Oracle® Financial Services Data Foundation Cloud Service for Banking

User Guide

Release 24C
G23736-01
January 2025

ORACLE

Oracle Financial Services Data Foundation Cloud Service for Banking User Guide, Release 24C

G23736-01

Primary Authors: (primary author), (primary author)

Contributing Authors: (contributing author), (contributing author)

Contributors: (contributor), (contributor)

Contents

1 Get Help in the Applications

1.1 Additional Resources 1-1
1.2 Learn About Accessibility 1-1
1.3 Get Support 1-1
1.4 Get Training 1-1
1.5 Join Our Community 1-1
1.6 Share Your Feedback 1-1
1.7 Before You Begin 1-2

2 Introduction to Data Foundation Cloud Service

2.1 Organization of the User Guide 2-2

3 Getting Started

3.1 Why DFCS? 3-1
3.2 Product Setup 3-1

4 Data Catalog

4.1 Business Terms 4-1
- 4.1.1 Business Term Name 4-1
- 4.1.2 Business Term Data Type 4-1
- 4.1.3 Business Term Description 4-2
- 4.1.4 Business Term References 4-3
- 4.1.5 Related Business Terms 4-3
- 4.1.6 Business Term Contextual Descriptions 4-3
- 4.1.7 Business Term Data Quality 4-3
- 4.1.8 Business Term List of Values 4-4
- 4.1.9 Business Term Use Case 4-4
- 4.1.10 Right To Forget 4-4

4.2 Entities 4-8
- 4.2.1 Line of Business 4-8
  - 4.2.1.1 Grain Classification 4-9

4.2.1.2 Entity Type Classifications 4-10
4.2.2 Product Processor Entities 4-11
4.2.3 Reference Data Entities 4-12
4.2.4 Results Area Entities 4-12
4.3 Catalog Extensions 4-12

5 Data Controls

5.1 DQ Checks 5-1
5.2 Balance Reconciliation 5-18

6 Data Integration

6.1 Background and Coverage 6-1
6.2 Data Sourcing and Data Egress 6-2
6.2.1 External Data Descriptors 6-2
6.2.2 Ingress Connectors 6-2

7 Data Operations

7.1 Account Load Run Map Population 7-1
7.1.1 Benefits 7-2
7.2 Results Area Load Batch 7-3
7.2.1 Benefits 7-4

8 Data Visualization

8.1 Data Browser 8-1
8.1.1 Source Data 8-1
8.1.1.1 Custom Source Data View 8-2
8.1.1.2 Pre-configured source data View 8-3
8.1.1.3 Exporting data 8-3
8.1.2 Results Data 8-5
8.1.2.1 Subject Area 8-6
8.1.2.2 List of subject areas supported 8-7
8.1.2.3 Custom results data view 8-8
8.1.2.4 Exporting Data 8-10
8.1.2.5 Sample Key Performance Indicators (KPIs) 8-12
8.1.3 Sample reports 8-19
8.1.3.1 Navigation Path 8-21
8.1.3.2 Sample Financial Ledger Reporting 8-21
8.1.3.3 Sample Accounts Reporting 8-22

8.1.3.4 Sample Party Details Reporting 8-24
8.1.3.5 Sample Credit Line Reporting 8-26
8.1.3.6 Drill through option 8-29
8.1.4 Sample Key Performance Indicators (KPIs) 8-31
8.1.4.1 Sample Loans and Deposits KPIs 8-32
8.2 Data Quality Visualizations 8-39
8.3 GL Reconciliation Visualizations 8-42
8.4 Custom Attributes 8-42
8.4.1 Custom Attributes creation 8-43
8.4.2 Custom Attributes Visualization 8-45

