

# **Oracle Financial Services Basel Regulatory Compliance for APRA**

**User Guide**

**Release 8.1.1.0.0**

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**ORACLE**  
Financial Services

## Oracle Financial Services Basel Regulatory Compliance

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# Document Control

Version Number	Revision Date	Change Log
1.0	May 2021	Created new user guide for Basel Regulatory Compliance for APRA jurisdiction.

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# 1 Getting Started

## 1.1 Intended Audience

Welcome to Release 8.1.1.0.0 of the Oracle Financial Services Basel Regulatory Compliance User Guide.

This guide is intended for:

- **Technical Analyst:** This user ensures that the data is populated in the relevant tables as per the specifications, executes, schedules, and monitors the execution of Runs as batches.
- **Business Analyst:** This user reviews the functional requirements and information sources, like reports.
- **Data Analyst:** This user is involved with cleaning, validation, and importing of data into the OFSAA Download Specification Format.
- **Administrator:** The Administrator maintains user accounts and roles, archives data, loads data feeds, and so on. The administrator controls the access rights of users.

## 1.2 Conventions

The following text conventions are used in this document.

**Table 1: Document Conventions**

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

## 1.3 Installing this Major Release

For detailed instructions to install this Major Release, see the [Oracle Financial Services Capital Adequacy Installation and Configuration Guide Release 8.1.1.0.0](#).

## 1.4 Related Information Sources

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

- [OHC Documentation Library](#) for **OFS Capital Adequacy (OFS CAP) Application Pack**:
  - *Oracle Financial Services Capital Adequacy Pack Installation Guide*
- [OHC Documentation Library](#) for **OFS AAI Application Pack**:
  - *OFS Advanced Analytical Applications Infrastructure (OFS AAI) Application Pack Installation and Configuration Guide*
  - *OFS Analytical Applications Infrastructure User Guide*
  - *OFS Analytical Applications Infrastructure Administration Guide*
  - *Oracle Financial Services Analytical Applications Infrastructure Environment Check Utility Guide*
- **Additional documents:**
  - [OFSAA Licensing Information User Manual Release 8.1.1.0.0](#)
  - [OFS Analytical Applications Infrastructure Security Guide](#)
  - [OFSAAI FAQ Document](#)
  - [OFS Analytical Applications 8.1.1.0.0 Technology Matrix](#)
  - [Oracle Financial Services Analytical Applications Infrastructure Cloning Guide](#)



## 2 What's New in this Release

As part of this release, Australian compliance for Capital Adequacy is introduced, and compliance with the 8<sup>th</sup> December 2020 draft guideline published for Credit Risk Standardized Approach is available. This is Australia's uptake of the Basel III: Finalizing Post Crisis Reforms (d424) document as published by BIS.

The key functionalities addressed in this release are the following:

- Credit Risk
  - Revised Standardized Approach

### 3 Introduction to Basel Regulatory Capital

In 1988, the Bank for International Settlements published the first guidelines on Capital Adequacy called the Basel I accord which primarily focused on credit risk. Assets of banks were classified and grouped into five categories according to credit risk, carrying risk weights. On 4 July 2006, the BIS Committee issued a comprehensive version of the Basel II Framework. This document also consisted of the changes in the June 2004 Basel II Framework, the elements of the 1988 Accord that were not revised during the Basel II process, and the 1996 Amendment to the Capital Accord to incorporate Market Risks. The major outlines of the Basel II accord are to comply with the three pillars.

- The First Pillar: Minimum Requirements for:
  - Tier 1, Tier 2, and Tier 3 capital
  - Credit Risk
  - Market Risk
  - Operational Risk
- The Second Pillar: Supervisory Review Process and
- The Third Pillar: Market Discipline

The main highlights of the Basel III accord of December 2010 (rev June 2011) were:

- Stricter Capital: Basel III requires banks to hold 4.5% of common equity (up from 2% in Basel II) and 6% of Tier I capital (up from 4% in Basel II) of risk-weighted assets (RWA).
- Capital Buffer: Basel III also introduces additional capital buffers, (i) a mandatory capital conservation buffer of 2.5% and (ii) a discretionary countercyclical buffer, which allows national regulators to require up to another 2.5% of capital during periods of high credit growth and (iii) a discretionary G-SIB / D-SIB buffer as applicable.
- Leverage Ratio: Also, Basel III introduces a minimum leverage ratio and two required liquidity ratios. The leverage ratio is calculated by dividing Tier 1 capital by the bank's Total Exposure. Banks are expected to maintain a leverage ratio above 3%.
- CVA Risk: Basel III introduced a CVA risk charge in addition to a counterparty default risk charge for Over counter derivative portfolio.

The Oracle Financial Services Basel Regulatory Capital application consists of Capital Adequacy and Risk-Weighted Assets computations as prescribed in Basel I, Basel II, and Basel III Accord.

The Oracle Financial Services (OFS) Basel Regulatory Capital application is categorized into two versions:

- OFS Basel Regulatory Capital Basic supports the Standardized Approach and its variant for the BIS Jurisdiction.

- OFS Basel Regulatory Capital Internal Rating Based Approach: This is based on the approaches supported by the OFS Basel Regulatory Capital Basic Application and the advanced approaches for BIS Jurisdiction.

The following approaches and calculation are supported in the application:

- Credit Risk
  - Non-Securitization – Standardized Approach & IRB Approach
  - Securitization – Standardized Approach & IRB Approach
- Counterparty Credit Risk
  - EAD Calculation for Derivatives – OTC Derivatives, Cleared Transactions and Exchange Traded Derivatives – Current Exposure Method & Standardized Approach of CCR
  - Default Fund Contribution
- Market Risk
  - Market Risk – Standardized Approach & FRTB Standardized Approach
- Operational Risk
  - Operational Risk – Basic Indicator Approach, Standardized Approach, Alternative Standardized Approach Capital Structure & Buffers

The following jurisdictions are being supported in the out of the box, with all the calculations listed above:

- EU
  - CRR and CRD IV
  - CRR II and CRD V
- BIS
  - Basel II
  - Basel III & Further
- APRA
  - Basel III Post Crisis Reforms (APS\_112) ( Credit Risk Only)

## 3.1 Key Features

The important features of the OFS Basel Regulatory Capital application are as follows:

- One integrated application that allows for different approaches configured for various portfolios.
- Financial institutions can migrate to more advanced approaches as and when required.
- Comprehensive coverage of Credit Risk Mitigation techniques ensures optimum allocation of Credit Risk Mitigants to exposures for maximum RWA reduction using the optimizer functionality in the application.
- Extensive, pre-built instrument coverage, built to meet Basel III guidelines, which means banks, can get 'up and running' quickly with minimal pre-processing.
- It is a fully transparent application where all Rules and Approaches are visible to business users, reviewers, or auditors.
- Audit Trail is present to maintain accountability of Rule changes, user activity, or system modifications.

## 4 Overview of OFSAA Infrastructure

Oracle Financial Services Analytical Applications Infrastructure is the complete end-to-end Business Intelligence solution that is easily accessible via your desktop. A single interface lets you tap your company's vast store of operational data to track and respond to business trends. It also facilitates the analysis of the processed data. Using OFSAAI you can query and analyze data that is complete, correct, and consistently stored in a single place. It has the prowess to filter data that you are viewing and using for analysis.

It allows you to personalize information access to the users based on their role within the organization. It also provides a complete view of your enterprise along with the following benefits:

- Track enterprise performance across information data store.
- Use one interface to access all enterprise databases.
- Create consistent business dimensions and measures across business applications.
- Automate the creation of coordinated data marts.
- Use your business language to get fast and accurate answers from all your databases.
- Deploy an open XML and web-based solution against all major relational or multi-dimensional databases on Microsoft Windows and UNIX servers.

This chapter provides an overview of Infrastructure, its components, and explains how these components are organized in the Splash window with the user login process.

## 4.1 Components of OFSAAI

The OFSAA Infrastructure consists of the following components or modules that are used to deploy an analytical solution.

- Data Model Management
- Data Management Tools
- Unified Analytical Metadata
- Rules Run Framework
- Metadata Browser
- Operations
- Questionnaire
- Process Modelling Framework
- System Configuration & Identity Management
- Object Administration
- Forms Framework

See the [OFS Analytical Applications Infrastructure User Guide](#) for more information on all important components/modules of OFSAAI.

# 5 Application Processing

This section provides details on the Application Processing components.

## 5.1 Data Requirements

Data can be divided into two categories – Setup Tables, and Slow Changing Dimensions (SCD), and can be set up by the bank

- **Setup Tables**

A setup table is a set of data that is static and does not change at regular intervals.

- **Dimension Tables**

A slowly changing dimension table is a set of data that is static and does not change at regular intervals. For more information on SCD, see the section [Slow Changing Dimensions](#) in the Annexure.

## 5.2 Data Assumptions

This section aims to identify certain data-related assumptions for specific tables that help in the smooth functioning of the Basel Regulatory Capital Application.

### Data Format

- In all the date columns, data is expected as per the **MIS\_DATE\_FORMAT** of the Atomic Schema.
- Country and Currency codes are expected as per the ISO standard.

### Dimension Table

**DIM\_CAPITAL\_ACCT\_HEAD**: General Ledger items and Non-General Ledger items are differentiated in the column **F\_GL\_IDENTIFIER** by the flag *Y* that indicates the General Ledger items and the flag *N* that indicates non-General Ledger items.

### Mapping Table

**FSI\_CAPITAL\_STANDARD\_MAPPING**: For certain standard account headline items that are processed by the application, for example, **Net Tier 1 Capital**, **Total eligible Capital**, **Tier 1 Capital Ratio**, and **Capital Ratio**, you are expected to provide mapping for these items as *Others* in the column **V\_CAPITAL\_ACCOUNT\_IDENTIFIER** in the **FSI\_CAPITAL\_STANDARD\_MAPPING** table. These capital line items mapped as *Others* are used in the **T2T - CAPITAL\_STD\_ACCT\_HEAD\_POP** to insert records into **FCT\_STANDARD\_ACCT\_HEAD** from **FCT\_CAPITAL\_ACCT\_HEAD**.

Across the Basel product, in all the seeded data tables, the open end date is mentioned as 31-DEC-9999. You must not modify this value.

## FACT Table

**FCT\_CAPITAL\_ACCT\_HEAD:** General Ledger items and non-General Ledger items are differentiated in the column **F\_GL\_IDENTIFIER** with the flag *Y* that indicates General Ledger items and the flag *N* that indicates non-General Ledger items. The T2T that populates data from the table **STG\_GL\_DATA** to the **FCT\_CAPITAL\_ACCT\_HEAD** table populates the value *Y* in the column **F\_GL\_IDENTIFIER**. The T2T that populates data from the **STG\_STANDARD\_ACCT\_HEAD** table to the table **FCT\_CAPITAL\_ACCT\_HEAD** populates the value *N* in the column **F\_GL\_IDENTIFIER**. The reclassification of General Ledger and non-General Ledger SKEYS to standard account head key (**N\_STD\_ACCT\_HEAD\_SKEY**) happens in the **FCT\_CAPITAL\_ACCT\_HEAD** table by either of the following tables:

- A Type 2 rule is used to reclassify by using the **DIM\_CAPITAL\_ACCT\_HEAD** and **DIM\_STANDARD\_ACCT\_HEAD** tables.
- The referencing the mapping table **FSI\_CAPITAL\_STANDARD\_MAPPING**

From the **FCT\_CAPITAL\_ACCT\_HEAD** table, General Ledger and Non-General Ledger data flows into the **FCT\_STANDARD\_ACCT\_HEAD** table. Again, the distinction is based on the flag *Y* in the column **F\_GL\_IDENTIFIER**.

### 5.2.1 Data Loading

The OFSAAI Data Integrator Framework allows you to move data flexibly within the Oracle Financial Services Analytical Applications (OFSAA) Data Model at different levels of granularity and various stages of the process.

Data can be loaded into the required Stage or Setup Tables in the following ways:

- **Connecting to other databases:** Relational Data Sources can be defined to connect to any of the Relational Database Management System (RDBMS) like Oracle, IBM DB2, MS SQL Server, and any RDBMS through native connectivity drivers or ODBC. RDBMS data source lets you define the RDBMS engine present locally or remotely with FTP access to the remote server.
- **Flat-Files:** Flat File data source lets you define the flat file present locally or remotely with FTP access to the remote server. Data files can be made available in the standard staging area configured in OFSAAI. A Flat-File data source is a local data source residing in the staging area of the Infrastructure Database Server.

For more information on the format of the flat file or RDBMS file, see the [Download Specifications](#) document.

Further, data can be loaded or maintained by using the following components available in the Data Integrator Framework:

**Excel upload:** Choose this option when you have moderate quantities of data that are available in an excel file format.

**Manual Data Entry – Forms:** The Data Entry Forms and Queries (DeFQ) Module of the Data Integrator is designed to create user-friendly Data Entry windows with a choice of layouts, which enables data viewing and data manipulation easily. You can select tables based on which you can create forms that can be used in any application.

For more information on data loading activities like Flat File Source and Connecting to other databases, see the [OFS Advanced Analytics Infrastructure User Guide](#).



## 5.2.2 Reclassification Rules

A sample list of products, customer types, issuer types, collateral types, credit ratings, and organization structure is pre-defined in the application. However, the list and naming convention of products, customer types, and so on, might differ from one bank to another. The application re-classifies the bank's data into standard data, which does not change for a given set of regulations, and then processes it based on standard classifications. This restricts the level of modifications needed for each implementation for re-classifying the bank's data into the relevant standard classifications.

The list of reclassification rules required for the population is attached in the Annexure.

### Setting up the Data

The respective Dimension Tables corresponding to products (**DIM\_PRODUCT**), customer types, issuer types (**DIM\_PARTY\_TYPE**), collateral type (**DIM\_MITIGANT\_TYPE**), credit ratings (**RATING\_SRC\_MASTER** and **DIM\_CREDIT\_RATING**), and organization structure (**DIM\_ORG\_STRUCTURE**) are populated with the list of product types, customer types, issuer types, collateral types, ratings, and organization structure as used in the respective bank.

As described in the [Data Requirements](#) section, these tables can be populated by directly uploading data into the tables if they are not likely to change frequently or by using the SCD component, if the data is likely to change over some time.

Also, data is expected in **STG\_PRODUCT\_MASTER**, **STG\_PARTY\_TYPE\_MASTER**, and **STG\_MITIGANT\_TYPE\_MASTER** for the product, party type, and mitigant types. SCDs populate data from these tables into **DIM\_PRODUCT**, **DIM\_PARTY\_TYPE**, and **DIM\_MITIGANT\_TYPE**.

### Modifying the Re-Classification Rules

You must only populate the SCD tables through the [SCD Batches](#). The hierarchies related to Product Types, Customer Types, and so on, must be re-saved if the data keeps on changing. This can be done individually for each hierarchy using the Unified Metadata Manager or in bulk using the Save Metadata link under Administration on the LHS pane of the OFSAAI window. A new node is created in the source hierarchy. This node is mapped to the node in the target to be added to the target hierarchy. The pre-configured reclassification rules are modified to map the Bank's data to the Standard data using the Rules Framework.

## 5.3 Processing

After data stores are created and Rules, Processes, and Runs are defined, the timing and frequency of the Execution can be established. For more information on the Runs pre-configured with the application, see the Run Charts. To execute Runs as batches, see the Operations section in the [Oracle Financial Services Analytical Applications Infrastructure 8.1.1 User Guide](#).

The scheduling of Runs within OFSAAI can be managed on a real-time or batch basis. Batch processes can be executed daily, weekly, monthly, or to meet specific business needs. The Run Management facility also provides the ability to run jobs on a manual or real-time basis, as required. Existing investments in external schedulers can also be used to call web services within this infrastructure.

## 5.3.1 **Batch Processing**

A batch refers to a set of executable processes based on a specified rule. Batches relating to the application must be executed as specified below. These batches are executed from the Operations Menu of OFSAAI. For more information on the Operations section, see the [OFS AAI 8.1.1 User Guide](#).

Slowly Changing Dimension batch: This must be executed when you are installing the application for the first time. Subsequently, this batch must be executed only when new data is added. The tasks processed and the order in which the tasks are processed, are specified in the Run Charts.

### 5.3.1.1 **Basel Common Batch**

The following tasks are mapped to the Basel Common batch:

- Date Population: This task populates the table DIM\_DATES.
- Party Role Map Calculation: This task populates the party and the role mapping from STG\_PARTY\_ROLE\_MAPPING to FSI\_PARTY\_ROLE\_MAPPING.
- FSI IRCS Calculation: This task populates FSI\_IRCS from STG\_IRC\_RATE\_HIST.

### 5.3.1.2 **PARTY\_FIN\_DATA\_POP Batch**

Populates the Party Financial Data and executes it as required when the Party Financial Data is available.

### 5.3.1.3 **BASEL\_DAILY Batch**

This batch is to be executed daily. This batch is used to populate the exchange rate between different currencies for each date.

### 5.3.1.4 **BASEL\_SETUP\_TBL\_POP Batch**

This batch is used for Basel set up tables' population. This batch contains T2Ts to populate data from setup tables into the corresponding processing tables, and includes rules to mark the latest data indicators. You are required to provide data in setup tables, whichever applicable. The tasks in this batch are adhoc and can be selected as applicable.

For more information on the setup tables for the batches, see the [Setup Table Batch Details](#) file.

### 5.3.1.5 **BASEL\_RATING\_AGENCY**

This batch is used for identifying eligible agencies for rating the exposures in a particular jurisdiction. Data is pulled from DIM\_CREDIT\_RATING into FSI\_CREDIT\_RATING\_JURISDICTION against all regulators available in DIM\_ORG\_STRUCTURE. Please note that V\_CREDIT\_RATING\_NAME, V\_CREDIT\_RATING\_AGENCY columns in DIM\_CREDIT\_RATING are essential for the eligibility rules to work.

Any new user additions to DIM\_CREDIT\_RATING must have these columns populated.

## 5.3.2 **Basel Configurations**

The Basel Configuration Framework is a unique feature of the Basel Regulatory Capital Application which enables a business user - without assistance from a technical analyst - to easily define a Portfolio and a Run. This framework allows you to define a Run by selecting a combination of different Basel approaches for RWA computation. It also allows you to define a Run for a combination of portfolios.

You can execute the Runs as a PMF batch from the **Process Modeller** window. The Regulatory Calculation Definition UI lists all the runs defined in the Framework. For more information on the Process Modelling Framework, refer [Oracle Financial Services Analytical Applications Infrastructure Process Modelling Framework Orchestration Guide](#).

The Basel Configurations feature consists of the following functionalities:

- Optimizer
- Portfolio Definition
- Regulatory Calculation Definition

### 5.3.2.1 **Optimizer**

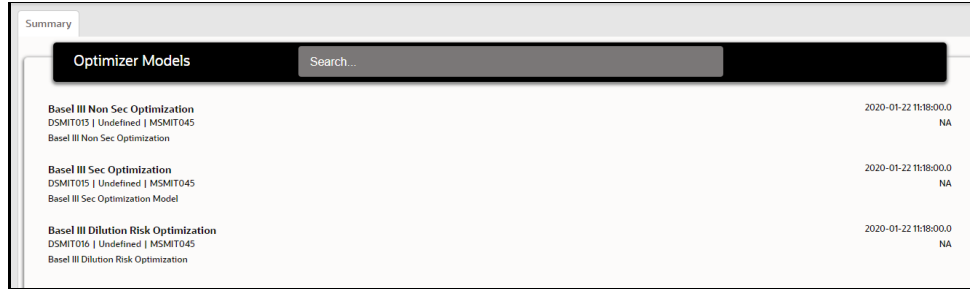
A prerequisite for defining the Optimizer is to update the pool ID in the sub-exposures **FSI\_CAP\_SUB\_EXPOSURES** table for the selected Run.

