset

Currency Type: Reporting Currency Apply Reset

**Balance Sheet as of 2011**  
Time run: 3/24/2022 10:39:46 AM

Trading Assets  
Current Vs Previous

Loans and Advances  
Current Vs Previous

Investments  
Current Vs Previous

Customer Liabilities  
Current Vs Previous

Equity  
Current Vs Previous

| Balance Sheet                             | Jan | Feb | Mar | Q1 | Apr | May | Jun | Q2 | Jul | Aug | Sep | Q3 | Oct | Nov | Dec | Q4           | Latest month vs. Previous month | Latest Month vs. same month Previous Year | Latest Qtr vs. Previous Qtr | Latest Qtr vs. same Qtr Previous Year | Latest Actual | Latest Forecast | Latest Actual vs. Latest Forecast |
|---|-----|-----|-----|----|-----|-----|-----|----|-----|-----|-----|----|-----|-----|-----|--------------|---------------------------------|---|-----------------------------|---------------------------------------|---------------|-----------------|-----------------------------------|
| Total Assets                              |     |     |     |    |     |     |     |    |     |     |     |    |     |     |     | 2,219,659.44 | 2,219,659.44                    |   |                             |                                       |               |                 |                                   |
| Total Liabilities and Shareholders Equity |     |     |     |    |     |     |     |    |     |     |     |    |     |     |     | 1,608,528.86 | 1,608,528.86                    |   |                             |                                       |               |                 |                                   |
| Risk-weighted Assets - Credit Risk        |     |     |     |    |     |     |     |    |     |     |     |    |     |     |     | 37,629.52    | 37,629.52                       |   |                             |                                       |               |                 |                                   |

Analyze - Edit - Refresh - Print - Export - Add to Briefing Book - Copy

**Trading Assets, Loans & Advances, Investments, Customer Liabilities, Equity**  
Time run: 3/24/2022 10:39:49 AM

2011 Trading Assets  
2011 Loans and Advances to Customers

2011 Investments  
2011 Customer Liabilities

2011 Shareholders Equity

Figure 11-5 Management Reporting - Balance Sheet - Time Series



Figure 11-6 Management Reporting - Balance Sheet - Key Indicators



Figure 11-7 Management Reporting - Income Statement - Income Statement



Figure 11-8 Management Reporting - Income Statement - Time Series



## 11.5.1.2 Income Statement Dashboard

Figure 11-9 Management Reporting - Income Statement - Key Indicators



Figure 11-10 Management Reporting - Income Statement - Variance Analysis

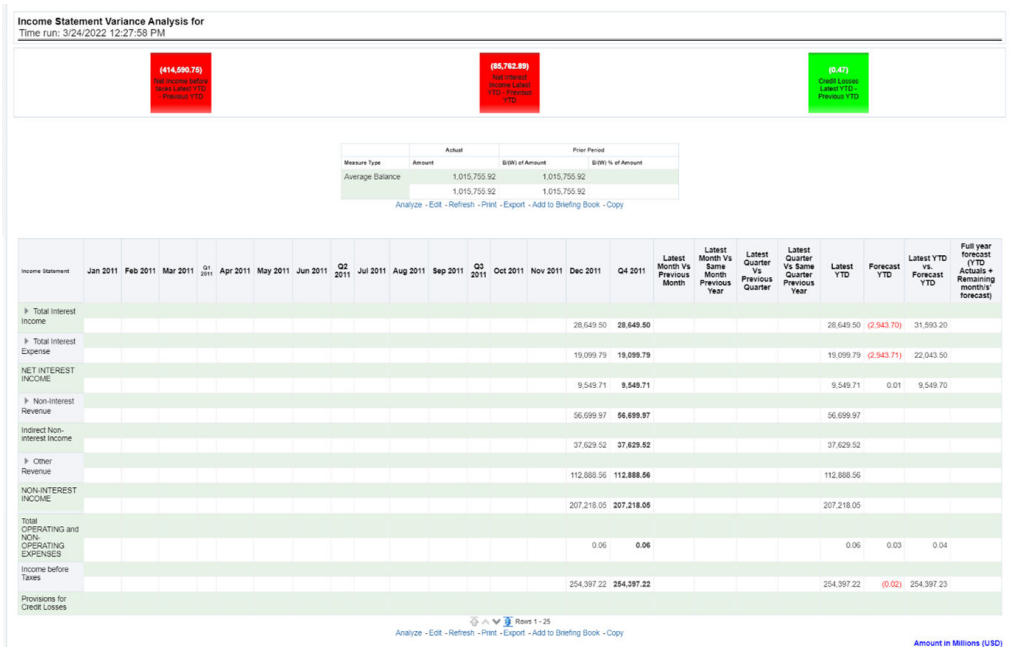


Figure 11-11 Management Reporting - Income Statement - Variance Analysis 71

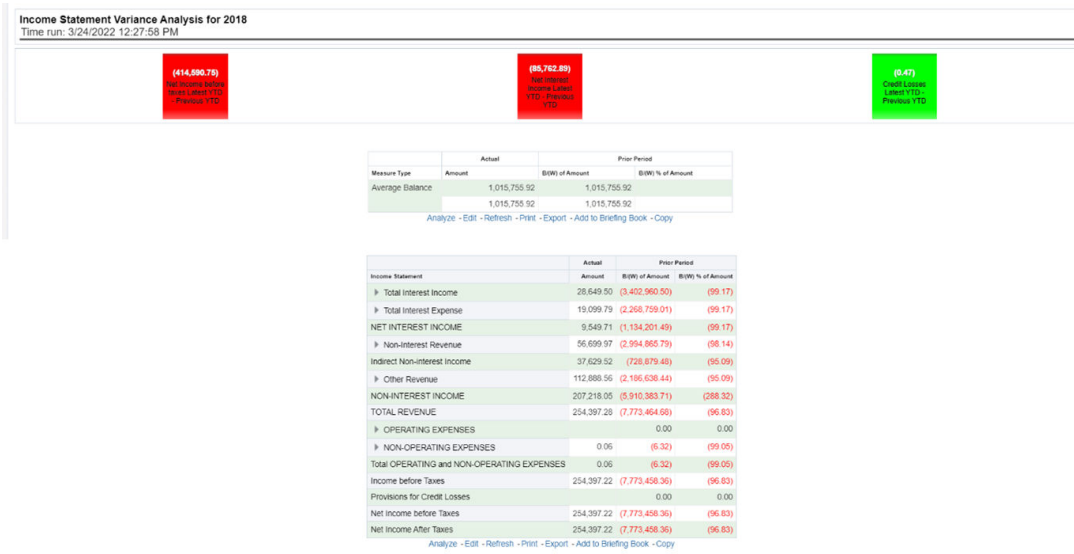
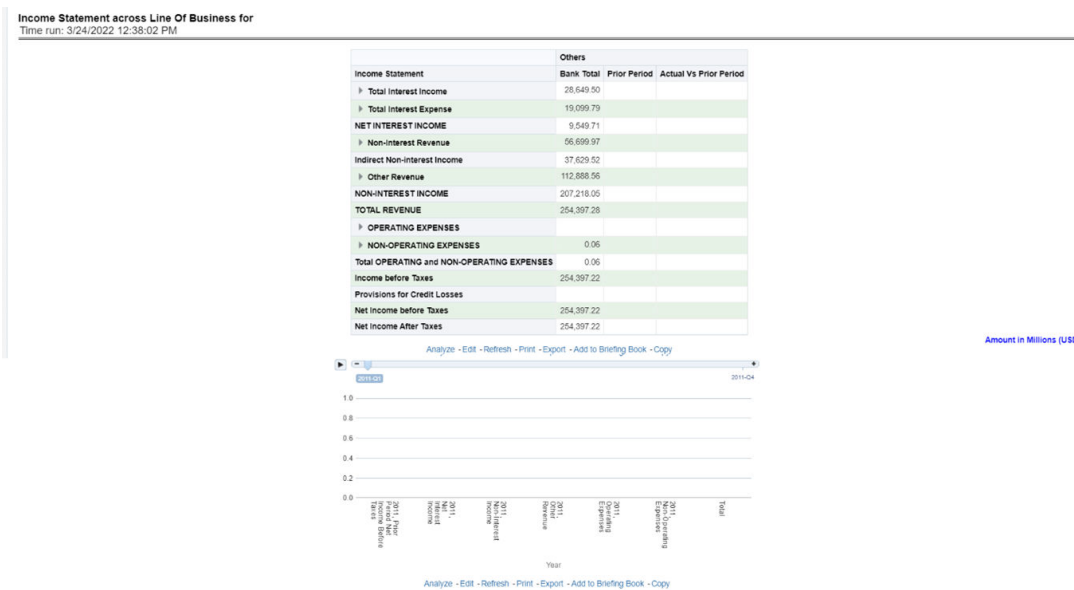