9 Change Management

10 Issues and Actions

11 Key Terms and FAQs

11.1 Frequently Asked Questions 11-3

Index

List of Figures

2-1	Data Foundation	2-1
4-1	RTF DV Report	4-5
4-2	DFCS RTF UI flow– Home Page	4-5
4-3	Factory Pipeline – Right To Forget	4-6
4-4	Process Flow	4-6
4-5	Process Modeller	4-6
4-6	Execution	4-7
4-7	Process Flow Monitor	4-7
4-8	RTF Pipeline flow	4-7
4-9	RTF Process flow	4-8
4-10	Execution Logs	4-8
8-1	Data Integration	8-1
8-2	Custom source data view	8-2
8-3	Custom source data view 2	8-2
8-4	Custom source data view 3	8-3
8-5	Pre-configured source data view	8-3
8-6	Pre-configured source data view 2	8-3
8-7	Party Financials	8-4
8-8	Party Financials Export	8-4
8-9	Party Financials File	8-5
8-10	Visualization	8-6
8-11	Subject Area Glossary	8-8
8-12	Custom results data view	8-8
8-13	Add Dataset	8-9
8-14	New Workbook	8-9
8-15	Data button	8-10
8-16	Data visualization Party Financial Details	8-11
8-17	Data visualization Party Financial Details Export	8-11
8-18	Data visualization Party Financial Details Export File	8-12
8-19	Sample Key Performance Indicators (KPIs)	8-13
8-20	End of Period	8-13
8-21	Time Series	8-14
8-22	Deposit Growth	8-14
8-23	Loans Growth Report	8-15
8-24	KPI Glossary	8-15
8-25	KPI Glossary Report	8-16

8-26	Drill through for KPIs	8-16
8-27	Balance Sheet KPIs	8-17
8-28	Drill	8-17
8-29	Drilldown at Country	8-18
8-30	Drill down to Party Name	8-18
8-31	Party Name Drill down	8-18
8-32	Drill down for account level	8-19
8-33	Account drilldown	8-19
8-34	Catalog Shared Folders	8-20
8-35	Catalog Shared Folders Sample Reports	8-20
8-36	Catalog Shared Sample Report	8-21
8-37	General Ledger Analysis	8-22
8-38	Actual vs Budget vs Forecast	8-22
8-39	Credit Status	8-23
8-40	Non Performing Assets	8-23
8-41	Branchwise NPA	8-24
8-42	Risk Profile Analysis	8-24
8-43	Party Financial Details	8-25
8-44	Party Party Relationships	8-25
8-45	Party Party Account Relationship	8-26
8-46	Credit Utilization by Parties	8-26
8-47	Utilization Across Product Types	8-27
8-48	Credit Line Distribution	8-27
8-49	Credit Line Status	8-28
8-50	Participation and Volume Analysis	8-29
8-51	Drill through option	8-30
8-52	Drill through option Data Elements	8-31
8-53	Sample Key Performance Indicators (KPIs)	8-32
8-54	End of Period	8-32
8-55	Time Series	8-33
8-56	Deposit Growth	8-33
8-57	Loans Growth Report	8-34
8-58	KPI Glossary	8-35
8-59	KPI Glossary Report	8-35
8-60	Drill through for KPIs	8-36
8-61	Balance Sheet KPIs	8-36
8-62	Drill	8-37

8-63	Drilldown at Country	8-37
8-64	Drill down to Party Name	8-38
8-65	Party Name Drill down	8-38
8-66	Drill down for account level	8-39
8-67	Account drilldown	8-39
8-68	DQ dashboards	8-40
8-69	Data Visualization report	8-41
8-70	Data Quality	8-41
8-71	Data Quality Execution	8-42
8-72	Data Quality Results	8-42
8-73	Custom Attributes creation	8-43
8-74	Report Configuration	8-44
8-75	Report Configuration Dimension Mapping	8-44
8-76	Attribute Mapping	8-44
8-77	Custom Attributes Visualization	8-46
8-78	Create Dataset	8-46
8-79	New Dataset	8-46

List of Tables

4-1	List of Data Types supported in DFCS	4-1
4-2	Line of Business	4-9
4-3	Grain Count	4-10
4-4	List of Entity Type	4-11
4-5	Core Banking Products	4-11
4-6	Reference Data Entities	4-12
5-1	Number of Tules that are bundled	5-2
5-2	Distribution of Rules for each Entity	5-3

1

Get Help in the Applications

Use help icons to access help in the application.

