Oracle Financial Services Regulatory Reporting for Reserve Bank of India – Lombard Risk Integration Pack

User Guide

Release 8.0.5.1.0

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Oracle Financial Services Regulatory Reporting for Reserve Bank of India – Lombard Risk Integration Pack User Guide, Release 8.0.5.1.0

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Preface

Welcome to Release 8.0.5.0.0 of the Oracle Financial Services Regulatory Reporting for Reserve Bank of India – Lombard Risk Integration Pack User Guide.

This section provides a brief description of the scope, the audience, the references, concepts and the organization of the user guide and conventions incorporated into the user guide. The topics in this section are organized as follows:

Scope of the Guide

The objective of this user guide is to provide a comprehensive working knowledge on Oracle Financial Services Regulatory Reporting for Reserve Bank of India – Lombard Risk Integration Pack (OFS REG REP RBI), Release 8.0.5.0.0. This user guide is intended to help you understand the key features and functionalities of OFS REG REP RBI release 8.0.5.0.0 and details the process flow and methodologies used.

Intended Audience

This guide is intended for:

- Regulatory Reporting Analyst who maintain the dimensional values across multiple reporting requirements, maintain results area structure of Oracle Financial Services Data Foundation, and ensure data quality.
- Data Analysts who clean, validate, and import data into the Oracle Financial Services Download Specification format, and ensure that data is populated in the relevant tables as per the specifications and executions required for regulatory reporting.
- System Administrator (SA), instrumental in making the application secure and operational and configures the user roles providing necessary access to users.

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Related Information Sources

In addition to this user guide, you can refer to the following documents in the OTN Documentation Library:

- Oracle Financial Services Regulatory Reporting for Reserve Bank of India – Lombard Risk Integration Pack Installation Manual Release 8.0.5.0.0
- Oracle Financial Services Data Foundation User Guide Release 8.0.5.0.0
- Oracle Financial Services Data Foundation Installation Manual Release 8.0.5.0.0
- Oracle Financial Services Analytical Applications Infrastructure User Guide Release 8.0.5.0.0 (present in the OTN Documentation Libaray)

How this Guide is Organized

The OFS Regulatory Reporting for Reserve Bank of India with Lombard Risk Integration User Guide includes the following topics:

Conventions Used

Table 1 lists the conventions used in this guide.

Table 1: Conventions Used in this Guide

Convention	Meaning
Italics	Names of books, chapters, and sections as references
Bold	♦ Object of an action (menu names, field names, options, button names) in a step-by-step procedure ♦ Commands typed at a prompt ♦ User input
`Monospace`	♦ Directories and subdirectories ♦ File names and extensions ♦ Process names ♦ Code sample, including keywords and variables within text

1 Introduction

This chapter provides an understanding of the Oracle Financial Services Regulatory Reporting for Reserve Bank of India – Lombard Risk Integration Pack (OFS REG REP RBI) application and its scope. It includes:

1.1 Overview

Oracle Financial Services Regulatory Reporting for Reserve Bank of India – Lombard Risk Integration Pack (OFS REG REP RBI) helps the banks to comply with various guidelines issued by RBI, including BCBS 239 regulations. It provides integrating risk data reporting systems and enhances the accuracy of reporting in banks. OFS Risk Regulatory Reporting (REG REP) Solution helps in achieving the objectives by enabling preset steps based on the generalization of a set of solutions. This is made possible by:

- Providing a centralized data storage for risk data through relevant subject areas of Financial Services Data Foundation (FSDF).
- Interfacing with a third party reporting tool such as Lombard Risk Reporter Portal to build necessary template reports to meet the regulatory expectations.

Data accuracy of risk reporting is ensured by:

- Data Governance Studio (DGS).

The OFS REG REP RBI solution enables financial services organizations to manage and execute regulatory reporting in a single integrated environment. It automates end-to-end processes from data capture through submission with industry-leading solutions. It leverages Oracle Financial Services Analytical Application (OFSAA) and Oracle Financial Services Data Foundation (OFSDF) for managing analytical application data. The AgileREPORTER in Regulatory Reporting (REG REP) Solution enables firms to automate the final mile of the reporting process. It provides pre-built integration to Lombard Risk Reporting, eliminating the need for further manual intervention. The solution ensures data integrity allowing banks to focus more time on analyzing and gaining new business insight from their growing stores of data instead of preparing data and reports with the sole objective of meeting submission deadlines.

1.2 OFSAA Regulatory Reporting Architecture

OFS REG REP RBI supports the regulatory requirements for various reporting requirements such as DSB3ROR, FORM X, BSR VII and so on, which require enterprise level data spanning multiple areas of banking. Each of these business areas have different applications to answer their respective processing requirements. REG REP warehouses this data for reporting purpose at a single place. An intermediate data transfer layer specific to the source applications enables data loading to REG REP by using the provided download specifications.

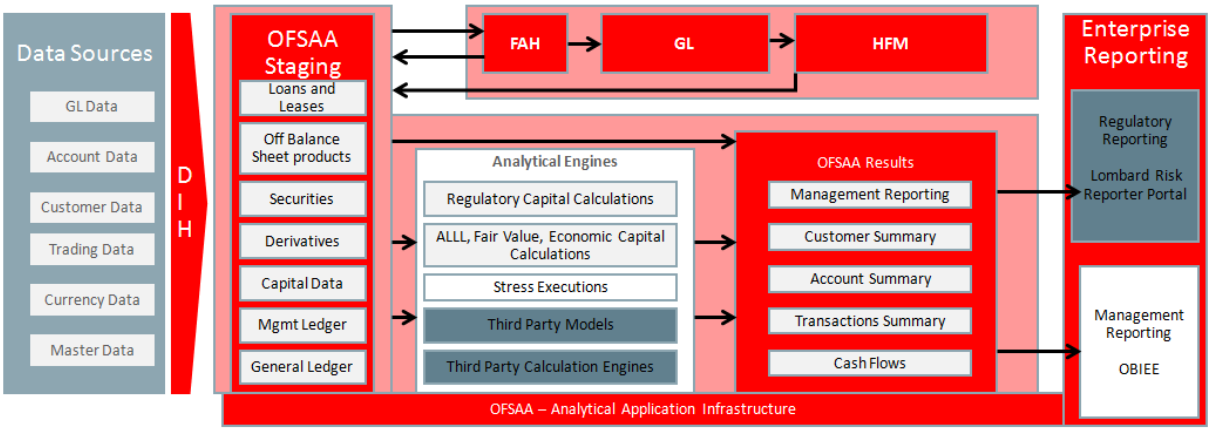


Figure 1: Regulatory Reporting (REG REP) Solution Architecture

This interface connects the Oracle FSDF to Lombard Risk. As shown in Architecture of Figure 1, Data flows from OFSAA to Lombard Risk.

OFSDF is an analytical data warehouse platform for the Financial Services industry. OFSDF combines an industry data model for Financial Services along with a set of management and infrastructure tools that allows Financial Services Institutions to develop, deploy, and operate analytical solutions spanning key functional areas in Financial Services, including: 1. Enterprise Risk Management 2. Enterprise Performance Management 3. Customer Insight 4. Financial Crime and Compliance Management OFSDF is a comprehensive data management platform that helps institutions to manage the analytical data life cycle from sourcing to reporting and business intelligence/BI using a unified, consistent platform and toolset.

AgileREPORTER is a forms and workflow tool that enables both creation and submission of regulatory returns. AgileREPORTER addresses the financial reporting requirements of both domestic and international banks and financial institutions by automating compliance with mandated reports to central banks, regulatory agencies. AgileREPORTER works easily with multiple sources of information as it standardizes data elements and automates regulatory report production in prescribed templates with the associated workflow for automatic submission. It is Reliable and efficient infrastructure to compile, generate and submit regulatory reports. It collects data from a wide universe (not just OFSAA Results). It provides automated repeated manual adjustments, variance analysis and validation checks. It provides features to explain and justify a number quickly, including links to OBIEE.

The solution provides a pre-built interface or integration between FSDF and AgileREPORTER. With this integration, end user can automate end to end reporting process covering data preparation to last mile of reporting.

1.3 Scope

Oracle Financial Services Regulatory Reporting for Reserve Bank of India – Lombard Risk Integration Pack covers the following regulatory reports for this 8.0.5.0.0 release as mentioned in the table.

Table 2: Scope for OFS REG REP RBI Release 8.0.5.1.0

Report Name	Report Code as per Lombard Portal	Report Description	Report Section Covered in 8.0.5.0.0
Return on Asset Quality	RAQ	Reports the asset quality of loans for domestic and overseas operations.	Sections 1, 2, 4, 5, 6, and 8 (Open grid)
FORM X (Supplementary Data-Sec & Unsec) (LF)	FORMX	Reports the details around the balance sheet, assets and liabilities of the reporting entity.	All
FORM VIII	FORMVIII	Reports the balance sheet attributes, assets, liabilities and Statutory Liquidity Ratio for a fortnight.	All
FORM A (Sec 42)	FORMA	Reports the details around the balance sheet, assets and liabilities of the reporting entity.	All
Card Usage Statistics	CUSTAT	Reports the card usage statistics bank wise - ATM/POS.	All
Return on Capital Adequacy (RCA) Report III	RCAIII	Reports the Capital adequacy that are on and off balance sheet.	All
Central Repository of Information on Large Credits	CRILC	Reports the limit or exposure of Large borrowers of the reporting entity.	Sections 1, 2, and 3
Return on Large Credits	RLC	Reports the exposure to large individual/ group borrowers of the reporting bank.	All
Risk Based Supervision (TR1)	RBSTR1	Reports the fund and non-fund based exposures of the reporting entity.	Tranche 1
Risk Based Supervision (TR3)	RBSTR3	Reports the Financial and Capital Data Points of Bank's advances, investments, income, expense, capital, and RWA.	Tranche 3
Risk Based Supervision (XBRL)	RBSIXBRL	Reports the investment, advances and finance related information of the reporting entity.	Credit Risk (RatingWiseStdAdv, RatingWiseNonSLR)

DSB Return 3 - ROR	DSB3ROR	Reports the earnings.	Sections A and B
Basic Statistical Report VII	BSRVII	Reports the statistics on Deposit and Credit.	BSR VII
SFR II	SFRII	Reports the cash reserve with RBI.	SFR II
Statutory Liquidity Ratio Maintenance	SLR	Reports the statement on maintenance of Statutory Liquidity Ratio.	SLR
Liquidity Coverage Ratio - Statement on Liquidity Coverage Ratio (LCR) - BLR-1	LCRBLR	Reports the statement on Liquidity Coverage Ratio.	Panel I, Panel II, Memo 1, Memo 2
Liquidity Coverage Ratio - Statement on Funding Concentration - BLR-2	LCRBLR	Reports the statement on liquidity attributes by Funding Concentration.	Part A1, A2, A3, B1, B2
Liquidity Coverage Ratio - LCR by Significant Currency - BLR-4	LCRBLR	Reporta the statement on LCR by Significant Currency.	Panel I and Panel II
Liquidity Coverage Ratio - Statement on other information on Liquidity BLR-5	LCRBLR	Reports the statement on liquidity attributes by other information on Liquidity.	Part I-A and I-B
DSB Return I-ALE	DSBIALE	Reports the Assets, Liabilities and Exposures.	Sections 1, 2, 3, Annexure 3
Basic Statistical Report II	BSRII	Reports the quarterly statistics for deposits and credits for a reporting entity.	Part I, II, III, IV, V
Card Information Credit Debit	CICDP	Reports the information related to credit and debit card of the customer.	All
Expired Prepaid Instruments	EXPI	Reports the value unspent on Prepaid Payment Instruments.	All
Global Travel Card	GTCAII	Reports the category-wise transaction summary of the reporting entity.	All
Interest Rate Sensitivity	IRS	Reports the interest rate sensitivity for different product types based on residual maturity.	All TGA and DGA

Report on Structural Liquidity - DSB Return VIII-STL	LR	Reports the liquidity attributes and inflows and outflows for the reporting entity.	Sections 2 and 3
Return on Customer Grievances	RETCGR	Reports the complaints / grievances of the customers of the reporting entity.	All
Quarterly Statement on Asset Quality	SAQLO1, SAQLO2	Reports the asset quality of loans for each sector of the reporting entity.	All

The following table lists the sections included in the reports.

Table 3: Detailed Scope

Report Name	Report Section
Return on Asset Quality	Section 1 - Portfolio Analysis
Return on Asset Quality	Section 2 - Classification of Risk Assets
Return on Asset Quality	Section 4 - Change in Asset Quality Profile and Recoveries of NPAs
Return on Asset Quality	Section 5 - Top Impaired Credits
Return on Asset Quality	Section 6 - Invest Quality and Non-SLR Securities
Return on Asset Quality	Section 8 - Sectoral Credit and Industry Breakup
Card Usage Statistics	Card Statistics, Credit Cards, Debit Cards
FORM X (Supplementary Data-Sec & Unsec) (LF)	Part I
FORM X (Supplementary Data-Sec & Unsec) (LF)	Part II
FORM X (Supplementary Data-Sec & Unsec) (LF)	Part III
FORM X (Supplementary Data-Sec & Unsec) (LF)	Foreign Liabilities and Assets
FORM VIII	Form VIII Main
FORM VIII	Annex I
FORM VIII	Annex II
FORM VIII	Annex III
FORM A - Sec 42	Form A - Main
FORM A - Sec 42	Form A - Memo
FORM A - Sec 42	Form A - Annexure A
FORM A - Sec 42	Form A - Annexure B

Report Name	Report Section
RCA Report III	RCAIII_QCCP
RCA Report III	RCAIII_Non-QCCP
RCA Report III	RCAIII_CR On BS Sec
RCA Report III	RCAIII_CR Off BS Sec
RCA Report III	RCAIII_CR On BS ReSec
RCA Report III	RCAIII_CR Off BS Resec
RCA Report III	RCAIII_Operational Risk
RCA Report III	RCAIII_Regulatory Capital-Basel III(S)
RCA Report III	RCAIII_Regulatory Capital-Basel III(C)
RCA Report III	RCAIII_CR On BS excluding Section (S)
RCA Report III	RCAIII_CR On BS excluding Section (C)
RCA Report III	RCAIII_MV_Mkt Risk Specific AFS
RCA Report III	RCAIII_MV_Agg. Cap for Market Risk
RCA Report III	RCAIII_Mkt Risk Specific HFT
RCA Report III	RCAIII_Mkt Risk Alternative Total Cap AFS
RCA Report III	RCAIII_Mkt Risk Specific-CDS
RCA Report III	RCAIII_MV_CCR–CDS
RCA Report III	RCAIII_CCR-As Borrower
RCA Report III	RCAIII_CCR-As Lender
RCA Report III	RCAIII_CR MR Off BS
RCA Report III	RCAIII_CR NMR Off BS
RCA Report III	RCAIII_Failed Transaction On BS
RCA Report III	RCAIII_Failed Transaction Off BS
Central Repository of Information on Large Credits	Section 1 - Exposure to Large Borrowers (Global Operations)
Central Repository of Information on Large Credits	Section 2 - Reporting of Technically/Prudentially Written-off Accounts (Global Operations)
Central Repository of Information on Large Credits	Section 3 - Reporting of Balance in Current Account (Global Operations)

Report Name	Report Section
Return on Large Credits	Section A - Exposures to Large Borrowers
Return on Large Credits	Section B - Exposures to Large Borrowers Group
Return on Large Credits	Section C - Large Exposures to Banks
Risk Based Supervision - TR1	Tranche 1
Risk Based Supervision - TR3	Tranche 3
Risk Based Supervision - XBRL	Credit Risk (RatingWiseStdAdv)
Risk Based Supervision - XBRL	Credit Card Business
Return on Customer Grievances	Report of resolution of Prepaid Payment Instruments Customer Grievances
Quarterly Statement on Asset Quality	SAQ 1
Quarterly Statement on Asset Quality	SAQ 2
DSB Return 3 - ROR	Section A - Earnings before Provisions and Taxes
DSB Return 3 - ROR	Section B - Net Profit and Retained Earnings
BSR-VII Quarterly Statistics on Deposit and Credit (BSR7)	BSRVII
SFR II	SFR II
SLR MAINTENANCE	SLR
Liquidity Coverage Ratio - Statement on Liquidity Coverage Ratio (LCR) BLR 1	BLR-1 - Panel I
Liquidity Coverage Ratio - Statement on Liquidity Coverage Ratio (LCR) BLR 1	BLR-1 - Panel II
Liquidity Coverage Ratio - Statement on Liquidity Coverage Ratio (LCR) BLR 1	Memo 1
Liquidity Coverage Ratio - Statement on Liquidity Coverage Ratio (LCR) BLR 1	Memo 2
Liquidity Coverage Ratio - Statement on Funding Concentration BLR-2	Part A1, A2, A3, B1, B2
Liquidity Coverage Ratio - LCR by Significant Currency - BLR-4	BLR-4 - Panel I
Liquidity Coverage Ratio - LCR by Significant Currency - BLR-4	BLR-4 - Panel II

Report Name	Report Section
Liquidity Coverage Ratio - Statement on other information on Liquidity BLR-5	Part I-A and I-B
DSB Return I-ALE	Section 1 - Part A, B, C
DSB Return I-ALE	Section 2 - Part-A, B, C, D1, E1, F1, G1, G2
DSB Return I-ALE	Section 3
DSB Return I-ALE	Annexure 3
Basic Statistical Report II	Part I - Deposits with Scheduled Commercial Banks
Basic Statistical Report II	Part II - Classification of Term Deposits according to Original Maturity
Basic Statistical Report II	Part III - Classification of Term Deposits according to Interest Rate Range
Basic Statistical Report II	Part IV - Classification of Term Deposits according to Size of Deposits
Basic Statistical Report II	Part V - Classification of Term Deposits according to Residual Maturity
Card Information Credit Debit	Credit Cards, Prepaid Cards, Debit Cards
Expired Prepaid Instruments	Information on value unspent on Prepaid Payment Instruments (PPIs) expired
Global Travel Card	All
Interest Rate Sensitivity	All TGA and DGA
Report on Structural Liquidity - DSB Return VIII-STL	Section 1 - LRPartA1
Report on Structural Liquidity - DSB Return VIII-STL	Section 2
Report on Structural Liquidity - DSB Return VIII-STL	Section 3

2 Getting Started

This chapter provides an understanding of the pre-requsites, general and data preparation assumptions and logging into the application. It includes:

- Prerequisites
- Assumptions
- Logging in to the OFSDF Interface with Lombard Risk for RBI
- Organization of the Interface for User Roles
- Metadata Browser

OFS Regulatory Reporting for Reserve Bank of India with Lombard Risk Integration allows you to perform the following activities:

- Manage Data Loading and Transformation from various source systems to staging, processing, and results.
- Manage relevant OFSAA metadata for regulatory reporting purpose. This includes creating, modifying, and viewing the metadata used in reporting.
- View the report metadata for mapping.
- Drill-down from AgileREPORTER to OFSAA results area.

2.1 Prerequisites

The prerequisite software that must be installed are:

- Minimum patch level set to OFS REG REP RBI **8.0.5.0.0**
- Oracle Financial Services Analytical Applications Infrastructure (OFSAAI) **8.0.5.1.0** (patch **27094265)**
- Oracle Financial Services Data Foundation (FSDF) **8.0.5.1.0** (patch **27197750**)
- AgileREPORTER version **1.15.6-b1293**
- AgileREPORTER RBI Template package (**AgileREPORTER_RBI_Package_v1.18.0.3**)
- Ensure that you have executed **.profile** file before you trigger the installation.
- Ensure that the FIC Server is up and running before you trigger the installation. For information on restarting the services, see *Oracle Financial Services AAI Release 8.0.5.0.0 Installation Guide* (OHC Documentation Library) for more information.

For detailed instructions on installing this Interim Release, see *Oracle Financial Services Regulatory Reporting for Reserve Bank of India – Lombard Risk Integration Pack Installation Guide Release 8.0.5.0.0*.