Figure 11-12 Management Reporting - Income Statement - Line Of Business



Key Statistics from Balance Sheet as of



Figure 11-13 Management Reporting - Income Statement - What-If Analysis



### 11.5.1.3 Key Trends Dashboard

Figure 11-14 Management Reporting - Key Trends - Key Trends

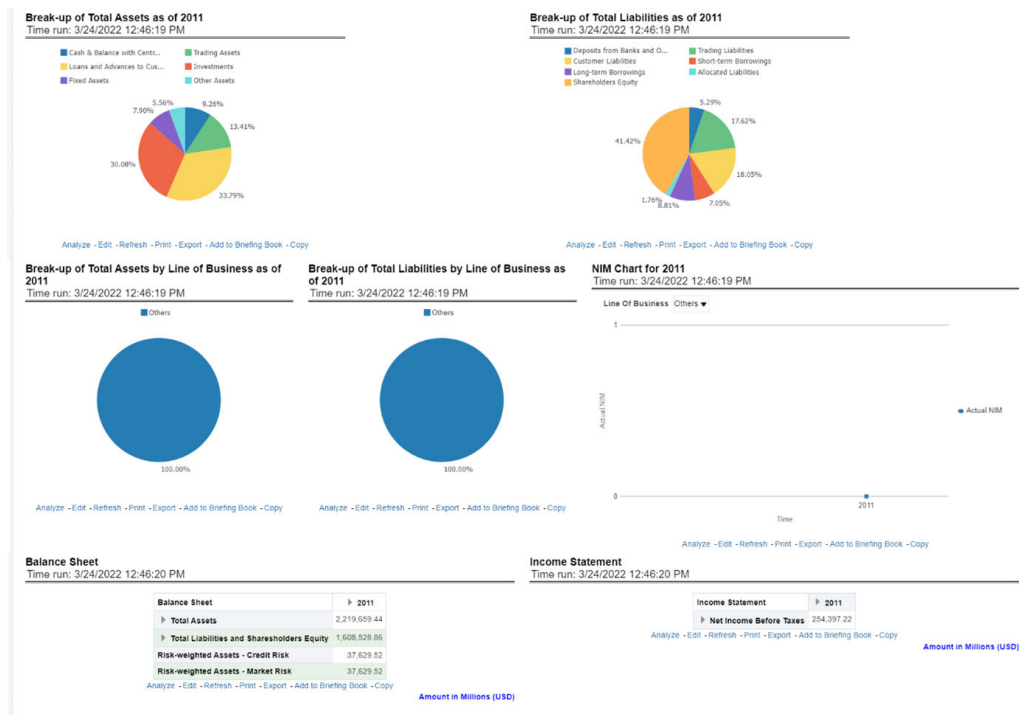


Figure 11-15 Management Reporting - Key Trends - Net Loss Analysis

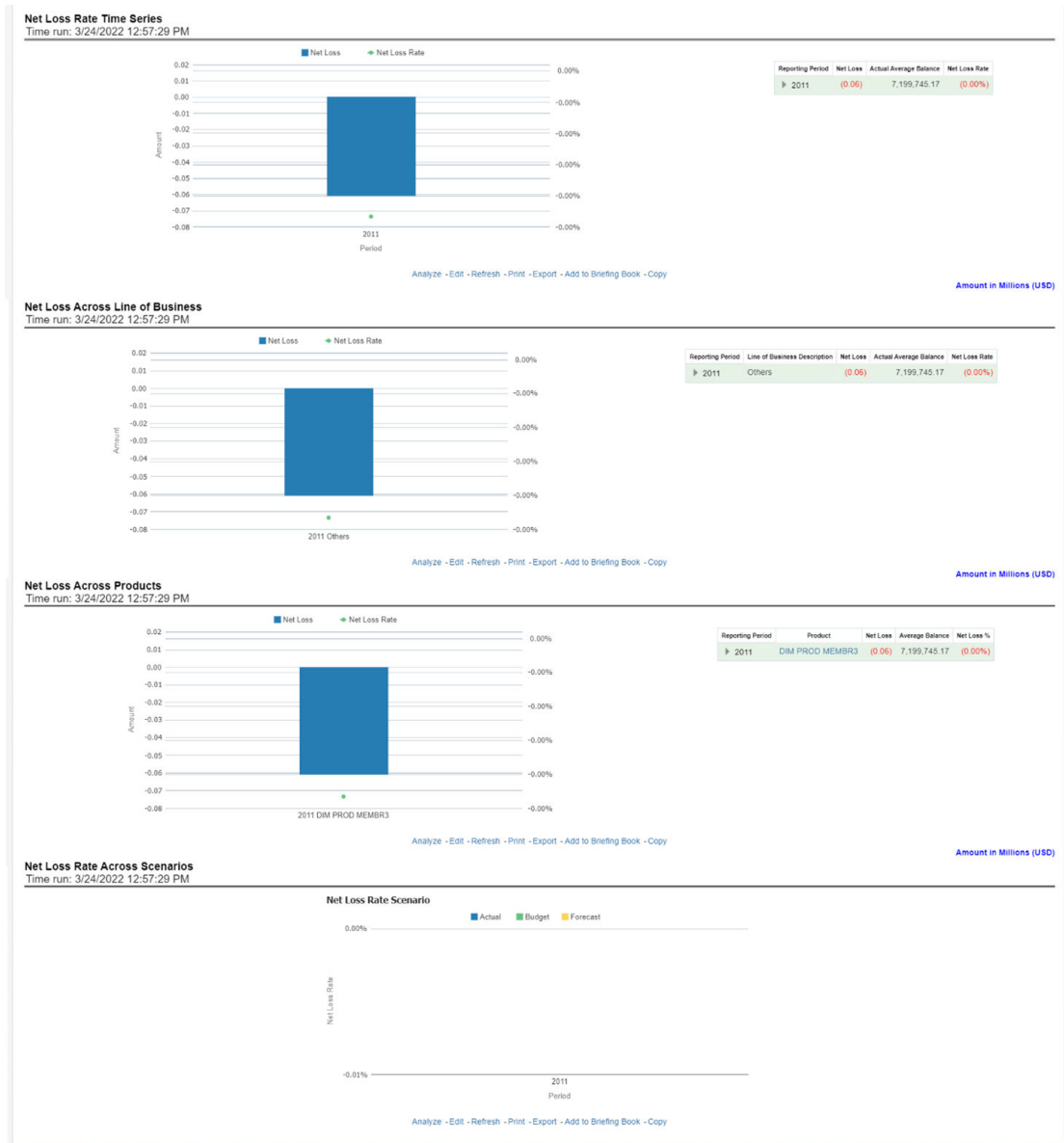




Figure 11-16 Management Reporting - Key Trends - NII Impact Analysis



Figure 11-17 Management Reporting - Key Trends - Balance Trends

**Details By Product Dec-2011**  
Time run: 3/24/2022 1:29:59 PM

| Product        | Current Month | Previous Month | Dec-2011              |                     |                |                | Rank EOP |
|----------------|---------------|----------------|-----------------------|---------------------|----------------|----------------|----------|
|                |               |                | B(W) Month-over-Month | B(W) Year-over-Year | Previous Month | Year-over-Year |          |
| DM PROD MEMBR3 | 3,541,076.95  |                |                       | -83.55%             |                |                | 1        |

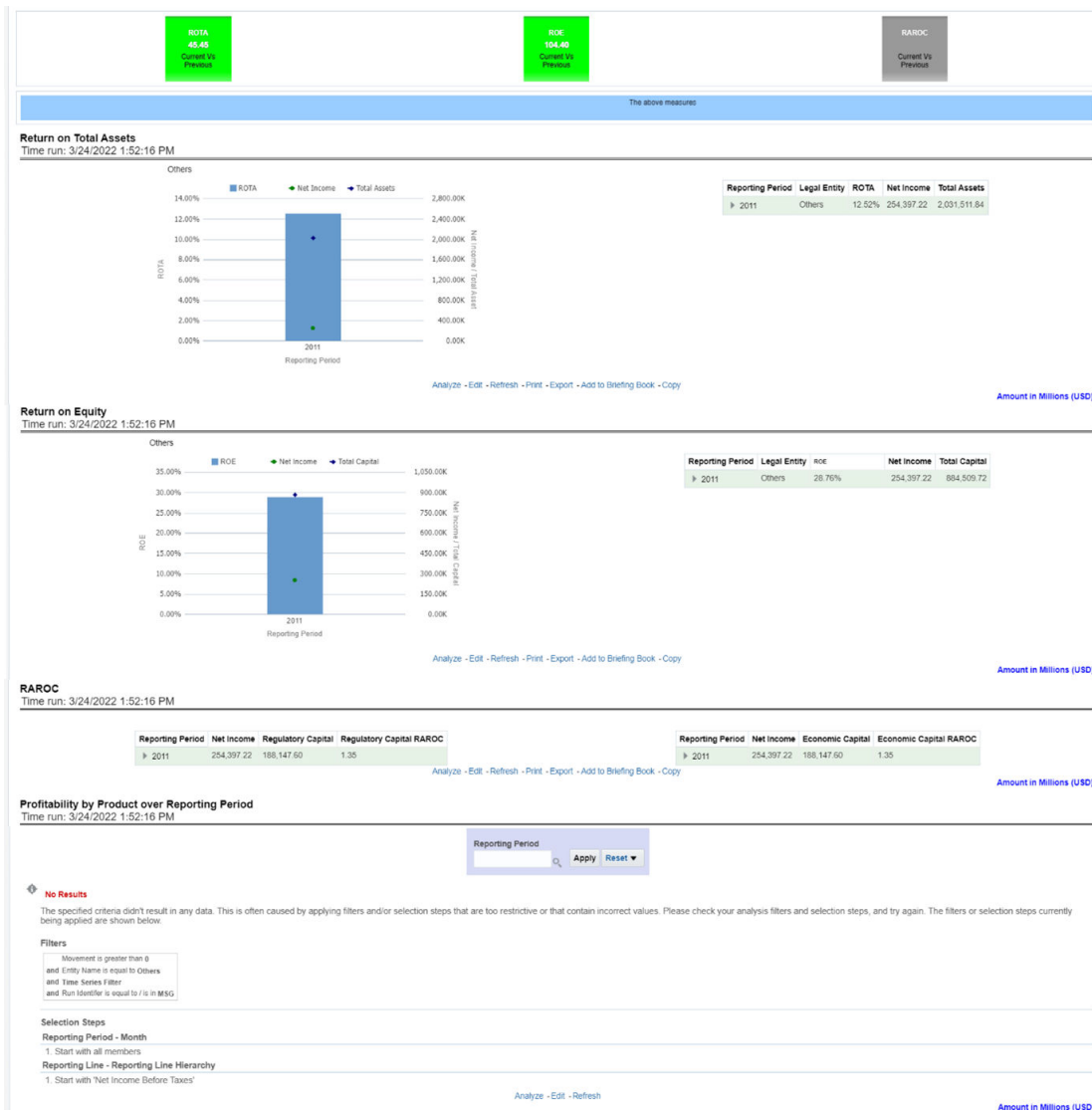
**Top 10 Products - Balance as of Dec-2011**  
Time run: 3/24/2022 1:29:59 PM

| Product        | Balance      | B(W) Month-over-Month | B(W) Year-over-Year | Rank |
|----------------|--------------|-----------------------|---------------------|------|
| DM PROD MEMBR3 | 3,541,076.95 |                       | -83.55%             | 1    |

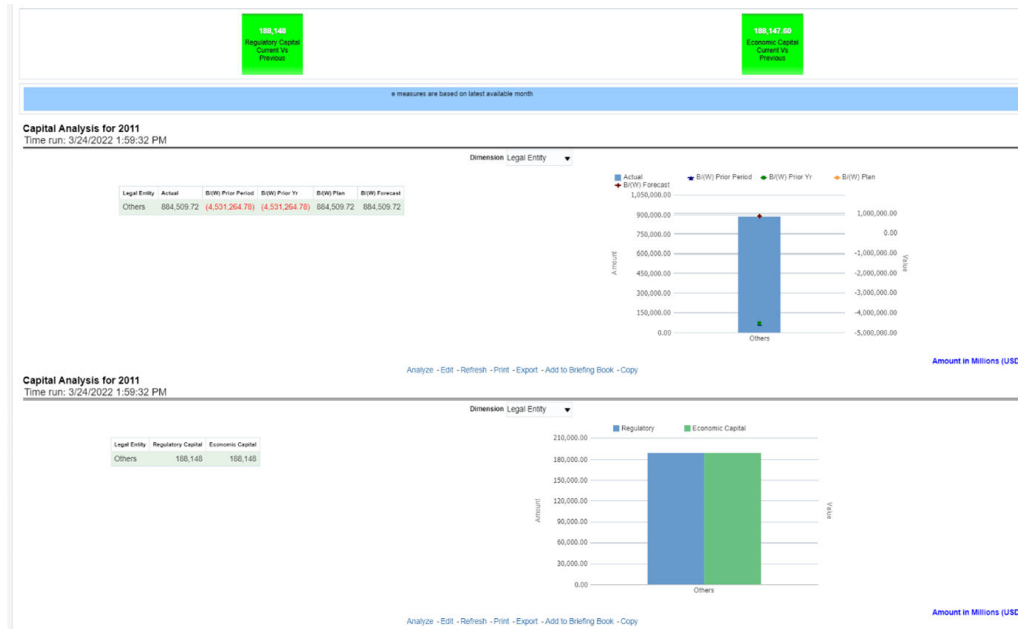
Amount in Millions (USD)

## 11.5.1.4 Performance Measures Dashboard

**Figure 11-18 Management Reporting - Performance Measures - Performance Measures**



**Figure 11-19 Management Reporting - Performance Measures – Capital Analysis**



# A

## How to Define a Dimension

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 hold the 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 the user intends to maintain the dimension within OFSAAI for adding dimension tables, see the Oracle Financial Services Analytical Applications Data Model Utilities User Guide. If the dimension data is fetched from OFS PFT, it reads only the nodes/leaves belonging to a single hierarchy. Therefore, before fetching dimension data from OFS PFT, ensure that the AMHM tables belonging to a single dimension have data present for only one hierarchy.