#### 5.3.2.1.1 **Viewing an Optimizer**

To view the optimizer, perform these steps:

1. Log in to the application and select **Financial Services Basel Regulatory Capital Basic**.
2. On the LHS menu, click **Basel Regulatory Capital Basic**, click **Basel Configurations**, and then click **Optimizer** to open the **Optimizer Models** window.

**Figure 1: The Optimizer Models Window**



3. Select an optimizer to view it.

### 5.3.2.1.2 Executing an Optimizer

#### Prerequisites


You must ensure the following before executing the optimizer:

- Complete the pooling process and update the **N\_POOL\_ID** column in the **FSI\_CAP\_SUB\_EXPOSURES** table.

Optimizer models are defined and accessible on the **Optimizer Models** page. These models are mandatory to execute the model for a particular exposure type.

#### Executing an Optimizer through an Independent Process

Perform the following steps to execute an optimizer as an independent process:

1. Log in to the application as a System Administrator.
2. Click **Basel Regulatory Capital Internal Ratings Based Approach** or **Basel Regulatory Capital Basic** depending on the application that you have the license for.
3. Click Process Modelling and then click Process Modeller.
4. Click **Add**  to open the **Process Details** window.

**Figure 2: The Process Details Window**

The screenshot shows a window titled "Process Details" with a close button (X) in the top right corner. The form contains the following fields and values:

- Process ID:
- Process Name:
- Process Description:
- App Package ID:
- Type:
- Registered Topics:
- Spark DB:
- Infodom:
- Tag:
- Segment:

At the bottom right, there are two buttons: "Save And Close" and "Save And Launch".

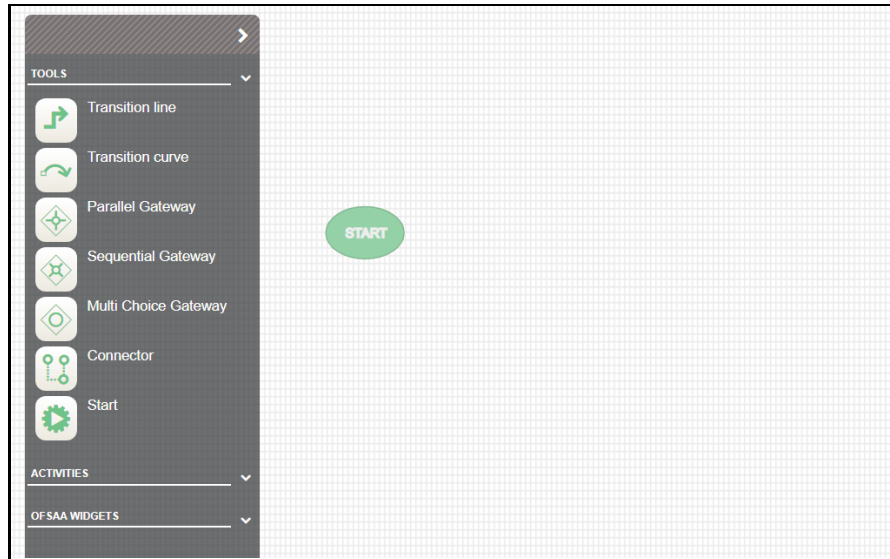
5. Populate the fields in the **Process Details** form as tabulated.

**Table 2: The Process Details Form**

Fields	Description
Process ID	Enter an ID for the optimizer process.
Process Name	Enter a name for the optimizer process.
Process Description	Enter a description for the optimizer process.
App Package ID	Select an application package ID from the drop-down list.
Type	Select the type from the drop-down list.
Spark DB	Do not enable this field if you want to keep the default settings.
Infodom	Select the infodom from the drop-down list.
Tag	Enter the names of the tags to be used for the optimizer process.
Segment	Select a segment from the drop-down list.

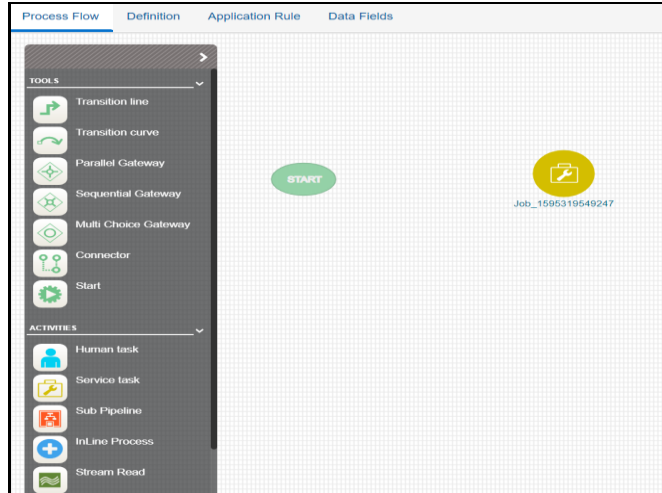
6. Click **Start** and drag the **Start** process in to the canvas.

**Figure 3: The Start Process Added to a Canvas**



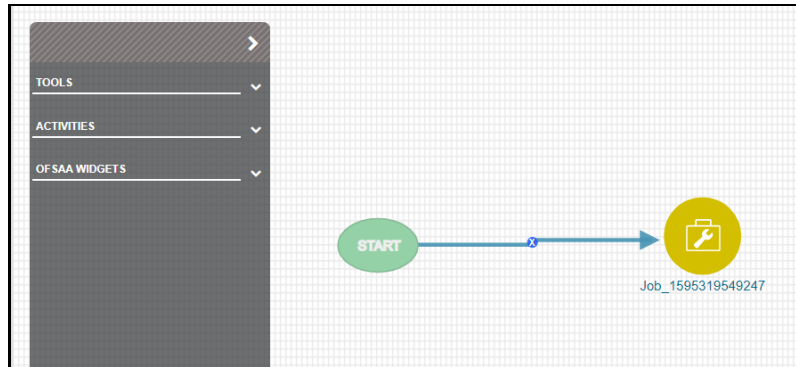
7. Click **ACTIVITIES** to expand it.
8. Click and drag **Service Task** process component into the canvas.

**Figure 4: The Service Task Process Added to the Canvas**



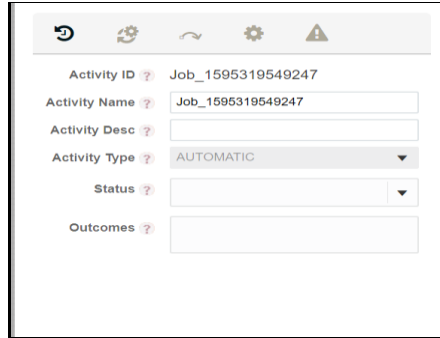
9. Join the **Start** component to the service task component by dragging the **Transition line** connector into the canvas.

**Figure 5: The Transition Line Connector Added to the Canvas**



10. Double-click the service task component to open the settings window.

**Figure 6: The Settings Window**

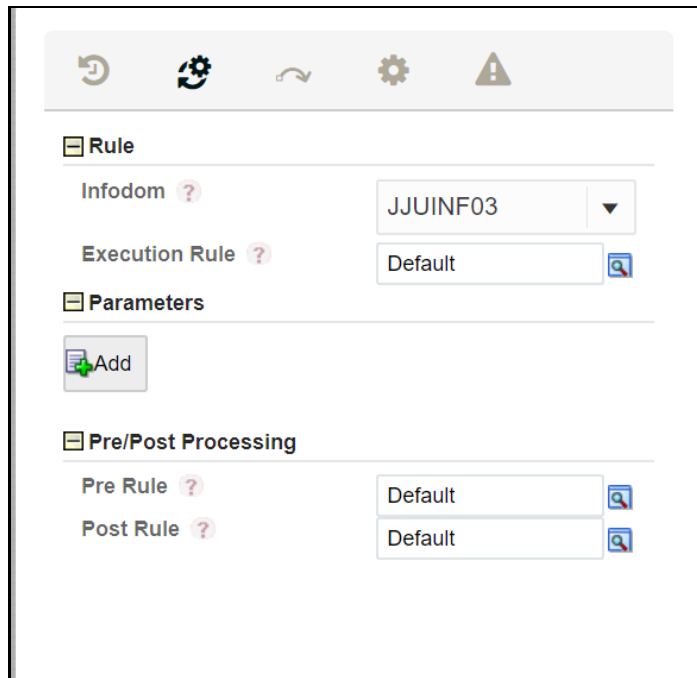


The screenshot shows a settings window with a toolbar at the top containing icons for back, refresh, undo, settings, and warning. Below the toolbar, the following fields are visible:





- Activity ID ? Job\_1595319549247
- Activity Name ? Job\_1595319549247
- Activity Desc ?
- Activity Type ? AUTOMATIC
- Status ?
- Outcomes ?

11. Click **Settings**  to open the **Settings** tab.

**Figure 7: The Settings Tab**



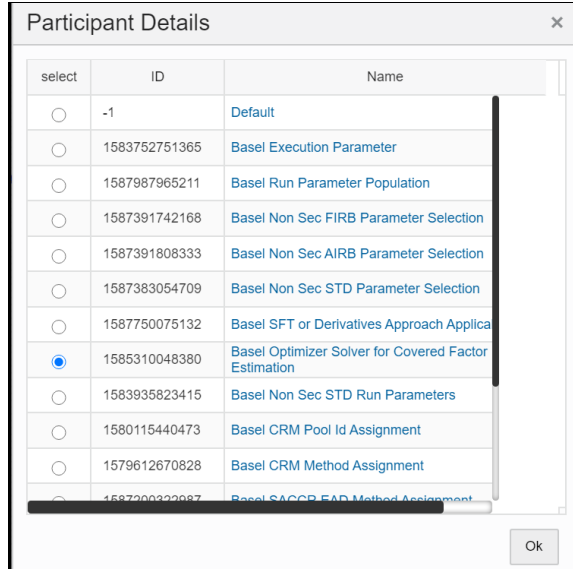
The screenshot shows the Settings Tab with a toolbar at the top containing icons for back, refresh, undo, settings, and warning. The settings are organized into sections:

- Rule**
  - Infodom ? JJUINF03
  - Execution Rule ? Default 
- Parameters**
  -  Add
- Pre/Post Processing**
  - Pre Rule ? Default 
  - Post Rule ? Default 

12. Click **Find**  to open the **Participant Details** screen.

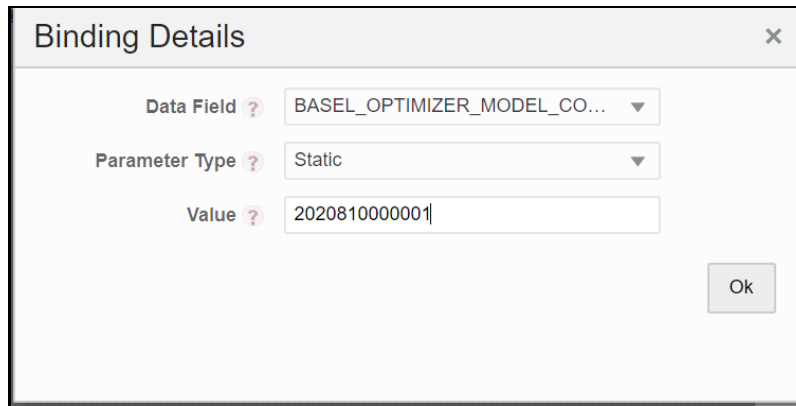


**Figure 8: The Participant Details Window**



13. Click the rule Basel Optimizer Solver for Covered Factor Estimation and then click OK.
14. Click **Add** to open the **Binding Details** window.  
The Data Field is automatically populated with the input value *BASEL\_OPTIMIZER\_MODEL\_CODE*.

**Figure 9: The Binding Details**



15. Click **Ok**.

In case the model code is not available on the screen, you can retrieve it from the **FSI\_BASEL\_OPTIMIZER\_MODEL\_TL** table.

**Figure 10: Sample Model Code Retrieval Query**

```
Select * from FSI_BASEL_OPTIMIZER_MODEL_TL where V_MODEL_DESC = 'Basel III Non Sec Optimization';
```

The **Parameters** pane is populated with the values that you added in the **Binding Details** window.

**Figure 11: The Parameters Pane Populated with Values**

The screenshot displays a software interface with a top toolbar containing icons for undo, redo, refresh, settings, and warning. Below the toolbar, the interface is organized into several sections:

- Rule**: A dropdown menu for 'Infodom' is set to 'JJUINF03'. Below it, the 'Execution Rule' is set to 'Basel Optimizer Solve' with a search icon.
- Parameters**: An 'Add' button is visible. Below it, a table lists parameters:

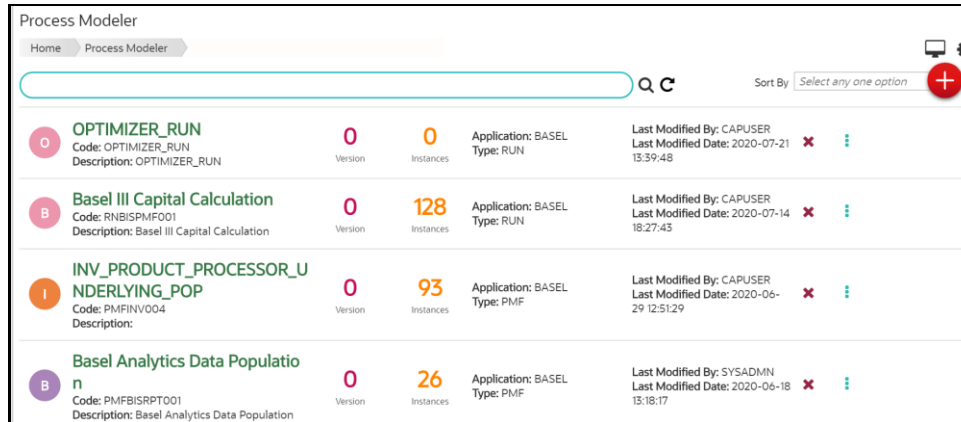
BASEL_OPTIMIZER_MODEL_CODE
2020810000001

Buttons for adding and deleting parameters are located below the table.
- Pre/Post Processing**: Two dropdown menus are shown. 'Pre Rule' is set to 'Default' and 'Post Rule' is also set to 'Default', both with search icons.

16. Click **Save**.


The newly created Optimizer Run appears on the **Process Modeler** Page.

**Figure 12: Newly Created Optimizer Run on the Process Modeler Page**

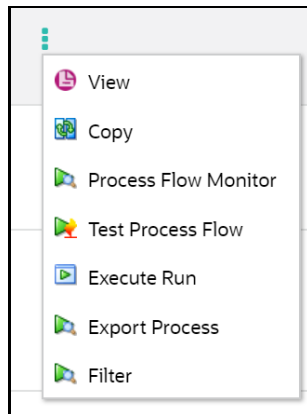


The screenshot shows the 'Process Modeler' interface with a list of runs. The runs are:

Run Name	Code	Description	Version	Instances	Application	Type	Last Modified By	Last Modified Date	Actions
OPTIMIZER_RUN	OPTIMIZER_RUN	OPTIMIZER_RUN	0	0	BASEL	RUN	CAPUSER	2020-07-21 13:39:48	✖ ⋮
Basel III Capital Calculation	RNBISPMF001	Basel III Capital Calculation	0	128	BASEL	RUN	CAPUSER	2020-07-14 18:27:43	✖ ⋮
INV_PRODUCT_PROCESSOR_UNDERLYING_POP	PMFINV004		0	93	BASEL	PMF	CAPUSER	2020-06-29 12:51:29	✖ ⋮
Basel Analytics Data Population	PMFBISRP001	Basel Analytics Data Population	0	26	BASEL	PMF	SYSADMIN	2020-06-18 13:18:17	✖ ⋮

17. Click **More**  to view additional actions.

**Figure 13: The Available Actions for a Run**




18. Click Execute Run to open the Select Run Params window.

**Figure 14: The Select Run Params Window**


19. Populate the **Select Run Params** form as per the following table:

**Table 3: The Select Run Params Pane**

Field	Description
Execution Date	Select the Execution Date by clicking <b>Calendar</b>  .
Legal Entity	Select a legal entity.
Consolidation type	Select the consolidation type from the drop-down list.
Reporting Currency	Select the reporting currency.
Significant Currency	Select the Significant Currency from the drop-down list.
Basel Configuration	Select the Basel Configuration from the drop-down list.

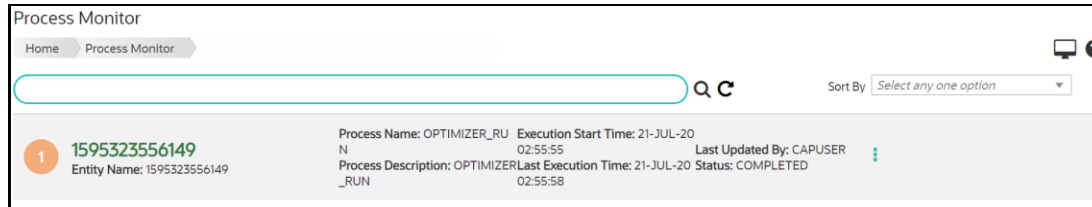
20. Click **OK** to go back to the **Process Modeler** Page.

The Optimizer Run is in progress.

21. Click **More**  and then select **Process Flow Monitor**.

The Run status will be either *Running* or *Completed*.

**Figure 15: The Status of the Run**



### Executing an Optimizer via the Sub-process of a Different Run

The steps to execute an optimizer run via the sub-process of a different Run are similar to the steps in the Executing an Optimizer through an Independent Process section. The only difference is that the optimizer Run that you want to execute is connected to a different Run in the canvas of the Process Details screen.

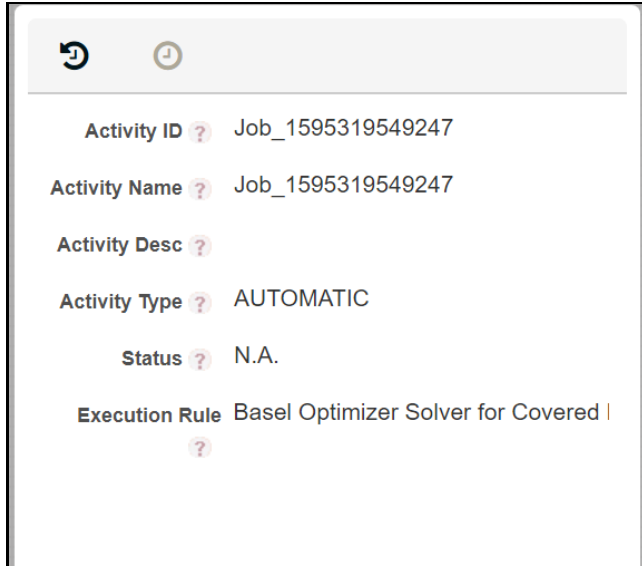
#### 5.3.2.1.3 View the Optimizer Log


##### View the Optimizer Log on via the Process Monitor Page

Follow these steps to view the log from the Process Monitor screen:

1. On the **Process Monitor** pane, click the required optimizer for which you want to view the log to open the **Process Definition** window.
2. Double-click the service task process in the canvas to open the setting window.

**Figure 16: The Setting Window**



3. Click **Log**  to view the log of the Optimizer Run.

#### **View the Optimizer Log on the Database Table**

You can view the log by referring to the **CL\_LOG\_MESSAGE** column in the **FSI\_BASEL\_OPT\_SOLVER\_BATCH\_MASTER** table.

#### **View the Optimizer Log on the Server**

The optimizer BaselSolver.log file is available in the server machine in the path: <web\_container\_location>/webapps/OFSCAP/logs

### **5.3.2.2 Portfolio**

You can define a combination of portfolios to participate in a Run. For example: If an institution wants to process only On Balance Sheet data and not all the product types, then the institution has the choice of selecting a subtype of an entire portfolio for processing.