Note that not all pages have help icons. You can also access the Oracle Help Center to find guides and videos.

1.1 Additional Resources

- Community: Use Oracle Cloud Customer Connect to get information from experts at Oracle, the partner community, and other users.
- Training: Take courses on Oracle Cloud from Oracle University.

1.2 Learn About Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program. Videos included in this guide are provided as a media alternative for text-based topics, and are also available in this guide.

1.3 Get Support

You can get support at My Oracle Support.

For accessible support, visit Oracle Accessibility Learning and Support.

1.4 Get Training

Increase your knowledge of Oracle Cloud by taking courses at Oracle University.

1.5 Join Our Community

Use Cloud Customer Connect to get information from industry experts at Oracle and in the partner community. You can join forums to connect with other customers, post questions, and watch events.

1.6 Share Your Feedback

We welcome your feedback about Oracle Applications user assistance. If you need clarification, find an error, or just want to tell us what you found helpful, we'd like to hear from you.

You can email your feedback to My Oracle Support.

Thanks for helping us improve our user assistance!

1.7 Before You Begin

See the following Documents:

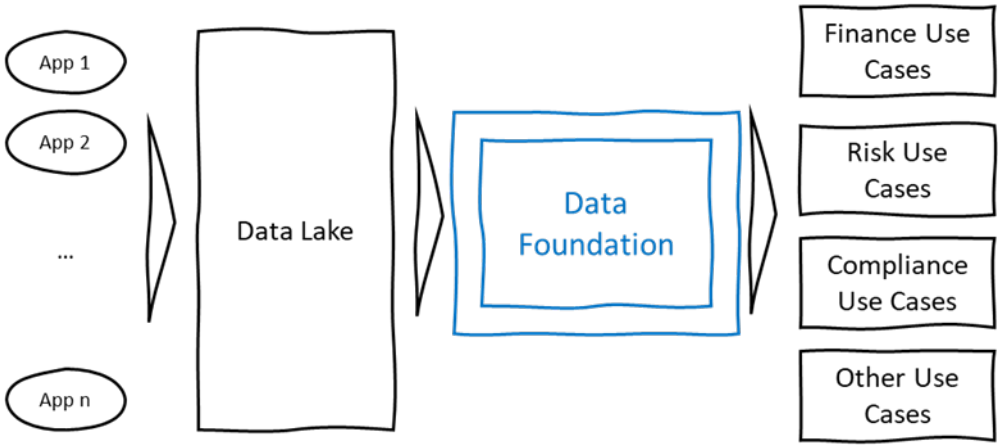
- See What's New

2

Introduction to Data Foundation Cloud Service

The Oracle Financial Services Data Foundation Cloud Service (DFCS) for Banking offers a consistent, efficient, and well-governed data management solution tailored to meet both internal and regulatory data requirements for banks. It includes a comprehensive data catalog designed to support key analytical use cases across finance, risk, and compliance domains. This solution is powered by a feature-rich platform that enables data ingestion, data quality and reconciliation, hosts high-quality historical data, and facilitates the distribution of validated data through extraction routines and data visualization tools, such as reports.

Figure 2-1 Data Foundation



Oracle Data Foundation Cloud Service (DFCS) is a cloud-native data management and processing platform that offers a single source of truth by using a unified and integrated results area. The platform stages the data directly from the source systems, processes it, and delivers results for downstream consumption.

Below are the salient features of the DFCS:

- Data Foundation **prioritizes consistency in definition of data** (and its governance) of a financial institution by using an industry-leading ontology of business terms to model the data.
- Data Foundation **ensures transparency in data management processes** by enforcing Change Management at its core, leading to safer adaptability (extension) of its comprehensive pre-built data model (and data catalog).
- Data Foundation **provides an extensive Results Area** that acts as the metaphorical single-source-of-truth for all data needs of an organization across key functions, such as, risk, finance, and compliance.
- Data Foundation also **standardizes distribution of data** to downstream applications and use cases by providing certifiable interfaces for consumption.