### A.1 Create a Business Hierarchy

To create a business hierarchy, follow these steps:

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

Figure A-1 Business Hierarchy

The screenshot shows the 'Add Business Hierarchy' window. The 'Business Hierarchy Details' section includes a 'Code' field with the value 'HACCOUNT', a 'Short Description' field with 'Account Dimension Hierarchy', and a 'Long Description' field with 'Account Dimension Hierarchy'. The 'Business Hierarchy Definition' section includes a 'Hierarchy Type' dropdown set to 'Regular', a 'Hierarchy Subtype' dropdown set to 'Business Intelligence Enabled', a 'Total Required' checkbox, a 'List' checkbox, an 'Entity' field with 'DIM\_ACCOUNT-Account Dimension', and an 'Attribute' field with 'n\_acct\_skey-Account Surrogate Key'. The 'Business Hierarchy' section is a table with the following data:

| Level                             | Short Description           | Level Identifier   | Level Description  |
|-----------------------------------|-----------------------------|--|--|
| <input type="checkbox"/> HACCOUNT |                             |  |  |
| <input type="checkbox"/> ACCOUNT  | Account Dimension Hierarchy | CASE WHEN NVL (DIM_ACCOUNT.f_latest_record_j ndicator,'Y') = 'Y' THEN DIM_ACCOUNT.v_account_number END | CASE WHEN NVL (DIM_ACCOUNT.f_latest_record_j ndicator,'Y') = 'Y' THEN DIM_ACCOUNT.v_account_number END |

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

- **Regular:** for representing non-time and non-measure dimensions in a hierarchical format. Examples of this type are Product, Organization Unit, and so on.
  - **Measure:** for representing the measures in the hierarchical format. An example of this type is the Management Reporting Line.
  - **Time:** for representing the calendar or date dimension in a hierarchical format. An example of this type is the Calendar hierarchy.
3. Select the **Hierarchy Sub Type**. The Hierarchy Sub Type can be:
    - **Non-Business Intelligence Enabled:** for representing the hierarchy with underlying data store containing just leaves and nodes are built within the metadata of the hierarchy. This subtype is useful for modelling bucket/range, ragged and non-additive hierarchies.
    - **Business Intelligence Enabled:** for representing the hierarchy with the underlying data store as a level-based dimension table. This sub-type is useful for modelling balanced hierarchies.
    - **Parent-Child:** for representing the hierarchy with the underlying data store as a parent-child dimension table. This subtype is useful for modelling ragged hierarchies.
  4. Select the **Total Required** property, if a TOTAL is required to be included as the root node of the hierarchy.
  5. Select the **List** property, if the hierarchy is a flat list of members without any levels.
  6. Select the **Entity** and **Attribute** on which the hierarchy is based. The components for the hierarchy definition differ for each subtype of the hierarchy.
    - If subtype is Non-Business Intelligence Enabled, then the user can add nodes and the order in which the node should appear in the hierarchy (sort-order). Node identifiers are SQL expressions that are specified for leaf members and data is classified based on the node identifiers.
    - If subtype is Business Intelligence Enabled, then the user can specify the levels and SQL expressions for each level within the hierarchy.
    - If subtype is Parent-Child, then the user can specify the column that contains the parent member and the column that contains the child member.

For more details, see the [OFS Analytical Applications Infrastructure User Guide](#).

## A.2 Create a Business Dimension

To create a business dimension, follow these steps:

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

Figure A-2 Business Hierarchy Details Page

The screenshot shows a web browser window titled "Add Business Dimension - Windows Internet Explorer". The page content is as follows:

- Business Dimension Details**
  - Code: DCCR001
  - Short Description: Customer Profile For CCR Analysis
  - Dimension Type: Measure
  - Data Type: Text
  - Long Description: Customer Profile For CCR Analysis
- Hierarchies**
  - Selected Hierarchies table:

|                                       |
|---------------------------------------|
| HCCR001-Measure Hierarchy for CCR - 1 |
|---------------------------------------|
- User Info**

|                  |  |                    |  |
|------------------|--|--------------------|--|
| Created By       |  | Creation Date      |  |
| Last Modified By |  | Modification Date  |  |
| Authorized By    |  | Authorization Date |  |

2. Click the **Add** icon to create a Business dimension definition. In the **Business Dimension Definition (Add mode)** window, select the **Dimension Type**. Dimension type is the same as the Hierarchy type and helps to filter the hierarchies that will be part of the dimension.  
A dimension will contain one or many hierarchies. Select the hierarchies that are part of the dimension.

## A.3 Modify a Dataset

To modify a dataset, follow these steps:

1. From **Unified Metadata Manager**, select **Business Metadata Management**, and then select **Data Sets**.

**Figure A-3 Data Set Details Page**

The screenshot displays the 'Edit Data Sets' interface. At the top, it shows the breadcrumb 'Data Sets > Data Set Definition (Edit mode)'. The main content is divided into three sections:

- Data Set Details:** A table with fields for Code (\*), Short Description (\*), and Long Description. The values are 'CSFVNDP', 'Account Fair Value Inception', and 'Hedge Management Inception Dataset for Account FV' respectively.
- Entities:** A list of selected entities: DIM\_DATES, DIM\_FCST\_RATES\_SCENARIO, DIM\_HEDGE, FCT\_ACCOUNT\_FAIR\_VALUE, and PSI\_HM\_HEDGE\_INSTRU\_MAP. A 'Selected Entities' button and a '1 to 5 of 5' indicator are also present.
- Data Set Definition:** A table defining the data set's structure. It includes:
  - ANSI Join:** A dropdown menu.
  - Join/Filter Condition:** A text area containing the SQL condition: `DIM_HEDGE.HEDGE_ID = PSI_HM_HEDGE_INSTRU_MAP.HEDGE_ID AND FCT_ACCOUNT_FAIR_VALUE.N_ID_NUMBER = PSI_HM_HEDGE_INSTRU_MAP.ID_NUMBER`.
  - Date Filter:** A text area.
  - Order By:** A text area.

2. Identify data sets that are based on the modified fact table.
  3. Edit the data set definition.
  4. Include the new dimension table in the data set.
  5. Modify the data set JOIN to include the join clause between the fact table and the new dimension table.
  6. Save the data set.
- <Enter a single subject here.>

# B

## How to Define a Measure

As a prerequisite, the fact table needs to have the column that holds values for the new measure.

To create a business measure, follow these steps:

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

**Figure B-1 Business Measure Details Page**

The screenshot shows a web-based form for defining a business measure. The form is titled "Add Business Measures" and is part of the "Business Measures > Business Measure Definition (Add mode)" section. It is divided into two main sections: "Business Measure Details" and "Business Measure Definition".

**Business Measure Details:**

|                     |                       |
|---------------------|-----------------------|
| Code *              | UEPUD01               |
| Short Description * | ECP Balance           |
| Long Description    | End of period balance |

**Business Measure Definition:**

|                      |                                     |          |         |
|----------------------|-------------------------------------|----------|---------|
| Aggregation Function | SUM                                 | DataType | Decimal |
| Roll up              | <input checked="" type="checkbox"/> |          |         |
| Entity               |                                     |          |         |
| Attribute            |                                     |          |         |
| Business Exclusions  |                                     |          |         |
| Filter Expression    |                                     |          |         |

2. Click the **Add** icon to create a Business measure definition. In the **Business Measure Definition (Add mode)** window, select the **Aggregation Function**. The 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.



# C

## Define a Batch

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 a Data Centre Manager function role mapped to access the Operations framework within OFSAAI. You can access Batch Maintenance by expanding the Operations section within the tree structure of the 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.

To create a batch, follow these steps:

1. From the OFSAAI LHS menu, navigate to **Operations**, and then select **Batch Maintenance**.
2. In the Batch Maintenance window, select the **Add (+)** icon from the Batch Name toolbar. The **New Batch Definition** window is displayed.
3. Enter the following Batch details:
  - **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 check box 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 the Batch Maintenance window with the specified Batch ID.

For more comprehensive coverage of configuration and execution of a batch, see the *Operations* chapter in [OFS Analytical Applications Infrastructure User Guide](#).

# D

## Predictive Modelling

What-If analysis reports use the reporting line forecast values that are generated using the Arima Algorithm in the R code seeded with the application. R has a base package called 'stats' which provides the function called 'arima()'. This function enables the usage of the ARIMA technique for time series forecasting.

The guidelines associated with respect to the execution R code are mentioned below:

- Data should be generated for at least one group for more than 12 continuous MIS dates. 12 is the parameter n Consider where we are setting how many records are significant to be considered for prediction.
- The assumption is that the data is chronological for consecutive end of month dates. By default, the prediction will be done for 60 months starting with the immediate month after the last available MIS Date.
- If the data provided is not for the chronological end of month dates, results generated will not be accurate.
- ARIMA is a statistical technique used for time-series predictions. It accepts a host of parameters of which the basic parameters are p,d, and q. p is the order of Autoregressive Process, q is the parameter for the Moving Average process and d is the number of differences after which the data can be considered stationary with the desired confidence level. It has more parameters that can be customized.
- Detailed documentation of the technique can be found at:  
<http://www.dms.umontreal.ca/~duchesne/chap7.pdf>  
Documentation of implementation of ARIMA in R can be found at:  
<http://stat.ethz.ch/R-manual/R-patched/library/stats/html/arima.html>

Logging for the individual groups' ARIMA model summaries will happen in a file named out.log. This log file will be generated in the `$FIC_DB_HOME/bin` folder. If a particular group has unstable data and prediction fails, the corresponding error will also be documented in the out.log file against that particular group.

### D.1 Files Used

There are two files that are required for R script execution. Both the files are present at the `$FIC_DB_HOME/bin` folder. Provide execute permissions to the following files:

- RExec executable
- EFPA\_ARIMA\_MR\_IS\_PV.r

### D.2 Errors

The following are the errors:

- Logging for the individual groups' arima model summaries will happen in a file named "out.log". This log file will be generated in the `$FIC_DB_HOME/bin` folder. If a particular

---

group has unstable data and prediction fails, the corresponding error will also be documented in the out.log file against that particular group.

- Error : Error in if ((lv > nr) || (lv == 0L && nr > 0L) || (nr%%lv != 0L))  
stop(gettextf("replacement data has %s rows, data has %s", :  
Missing value where TRUE/FALSE needed means and if a condition is receiving  
null and is unable to evaluate true or false.

# E

## What-If Analysis Configuration

The What-If Analysis report enables the user to account for the change in profitability owing to any probable changes in the projected components of profitability. The probable change can be defined by the user and is termed as 'Variation'. The user could define the parameters to which variation is being applied and the magnitude of variation. The net effect on profitability as a result of these variations can be applied.

The effect of variations on profitability can be analyzed at differing levels of granularity like enterprise, LOB, Product, Customer, and Account. This selection is enabled to the user through dashboard prompt selections. The projected data of income statement is available at an account level. Aggregations are done based on the desired level of granularity. The projections are created based on historical data of the account.

Users could define the variations through the UI, which when imposed on the income statement provide the resulting net income. The resulting income statement post applying the variations is called as a 'Scenario'. The projections are by default created for five years, but the change in projection may not necessarily be applied for the entire 5 years. The tenure for which the specified variation is applicable can also be defined while specifying the variation. The magnitude of variation being applied can be specified either in 'percentage' or 'absolute'. If the variation is specified as a percentage then the value of the component to which variation is being applied changes by the corresponding percentage value for the specified time. Similarly, when the variation is applied in absolute terms the value of the component to which variation is being applied changes by the corresponding absolute value for the specified time.

Certain users should have the authority to save a scenario which can later be accessed by other users for reference. The variations once applied can be applied on the income statement by either of the following two methods:

- **Basic:** The variations that are applied get simply aggregated with the modified values of components to show the resulting net income. The basic version supports variations to be applied to multiple parameters at the same time.
- **Advanced:** The variations that are applied also affect the other components it is correlated to and the modified values of all such parameters get aggregated to show the resulting net income. In the Advanced version, variation can be applied to only a single component at a time.

The scenarios that are thus created can be used to analyze the outcome on the profitability of any probable change in the future. Certain users should have the authority to save a scenario which can later be accessed by other users for reference. It is also possible to create a scenario on an existing scenario by applying variations to the components of the income statement in the scenario.