#### **5.3.2.2.1 Adding a New Hierarchy for Portfolio Creation**

To add a new hierarchy for portfolio creation, the hierarchy code must be added in **PORTFOLIO\_HIERARCHY\_MASTER** table as tabulated:

**Table 4: The PORTFOLIO\_HIERARCHY\_MASTER table**

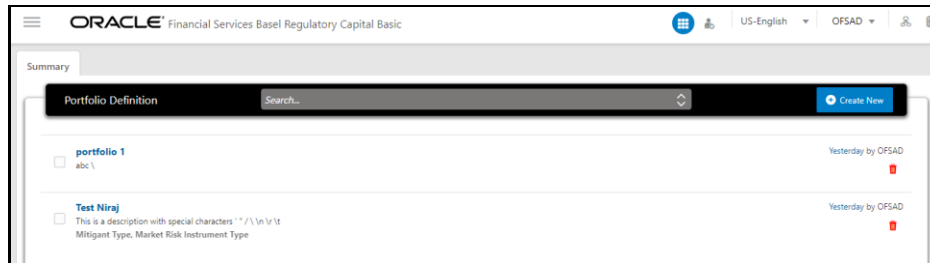
Column	Indicative values
V_HIERARCHY_CODE	Contains hierarchy code of the hierarchy to be added.
F_LATEST_RECORD_INDICATOR	To be set to 'Y' for the hierarchies which have to be displayed.
D_RECORD_START_DATE	Start date of the hierarchy.
D_RECORD_END_DATE	The end date of the hierarchy.

### 5.3.2.2.2 Access Portfolio Definition

To access a portfolio definition, follow these steps:

1. Log in to the application and select **Financial Services Basel Regulatory Capital Basic**.
2. On the LHS menu, click **Basel Regulatory Capital Basic**, click **Basel Configurations**, and then click **Portfolio** to open the **Portfolio Definition** window.

**Figure 17: The Portfolio Definition Window**

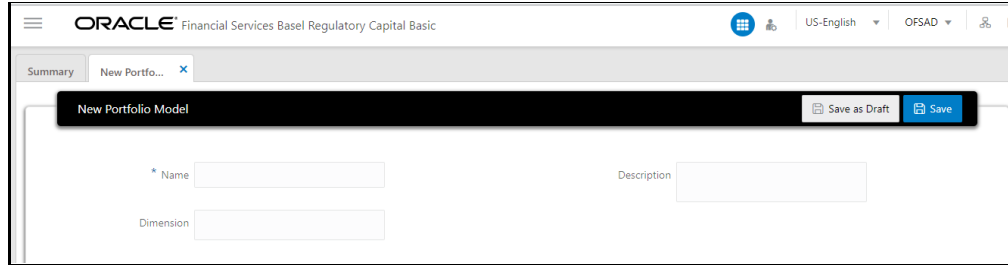


### 5.3.2.2.3 Create a Portfolio Definition

To create a portfolio definition, follow these steps:


1. In the Portfolio Definition window, click **Create New**  to open the **New Portfolio Model** window.

**Figure 18: The New Portfolio Model Window**



2. Populate the details as per the following table:

**Table 5: The New Portfolio Model Pane**


Field	Description
Name	Enter a name for the portfolio definition.
Dimension	Select a dimension(s) from the drop-down list. Available options are: <ul style="list-style-type: none"> <li>• Counterparty Type</li> <li>• Market Risk Counter Party</li> <li>• Mitigant Type</li> <li>• Product</li> <li>• Market Risk Instrument Type</li> </ul>
Description	Enter a description of the portfolio definition.
Add Dimension	This pane only appears after you select a dimension(s) in the Dimension field. Click <b>Add</b>  to open the window for the selected dimension and select the required options.

3. Click **Save as Draft** if you want to save a draft of the portfolio.
4. Click **Save**.

#### 5.3.2.2.4 Delete a Portfolio

To delete a portfolio, follow these steps:



1. In the **Portfolio Definition** window, for the portfolio that you want to delete, click **Delete** .  
A confirmation message appears, asking you if you are sure that you want to delete the portfolio.
2. Click **Yes**.

The portfolio is deleted, and the **Portfolio** Page is refreshed to display the updated list of portfolios.

### 5.3.2.3 Regulatory Calculation Definition

The Process Modelling Framework helps you to combine various components and/or processes together and execute them with different underlying approaches. For more information on the Process Modelling Framework, refer to the [Oracle Financial Services Analytical Applications Infrastructure Process Modelling Framework Orchestration Guide](#).

#### 5.3.2.3.1 Access the Regulatory Calculation Definition Page

To access the **Regulatory Calculation Definition** Window:

1. Log in to the application and select **Financial Services Basel Regulatory Capital Basic** or **Financial Services Basel Regulatory Capital IRB**.
2. On the LHS menu, click **Basel Regulatory Capital Basic** or **IRB**, click **Basel Configurations**, and then click **Regulatory Calculation Definition** to open the **Regulatory Calculation Definition** window.

#### 5.3.2.3.2 Create a Run Definition

Follow these steps to create a Run definition:

To create a Run definition, follow these steps:


1. In the **Regulatory Calculation Definition** window, Click **Create New**  to open the **New Run Definition** window.

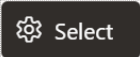
**Figure 19: The New Regulatory Calculation Definition Window**

2. Populate the details as per the following table:

**Table 6: The New Run Definition Form**

Field	Description
Name	Enter a name for the Run definition.
Description	Enter a description for the Run definition.
Jurisdiction	Select a jurisdiction from the drop-down list. The available options are: <ul style="list-style-type: none"> <li>• BIS</li> <li>• EU</li> <li>• INDIA</li> <li>• APRA</li> </ul>
Regulation	Select a regulation from the drop-down list. The available options are: <ul style="list-style-type: none"> <li>• BASEL III Post Crisis Reforms</li> </ul>

Field	Description
<i>Regulatory Approaches pane</i>	<p><b>NOTE</b> The Regulatory approaches that appear in this field depend on if you have the license for the <b>Oracle Financial Services Basel Regulatory Capital Basic</b> or <b>Oracle Financial Services Basel Regulatory Capital IRB</b> application pack and if you selected either BASEL III or BASEL III Post Crisis Reforms in the Regulation field.</p>
Credit Risk and Counterparty Credit Risk for Non Securitization Exposures – Standardized Approach	<p>Click <b>Select</b>  to open the configurations window for this Regulatory approach. See Step 7 to view and populate the fields available in this window.</p>

- If you have enabled the **Regulatory** Approaches field, then in the required approach pane, click **Select**  to open the configuration window and populate the form as tabulated.


**Table 7: The Configuration Form for a Selected Regulatory Approach**

Field	Description
<i>Risk Type pane</i>	
Credit Risk	If the Regulatory approach requires this risk type, then select the checkbox.
Counterparty Credit Risk	If the Regulatory approach requires this risk type, then select the checkbox.
<i>EAD &amp; CRM Method Selection pane</i>	
The Capital Calculation Methods that appear in this field depend on if you have the license for the <i>Oracle Financial Services Basel Regulatory Capital Basic</i> or <i>Oracle Financial Services Basel Regulatory Capital IRB</i> Application pack and if you selected either <i>BASEL III</i> or <i>BASEL III Post Crisis Reforms</i> in the <i>Regulation</i> field. You must select a value from the drop-down lists. Details regarding these methods and options are provided under the section <a href="#">Run parameters setup</a> .	
<i>Supervisory Approved Option Selection pane</i>	
The Capital Calculation Methods that appear in this field depend on if you have the license for the <i>Oracle Financial Services Basel Regulatory Capital Basic</i> or <i>Oracle Financial Services Basel Regulatory Capital IRB</i> Application pack and if you selected either <i>BASEL III</i> or <i>BASEL IV</i> in the <i>Regulation</i> field. You must select a value from the drop-down lists. Details regarding these parameters and options are provided under the section <a href="#">Run parameters setup</a> .	
<i>Portfolio pane</i>	
Select Applicable Portfolios	Select a portfolio from the drop-down list. The portfolios that you created in the <a href="#">Create a Portfolio Definition</a> section appear in this field.

4. Select **Save as Draft** if you want to save a draft of this form.
5. Select **Save**.

### 5.3.2.3.3 Delete a Run Definition

To delete a Run definition, perform the following steps:

1. In the **Regulatory Calculation Definition** window, for the Run definition that you want to delete, click **Delete** .

A confirmation message appears, asking you if you are sure that you want to delete the Run definition.

2. Click **Yes**.

The definition is deleted, and the Summary Page is refreshed to display the updated list of Run definitions.

## 5.3.3 Reporting

Oracle Financial Services Basel Regulatory Capital Analytics provides the customer with a reporting as well as information framework that can be used for generating reports and viewing information relevant to the capital computations and other aspects of the Basel framework. Basel Analytics provides pre-configured Basel dashboards for all the functionalities supported in the application, Pillar II reports covering most of the aspects related to stress testing and other supervisory review and Pillar III reports covering all market disclosure requirements of the Basel Accord.

For more information on Basel Regulatory Capital Analytics, see the Oracle Financial Services Basel Regulatory Capital Analytics User Guide.

Oracle Financial Services Basel Regulatory Capital Analytics must be licensed by the Bank separately.

## 6 Australian Prudential Regulation Authority (APRA)

### 6.1 Introduction of OFSAA Portfolio Definitions

Every bank has different LOBs and they have different functions. To aid the bank in its efficient management of regulatory calculations, the application has inbuilt portfolio definitions, concerning the banking book and trading book, respectively. The different portfolio definitions help in the ease of calculations for the bank, and the parallel processing of the risk-weighted asset calculations. In many of the banks, the ownership of every portfolio might be different, and therefore, it becomes easier for maintaining the ownership for every data point and calculation. The data points concerning each portfolio are different.

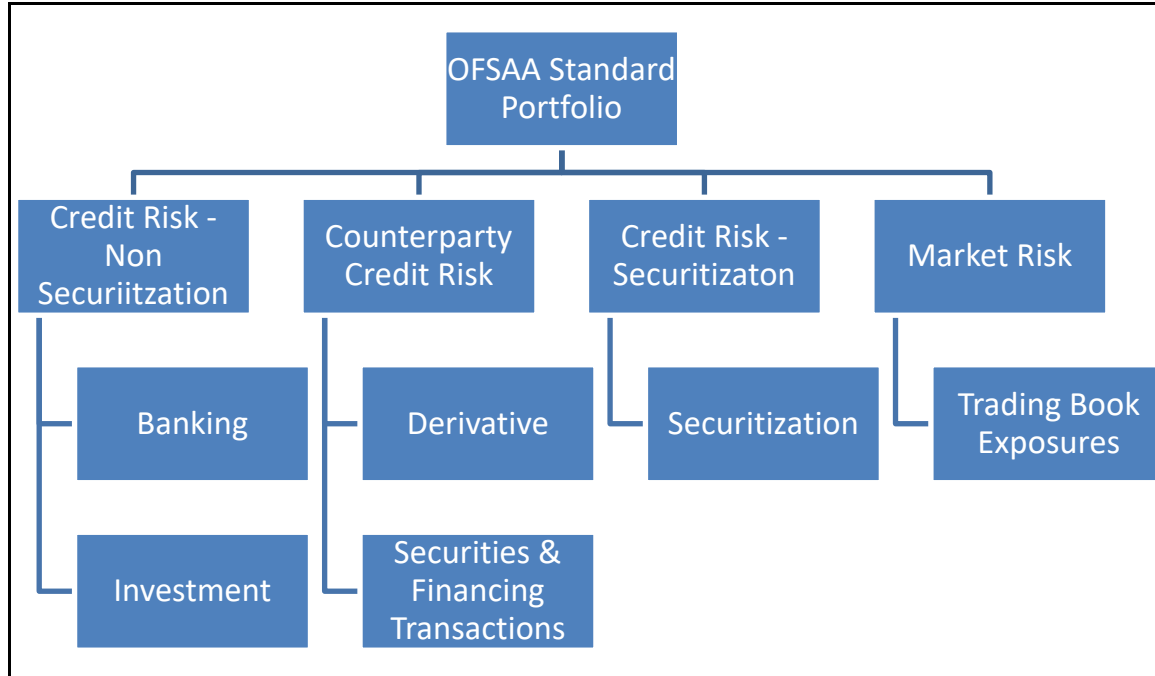
The various portfolios concerning Credit Risk are:

- Credit Risk Non-Securitization
  - Banking Related Exposures
  - Investment Related Exposure (Only belonging to banking book).
- Counterparty Credit Risk – Non-Securitization
  - Derivative Related Exposures (Both banking and trading book exposures).
  - Securities and Financing Transaction Related Exposures (Both banking and trading book exposures).
- Credit Risk Securitization
  - Securitization Related Exposures (Only belonging to banking book).

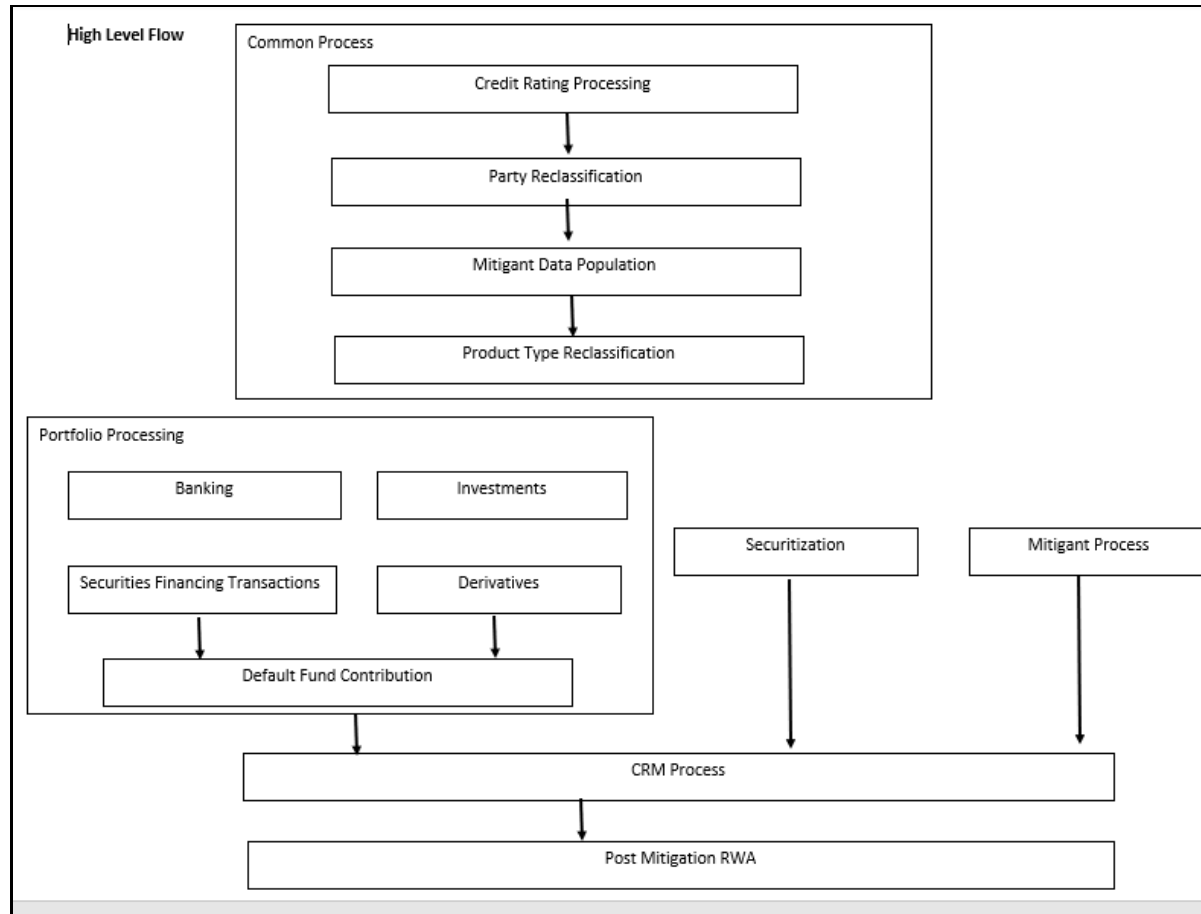
The portfolio of trading book exposures is the portfolio for Market Risk.

For the above portfolios, the 8.1.1.0.0 release of the application includes banking and investment portfolios for the Credit Risk Non-Securitization Standardized approach.

Figure 20: OFSAA Portfolio Hierarchy



**Figure 21 High-Level Flow of Processing**

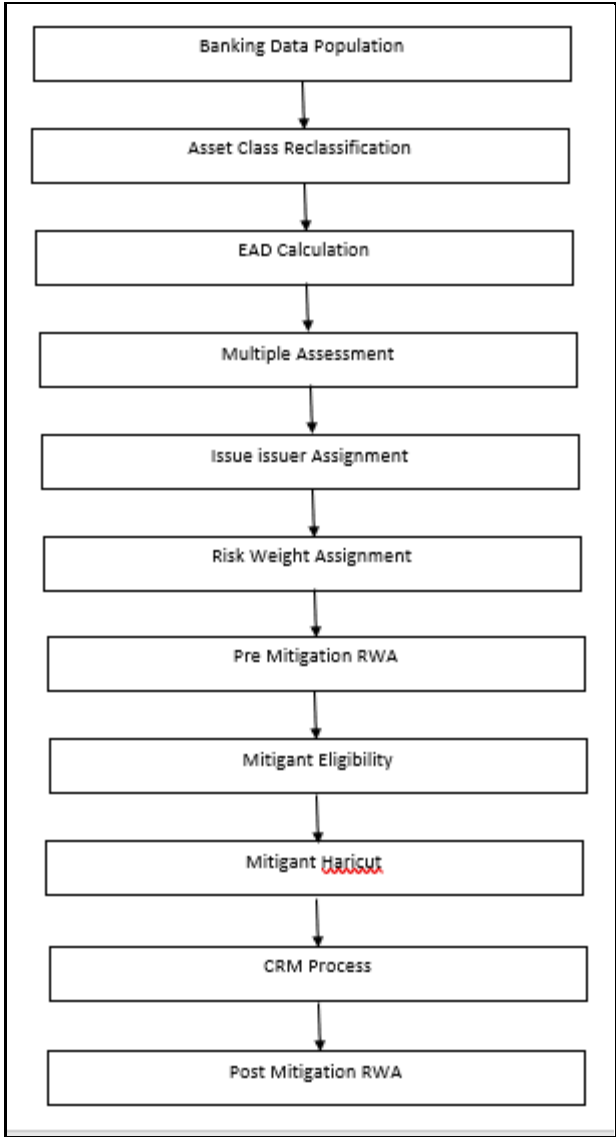


### 6.1.1 Banking

The Banking portfolio caters to the core banking activities of the bank – be it corporate banking or retail banking. This includes all the various banking activities in the form of loans provided by the bank, cards issued by the bank, commitments issued by the bank, overdraft provided by the bank, and other such core banking-specific activities. Since this will be a mandatory portfolio for all the banks, this portfolio has its own RWA calculations.