2.2 Assumptions

OFSDF interface with Lombard Risk for RBI is a reporting application and it does not perform any risk/stress calculations. The following are the assumptions for the application:

- Data required for risk and compliance regulatory report templates is available in FSDF as per data requirements.
- Lombard Risk Reporter Portal supports other non-risk and non-compliance related regulatory templates and Oracle Financial Services Analytical Application (OFSAA) may not supply all the necessary data for such reports.
- Textual and other related portions of reports like person details, contact details, Yes / No choices must be updated on Report Portal directly and FSDF does not have placeholder for it.
- Data provided is post reconciliation to ensure that accuracy of data being reported (non-prescribed by regulators) are performed in OFSAA using various components – General Ledger (GL) reconciliation, data quality checks, and variance reporting.
- Validity checks such as edit checks, cross-validation checks and so on prescribed by regulator are performed within the AgileREPORTER.
- All monetory amounts are expected to be positive in number, except valuation outputs which can be positive or negative. Rules are constructed assuming the negative sign of valuation amounts wherever applicable.
- The application populates few specific dimension tables, known as seeded / sample tables as part of the installation script. Since they are used in the metadata, changes in data values have impact on the overall functioning.
- All percentage data are expected in decimal format meaning 9% must be provided as 9 and not 0.09.
- For a data provided as of date, such as last day of the quarter of the reporting year: Quarterly and Year to Date (YTD) report for the given date displays same value for those measures which are of as of date in nature. For example, Annual and Quarterly Balance Sheet and BASEL reports generated as of 31-MAR show same values for all measures such as Account Balance.
- Account Balances such as End of Period Balances are expected to be provided as Net of (without) Unearned Income.
- RCA III - Mkt Risk Specific-CDS: As per the reporting requirement, we must use `Fct_reg_market_risk_exposures.f_cds_undrly_party_cre_nbfc` flag to identify CDS counterparty type. DM change for the same is handled in subsequent model. To support template for 8.0.5.0.0 releases, use the unused column, `Fct_reg_market_risk_exposures.V_eff_credit_score_source`. This column is populated from Basel tables, that is, `Fct_market_risk_exposures.f_cds_undrly_party_cre_nbfc`.

- RCA III - CR On BS excl. Sec: Reporting in this schedule is as per Asset Class (for example: Domestic PSE, Foreign Bank, and so on) for Pre CRM amount and CRM Amount. There is no separate reporting for Non Sec Covered Amount / RWA (Covered by mitigant) anywhere in the template. So we are assuming the following:

  If the mitigant is Guarantor or Credit Derivative, then amount covered by that mitigant will be reported as per Effective Asset Class in its respective line in the template. So each reporting line will have two parts added to it for Amount of Exposure column. First part will report Exposure based on Original Asset Class to report Uncovered RWA, Second part will report Exposure based on Mitigant's Effective Asset Class to report Covered RWA column.
- RCA III - Securitization Related Schedules: Regarding RW reporting of Unrated Eligible Liquidity Facilities in Line 1.2 and 1.2 of all 4 schedules related to securitization exposures, RW is taken as maximum RW assigned to any of the Unrated Eligible Liquidity Facilities. RCA III template issued by RBI has only one cell for the reporting of RW of such unrated facilities. If reporting bank has more than one such facility, maximum RW assigned to any one of these facilities is reported. This is taken as the interpretation of the template.
- RCA III - Securitization Related Schedules: Line Items 1.1. III, 1.1. IV, 2.1. III, and 2.1. IV are not mapped for all 4 schedules related to securitization exposures. Reason behind not mapping these is that they are already covered in 1.2 and 2.2.
- RCA III - Capital Structure Schedules: Some line Items are not mapped in Capital Schedules. The following table explains the reason for not mapping these line items.

Line Item	Comments
Shortfall in regulatory capital instruments in the unconsolidated entities - Amounts subject to Pre-Basel III Treatment.	For this line, there is no amount subject to Pre-Basel III Treatment.
Regulatory adjustments applied to Common Equity Tier 1 in respect of amounts subject to Pre-Basel III treatment (please specify the details in remarks column).	All items falling under this category are already captured in previous reporting lines of template, hence null mapping for this line.
Shortfall in the Additional Tier 1 capital of majority owned financial entities which are not consolidated with the bank.	As per our interpretation of RBI Basel Guidelines, deduction must be from CET1 alone, and not from respective Tier (CET1, AT1 and T2).
Regulatory adjustments applied to Additional Tier 1 in respect of amounts subject to Pre-Basel III treatment (please specify the details in remarks column).	All items falling under this category are already captured in previous reporting lines of template, hence null mapping for this line.
Regulatory adjustments applied to Additional Tier 1 due to insufficient Tier 2 to cover deductions - Amounts subject to Pre-Basel III Treatment.	For this line, there is no amount subject to Pre-Basel III Treatment.
Shortfall in the Tier 2 capital of majority owned financial entities which are not consolidated with the bank.	As per our interpretation of RBI Basel Guidelines, deduction must be from CET1 alone, and not from respective Tier (CET1, AT1 and T2).

Regulatory adjustments applied to Tier 2 capital in respect of amounts subject to Pre-Basel III treatment (please specify the details in remarks column).	All items falling under this category are already captured in previous reporting lines of template, hence null mapping for this line.

- CRILC Section 1 - Line 'In case SMA-0 under SMA, the reason thereof:' is not mapped as this is expected to be a user input field, where user can directly update the SMA reason.
- ALE – Section 2 Part F1 and F2 - Line 'b) Credit event payments (cash settled):' is interpreted to be derived from subsequent two lines – 'paid' and 'received'.

2.3 Logging in to the OFSDF Interface with Lombard Risk for RBI

After the application is installed and configured, to access the OFSDF Interface with Lombard Risk for RBI application you need to log into OFSAAI environment using the OFSAAI login page.

To access application follow these steps:

1. Enter the OFSAAI URL in your browser. The OFSAAI login page is displayed.

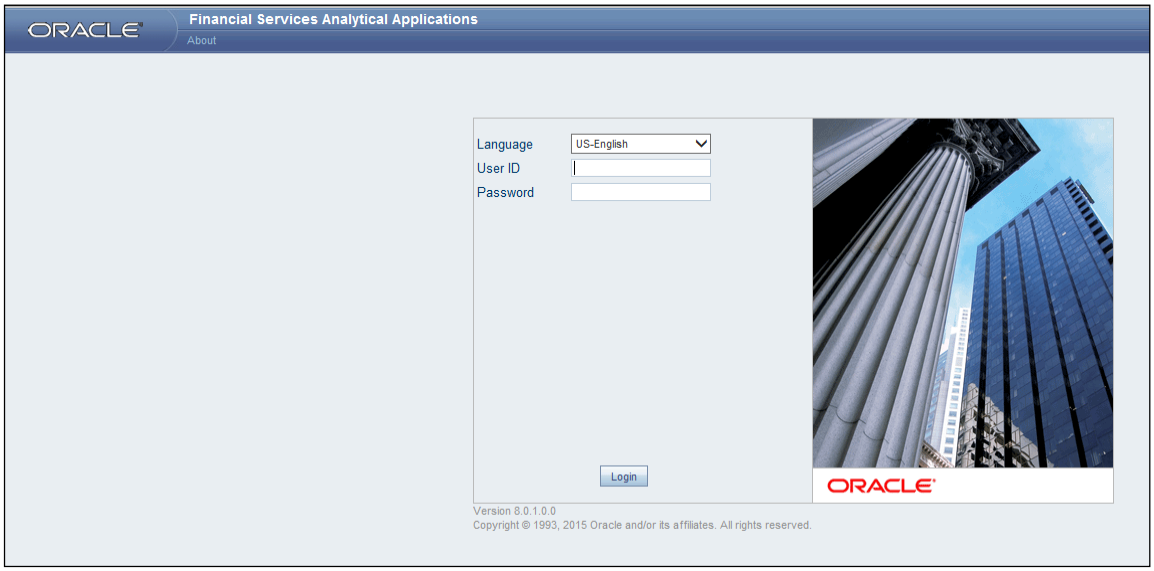


Figure 2: OFSAAI Log In

2. Select the desired language from the **Language** drop-down list.
3. Enter your **User ID** and **Password**. When you log into OFSAAI, the first screen is dsplayed.

Figure 3: Landing Page

2.4 Organization of Interface for User Roles

This section explains the various features used by a analyst. It describes the organization of the user interface and provides step-by-step instructions for navigating through the application to carry out these activities.

Data Analysts are expected to perform the following activities:

1. Marking Run as Final
2. Executing Batch to Refresh Derived Entities
3. Drill Down from AgileREPORTER to OFSDF

Reporting Analyst are expected to perform the following activities:

1. Drill Down from AgileREPORTER to OFSDF
2. Using Metadata Browser to check Schedule Wise metadata
3. Using Metadata Browser to check metadata usage across schedules

2.4.1 Marking Run as Final

Various applications provide data for regulatory reporting. You must mark specific executions for regulatory reporting as final run.

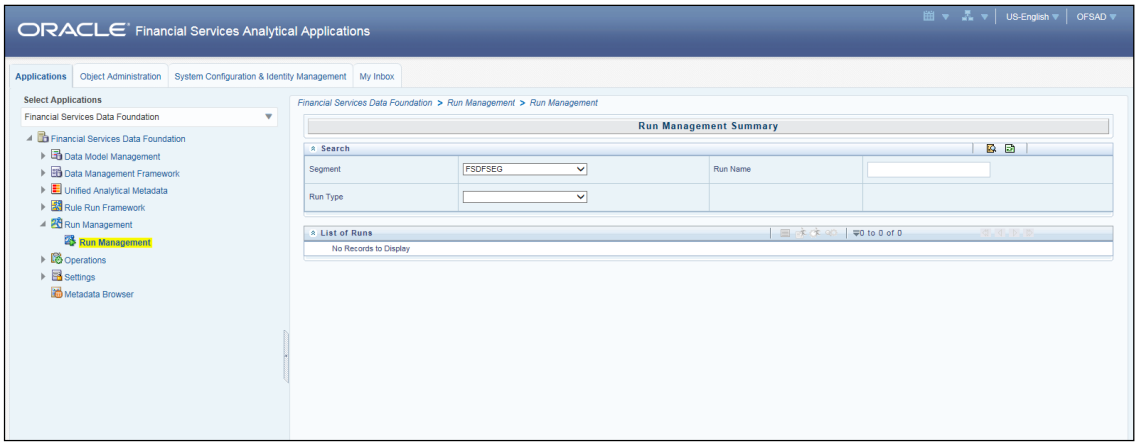


Figure 4: Run Management Summary Screen

2.4.2 Executing Batch to Resave Derived Entities

To execute the batch to refresh derived entities, follow the below steps:

1. Navigate to ***Financial Services Data Foundation → Operations → Batch Execution***
2. Select the batch <INFODOM>_REG_REP_RBI_DE_RESAVE to resave all the DEs used in RBI.

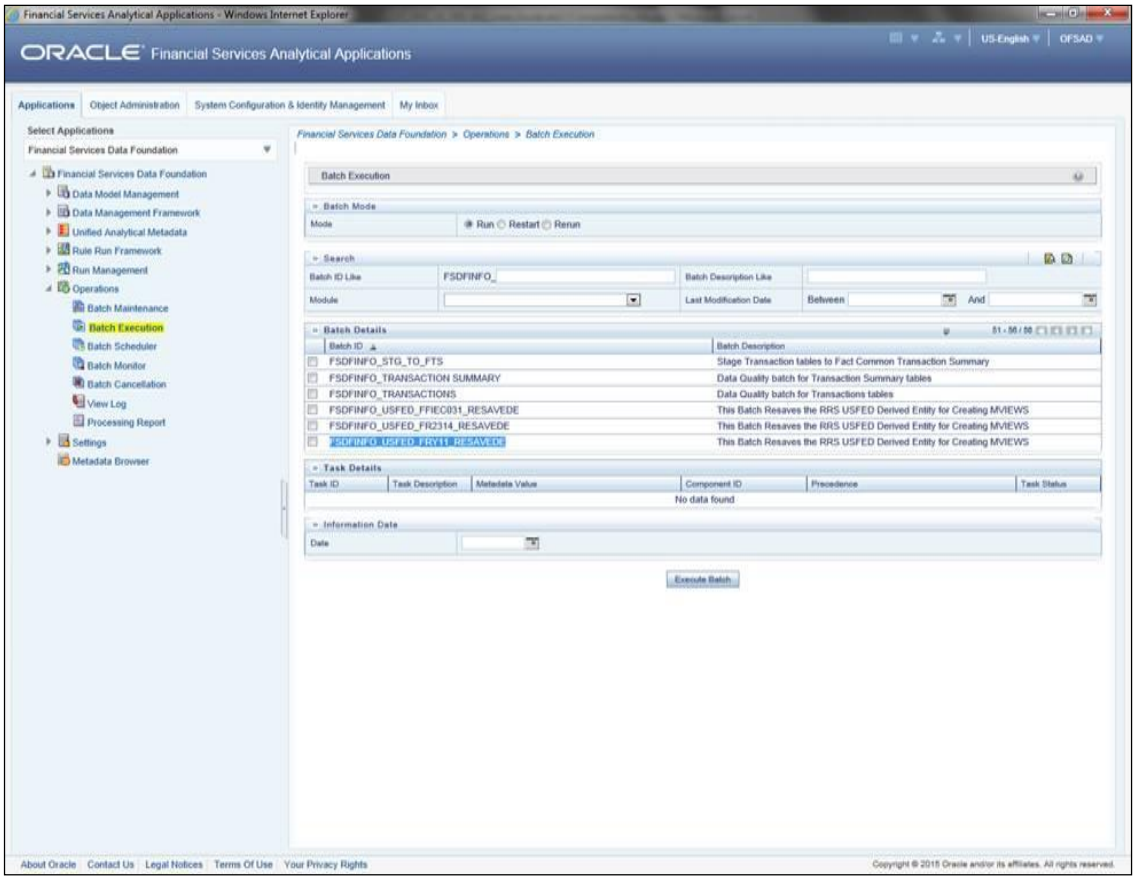


Figure 5: Batch Maintenance Screen

3. Monitor status of the batch using **Batch Monitor** link.

2.4.3 Report Verification - Drill Down from AgileREPORTER to OFSAA Results Area

Drill down functionality enables the user to view the accounts included in the aggregation. Following these steps to drill down from AgileREPORTER to OFSAA:

1. Log in to the AgileREPORTER.

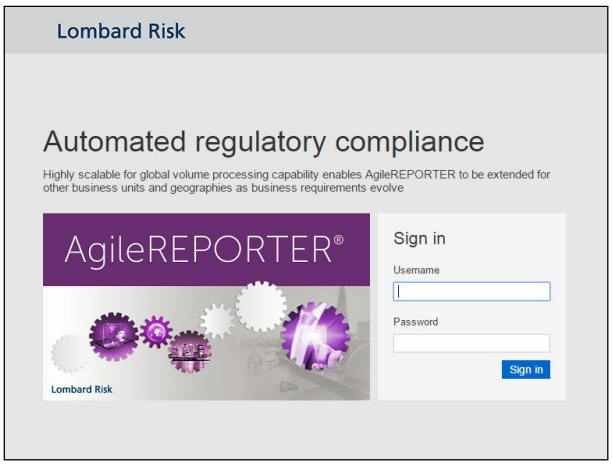


Figure 6: AgileREPORTER Login page

2. The user can view the list of reports in the main page. Click any report name in the Returns column, for example, **FORMVIII**.

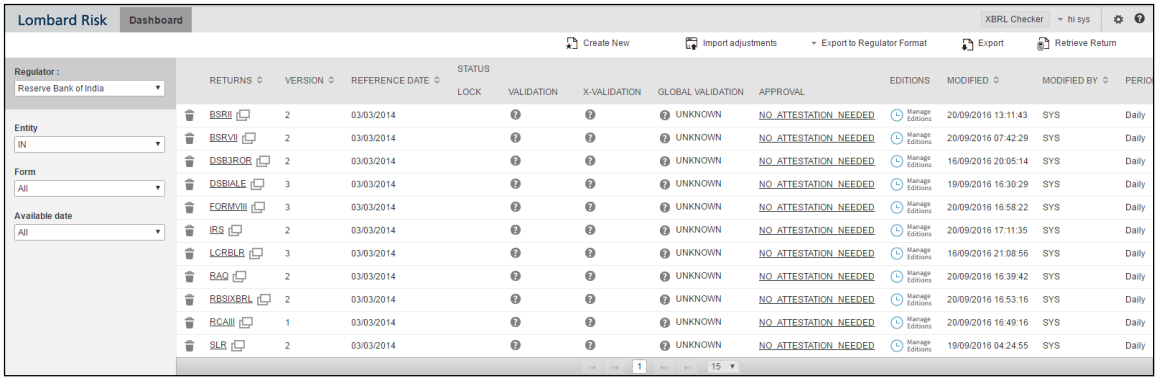


Figure 7: AgileREPORTER Main Page

3. The schedule list is displayed in the left hand side. Click any schedule name, for example **AnnexI_P2**.

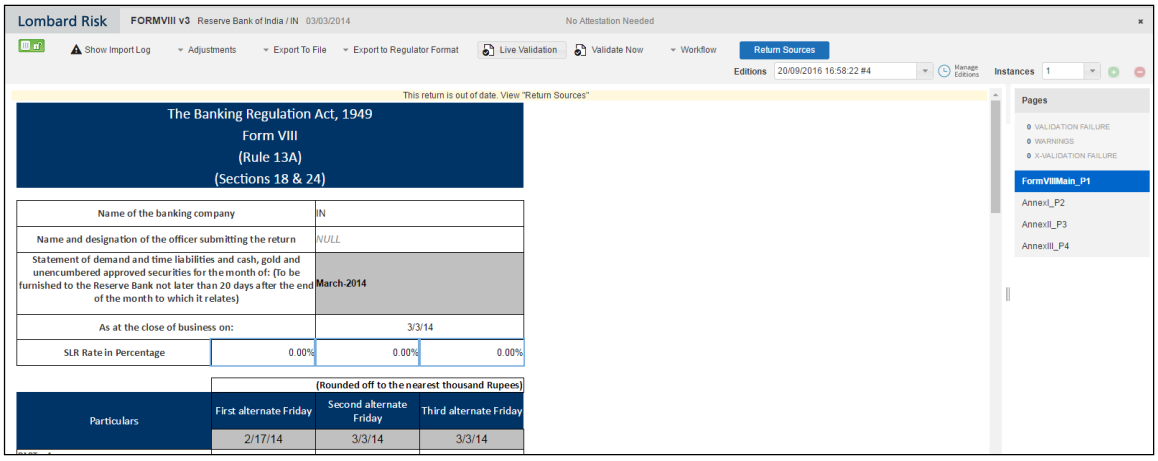


Figure 8: AgileREPORTER Page Displaying List of Schedules

4. Click any cell to drill down.

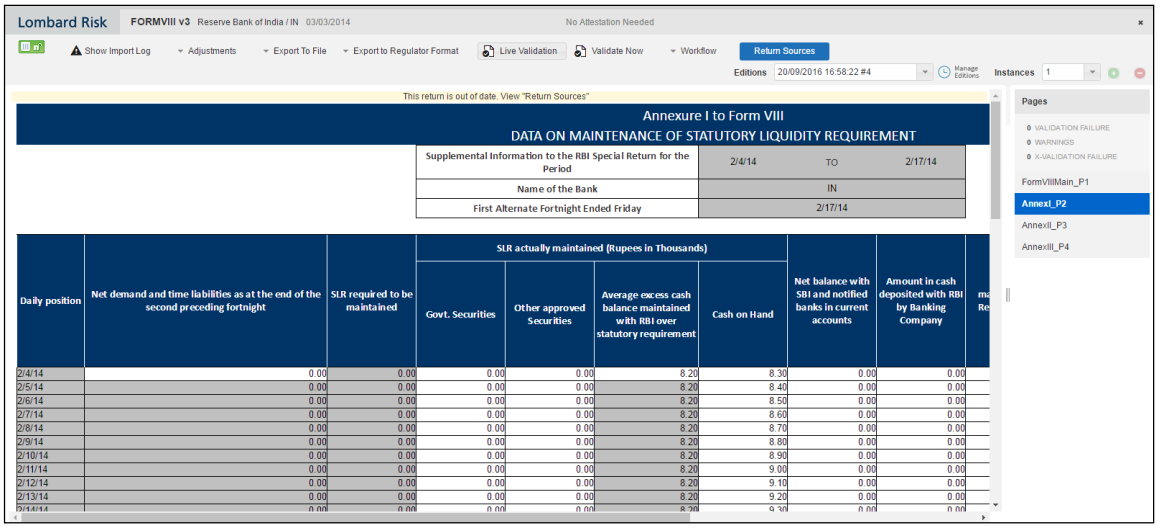


Figure 9: AgileREPORTER Schedule Details Page

5. Figure 10 displays drill down for the first cell in Column F. The **OFSAA icon** is displayed. Click OFSAA icon to view how this cell was populated from OFSAA results. You are redirected to the OFSAA drill down page.

