Oracle Financial Services Analytical Applications Enterprise Risk Management Customer Deliverables

December 2015 Part Number: E69398-01





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INTRODUCTION

For the Oracle Financial Services risk management products, apart from the release notes, installation document and user guide, there are some additional documents that are delivered, which helps in understanding implementation/ data flow of the product. Prior to OFSAA 8.0, these documents used to be part of a folder 'Customer deliverables' in the installation kit. From OFSAA 8.0 onwards, these documents are available in the OTN itself or in MOS (details of the document ID is provided in OTN).

Purpose of this document is to give a brief introduction for the following documents and their intended usage:

- Download specifications (DL specs)
- Technical metadata document
- Business metadata document
- Rule metadata document
- Runchart document

1. DOWNLOAD SPECIFICATIONS

Download specifications (DL Specs) document provides an efficient way to manage the sourcing of data into the staging area.

For each staging table/column, it provides key information such as definition, data type, primary key (PK), foreign key (FK), domain name, and so on.

Additionally, it provides information about which application(s) is using the column in the staging table and also indicates whether this column is mandatory or optional.

In short, this document describes the properties of each column of input source data as expected by the product.

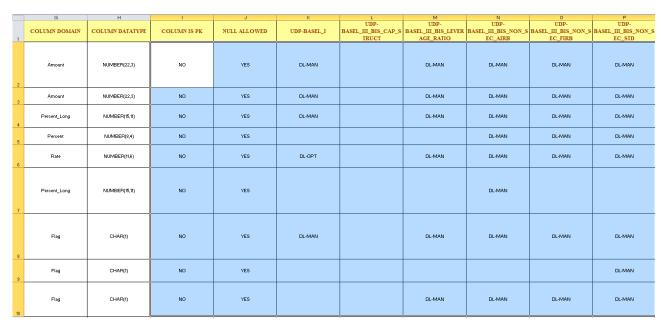
Note: A column can be a nullable column, but may be marked as mandatory for a product based on its further usage in the process.

This document is generated from the staging data model of Financial Service Data Foundation application (FSDF). Hence, as per the naming convention followed, most of the tables present in this document are prefixed with "STG_" and in some applications like Liquidity Risk management (LRM); user can see the "FSI" tables as well.

Below is a sample of the DL specs of ERM: Basel (Capital adequacy pack) application – stage cards table:



Sample DL Spec



Sample DL Spec

Stg_Cards table will store the download information about cards related contracts (entity description is in col B of the Figure 1).

Take a column $\mathbf{n}_{\mathbf{drawn}_{\mathbf{amt}}}$ (row 2 in Figure 1) present in this table, which will store the sum total of amounts drawn till date (Description of column is in col F of the Figure 1). For instance, a customer draws 100 and then pays back 20 and then draws 50. While the End of Period Balance (EOP Balance) will be 130 (100 - 20 + 50), the drawn amount will be 150 (100 + 50).

This particular column is not a Primary Key (PK) and hence null values are allowed.(row 2, col J in the Figure 2)

For BASEL, column K through last column in the Excel will provide information regarding, for which accord, which jurisdiction, and which process this column value will be mandatory/not mandatory/optional.

- DL-MAN indicates that it's mandatory to load input data for the respective column.
- DL-OPT indicates that loading the data for respective column is optional.
- DL-NO indicates that data for respective column is not required.

2. TECHNICAL METADATA

This document contains the details about each table to table mapping, (henceforth referred to as T2T in this document) that is delivered out of the box, with the product.

This document helps user to understand flow of data from **source** to **target** tables for each T2T and the tables that are being accessed by the Data transformation procedures/functions/packages.

Note: Code for Out of the box procedures/functions/packages are not shared as that is Oracle IP. Technical metadata and business metadata together helps the consultants to understand the data flow without the need for the code.

Below is a sample of the Technical metadata of ERM: LRM (Treasury pack) application.