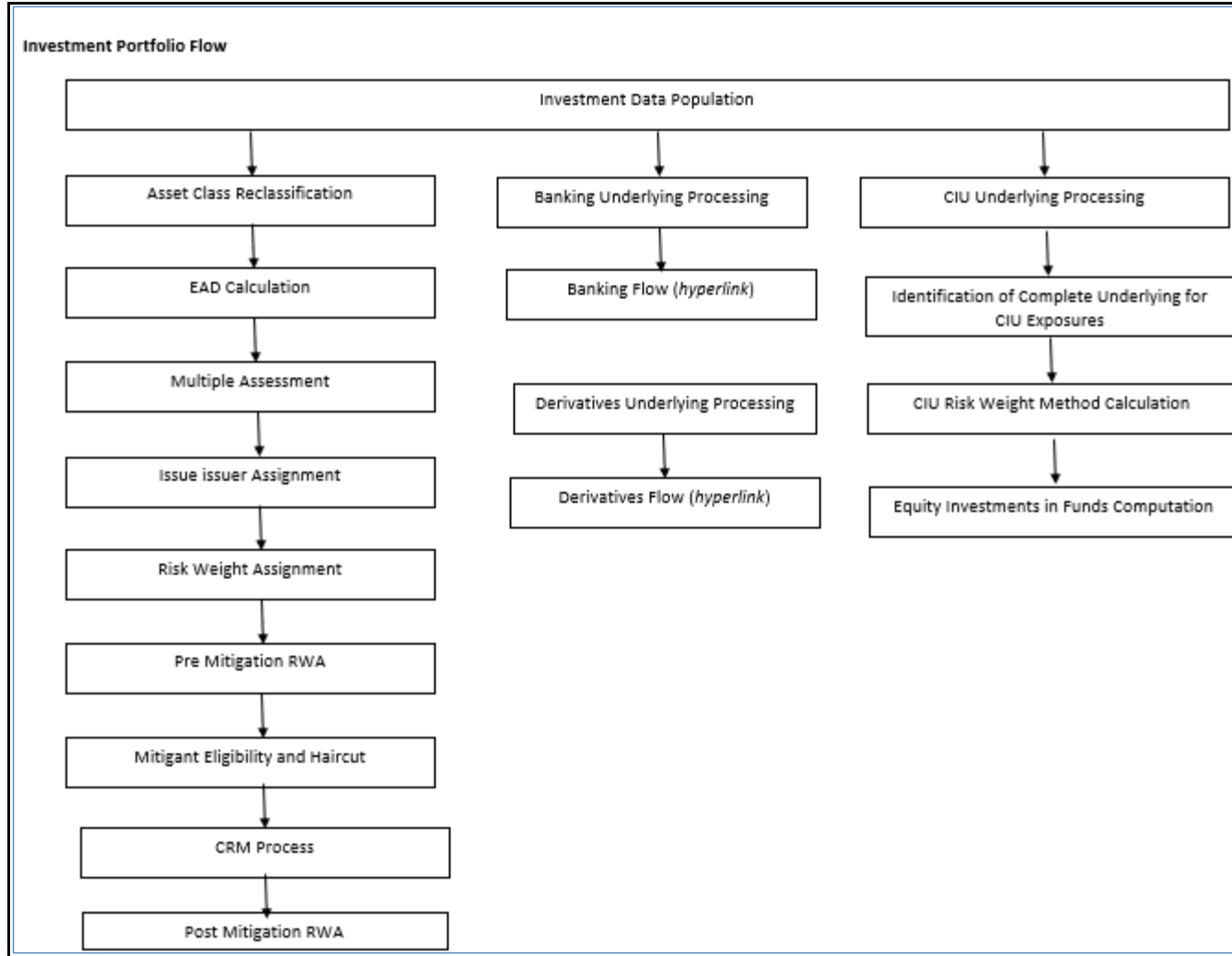
Figure 22: High-Level Flow of Banking Portfolio



## 6.1.2 **Investment**

The Investment portfolio caters to any of the investment activities of the bank, for which the bank holds the assets till maturity. These are the exposures that the bank will portray in the banking book. This includes all the investment in the form of any money market instruments or spot instruments or debt securities, held by the bank till maturity, and hence considered to be in the banking book. This also includes the bank's investment in the form of fixed assets as well. This will be applicable only if the bank holds exposures in the form of investment related to the banking book.

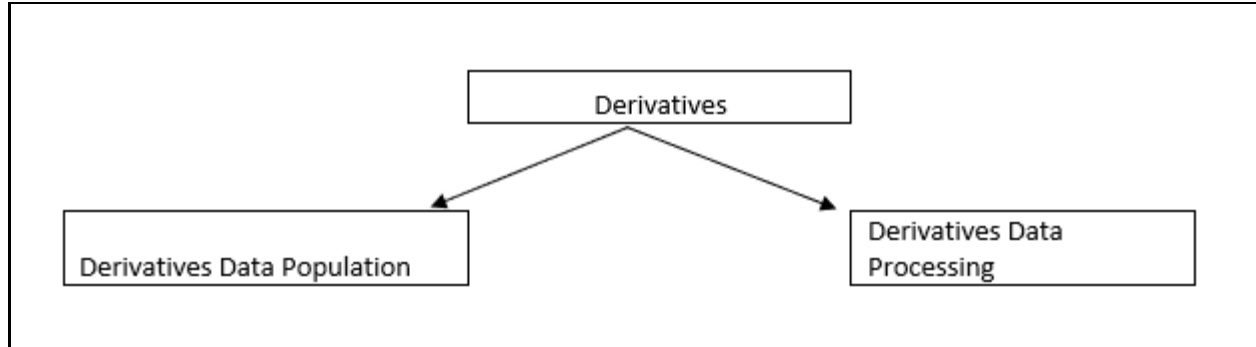
Figure 23: Flow Diagram for Investment Portfolio



### 6.1.3 Derivative

The derivative portfolio caters to any of the derivative activities of the bank. These are the derivatives for which the bank is one of the counterparties or the bank acts as a clearing member or clearing member client. This includes derivatives in the form of credit derivatives, forwards, futures, options contracts, and swap contracts. This will include both the banking and trading book-related derivative exposures.

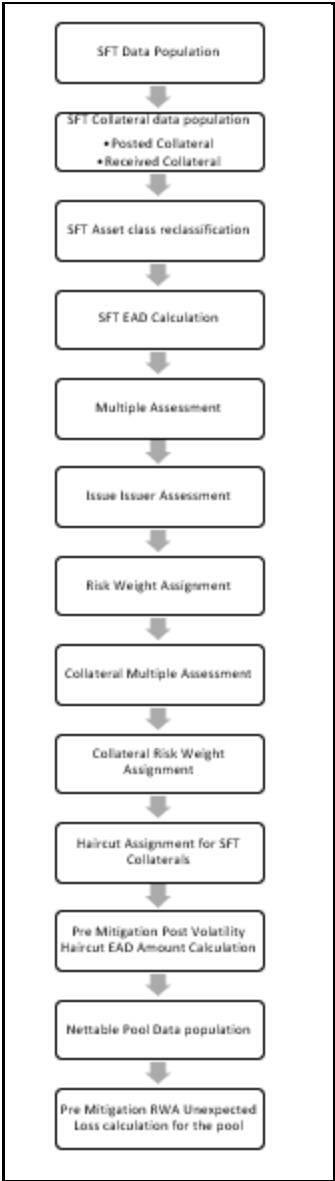
Figure 24: Flow Diagram for Derivatives



#### 6.1.4 **Securities and Financing Transactions**

The Securities and Financing Transactions (SFT) portfolio caters to any of the securities financing activities of the bank. These are the SFT which the bank enters into, or the bank acts as a clearing member or clearing member client. This includes SFT in the form of repurchase agreements, reverse repurchase agreements, margin lending transactions, securities lending, and borrowing transactions. This will include both the banking and trading book-related exposures.

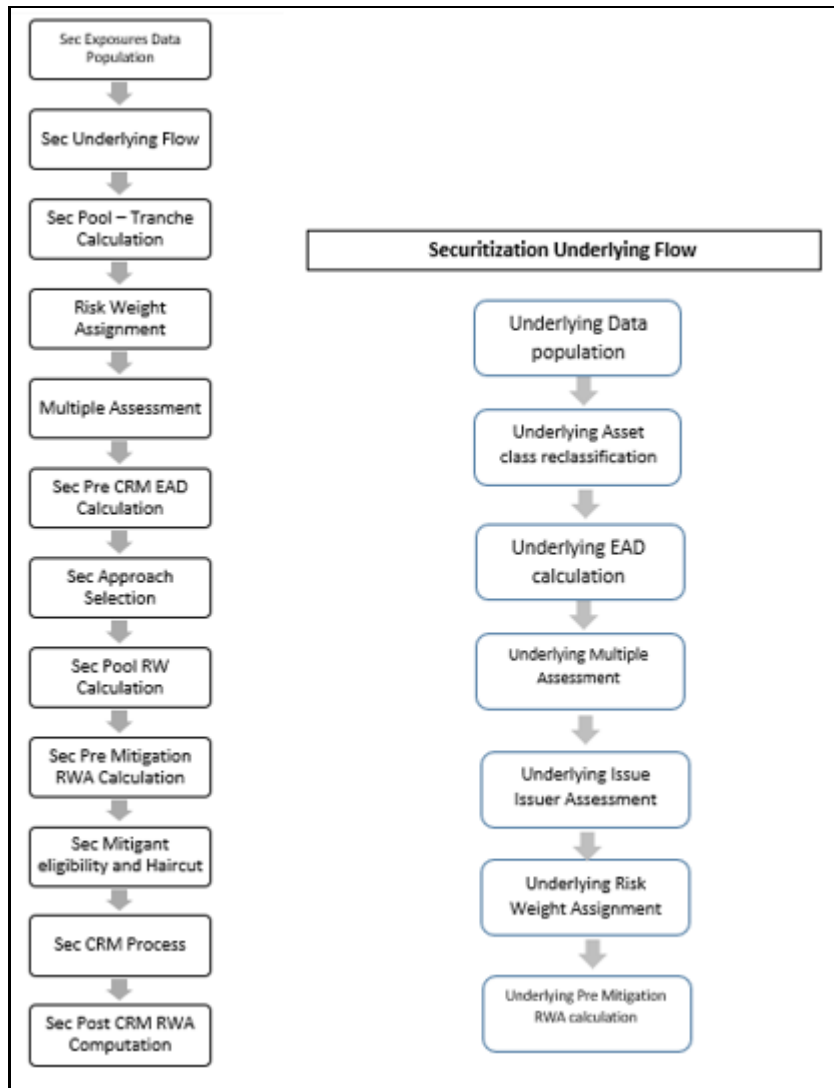
Figure 25: Flow Diagram for SFT



## 6.1.5 Securitization

The Securitization portfolio caters to the securitization activities of the bank, wherein the bank either acts as an investor/ originator/ sponsor, or in the form of any other party wherein the bank provides some credit enhancement or commitment to the securitization transaction. This includes banking book-related exposures.

Figure 26: Flow Diagram for Securitization



## 6.2 Overview of APRA Capital Adequacy Guidelines

The Australian Prudential Regulation Authority (APRA) has issued various prudential standards which encompass the entire Capital Adequacy Regulations to be followed by the Banks. These regulations are by and large compliant with Basel III: Finalizing post-crisis reform changes issued by the Basel Committee (BIS). The following are the prudential standards that comply with the Capital Adequacy calculations:

- Credit Risk – Standardized Approach – APS\_112
- Credit Risk – Advanced Approach – APS\_113
- Credit Risk Securitization Exposures – Standardized Approach – APS\_120
- Counterparty Credit Risk Exposures – Adjusted CEM Approach, SA-CCR, and Default Fund Contribution – APS\_180
- Capital Structure – Capital Ratios, Buffers and Leverage Ratio – APS\_110, 111
- Large Exposure – APS\_220
- Operational Risk – APS\_115

In the above list, the guidelines that are changing, and are coming into effect based on the revised guidelines from January 2023 are the following:

- Credit Risk – Standardized Approach – APS\_112
- Credit Risk – Advanced Approach – APS\_113
- Operational Risk – APS\_115
- Capital Structure – Capital Ratios, Buffers and Leverage Ratio – APS\_110, 111

APRA is planning to provide the revised standards for Market Risk and Credit Valuation Adjustment and they will comply from January 2024.

- Market Risk – APS\_116 (yet to be finalized by APRA)

## 7 Prudential Standard APS\_112

The OFS Financial Services Basel Regulatory Capital Application incorporates the Capital Requirements for Credit Risk Standardized Approach for Australian Jurisdiction as per the second draft guidelines of APS\_112 published by APRA on 8<sup>th</sup> December 2020. The corresponding BIS guideline is **Basel III: Finalising post-crisis reforms** issued by BCBS on December 2017.

In the current release, the OFS Basel Regulatory Capital application handles the Credit Risk calculations as per the Standardized Approach. The calculations for Counterparty Credit Risk are also available concerning the Risk weighting standards. The current exposure method-related calculations are part of the next release.

### 7.1 Credit RWA

Credit RWA is the calculation of Non-Securitization RWA.

This includes the portfolio of banking and investment for the Non-Securitized exposures and the securitization portfolio for the securitization positions. The application complies with the standardized approach and IRB approach of the Credit Risk Calculations.

A few processes such as Credit Rating, Party Type Reclassification, and Mitigant Data Population are common between Credit RWA and Counterparty Credit RWA.

This also includes the Settlement Risk Calculation about the unsettled transactions depending on the number of days they are unsettled.

#### 7.1.1 Banking Portfolio

##### 7.1.1.1 Rating Population

The data on ratings is captured in the following rating specific tables:

- Account Rating Table (**STG\_ACCOUNT\_RATING\_DETAILS**)
  - Ratings of all Credit Risk Banking Exposures are captured in this table.
- Party Rating Table (**STG\_PARTY\_RATING\_DETAILS**)
  - Credit Ratings for all customers and issuers are captured in this table.
- Sovereign Rating Table (**STG\_SOVEREIGN\_RATING\_DETAILS**)
  - Credit Rating for all countries is captured in this table.



### 7.1.1.2 Processing Steps

Banks obtain Credit Ratings from different sources and these are provided as input in the application through the rating tables mentioned in the preceding list.

This is handled in the sub-process T2T **RATING\_RECLASSIFICATION\_POPULATION** in **APRA Other Reclassifications** process.

The application re-classifies the rating information to APRA Specific standard ratings. The out-of-box application supports the Fitch / Moodys / S&P and DBRS Credit Rating Reclassification for Long Term and Short Term Ratings.

This is handled in the rule **Credit Rating Reclassification** in **APRA Other Reclassifications** process.

The Rating Reclassification lookup table (**FSI\_RATING\_CLASSIFICATION**) is used to lookup Reclassified Standard Ratings so that the Reclassification Rule is not repeated for each of the rating processing tables.

Ratings are populated from the stage tables (for example, **STG\_PARTY\_RATING\_DETAILS**) to FSI tables (for example, **FSI\_PARTY\_RATING\_DETAILS**) using the lookup table (**FSI\_RATING\_CLASSIFICATION**) to obtain a Reclassified Rating.

Ensure that all the columns as indicated in the DL Specs are mandatorily populated with data. For example, in the Stage Party Rating Details (**STG\_PARTY\_RATING\_DETAILS**) table: Rating source code (**V\_RATING\_SRC\_CODE**), Party Code (**V\_PARTY\_CD**), Purpose (**V\_PURPOSE**) are required to be populated. The purpose code is to indicate whether the rating is domestic or foreign. If any other rating is provided, then the exposure is considered unrated.

### 7.1.1.3 Data Population

Credit Risk exposures are updated in the application for all the product types through their respective input tables known as Product Processors. Main categories of Credit Risk Banking exposures, along with their respective table names that are used as an input, are as follows:

**Table 8: Categories of Credit Risk Banking Exposures and their Tables**

Product	Source Product Processor
Assets Sold	STG_ASSETS_SOLD
Bills	STG_BILLS_CONTRACTS
Credit Cards	STG_CARDS
Guarantees	STG_GUARANTEES
Lease Contracts	STG_LEASE_CONTRACTS
Letters of Credit	STG_LC_CONTRACTS
Line of Credit	STG_CREDIT_LINE_DETAILS
Commitment Contracts	STG_COMMITMENT_CONTRACTS
Loans	STG_LOAN_CONTRACTS
Overdraft	STG_OD_ACCOUNTS

There is a data population about the mitigants, which cater to all the types of mitigants like collateral, guarantee, and credit derivatives. There is one data population about the Counter-Guarantee for the guarantor.

**Table 9: Table for Mitigant and Counter Guarantee Data Population**

Product	Source Product Processor
Mitigants – Collateral, Guarantee, Credit Derivatives	STG_MITIGANTS
Counter Guarantee	STG_MITIGANT_COUNTER_GUARANTEE

There is a data population about the mapping between the Exposures and the Mitigants.

**Table 10: Data Population between Exposures and Mitigants**

Product	Source Table
Mapping for Exposures and Mitigants	STG_ACCOUNT_MITIGANT_MAP

### **Processing Table Details**

All Credit Risk Banking exposures are loaded into the table, FSI Cap Banking Exposures (**FSI\_CAP\_BANKING\_EXPOSURES**) where further processing happens for this portfolio of exposures till the computation related to Pre-Credit Risk Mitigation process.

This is handled in the process **Banking Data Population**.

### **Banking Retail Data Population**

There is a data population for Retail exposures which picks up relevant exposures from above mentioned Product tables and populates the same into **FSI\_CAP\_BANK\_RETAIL\_EXP** table. This is handled in the **BANKING\_RETAIL\_EXPOSURE\_DATA\_POP** T2T within the **APRA Post Crisis Banking Data Processing - STD** process.

#### **7.1.1.4 Shareholding Percent Multiplication**

Shareholding percent multiplication for common entity-level data is a part of **Common Data Processing** (PMFAPR001) process. In this, the application updates the shareholding percentage against each entity is updated with the value of 1 as the shareholding percent and for each child entity, the percentage is based on the parent's holding percentage as specified for each child in fact entity shareholding percent table (FCT\_ENTITY\_SHR\_HLD\_PERCENT).

Shareholding Percent Multiplication for exposure level is part of each portfolio as well. In this process, the application multiplies the entity shareholding percentage for that entity concerning parent entity against exposure amounts, undrawn amount, and provision amount for that exposure and updates the same.

This is handled in the sub-process **BNK\_SHAREHOLDING\_CALCULATION\_STD** of the process **APRA Post Crisis Banking Data Processing - STD**.

#### **7.1.1.5 Common Reclassification Rules**

The application reclassifies the bank's product types and party types to standard product and party types. Based on the standard product and party type, the asset class for each exposure is arrived at. Similarly, the application does Reclassification for mitigant based on its mitigant types and reclassifies it to standard mitigant types.

Ensure that all products and party type and mitigants which are bank-specific are reclassified, as part of the setup activity. If they are not reclassified, the treatment might not happen as expected by the regulator.

##### **1. Product Type Reclassification**

Product types used by the reporting bank as input data are reclassified to standard product types as recommended in the Accord. The product types after reclassification are stored as Basel product types. For Example, Housing Loan is reclassified as Residential Mortgage Exposure.

This is handled in the **Basel Product Type Reclassification** which is part of the **COMMON\_RECLASSIFICATION** process.

## 2. Party Type Reclassification

Similar to the product type, the customer type (which is stored as counterparty type) is also reclassified as standard counterparty type. The customer information is expected in the Stage Party Master (STG\_PARTY\_MASTER), and this also includes the Party Type based on the Stage Party Type Master (STG\_PARTY\_TYPE\_MASTER).

Party Type Reclassification Rules handle reclassification for customer types. For Example, an Individual is reclassified as Retail.

This is handled in the **Basel Party Type Classification** which is part of the **APRA Other Reclassifications** process.

## 3. Rating Reclassification

As part of the Rating Reclassification, it is expected that the bank will reclassify the ratings into the different Basel credit rating of AAA Equivalent, AA Equivalent, and so on. This gets handled in the rule “Credit Rating Reclassification” of the process **APRA Other Reclassifications**.