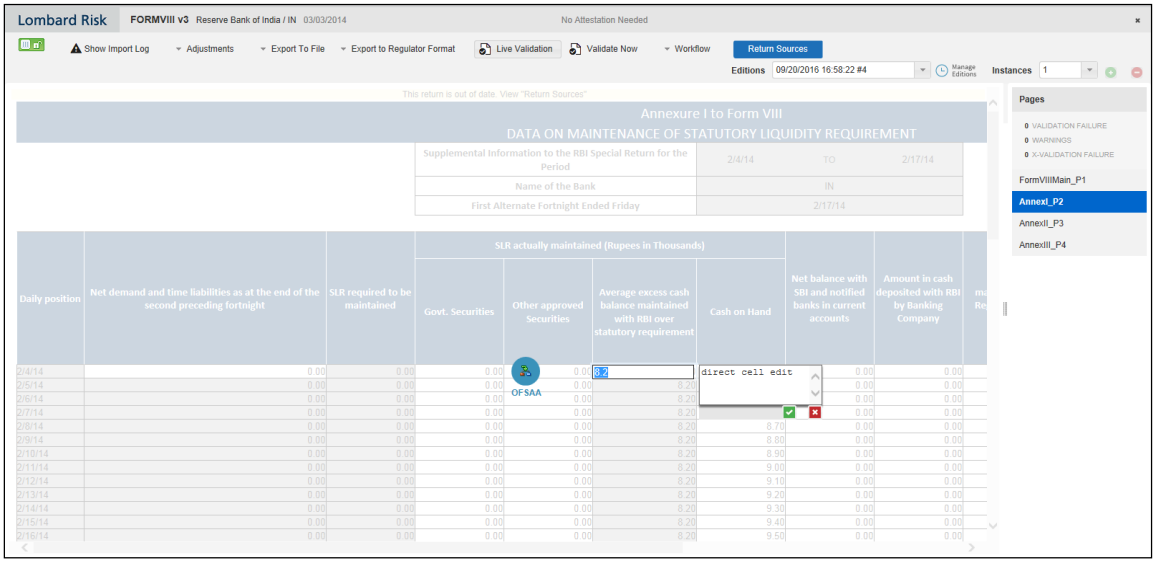


Figure 10: AgileREPORTER Drill Down

6. This cell is populated from the derived entity mentioned in the grid header *DE – FMR Fortnightly SLR Maintenance Agg*. The value in the derived entity grid 8200.00 must match with that of the cell in the report. Derived entity is an aggregate built on top of OFSAA results model to serve regulatory template requirements. It is built using dimensions, measures and business processors. The dimensions that participates in determining the cell value is displayed with data. Click the derived entity link in the grid header.

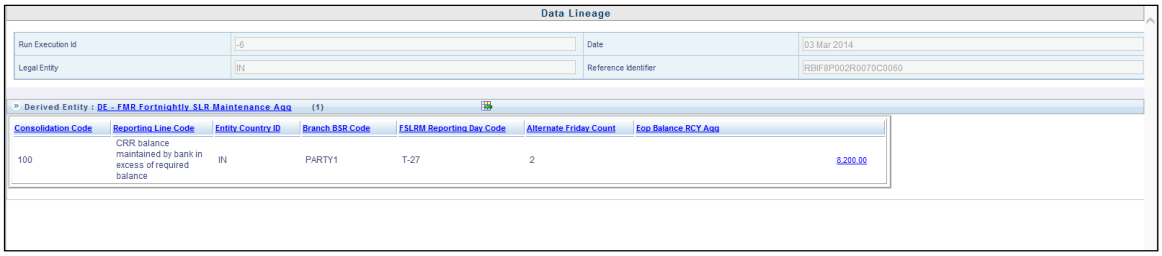


Figure 11: Data Trace Browser/ OFSAA Report Drill-down Screen

7. Derived entity details are displayed in the Metadata Browser within the page. Scroll to view complete details such as Datasets, Hierarchies, Measures and so on. Click the measure value in the derived entity row, for example **8,200.00**.

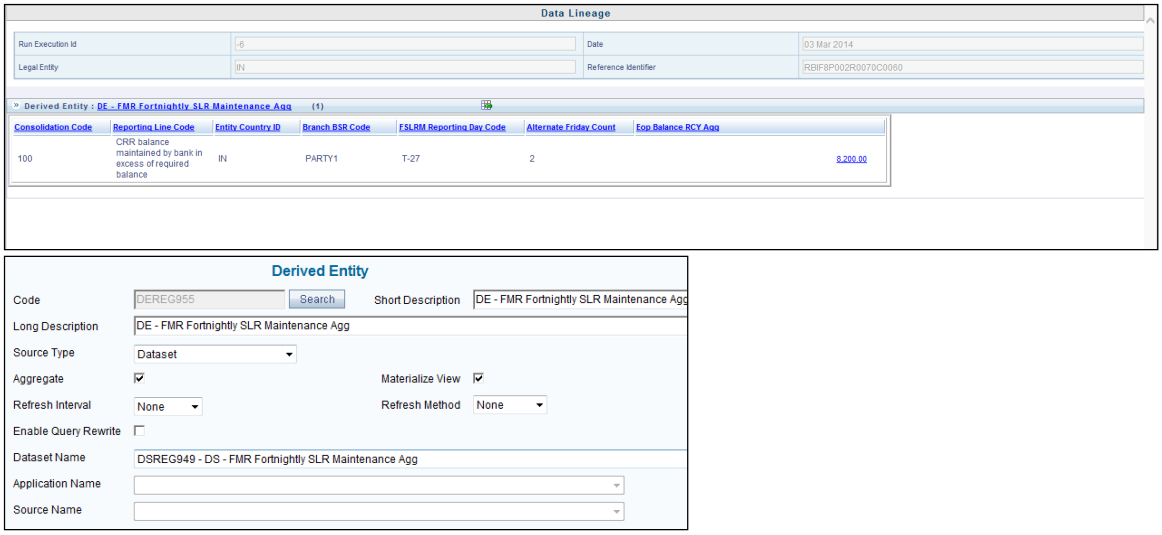


Figure 12: Derived Entity MDB View

8. Double-click any figure in the screen to drill-down to the fact tables. The below grid displays the detailed granular rows of fact data that comprises the derived entity aggregate.

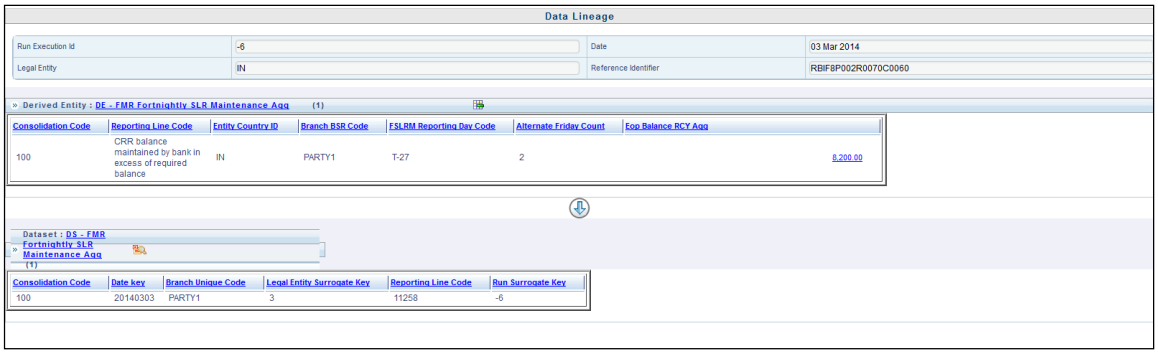


Figure 13: Drill-down Page

9. Click **Attribute Selector** icon on the header of the second grid.

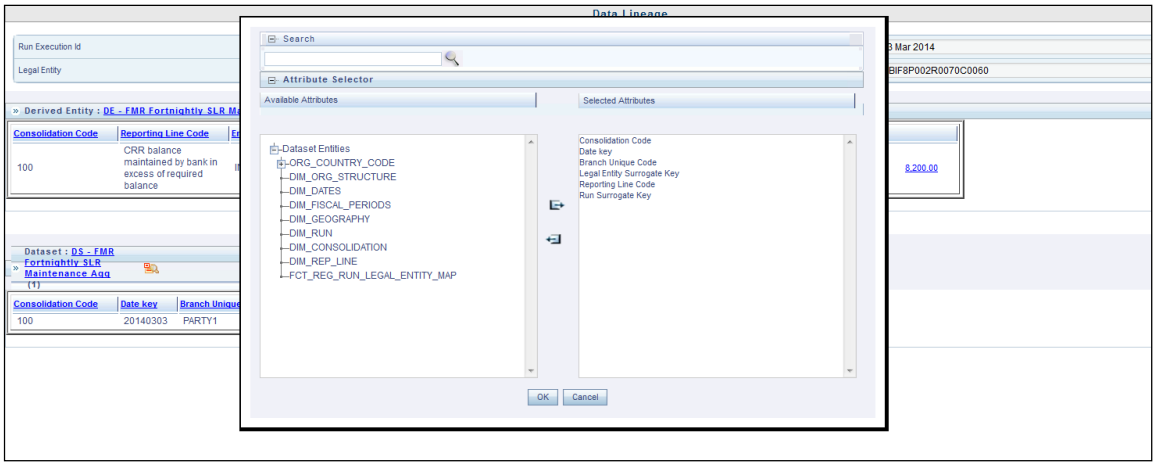


Figure 14: Drill-down Attribute Selector 1

10. Expand **Dataset Entities** and select **DIM_ORG_STRUCTURE**. Click **OK**.

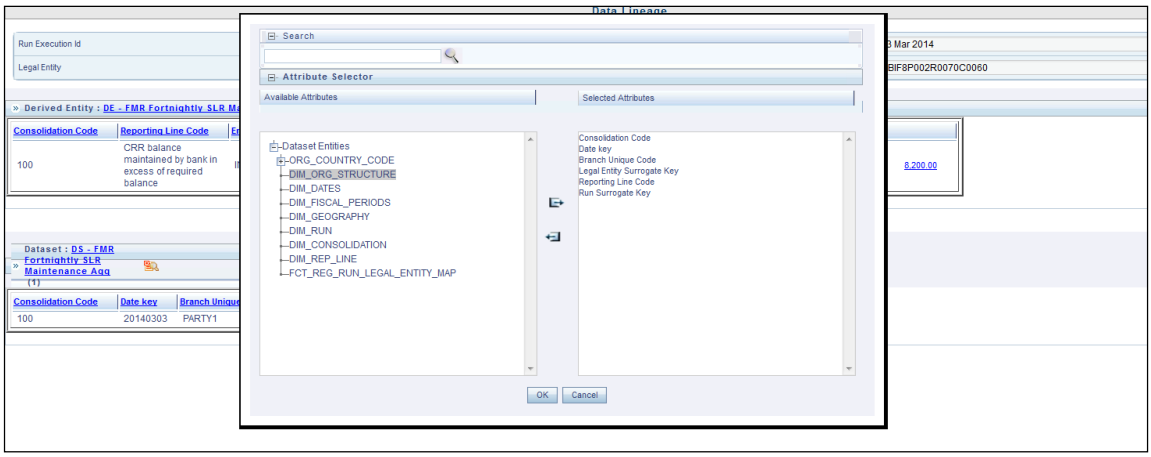


Figure 15: RBI Drill-down Attribute Selector 2

11. If account number is required, scroll and expand the account dimension. Select **account number/contract code** and click **OK**. Data source and account / contract code is displayed in the drill down grid.

2.4.4 Retrieving the Returns from AgileREPORTER

The Retrieve Return functionality in AgileREPORTER fetches data from OFSAA derived entities and embeds them on AgileREPORTER templates. This runs the decision table process in Lombard Risk. You can view the relevant OFSAA data on various schedules of the AgileREPORTER using this functionality.

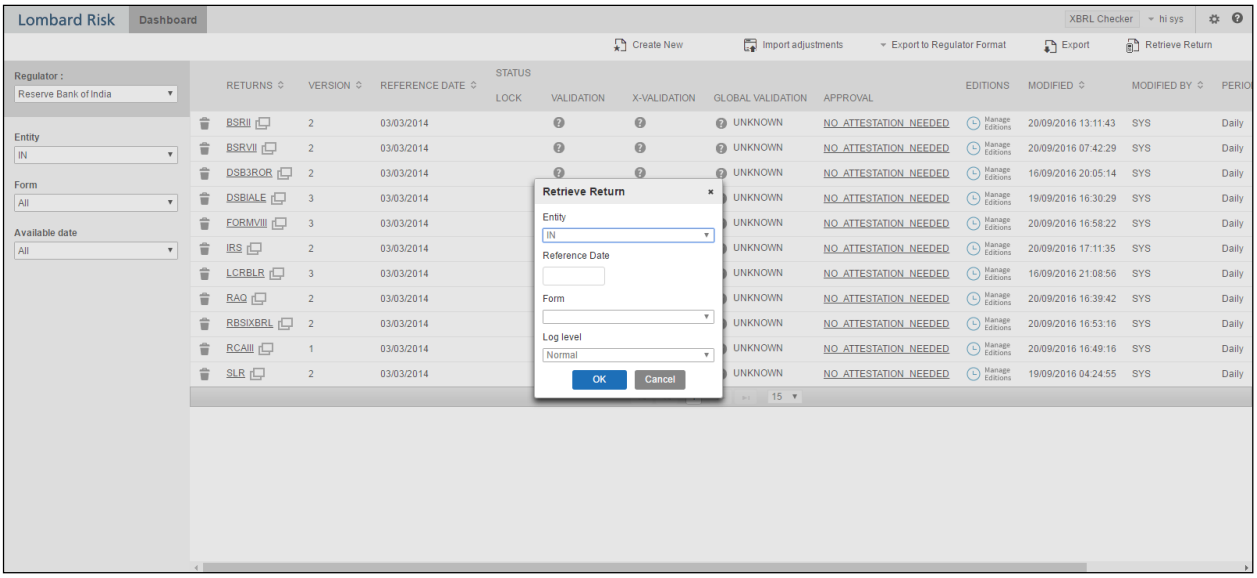


Figure 16: Retrieve Returns Page

2.5 Metadata Browser

This section helps you to navigate through Metadata Browser and guides you in tracing the source of the metadata. The Metadata Browser function allows you to view and analyze all aspects of the metadata used in the OFSAAI. It provides extensive browsing capabilities of metadata, helps in tracking the impact of changes to metadata, and trace through to the source of originating data.

Metadata Browser (Object and Application View) provides common repository of metadata objects created in OFSAAI and applications hosted in OFSAAI. Using this view, you can identify the usage of base objects in higher level objects and the mapping of Objects to Application, thus enabling traceability. It also allows you to view the data flow and the work flow of the application and understand the usage of objects within the application.

The new visualization of Metadata Browser (MDB) supports Application view and Object view. In Application view, you can browse through the metadata created using the applications hosted in OFSAAI. In object view, you can view the metadata created in OFSAAI.

To access the Metadata Browser (Object and Application View), your role must be mapped to the SCR_MDB function.

Analysts review the metadata used for a particular report schedule to verify the data. Data verification may require looking for metadata used in given schedule or it can be schedules in which particular metadata is used. Data Analysts and Reporting Analysts perform the report verification. Metadata refers to business measures, hierarchies, data sets, derived entities used for a given schedule.

To use MDB for schedule wise metadata, and to use MDB for metadata wise schedule follow the below steps.

1. To use MDB for schedule wise metadata for a given schedule, identify the metadata used.
    a) User can verify the data for related data elements in results using this information. Navigate to path ***Objects → OFSAA Metamodel → Reporting Metadata → Reports***. The Left Hand Side (LHS) displays the list of reports.
    b) Click the object view. The *Report Details* page is displayed.

       You can view the below information in the *Details* tab:

       - **Reporting Elements**: This section displays the line items in report with regulatory references.
       - **Depends On**: This section displays the metadata used in a given schedule.

    c) Click any Reporting Element.

       You can view the following information in this page:

       - **Reporting Element Properties**: It provides information on line items or cell references in regulatory reports.

Table 4: Fields and their Descriptions in Reporting Element Properties

Fields	Description
Derived	Provides information on whether the cell is derived / computed using other elements.
Confidentiality	Refers to regulator specific interpretation. For MDRM codes, it indicates whether the MDRM codes is confidential for disclosure within a specific report.
Notes	Refers to regulator specific interpretation. For MDRM codes, this field provides a detailed description of a given cell reference.
Start Date	Refers to regulator specific interpretation. For MDRM codes, this field refers to the effective date of particular cell reference in case.
End Date	Refers to regulator specific interpretation. For MDRM codes, this field refers to the effective end/ sunset date of particular cell reference.

- **Dimension Filters**: This section displays the dimensions and node value filters used to derive a particular cell.
- **Depends on**: This section displays all the hierarchies (dimensions, filters) and business measure used for arriving at a particular cell / MDRM code.

2. Starting from a common metadata used across applicaiton, you may want to know the list of reports/ derived entities this metadata has used. Let us take an example of measure. To use MDB for metadata wise schedule, for each metadata, identify the schedules in which it is used. Follow these steps to identify the schedules:

    a) To view the measures, navigate to path ***Objects → OFSAA Metamodel → Business Metadata → Base Metadata → Measures***. The LHS displays the list of measures.

    You can view the below information in this page:

    - **Measure Properties**: It provides information on properties of Business measures. For example aggregation function, Measure Data Type, Business Exclusions, Filter and Rollup Type.
    - **Depends on**: This section displays all the object names and their types, such as Entities, Columns and so on.

Follow these steps to view the derived entities used in a given schedule:

Note: The similar steps as below are applicable for other metadata such as Business Metadata (Hierarchies, Measures, Variables and so on) and Derived Metadata (Dimensions, Filters and so on).

a) To view the schedule wise derived entities, navigate to path **Objects → OFSAA Metamodel → Derived Metadata → Derived Entities**. The LHS displays list of Schedules.

You can view the following information in this page:

- **Derived Entity Properties**: It provides information on properties of derived entities, such as Source Type, Aggregate Flag, and Materialized View.
- **Depends on**: This section displays all the object names and their types, such as Measure, Hierarchy, and so on.

3 Regulatory Reporting Solution Data Flow

This chapter provides an understanding of the data flow. It explains what happens within data flow and how various processing aspects are integrated with the overall data flow.

It includes:

- Data Preparation
- Mapping of Results to Line Items in Reporting
- AgileREPORTER: Submission

3.1 Data Preparation

This section explains the input data preparation from OFSAA. It includes:

- Assumptions for Data Preparation
- Run/Execution Expectations
- Projection Data
- Data Flow from Sources Systems to Staging Area
- Data Flow from Staging to Results Area
- Data flow from Staging to Processing Area
- Data Flow From Processing to Results Area
- Dimension Tables/Entities

3.1.1 Assumptions for Data Preparation

The following assumptions must be considered before Data preparation:

1. REG REP is a reporting solution, which uses data from underlying fact tables directly for reporting. The end user is expected to prepare the load for the required data in reporting area accordingly. Although this has a thin processing layer to reclassify to regulatory dimensions and bands, all the processing measures are expected to be from respective applications and provide as required.
2. It is integrated with results area of the respective processing application, and any change in the underlying processing can disturb the REG REP data sourcing.
3. Baseline and stress data must be populated with appropriate codes. Inaccurate mappings may can lead to inaccurate results. For details please refer to Relationship between Run and Stress.
4. For usage of consolidation dimension (which has values like Actual, Budged, Forecast, and so on), all historical data is expected to be tagged as actual for the purpose of reporting vintage data, as per report requirements. For projection data, for a given run and Projection Period (quarter/year), only one set of data is expected to be stored.
5. All processing reporting requirements requiring cashflows, integration package expects bucketed cash flow as a input (meaning a time bucket for cash flow and cash flow amount is expected as input).

3.1.2 Run/Execution Expectations

Run refers to execution. It is assumed that at different time periods, different combination of parameters, and different data require different executions. From a reporting perspective, as required by regulators, RRDF application requires data for the following executions:

1. Current Data / Execution
    a. Reporting month end data
    b. Projection Data
2. Historical (trend/vintage) Data
    a. Yearly
    b. Quarterly
3. Stressed Data

In cases such as report ROR, it is expected to display Domestic and Overseas data separately. In such cases, data is expected separately at each legal entity level within the organisation structure. Domestic data is populated in the report as data for legal entity within India. Overseas data is populated in the report as data for legal entity outside India.

Populate the following tables before executing reports in Reporter Portal, and after populating data in the OFSAA results tables through a scheduled batch

- SETUP_MASTER: The below mentioned parameters should be updated before every regulatory reporting run.