Extract Name	ACCOUNT_MITIGANT_MAP_POPULATION			
	STG_ACCOUNT_MITIGANT_MAP LEFT OUTER JOIN			
	DIM_ACCOUNT ON			
	STG_ACCOUNT_MITIGANT_MAP.V_ACCOUNT_NUMBER =			
	DIM_ACCOUNT.V_ACCOUNT_NUMBER AND			
	COALESCE(DIM_ACCOUNT.F_LATEST_RECORD_INDICATOR			
	'Y') = 'Y' LEFT OUTER JOIN DIM_MITIGANT ON			
	STG_ACCOUNT_MITIGANT_MAP.V_MITIGANT_CODE =			
	DIM_MITIGANT.V_MITIGANT_CODE AND			
	DIM_MITIGANT.F_LATEST_RECORD_INDICATOR = 'Y' LEFT			
	OUTER JOIN DIM_DATES ON			
	STG_ACCOUNT_MITIGANT_MAP.FIC_MIS_DATE =			
ANSI Join	DIM_DATES.D_CALENDAR_DATE			
Filter Condition	DIM_DATES.D_CALENDAR_DATE=\$MISDATE			
JOIN Condition				

Source Table	Source column	Destination Table	Destination Column	Expression
STG_ACCOUNT_MITIGANT_MAP	N_MITIGANT_WEIGHT	FCT_ACCOUNT_MITIGANT_MAP	N_MITIGANT_WEIGHT	
EXPRESSION	N_MIS_DATE_SKEY	FCT_ACCOUNT_MITIGANT_MAP	N_MIS_DATE_SKEY	DIM_DATES.N_DATE_SKEY
				COALESCE(DIM_MITIGANT.N_MITIGANT_SKEY,-
EXPRESSION	N_MITIGANT_SKEY	FCT_ACCOUNT_MITIGANT_MAP	N_MITIGANT_SKEY	1)
DIM ACCOUNT	N ACCT SKEY	ECT ACCOUNT MITIGANT MAP	N ACCT SKEY	

Sample Technical Metadata

In Figure 3, Extract name is the name of the T2T.

ANSI Join provides the join for all tables that are participating in the T2T.

Filters are what are used to select the subset of the data that is selected by using the join condition, filtered out by the criteria provided in this clause.

User can refer the mapping of source and target tables (<table.columns>) with respective each T2T's. In some cases, there may some expression involved which may be just picking up skeys from the dimension tables or some transformation of data as required by the application.

User can also create their own T2T as per the requirements of the Bank. (Refer OFSAAI_User_Guide_8.0 guide)

3. BUSINESS METADATA

This document contains the details about Measures, Hierarchy, Alias, Cubes, Dimensions, Datasets, Measures, Business Processors and Derived entity that are packaged out of the box with the product.

It is used for,

- Identifying the flow/use of columns in the tables that got populated by T2Ts/Loading and updated by DTs.
- *Understanding the relationship between tables that are used in the definitions.*
- Columns used in hierarchy definitions.
- Formulae/calculations and so on.

Name of Sheet	Link
Measure Hierarchy	Measure Hierarchy
Hierarchies - BI	<u>Hierarchies - Bl</u>
Alias	Alias
Hierarchies - Non BI	Hierarchies - Non Bl
Hierarchy Attributes	Hierarchy Attributes
Cubes	Cubes
Dimensions	<u>Dimensions</u>
Datasets	<u>Datasets</u>
Computed Measures	Computed Measures
Business Processor	Business Processor
Base Measures	Base Measures
	Name of Sheet Measure Hierarchy Hierarchies - BI Alias Hierarchies - Non BI Hierarchy Attributes Cubes Dimensions Datasets Computed Measures Business Processor Base Measures

Summary sheet

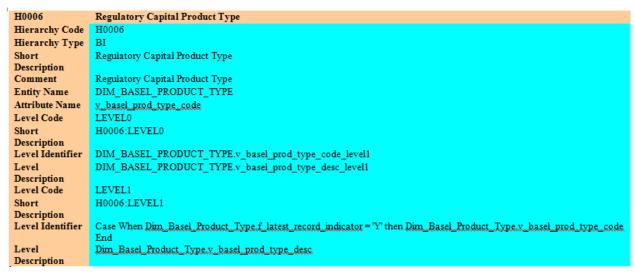
Figure 4 is a sample 'summary' worksheet from a business metadata spreadsheet. Each element listed here will be linked to a worksheet/tab in the spreadsheet.