The reclassification of these ratings to the Credit quality steps gets handled as part of the T2T **T2T\_BASEL\_CREDIT\_RATING\_BAND\_MAP\_DATA\_POP**. The ratings get reclassified into Credit Quality Steps as expected for each of the following risk types:

- Credit Risk
- Securitization
- Sold Credit Protection

## 4. Other Reclassification

As part of the Reclassification Rules, any other data which is being brought inside the application like seniority, transaction type, and so on also get reclassified into OFSAA specific values. This is also mandatory to be performed, otherwise, the data is not available for processing as required by the regulator. This happens as part of the process **COMMON\_RECLASSIFICATION**.

### 7.1.1.6 Asset Reclassification Rules

Based on Basel product type and standard counterparty type, an asset class is formed by the application. This asset class is used for data processing. The asset class is the same as specified in the accord.

For example, Standard counterparty is corporate non-SME and Corporate SME, the asset class is corporate. For Basel product type Residential Mortgage Exposure, the asset class is Claims Secured by Residential Real Estate.

The asset class for all mitigants is reclassified based on their Standard Mitigant types and Standard Issuer type.

The list of asset classes that are relevant for APRA jurisdiction and reclassification happens in the solution are the following:

- Central Government or Central Bank
- Sovereign Exposure
- Highly Rated Multilateral Development Bank
- Domestic PSE
- Bank - Long Term Exposures
- Bank - Short Term Exposures
- Other Multilateral Development Bank
- Covered bond
- Covered Bonds treated as Bank Exposure
- Corporate - Other than Specialized Lending Long Term Rated Exposures
- Corporate - Other than Specialized Lending - unrated - SME
- Corporate - Other than Specialized Lending Short Term Rated Exposures
- Corporate - Other than Specialized Lending - unrated - Non SME
- Corporate - Specialized Lending - Non SME
- Corporate - Specialized Lending - SME
- Equity Instruments
- Non Equity Regulatory Capital Instruments
- Retail - Credit Card Exposures
- Other Retail Exposures
- Residential Real Estate - Standard Mortgages - Owner Occupied with Insurance
- Residential Real Estate - Standard Mortgages - Owner Occupied with No Insurance
- Residential Real Estate - Standard Mortgages - Others with Insurance
- Residential Real Estate - Standard Mortgages - Others with No Insurance
- Residential Real Estate - Non Standard Mortgages - Reverse Mortgages
- Residential Real Estate - Non Standard Mortgages - Others
- Commercial Real Estate - Income Dependent - Standard Mortgage

- Commercial Real Estate - Income Dependent - Non Standard Mortgage
- Commercial Real Estate - Others
- Land acquisition, development and construction exposure - RRE
- Land acquisition, development and construction exposure - Others
- Other Assets - Margin Lending Exposure with Eligible Collateral
- Other Assets - Margin Lending Exposure without Eligible Collateral
- Other Assets - Physical Assets under Leases
- Other Assets - Third Party Lending Exposure
- Other Assets - Fixed Assets
- Cash in Process of Collections
- Cash
- Gold
- Other Assets
- Unhedged Foreign Retail Exposure
- Unhedged Foreign Residential Real Estate Exposure

Asset Reclassification happens in the sub-processes **APRA Post Crisis Banking Reclassification** and **BIS III Post Crisis Retail Specific Reclassification** of the process **APRA Post Crisis Banking Data Processing - STD**.

The asset class gets clubbed under different asset class categories as relevant for the asset classes. This is used for regulatory treatment. This particular reclassification happens in the **FSI\_BASEL\_ASSET\_CATEGRY\_MAP\_DATA\_POP** task of the process **OTHER\_DATA\_POPULATION**.

### 7.1.1.7 Pre-mitigation Calculations

Based on the asset class, the application calculates the Pre-Credit Risk Mitigation (CRM) Exposure at Default (EAD) for each exposure. This value signifies the maximum loss that the bank can suffer, in case of default on this exposure, before considering any mitigation effects.

Some exposures can be hedged against credit risk through various mitigants such as guarantees, collaterals, credit derivatives, and so on. These provide mitigation to credit risk and must be considered while computing Credit RWA, as per the Accord. Therefore, the application calculates the pre-mitigation exposure amount and post-mitigation exposure amount.

The application also computes pre-mitigation risk-weighted assets (Pre CRM RWA) and post-mitigation risk-weighted assets (Post CRM RWA) by multiplying the respective EAD by risk weight. The risk weight is arrived at, by considering the credit rating of the exposures and mitigants as per the guidelines.

#### **7.1.1.7.1 Exposure at Default Amount Calculation**

##### **Pre CRM EAD**

Exposure at Default (EAD) is calculated for all the products. This is being computed using the Exposure Amount (EOP Balance of the Exposure), Undrawn Amount of the Exposure (Undrawn Amount) and the Credit Conversion Factor for the Off-Balance sheet Amount (CCF). This is computed for the on-balance sheet products, and the off-balance sheet products, separately.

This happens in the sub-process **BNK\_PRE\_CRM\_EAD\_COMPUTATION\_STD** in **APRA Post Crisis Banking Data Processing - STD** process.

##### **Credit Conversion Factor (CCF Assignment)**

This is an input required for converting the off-balance sheet component of the exposure (undrawn portion associated with an on-balance sheet or off-balance sheet product, or the exposure amount of an off-balance sheet product). This is based on the supervisory provided values and is determined based on the product type and the maturity associated with the exposure.

This populates the Drawn CCF (for the CCF to be assigned to the exposure amount of the off-balance sheet product) and the Undrawn CCF (for the CCF to be assigned to the undrawn portion of the on balance sheet and off balance sheet exposures).

This happens in the process **PCR CCF Assignment Based on Supervisory Estimates and APRA PCR CCF Assignment** in **APRA Post Crisis Banking Data Processing – STD process**.

##### **Post CRM EAD**

Through the CRM process, the bank considers the effect of the mitigation and calculates the post-mitigation exposure at the default amount. This signifies the maximum loss that the bank can suffer in case of default on this exposure, after considering the effects of the mitigation. This will be the EAD of the Exposure Pre-Mitigation less the covered portion of the mitigant.

#### **7.1.1.7.2 Multiple Assessment**

For exposures with multiple ratings, risk weight assignment is based on multiple assessment processes. For each exposure, the final rating is the worst of the best two ratings assigned to the exposure.

The risk weight corresponding to this rating is then assigned to the exposure.

Exposures for multiple rating assessments are first moved into the table FSI Multiple Rating Processing (FSI\_MULTIPLE\_RATING\_PROCESSING) wherein the ranking and final selection of which rating to use takes place.

This happens in the sub-process of **BNK\_MULTIPLE\_ASSESSMENT\_PROCESSING\_DATA\_POPULATION**, wherein the data for the multiple assessment processing is populated into the FSI table. **MULTIPLE\_RATING\_ASSESSMENT**, wherein the identification of the

multiple rating for the exposure happens, and the **APRA Banking Post Crisis Multiple Assessment** the actual risk weight and final rating assignment happens for the exposures.

All the above fall under the **APRA Post Crisis Banking Data Processing - STD** process.

#### **7.1.1.7.3 Issue Issuer Assessment**

For all the exposures, which remain unrated after the multiple assessment processes, the issue issuer process is performed. This happens in the Issue Issuer Assessment sub-process **APRA Bank Issue Issuer Assessment**. In this case, the unrated exposures are assigned a reference rating based on the reference issue available or the rating of the party, whichever is applicable. These unrated exposures are assigned a risk weight based on the reference rating.

For unrated Banking exposures, the application does an issue-issuer assessment to infer a rating of the unrated exposures, based on the rating of a similar instrument (referred to as reference issue hereafter) issued by the same issuer. The reference issue is used only when it is of the same currency as the exposure and the exposure is senior or equivalent to the same. For the unavailable reference issue, the party rating is used. In the case of the party also being unrated, the exposure remains unrated. Also, the application populates whether the exposure is LT rated or ST rated, based on the rating assigned to the exposure.

#### **7.1.1.7.4 Risk Weight Assignment Rules**

##### **Banking Exposures Risk Weight**

Risk Weight is assigned based on asset class and the credit rating as per APRA guidelines per APS\_112. In addition to credit rating grade, risk weight is also assigned to additional parameters. Few examples are as below:

- **Property Exposures:** Risk Weight for property exposures is very specific to APRA jurisdiction and is assigned based on multiple parameters, including the rating. The main categories are Residential Mortgages, Commercial Mortgages, and Land & Acquisition. These are further split based on Standard Vs Non-Standard mortgages, Income Dependent Vs Others, Owner occupied Vs Investor, etc. Details are specifically mentioned in the upcoming section.
- **Corporate Exposures:** These exposures are mainly risk-weighted based on whether they are general lending or specialized lending and their rating. There is further specific risk weight based on long/short term rated exposures, SME or Non-SME exposures.
- **Retail Exposures:** These exposures are risk-weighted based on whether they are credit card exposures, or non-credit card retail exposures. Rating is not checked here.

Other exposure asset classes that are risk-weighted based on credit rating grade are Sovereign, PSE, Banks and Covered Bonds.

Exposure asset classes that are not risk-weighted based on credit rating grade are Retail, Margin Lending, Equity, Subordinated Debt (Other regulatory Capital Instruments), Leases, Exposures to the third party, Cash, Gold, Investment in fixed assets, and other generic exposures.



Exposures that are in foreign currency but not hedged for currency fluctuations are assigned an additional risk weight of 50% of the original assigned risk weight. The solution updates the risk weight column as the final risk weight for such exposures and also stores additional risk weight separately if that is needed for reporting or internal analysis purposes.

The risk weight rules operate on the risk weight table **FSI\_RW\_MAP\_MASTER**. Highly rated exposures are allocated low-risk weight and poorly rated exposures are allocated high-risk weights. If exposure has more than one rating (rated by more than one agency), then the final rating is assigned based on multiple assessments. The application updates the risk weights against the exposures directly, when ratings are not considered.

Options for risk-weighting are selected during Run definition if the Run Management UI is used, to update the required calculations as allowed by the specific jurisdiction. For more details on the options, see the [Run Management](#) section.

Risk weight assignment takes place in the sub-processes **APRA Banking Post Crisis Risk Weight Assignment – ECRA, APRA PCR Retail and Real Estate Risk Weight Assignment, APRA PCR Retail Repayment materially dependent based RW Assignment** and

**BNK\_PAST\_DUE\_TREATMENT\_STD** in **APRA Post Crisis Banking Data Processing - STD** process.

### Specific Standard Party treatment

The application has a pre-determined set of Specific Standard Parties. The list of Standard Parties covered are as follows, and the party id mentioned are just samples, that can be changed to meet the bank’s logic for the Party ID:

**Table 11: List of Standard Parties and its Details**

V_STD_PARTY_CODE	V_STD_PARTY_NAME	V_PARTY_ID
IBRD	International Bank for Reconstruction and Development	P11
IFC	International Finance Corporation	P12
ADB	Asian Development Bank	P13
AFDB	African Development Bank	P14
EBRD	European Bank for Reconstruction and Development	P15
IADB	Inter-American Development Bank	P16
EIB	European Investment Bank	P17
EIF	European Investment Fund	P18
BIB	Nordic Investment Bank	P19

CDB	Caribbean Development Bank	P20
IDB	Islamic Development Bank	P21
CEDB	Council of Europe Development Bank	P22
IFFI	International Finance Facility for Immunization	P23
MIGA	Multilateral Investment Guarantee Agency	P24

For exposures to these exposures, the asset class is Highly Rated Multilateral Development Bank. These exposures will be assigned a risk weight of 0%.

This treatment takes place in the sub-process **Banking RW for MDB Exposures – ECRA** of the **APRA Post Crisis Banking Data Processing – STD** process.

#### 7.1.1.7.5 Treatment of Immovable Property Exposures

##### Loan to Value Calculation

The application calculates the Loan to Value (LTV) ratio based on Collateral Value that is available as mitigant.

Loan to value is computed by dividing Pre mitigation Exposure at default value by the available mitigant value.

The above calculations can be found in the sub-process **Banking LTV Ratio Assignment** of the process **APRA Post Crisis Banking Data Processing - STD**.

The exposures to Immovable property will have risk weight assignment and Asset Class stamping separately for Residential property and commercial property.

Asset Classes related to property exposures are defined based on several conditions mentioned as below:

- Basel Product type
- Standard Vs Non-Standard (based on parameters like Ability of borrower to repay, Independent valuation of property, Loan Documentation Status, etc.)
- Occupancy Type (Self-occupied vs rented investment property)
- Insurance (LMI) available or not
- Repayment Type (Amortizing or Interest Only)

- Interest Only Period

Risk weighting rules for property exposures can be found in the sub-process

**APRA PCR Retail and Real Estate Risk Weight** of the **APRA Post Crisis Banking Data Processing – STD** process.

#### 7.1.1.7.6 RWA Calculations

The RWA is calculated as the Pre-mitigation EAD multiplied by the Pre-Mitigation Risk Weight.

This is handled under the sub-process **BNK\_PRE\_CRM\_RISK\_WEIGHTED\_ASSET\_CALCULATION\_STD** of the **APRA Post Crisis Banking Data Processing - STD** process.

### 7.1.2 Investment Portfolio

#### 7.1.2.1 Rating Population

The data on ratings is captured in the following rating specific tables:

- Instrument Rating Table (**STG\_INSTRUMENT\_RATING\_DETAILS**)
  - Ratings for investment exposures subject to credit risk (one that is in **STG\_INVESTMENTS**) and mitigants are captured in this table.
- Party Rating Table (**STG\_PARTY\_RATING\_DETAILS**)
  - Ratings for the customer are captured in this table.
- Sovereign Rating Table (**STG\_SOVEREIGN\_RATING\_DETAILS**)
  - Credit Rating for all countries is captured in this table.
- External Underlying Exposures Rating Table (**STG\_EXT\_ULY\_ACCT\_RATING\_DTL**)
  - Credit Rating for all external underlying exposures is captured in this table. In the case of underlying exposures of CIU transactions, it is expected that the value of Exposure ID is that of the instrument ID to which the underlying exposures belong. For example, If the Underlying Exposure ID EXP001, which belongs to the instrument INSTR001, and which has the parent ID as PARENT001; in this case, the data expected in this table is of the instrument INSTR001, with the Exposure ID as INSTR001.

#### 7.1.2.2 Processing Steps

Banks obtain credit ratings from different sources and these are provided as input in the application through the rating tables mentioned in the preceding list.

The rating reclassification lookup table (**FSI\_RATING\_CLASSIFICATION**) is used to lookup reclassified standard ratings so that the reclassification rule is not repeated for each of the rating processing tables. Ratings are populated from the stage tables (for example, **STG\_PARTY\_RATING\_DETAILS**) to FSI tables (for example, **FSI\_PARTY\_RATING\_DETAILS**) using the lookup table (**FSI\_RATING\_CLASSIFICATION**) to obtain a reclassified rating.

Ensure that the following columns are mandatorily populated with data in the **STG\_PARTY\_RATING\_DETAILS** table: Rating source code (**V\_RATING\_SRC\_CODE**), Party Code (**V\_PARTY\_CD**), Purpose (**V\_PURPOSE**): In this field whether the rating is a domestic rating or foreign rating must be indicated. If any other rating is provided, then the exposure is considered as unrated.  
Data Population.

**The following are the preprocessing steps:**

Credit Risk exposures are updated in the application for all the product types through their respective input tables known as Product Processors. Main categories of Credit Risk Investment exposures, along with their respective table names that are used as an input, are as follows:

**Table 12: Type of Credit Risk Investment Exposures and their Table Names**

Product	Source Product Processor
Investment Products:	STG_INVESTMENTS
Money Market Instruments	STG_MM_CONTRACTS
Spot Forex Transactions	STG_FX_CONTRACTS
Fixed Assets	STG_FIXED_ASSETS

### 7.1.2.3 Data Population

There is a data population about the mitigants, which cater to all the types of mitigants like collateral, guarantee, and credit derivatives. There is one data population about the Counter-Guarantee for the guarantor.

**Table 13: Data Population for Mitigants and Counter-Guarantee**

Product	Source Product Processor
Mitigants – Collateral, Guarantee, Credit Derivatives	STG_MITIGANTS
Counter Guarantee	STG_MITIGANT_COUNTER_GUARANTEE

There is a data population about the mapping between the Exposures and the Mitigants.

**Table 14: Data population for the mapping between exposures and mitigants.**

Product	Source Table
Mapping for Exposures and Mitigants	STG_ACCOUNT_MITIGANT_MAP

In the case of investments in funds (CIUs), the underlying of the CIU is captured in either of the below tables, depending on the data availability.

**Table 15: Data population for CIU**

Product Type	Source Product Processor
Underlying composition Details of CIU	STG_FUND_CIS_COMPOSITION
Underlying Exposures of CIU	STG_FUND_UNDERLYNG_COMPOSITION

### Processing table details

All Credit Risk Investment exposures are loaded into the table, FSI CAP Investment Exposures, **FSI\_CAP\_INVESTMENT\_EXPOSURES** where further processing happens for this portfolio of exposures till the computation pertaining to Pre Credit Risk Mitigation process

This is handled in the process **Investment Data Population**.

#### 7.1.2.4 Shareholding Percent Multiplication

In this, the application updates the shareholding percentage against each entity. The Parent entity is updated with the value of 1 as the shareholding percent and for each Child entity, the percentage is based on the parent's holding percentage as specified for each child in fact entity shareholding percent table **FCT\_ENTITY\_SHR\_HLD\_PERCENT**.

Shareholding percent multiplication for exposure level is part of each portfolio as well. In this process, the application multiplies the entity shareholding percentage for that entity concerning to parent entity against exposure amount, undrawn amount, and provision amount for that exposure and updates the same.

This is handled in the sub-process **INV\_SHAREHOLDING\_CALCULATION\_STD** of the process **APRA Post Crisis Investment Data Processing - STD**.

### 7.1.2.5 Common Reclassification Rules

The application reclassifies the bank's product types and party types to standard product and party types. Based on the standard product and party type, the asset class for each exposure is arrived at. Similarly, the application does reclassification for mitigant based on its mitigant types and reclassifies it to standard mitigant types.

Ensure that all products and party type and mitigants which are bank-specific are reclassified, as part of the setup activity. If they are not reclassified, the treatment might not happen as expected by the regulator.

#### 1. Product Type Reclassification

Product types used by the reporting bank as input data are reclassified to standard product types as recommended in the Accord. The product types after reclassification are stored as Basel product types. For Example, Fixed Rate Bond is reclassified as Debt Securities

This is handled in the **Basel Product Type Reclassification** which is part of the **COMMON\_RECLASSIFICATION** process.

#### 2. Party Type Reclassification

Similar to the product type, the customer type (which is stored as counterparty type) is also reclassified as the standard counterparty type. The customer information is expected in the Stage Party Master (STG\_PARTY\_MASTER), and this also includes the Party Type based on the Stage Party Type Master (STG\_PARTY\_TYPE\_MASTER).

Party type reclassification Rules handle reclassification for customer types. For Example, a housing finance company is reclassified as Corporate.

This is handled in the **Basel Party Type Classification** which is part of **APRA Other Reclassifications** process.

#### 3. Rating Reclassification

As part of the Rating Reclassification, it is expected that the bank reclassifies the ratings into the different Basel credit rating of AAA Equivalent, AA Equivalent and so on. This gets handled in the rule **Credit Rating Reclassification** of the process **APRA Other Reclassifications**.

The reclassification of these ratings to the Credit quality steps gets handled as part of the T2T "T2T\_BASEL\_CREDIT\_RATING\_BAND\_MAP\_DATA\_POP". The ratings get reclassified into Credit Quality Steps as expected for each of the risk type – Credit Risk, Securitization, Sold Credit Protection.

#### 4. Other Reclassification

As part of the Reclassification Rules, any other data which is being brought inside the application like seniority, transaction type, and so on also get reclassified into OFSAA specific values. This is also mandatory to be performed. Otherwise, data is not available for processing as required by the regulator.