V_COMPONENT_CODE	V_COMPONENT_DESC	V_COMPONENT_VALUE (Sample Value)
CURRENT_QUARTER_NAME	Current Quarter Name	2014-Q2
PREVIOUS_YEAR	Previous Year	2013-2014
PREVIOUS_QUARTER_NAME	Previous Quarter Name	2014-Q1
CURRENT_YEAR	Current Year	2014-2015
CURRENT_MIS_DATE	Current MIS Date	2014-06-30

- FCT_REG_RUN_LEGAL_ENTITY_MAP: As an Organization should have a hierarchical structure and reporting could happen for entity at any level in the hierarchy, the applicable reporting entity should be provided as part of every regulatory reporting run in this table.

3.1.2.1 Relationship between Run and Stress

The OFS REG REP RBI application for example in BSR II Annual, picks up reporting data based on the Reporting Run that populates the underlying Fact Table(s). Reporting Run is a flag, which must be marked as 'Y' in a DIM_RUN table so that, the OBIEE reporting layer selects a particular run execution.

In this application, a Run comprises:

a. **Baseline Run**: The Bank Holding Company (BHC) may have multiple runs. The run used for reporting is marked with a **Reporting Flag = Y**. This is the Baseline run for a given reporting date. It is referred to as Baseline because the values that it represents are not stressed and the BHC may use these base values for stressing them according to various scenarios. A history of such runs accumulated over period of time provides historical runs. For more information on updating the reporting flag, refer section Updating Reporting Flag.

b. **Stress Run**: Stress runs hold data, which are stressed by a certain percentage/basis point over the Baseline figures. The BHC expects these figures to reflect the business/risk position under predetermined business scenarios/economic conditions.

c. Identification of Baseline and Stress run occurs from STRESS DIMENSION.

In this application, the required stress runs are tagged to a Baseline run. If the BHC performs several stress runs, the relevant runs which are intended for reporting are identified and tagged with a reporting Baseline run using the V_RUN_ID in the DIM_RUN.

DIM RUN stores n_run_skey / v_execution_id, which are execution specific for every run definition which is v_run_id. Therefore, the run definition can remain constant over a period of time and different executions provide different outputs due to underlying data changes.

DIM_STRESS conveys the stress definition. Additionally, it links the original run Definition (v_run_id) and Stressed run ID (v_stressed_run_id). You must refer to the DIM_RUN table to get expected run execution of these runs definitions pertaining to a particular date / n_mis_date_skey.

The same fact table stores both the Baseline data and the Stressed data, uniquely identified through Scenario codes (and Run skeys).

Refer to the *Business Metadata.xls* present in the installer package for details on different Fact Tables used for related reports.

3.1.3 Updating the Reporting Flag

On any given date for a given RUN DEFINITION, you can have multiple executions. Compare the output of different executions to select the final run execution which will be used as a reporting run execution. After, the execution is marked as a reporting run execution, REG REP uses this flag while querying / navigating data in history. For example, if a report requires displaying account balance for the last four quarters, REG REP searches for run executions marked as 'Y' on all quarter end dates / last executions of the quarter.

Follow the below steps to update reporting flag:

Note: Query tools such as PL-SQL developer / SQL developer are required to execute the steps.

1. Continuing the OBIEE report access, the first information required is the number of run executions available for a given date and RUN Definition. You can execute following query in Oracle with necessary query filters. This, apart from other information will show RUN SKEY which is unique identifier for each execution:

```
SELECT R.N_RUN_SKEY AS RUN_SKEY, R.FIC_MIS_DATE AS MIS_DATE,
R.V_RUN_EXECUTION_ID AS RUN_EXECUTION_ID,
R.V_RUN_MAIN_DESC AS EXECUTION_DESCRIPTION, R.V_RUN_DESC AS
RUN_DESCRIPTION, R.F_REPORTING_FLAG AS REPORTING_FLAG
      FROM DIM_RUN R
      WHERE R.FIC_MIS_DATE = 'DD-Mon-YYYY'
      AND R.V_RUN_EXECUTION_ID LIKE '%%'
      AND R.V_RUN_MAIN_DESC LIKE '%%'
```

2. Second step is to select the correct RUN SKEY and update DIM_RUN.F_REPORTING_FLAG as 'Y':

```
UPDATE DIM_RUN R
SET R.F_REPORTING_FLAG = 'Y'
WHERE R.N_RUN_SKEY =
AND R.FIC_MIS_DATE = 'DD-Mon-YYYY'
AND R.V_RUN_EXECUTION_ID = '';
COMMIT;
```

3.1.4 Projection Data

The following points provide information on the projection data:

1. Baseline run also populates projected date data.
2. This application requires projected data at two levels - Quarterly and Annual.
3. The **DIM_CONSOLIDATION** table is used to identify the projections. It contains the codes for projected quarters and years as required by the templates.
4. In the Fact tables, projection data is referred with respective Consolidation codes (scenario code for **FCT_MGMT_REPORTING**). BHC must populate the data accordingly.
5. In the following example, FQ1 means Financial Quarter 1, FY1 means Financial Year 1 and so on.

Table 5: Projection Data Example 1

Consolidation Code	Consolidation Description	Reporting Line	Scenario	EOP Balance
100	Actual	100	BSL	426,367
400	FQ1	100	BSL	608,618
401	FQ2	100	BSL	870,502
402	FQ3	100	BSL	567,736

Consolidation Code	Consolidation Description	Reporting Line	Scenario	EOP Balance
403	FQ4	100	BSL	846,196
404	FQ5	100	BSL	775,027
410	FY1	100	BSL	470,092
411	FY2	100	BSL	473,880
412	FY3	100	BSL	942,034
413	FY4	100	BSL	497,889
414	FY5	100	BSL	807,813

Note:

- For Movement measures data is not carried from one reporting period to another. For example, Profit or Loss. Where General ledger balances such as loan outstanding are carried forward from one year to another, profit and loss is period specific.
- Therefore, unlike End of Period (EoP) balance, movement values for quarter actuals must be derived for reporting. For a historical data, net sales for quarter 3 is the difference between sales figure as of end of quarters 2 and 3. You do not need to provide this difference as a download. Movement data for actual is identified through different runs and the respective values is summed up.
- Only those records, whose corresponding runs fall between the fiscal month start date and end date of the reporting quarter are selected for summation. Each Run has an associated date, and runs can be performed daily. Assuming that runs are performed daily in a given quarter (90 days), REG REP sums up data points across all 90 days to arrive at a quarter end movement figure.

Table 6: Projection Data Example 2

Code	Projected Period	Reporting Line	Scenario	Run ID	Date	Projected Amount	Movement
100	Actual	100	BSL	RUNID001	10-Oct-13	300,000	900,000
100	Actual	100	BSL	RUNID002	15-Nov-13	100,000	
100	Actual	100	BSL	RUNID003	20-Nov-13	300,000	
100	Actual	100	BSL	RUNID004	30-Dec-13	200,000	
400	FQ1	100	BSL	--	--	--	608,618
401	FQ2	100	BSL	--	--	--	870,503
402	FQ3	100	BSL	--	--	--	567,736
410	FY1	100	BSL	--	--	--	470,093

Code	Projected Period	Reporting Line	Scenario	Run ID	Date	Projected Amount	Movement
411	FY2	100	BSL	--	--	--	473,881
412	FY3	100	BSL	--	--	--	942,035

- However, when projection of net sales for quarter 2 next year is to be performed, no derivation is required. Projections data for said quarter can be directly downloaded in the respective Fact table(s) for reporting.

3.1.5 Data Flow from Source Systems to Staging Area

The staging area is populated with data from various data sources, such as GL data, Account data, Customer data, Trading data, Currency data, and Master data. Refer to *Data Integration Hub (DIH) User Guide* in OTN Documentation Library for details. DIH enables to load the data from the source systems to the OFSAA staging tables, through logical interfaces, known as Application Data Interfaces (ADI). DIH provides a set of User Interfaces (UI), which is used to define and maintain External Data Descriptor (EDD), Application Data Interfaces, and map the EDDs and ADIs through connectors.

3.1.6 Data Flow from Staging to Results Area

This section details the pass through data, transformed data and classification.

3.1.6.1 Pass Through Data

Pass through data refers to the static data that is pre-processed and flows to the results area directly. The Common Staging Area (CSA) model represents the data entry point into the FSDF. CSA provides a simplified, unified data sourcing area for inputs required by analytical applications and engines. It consists of over 400 tables and nearly 9000 columns organized into distinct subjects.

The staging area is a physical data model, which is deployed using the Analytical Application Infrastructure, which manages it. The design of the staging area data model is to allow efficient data loading for analytics. It thus has crucial differences from a general-purpose repository of operational/transactional data across a bank.

The staging area acts as the single source of data, and contains unified data requirements for various banking areas such as Loans and Losses, Off balance Sheet products, Securities, Derivatives, Capital Data, Management Ledger and General Ledger. Common example of this category includes various monetary amounts, dates and so on.

3.1.7 Data Flow from Staging to Processing Area

The staging area of the FSDF serves as a container for analytical processing from sourcing to consumption. Such processing is usually delivered in the form of discrete units called analytical applications, spanning different analytical use cases ranging from Finance to Risk to Compliance.

These applications consist of custom-built computational engines and numerical libraries, and can execute processes on the data that range from simple aggregations to complex, multi-step stochastic processes such as Monte-Carlo simulation.

Hence, analytical applications place varying demands on the data infrastructure in terms of volumes and speed, and hence place different demands on the data architecture. In practice, the normalized (3NF) design favored for enterprise data warehouses often fails to be efficient or performant when it comes to analytical processing across a wide range of use cases.

Therefore, the OFSDF recognizes the need for distinct application-specific working stores, separate from the staging and reporting area. For example, the OFSAA Asset and Liability Management (ALM) application has a distinct set of ALM-specific tables, as does the Market Risk solution.

Note: The structure of these processing area stores is decided by the actual analytical application and engine used. The OFSAA suite of applications is organized this way, with each application managing a specific set of tables/schemas within the processing area.

The processing area tables/schemas are not part of the OFSDF. This is because OFSDF is intended to be an open platform. Other analytical applications and engines can equally provision data out of OFSDF by mapping their input requirements appropriately to the OFSDF staging area model.

3.1.8 Data Flow from Processing to Results Area

This step is similar to Data Flow from Staging to Results Area. It involves either pass through data from processing to results or loading directly to results (refer Section 3.1.9). This is mostly due to processing measures such as Fair Value, Risk Weighted Assets, and so on.

3.1.9 Guidelines for Data Loading to Result Area Tables in Data Foundation for Regulatory Reporting Implementations

Regulatory reports make use of data available across several fact tables in the OFSAA data foundation model and these result tables are either loaded from the raw data sourced from source systems via out-of-box T2T's or processed data output from various OFSAA applications.

For example, Fact LRM Account Summary (FCT_LRM_ACCOUNT_SUMMARY) which stores the liquidity risk related attributes and metrics computed by OFSAA LRM application, Fact Loan Loss Forecasting and Provision Account Summary (FCT_LLFP_ACCOUNT_SUMMARY) which stores the attributes and measures computed by OFSAA LLFP application. However, there can be several implementation use cases in the regulatory reporting space where customer may not have licensed any of OFSAA application and hence must put additional custom effort to design an ETL process to load the required data elements into the respective fact tables referenced by the report. The following section highlight some of the guidelines that the customer can consider when designing a data flow for such a use case.

- Consistent Usage of Run Identifier

  Most of the fact tables used in regulatory reporting are run enabled and have a composite primary key inclusive of run identifier that enables same snapshot of data to be loaded multiple times into the target fact table for any given execution date. All the out of the box processes that impact data used in regulatory reports are executed as part of an integrated run to ensure that run identifier is consistent across fact tables. Since the reporting is done on an integrated schema, it is imperative for the custom data flow design to keep this integrity intact. This essentially means that the custom ETL processes designed to load the data directly into the fact tables must be able to leverage the run identifier generated by the run engine during execution. Run Identifier information is available in DIM_RUN table.

- Correct Dimensional Lookup Configuration

  Dimensional identifiers are typically part of referential integrity constraints with the fact table so the custom ETL processes must ensure that lookups retrieve a valid surrogate keys for a given value of business key. The intermediate staging structure must ensure all the business keys are persisted correctly and the lookup condition is designed on the correct dimension table.

  For example, FCT_LRM_ACCOUNT_SUMMARY.n_asset_level_skey → DIM_ASSET_LEVEL.n_asset_level_skey. The business key (v_asset_level_code) must be sourced and persisted to ensure correct values are populated in the target column, that is, FCT_LRM_ACCOUNT_SUMMARY.n_asset_level_skey.

From OFSAA technical infrastructure standpoint, the mentioned options are available to the customer to design and implement the custom ETL process explained above. OFSAA strongly recommends the below options to maintain consistency in terms of data lineage in Metadata browser as the configured metadata can be made available in meta model via MDB publish:

1) Data Integration Hub (DIH) Connectors
2) Data Mapping (T2T) option in Application Infrastructure
3) Data File Mapping (F2T) option in Application Infrastructure

3.1.9.1 Data Mapping (T2T)

Data Mapping refers to the process of retrieving unstructured data from data sources for further data processing, storage, or migration. This feature is commonly known as RDBMS source to RDBMS target(T2T) framework in the OFSAA world and can be leveraged when source data is available in Oracle database. Dimensional lookups must be handled via the T2T's join condition and expressions. Refer to *OFS AAI User Guide* for more details on configuring a T2T.

3.1.9.2 Data File Mapping (Flat File to RDBMS Target - F2T)

If the source data is available in file structures, OFSAA F2T component can be used to bring the data in the OFSAA eco system. As lookups cannot be configured in a F2T, this component must be used in conjunction with T2T component, that is, data is first loaded from the file to an interim staging structure using the F2T component followed by data load to the target result area table using the T2T component.

This is least recommended approach as there is need for interim table structure in data model and involves multiple data hops which add to the overhead.

See the *OFS AAI User Guide* for more details on configuring a F2T.

3.2 Mapping of Line Items to Reporting Requirements of Lombard Risk

Figure 17 explains the flow of data between OFSAA and AgileREPORTER.

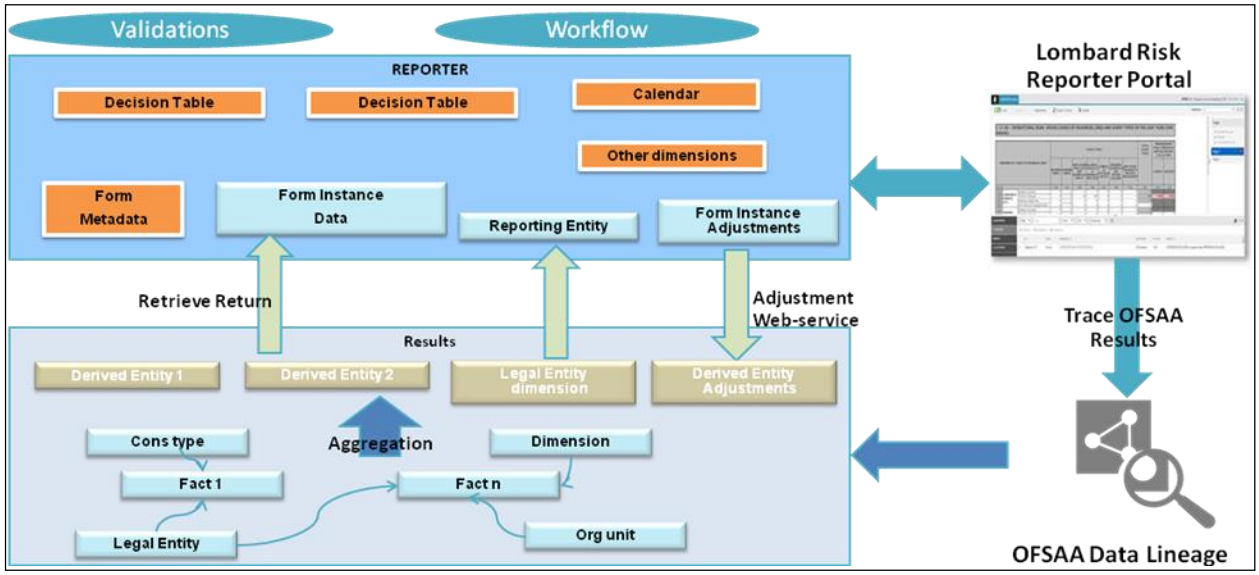


Figure 17: Data Flow between OFSAA and AgileREPORTER

OFSAA provides the data to AgileREPORTER in the form of derived entities. Derived entity is an existing OFSAA higher order metadata object and can be physicalized as a materialized view in the database. Derived entities store aggregated data from base fact entities specified in the dataset and have the necessary dimensions and measures. Dimensional and measure combination stored within the derived entity is mapped to cells within the report. This mapping is maintained within the 'Dimensional mapping' template. 'Decision Process' within AgileREPORTER reads the derived entities and dimension mapping information to derive the data for reporting. Derived entities are created based on measures, hierarchies, and datasets.

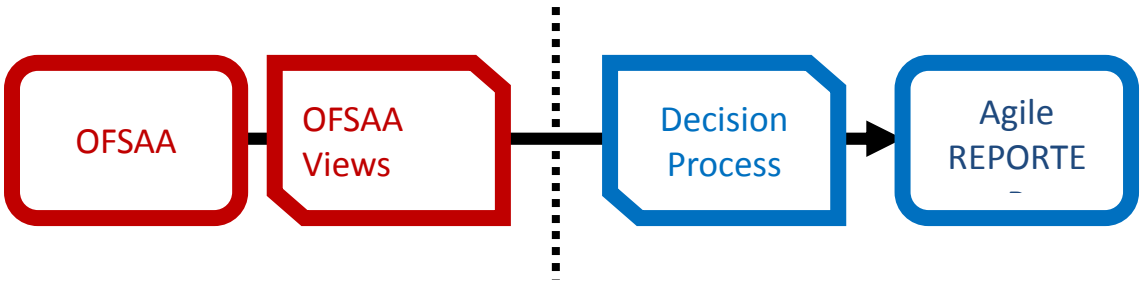


Figure 18: Decision Process in AgileREPORTER

Each regulatory report contains numerous schedules. Each schedule contains various cells that need to be reported. Each cell or box is uniquely identified by a cell reference (or box identifier). OFSAA and Lombard Risk provide a unique cell reference to the cell.

Each cell is mapped to a set of dimensions and measures within OFSAA. A group of cells within the schedule have similar mappings (such as same dimensions but different member codes). Such groups are identified to create logical sections within the schedule. A derived entity is created for each of these logical sections within the schedule.

The dataset associated with the derived entity, provides data for the specific derived entity. Data such as measures, in a derived entity are aggregated based on dimensions that are included in thederived entity, even though the fact entities in the dataset contain complete details of the data.

Some of the cells in the schedule can be derived as per the logic provided by the regulator. Derivation could be an expression built using values from other cells. Examples of derivation are ratio, node-level rollup, direct reference to cells in other schedules within the report. These derivations are performed within the Lombard Risk Reporter portal. OFSAA provides data only for the cells that are not derived.

The "Decision Process" within Lombard Risk Reporter Portal uses the dimension mapping template to interprete data present in the derived entity. Decision process creates form data by reading the information from the derived entity, and derives the necessary data that will be used by the Lombard Risk Reporter Portal to display reporting data.

Refer to the excel sheet for the list of Reporting Lines used across all the RBI returns.

NOTE: Metadata for data transformation is available as part of the data ware house configuration pack provided Out-of-Box / pre-configured from OFSAA. You need not perform any mapping for the reports. However, this information can be useful for maintenance or extensions when Out-of-Box pack is not available.

3.3 Mapping Metadata

The list of reports with the corresponding Mapping Metadata Information are present in the Hierarchy Measure Linkages document present in My Oracle Support page.

3.4 AgileREPORTER: Submission

The AgileREPORTER is a web-based regulatory reporting tool provided by Lombard Risk. It provides necessary features to address e-filing workflow, validation and submission process, and supports reports (called as forms/returns) for various jurisdictions. AgileREPORTER provides a reliable and efficient infrastructure to compile, generate, and submit regulatory reports.

Lombard Risk Reporter portal stores data related to forms/returns in its schema. Lombard Risk application supports loading of data into its schema in the following ways:

- **Cell References File hand-off**: It is used when data providers compute all the information required for reports and pass the data that is required for each cell in the report.
- **Base Data hand-off**: It is used when data providers pass base data to the Lombard Risk application and expect computations that are required for each cell to be performed within the Lombard Risk application.

However, Lombard Risk Reporter portal supports dimensional mapping based approach for OFSAA. In this approach, data hand-off is based on dimensions and measures similar to the pattern of information storage in OFSAA. Decision table mapping process within the Lombard Risk Reporter portal maps dimensions and measures to cell references.