2.1 Organization of the User Guide

This user guide is divided into nine chapters. Chapters 2 through 7 focus on the core modules of the Data Foundation Platform.

1. **Getting Started**: This chapter outlines the process for ordering and configuring the Data Foundation Cloud Service.
2. **Data Catalog**: This chapter details the structure and organization of the Data Catalog, which outlines the data model for the Data Foundation.
3. **Data Controls**: This chapter covers the two types of data controls supported by the service: **Data Quality** (**DQ**) and **Reconciliation**. It describes the structure of prepackaged DQ rules and provides guidance on configuring and using these rules, along with the new reconciliation rules.
4. **Data Integration**: This chapter details the data integration features that support the sourcing of data into the staging area and the extraction of data from the Data Foundation for downstream consumption.
5. **Data Operations**: This chapter details various DFCS tasks that can be combined into a sequence of data movement activities, including sourcing, curation, and consumption.
6. **Data Visualization**: This chaptre is divided into two main sections:
   - **Data Browser**: As DFCS is a Saas service, users require a cloud-based data browser to explore data. This section explains how to browse both source data and results data.
   - **Sample Reports and KPIs**: DFCS is pre-configured with sample reports and KPIs. This section provides guidance on using these examples for reference and customization.
7. **Change Management**: All changes in DFSC are managed through a comprehensive issue-mechanism. This chapter descibes how to capture data events as issues and assign appropriate actions for resolution to the respective action owners.
8. **Key Terms and Concepts**: This chapter defines the key terms and concepts used throughout the User Guide.
9. **Support**: This chapter describes how to contact Oracle for support and clarification requests.

3
Getting Started

3.1 Why DFCS?

Consider a bank with a diverse portfolio of products. They aim to accomplish the following two primary data management objectives.

- Maintain a consistent view of data to meet regulatory obligations and support internal performance measurement reporting.
- Reduce data sourcing costs by retrieving data once from a book-of-record system and utilizing it across multiple downstream applications.

Suppose the bank encounters challenges in achieving these objectives:

- The data nomenclature used by regulatory agencies and internal use cases does not align well with the terminology used in book-of-record systems.
- Each consuming application is developed independently, making it easier to source data multiple times rather than achieving alignment across all consuming applications.

To address these challenges and achieve their data management objectives, the bank decides to implement DFCS.

- DFCS offers a unified view of data sourced from book-of-record systems for all commonly known consumption use cases in a bank. With DFCS, the bank only needs to source data once, regardless of the number of downstream use cases currently in scope.
- A standardized set of quality-checked and reconciled datasets feeds into downstream applications, ensuring consistent reporting for both regulatory and internal use cases.

3.2 Product Setup

Refer to Oracle® Financial Services Data Foundation Cloud Service Banking Getting Started guide.

4

Data Catalog

Data Foundation organizes metadata for the underlying data model using a shared glossary of business terms and entities. By sharing business terms across entities, it ensures consistency in physical data characteristics, such as data types and lengths. It also centralizes data governance by automatically applying rules, like data quality standards, to any entity that uses a field mapped to the business model.

4.1 Business Terms

The catalog serves as a central repository of Business Terms (BT), providing consistent definitions for business concepts across the platform. It includes over 10,000+ business terms spanning more than 1,500+ entities. Each term comes with attributes such as logical data type, originating application, and whether it contains personally identifiable information (PII). Related business terms share a common definition while maintaining context relevant to different roles.