**Figure E-1 Income Statement Variation**

|                       |  | 2013               |                  | 2014               |                  | 2015               |                  | 2016               |                  | 2017               |                  | 2018               |                  |
|-----------------------|--|--------------------|------------------|--------------------|------------------|--------------------|------------------|--------------------|------------------|--------------------|------------------|--------------------|------------------|
|                       |  | Projected Movement | Revised Movement | Projected Movement | Revised Movement | Projected Movement | Revised Movement | Projected Movement | Revised Movement | Projected Movement | Revised Movement | Projected Movement | Revised Movement |
| Net Income Before Tax |  | -246.27            |                  | -320.95            |                  | -323.85            |                  | -326.55            |                  | -329.29            |                  | -85.13             |                  |

The following input parameters are applicable for OFS EFPA:

**Table E-1 What-If Input Parameters**

| V_PARAMETER_NAME | V_PARAMETER_VALUE   |
|------------------|---|
| VAR_STRT_DT_EFPA | This input parameter indicates the start date for the variance calculation. |
| VAR_END_DT_EFPA  | This input parameter indicates the end date for the variance calculation.   |
| TSHLD_FCTR_EFPA  | This input parameter indicates the threshold factor for replines.           |
| EXCL_LMT_EFPA    | This input parameter indicates the maximum outlier exclusion percentage.    |

 **Note:**

There is a limitation on the graph. Default upper limit for the graph will be based on underlying data in a fact table. Variations applied above the normal can be applied using the grid. If the user wants to apply variation beyond the upper limit shown in the graph, it is not possible through the graph and hence, it should be applied through the grid. The same applies to Negative Values. The graph does not allow applying negative variations. That is, the graph nodes cannot be dragged below the X-Axis. This change needs to be done using the grid mode.

Topics:

- [Configuration for What-If Analysis](#)
- [Reporting Line Correlation Calculations](#)
- [What-If Analysis Limitation](#)

## E.1 Configuration for What-If Analysis

To configure What-If Analysis, follow these steps:

1. Configure the connection to the What-If Variation application page in OFSAAI in the Create Scenario Analysis.  
OFSAAI is Oracle Financial Services proprietary tool, which uses Java to enable users to apply variations on the projected data.

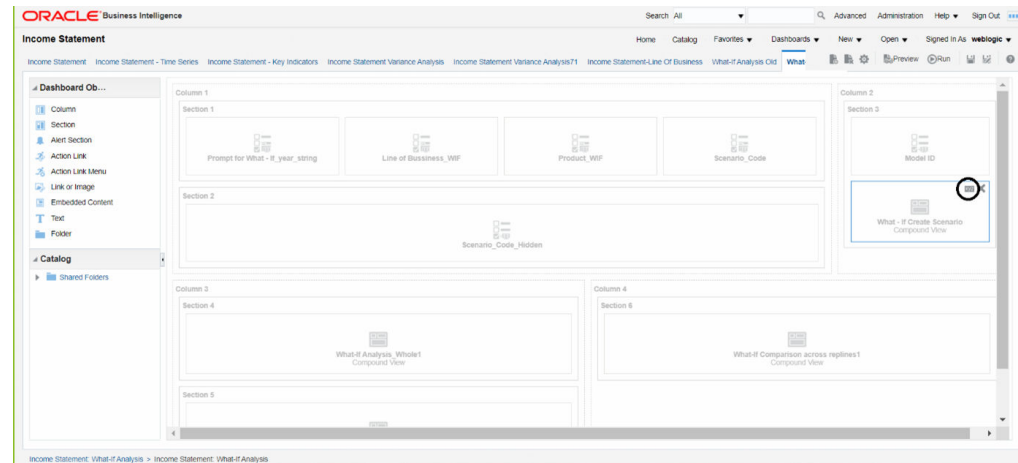
For example: Assume that the OFSAA hostname is bank\_host and the OBIEE analytics port is 8080, then the OBIEE analytics access URL would be: http://bank\_host:8080/PFT81.

To configure the What-If analysis framework, follow these steps:

- a. Navigate to What-If Analysis Dashboard Page in the Dashboard - Institutional Performance for OFSIPA, Retail Performance for OFSRPA, and Income Statement for EFPA.
- b. Edit the **Dashboard Page**.
- c. Edit the analysis **Create Scenario**.

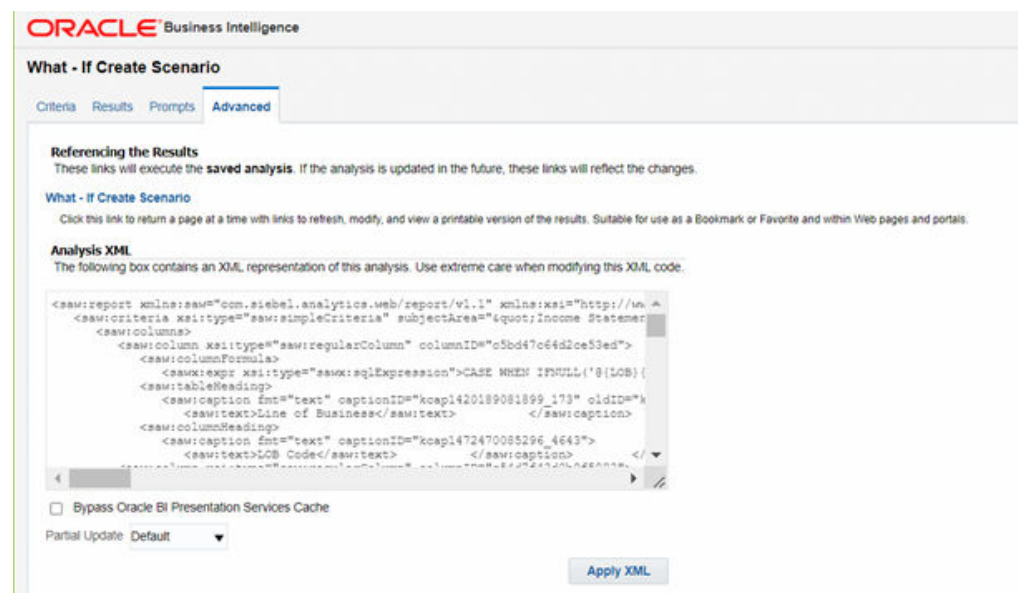
The OBIEE users mapped to the role of BI Author or higher will be able to configure the What-If Analysis framework.

**Figure E-2 Business Intelligence - What-If Tab**



- d. Navigate to the **Advanced XML** section and edit the contents of the Analysis XML.

**Figure E-3 Create Scenario - Advanced Search**



- e. Replace all occurrences as follows:
  - `##ofsaai_hostname##` with the OFSAAI user hostname (For example: bank\_host)
  - `##ofsaai_port##` with the OFSAAI servlet port (For example: 8080)
  - `##ofsaai_context##` with the context of the OFSAAI instance (For example: PFT81).
- f. Click **Apply XML**. Save the analysis after the occurrences of placeholders have been replaced and the XML contents have been pasted.

2. Configure the **OBIEE URL** in the **What-If Model Definition** setup tables to navigate between the OFSAAI and OBIEE screens.

Example:

Assume that the user hostname is bank\_host and the OBIEE analytics port is 7001, then the OBIEE analytics access URL would be http://bank\_host:7001/analytics.

To configure the details on the What-If analysis framework, the user needs to execute the following update on the atomic schema:

```
update fsi_m_wif_model_defn set output_page =
replace(replace(output_page,'##hostname##', 'bank_host' ),
'##port##','7001')
/
Commit
/
```

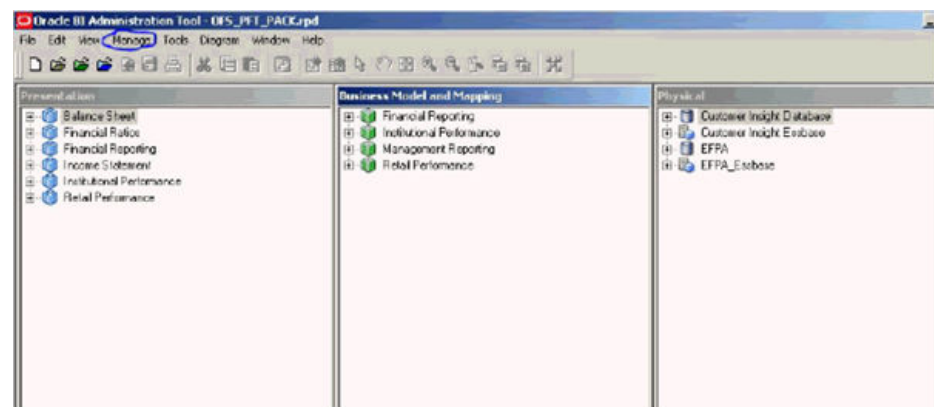
Where the hostname and port replaced would be the user's corresponding hostname and port instead of the examples mentioned.

3. Configure the What-If Admin Role in RPD to configure security roles to restrict Scenario Creation.

If a user is not mapped to the role of a What-If Analysis administrator, the user will only have access to Display Results. The results of this operation will not be persisted beyond one session per user.

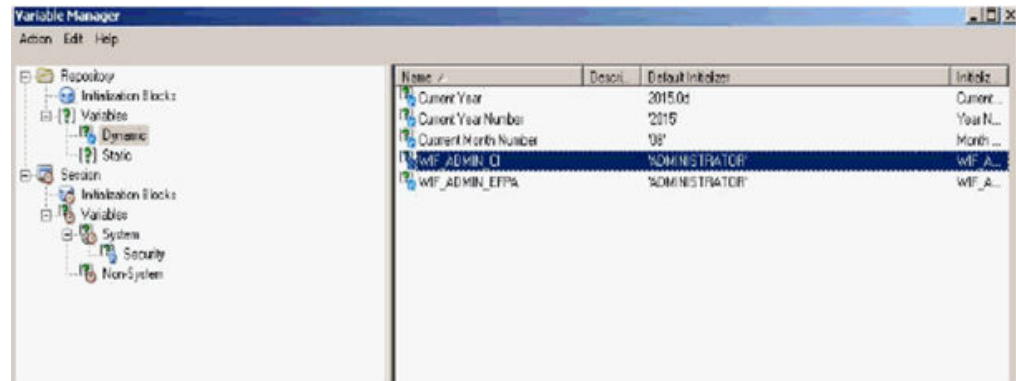
- Open the **OFS\_PFT\_PACK RPD** and navigate to the **Variable Definition** Screen.

**Figure E-4 Oracle BI Administration Tool**



- Modify the WIF\_ADMIN\_CI Repository Dynamic Variable.

Figure E-5 Variable Manager

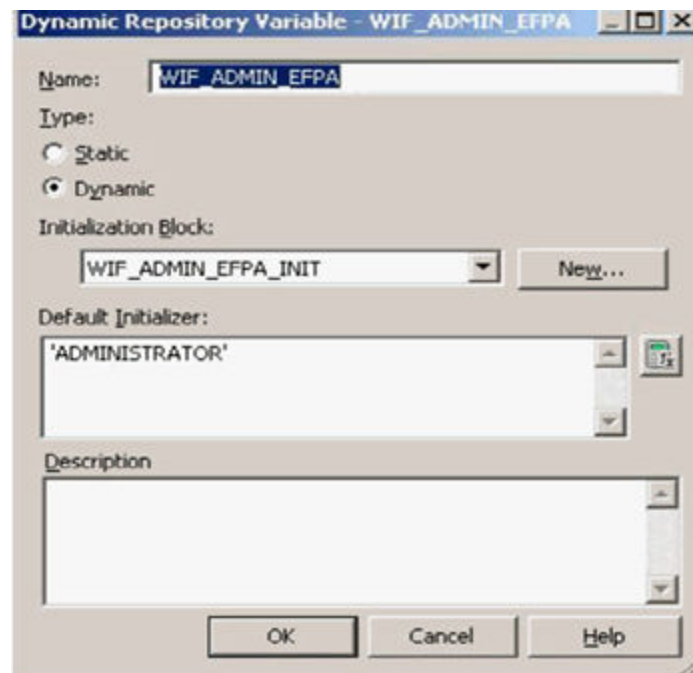


- Edit the default initializer to enter the desired What-If Administrator role.