3.4.1 Decision Process

Decision process is a component within Lombard Risk Reporter portal that processes each row of the derived entity for the criteria's specified in the decision table to derive cell references and data that will be used to display on the face of returns.

Decision process is triggered within the reporter portal after OFSAA establishes data readiness for reporting. This indicates that data in fact entities, pass all the necessary data quality checks and the derived entities are refreshed for latest AS OF DATE and final reporting run.

Decision process can be triggered in batch mode, and can be scheduled to run in an Enterprise Scheduler. Alternatively, decision process can also be triggered in ad-hoc mode for a specific report.

4 OFSAA Features

Regulatory Reporting (REG REP) Solution configures the data hand-off structure to Lombard using metadata. The following sections provide details on datasets, measures, hierarchies and Derived Entities. Multiple derived entities are linked to a specific regulatory schedule. You can modify the configuration using OFSAA infrastructure. Additionally, metadata route provides traceability from reporting elements to the data elements used.

This chapter provides an understanding of the AAI components used in the solution and dimensional mapping. It includes:

- OFSAA Infrastructure
- Business Metadata
- Derived Entity
- Rules Run Framework Features
- Dimension Mapping

4.1 OFSAA Infrastructure

OFSAA Infrastructure includes the facilities for creating and maintaining dimensional reference data, interest rate and currency exchange rate data, and process tuning data. Additionally, OFSAA Infrastructure includes functionality for building and maintaining rules that can be used by any Oracle Financial Services Analytical Application. These common rule objects include:

1. Expressions
2. Hierarchies
3. Filters

The analytical applications that you see on the Left Hand Side (LHS) of the Financial Services Applications home page depends on your logon privileges and on the OFSAA modules that are installed for your environment.

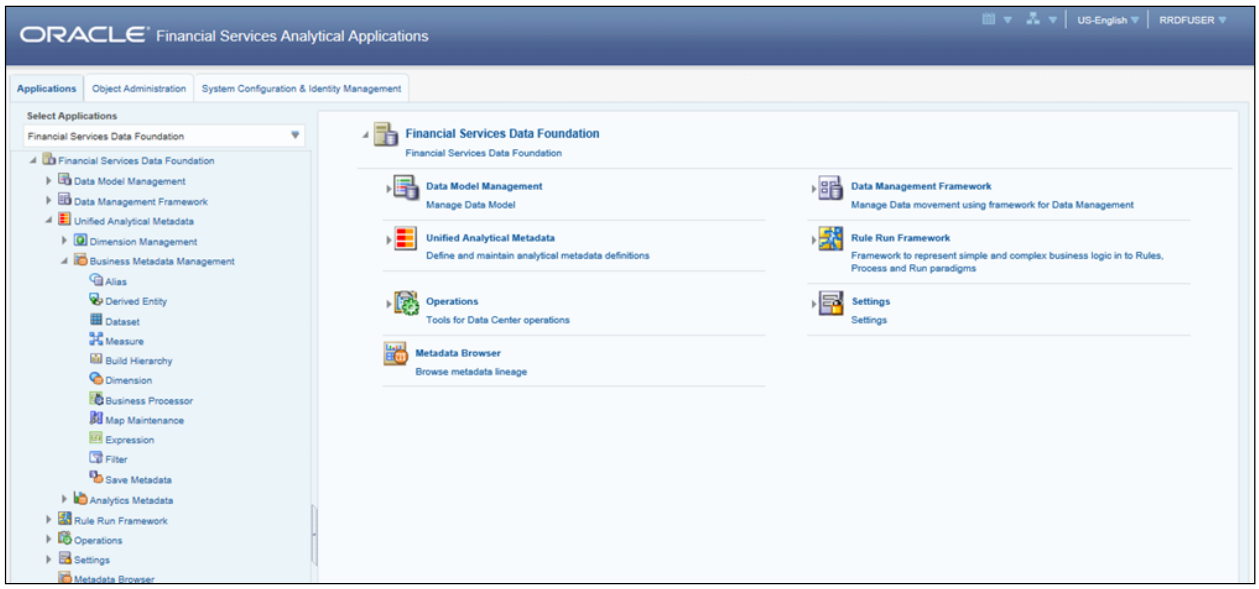


Figure 19: Landing Page

4.2 Business Metadata

In addition to Derived Entity, REG REP uses the following OFSAA features to create the business metadata. For details on the features, refer to OFS Analytical Applications Infrastructure User Guide in OHC documentation library.

- **Hierarchies**: Some OFSAA dimensions support hierarchies. Hierarchies can be used to provide sophisticated stratification for either processing or reporting purposes. For example, an organizational hierarchy can start with a Division level containing Western Region, Eastern Region, and Southern Region; the next level down within the hierarchy can be state or county. A product hierarchy can begin with branches for Asset vs.Liability vs. Service products; under the Asset branch, you can define additional branches for Mortgage Lending, Commercial Lending, Consumer Lending, and so on.
- **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.
- **Business Processor**: It 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.
- **Datasets**: It refers to a group of tables whose inter-relationship is defined by specifying a join condition between the various tables. It is a basic building block to create a query and execute on a data warehouse for a large number of functions and to generate reports.

4.3 Derived Entity

It is the primary component of OFSAA used for OFSDF Interface with Lombard Risk for RBI Regulatory Reporting Solution uses Derived Entity to create physical materialized view which is then queried by Lombard using pre-set data hand-off templates. An Entity refers to a table in which data is stored. Derived Entity within the infrastructure system facilitates you to define entities which are populated through a series of data transformation processes resulting from an existing Data Set or a Source Application. An Entity can be used to define other Business Metadata such as measures, hierarchies, dimensions, data sets, and cubes.

Derived Entities comprise the following:

- Measures
- Hierarchies
- Datasets

Ensure to define the above components within OFSAA before configuring the derived entity, and select **Materialized View** property in Derived Entity. This property creates the derived entity as materialized views.

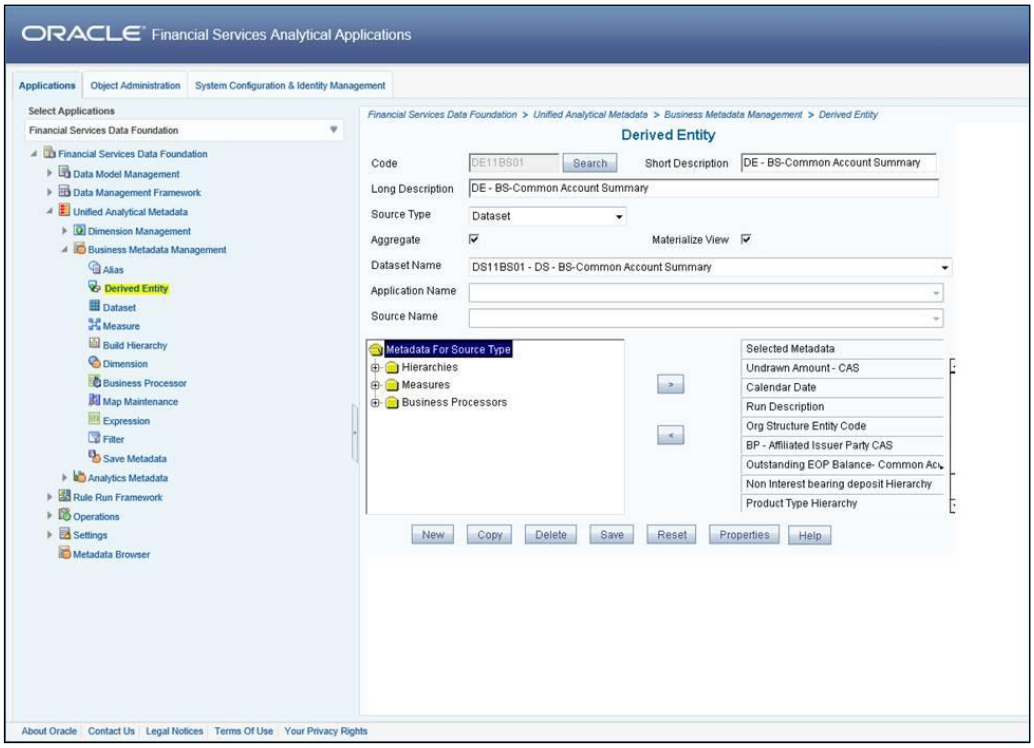


Figure 20: Derived Entity User Interface

Derived Entities must have AS_OF_DATE and LEGAL_ENTITY as the mandatory dimensions. Rest of the structure of the derived entity can vary depending on the dimensions present. A metadata configuration table is present in AgileREPORTER to link the name of the column in the derived entity and dimension that is referred in dimension mapping process.

Derived entities have data for the 'Final Reporting Run' only, which is reported to the Regulatory, and are refreshed for the latest hand-off date.

A metadata configuration table is maintained within AgileREPORTER to capture the derived entities that supply data for each schedule.

4.3.1 Creating Derived Entity

Refer to *OFS Analytical Applications Infrastructure User Guide* in (OHC) documentation library for detailed steps on creating a derived entity.

4.3.2 Saving Derived Entities

After the server restart is complete, save all the derived entities manually using the OFSAAI User Interface (**Unified Analytical Metadata >> Business Metadata Management >> Derived Entity**).

Certain derived entities are defined for RBI Regulatory Reporting, that have a dependency on other derived entities. Therefore, first save the derived entities in the order mentioned below.

4.3.2.1 RBI Reports Batch DEs

Task No.	Derived Entity Code	Derived Entity Description
Task1	DEREG901	DE - Setup Master for Year
Task2	DEREG902	DE - Setup Master for MIS Date
Task3	DEREG903	DE - Setup Master for Quarter
Task4	DEREG904	DE - Setup Master for Last Year
Task5	DEREG905	DE - Setup Master for Last Quarter
Task6	DEREG906	DE - Management Reporting YTD Movement
Task7	DEREG907	DE - Management Reporting QTD Movement
Task8	DEREG908	DE - Management Reporting Previous QTD Movement
Task9	DEREG909	DE - Management Reporting Previous YTD Movement
Task10	DEREG956	DE - Fiscal Period Dimension
Task11	DEREG989	DE - BP Reg Account Summary
Task12	DEREG920	DE - Basel Asset Class
Task13	DEREG921	DE - Standard Party Type
Task14	DEREG978	DE - Reg Account Summary Reclassification
Task15	DEREG951	DE - IFRS Account Summary
Task16	DEREG913	DE - Special Fortnightly Return

Task No.	Derived Entity Code	Derived Entity Description
Task17	DEREG918	DE - Asset Level A1
Task18	DEREG919	DE - Asset Level A2
Task19	DEREG924	DE - Standard Party
Task20	DEREG925	DE - Band Dimension
Task21	DEREG928	DE - Party Dimension
Task22	DEREG929	DE - Country Dimension
Task23	DEREG953	DE - Alternate Friday Count
Task24	DEREG933	DE - Guarantor Country Dimention
Task25	DERBI098	DE - Internal Rating as Hurdle Rate
Task26	DERCA918	DE - Sub Exposures Effective Asset Class CD
Task27	DERCA919	DE - Sub Exposures Issuer STD Party Type CD
Task28	DERCA03	DE - Non Sec Exposures Basel Credit Rating
Task29	DEREG940	DE - Reg Account YTD Metrics
Task30	DEREG941	DE - Reg Account QTD Metrics
Task31	DEREG944	DE - Setup Master for Entity
Task32	DEREG945	DE - Entity Details
Task33	DEREG947	DE - Alternate Friday Summary
Task34	DEREG910	DE - Management Reporting EOP Balance
Task35	DEREG911	DE - Reg Account Summary
Task36	DEREG912	DE - Basic Statistical Return
Task37	DERBI099	DE - Legal Entity Hurdle Rate
Task38	DEREG917	DE - Liquidity Reporting
Task39	DEREG926	DE - Account Summary
Task40	DEREG930	DE - LRM Summary
Task41	DEREG932	DE - Aggregate Cash Flow
Task42	DEREG934	DE - Capital Instrument Transaction Summary
Task43	DEREG935	DE - Management Reporting EOP for ALE
Task44	DEREG936	DE - Management Reporting YTD Movement Agg
Task45	DEREG937	DE - Management Reporting QTD Movement Agg

Task No.	Derived Entity Code	Derived Entity Description
Task46	DEREG938	DE - Management Reporting Previous QTD Agg
Task47	DEREG939	DE - Management Reporting Previous YTD Agg
Task48	DEREG942	DE - Reg Account YTD Metrics Agg
Task49	DEREG943	DE - Reg Account QTD Metrics Agg
Task50	DEREG946	DE - Sundry Debtors Account
Task51	DEREG948	DE - SLR Securities Summary
Task52	DEREG949	DE - Special Fortnightly Return Agg
Task53	DEREG950	DE - Reg Account Summary Agg
Task54	DEREG952	DE - Management Reporting EOP Balance Agg
Task55	DEREG954	DE - RAS Fortnightly SLR Maintenance Agg
Task56	DEREG955	DE - FMR Fortnightly SLR Maintenance Agg
Task57	DERBI011	DE - Asset and Liability Exp Management
Task58	DEREG968	DE - Account Ranking
Task59	DEREG969	DE - Deposit Balances
Task60	DEREG970	DE - Depositor Ranking
Task61	DEREG971	DE - Top 20 Depositor
Task62	DEREG962	DE - Basel Credit Rating Dimension
Task63	DEREG957	DE - RLC Exposures to Large Borrowers Individual
Task64	DEREG958	DE - Capital Instrument Transaction
Task65	DEREG959	DE - Staff Details Summary
Task66	DEREG960	DE - Deposits Summary
Task67	DEREG961	DE - Reg Account Summary Asset Quality
Task68	DEREG973	DE - Term Deposit and Rate Range Agg
Task69	DEREG967	DE - Term Deposit and Rate Range
Task70	DEREG963	DE - Term Deposit
Task71	DEREG964	DE - Large Exposures Customerwise
Task72	DEREG965	DE - Large Exposures Customerwise with Rank
Task73	DEREG966	DE - RLC Large Exposures to Banks
Task74	DEREG972	DE - Accountwise Cash Flows

Task No.	Derived Entity Code	Derived Entity Description
Task75	DEREG974	DE - Regulatory Capital BOY
Task76	DEREG975	DE - Slippage in Loan Previous Year
Task77	DEREG976	DE - Slippage in Loan Current Year
Task78	DEREG977	DE - Slippage Credit Risk Account During the Year
Task79	DEREG979	DE - ALM Account Summary
Task80	DEREG987	DE - Account Write-Off Details QTD
Task81	DEREG290	DE - NPA Classification
Task82	DEREG291	DE - NPA Classification Rank
Task83	DEREG292	DE - NPA Classification Max Principal Amount
Task84	DEREG293	DE - RLC Exposures Classification
Task85	DEREG294	DE - SMA Classification Rank
Task86	DEREG295	DE - SMA Classification Maximum Principal Amount
Task87	DEREG289	DE - RLC Exp to Large Borrowers Group Rank
Task88	DEREG299	DE - RLC Exp to Large Borrowers Group
Task89	DEREG982	DE - RLC Exposures to Large Borrowers Group
Task90	DEREG983	DE - Terminal Information
Task91	DEREG984	DE - Cards Details
Task92	DEREG985	DE - Card Information
Task93	DEREG986	DE - Reg Account Details
Task94	DEREG988	DE - Limit Details
Task95	DEREG980	DE - RBS RatingWise SLR
Task96	DEREG981	DE - Issued Instrument Transaction
Task97	DERBS999	DE - Deposits and Borrowings
Task98	DERBS888	DE - Regulatory Capital Account Summary
Task99	DERBS001	DE - Reg Account Summary RBS
Task100	DERBS09	DE - Fund of Banks Net Worth-End of Previous FY-Borrower-wise
Task101	DERBS10	DE - Fund Exposures for Rep Line
Task102	DERBS08	DE - Fund Exposures-Borrowers exceeding 1 Percent-Banks Networth
Task103	DERBS16	DE - 1 Percent of Total Fund Exposures

Task No.	Derived Entity Code	Derived Entity Description
Task104	DERBS002	DE - Asstes of Bank Reported in Balance Sheet
Task105	DERBS003	DE - Reg Capital Summary under RCA
Task106	DERBS004	DE - Exposures-Standard and Rated at Hurdle Rate
Task107	DERBS005	DE - Exposures-Standard and Rated below the Hurdle Rate
Task108	DERBS006	DE - Exposures-Standard and Rated above the Hurdle Rate
Task109	DERBS009	DE - Fund Base Exposures greater than equal to 1 cr
Task110	DERBS010	DE - Fund Base Exposures less than equal to 1 cr
Task111	DERBS011	DE - Non Fund Base Exposures greater than equal to 1 cr
Task112	DERBS012	DE - Non Fund Base Exposures less than 1 cr
Task113	DERBS11	DE - IFRS Account Summary
Task114	DERBS12	DE - IFRS Account Summary for past 90 days
Task115	DERBS13	DE - IFRS Account Summary Rank-wise
Task116	DERBS14	DE - 1st-2nd-3rd Net Trading PV01-90 days
Task117	DERBS30	DE - Top Borrowers Rank-wise
Task118	DERBS31	DE - Top 20 Borrowers
Task119	DERBS33	DE - Top Industries Rank-wise
Task120	DERBS34	DE - Top 3 Industries
Task121	DEREG990	DE - During the Quarter
Task122	DEREG991	DE - Beginning the Quarter
Task123	DEREG992	DE - FRAS YTD Summary
Task124	DEREG993	DE - RAQ Exposures to Large Borrowers
Task125	DEREG994	DE - Investment Details
Task126	DEREG995	DE - Market Info Detail
Task127	DEREG996	DE - SLR Securities Summary 3AF
Task128	DEREG997	DE - Counterparty Summary
Task129	DEREG998	DE - Cumulative Write-offs
Task130	DEREG999	DE - Counterparty Borrowings
Task131	DERBI001	DE - Counterparty Borrowings Rank-wise
Task132	DERBI002	DE - Counterparty Deposits

Task No.	Derived Entity Code	Derived Entity Description
Task133	DERBI003	DE - Counterparty Deposits Rank-wise
Task134	DETR300	DE - Maximum Values NOOP
Task135	DETR301	DE - NOOP Rank-wise
Task136	DETR302	DE - 1st-2nd-3rd-Maximum values of NOOP
Task137	DETR304	DE - Forthnightly Sum of Bulk Depositors
Task138	DETR305	DE - Forthnightly Average of Bulk Depositors
Task139	DETR306	DE - Top 20 Depositors Assets Range-wise
Task140	DETR307	DE - Top 20 Depositors by Rank
Task141	DETR308	DE - Top 20 Depositors for Rank Hierarchy
Task142	DETR309	DE - Top 20 Depositors
Task143	DETR312	DE - Outstanding Amount for the last 90 days
Task144	DETR313	DE - Maximum Outstanding for the last 90 days
Task145	DERBS40	DE - Average Net Interest of 4 Pre-Quarters
Task146	DERBS41	DE - Net Cash Flows
Task147	DERBS995	DE - Market Info Detail for last 15 days
Task148	DERBS45	DE - Net Daily MTM for past 90 days
Task149	DETR001	DE - Deposits Borrowings for 90 days
Task150	DETR002	DE - Daily Average of Liquid Assets past 90 days
Task151	DETR303	DE - Daily Average of NOOP
Task152	DETR400	DE - Reg Instr Details
Task153	DETR310	DE - Earnings
Task154	DETR311	DE - Fct Aggregate CONS CCY ALM Measures
Task155	DETR3001	DE - NPAs Movement
Task156	DETR3002	DE - Movement of NPA
Task157	DETR3003	DE - PSA
Task158	DETR3006	DE - MTM Assets
Task159	DETR314	DE - Reg Account BP Res Mat
Task160	DETR315	DE - Reg Account summary Res Mat Band
Task161	DETR3007	DE - Le Reg Capital Summary