Hierarchies:

Business Hierarchy refers to Organizing Data into logical tree structure to represent the groups and relations among various levels at which measure can be viewed.

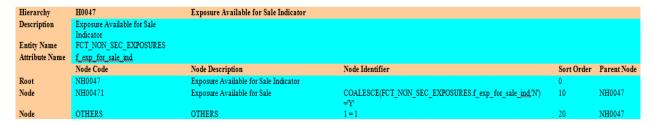
Details of the Out of Box (OOB) Hierarchies (BI and Non-BI) are mentioned in this tab.

Below is sample of BI and Non –BI Hierarchy for ERM: Basel (Capital adequacy pack) application



Example of BI Hierarchy

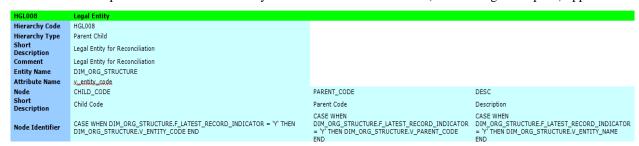
The above image shows the definition of the BI hierarchy - its levels with their respective descriptions, level codes and respective level identifier. (Refer OFSAAI User Guide 8.0 guide for more information about BI hierarchy)



Example of Non-BI Hierarchy

The above image shows the definition of the Non-BI hierarchy - its nodes with their respective descriptions, node codes and respective node identifier. (Refer OFSAAI User Guide 8.0 guide for more information about Non-BI hierarchy)

Below is the example for Parent-child hierarchy for ERM: GL Reconciliation (Data Management pack) application.



Example of Parent child Hierarchy

The above image shows the definition of a parent and child hierarchy. (Refer

OFSAAI_User_Guide_8.0 guide for more information about Parent-child hierarchy).

Datasets:

These section contains the details about a group of tables whose inter-relationship is defined by specifying a join condition between the various tables.

Below is sample Datasets for ERM: GL Reconciliation (Data Management pack) application - Bills Contracts Dataset for Reconciliation.