 **Note:**

The user mapped to the role of Administrator has the privilege to create and save a scenario. Users who are not mapped to the role of Administrator will only be able to create a scenario, but not save it.

Figure E-6 Dynamic Repository Variable



If the webserver is Tomcat of version  $\geq 8.0.18$ , the following additional configuration needs to be done to avoid performance issues while performing What-If Analysis.

- Add the following tags in the server.xml file under tomcat\_folder/conf/:  
Insert the following tag in the Context tag as the first nested tag:



```
<Loader delegate="true"/>
```

- b. Insert the following attributes for all the Resource tags in the Context tag:  
 removeAbandonedOnBorrow = "true"  
 removeAbandonedOnMaintenance = "true"

Example:

**Figure E-7 server.xml File**

```
<Context path="/PFT" docBase="/scratch/ofsaaapp/tomcat-7.0.13/webapps/PFT" debug="0" reloadable="false" crossContext="true"
  <Loader delegate="true"/>
  <Resource auth="Container"
    name="jdbc/FICRSTER"
    type="javax.sql.DataSource"
    driverClassName="oracle.jdbc.driver.OracleDriver"
    username="pftconf30"
    password="ofsaa8x"
    url="jdbc:oracle:thin:@10.104.153.07:1521:BEV11C"
    maxActive="1000"
    maxIdle="30"
    maxWait="10000" removeAbandoned="true" removeAbandonedTimeout="60" logAbandoned="true"
    removeAbandonedOnBorrow="true" removeAbandonedOnMaintenance="true"/>

  <Resource auth="Container"
    name="jdbc/DEFPTINFO"
    type="javax.sql.DataSource"
    driverClassName="oracle.jdbc.driver.OracleDriver"
    username="pftatn30"
    password="ofsaa8x"
    url="jdbc:oracle:thin:@10.104.153.07:1521:BEV11C"
    maxActive="1000"
    maxIdle="30"
    maxWait="10000" removeAbandoned="true" removeAbandonedTimeout="60" logAbandoned="true"
    removeAbandonedOnBorrow="true" removeAbandonedOnMaintenance="true"/>
```

## E.2 Reporting Line Correlation Calculations

For the reporting lines, regression coefficients are calculated using the R-model based on the threshold values. It is considered that a pairwise relationship exists between independent and dependent reporting lines.

In what-if analysis, you can make variations to the value of a variable. Variations can be applied only to the following reporting lines in the income statement:

- Interest Income
- Interest Expenses
- Transfer Pricing Charge
- Transfer Pricing Credit
- Non-Interest Income
- Operating Expenses
- Net Credit Losses
- Other Revenue

The following parameters are available in the FSI\_MODEL\_PARAMETERS table:

- The start date of the reference period.
- The end date of the reference period.

- The percentage of values that lie within the threshold.
- The percentage of outliers that need to be removed.

The following steps are used in the repline correlation calculation:

- **Excluding Outliers:** For each variable, the sigma and mean are calculated within the reference period as defined in the database. If the value of the variable lies outside the threshold provided, the respective pairs are excluded for all associated variables. Pairs are excluded based on the Mahalanobis distance, i.e., pairs are excluded in descending order of their absolute distance from the mean.
- **Testing for Stationarity:** After the outliers are excluded, the ADF test is used to check for stationarity on the time replines. The stationary is checked for each repline at two levels: I(0) and I(1). If any time repline is not found to be stationary, do a differencing of data, and repeat the test. `add.test` is a function of the R-library. A limitation of the R-library is that the stationary value can be calculated only if the records or data points are more than or equal to 6. Results are reported and used in the co-integration test.
- **Testing for Cointegration:** After the stationary test is done, the causal relations between regression variables are checked. Then co-integration is done. The following table shows the action that is performed for pairwise stationarity and pairwise integration based on the stationarity level:

**Table E-2 Testing for Co-integration**

| Pairwise Stationarity | Pairwise Co-integration | Action                                       |
|-----------------------|-------------------------|--|
| Both I(1)             | Exists                  | Do regression without any transformation.    |
|                       | Does not exist          | Do regression after differencing.            |
| Both(0)               | NA                      | Do regression without any transformation.    |
| One I(1) other I(0)   | NA                      | Do regression after differencing I(1) series |

## E.3 What-If Analysis Limitation

There is a limitation on the graph.

The default upper limit for the graph will be based on underlying data in the fact table. Variations applied above the normal can be applied using the grid. If the user wants to apply variation beyond the upper limit shown in the graph, it is not possible through the graph and hence, it should be applied through the grid.

The same applies to Negative Values. The graph does not allow applying negative variations. That is, the graph nodes cannot be dragged below the X-Axis. This change needs to be done using the grid mode.

# F

## Run

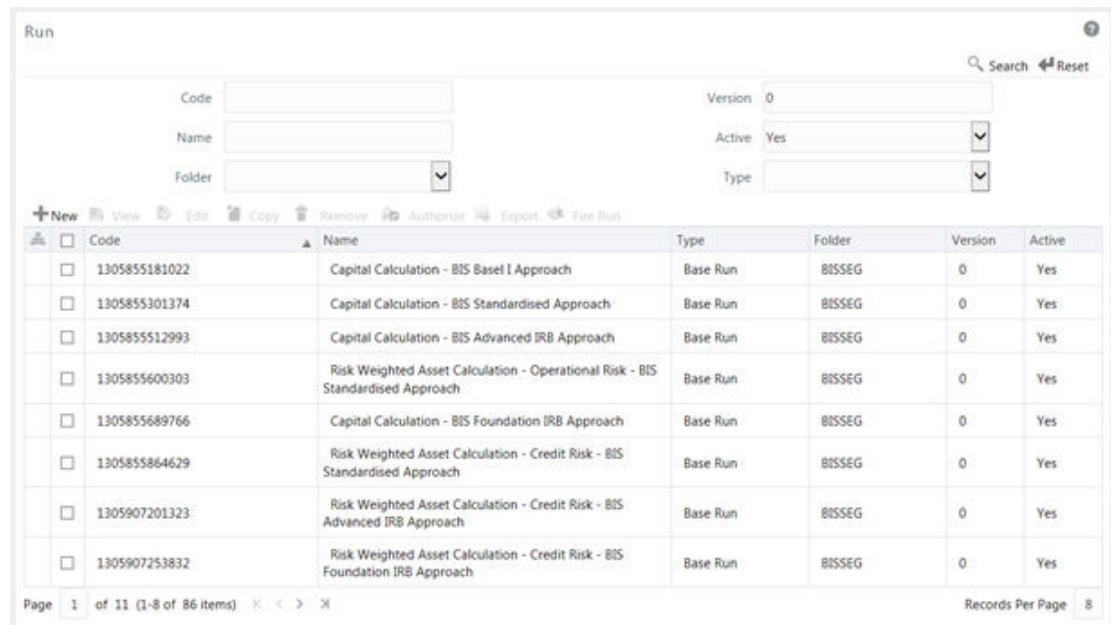
The Run feature in the Rules Run Framework helps you to combine various components and/or processes together and execute them with different underlying approaches. Further, run conditions and/or job conditions can be specified while defining a run.

Two types of runs can be defined namely Base Run and Simulation Run.

- **Base Run** allows you to combine different rules and processes together as jobs and apply run conditions and job conditions.
- **Simulation Run** allows you to compare the resultant performance/ calculations with respect to the baseline runs by replacing an existing job with a simulation job (a job can be a rule or a process). This comparison provides useful insights into the effect of anticipated changes to the business.
- **Instance Run** allows you to combine Base Runs and Simulation Runs in addition to other components from multiple information domains as Jobs. This eliminates the need for having different Run definitions if some Jobs are available in Hive Information Domain and some are present in RDBMS Information Domain.

The Roles mapped for Run module are Run Access, Run Advanced, Run Authorize, Run Read Only, Run Write, and Run Phantom. Based on the roles mapped to your user group, you can access various screens in the Run module.

**Figure F-1 Run Parameters**



The screenshot shows the 'Run' window with a search bar and a table of runs. The table has columns for Code, Name, Type, Folder, Version, and Active. The runs listed are:

| Code          | Name   | Type     | Folder | Version | Active |
|---------------|--|----------|--------|---------|--------|
| 1305855181022 | Capital Calculation - BIS Basel I Approach                                     | Base Run | BISSEG | 0       | Yes    |
| 1305855301374 | Capital Calculation - BIS Standardised Approach                                | Base Run | BISSEG | 0       | Yes    |
| 1305855512993 | Capital Calculation - BIS Advanced IRB Approach                                | Base Run | BISSEG | 0       | Yes    |
| 1305855600303 | Risk Weighted Asset Calculation - Operational Risk - BIS Standardised Approach | Base Run | BISSEG | 0       | Yes    |
| 1305855689766 | Capital Calculation - BIS Foundation IRB Approach                              | Base Run | BISSEG | 0       | Yes    |
| 1305855864629 | Risk Weighted Asset Calculation - Credit Risk - BIS Standardised Approach      | Base Run | BISSEG | 0       | Yes    |
| 1305907201323 | Risk Weighted Asset Calculation - Credit Risk - BIS Advanced IRB Approach      | Base Run | BISSEG | 0       | Yes    |
| 1305907253832 | Risk Weighted Asset Calculation - Credit Risk - BIS Foundation IRB Approach    | Base Run | BISSEG | 0       | Yes    |

The Run window displays the runs created in the current Information Domain with the metadata details such as Code, Name, Type, Folder, Version, and Active status. For more

information on how object access is restricted, see the *Object Security* section in the [OFS Analytical Applications Infrastructure User Guide](#).

You can search for specific runs based on Code, Name, Folder, Version, Active status, or Type. The Folder drop-down list displays all Public folders, shared folders to which your user group is mapped, and Private folders for which you are the owner. The Pagination option helps you to manage the view of existing runs within the system.

## F.1 Create Run

You can create run definitions using the existing metadata objects. The various components that can be used to form run definitions are mentioned in the section Process Hierarchy Members in the OFS Analytical Applications Infrastructure User Guide. The Write role should be mapped to your user group, from the User Group Role Map window.