Task No.	Derived Entity Code	Derived Entity Description
Task162	DERBI004	DE - Cumulative Write-offs Previous Year
Task163	DERBI005	DE - Cumulative Write-offs Current Year
Task164	DERBI006	DE - Litigations Previous Quarter
Task165	DERBI007	DE - Litigations Current Year
Task166	DERBI008	DE - Assests Sold
Task167	DEQCCP2	DE - QCCP Regulatory Capital Account Summary
Task168	DERBI009	DE - Regulatory Capital Rank
Task169	DEREG678	DE - RLC Exposures Reg Capital
Task170	DEREG679	DE - RLC Exposures to Large Borrowers
Task171	DEREG676	DE - Account Write-off Details CRILC
Task172	DEREG677	DE - Account Write-off Details CRILC
Task173	DETR3034	DE - Gross NPA-LESS-FYSD-Account Level
Task174	DETR3024	DE - Account Level Data to Run-Date Level
Task175	DETR3014	DE - Management
Task176	DETR3017	DE - Restructured Assets-EQUAL-FYSD-DATE
Task177	DETR3010	DE - Gross NPA-LESS-FYSD
Task178	DETR3012	DE - Gross NPA-BETWEEN-FYSD-DATE
Task179	DETR3011	DE - Gross NPAMovementCURR
Task180	DETR3009	DE - Write-offs
Task181	DETR3030	DE - Restructured Assets-GREATER THAN EQUAL-FYSD-DATE
Task182	DETR3020	DE - Restructured Assets-LESS-FYSD-DATE
Task183	DETR3018	DE - Restructured Assets-Slipp-NPA-BETWEEN-FYSD-DATE
Task184	DETR3015	DE - Total Borrowings
Task185	DETR3031	DE - LRM Summary QTR End Date
Task186	DETR3035	DE - Gross NPA-BETWEEN-FYSD-DATE-Account Level
Task187	DETR3037	DE - Closing Balance - Slippage
Task188	DETR3036	DE - Account-to-legal entity
Task189	DETR3027	DE - Account Level Data-BETWEEN-FYSD-FYED
Task190	DETR3028	DE - Account Level Data-BTWN-FYSD-FYED and FYSD-MISDATE

Task No.	Derived Entity Code	Derived Entity Description
Task191	DETR3029	DE - Provision Made for NPA-Total Income
Task192	DETR3022	DE - Account Level Data to Run-Date Level-BETWEEN-FYSD-FYED
Task193	DETR3050	DE - Between FYSD-FYED-Mangmnt
Task194	DETR3019	DE - Liability-OS-Derivatives
Task195	DETR3051	DE - Deposits Borrowings for Rank
Task196	DETR3052	DE - Borrowers Rank
Task197	DETR3025	DE - Account-to-Management
Task198	DETR3060	DE - Date-Date-Account Level
Task199	DETR3061	DE - Date-FYSD-Account Level
Task200	DETR3062	DE - Date-Date-to-FYSD
Task201	DETR3063	DE - NPA-Upgradations
Task202	DETR3064	DE - Restructured Assets-LESS-FYSD-DATE-Account Level
Task203	DETR3065	DE - NPA-NetAdvncs
Task204	DETR3088	DE - Management Reporting-Average-Last 4 Quarter End Dates
Task205	DETR3077	DE - Management Reporting-Previous-90 Days
Task206	DETR3078	DE - Reg Date to FQED
Task207	DETR3090	DE - Borrowers by Party
Task208	DETR3091	DE - Top Borrowers by Party
Task209	DETR3092	DE - Industries by Fund Base
Task210	DETR3093	DE - Top Industries by Fund Base
Task211	DETR3094	DE - Industries by Fund Base Non SLR
Task212	DETR3095	DE - Top Industries by Fund Base Non SLR
Task213	DETR3096	DE - Industries by Fund Base OOB
Task214	DETR3097	DE - Top Industries by Fund Base OOB
Task215	DETR3098	DE - Industries by Fund Base OTD
Task216	DETR3099	DE - Top Industries by Fund Base OTD
Task217	DETR5000	DE - RAS EOP Borrowers by Party
Task218	DETR5001	DE - 1 Percent of Total Management
Task219	DETR5002	DE - Borrowers by Party exceeds 1 Percent

Task No.	Derived Entity Code	Derived Entity Description
Task220	DETR6000	DE - RAS EOP Borrowers by Party OOB
Task221	DETR6001	DE - Borrowers by Party exceeds 1 Percent OOB
Task222	DETR7000	DE - RAS EOP Borrowers by Party OTD
Task223	DETR7001	DE - Borrowers by Party exceeds 1 Percent OTD
Task224	DETR8000	DE - RAS EOP Borrowers by Party NY
Task225	DETR8001	DE - Borrowers by Party exceeds 1 Percent NY
Task226	DETR5501	DE - Management EOP Rep Line-810K
Task227	DETR5502	DE - Management Range-wise
Task228	DETR5503	DE - Deposits by Party
Task229	DETR5504	DE - Deposit-Management-by Party
Task230	DETR5505	DE - Deposit-Management-by Rank
Task231	DEREG899	DE - Base Rate At Quarter Start
Task232	DEREG900	DE - Base Rate At Quarter End
Task233	DEREG898	DE - RBS Credit Risk
Task234	DEREG333	DE - ALM Account Summary DGA
Task235	DEREG897	DE - RBS Credit Risk ROI
Task236	DEREG896	DE - RBS Credit Risk WA ROI
Task237	DETR8050	DE - Reg Dep Percentile
Task238	DEREG803	DE - Coupon Yield
Task239	DEREG895	DE - RBS Credit Risk WA ROI oY
Task240	DEREG891	DE - Classification
Task241	DEREG892	DE - Classification Rank
Task242	DEREG893	DE - Classification Max EOP Balance
Task243	DEREG894	DE - RAQ Exposures
Task244	DEREG888	DE - RAQ Exposures Rank
Task245	DEREG889	DE - Provision and Overdue Interest Amount QTD
Task246	DEREG890	DE - TOP 50 RAQ Exposures to Large Borrower
Task247	DETR8101	DE - Write-offs greater than equal to FQSD
Task248	DETR8102	DE - Reg Account equal to FQSD and CreSta S

Task No.	Derived Entity Code	Derived Entity Description
Task249	DETR8103	DE - Reg Account equal to MISDATE and CreSta Not S
Task250	DETR8104	DE - Reg Acct FQSD and MISDATE
Task251	DETR8105	DE - Write-offs from FRSH Slippages
Task252	DEREG664	DE - Country Risk Management
Task253	DEREG777	DE - All Aggregate Currency DGA
Task254	DETR3312	DE - For High Outstanding
Task255	DETR3313	DE - Maximum Outstanding for the Pre 90 Days
Task256	DETR8801	DE - Exposures Not Rated
Task257	DEREG800	DE - Exposure to Large Borrowers Global
Task258	DEREG801	DE - Exposure to Large Borrowers
Task259	DERBI010	DE - Asset and Liability Exposures
Task260	DERBI333	DE - ALM Account Summary DGA
Task261	DETR3004	DE - Standard Asstes BOA
Task262	DEREG815	DE - Foreign Exchange & Securities-Turnover
Task263	DERBI910	DE - Priority Sector Lending for Previous Year
Task264	DERBI097	DE - Hurdle Rate at Maximum Credit Rating Rank
Task265	DERBI096	DE - Maximum Hurdle Rate
Task266	DERBI095	DE - Final Hurdle Rate
Task267	DERBI012	DE - Subsidiary Entity HQLA
Task268	DERBS013	DE - Mrkt Risk Reporting

4.3.2.2 RCA-III Report Batch DEs

Task No.	Derived Entity Code	Derived Entity Description
Task1	DERBI901	DE - Excluding Securitized Transactions
Task2	DERBI902	DE - Sub-Excluding Securitized Transactions
Task3	DERCA004	DE - Sub Operational Risk
Task4	DEQCCP4	DE - QCCP Collateral Amount
Task5	DERCA008	DE - Sub Market Risk Specific
Task6	DENQCCP4	DE - NQCCP Collateral Amount

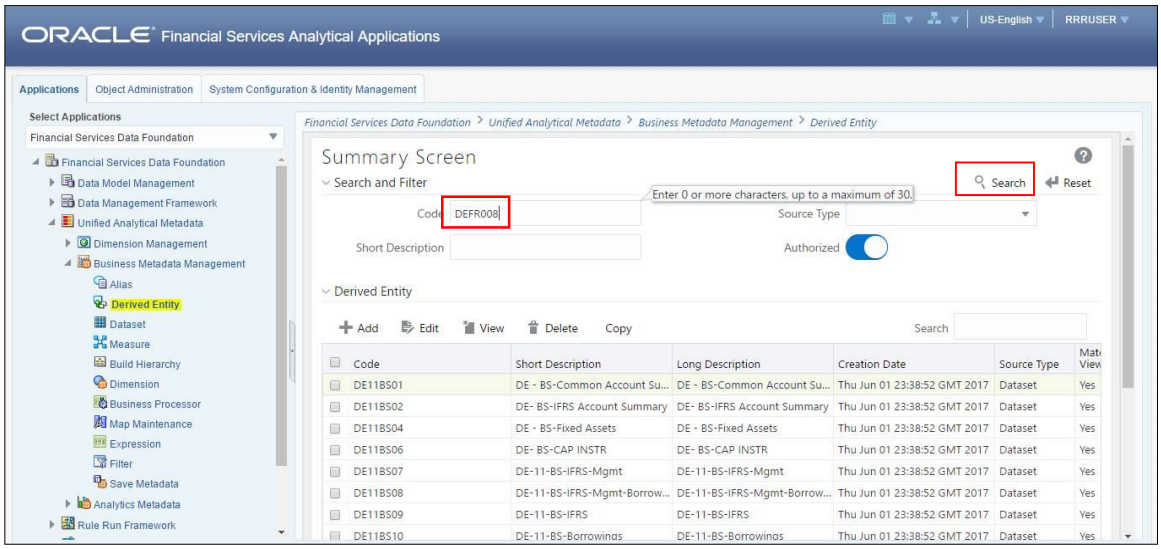
Task No.	Derived Entity Code	Derived Entity Description
Task7	DERBS003	DE - Reg Capital Summary under RCA
Task8	DERBI900	DE - Other Assets of Bank
Task9	DENQCCP	DE - NQCCP Reg Cap Account Summary
Task10	DETR316	DE - Market Risk Cap Summary
Task11	DERBS013	DE - Mrkt Risk Reporting
Task12	DERCA007	DE - Market Risk Specific
Task13	DEQCCP3	DE - QCCP Exposure Amount
Task14	DEQCCP	DE - QCCP Reg Cap Account Summary
Task15	DERCA006	DE - Operational Risk
Task16	DEREG805	DE - Credit Risk Weight
Task17	DERCA010	DE - CCR Lender
Task18	DERCA001	DE - RCA Credit Risk
Task19	DEREG016	DE - NMR Off BS
Task20	DETR3005	DE - Standard Asstes
Task21	DERCA009	DE - Reg Capital Consolidated
Task22	DERBI903	DE - Excluding Securitized Transactions Mit
Task23	DEQCCP1	DE - Default Fund Exposures to QCCP

4.3.3 Adding a Hint to a Derived Entity

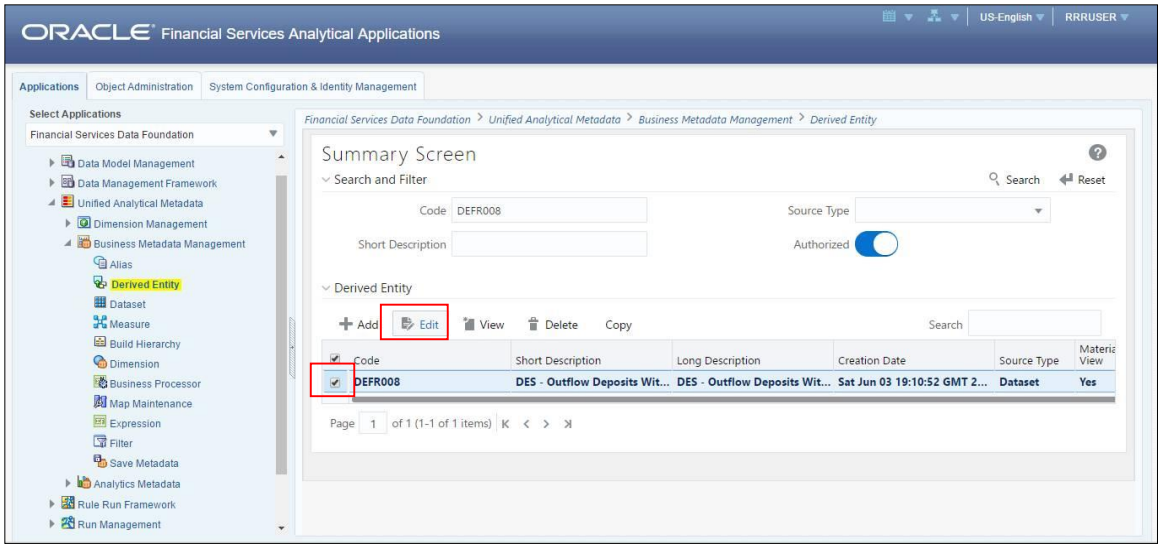
Perform the following steps to add a Hint to a Derived Entity:

A. To add a Hint in a DE, perform the following steps:

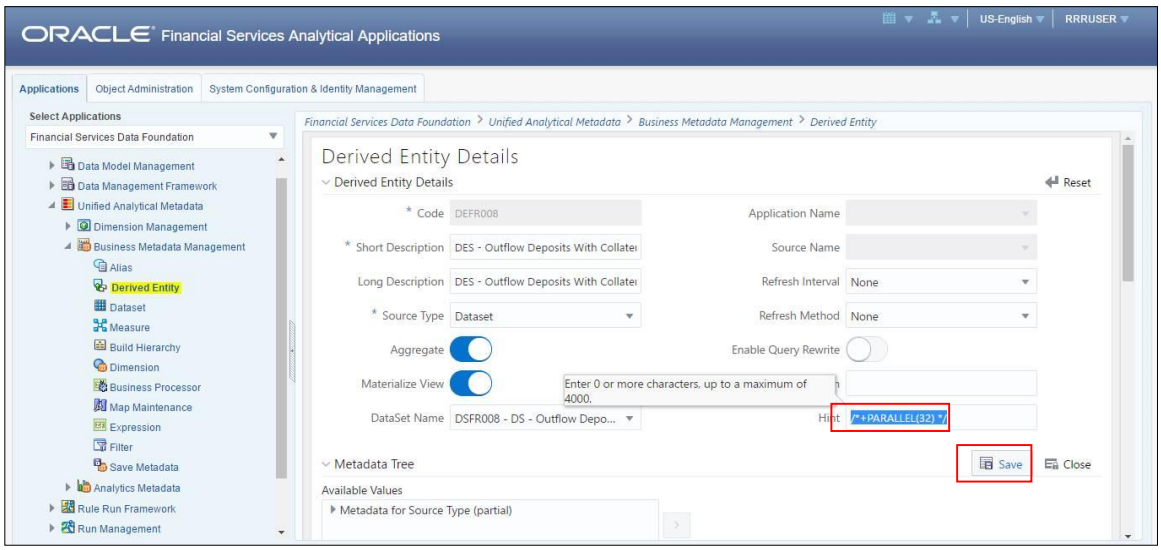
1. Log in to OFSAA application GUI.
2. Navigate to **Financial Services Data Foundation → Unified Analytical Metadata → Business Metadata Management → Derived Entity**. The Summary Screen is displayed as follows.



3. Enter the **DE Code** and click **Search**. The corresponding DE Code and details are displayed.



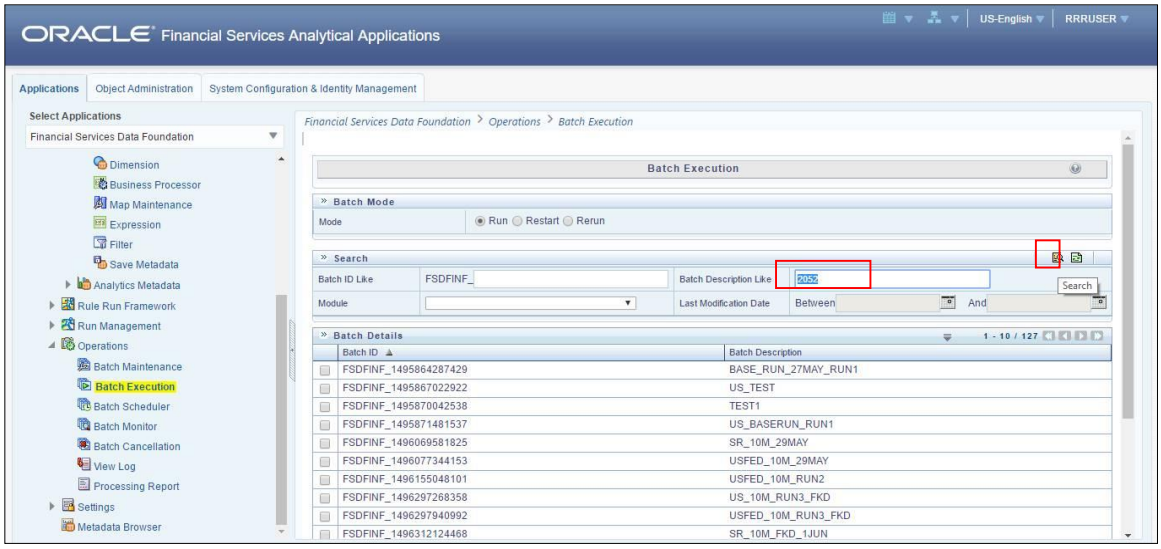
4. Select the **DE Code** and click **Edit**. The DE details are displayed.



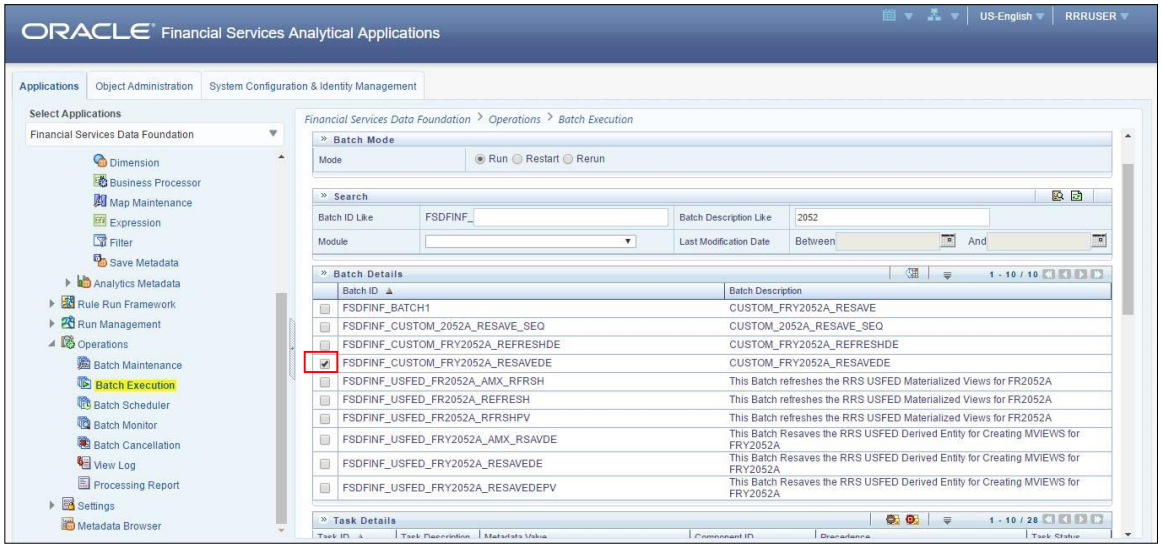
5. Enter the **Hint** for the DE and click **Save**.

B. To execute the Hint added in the DE, perform the following steps:

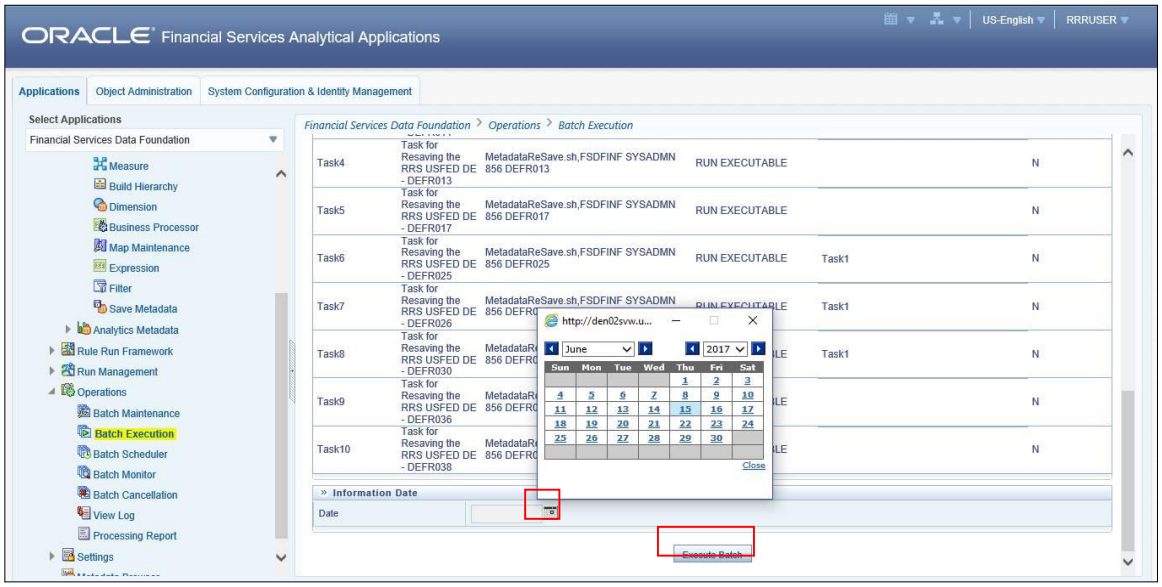
1. Navigate to **Financial Services Data Foundation → Operations → Batch Execution**. The Batch Execution screen is displayed.