Dataset Code	Dataset Name	From Clause	Ansi Join	Date Filter	Order By Clause
DSGL001	Bills Contracts Dataset for Reconciliation	STG_BILLS_CONTRACTS DIM_BUSINESS_UNIT DIM_CUSTOMER_TYPE DIM_ORG_UNIT DIM_GEORGAPHY DIM_PRODUCT DIM_CURRENCY DIM_ORG_STRUCTURE DIM_GAAP	STG_BILLS_CONTRACTS INNER JOIN DIM_CURRENCY ON DIM_CURRENCY.V_ISO_CURRENCY_CD = STG_BILLS_CONTRACTS.V_CCY_CODE INNER JOIN DIM_ORG_STRUCTURE ON DIM_ORG_STRUCTURE.V_ENTITY_CODE = STG_BILLS_CONTRACTS.V_LV_CODE AND DIM_ORG_STRUCTURE.F_latest_record_indicator='Y' INNER JOIN DIM_DATES ON DIM_DATES.D_CALENDAR DATE = STG_BILLS_CONTRACTS.FIC_MIS_DATE INNER JOIN DIM_GAAP ON DIM_GAAP.V_GAAP_CODE = STG_BILLS_CONTRACTS.V_GAAP_CODE AND DIM_GAAP_I_JATEST_V_GAAP_CODE AND DIM_GAAP.I_JATEST_V_GAAP_CODE AND DIM_BUSINESS_UNIT.V_BUSINESS_UNIT_CODE = STG_BILLS_CONTRACTS.V_BUSINESS_UNIT_CODE AND DIM_BUSINESS_UNIT.I_JATEST_USINESS_UNIT_CODE AND DIM_BUSINESS_UNIT.I_JATEST_USINESS_UNIT_CODE AND DIM_BUSINESS_UNIT.I_JATEST_USINESS_UNIT_CODE AND DIM_BUSINESS_UNIT.I_JATEST_USINESS_UNIT_CODE AND DIM_GUSINESS_UNIT.I_JATEST_USINESS_UNIT_CODE = STG_BILLS_CONTRACTS.V_BUSINESS_UNIT_CODE = STG_BILLS_CONTRACTS.V_CLASS_CODE = STC_BILLS_CONTRACTS.V_CLASS_CODE = STC_BILLS_CONTRACTS_V_LISC_SCODE AND	1=1	
		DIM_DATES	STG BILLS_CONTRACTS.V_CLASS_CODE AND DIM_CUSTOMER_TYPE.f_latest_record_indicator="Y' LEFT OUTER JOIN DIM_ORG_UNIT_ODE = STG_BILLS_CONTRACTS.V_ORG_UNIT_CODE AND DIM_ORG_UNIT.f_latest_record_indicator="Y' LEFT OUTER JOIN DIM_GEOGRAPHY ON DIM_GEOGRAPHY.V_ACCT_BRANCH_CODE AND DIM_GEOGRAPHY.V_ACCT_BRANCH_CODE AND DIM_GEOGRAPHY.V_ACCT_BRANCH_CODE AND DIM_GEOGRAPHY.ORD CODE = STG_BILLS_CONTRACTS.V_BRANCH_CODE AND DIM_PRODUCT_ORD CODE = STG_BILLS_CONTRACTS.V_PROD_CODE AND DIM_PRODUCT.f_latest_record_indicator="Y" LEFT OUTER JOIN DIM_PRODUCT_ORD CODE AND DIM_PRODUCT.f. latest_record_indicator="Y" LEFT OUTER JOIN DIM_PRODUCT.f. late		

Sample of Dataset

The above image shows the list of tables(from clause), and the relationship (ANSI join).

The Date Filter section shows if there are any date related filter that need to be applied. There is also business exclusion to capture all the other filters on data.

The Order By condition enables you to sort the dimension data in order. The order of the Dimension nodes will be maintained only for BI enabled hierarchies. The Order By condition is specific to the Essbase.

Refer OFSAAI User Guide 8.0 guide for more information about Datasets.

Alias:

Alias section contains the details about Aliases used for out of box (OOB) table.

Alias Name	Table Name	Filter Condition
ASSET1	DIM_MR_ASSET	F_LATEST_RECORD_INDICATOR='Y'
ASSET2	DIM_MR_ASSET	F_LATEST_RECORD_INDICATOR='Y'
ASSETCLASS1	DIM_MR_ASSET_CLASS	F_LATEST_RECORD_INDICATOR = 'Y'
ASSETCLASS2	DIM_MR_ASSET_CLASS	F_LATEST_RECORD_INDICATOR=Y
CURRENCY1	CURRENCY_MASTER	F_LATEST_RECORD_INDICATOR='Y'

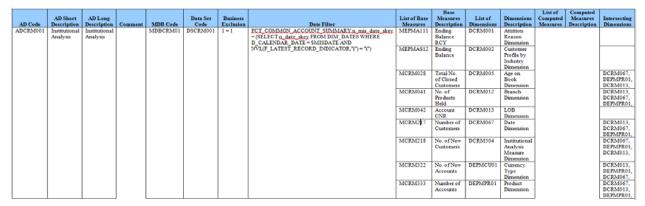
Sample of Aliases

Above image shows a few aliases with the table names with the filter conditions.