4.1.1 Business Term Name

The Business Term Name serves as the standardized identifier for a Business Term within the Data Catalog, ensuring uniformity and clarity across the application. It is a concise, human-readable representation that encapsulates the essence of the term's purpose and meaning in a logical and structured format. For example, a logical name like **End of Period Balance** clearly conveys its role and relevance within the context of financial reporting and analysis. The Logical Name aids in seamless communication among technical and business stakeholders, simplifies data traceability, and ensures consistent mapping across diverse systems and processes. Its design follows established naming conventions, adhering to guidelines that prioritize clarity, scalability, and relevance to the associated entity and its attributes.

4.1.2 Business Term Data Type

Data Types provide a framework for classification that defines the nature of data within a system, ensuring proper interpretation, storage, and manipulation. Each logical data type is designed for specific use cases, clearly distinguishing how different types of data should be handled. For instance, types like *amount*, *amount_long*, and *amount_medium* represent financial figures with varying levels of precision and scale, while currency denotes monetary values linked to a specific currency. These logical data types help maintain the structure, integrity, and compatibility of data models across various systems and applications.

Following are the list of Data Types supported in DFCS:

Table 4-1 List of Data Types supported in DFCS

Logical Data Type	Oracle Data Type
Amount	NUMBER(22,3)
Amount_Long	NUMBER(38,6)
Amount_Medium	NUMBER(30,11)
Clob	CLOB

Table 4-1 (Cont.) List of Data Types supported in DFCS

Logical Data Type	Oracle Data Type
Blob	BLOB
Code_Alphanumeric	VARCHAR2(20)
Code_Alphanumeric_Long	VARCHAR2(60)
Code_Numeric	NUMBER(14)
Currency	VARCHAR2(3)
Date	DATE
Description_Short	VARCHAR2(100)
Description	VARCHAR2(255)
Description_Medium	VARCHAR2(1000)
Description_Long	VARCHAR2(4000)
Flag	CHAR(1)
Indicator	VARCHAR2(1)
Number_Factor	NUMBER(10,6)
Number_Factor_Long	NUMBER(38,15)
Numeric	NUMBER(10)
Numeric_Long	NUMBER(30)
Rate_Percent	NUMBER(11,6)
Rate_Percent_Medium	NUMBER(15,11)
Rate_Percent_Long	NUMBER(30,11)
SurrogateKey	NUMBER(10)
SurrogateKey_Long	NUMBER(15)
Timestamp	TIMESTAMP
Amount_Currency	NUMBER(22,3)
Amount_Currency_Long	NUMBER(38,6)
Amount_Currency_Date	NUMBER(22,3)
Amount_Currency_Date_Long	NUMBER(38,6)
Number_Area	NUMBER(30,3)
Number_Geog_Temp	NUMBER(3,2)
Number_Speed	NUMBER(4,2)
Number_Weight_Ltrs	NUMBER(7,2)
Number_Distance	NUMBER(10,2)
Number_Elec_Str	NUMBER(4,2)

4.1.3 Business Term Description

A Business Term Description provides a fundamental explanation of a Business Term, offering a base definition that remains consistent and relevant across all contexts. It outlines the term's core purpose and meaning, ensuring clarity and uniformity in its understanding and application. This description serves as a common reference for stakeholders, connecting technical and business perspectives while remaining independent of specific implementations or use cases. For example, **End of Period Balance** could be defined as *the account balance at the end of a reporting period, reflecting a snapshot of financial standing*. By delivering a universal and context-neutral definition, the Business Term Description promotes clear communication, traceability, and alignment with business objectives across various systems and processes.

4.1.4 Business Term References

Business Term References represent a comprehensive list of all entities within the data catalog where a specific Business Term is used or mentioned. This includes the source and result entities that store, process, or propagate the term, enabling complete traceability within the data architecture. By documenting these references, stakeholders can track the flow and usage of the term across various system tables, ensuring consistency and alignment. For instance, the term **End of Period Balance** might appear in tables related to financial reporting, account summaries, and transactional data. These references ensure that all data models adhere to accurate term definitions and interpretations, promoting data integrity and consistency.