2. Enter the **Batch Description Like** and click **Search**.



3. Select the modified/ required DE for Batch Execution under the **Batch Details**.



4. Select the **Date** and click **Execute Batch**. After execution, the DDL reflects the Hint added to the DE.

4.3.4 User Roles

Following are the user roles for derived entity:

- **Reporting Analyst**: This user can create, modify, and delete a derived entity.
- **Data Analyst**: This user can view the derived entities.

4.4 Rules Run Framework Features

OFSDF Interface with Lombard Risk for RBI uses the following Rules Run Framework of OFSAA. For details on the features refer to *OFS Analytical Applications Infrastructure User Guide* in OTN documentation library.

- **Rules**: Financial institutions require constant monitoring and measurement of risk in order to conform to prevalent regulatory and supervisory standards. Such measurement often entails significant computations and validations with an organization's data. Data must be transformed to support such measurements and calculations. The data transformation is achieved through a set of defined Rules.

  REG REP uses Rules for reclassification of dimensions.
- **Process**: A set of Rules collectively form a Process. A Process definition is represented as a Process Tree. The Process option in the Rules Run Framework provides a framework that facilitates the definition and maintenance of a Process. By defining a Process, you can logically group a collection of Rules that pertain to a functional process.
- **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.

4.5 Dimension Mapping

Each cell reference is mapped to a set of dimensions and measures. This mapping is documented in excel and then converted to a Decision table through an offline utility provided by AgileREPORTER. Decision table is a metadata object within AgileREPORTER that stores the criteria for deriving value for each cell reference. The metadata is packaged for regulatory report as part of the OFS Risk Regulatory Solution. Decision table process within AgileREPORTER reads the metadata and derived entity published by OFSAA to populate data required for returns for the specified date and legal entity.

The following table is an example of dimension mapping. Each cell reference is mapped to a set of dimension members and measure. If a dimension is left empty for a cell reference, it indicates that it is not participating in the mapping process. If there are multiple mappings for a cell reference, then the value of this cell can come from any of these criteria.

Decision mapping table is processed against the contents of derived entity to reporting data. Each record of the derived entity is matched against the criteria specified in the decision table to identify the cell reference and derive return data (such as, cell reference and cell value).

Table 7: Dimension Mapping Example 1

Cell References	Is Derived?	Standard Product Type Code	Bucket Category	Bucket Type	Measure
RBIIRSP022R0020C0020	No	Perpetual Cumulative Preference Shares	1 to 28 days	IR	Agg Outflow Amount

RBIIRSP022R0020C0030	No	Perpetual Cumulative Preference Shares	29 days to 3 months	IR	Agg Outflow Amount
RBIIRSP022R0020C0040	Yes				
RBIIRSP022R0020C0050	No	Perpetual Cumulative Preference Shares	Over 6 months and upto 1 year	IR	Agg Outflow Amount
RBIIRSP022R0020C0060	No	Perpetual Cumulative Preference Shares	Over 1 year and upto 3 years	IR	Agg Outflow Amount
RBIIRSP022R0020C0070	No	Perpetual Cumulative Preference Shares	Over 3 years and upto 5 years	IR	Agg Outflow Amount

The following table is derived after converting the dimension member and measure names into corresponding dimension member codes (not surrogate keys) and measure codes. This decision table mapping is provided for each decision table in excel format as per template. AgileREPORTER converts the decision table mapping present in excel into configuration entries within their schema.

Table 8: Dimension Mapping Example 2

Cell References	Is Derived?	Product Type	Customer Type	Branch Country	Measure
RBIIRSP022R0020C0020	No	Perpetual Cumulative Preference Shares	1 to 28 days	IR	MSREG976
RBIIRSP022R0020C0030	No	Perpetual Cumulative Preference Shares	29 days to 3 months	IR	MSREG976
RBIIRSP022R0020C0040	Yes				
RBIIRSP022R0020C0050	No	Perpetual Cumulative Preference Shares	Over 6 months and upto 1 year	IR	MSREG976
RBIIRSP022R0020C0060	No	Perpetual Cumulative Preference Shares	Over 1 year and upto 3 years	IR	MSREG976
RBIIRSP022R0020C0070	No	Perpetual Cumulative Preference Shares	Over 3 years and upto 5 years	IR	MSREG976

Note: All the dimension member codes that are used in the decision table are preseeded by OFSAA and cannot be modified. Therefore, if you have other member codes in the dimension, then you must re-classify them by using re-classification rule post load, or value-code mapping during load.

Decision tables must be prepared closer to the report submission period. In some cases, reclassification of multiple dimensions which result in a single unified reporting dimension must be performed in order to address the complexity of decision table. Reclassification rule is defined in OFSAA and packaged as part of OFSAA Risk Regulatory Reporting Solution.

In some cases, certain sections of the schedule or the entire schedule can be a list of data rows without any mapping to fixed set of dimension members. For example, Top 20 counterparties, List of Available for Sale (AFS) - securities. In such cases, since there are no cell references, decision table mapping specifies the names of dimensions and measures of derived entities in ‘sheet’ column or ‘row’ column of the template.

Note: As a part of the solution, metadata exists as out-of-box / pre-configured with installer.

5 Report Submission

This chapter provides an understanding of the report submission process. It includes:

- Report Submission: AgileREPORTER to Regulator
- Edit Checks/ Validity Check/ Quality Checks
- Report Templates to be used in AgileREPORTER

5.1 Report Submission: AgileREPORTER to Regulator

After OFSAA has prepared and hands off the data as required to Lombard Risk, the subsequent activities are performed within the AgileREPORTER.

Lombard takes care of the report format as per the regulatory requirement which may be eXtensible Business Reporting Language (XBRL)/ XML/ Excel / .Data/ XML and so on.

5.2 Edit Checks/ Validity Check/ Quality Checks

The AgileREPORTER carries out the report level / submission check comprising Edit Chceks / Validity Checks / Quality Checks as provided by the regulator.

NOTE: Refer to the AgileREPORTER user documentation provided by Lombard Risk, for details of activities within the AgileREPORTER.

5.3 Report Templates to be used in AgileREPORTER

The report templates to be used in AgileREPORTER are listed as follows:

Report Name	Template Version
BSRII	BSRII_v3
BSRVII	BSRVII_v2
CICDP	CICDP_v1
CRILC	CRILC_v6
CUSTAT	CUSTAT_v2
DSB3ROR	DSB3ROR_v4
DSBIALE	DSBIALE_v6
EXPI	EXPI_v1
FORMAS42	FORMAS42_v3
FORMVIII	FORMVIII_v4
FORMX	FORMX_v3

Report Name	Template Version
GTCAII	GTCAII_v1
IRS	IRS_v4
LCRBLR	LCRBLR_v6
LR	LR_v3
RAQ	RAQ_v6
RBSIXBRL	RBSIXBRL_v5
RBSTR1	RBSTR1_v3
RBSTR3	RBSTR3_v5
RCAIII	RCAIII_v4
RETCGR	RETCGR_v1
RLC	RLC_v4
SAQLO1	SAQLO1_v2
SAQLO2	SAQLO2_v2
SLIPPAGE	SLIPPAGE_v2
SLR	SLR_v3

5.4 Supported Report Template Version and Activation Date

The AgileREPORTER contains the details of the Report template version and the activation date of the same. This can be accessed by selecting the Entity setup option in the Settings Menu which enables the user to Add, Modify, and Delete Entitites. Click on a created Entity to access report templates according to version and the activation date, and assign the necessary privilages as required.

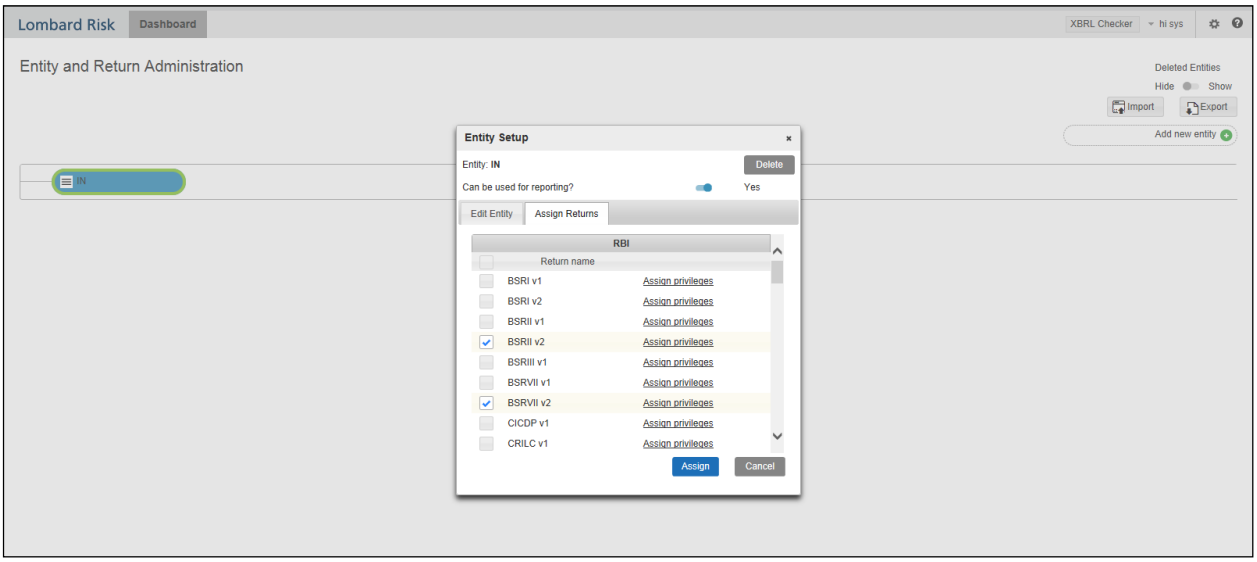


Figure 21: AgileREPORTER Entity Setup

Refer to the *Lombard Risk AgileREPORTER User Guide* for more details.

6 Maintenance

This chapter provides an understanding of the maintainence process for the regulatory templates.

Changes to regulatory template is one of the most common and continuous activity. The following steps help to assess the impact (You can replace the measure, dimension for existing dataware housing configuration pack using the below process):

1. Choosing different execution as a final. After report verification, if requirement is to change the execution, then you must visit Marking Run as Final section. After making these changes you must refresh Derived Entities (Executing Batch to Resave Derived Entities). Then AgileREPORTER also needs to retrieve returns so that revised data is reflected on AgileREPORTER.
2. If Executing Batch to Resave Derived Entities is not working, you can look for Batch Operation Log files. For file path, refer to *OFS Analytical Applications Infrstructure Installation Manual* in OHC documentation library and search for **ficdb/log**.
3. To apply revised patch, refer to the **ReadMe** file for instructions to be followed.
4. To update revised data warehouse configuration pack, perform the following instructions.
   i. Click **Settings → Administration → Data Warehouse Integration**.

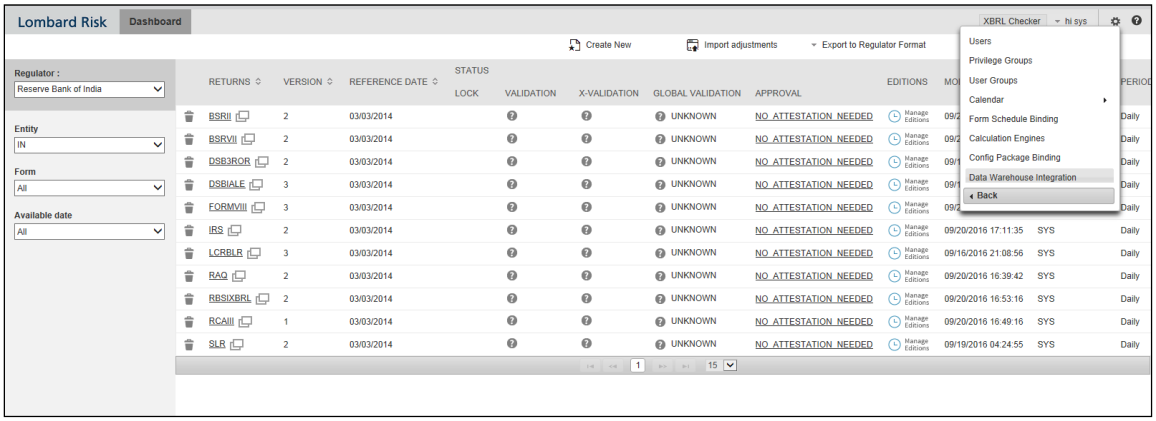


Figure 22: Data Warehouse Integration

   ii. Click **Add** to add a contextual button.
   iii. Enter details of the contextual button.

   Name: It is the text that needs to be displayed in the contextual button.

   URL Pattern: Replace `<<OFSAA_HOST>>`, `<<OFSAA_PORT>>` and `<<OFSAA_CONTEXT>>` with host, port and web context of the environment where OFSAA is installed. Replace `<<OFSAA_HOST>>` with the name of information domain.

   http://<<OFSAA_HOST>>:<<OFSAA_PORT>>/<<OFSAA_CONTEXT>>/OFSAADrilldown/drilldownreport.jsp?cellid=${cellId}&infodom=<<INFODOM>>&legalentity=${entityCode}&run=${run}&date=${referenceDate}

Example:

http://127.0.0.1:8080/ofsaa/OFSAADrilldown/drilldown.jsp?cellid=${cellId}&infodom=OFSFSDFINFO&legalentity=${entityCode}&run=${run}&date=${referenceDate}

i. Use http or https depending on the protocol configured for OFSAA.

ii. Pick an icon.

iv. Click **Add** to save the details.

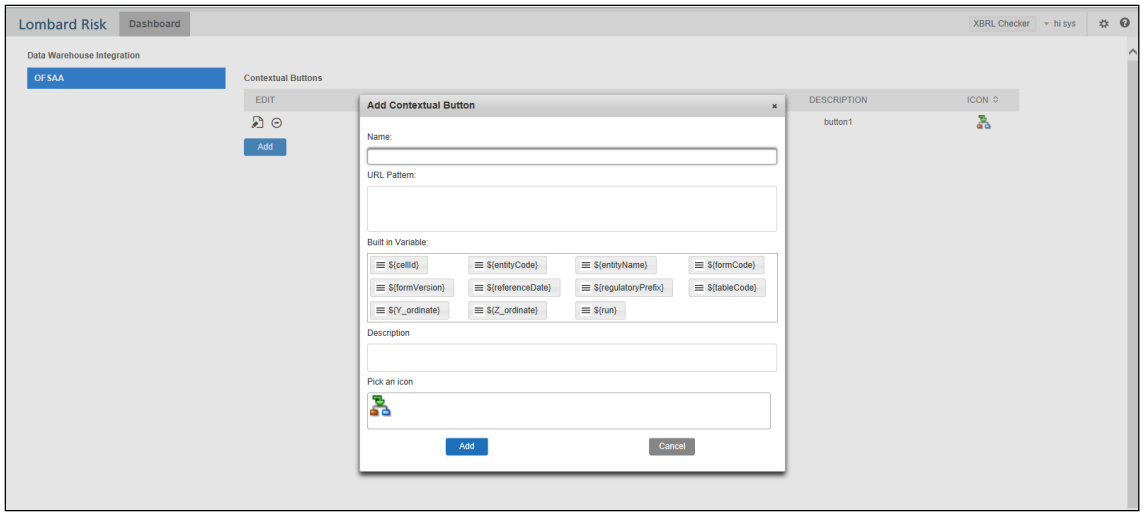


Figure 23: Adding Contextual Button

5. After the data ware configuration pack is updated, Lombard Configuration pack must reflect this.

Note: Refer to *Lombard Risk AgileREPORTER User Guide* for details.

7 Troubleshooting Guidelines

This section covers troubleshooting guidelines for user of Oracle Financial Services Regulatory Reporting Integration with AgileREPORTER, hereafter called as Integration.

Integration users provide the data inputs through the OFSDF where data is loaded, processed and results are made available for reporting purposes. Integration package then makes this data available in required formats to AgileREPORTER. In AgileREPORTER, this data is then aggregated according to the reporting requirements and end users view this from AgileREPORTER User Interfaces designed for the Viewing / Editing of this aggregated data.

This section provides detailed guidelines on how to troubleshoot the data issues tracing back the data flow from AgileREPORTER.

7.1 Prerequisites

It is assumed that user can login and see following menus and respective reports in AgileREPORTER.

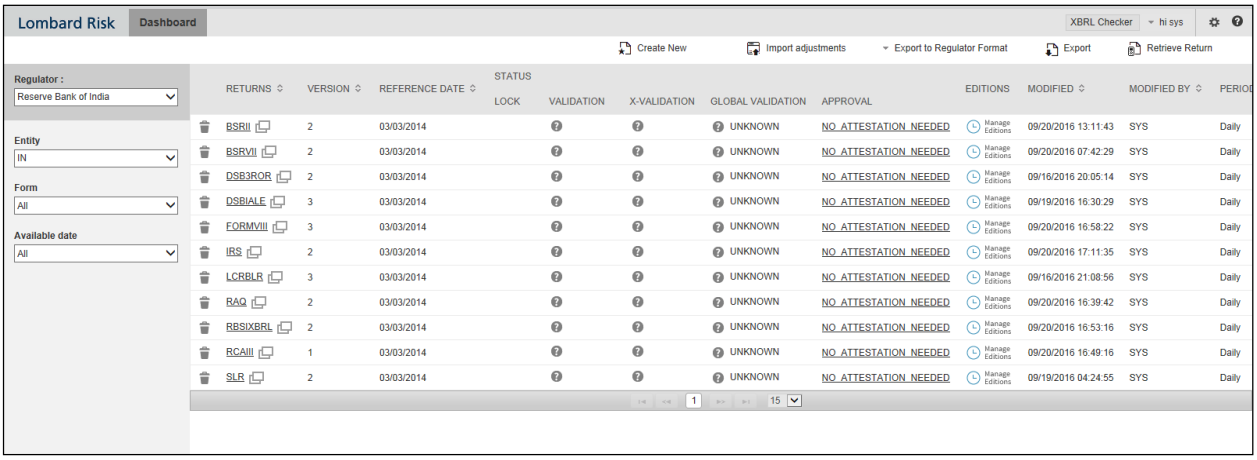


Figure 24: AgileREPORTER

This means configurations activities for the AgileREPORTER and OFSAA are completed. Set up activities for Entity is done and reports templates as shown above are available for viewing. Report Names shown in the figure are for illustration purpose and actual name depends on the integration pack licensed.

7.2 Troubleshooting Use Cases

7.2.1 Unable to Generate Report

If you are unable to generate reports, meaning none of the derived entities referred in the report has rows for the LE/date combination, then you must refer to Installation Manuals of AgileREPORTER or OFSAA Integration pack for further instructions and steps to be followed.

If the process mentioned in Installation Manual is correctly followed and still report list is not available then you are requested to login the bug / service request with Lombard Risk.

7.2.2 Data Unavailable in AgileREPORTER

This is a use case where you are logged in to AgileREPORTER, and selected particular regulatory report for appropriate entity and As of Date, but unable to generate the report.

7.2.2.1 Fetching Null or Zero Values

AgileReporter is showing either Zero or Null values. It indicates that Derived Entities has data (however, all required filer conditions are not matching and resulting in zero value output) or Derived Entiy does not have data at all.