The following filter conditions can also be applied to a run definition:

**Table F-1 Filter Conditions applied for Run Definition**

| Condition Type | Description  |
|----------------|--|
| Run Condition  | <p>A Run Condition is defined as a filter and all hierarchies (defined in the current information domain) are available for selection.</p> <p>You can select up to 9 run conditions.</p> <p>A Run condition is defined for all Jobs. But it will be applied to a Job only if the underlying target/destination entities of both Job and Hierarchy are common.</p>      |
| Job Condition  | <p>A Job Condition is a further level of filter that can be applied at the component level. This is achieved through a mapping process by which you can apply a Job Condition to the required job.</p> <p>You can select only one Job Condition and the hierarchy that you have already selected as a run condition cannot be selected as the Job Condition again.</p> |



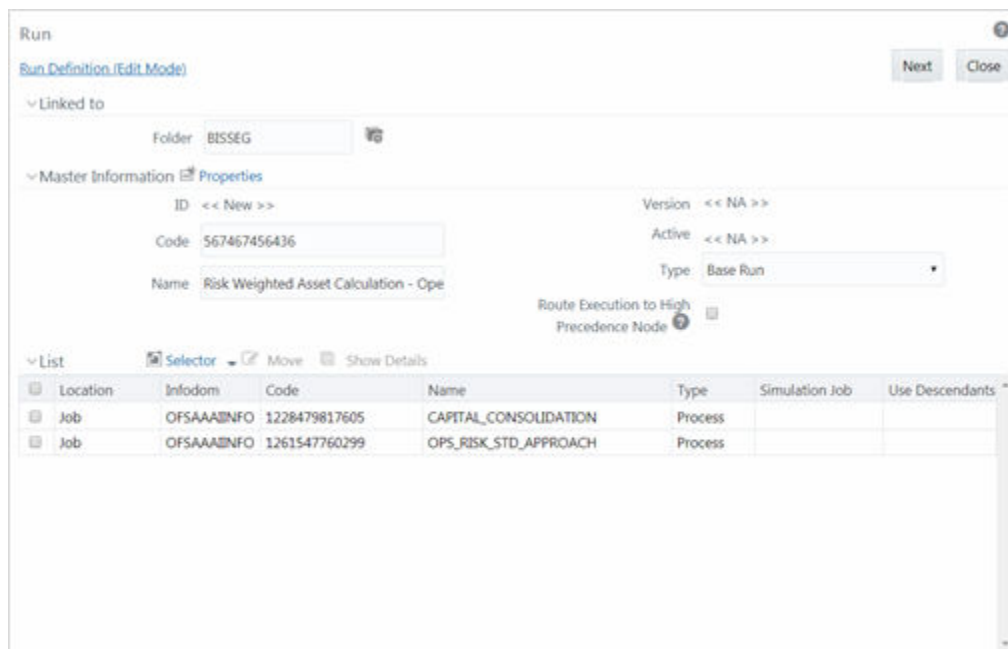
### Note:

Filter conditions are not applicable for Instance Runs.

To create a run definition in the Run window, follow these steps:

1. Click the **Add** icon from the toolbar. The Run Definition (New Mode) window is displayed.

**Figure F-2 Run Definition (Edit Mode)**




2. Click the **View Attributes** icon adjacent to the **Folder** field in the Linked to the pane. The Folder Selector window is displayed. The folders to which your user group is mapped are displayed.
  - a. Select the checkbox adjacent to the required folder. Click **OK**.
  - b. Click the **Add** icon from the List toolbar to create a new folder/segment. For more information, see the section *Segment Maintenance* in the [OFS Analytical Applications Infrastructure User Guide](#).
  - c. Search for a folder by specifying any keyword and clicking Search button.
3. Enter the details of the Master information pane as tabulated below:

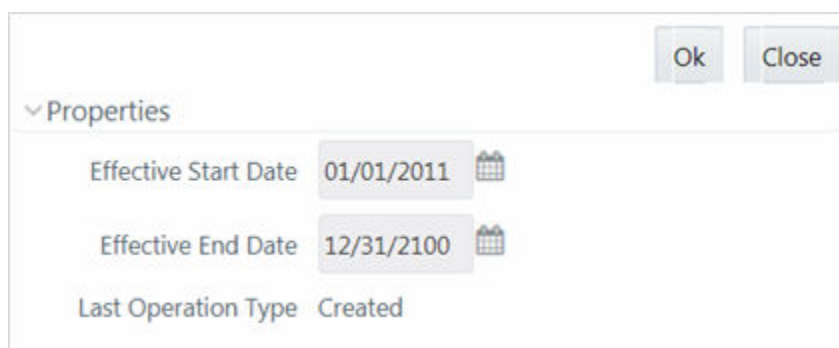
**Table F-2 Master Information**

| Field Name | Description   |
|------------|---|
| ID         | Refers to system-generated ID for a newly created run. When you create a rule, it is displayed as <b>&lt;&lt;New &gt;&gt;</b> . |

Table F-2 (Cont.) Master Information


| Field Name                              | Description  |
|---|--|
| Code                                    | <p>Enter a valid code for the run. Ensure that the code value specified is a maximum of 30 characters in length and it does not contain any special characters except “_”.</p> <p>The code is unique and case sensitive. It is used to identify a run definition during execution.</p> <div style="border: 1px solid #0070C0; padding: 10px; margin-top: 10px;"> <p> <b>Note:</b></p> <p>You cannot use the same code of a rule which has been deleted from the UI.</p> </div> |
| Name                                    | <p>Enter a valid name for the run. Ensure that Run Name is alphanumeric and does not contain any of the following special characters: #, %, &amp;, +, ", and ~.</p> <p>Note that the name is not required to be unique.</p>  |
| Version                                 | <p>By default, the version field is displayed as &lt;&lt;NA&gt;&gt; for the new run being created. Once the run definition is saved, an appropriate version is assigned as either -1 or 0 depending on the authorization permissions. For more information, see the <i>Run Definition Versioning</i> section in the <a href="#">OFS Analytical Applications Infrastructure User Guide</a>.</p>   |
| Active                                  | <p>By default, the Active field is displayed as &lt;&lt;NA&gt;&gt; for the new run being created. Once the run definition is saved, the status becomes <b>Yes</b> if you are an authorizer or <b>No</b> if the created Run needs to be authorized by an authorizer.</p>  |
| Type                                    | <p>Select the type of the run from the drop-down list. The available types are <b>Base Run</b>, <b>Simulation Run</b>, and <b>Instance Run</b>.</p>  |
| Route Execution to High Precedence Node | <p>Select the checkbox if you want to route the execution of this Process definition to the high precedence node set up in the AM server.</p>  |


- Click the **Properties** icon in the Master information grid. The Properties window is displayed.

**Figure F-3 Properties window**

Ok Close

▼ Properties

Effective Start Date 01/01/2011 

Effective End Date 12/31/2100 

Last Operation Type Created

You can edit the following details in the Properties window:

- **Effective Start Date** and **Effective End Date**: Effective Dates is not implemented for Run definition.
  - **Last Operation Type**: By default, this field displays the last change done to the run definition. While creating a run, the field displays the operation type as Created.
5. Click **OK**. The properties are saved for the current Run definition.

## F.1.1 Select Run Condition for Run

You can select conditions to preset the initialization mechanism of a run definition.



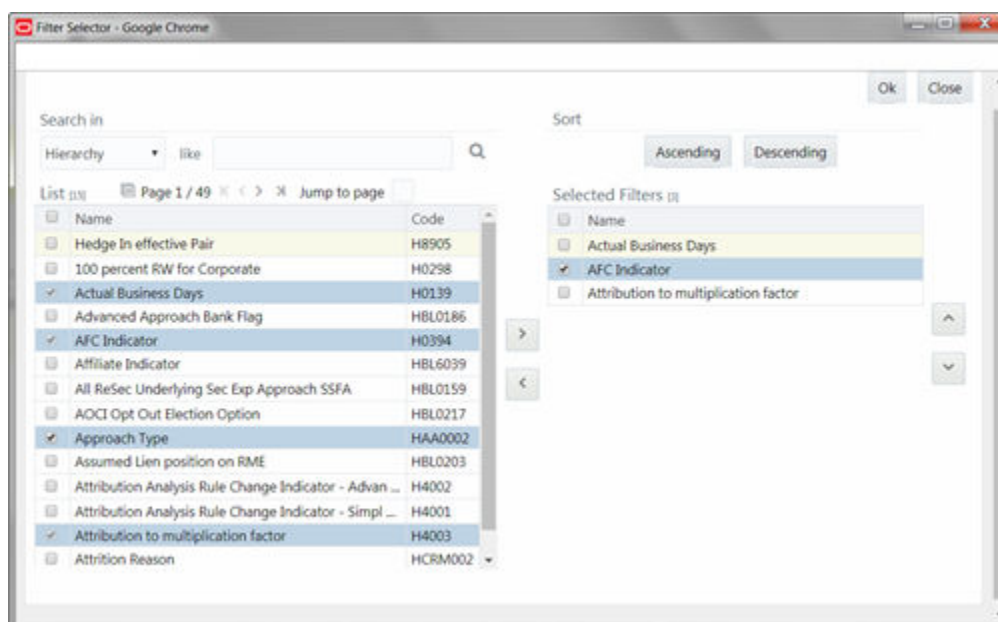
### Note:

Run Condition is not applicable for Instance Run.

To select a condition for a run in the Run Definition (New Mode) window, follow these steps:

1. Click the **Selector** icon from the List toolbar and select the **Run Condition** icon. The Filter Selector window is displayed.

Figure F-4 Filter Selector



The List pane displays Hierarchies or Filters based on the option selected in the drop-down list in the Search in the pane. The options are:

- **Hierarchy:** Displays all Business Hierarchies defined in the information domain.
  - **Filter-Data Element:** Displays all Data Element Filters defined in the information domain.
  - **Filter-Hierarchy:** Displays all Hierarchy Filters defined in the information domain.
  - **Filter-Group:** Displays all Group Filters defined in the information domain.
  - **Filter-Attribute:** Displays all Attribute Filters defined in the information domain.
2. Select the checkbox adjacent to the **Hierarchy** or **Filter** that you want to select as the Run condition and click the **Move** icon.  
To know about the operations you can do in this window, see *Filter Selector Hierarchy\_Selector* window in the [OFS Analytical Applications Infrastructure User Guide](#).
  3. Click **OK**. The selected Hierarchies are listed in the Run Definition (New Mode) window.
  4. If the selected Run condition is a Parent-Child hierarchy, the **Use Descendants** checkbox is displayed. If the checkbox is selected for a hierarchy, the descendants will be automatically applied and need not be selected in node selection from the Hierarchy Browser window.

## F.1.2 Select Jobs for Run

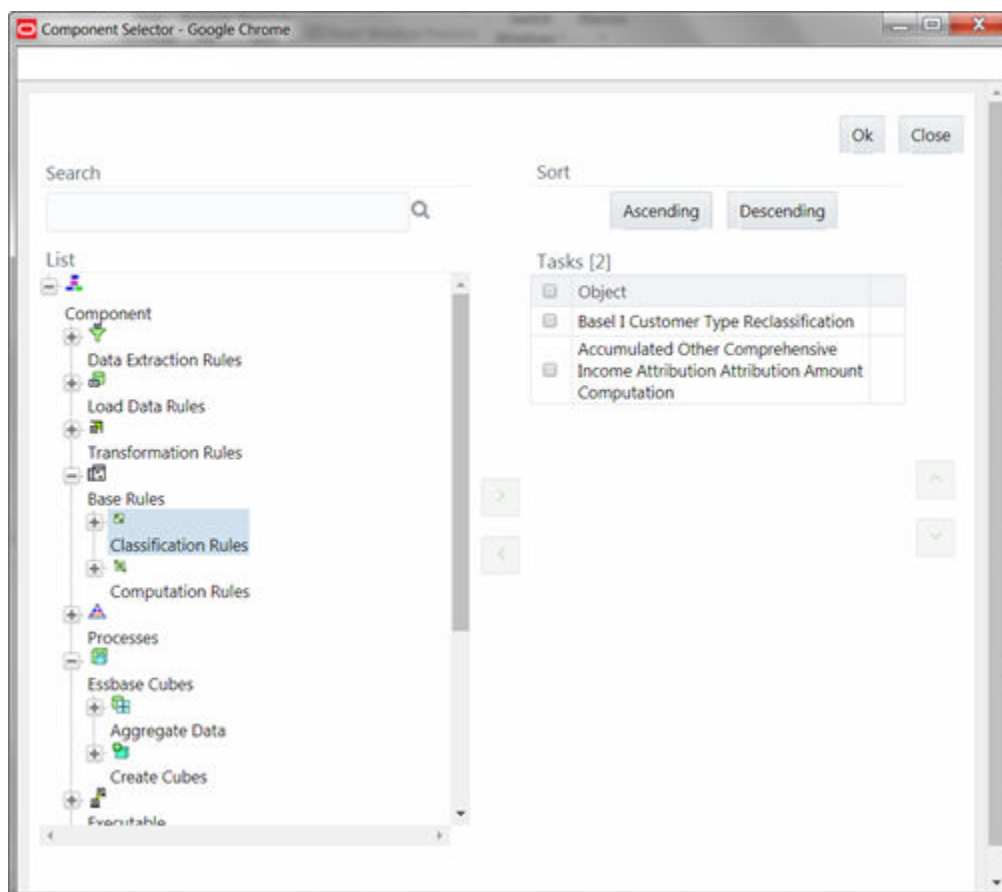
You can select the required jobs for the run definition being created.