Cubes:

In the applications where Essbase cubes are built for analytics, cube definitions are provided in the worksheet.

Below is the sample of cube used in Profitability Application Pack - Institutional Analysis



Sample of Cubes

The above image explains about the list of measures and dimensions, logic levels used for **ADCRM001** cube.

To know more about cubes and alias refer OFSAAI_User_Guide_8.0 guide.

Business Measures:

Business Measure refers to a uniquely named data element of relevance which can be used to define views within the data warehouse. It typically implies aggregated information as opposed to information at a detailed granular level that is available before adequate transformations.

Below is the sample of Business Measures for ERM: Liquid risk management application (Treasury pack).



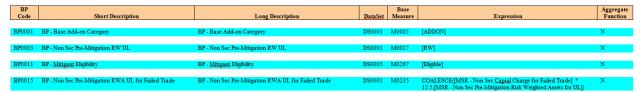
Sample of Business Measures

Business Processor:

A Business Processor encapsulates business logic for assigning a value to a measure as a function of observed values for other measures. Measurements that require complex transformations that entail transforming data based on a function of available base measures require Business Processors.

A supervisory requirement necessitates the definition of such complex transformations with available metadata constructs. Business Processors are metadata constructs that are used in the definition of such complex rules. Business Processors are designed to update a measure with another computed value. When a rule that is defined with a Business Processor is processed, the newly computed value is updated on the defined target.

Below is the sample of Business Processor for ERM: Basel Application (Capital adequacy pack).



Sample of Business Processors

To know more about Business processor and Measures refer OFSAAI User Guide 8.0 guide.

4. RULE METADATA

This document contains the details about the TYPE II and TYPE III rules used in the application.

TYPE III Rule:

Computational (TYPE III) rule consists of a Data Set, Source is **Hierarchy** and Target is **Business Processor.**

Below is sample of TYPE III rule for ERM: Liquid Risk Management application (Treasury pack).

Name	LRM - Time Bucket Assignment for Account Attributes
Description	LRM
Rule ID	LRMRULE0482
Туре	TYPE3
Dataset Name	DSLRM177 - LRM - Time Bucket Assignment For Account Attributes
Source Hierarchies	
HLRM027	LRM - Date
Target	
BPLRM398	BP - Time Bucket Assignment For Account Attributes
BPLRM413	BP - Effective Maturity Time Bucket Assignment
BPLRM415	BP - Effective Residual Maturity Time Bucket Assignment

Sample of TYPE III rule

In the above image Source is HLRM027 hierarchy and targets are BPLRM398, BPLRM413 and BRLRM415 business processors.

TYPE II Rule:

Assignment Rules (TYPE II Rule) consists of a Data Set, Source is Hierarchy and Target is **Hierarchy**

Below is sample of TYPE II rule for ERM: Liquid Risk Management application (Treasury pack).

Name	LRM - Standard Product Type Reclassification
Description	LRM
Rule ID	LRMRULE0259
Type	TYPE2
Dataset Name	DSLRM094 - LRM - Standard Product Type Reclassification
Source Hierarchies	
HLRM0482	LRM - LRM Product
Target	
HLRM0346	LRM - LRM Standard Product Type

Sample of TYPE II rule

Summary section of this document provides details about the description of rule, datsets , target table and its columns for the respective type of rules.

Below is sample of Summary section for ERM: Liquid Risk Management application (Treasury pack).