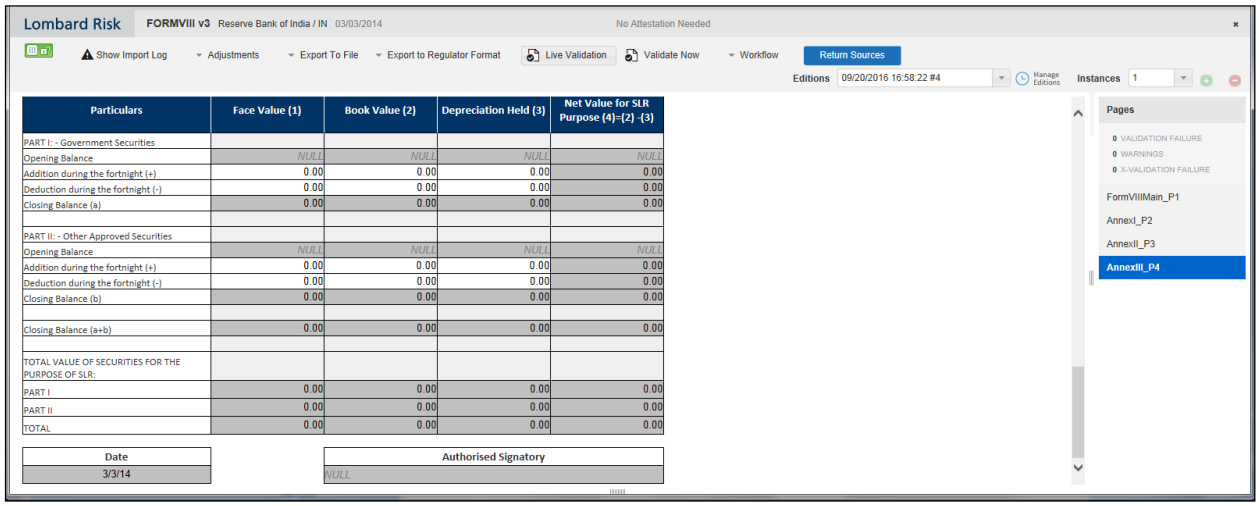


Figure 25: Fetching Null or Zero Values

You must validate as:

1. Derived Entity has data:
    a. Execute the Derived Entity / Materialized views to check if Derived Entity has data or not.
    b. If Derived Entity / materialized view has data but not showing in AgileREPORTER, you must log a Bug / Service Request with Lombard Risk.
2. Derived Entity does not have data:
    a. Execute the Derived Entity / Materialized views to check if Derived Entity has data or not.
    b. If Derived Entity does not have data, then check the Business Metadata excel for a given schedule.
    c. Check Worksheet titled ‘Derived Entity’ in Business Metadata excel. Get all the derived entities for a given schedule.
    d. Get dataset for each derived entity.
    e. Execute datasets in OFSAA FSDF Atomic Schema to check if data is available for a given dataset joins.
    f. If data is available in dataset queries, you must log a Bug / Service Request with AgileREPORTER.
    g. If data is not available in dataset, then check if selection of Entity, Available Date (as of date) is appropriate and required executions are available. If Entity, As of Date and Run executions are correct and still data is not available, then you must log a Bug / Service Request with Oracle Support.

7.2.3 Data Available in AgileREPORTER but Not as Expected

This use case where you are able to refer data for a required cell of a schedule in AgileREPORTER; however, value shown differs from expected value.

Let us take following example to illustrate the steps to be followed. This refers to RegCapitalBaselIIIC_P2 from RCAIII v1 report from RBI. Particular cell referred here is RBIRCA3P002R0110C0030 –

Common Equity Tier 1 capital (CET1): instruments and reserves:

1. Interest free funds from H.O. (for Foreign banks):

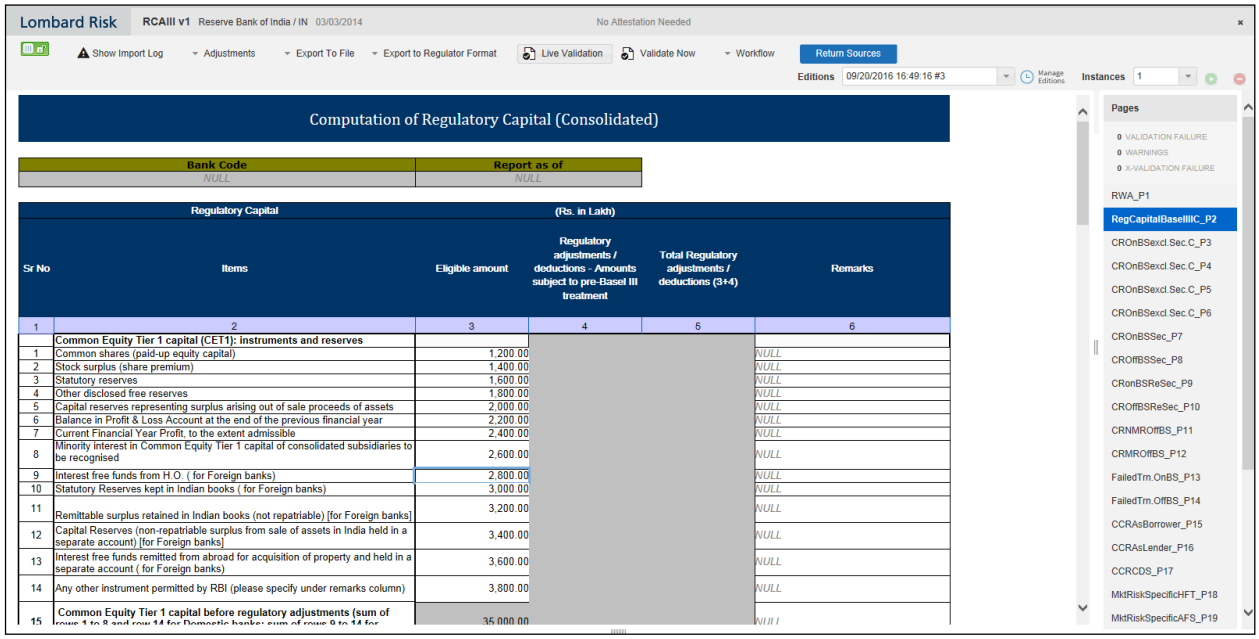


Figure 26: RWA_P1 from RCAIII v1 Report

You can drill down for each cell to check details of data as what is included in aggregation. To drill down, click the value of particular cell and it is shown highlighted. It shows OFSAA data lineage icon on clicking as shown in Figure 27.

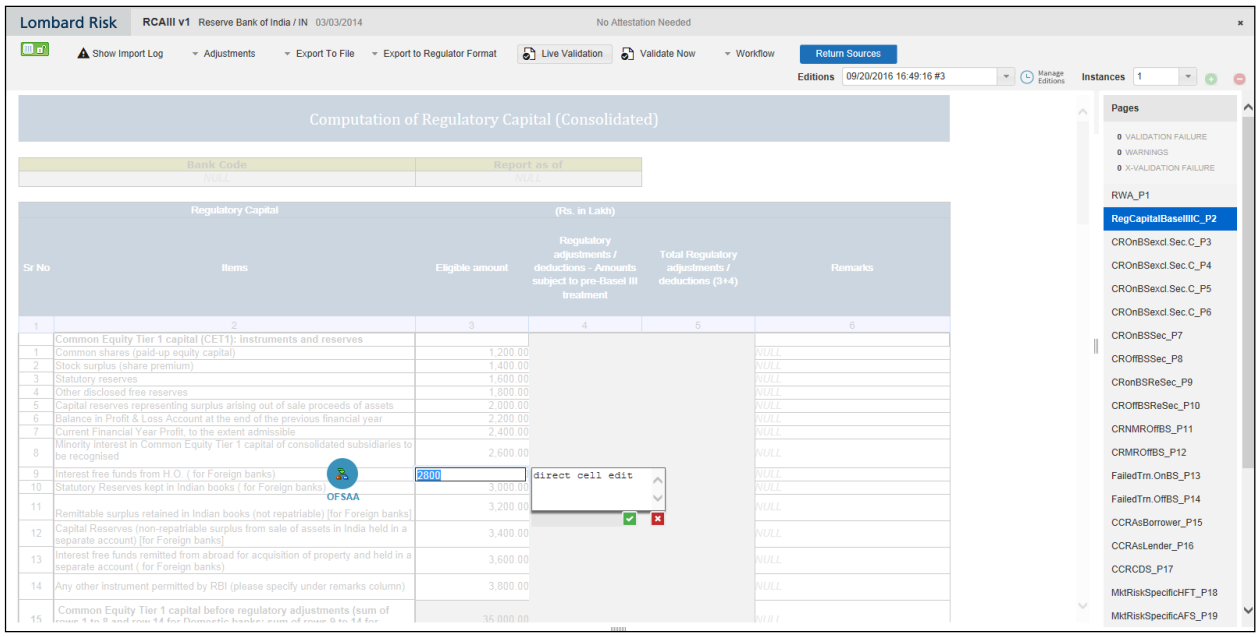


Figure 27: OFSAA Data Lineage Icon

Make sure that you are logged in to OFSAA infrastructure before clicking **Data Lineage** icon.

- If you are not already logged in, clicking here opens the OFSAA infrastructure login window. Log in using appropriate credentials and come back to Report Portal and click the same **Data Lineage** icon again.
- If you are already logged in to OFSAA Infrastructure, the Data Lineage first page opens as shown in Figure 28.

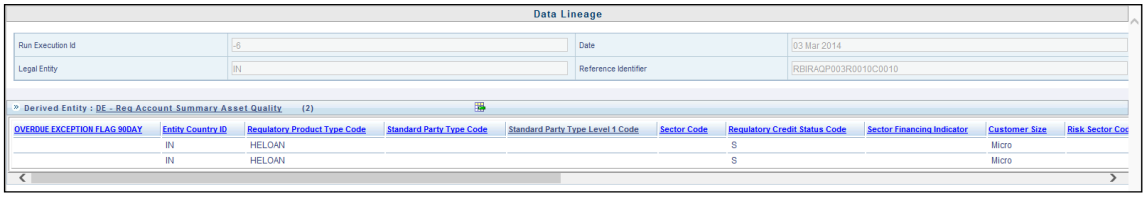


Figure 28: OFSAA Data Lineage Page

Top block of this screen shows following information which helps to connect the AgileREPORTER aggregated data to OFSAA references.

1. Run Execution ID: This refers to OFSAA Execution ID chosen for a given report.
2. Date: This refers to AS OF DATE selected for a given report.
3. Legal Entity: This refers to the OFSAA Legal Entity for whom the report is generated.
4. Reference Identifier: This is the cell reference for which data drill down / lineage is being checked.

Second block displays all hierarchies with values used in a given Derived Entity and measures aggregated for a given combination of a hierarchy values.

To refer the measure values, scroll rightwards using horizontal scroll bar at bottom of second block. On extreme right, measures are displayed as shown in Figure 29:

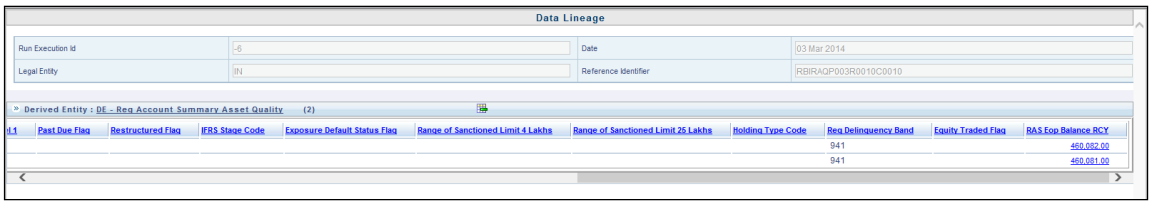


Figure 29: Measure Values

Only measure values are hyperlinked indicating that they can be drilled down further. On clicking the amount, second level drill down show the lowest granularity data available for a given cell reference.

7.2.3.1 Using Drill Down with Data Lineage View

Data Analysts/You can then compare these accounts and their respective monetary amounts with expected values. One can check the following:

1. All required accounts are shown in aggregation
2. Unwanted accounts are not included in aggregation
3. Measures / Monetary amounts at account granularity are as expected.

Any deviation from expectations can be then checked back for:

1. If measure is stage pass through, then validate using T2T to verify if stage data is as expected or must be corrected.
2. If measure is processed, then validate using T2T to verify processing measure is correctly moved to result area.
3. If reclassified hierarchies are showing unexpected values, check Rules and source hierarchies of rules. This use case needs close verification to ensure that all source hierarchies have required values or Rule sequence which can lead to overwriting the values.
4. If all the source data is as expected and result area is now showing unexpected output, then log a Bug / Service Request with Oracle Support.

7.2.3.2 Data Lineage View is not available

If the second block does not show any data, then data analysts/you are advised to refer to the data set worksheet of Business Metadata.

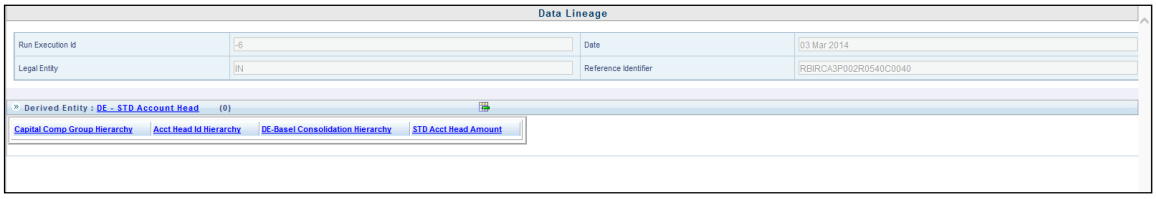
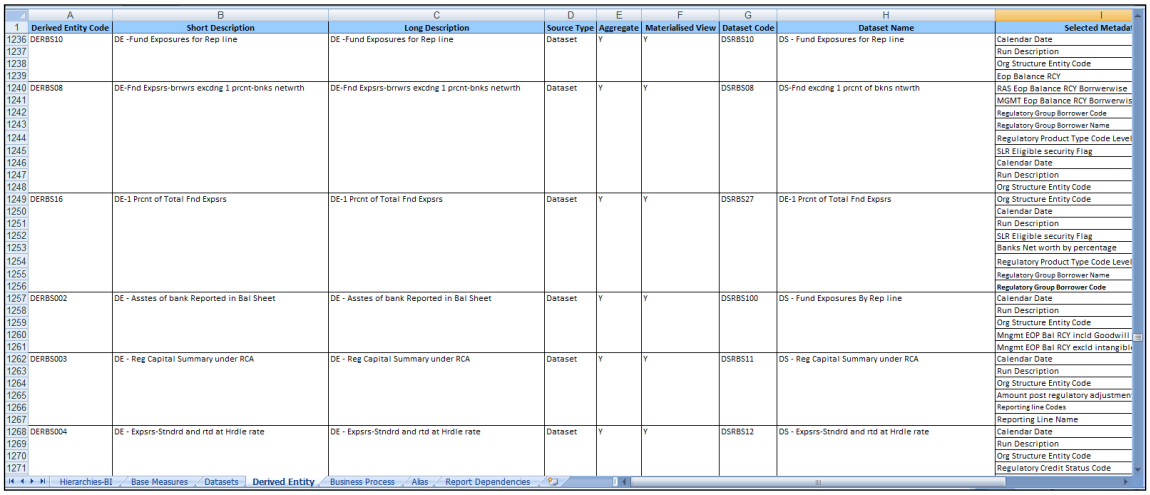


Figure 30: Data Lineage Unavailable

There can be few reasons why second block does not show the data:

1. Internet connection is timed out or broken down - in this case clicking Data Lineage on AgileREPORTER results in a black second block. To rectify this, re-login to OFSAA infrastructure and AgileREPORTER.

2. Data Lineage view works after Metadata is published using OFSAA Infrastructure. To validate if Metadata is properly published or not.
3. If Metadata is properly published and second block still does not show the data, then start with Derived Entity code shown at the beginning of second block. This Derived Entity code is available even if data is not available.
4. Using this Derived Entity code data analysts are advised to refer to OFSAA Business metadata with worksheet name as 'Derived Entity'. Sample Business Metadata excel is shown in Figure 31:

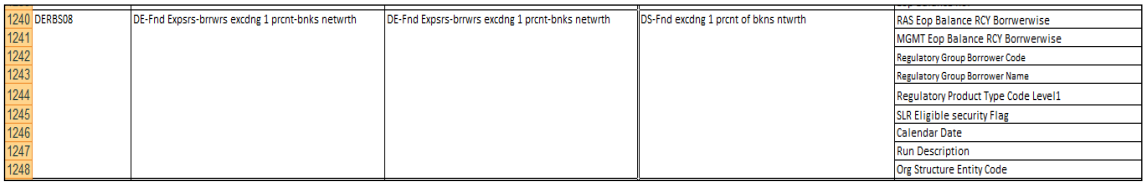


	A	B	C	D	E	F	G	H	I
1	Derived Entity Code	Short Description	Long Description	Source Type	Aggregate	Materialised View	Dataset Code	Dataset Name	Selected Metadat
1236	DERBS10	DE -Fund Exposures for Rep line	DE -Fund Exposures for Rep line	Dataset	Y	Y	DSRBS10	DS - Fund Exposures for Rep line	Calendar Date
1237									Run Description
1238									Org Structure Entity Code
1239									Eop Balance RCY
1240	DERBS08	DE-Fnd Expsrs-brrwrs excdng 1 prcnt-bnks netwrth	DE-Fnd Expsrs-brrwrs excdng 1 prcnt-bnks netwrth	Dataset	Y	Y	DSRBS08	DS-Fnd excdng 1 prcnt of bkns ntwrth	RAS Eop Balance RCY Borrwerwise
1241									MGMT Eop Balance RCY Borrwerwis
1242									Regulatory Group Borrower Code
1243									Regulatory Group Borrower Name
1244									Regulatory Product Type Code Level
1245									SLR Eligible security Flag
1246									Calendar Date
1247									Run Description
1248									Org Structure Entity Code
1249	DERBS16	DE-1 Prcnt of Total Fnd Expsrs	DE-1 Prcnt of Total Fnd Expsrs	Dataset	Y	Y	DSRBS27	DE-1 Prcnt of Total Fnd Expsrs	Org Structure Entity Code
1250									Calendar Date
1251									Run Description
1252									SLR Eligible security Flag
1253									Banks Net worth by percentage
1254									Regulatory Product Type Code Level
1255									Regulatory Group Borrower Name
1256									Regulatory Group Borrower Code
1257	DERBS002	DE - Asstes of bank Reported in Bal Sheet	DE - Asstes of bank Reported in Bal Sheet	Dataset	Y	Y	DSRBS100	DS - Fund Exposures By Rep line	Calendar Date
1258									Run Description
1259									Org Structure Entity Code
1260									Mngmt EOP Bal RCY incld Goodwill
1261									Mngmt EOP Bal RCY excld intangibl
1262	DERBS003	DE - Reg Capital Summary under RCA	DE - Reg Capital Summary under RCA	Dataset	Y	Y	DSRBS11	DS - Reg Capital Summary under RCA	Calendar Date
1263									Run Description
1264									Org Structure Entity Code
1265									Amount post regulatory adjustmen
1266									Reporting line Codes
1267									Reporting Line Name
1268	DERBS004	DE - Expsrs-Stndrd and rtd at Hrdle rate	DE - Expsrs-Stndrd and rtd at Hrdle rate	Dataset	Y	Y	DSRBS12	DS - Expsrs-Stndrd and rtd at Hrdle rate	Calendar Date
1269									Run Description
1270									Org Structure Entity Code
1271									Regulatory Credit Status Code

Hierarchies-BI | Base Measures | Datasets | Derived Entity | Business Process | Alias | Report Dependencies

Figure 31: Business Metadata

5. By referring to Business Metadata, you can get complete information on Derived Entity such as dataset, Fact tables, measures, hierarchies defined under particular Derived Entity.



1240	DERBS08	DE-Fnd Expsrs-brrwrs excdng 1 prcnt-bnks netwrth	DE-Fnd Expsrs-brrwrs excdng 1 prcnt-bnks netwrth	DS-Fnd excdng 1 prcnt of bkns ntwrth	RAS Eop Balance RCY Borrwerwise
1241					MGMT Eop Balance RCY Borrwerwise
1242					Regulatory Group Borrower Code
1243					Regulatory Group Borrower Name
1244					Regulatory Product Type Code Level1
1245					SLR Eligible security Flag
1246					Calendar Date
1247					Run Description
1248					Org Structure Entity Code

Figure 32: Business Metadata

The Dataset ANSI Joins provide valuable information on how various entities are joined/linked together. By executing these Joins, you can confirm if data is available for given filters and conditions. If data is fetched using Dataset Joins and Data Lineage does not show data, you must log a Bug / Service Request with Oracle Support Services.

Oracle Financial Services Regulatory Reporting for Reserve Bank of India – Lombard Risk Integration Pack User Guide Release 8.0.5.1.0

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