To select jobs for Base and Simulation Run, follow these steps:

1. Click the **Selector** icon from the List toolbar and select the icon (**Job**). The Component Selector window is displayed.

**Figure F-5 Component Selector**



On the **List** pane, you can click the **Add** button to expand the members and view the job components. For more information, see the *Process Hierarchy Members* section in the [OFS Analytical Applications Infrastructure User Guide](#).

2. Select a job component and click the **Move** icon to move the component to the Tasks pane.

 **Note:**

You cannot select different Jobs with the same unique code in a run definition. In such cases, the Jobs should be added to a process and the process should be added to the run definition.

In Job Selector window you can also:

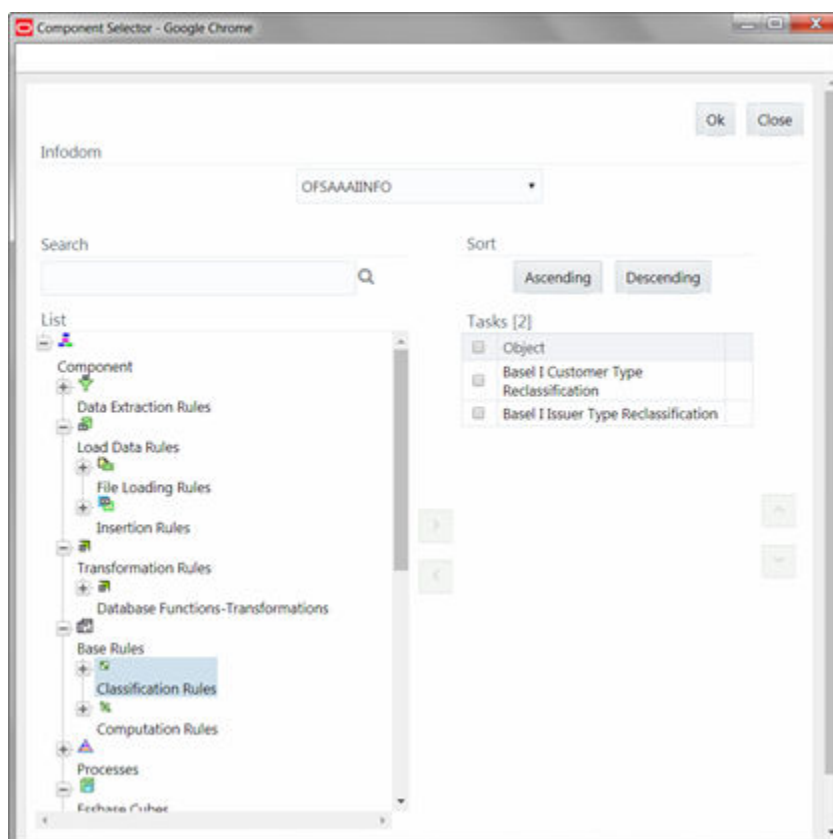
- Search for a component by specifying the nearest keyword and clicking the **Search** icon. It may not display search results if the branch of that component has not been expanded.
- Click **Ascending** or **Descending** buttons to sort the selected components in ascending or descending alphabetical order.
- Click the **Move up** icon or the **Move down** icons to re-order the selected components.
- Click the **Add Parameters** icon to add parameters for the selected components.

 **Note:**

Parameters can be given in the format "param1","param1VALUE" or "\$PARAM2","param2VALUE". Single quotes should not be used.

- Click the **Remove** icon to remove the selected components from the Tasks pane.
3. Click **OK**. The components are listed under the List pane in the Run Definition window.  
To select Jobs for Instance Run:
  4. Click the **Selector** icon from the List toolbar and select the **Job** icon. The Component Selector window is displayed.

**Figure F-6 Component Selector**



For Instance Run, you can add **Base Run** and Simulation Run as Jobs.

5. Select the information domain in which the job component you want to add is present, from the **Infodom** drop-down list. By default, the selected Application's Information Domain is displayed. The drop-down list displays all information domains to which your user group is mapped except sandbox information domains.
6. Select a job component and click the **Move** icon to move the component to the Tasks pane.
  - If you want to add a job component from another information domain, select the required information domain from the drop-down list. The Component list refreshes and you can add the required Job components.
  - For more information see the *Job Selector* section in the [OFS Analytical Applications Infrastructure User Guide](#).
7. Click **OK**. The components are listed under the List pane in the Run Definition window.

### F.1.3 Select Job Condition for Run

You can select only a single job condition for the execution of predefined jobs in a run. A hierarchy, which is already selected as a run condition, cannot be selected as a job condition.

#### Note:

The Cumulative Node Expression for Hierarchy Nodes used as Job Condition in a Run definition should not cross 4000 characters. If it is exceeded, you will get an error while executing the Run definition. Job Condition is not applicable for Instance Run.

To select the job condition for a run, follow these steps:

1. Click the **Selector** icon from the List toolbar and select the **Job Condition** icon. The Filter Selector window is displayed.
2. Select the checkbox adjacent to the hierarchy that you want to select as the Job condition and click the **Move** icon.  
To know about the operations you can do in this window, see the *Filter Selector Hierarchy\_Selector* window in the [OFS Analytical Applications Infrastructure User Guide](#).

#### Note:

Ensure that you have selected only one Job Condition and the same hierarchy is not selected as both Run and Job conditions.

3. Click **OK**.  
From the List grid in the Run Definition (New Mode) window, you can also:
  - Click the **Edit** icon to change a selected run condition to job condition and conversely. For Instance Run, the **Edit** is disabled.
  - Click the **Show Details** icon to view the metadata information of the selected member.

- If the selected Job condition is a Parent-Child hierarchy, the **Use Descendants** checkbox is displayed. If the checkbox is selected for a hierarchy, the descendants will be automatically applied and need not be selected in node selection from the Hierarchy Browser window.

Once all the necessary information in the first window of the Run Definition (New Mode) is populated, click **Next** to navigate to the concurrent procedures of defining a Rule.

**Figure F-7 Run Definition New Mode**

4.

The second window of Run Definition (New Mode) window displays all the information you have provided in the Linked to and Master information grids. You can view the selected filters in the Run Condition grid and selected jobs along with the job condition in the Detail Information grid in case of Base Run and Simulation Run. For Instance Run, only jobs will be displayed.

Expand a job which is a process, then the Object, Parent Object, Precedence, and Type columns are populated.

## F.1.4 Hierarchical Member Selection

In the Run Condition grid, you can modify the run conditions by including hierarchical members.



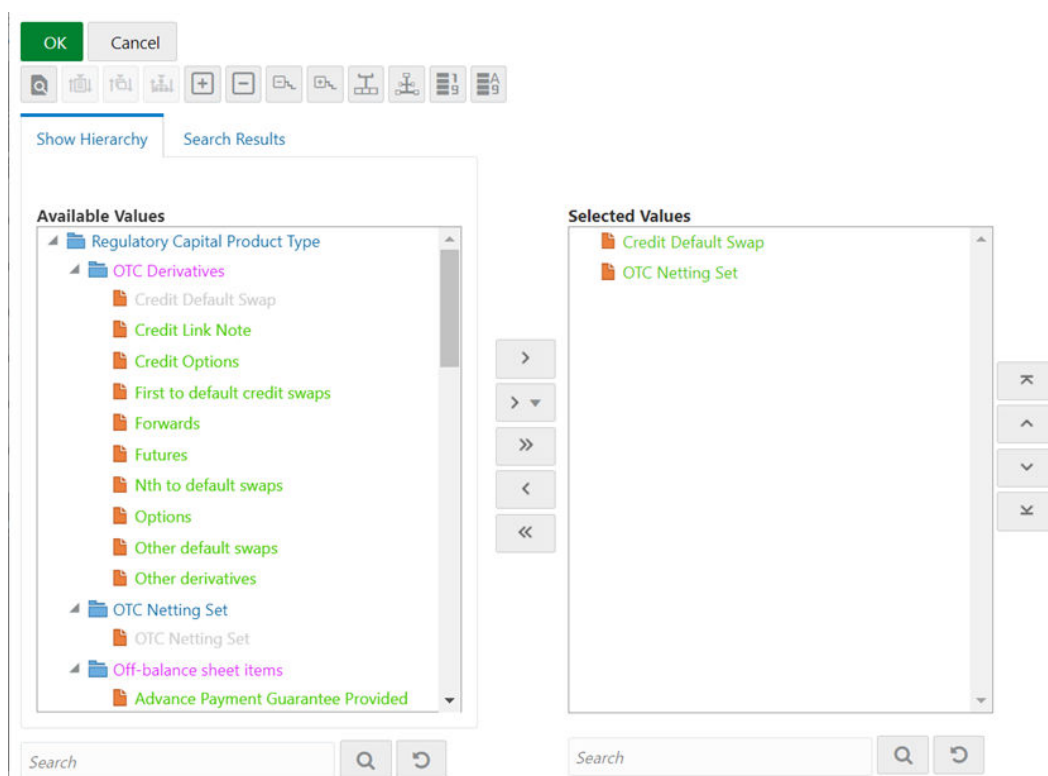
### Note:

This option will be available only if you have selected Hierarchy as the Run condition.

To modify a run condition, follow these steps:

1. Click the **Modify** icon corresponding to the run condition you want to modify. The Hierarchy Browser window is displayed.

Figure F-8 Hierarchy Selection



2. Select a member/node and click the **Move** icon to select the same. Click the **Sort Descending** icon to select the member as Self, Self & Descendants, Self & Children, Parent, Siblings, Children, Descendants, or Last Descendants. For more information, see the *Hierarchical Member Selection Modes* section in the [OFS Analytical Applications Infrastructure User Guide](#).

In the Hierarchy Browser window you can also:

- Click the **Sort Members** icon to sort members based on the path.
- Click the **Sort Member Descending** icon to sort hierarchy (top to bottom).
- Click the **Sort Level** icon to sort based on level.
- Click the **Collapse** icon or the **Expand** icon to collapse or expand the members under a node respectively.
- Click the **Collapse** icon or the **Expand** icon to collapse or expand the selected branch respectively.
- Click the **Focus** icon to focus only on the selected branch. The Available Values pane shows the members of the selected branch only. Click the **Normal View** icon to go back to normal view.
- Click the **Number Right** icon to display member's numeric codes on the right. The icon changes to **Number Left** icon.
- Click the **Number Left** icon to display member's numeric codes on the left. The icon changes to **Show Numbers** icon.
- Click the **Show Numbers** icon to show only member names. This is the default view. The icon changes to **Number Left** icon.