Rule Code	Rule Description	Type	Dataset Code	Target Table	Target Column
1348095442031	Consolidated Asset Value of an Entity	TYPE3	DS0089	FCT_ENTITY_INFO	N_CONSOLIDATED_ASSETS
1348095745122	Proportionate Consolidated Asset Value of an Entity	TYPE3	DS0010	FCT_ENTITY_INFO	N_NON_REG_ENTITY_PROP_EXP
1348096070542	Total Additional Asset of an Entity where Bank have Significant Investment	TYPE3	DSBL0011	FCT_STANDARD_ACCT_HEAD	N_STD_ACCT_HEAD_AMT
1228217440148	Non Sec Cap Consl Deduction Approach - STD	TYPE2	DS0039	DIM_STANDARD_ACCT_HEAD	V_STD_ACCT_HEAD_ID
1228143985100	Cap Consl Non Sec Elimination of Exp to Internal Customer	TYPE2	DS0039	DIM_STANDARD_ACCT_HEAD	V_STD_ACCT_HEAD_ID
1228147825009	Cap Consl Non Sec Deduction for Reciprocal Cross-holding	TYPE2	DSBL0099	DIM_STANDARD_ACCT_HEAD	V_STD_ACCT_HEAD_ID

5. RUNCHART

Runchart, 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.

Below is sample from runchart of ERM: Basel application .

Execution Order	Run Name/Batch Id	Mode	Туре	Remarks
O GC				
1	Setup Table Data Load	Data Load	Excel Upload	Refer relevant tables in Data Load Sheet
2	Stage Dimension Data Load	Data Load	Excel Upload	Refer relevant tables in Data Load Sheet
3	Extracts Data Load	Data Load	Excel Upload	Refer relevant tables in Data Load Sheet
	ICC Execution			
4	<infodom>_SCD</infodom>	ICC Batch	Individual Batch Execution	First time all the tasks needs to be executed. Then whenever data changes or new data comes in then releavant task needs to be executed.
5	<infodom>_BASEL_COMMON</infodom>	ICC Batch	Individual Batch Execution	Needs to be executed when required
6	<pre><infodom>_PARTY_FINANCIAL_DATA_POPULATION</infodom></pre>	ICC Batch	Individual Batch Execution	Needs to be executed when required
7	<infodom>_BASEL_DAILY</infodom>	ICC Batch	Individual Batch Execution	Needs to be executed daily.
		_		
	PR2 Execution			
8	IND Basel III Capital Calculation - Standardised Approach - Indian Banks	RRF Batch	Group Batch Execution	Execution thro' run execution screeen
9	IND Basel III Capital Calculation - Standardised Approach - Foreign Banks	RRF Batch	Group Batch Execution	Execution thro' run execution screeen
10	IND Basel III Leverage Ratio - Indian Banks	RRF Batch	Group Batch Execution	Execution thro' run execution screeen
11	IND Basel III Leverage Ratio - Foreign Banks	RRF Batch	Group Batch Execution	Execution thro' run execution screeen
12	Risk Weighted Asset Calculation - Credit Risk - RBI Standardised Approach	RRF Batch	Group Batch Execution	Execution thro' run execution screeen
13	Risk Weighted Asset Calculation - Market Risk - RBI Standardised Approach	RRF Batch	Group Batch Execution	Execution thro' run execution screeen
14	ATTRIBUTION SIMPLE APPROACH	RRF Batch	Group Batch Execution	Needs to be executed when two attribution analysis has to be done between the data of two dates.
15	Staging Data Population - Market Risk - RBI Standardised Approach	RRF Batch	Group Batch Execution	Pre requisite for Market Risk and Capital Runs
16	Risk Weighted Asset Calculation - Operational Risk - RBI	RRF Batch	Group Batch Execution	Execution thro' run execution screeen
17	Capital Calculation - RBI Standardised Approach - Foreign Banks	RRF Batch	Group Batch Execution	Execution thro' run execution screeen
18	Capital Calculation - RBI Standardised Approach - Indian Banks	RRF Batch	Group Batch	Execution thro' run execution screeen

Sample of Runchart

Above image explains that user has to load data into mentioned setup, stage, dimensions tables via excel upload followed by movement of data into the target tables through batch execution, before proceeding to the process execution.

User has to follow the execution order provided in the runchart. User can refer comments/Remarks section of respective application to get details about each task used in the product.



Oracle Financial Services Analytical Applications Enterprise Risk Management, Customer Deliverables

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