This happens as part of the process **COMMON\_RECLASSIFICATION**.

### 7.1.2.6 **Asset Reclassification Rules**

Based on Basel product type and standard counterparty type, an asset class is formed by the application. This asset class is used for data processing. The asset class is the same as specified in the accord.

For example, Standard counterparty is Corporate non-SME and Corporate SME, the asset class is corporate. For Basel product type gold, the asset class is Gold.

The asset class for all mitigants is reclassified based on their standard mitigant types and standard issuer type.

This happens in the sub-process **APRA Post Crisis Investments Reclassification** of the process **APRA Post Crisis Investment Data Processing**.

The Asset class gets clubbed under different asset class categories as relevant for the asset classes. This is used for regulatory treatment. This particular reclassification happens in the “**FSI\_BASEL\_ASSET\_CATEGORY\_MAP\_DATA\_POP**” task of the process “**OTHER\_DATA\_POPULATION**”

### 7.1.2.7 **Pre-mitigation Calculations**

Based on the asset class, the application calculates the Pre-Credit Risk Mitigation (CRM) Exposure at Default (EAD) for each exposure. This value signifies the maximum loss that the bank can suffer, in case of default on this exposure, before considering any mitigation effects.

Some exposures can be hedged against credit risk through various mitigants such as guarantees, collaterals, credit derivatives, and so on. These provide mitigation to credit risk and must be considered while computing Credit RWA, as per the Accord. Hence, the application calculates the pre-mitigation exposure amount and post-mitigation exposure amount.

The application also computes pre-mitigation risk-weighted assets (Pre CRM RWA) and post-mitigation risk-weighted assets (Post CRM RWA) by multiplying the respective EAD by risk weight. The risk weight is arrived at, by considering the credit rating of the exposures and mitigants as per the guidelines.

#### 7.1.2.7.1 **Exposure at Default Amount Calculation**

##### **Pre CRM EAD**

Exposure at Default (EAD) is calculated for all the products. This is being computed using the Exposure Amount (EOP Balance of the Exposure)

This happens in the process **APRA Investment Pre CRM EAD Computation - STD** of the process **APRA Post Crisis Investment Data Processing – STD** process.

## Post CRM EAD

Through the CRM process, the bank considers the effect of the mitigation and calculates the post-mitigation exposure at the default amount. This signifies the maximum loss that the bank can suffer in case of default on this exposure, after considering the effects of the mitigation. This will be the EAD of the Exposure Pre-Mitigation less the covered portion of the mitigant.

### 7.1.2.7.2 Multiple Assessment

For exposures with multiple ratings, risk weight assignment is based on multiple assessment processes. For each exposure, the final rating is the worst of the best two ratings assigned to the exposure.

The risk weight corresponding to this rating is then assigned to the exposure.

Exposures for multiple rating assessments are first moved into the table FSI Multiple Rating Processing (FSI\_MULTIPLE\_RATING\_PROCESSING) wherein the ranking and final selection of which rating to use takes place.

This happens in the sub-process of **INV\_MULTIPLE\_RATING\_ASSESSMENT\_DATA\_POPULATION**, wherein the data for the multiple assessment processing gets populated into the FSI table. **MULTIPLE\_RATING\_ASSESSMENT**, wherein the identification of the multiple rating for the exposure happens, and the

APRA Post Crisis Reforms Multiple Assessment wherein the actual risk weight and final rating assignment occurs for the exposures.

All the above fall under APRA Post Crisis Investment Data Processing - STD.

### 7.1.2.7.3 Issue Issuer Assessment

For all exposures which remain unrated after the multiple assessment processes, the issue issuer process is performed. This happens in the Issue Issuer Assessment sub-process **APRA Investment Issue Issuer Assessment**. In this case, the unrated exposures are assigned a reference rating based on the reference issue available or the rating of the party, whichever is applicable. These unrated exposures are assigned a risk weight based on the reference rating.

For unrated Non-Securitized exposures, the application does an issue-issuer assessment to infer a rating of the unrated exposures, based on the rating of a similar instrument (referred to as reference issue hereafter) issued by the same issuer. The reference issue is used only when it is of the same currency as the exposure and the exposure is senior or equivalent to the same. For the unavailable reference issue, the party rating is used. In the case of the party also being unrated, the exposure remains unrated. Also, the application populates whether the exposure is LT rated or ST rated, based on the rating assigned to the exposure.

### 7.1.2.7.4 Risk Weight Assignment Rules

#### Non-Sec Exposures Risk Weight

Risk Weight is assigned based on asset class and the credit rating as per Basel guidelines. The risk weight rules operate on the risk weight table (**FSI\_RW\_MAP\_MASTER**). Highly rated exposures are allocated low-risk weight and poorly rated exposures are allocated high-risk weights.



If exposure has more than one rating (rated by more than one agency), then the final rating is assigned based on multiple assessments. The application updates the risk weights against the exposures directly, when ratings are not considered.

Options for risk-weighting are selected during Run definition if the Run Management UI is used, to update the required calculations as allowed by the specific jurisdiction. For more details on the options, see the [Run Management](#) section.

This is handled under the sub-process: **APRA Investment Post Crisis Risk Weight Assignment – ECRA** and **APRA Investment Debt Equity Risk Weight Assignment** in the **APRA Post Crisis Investment Data Processing – STD** process.

### Specific Standard Party treatment

The application has a pre-determined set of Specific Standard Parties. The list of Standard Parties covered are as follows, and the Party ID mentioned are just samples, that can be changed to meet the bank’s logic for the Party ID:

**Table 16: List of Standard Parties**

V_STD_PARTY_CODE	V_STD_PARTY_NAME	V_PARTY_ID
IBRD	International Bank for Reconstruction and Development	P11
IFC	International Finance Corporation	P12
ADB	Asian Development Bank	P13
AFDB	African Development Bank	P14
EBRD	European Bank for Reconstruction and Development	P15
IADB	Inter-American Development Bank	P16
EIB	European Investment Bank	P17
EIF	European Investment Fund	P18
BIB	Nordic Investment Bank	P19
CDB	Caribbean Development Bank	P20
IDB	Islamic Development Bank	P21
CEDB	Council of Europe Development Bank	P22

IFFI	International Finance Facility for Immunization	P23
MIGA	Multilateral Investment Guarantee Agency	P24

For exposures to these exposures, the asset class determined earlier gets overridden to mainly International Organizations and Multilateral Development Bank (Zero Risk Weight) takes place. These exposures will be assigned a risk weight of 0%.

This treatment of Standard Parties is handled in the sub-process **Investments RW for MDB Exposures – ECRA** in **APRA Post Crisis Investment Data Processing – STD** process.

#### 7.1.2.7.5 RWA Calculations

The RWA is calculated as the Pre-mitigation EAD multiplied by the Pre-Mitigation Risk Weight.

This is handled under the sub-process **INV\_PRE\_CRM\_RISK\_WEIGHTED\_ASSET\_CALCULATION\_STD** under the process **APRA Post Crisis Investment Data Processing - STD**.

## 7.2 Data Capture and Treatment of Underlying Exposures Related to CIU, Securitization, and Covered Bond

### Underlying Exposures Treatment

#### Underlying Exposures Data Flow and Treatment Related to Covered Bond

The application also supports Underlying exposures that are received as input through the Stage Underlying Exposures table (**STG\_UNDERLYING\_EXPOSURES**). This is relevant for the covered bond exposures,

#### Banking Underlying Exposures

For these exposures, the parent exposures are covered bond exposures, mapped via the parent instrument code, but the underlying is Banking exposures.

In such cases, exposures will have a record type as **INV\_NON\_SEC\_ULY** (Investment Underlying) and will be populated and processed in the Banking table **FSI\_CAP\_BANKING\_EXPOSURES**. This is handled in the process **APRA Post Crisis Banking Underlying Data Processing - STD**.

#### Investment Underlying Exposures

For these exposures, the parent exposures, as well as the underlying exposures, are both investment exposures. Such exposures will have record type as **INV\_NON\_SEC\_ULY** (Investment Underlying) and will be populated and processed in the Investments table, **FSI\_CAP\_INVESTMENT\_EXPOSURES**.

This is handled similarly as a normal investment exposure in the process **Investment Data Processing - STD**.

#### Underlying Flow Related to CIU

The application also supports Underlying exposures that are received as input through Stage Fund Underlying Composition table (**STG\_FUND\_UNDERLYNG\_COMPOSITION**). This is relevant for the CIU exposures. The application also supports the underlying composition received as input through the Stage Fund CIS Composition table (**STG\_FUND\_CIS\_COMPOSITION**)

#### Investment Underlying Exposures

For these exposures, the parent exposures, as well as the underlying exposures, are both investment exposures. Such exposures will have record type as **INV\_NON\_SEC\_ULY** (Investment Underlying) and will be populated and processed in the Investments table, **FSI\_CAP\_INVESTMENT\_EXPOSURES**.

#### Derivatives Underlying Exposures

For these exposures, the parent exposures are investment exposures, but the underlying is Derivatives exposures. Such exposures will have record type as **INV\_NON\_SEC\_ULY** (Investment Underlying) and will be populated and processed in the Derivatives table **FSI\_CAP\_DERIVATIVES**.

This is handled in the process **APRA Post Crisis Derivatives Underlying Data Processing - STD**.

## 8 Annexure A: Key Concepts

### 8.1 Slow Changing Dimensions

This component details how to load data from the stage tables into the slowly changing Dimension tables. SCD batches are run usually at fixed intervals, for example at the end of each month. There are certain SCDs that have to be run whenever any new data is required to be added for the bank.

When the SCD batch is executed for the first time it loads all the data in the stage tables for that Extraction Date and it also inserts two records – Missing and Others.

When the batch is run for the next Extraction Date, then the new records are inserted. The End Dates of the modified records are updated with the Extraction Date and new records with the Start Date as the extraction records are inserted. The records that are the same for both Extraction Dates are left untouched.

The SCD component is delivered through an executable.

#### Type 1 SCD Methodology

The Type 1 methodology overwrites old data with new data, and therefore, does not track changes to the data across time. For Example, consider a Dimension table, **DIM\_PRODUCT**.

**Table 17: Values in the DIM\_Product Table**

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

The following is a description of the column names in this table:

- **N\_Product\_Skey** is the surrogate key column which is a unique key for each record in the Dimension table.
- **V\_Product\_Name** is the product name.
- **D\_Start\_Date** indicates the date from which this product record is valid.
- **D\_End\_Date** indicates the date to which this product record is valid.
- **F\_Latest\_Record\_Indicator**: A value *Y* indicates this is the latest record in the Dimension table for this product and *N* indicates it is not.

If the **V\_Product\_Name** column is set as a Type 1 and if there is a change in the product name from *PL* to *Personal Loan* in the earlier example in the next Processing Period, then the SCD that executed the record in the earlier example is changed.

**Table 18: Values in the DIM\_Product Table**

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

### Type 2 SCD Methodology

The Type 2 method tracks Historical Data by creating multiple records for a given natural key in the Dimensional tables with separate surrogate keys. With Type 2, the historical changes in Dimensional Data are preserved. In the earlier example, for the change in product name from 'PL' to 'Personal Loan' if history is preserved, then the V\_Product\_Name column is set as Type 2, that is, when SCD is processed for the processing period, it inserts a new record as shown in the following example.

**Table 19: Values in the DIM\_Product Table**

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

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

### Prerequisites

The setup tables accessed by the SCD component, including **SYS\_TBL\_MASTER**, **SYS\_STG\_JOIN\_MASTER** have the required entries. The tables **SYS\_TBL\_MASTER** and **SYS\_STG\_JOIN\_MASTER** are seeded. You must only add entries in these tables if you add user-defined dimensions.

### Tables used by SCD Component

The [Basel 8.1 Seeded Tables](#) Excel lists out the Stage tables and the corresponding Dimension tables that are used in the BASEL application.

No changes are needed in this table if the standard key dimensions are being used within the Basel Application. If any new dimensions are added, the related column details are to be inserted into this table manually.

STG\_<dimensionname>\_MASTER - is the database table that SCD uses as the source. This table comes as a part of the Data Model.

DIM\_<dimensionname> - is the output table to which SCD writes the dimension data.



## Seeded Data

The tables are seeded in the installation as per the worksheet available in the following files:

- [Seeded Tables Data 1](#)
- [Seeded Tables Data 2](#)

## 8.2 Exhibit 3: Currency Conversion

SETUP\_MASTER table is a setup table, used to provide the setup information of a Run. It can be used to set the default values of Rate Data Source Code or Standard Currency Code. For currency conversion, the rate data source and standard currency are important values. If the rate data source value is missing, then BLOOMBERG is by default considered to determine the Rate Data Source Code from the **DIM\_ORG\_STRUCTURE** table during currency conversion. If the Standard Currency code values are not provided or are missing, then USD is used as the destination currency code from the **DIM\_ORG\_STRUCTURE** table during currency conversion. This is column under the **DIM\_ORG\_STRUCTURE** table mapped to these default values are as follows:

**Table 20: Column Values for DIM\_ORG\_STRUCTURE**

V_COMPONENT_CODE	V_COMPONENT_DESC	V_COMPONENT_VALUE
DEFAULT_FX_RATE_SRC	Default Rate Data Source Code	BLOOMBERG
STD_CCY_CD	Standard Currency Code	USD

Rule Reporting Currency Code Assignment is set to 'USD' out of the box but can be modified to any other currency. The reporting currency selection can be done in the Run execution windows if the Run is executed from the Run Execution Window.

Currency conversion is performed on multiple tables to convert the values from its natural currency to reporting currency. The steps which are performed for the currency conversion are as follows:

- The table Stage Forward Exchange Rates **STG\_FORWARD\_EXCHG\_RATES** stores the details about the pair of currencies and the corresponding exchange rate to perform the same with the extraction date for which the forward exchange rate is provided. This table also contains the information about the data source from which the exchange rates are quoted and the tenor which is used to identify the period for which the forward exchange rate is applicable for.
- The data from this table is populated to the **Exchange Rates** fact table through the common batch which is executed in the beginning. The initial data populated hereby contains the default Run Skey which is set to minus 1. Only the records with tenor 0 are used for currency conversion for which the spot exchange rate is required.
- After populating the data in the table, in each Run, all the exchange rates are updated based on the conditions at the time of execution to account for the increase or decrease in the exchange rates. A Rule is used which updates the exchange

rates and populates the corresponding Run Skey which is then used for currency conversion in that particular Run. The exchange rates are then moved into the table wherever currency conversion is required. This is performed in the Product Processor data population step.

- Different legal entities can use the exchange rates quoted by different data sources. Therefore, the column which contains the information about the data source in the table Exchange Rates is compared with the required data source for a legal entity stored in the Org Structure Dimension (DIM\_ORG\_STRUCTURE) table.
- After the exchange rate population into the required fact tables, the currency conversion rules are executed which take the values stored in amount columns in natural currency, multiply them with the exchange rate and populate to the reporting currency amount columns.

For mitigants table, the exchange rate that is used for currency conversion is the exchange rate for the entity of the exposure which the mitigant belongs to. The list of tables and corresponding columns where currency conversion is carried out is available in the following OTN Documentation Library location:

[Currency Conversion Tables and Columns](#)

## 8.3 **Exhibit 4: FSI\_CAPITAL\_STANDARD\_MAPPING Table Mapping**

As a part of Basel Capital Structure, information stored in Capital Standard Mapping (FSI\_CAPITAL\_STANDARD\_MAPPING) table is a mapping of GL capital line items with seeded data in Standard Accounting Head Dimension table (DIM\_STD\_ACCT\_HEAD). This is also required for all the computed fields, so that the computation happens in the application for those standard accounting heads.

For all jurisdictions this mapping must be present which is elaborated in the following worksheet, available in the following OTN Documentation Library location:

[FSI CAPITAL STANDARD MAPPING](#)

## 8.4 **Exhibit 5: Data Expectations for few of the Basel Products**

### 8.4.1 **Equity Exposures Data Expectations**

The Equity Exposures and any other exposures which were expected to be treated under Equity Asset Class of the particular jurisdiction were expected in Stage Equity Exposures (STG\_EQUITY\_EXPOSURES) till 8.0.3 release of Basel application.

Starting from 8.0.4 release, any exposure which must be treated under Equity Asset Class is expected to be provided in Stage Investments (STG\_INVESTMENTS).

For mandate-based approach in equity Investment in funds when there are no entries in STG\_FUND\_UNDERLYING\_COMPOSITION, application assigns Fall Back Approach to the remaining exposures.



All the required attributes pertaining to Equity Exposures are expected to be provided in Stage Investments (STG\_INVESTMENTS) and any Instrument Specific attributes in Instrument Contract Dimension table (DIM\_INSTRUMENT\_CONTRACT).

## 8.4.2 **Securities Financing Transaction Related Exposures Data Expectations**

The Securities Financing Transaction (SFT) related exposures were expected in Stage Repo Contracts (STG\_REPO\_CONTRACTS), and all their related collateral were expected in Stage Underlying Exposures (STG\_UNDERLYING\_EXPOSURES) till 8.0.3 release of Basel application.

Starting from the 8.0.4 release, there are changes to the capture of the collateral related to the SFT.

- The collateral which the bank has received concerning the SFT transactions is captured in the Stage Mitigants **STG\_MITIGANTS** table, with the SFT Exposure mapped to the collateral received using the Stage Account Mitigant Map **STG\_ACCOUNT\_MITIGANT\_MAP** table.
- The collateral which the bank has placed concerning the SFT transactions are captured in the Stage Placed collateral **STG\_PLACED\_COLLATERAL** with the SFT Exposure mapped to the collateral placed using the Stage Account Placed Collateral Map **STG\_ACCT\_PLACED\_COLL\_MAP** table.

Any Instrument Specific attributes are expected in the Instrument Contract Dimension table **DIM\_INSTRUMENT\_CONTRACT**.

## 8.4.3 **Account Mitigant Mapping Data Expectations**

Any account in the product processors, mapped to the various mitigants received were captured in the Stage Exposure Mitigant Mapping **STG\_EXP\_MITIGANT\_MAPPINGS** till 8.0.4 release of Basel Application.

Starting from the 8.0.5.0.0 release of the application, this is expected to be provided in the Stage Account Mitigant Map (STG\_ACCOUNT\_MITIGANT\_MAP) table.

## 8.4.4 **Commitment Contract Data Expectations**

Any commitment contracts issued by the bank were initially expected in Stage LC Contracts (STG\_LC\_CONTRACTS) till 8.0.4 release of Basel Application.

Starting from the 8.0.5 release of the application, any exposure which a commitment contract is issued by the bank is expected to be provided in the Stage Commitment Contracts **STG\_COMMITMENT\_CONTRACTS**.

In the case of the commitment contracts issued under a credit line facility, then, the linkage of the credit line to the contract is required to be provided. The credit line is expected to be populated into the Dimension Credit Line **DIM\_CREDIT\_LINE** table.

## 8.4.5 Credit Line Issued Data Expectations

Any credit line, issued by the bank was initially expected in Stage LC Contracts (STG\_LC\_CONTRACTS) till 8.0.4 release of Basel Application.

Starting from the 8.0.5 release of the application, any exposure which is a line of credit issued by the bank is expected to be provided in the Stage Credit Line Details (STG\_CREDIT\_LINE\_DETAILS) along with entries in the Dimension Credit Line (DIM\_CREDIT\_LINE) table.

The credit line table will hold information concerning all the lines of credit issued by the bank. The lines of credit can be drawn for various products like Credit Card (corporate credit cards issued to various employees under a credit line for that corporate), Loan commitments (loan issued to the customer as part of a credit line issued to that customer) and so on. This table will hold all the information related to the credit line, and any undrawn portion related to that credit line.