- Click the **Names Right** icon to display member's alphanumeric codes on the right. The icon changes to **Names Left** icon.
  - Click the **Names Left** icon to display member's alphanumeric codes on the left. The icon changes to .
  - Click the **Show Number and Name** icon to display only member names. This is the default view. The icon changes to **Show Number and Name** icon .
  - Select a member and click the **Sort Ascending** icon or **Sort Descending** icon to re-arrange the members in the Selected Values pane.
  - Select a member and click the **Move Top** icon to move it to the top or click the **Move bottom** icon to move it to the bottom.
  - Click the **Search** icon to launch the Search panel. Here you can search based on **Dimension Member Numeric Code**, **Dimension Member Name**, or **Dimension Member Alphanumeric Code**. You can also search in the grid based on member name using the Search field.
3. Click the **Run Condition** icon corresponding to the run condition to view the SQL query. The SQL query is formed based on the hierarchical member selection mode. The Preview SQL Query window is displayed with the resultant SQL equivalent of the run condition. The Detail Information grid displays the jobs and job condition defined for the run definition.
- Click the **View** icon adjacent to the job names to re-order the selected jobs.
  - Click the **Hierarchy Browser** icon beside the job condition to launch the Hierarchy Browser window. This option is available only if a Hierarchy is selected as the Job condition.
  - Select the checkbox corresponding to the job if you want to apply the Job condition to that job.
  - Click a job to view its definition details. For example, if it is a Rule, the Show Details window displays the Rule Definition (View Mode) window.

You can click **Back** to navigate back to the first page of the Run Definition (New Mode) window to modify any details.

Once all the necessary details are entered, click **Save**. If you are an authorizer, the version of the run definition will be **0**, else it will be **-1**.

The Audit Trail section at the bottom of Run Definition (New Mode) window displays metadata information about the Run definition created. The User Comments section facilitates you to add or update additional information as comments.

## F.2 View Run Definition

You can view individual run definition details at any given point.

To view the existing Run definition details in the Run window, follow these steps:

1. Select the checkbox adjacent to the **Run Code** whose details are to be viewed.
2. Click the **View** icon in the List toolbar.  
The Run Definition (View Mode) window is displayed with all the details of the selected Run. Click Next and Back buttons to navigate back and forth in the Run Definition (View Mode) window.

## F.3 Edit Run Definition

You can modify all the details except ID, Code, Version, Active Status, and Type of a run definition.

To modify an existing run definition in the Run window, follow these steps:

1. Select the checkbox adjacent to the **Run Code** whose details are to be updated.
2. Click the **Edit** icon in the List toolbar. The **Edit** button is disabled if you have selected multiple Runs. The Run Definition (Edit Mode) window is displayed.
3. Edit the **Run** details as required. For more information, see [Create Run](#).
4. Click **Save** to save the changes.

### F.3.1 Run Definition Versioning

#### For an authorizer:

When you create a new run, its version will be 0. When you edit an existing run and try to save, you are prompted whether to save it as a new version or not. If you click Yes, a new run is created with the version as 0 and the run having version as 0 will be saved with the version as maximum version +1. If you click No, the existing run is overwritten and the version will be as it is.

#### For a non-authorizer:

When you create a new run, its version will be -1. Once the run is approved by an authorizer, the version becomes 0. When you edit an existing run and try to save, you are prompted whether to save it as a new version or not. If you click Yes, a new run is created with the version as -1. Once the run is approved, its version becomes 0 and the run having version as 0 will be saved with the version as maximum version +1. If you click No, the existing run is overwritten, and the Active flag of the run becomes N (which you can view from the Summary window). The version remains the same. Once the run gets approved, its Active flag changes to Y.



#### Note:

- The run with version 0 is the latest one and it can have many versions say 1 to n, where 1 is the oldest run and n is the next to the latest.
- A run with version -1 will always be in an Inactive state.

You can view all the versions of a particular rule by providing the run's name or code and clicking **Search** in the Search and Filter grid. (Ensure the Version field is cleared since it is auto-populated with 0).

## F.4 Copy Run Definition

This option facilitates you to quickly create a new run definition based on an existing run by updating the values of the required fields.

To copy an existing Run Definition in the Run window, follow these steps:

1. Select the checkbox adjacent to the Run Code whose details are to be duplicated.
2. Click the **Copy** icon in the List toolbar to copy a selected Run definition. The Run Definition (Copy Mode) window is displayed. Copy button is disabled if you have selected multiple Runs.

In the Run Definition (Copy Mode) window you can:

- Create a new Run definition with existing variables. Specify a new **Run Code** and **Folder**. Click **Save**.
- Create a new Run definition by updating the required variables. Specify a new **Run Code**, **Folder**, and update other required details. For more information, see [Create Run](#). Click **Save**.

The new Run definition details are displayed in the Run window. By default, version 0 is set if you have authorization rights, else the version is set to -1.

## F.5 Authorize Run Definition

All the actions in a run definition should be approved by an authorizer. An authorizer can approve a pre-defined run definition for further execution or reject an inappropriate run definition listed within the Run window. To approve/ reject run definitions in the Process window, you need to have the Authorize role mapped to your user group.

If you are an authorizer, the run definition is auto-approved as you save it and the **Active** status is set to **Yes**. Otherwise, the **Active** status is set to No and an authorizer needs to approve it to change the **Active** status to **Yes**.

To approve/reject runs, follow these steps:

1. Select the checkbox(s) adjacent to the required Run Codes.
2. Do one of the following:
  - To approve the selected run definitions, click **Authorize**, and select **Approve**.
  - To reject the selected run definitions, click **Authorize** and select **Reject**.

A run is made available for use only after the approval. For a rejected definition a comment with the rejection details will be added.

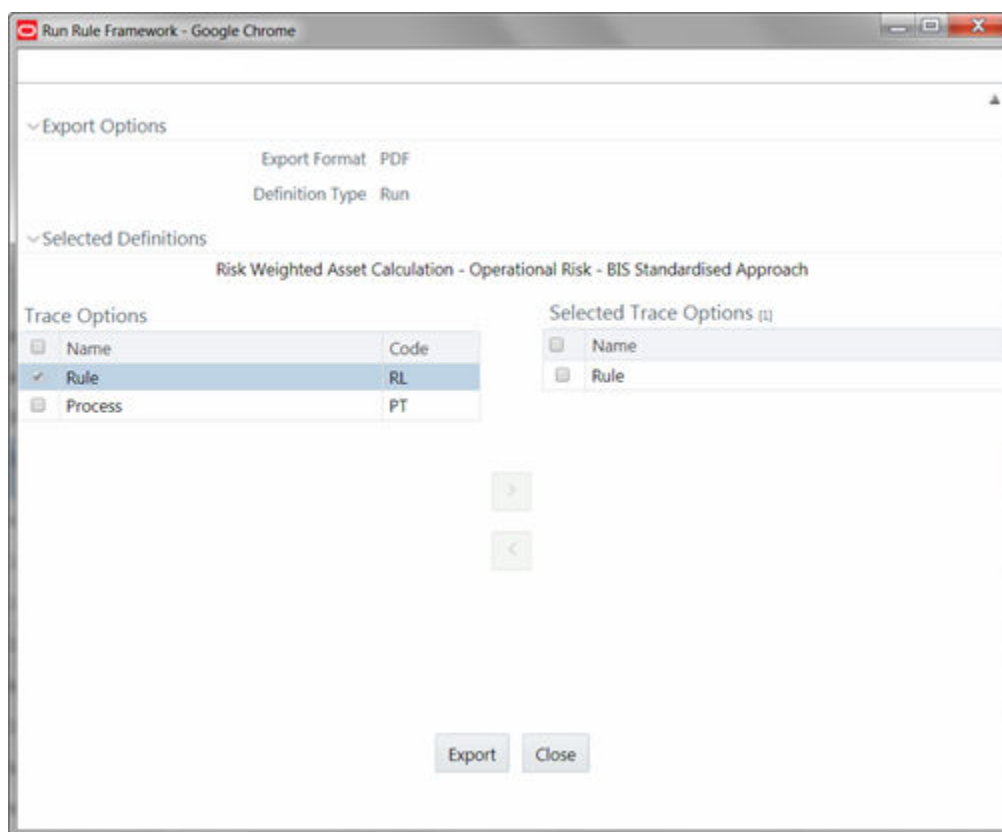
## F.6 Export Run to PDF

This option allows you to export multiple run definitions to a PDF file. You have the option to export only the rules or processes in the run definition to PDF by selecting the required Trace Options. In the case of Instance Run, you can select Runs that you want to export, apart from Rules and Processes.

To export the run definitions in the Run window, follow these steps:

1. Select the checkbox(s) adjacent to the required Run Codes.
2. Click the **Export** icon in the List toolbar and click the **PDF** button in the pop-up window. The Export dialog box is displayed.



**Figure F-9 Run Rule Framework – Export Options**

The Export dialog displays the Export Format, Definition Type, the names of the Selected Definitions, and the Trace Options.

- Select the checkbox adjacent to **Rule** or **Process** if you want to export only the rule details or Process details respectively. If you do not select any checkbox, all details of the selected run definitions will be exported.
  - Click the **Move** icon. The selected options are displayed in the Selected Trace Options pane. You can also select a trace option and click the **Remove** icon to deselect it from the Selected Trace Options pane.
3. Click **Export**. The process is initiated and is displayed in a pop-up specific to the current download. Once the PDF is generated, you can open/save the file from the File Download dialog.

You can either save the file on the local machine or view the file contents in a PDF viewer. The downloaded PDF displays all the details such as Linked to, Properties, Master info, Audit Trail, List, and Comments of all the Run definitions selected.

## F.7 Fire Run

This feature facilitates you to execute a previously created Run. You can execute the run definition as a batch from the Operations module.

To execute a run definition, follow these steps:

1. Select the checkbox adjacent to the Run Code which you want to execute and click Fire Run in the List toolbar. The Fire Run window is displayed.

**Figure F-10 Fire Run**

The screenshot shows a dialog box titled "Fire Run - Google Chrome". It contains the following fields and options:

- Run Definition:**
  - Name: Risk Weighted Asset Calculation - Operational Risk - BIS Standardised Approach
  - Request Type: Single (dropdown)
- Execution Mode:**
  - Batch: Create (dropdown)
  - Wait: No (dropdown)
- Others:**
  - Parameters: (empty text field)
  - Filters: (empty text area)

2. Enter the field details as below:
  - a. **Name:** This field displays the name of the selected run.
  - b. **Request Type:** Select the request type either as Single or as Multiple from the drop-down list.
    - **Single Request:** You need to provide the MIS Date during Batch execution from the Operations module.
    - **Multiple Request:** You can run the batch with the same MIS date multiple times from the Operations module.
  - c. **Batch:** Select the Batch either as Create or as Create & Execute from the drop-down list.
    - **Create:** The batch will be created and needs to be executed from the Operations module.
    - **Create & Execute:** The batch will be created and executed. You can monitor it from the Operations module.
  - d. **MIS Date:** Click the **Calendar** icon to display the Calendar. Select the MIS Date from the calendar.  
This field is displayed only if you have selected Request Type as **Multiple** with any of the Batch mode or Request Type as **Single** with Batch mode as **Create & Execute**.

- e. **Wait:** Select **Yes** and provide the Duration in seconds after which the run definition should be executed. Select **No** to execute it immediately.
  - f. **Parameters:** Enter the required parameters in the field provided. The parameter provided in this field is considered for Run execution.
  - g. **Filters:** Enter the filter details in the field provided. The filters provided in this field are considered for Run execution.
3. Click **OK**. The details are saved and the run definition is executed as per the Fire Run details.  
For information on runtime parameters supported during run execution, see the *Passing Runtime Parameters* section [OFS Analytical Applications Infrastructure User Guide](#).

## F.8 Delete Run Definition

You can remove the Run definition(s) which are no longer required in the system by deleting from Run window. However, it is a soft deletion only. An authorizer has to approve the deletion.

To delete a run definition, follow these steps:

1. Select the checkbox(s) adjacent to the Run Codes whose details are to be removed.
2. Click the **Delete** icon from the List toolbar.
3. Click **OK** in the information dialog to confirm the deletion.  
An information dialog is displayed confirming the deletion of the Run definitions and asking the authorization of the same.