The drawn portion of the credit line, or the portion which has been earmarked for a specific product like credit card, will be part of the corresponding product processor (STG\_CARDS, in this example), with the credit line code populated. And under that particular product, there can be both the drawn and undrawn portion, which will be captured in the same product processor (STG\_CARDS, in this example).

The undrawn portion of the credit line is the one that is treated as a line of credit, and receives the corresponding Basel guideline specific treatment.

## 8.4.6 Forward Contract Data Expectations

Any forward agreement or contract was initially expected in Stage Futures (STG\_FUTURES) till the 8.0.4 release of the Basel Application.

Starting from the 8.0.5.0.0 release of the application, any exposure that is a forward agreement is expected to be provided in the Stage Forwards **STG\_FORWARDS**.

## 8.4.7 Asset Sold Data Expectations

Any assets sold with recourse were initially expected in Stage Loan contracts (STG\_LOAN\_CONTRACTS) till 8.0.4 release of Basel Application.

Starting from the 8.0.5.0.0 release of the application, any exposure which is an asset sold is expected to be provided in the Stage Assets sold (STG\_ASSETS\_SOLD). This will include all the assets sold by the bank. And the assets sold, for which the bank is retaining recourse will be part of the regulatory capital calculations, and that will be taken up for the Basel-related processing.

## 8.4.8 Spot Forex Data Expectations

Any forex transaction, which is a spot were initially expected in Stage Investments (STG\_INVESTMENTS) till the 8.0.4 release of the Basel Application.

Starting from the 8.0.5 release, any forex transaction which is a spot contract is expected to be provided in the Stage Forex Contracts (STG\_FX\_CONTRACTS).

Note: All other forex transactions are expected to be populated in their respective derivative tables (Currency Swap in STG\_SWAPS\_CONTRACTS and so on).

## 8.4.9 Underlying Exposures for Derivatives

The underlying exposures for derivatives are now being captured through STG\_UNDERLYING\_MASTER.

The Data expectation for the underlying relationship for the derivatives is as follows:

- Case 1 – Both Parent derivative contract and underlying of the derivative are instruments:
  - This will involve usage of the two tables for capture of the underlying information – STG\_UNDERLYING\_MASTER/DIM\_UNDERLYING and STG\_UNDERLYING\_DTL.
  - The parent account will be in one of the derivative contract, and the relationship between the parent and the underlying will be captured in the derivative tables as Underlying Instrument Code or the Underlying Code.
  - DIM\_UNDERLYING will be used to store the static information about the underlying instruments, and STG\_UNDERLYING\_DTL will be used to store any variable information about the underlying instruments.
  - Data for STG\_UNDERLYING\_DTL
    - The STG\_UNDERLYING\_DTL can support the relationship reference of 1 parent to 1 underlying or multiple underlying instruments.
    - In this, the underlying instrument code will be provided as v\_instrument\_code and the parent's Instrument Code will be provided as v\_contract\_instrument\_code.
    - Both these Instrument Codes will have reference in dim\_instrument\_contract.
- Case 2 – If Parent derivative contract or underlying of the derivative are not instruments but instead are accounts or exposure:
  - This will involve usage of a single table for capture of the underlying information – STG\_UNDERLYING\_EXPOSURES.
  - The parent account will be in one of the derivative contract, and the relationship between the parent and the underlying will be captured in the underlying table as the parent exposure ID.
  - Data for STG\_UNDERLYING\_EXPOSURES.
    - The STG\_UNDERLYING\_EXPOSURES can support the relationship reference of 1 parent to 1 underlying or multiple underlying instruments.
    - In this, the underlying exposure will be provided as v\_exposure\_id and parent's exposure ID in v\_parent\_exposure\_ID.

— Both these exposure ID's will have reference in dim\_exposure.

## 8.4.10 Underlying Exposures for CIU

The underlying exposures for CIU are now being captured through STG\_UNDERLYING\_MASTER.

The following is the data flow of underlying exposure of CIU:

- Case of Invested Mutual Fund
  - Invested portion will be in STG\_INVESTMENTS
  - Any Fund related information which do not change will be in STG\_INSTRUMENT\_CONTRACT\_MASTER
  - Any Fund related information which changes frequently will be in STG\_INTRUMENT\_CONTRACT\_DTL
  - The composition of the fund will be in STG\_FUND\_UNDERLYNG\_COMPOSITION
  - The assets of the fund will be in STG\_FUND\_CIS\_COMPOSITION

## 8.5 Exhibit 6: Design Changes

### 8.5.1 Design Changes for Handling Organization Structure

From Release 8.1.0.0 onwards, for a selected Org Entity and the mode of execution either Solo or Consolidation, the application flattens the Org entries from DIM\_ORG\_STRUCTURE into a structure as follows:

Example for Dim Org Structure Data

**Table 21: Sample Values for DIM\_ORG\_STRUCTURE Table**

Dim Org Account	Dim Org Parent
A1	A2
A2	A3
A3	A4

If you select, A3 as the Entity and Consolidation as execution type, the following data is populated in the flattened table:

**Table 22: List of Data Populated in the Flattened Table**

Entity	Parent Entity	Consolidation Parent	Heir Level
A3	A3	A3	0
A3	A2	A3	1
A2	A1	A3	2

All the entities from the Entity column from Consolidation Parent = A3 are picked up and populated into the **FCT\_ENTITY\_INFO** table.

This step is done to avoid the population of all unnecessary org structure data into FCT\_ENTITY\_INFO and later it is deleted once they are unused.

## 8.5.2 Design Changes for Standardization of Asset Class and Rating

It has been seen that across jurisdictions, functionally the treatment of asset class mapped to a specific rating are the same, but the regulatory requirement to keep up with the reporting needs is more granular. Though the functionally same, the way both the data are expected by each of the regulators are slightly different, and the nomenclature used is different. Due to this, there was a need for standardization of the Basel Credit Rating and the Basel Asset Class.

The base premise of this standardization is to have the intermediate mapping of the standard values (as referred to by BIS) to the actual values referred to by the regulator.

### **Asset Class Standardization:**

Jurisdiction-specific asset classes are converted into standardized asset class categories which are in turn used for all computation purposes in the application. These asset classes are mapped to the asset class categories based on the specific treatment expected by the jurisdiction.

- DIM\_BASEL\_ASSET\_CLASS\_CATEGORY table holds the list of all standardized asset class categories used across jurisdictions.
- FSI\_BASEL\_ASSET\_CAT\_MAP\_MASTER table is the mapping master table that holds all the asset classes being mapped to their respective asset categories per jurisdiction.
- FSI\_BASEL\_ASSET\_CATEGRY\_MAP table holds the run based snapshot per jurisdiction requirement.

For example, a regulator can expect a treatment for all Corporate Exposures, whereas another regulator can indicate that the treatment is the same, but reporting has to be differentiated into Corporate and Corporate SME Exposures. Both will be mapped to the same category of Corporate.

### **Rating Standardization:**

The standardized ratings are converted into the jurisdiction-specific rating requirement, in the form of any band or the actual rating. The standardized ratings are used for the calculation, whereas these rating bands are used for the reporting as per jurisdictional requirements.

- DIM\_CAP\_REG\_RATING holds all the standardized bands that are applicable across jurisdictions.
- FSI\_BASEL\_RATING\_MAP\_MASTER is a master table that stores the standardized bands for a process type of SEC, NON-SEC, Market Risk Non Sec, Market Risk Sec, and Sold Credit protection.
- FSI\_BASEL\_RATING\_BAND\_MAP table is a Run-based snapshot of FSI\_BASEL\_RATING\_MAP\_MASTER loaded for a jurisdiction.

For example, a regulator can expect a treatment for all AAA to AA- of Corporate Exposures to be risk-weighted at 20%. Another regulator can expect the same treatment but they might be calling it as Credit Quality Step 1, and all exposures of corporate with Credit quality step 1 rating to be risk-weighted at 20%. In this scenario, AAA to AA- and Credit Quality Step 1 are both signifying the same. The rating band will indicate it to be AAA to AA-, and the regulatory rating will be Credit Quality Step 1 as stored in the table FSI\_BASEL\_RATING\_BAND\_MAP.

## 9 Annexure B

### 9.1 Download Specifications

For information, see [Download Specifications](#).

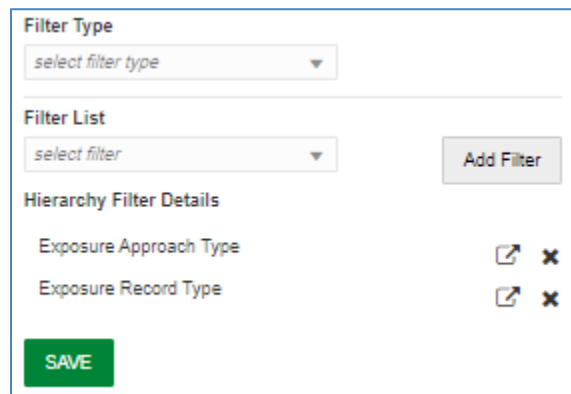
### 9.2 Using Process Modelling Framework

#### 9.2.1 Basel CAP PACK Process Modelling Framework Filters and Decision Rules

PMF provides an option to apply filter hierarchies at the Run or Business Pipeline level. These filters are similar to the regular filter hierarchies used in rules. They get appended to each task in that business pipeline or Basel Run at run-time based on the applicability of the filter to that task.

In 8.1.1, CAP PACK makes use of two filter hierarchies, which apply through PMF. The filter hierarchies used are as follows:

Figure 27: Filter Hierarchies



The screenshot shows a configuration window for filter hierarchies. It features a 'Filter Type' dropdown menu with the text 'select filter type'. Below this is a 'Filter List' section with a 'select filter' dropdown and an 'Add Filter' button. The 'Hierarchy Filter Details' section contains two rows: 'Exposure Approach Type' and 'Exposure Record Type', each with a copy icon and a delete icon. A green 'SAVE' button is located at the bottom left of the window.

##### 9.2.1.1 Exposure Approach Type

This hierarchy is based on the underlying seeded table FSI\_CAP\_APPROACH\_TYPE\_MASTER.

Used mainly to filter data in processing based on the approach selected by the user in the Advanced Run. Approach types are Standardized, Foundation IRB, and Advanced IRB. Further, the approach is broken into the following matrix:



**Table 23: Exposure Approach Type**

V_APPROACH_TYPE	V_APPROACH_TYPE_DESC
OTH	Others
NSSTD	Non Securitisation Standardized
NSFIRB	Non Securitisation FIRB
NSAIRB	Non Securitisation AIRB
SECSTD	Securitisation Standardized
SECIRB	Securitisation - Internal Rating Based Approach
MRSA	Market Risk Standardised Approach
MRIMM	Internal Models Approach
ORBIA	Basic Indicator Approach (BIA)
ORSA	Standardised Approach (SA)
ORASA	Alternative Standardised Approach (ASA)

For a task, if this table is part of the used tables list, then the filter chosen in the calling business pipeline or run pipeline applies to it. Used tables can be either part of the Dataset (for Rules) or Mapped or NonMapped column (for T2Ts).

### 9.2.1.2 Exposure Record Type

This hierarchy is based on the underlying seeded table FSI\_CAP\_RECORD\_TYPE\_MASTER. Used mainly to filter data of each portfolio for processing within or across portfolios. Depending upon the portfolio(s) the user picks as part of the run, the record type decides the type of data to be processed by each task in each portfolio. Record types currently supported are as follows:

**Table 24: Type of Exposure Records**

V_RECORD_TYPE	V_RECORD_TYPE_DESC
INV_NON_SEC_EXP	Investment Non Sec Exposure
INV_NON_SEC_ULY	Investment Non Sec Underlying

V_RECORD_TYPE	V_RECORD_TYPE_DESC
INV_SEC_ULY	Investment Sec Underlying
BNK_NON_SEC_EXP	Banking Non Sec Exposure
BNK_NON_SEC_ULY	Banking Non Sec Underlying
BNK_SEC_ULY	Banking Sec Underlying
DRV_NON_SEC_EXP	Derivatives Non Sec Exposure
DRV_NON_SEC_ULY	Derivatives Non Sec Underlying
DRV_SEC_ULY	Derivatives Sec Underlying
SFT_NON_SEC_EXP	SFT Non Sec Exposure
SFT_NON_SEC_ULY	SFT Non Sec Underlying
SFT_SEC_ULY	SFT Sec Underlying
OTH_PLACED_COLL_EXP	Other Placed Collateral Exposure
SFT_PLACED_COLL_EXP	SFT Placed Collateral Exposure
MITIGANT	Mitigant
SFT_MITIGANT	SFT Mitigant
OTH	Others

A simplified example of such a case can be Investment Portfolio and Banking Portfolio for which data sources, besides other sources, are as follows:

- Securitization:
  - Product Processor Tables [main exposures]
  - From PP tables to FSI\_CAP\_INVESTMENT\_EXPOSURES.
  - STG\_UNDERLYING\_EXPOSURES [Investment underlying exposures which are banking products and investment products]
  - From STG\_UNDERLYING\_EXPOSURES to FSI\_CAP\_BANKING\_EXPOSURES.
- Banking Portfolio:
  - Product processor Tables [main exposures]
  - From PP tables to FSI\_CAP\_BANKING\_EXPOSURES.

If the user chooses banking and investment portfolios together in a run, the data movement is as follows:

**Table 25: Data Movement for Banking in a Run**

Banking				
MAIN EXPOSURE TYPE	SOURCE	ULY EXPSOURE TYPE	TARGET	V_RECORD_TYPE
BANKING	PP TABLES		FSI_CAP_BANKING_EXPOSURES	BNK_NON_SEC_EXP

**Table 26: Data Movement for Investment Portfolios in a Run**

Investments				
MAIN EXPOSURE TYPE	SOURCE	ULY EXPSOURE TYPE	TARGET	V_RECORD_TYPE
INVESTMENT	PP TABLES		FSI_CAP_INVESTMENT_EXPOSURES	INV_NON_SEC_EXP
INVESTMENT	STG_UNDERLYING_EXPOSURES	BANKING	FSI_CAP_BANKING_EXPOSURES	INV_NON_SEC_ULY
INVESTMENT	STG_UNDERLYING_EXPOSURES	INVESTMENT	FSI_CAP_INVESTMENT_EXPOSURES	INV_NON_SEC_ULY

When banking and investments both execute, the record type filter helps to process exposures as follows:

1. Banking Portfolio:  
Only those exposures, which have record type as BNK\_NON\_SEC\_EXP in FSI\_CAP\_BANKING\_EXPOSURES.
2. Investment Portfolio:
  - a. Exposures, which have record types as INV\_NON\_SEC\_EXP and INV\_NON\_SEC\_ULY in FSI\_CAP\_INVESTMENT\_EXPOSURES.
  - b. Exposures, which have record type as INV\_NON\_SEC\_ULY in FSI\_CAP\_BANKING\_EXPOSURES.

The steps to apply filters at Run and Business Pipeline levels are detailed in the [OFS Analytical Applications Infrastructure User Guide](#).

### 9.2.1.3 Execution and Decision Rules

PMF allows the flow of execution to follow a certain path while running a batch. The decision to include or exclude components in a user-defined run is based upon the Run Management Options. This allows the user to manage and report data for only those components, which the user has opted through the Basel Configuration > Run Management screen.

Based upon the selections made in the configuration screen, a table **FSI\_CAP\_RUN\_EXE\_PAREMETERS** is updated with the answers to the questionnaire.

A simple example can be of which portfolios the user has opted. If the user wishes to execute banking and investments only, then a Basel Configuration is created through Run management with this questionnaire. This configuration is selected during Run execution.

### 9.2.1.4 Evaluation of Execution Rule

The questionnaire data is captured and pushed into the table **FSI\_CAP\_RUN\_EXE\_PAREMETERS**.

The execution rule 'Basel Execution Approach Assignment' reads the data from this table and assigns the values to respective PMF variables.

Figure 28: Execution Rule - Basel Execution Approach Assignment

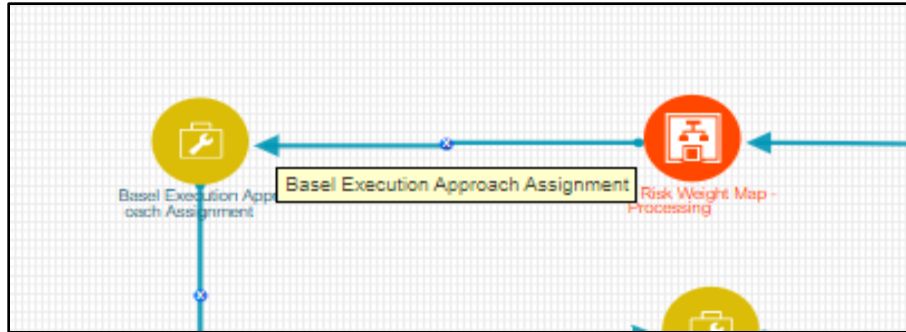


Figure 29: Edit API Details Window

Edit API Details		X
Name ?	<input type="text" value="Basel Execution Approaches"/>	
RuleType ?	<input type="text" value="ExecutionRule"/>	
ExecutionType ?	<input type="text" value="JSON Read From DB"/>	
Table Name ?	<input type="text" value="FSI_CAP_RUN_EXE_PARAMETERS"/>	
Column List ?	<input type="text" value="F_BASEL_NSSTD,F_BASEL_NSFIRE F_BASEL_NSAIRB,F_BASEL_SECSTD,F"/>	
Where Condition ?	<input type="text" value="N_RUN_SKEY = {WF_RUNSK}"/>	
Return JSON Type ?	<input type="text" value="JSON Object"/>	
Output Datafield ?	<input type="text" value="BASEL_EXEC_APPROACH"/>	
Scope ?	<input type="text" value="Package"/>	

### 9.2.1.5 Evaluation of Decision Rule

The variables, values for which are assigned in the execution rule, are evaluated in the respective transition lines for each applicable component. If the value matches the expected value in the transition line, then that path is taken.

Figure 30: Evaluation of Decision Rule

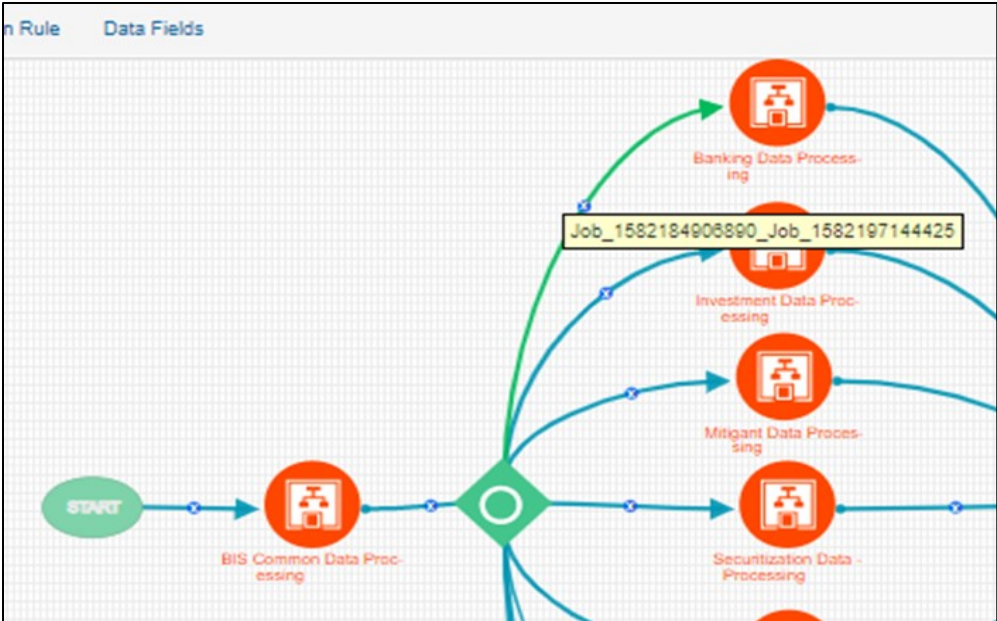


Figure 31: Edit Transition

Edit Transition	
Transition Name	Job_1582184906890_Job_158219714442
Connected To	Banking Data Processing
Decision Rule	Basel Banking Portfolio Selection
Order	1
Stroke	Default
Ok	

Figure 32: Edit Decision Rule

Name ?	Basel Banking Portfolio Selection
RuleType ?	DecisionRule
ExecutionType ?	JSON Path Expression
JSON input ?	BASEL_EXEC_APPROACH
JSON Path Expression ?	\$.F_IS_BANK_APPLICABLE
Operator ?	=
RHS Expression ?	Y
Scope ?	Package

### 9.2.1.6 Deprecation of Uncovered Record Creation DT and New Logic

The DT, Pop\_Uncovered\_Mitigant, that creates uncovered exposure records in the **FCT\_SUB\_EXPOSURE** table is deprecated and is replaced with three T2Ts as mentioned as follows:

For the effective optimization of the mitigants, the application used to create a replica of the exposures, with the standard mitigant type as Uncovered. This used to happen with the **DT POP\_UNCOVERED\_MITIGANT**.

To handle the revised data flow of processing, this is replaced by three T2Ts as follows:

- **T2T\_FSI\_CAP\_NET\_POOL\_UNCOV\_SUB\_EXPOSURES**

This T2T creates and inserts one uncovered exposure in FSI\_CAP\_SUB\_EXPOSURES for each nettable pool account from FSI\_CAP\_NETTABLE\_POOL.

- **SUB\_EXPOSURES\_BANKING\_UNCOV\_DATA\_POP**

This T2T creates and inserts one uncovered exposure in FSI\_CAP\_SUB\_EXPOSURES for each exposure from FSI\_CAP\_BANKING\_EXPOSURES.

- **SUB\_EXPOSURES\_INVESTMENT\_UNCOV\_DATA\_POP**

This T2T creates and inserts one uncovered exposure in FSI\_CAP\_SUB\_EXPOSURES for each exposure from FSI\_CAP\_INVESTMENT\_EXPOSURES.

### 9.2.1.7 Reuse of PMF Process for Underlying or Placed Collateral Data Processing

An investment portfolio requires banking and derivative underlying for its processing and calculations apart from investment exposures.

The banking and derivative underlying exposures must get the respective portfolio treatment (Risk weighting, AD and so on) while being processed under the investment portfolio.

To achieve the above, the investment portfolio pipeline calls the banking portfolio and derivative portfolio pipeline to process the respective underlying and then use the processed or calculated attributes of these underlying to complete investment processing.

Hence investment portfolio reuses the complete Banking and Derivative Pipeline (PMF process).

These pipelines are called only for the respective underlying by applying proper process filter on record type for underlying. The record type values can be found in FSI\_CAP\_RECORD\_TYPE\_MASTER. The process filter will allow only underlying records to be processed when called from the investment pipeline.

The record type process filters that are used are the following:

- BNK\_NON\_SEC\_ULY in Banking Pipeline.
- DRV\_NON\_SEC\_ULY in Derivative Pipeline.

Securitization Portfolio calls Banking Portfolio Pipeline from within to process non securitized banking underlying exposures which are part of the securitized pool and are required for the overall processing of the securitization portfolio. The Banking Pipeline is called with appropriate record type process filter to process only banking underlying exposures.

The record type process filter used is BNK\_SEC\_ULY in the Banking Pipeline.

Derivative Portfolio and SFT Portfolio pipelines call Mitigant Pipeline from within to provide mitigant treatment (eligibility, mitigant risk weight, and haircut) to their placed collaterals. The Mitigant Pipeline is called with appropriate record type process filter to process only placed collaterals.

The record type process filters used are the following:

- OTH\_PLACED\_COLL\_EXP in Mitigant Pipeline called in Derivative Portfolio Pipeline.
- SFT\_PLACED\_COLL\_EXP in Mitigant Pipeline called in SFT Portfolio Pipeline.

## 9.3 Run Parameters Setup for Creating a Run

If the Run definition has not been created through the **Run Management** UI, then the **USER\_DEFINED\_RUN\_PARAMETERS** table must be set up manually for the selected options/approaches for particular regulation and segment. This table contains the setup codes for different options. However, if you want to add more options, then you can add a record (new setup codes with options) by using information from that are updated for the selected option are given in the following tables:

**Regulation: Basel III**



**Segment: APRA**

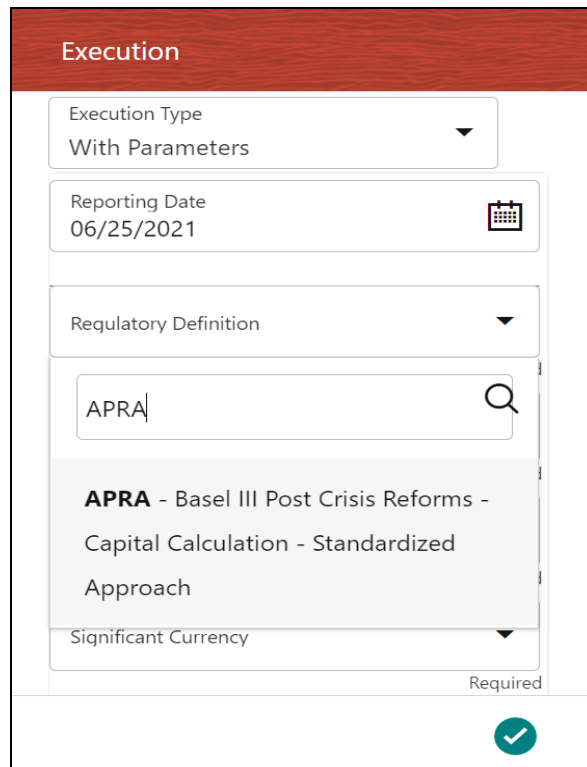
**Table 27: The Values for APRA Post Crisis Reforms Regulation with Segment as APRA and Approach as Non-Securitization Standardized**

<b>RUN_PARAMETER S column name</b>	<b>Approach for Securitization</b>	<b>Selected Option</b>	<b>RUN_PARAMETER S column value</b>
V_CRM_METHOD	Credit Risk Mitigation Approach	Simple Approach for Collateral Recognition	OPT0053
V_CRM_METHOD	Credit Risk Mitigation Approach	Comprehensive Approach for Collateral Recognition	OPT0054
V_RW_OPTION_EX T_RATING	Does Regulator Allow Usage of External Ratings for Risk Weighting?	Yes	OPT-YES
V_NSS_RW_OPTIO N_BANK	Risk Weighting Approach	Based on Sovereign Rating	OPT0012
V_NSS_RW_OPTIO N_DPSE	Risk Weighting Approach	Based on Domestic PSE Rating	OPT0009
V_NSS_BORROWE R_CCY_RAT_MDB	Supervisory Approval to use Domestic Currency Rating for Loans issued in foreign currency?	Yes	OPT0030
V_NSS_ECA_FOR_S OVERIGN	Supervisory Approval to use ECA Scores for Risk Weighting?	Not applicable for risk weighting	OPT0005
V_RW_BASED_NAT _DISCR	Does the Regulator Allow Exposures funded and denominated in the same currency to be Risk-Weighted at 0%	Yes	OPT-YES

### 9.3.1 Selecting Run Definition for Execution

The Run Definition can be selected by searching or scrolling in the “Regulatory Definition” field while triggering a Run Execution.

Figure 33: Select Run Parameters



The screenshot shows a mobile application interface for 'Execution'. At the top is a red header with the word 'Execution' in white. Below the header are several input fields: 'Execution Type' with a dropdown menu showing 'With Parameters'; 'Reporting Date' with the value '06/25/2021' and a calendar icon; 'Regulatory Definition' with a dropdown menu and a search icon. The search dropdown is open, showing a search bar with 'APRA' entered and a list of results: 'APRA - Basel III Post Crisis Reforms - Capital Calculation - Standardized Approach'. Below the search dropdown is a 'Significant Currency' dropdown menu. At the bottom right of the form is a green checkmark icon. The word 'Required' is visible at the bottom right of the form area.

### 9.3.2 Importing Run Definitions

To import the DMP file, perform the following steps:

1. Rename or delete the existing OOB definitions in the setup.
2. Navigate to the directory path `$FIC_HOME/utility/Migration/conf/`.

3. Create a copy of the file `OBJECTMIGRATION_template.xml` as `OBJECTMIGRATION.xml` and provide appropriate values for the parameters as per the following table:

**Table 28: Parameters for the File OBJECTMIGRATION.xml**

Parameter	Value
<code>\$USERID\$</code>	Application User ID
<code>\$LOCALE\$</code>	Locale Information
<code>\$INFODOM\$</code>	Information Domain
<code>\$FOLDER\$</code>	Folder or Segment where you wish to import the definition
<code>MODE</code>	IMPORT
<code>\$FILE_NAME\$</code>	BASEL_RUN_DEFINITIONS_EU
<code>MIGRATION_CODE\$</code>	11

4. Place the required codes of the definitions that you want to import within the OBJECTS tag.

Example: `<OBJECT Code="1000" Type="4003" />`

To find the object codes, you must perform the following steps:

- i. Execute the following query in the atomic schema to check the existing **N\_RUN\_PARAM\_DEFN\_ID** that are in use.  

```
SELECT * FROM FSI_RUN_PARAM_DEFINITION_TL;
```
- ii. Use the Object Code in `OBJECTMIGRATION.xml` which does not exist in the **N\_RUN\_PARAM\_DEFN\_ID** column.

**NOTE**

The type must have the value 4003 which represents Regulatory Calculation Definitions.

5. Create the following folder structure in the path `$FIC_HOME/utility/Migration`:

```
metadata/restore
```

6. Copy the dump file from the installer and place it in the directory path

```
$FIC_HOME/utility/Migration/metadata/restore
```

7. Execute the following script located in the directory path `$FIC_HOME/utility/Migration/bin/`:

```
./ObjectMigration.sh
```

Check the availability of definitions in the UI. Migration logs are available in the directory path  
\$FIC\_HOME/utility/Migration/logs/migration.log.

### 9.3.3 Exporting Optimizer, Portfolio and Run Definitions

1. Navigate to the directory path \$FIC\_HOME/utility/Migration/conf/.
2. Create a copy of the file OBJECTMIGRATION\_template.xml as OBJECTMIGRATION.xml and provide appropriate values for the parameters as per the following table:

**Table 29: Parameters for the File OBJECTMIGRATION.xml**

Parameter	Value
\$USERID\$	Application User ID
\$LOCALE\$	Locale Information
\$INFODOM\$	Information Domain
\$FOLDER\$	Folder or Segment of the existing definition
MODE	EXPORT
\$FILE_NAME\$	Name of the file to be exported without the .dmp extension
MIGRATION_CODE\$	11

3. Place the required codes of the definitions that you want to export within the OBJECTS tag.

For example, <OBJECT Code="1000" Type="4003" />

To find the object codes, perform the following steps:

- i. Execute the following query in the atomic schema for run definitions:  

```
SELECT * FROM FSI_RUN_PARAM_DEFINITION_TL;
```

N\_RUN\_PARAM\_DEFN\_ID is the object code and value of Type is 4003.
- ii. Execute the following query in the atomic schema for portfolio definitions:  

```
SELECT * FROM FSI_PORTFOLIO_MASTER;
```

N\_PPORTFOLIO\_ID is the object code and value of Type is 4002.
- iii. Execute the following query in the atomic schema for portfolio definitions:  

```
SELECT * FROM FSI_BASEL_OPTIMIZER_MODEL_TL;
```

N\_MODEL\_ID is the object code and the value of Type is 4001.

- Execute the following script in the directory path `$FIC_HOME/utility/Migration/bin:`  
`./ObjectMigration.sh`

The Dump is available in the directory path `$FIC_HOME/utility/Migration/metadata/archive.`

The migration logs are available in file `migration.log` in the directory path `$FIC_HOME/utility/Migration/logs.`

## 9.4 Data Transformation Details for Portfolio or Module

This section lists the Data Transformation (DT) details for each Portfolio or Module.

See [Oracle Financial Services Basel Data Transformation Details](#) document for more details.

### 9.4.1 DT Details - Banking

**Table 30: List of Data Transformations for Banking**

DT TASK NAME	PROCESS CODE	PROCESS NAME
Bnk_Map_Ret_Exp	PMFAPRBNK012	APRA Bank Regulatory Retail Portfolio
Bnk_Issue_Issuer_Assessment	PMFAPRBNK011	APRA Bank Issue Issuer Assessment

### 9.4.2 DT Details - Investment

**Table 31: List of Data Transformations for Investments**

DT TASK NAME	PROCESS CODE	PROCESS NAME
Inv_Ind_Mat_Chk_CE_CR_STD	PMFAPRINV008	APRA Investment Pre CRM EAD Computation - STD
Inv_Issue_Issuer_Assessment	PMFAPRINV007	APRA Investment Issue Issuer Assessment

### 9.4.3 DT Details - Derivative

Table 32: Data Transformation Details for Derivatives

DT TASK NAME	PROCESS CODE	PROCESS NAME
Drv_Issue_Issuer_Assessment	PMFAPRDRV007	APRA Derivatives Issue Issuer Assessment

### 9.4.4 DT Details - Secured Financial Transactions (SFT)

Table 33: Data Transformation Details for SFT

DT TASK NAME	PROCESS CODE	PROCESS NAME
Sft_Issue_Issuer_Assessment	PMFAPRSFT008	APRA SFT Issue Issuer Assessment

## 9.5 Implementing Basel

### 9.5.1 Rules List for Configuration

The list of rules which customer needs to reconfigure at their site are the following:

**Table 34: Rules List for Configuration**

Functionality	Reclassification Rule Name
Common	Basel III Capital Consolidation Approach Type Reclassification for an Entity
Common	Basel III Instrument Type Reclassification
Common	Credit Rating Reclassification
Common	Seniority Reclassification
Common	Mitigant Type To Standard Mitigant Reclassification
Common	Bank Role To Basel Bank Role Reclassification
Common	Account Purpose Reclassification
Common	APRA - Cap Consl Basel Entity Type Reclassification
Common	BIS - Basel Party Type Classification
Credit Risk - Non Securitization	Basel Product Type Reclassification
Credit Risk - Non Securitization	Fixed Assets to Basel Product Type Reclassification
Credit Risk - Non Securitization	Guarantee Scheme To Regulatory Guarantee Scheme Reclassification

### 9.5.2 Custom Reclassification Rules

See [Configure Rule with Target Members](#) for more information on Custom Reclassification Rules.

### 9.5.3 Seeded Values Used

To view the seeded values for the following Seeded tables, see [Seeded Tables Data 1](#) and [Seeded Tables Data 2](#).

- DIM\_BANDS
- DIM\_BASEL\_ASSET\_CLASS
- DIM\_BASEL\_CAP\_CONSL\_APPR
- DIM\_BASEL\_CONSL\_OPTION\_TYPE
- DIM\_BASEL\_CREDIT\_RATING
- DIM\_BASEL\_EXPOSURE\_CLASS

- DIM\_BASEL\_ISSUER\_TYPE
- DIM\_BASEL\_METHODODOLOGY
- DIM\_BASEL\_PRODUCT\_TYPE
- DIM\_BASEL\_TRANSACTION\_TYPE
- DIM\_COUNTRY
- DIM\_CREDIT\_RATING
- DIM\_CREDIT\_STATUS
- DIM\_CURRENCY
- DIM\_EXPOSURE\_UNDERLYING\_TYPE
- DIM\_GAAP
- DIM\_INSTRUMENT\_TYPE
- DIM\_INTEREST\_TYPE
- DIM\_METHODODOLOGIES
- DIM\_PRODUCT\_BOOK
- DIM\_REG\_CAP\_ACCT\_PURPOSE
- DIM\_REG\_CAP\_EXEMPTION\_CRITERIA
- DIM\_REG\_CAP\_GUARANTEE\_SCHEME
- DIM\_REG\_PARTY\_RELATIONSHIP\_TYPE
- DIM\_RISK\_TYPE
- DIM\_RUN\_TYPE
- DIM\_STANDARD\_PARTY\_TYPE
- DIM\_STANDARD\_SENIORITY
- DIM\_STD\_MITIGANT\_TYPE
- REVELEUS\_PARAMETER\_MASTER

## 9.6 Basel Analytics Table Population - Reporting T2T

This section provides information on the target and the granularity of tables. See [Oracle Financial Services Basel Analytics User Guide](#) for more information.



## 10 Glossary

<b>BCBS</b>	Basel Committee on Banking Supervision
<b>Bankruptcy Remote</b>	In case of liquidation of the company, if the collateral is bankruptcy remote then the legal proceeding does not have the right to liquidate the collateral.
<b>BIS</b>	Bank of International Settlements
<b>CAR</b>	Capital Adequacy Ratio
<b>Central Counterparty (CCP)</b>	Central Counterparty (CCP) is a clearinghouse that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the future performance of open contracts.
<b>CCB</b>	Capital Conservation Buffer
<b>CCF</b>	Credit Conversion Factor
<b>CCR</b>	Counterparty Credit Risk
<b>CET1 Ratio</b>	Common Equity Tier 1 Ratio
<b>Clearing Member (CM)</b>	Clearing Member (CM) is a member of, or a direct participant in, a CCP that is entitled to enter into a transaction with the CCP, regardless of whether it enters into trades with a CCP for its own hedging, investment or Capitalization of exposures to central counterparties.
<b>Clearing Member Client (CMC)</b>	Clearing Member Client (CMC) is the client of the Clearing Member and trades are done through clearing member for the client.
<b>CRE</b>	Commercial Real Estate
<b>CRM</b>	Credit Risk Mitigants
<b>CVA</b>	Credit Valuation Adjustment
<b>EAD</b>	Exposure At Default

<b>GL</b>	General Ledger
<b>IRB</b>	Internal Rating Based
<b>LGD</b>	Loss Given Default
<b>OFSAA</b>	Oracle Financial Services Analytical Application
<b>OFSAAI</b>	Oracle Financial Services Analytical Application Infrastructure
<b>OTC</b>	Over the Counter
<b>Non-Securitization Exposure</b>	The exposures that are not securitized by the bank which include, loans, investments, Bonds, Facilities Purchase Receivables and so on are known as Non-Securitized Exposures.
<b>PD</b>	Probability of Default
<b>Private Sector Credit Exposure</b>	A private sector credit exposure is defined as an exposure to a company or an individual that is included in credit risk-weighted assets (excluding an exposure to a sovereign, the Bank for International Settlements, the European Central Bank, the European Commission, the International Monetary Fund, a multilateral development bank (MDB), a public sector entity (PSE), or a government sponsored entity (GSE). The geographic location of a private sector credit exposure is the national jurisdiction of the place the borrower is located in.
<b>Qualifying Central Counterparty (QCCP)</b>	<p>A qualifying central counterparty (QCCP) is an entity that is licensed to operate as a CCP (including a license granted by way of confirming an exemption), and is permitted by the appropriate regulator/overseer to operate as such with respect to the products offered.</p> <p>This is subject to the provision that the CCP is based and prudentially supervised in a jurisdiction where the relevant regulator/overseer has established, and publicly indicated that it applies to the CCP</p>

	on an ongoing basis, domestic rules and regulations that are consistent with the CPSS-IOSCO Principles for Financial Market Infrastructures.
<b>RRE</b>	Residential Real Estate
<b>RWA</b>	Risk-weighted Assets
<b>SCD</b>	Slowly Changing Dimension
<b>SFT</b>	Securities Financing Transactions
<b>T2T</b>	Table to Table

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