4.1.5 Related Business Terms

Related Business Terms are variations of a core business term, each adapted to a specific contextual meaning within different business processes or applications. While they share a common foundational concept, their interpretation or usage may vary to address distinct functional requirements. For example, "Country Code" might refer to a standardized ISO code for global identification, whereas **Regulatory Country** could represent a jurisdiction-specific classification used in compliance or regulatory reporting. Defining related business terms ensures clarity and precision in data usage, fostering effective communication across diverse teams and systems. This approach enhances traceability, minimizes ambiguity, and strengthens data governance by connecting related terms under a unified framework while accommodating their contextual distinctions.

4.1.6 Business Term Contextual Descriptions

The Contextual Description offers application-specific definitions of a Business Term, tailored to reflect its unique interpretation and usage within particular systems or domains. It complements the universal Business Term Description by providing context that aligns with the functional and technical requirements of each application. For instance, the term **End of Period Balance** may refer to a customer's account balance at the close of a financial period in a core banking application, while in the insurance domain, it could represent the balance remaining on a policyholder’s account. These tailored definitions ensure clear communication, promote accurate data usage, and ensure that the term’s meaning aligns with the operational and analytical needs of each system. By providing targeted descriptions, the Contextual Description helps bridge potential gaps in understanding and maintains consistency across diverse applications.

4.1.7 Business Term Data Quality

Data Quality Rules establish the criteria and constraints necessary to ensure the accuracy, consistency, completeness, and reliability of data associated with a Business Term. These rules define validation checks, threshold limits, and compliance conditions that data must meet to maintain its integrity across systems and processes. For example, for the term **End of Period Balance**, data quality rules might include ensuring the value is non-negative, matches the sum of debits and credits for a reporting period, and corresponds correctly to the associated account type. These rules are applied at both the table and attribute levels in the data model to detect anomalies, prevent errors, and ensure compliance with regulatory or business standards. By implementing strong Data Quality Rules, organizations can uphold data integrity, foster trust in their data assets, and enable accurate decision-making.

4.1.8 Business Term List of Values

The List of Values (LoV) for Business Terms consists of a predefined set of acceptable values or categories associated with a specific Business Term. These values establish clear boundaries for data entry, ensuring consistency, standardization, and accuracy across systems and processes. For example, the Business Term, **Account Status** might have a List of Values such as "**Active**, **Inactive**, **Closed**, and **Suspended**. The LoV is typically managed in lookup tables within the data model and plays a key role in validation, reporting, and analysis. By defining and enforcing the List of Values, organizations can reduce errors, simplify data interpretation, and ensure consistent application of the term across various operational and analytical contexts.

4.1.9 Business Term Use Case

The Business Term Use Case documents the specific applications of a Business Term across various systems, illustrating how the term supports distinct business processes and analytical needs. This mapping ensures that the term's definition and usage align with the objectives of each system. For example, the term **End of Period Balance** might be used in Profitability applications to calculate income and expense margins, in Asset Liability Management to evaluate balance sheet stability, and in Liquidity Risk management to assess cash flow sufficiency. By outlining these use cases, the Business Term Use Case promotes accurate data alignment across systems, facilitates seamless integration, and ensures the term is effectively utilized to achieve both operational and strategic goals.

4.1.10 Right To Forget

RTF-Right to be Forgotten ensures businesses to protect sensitive PII related party data. This feature is available in Data Foundation Cloud Service (DFCS).RTF refers to a process where party data gets randomized when it is no longer necessary to be in the system.

RTF Process is designed to be executed as PMF job.

RTF process is user driven wherein customer can input party identifiers whose details are to be forgotten. Party Identifiers to be provided by the user through PMF input. Multiple Ids, if any, to be entered as comma separated.

User is expected to invoke SCD process (DIM Incremental process) to update Party Dimension before executing RTF process as PMF job. Only the Party Id's in Party Dimension would be identified and considered for randomization.

For each user who has made RTF request the service spawns to verify if the user has any sensitive PII related party data in the respective entities. If there is/are requests, then fetch the list of entities that contain the Party Identifier and randomize PII related data.

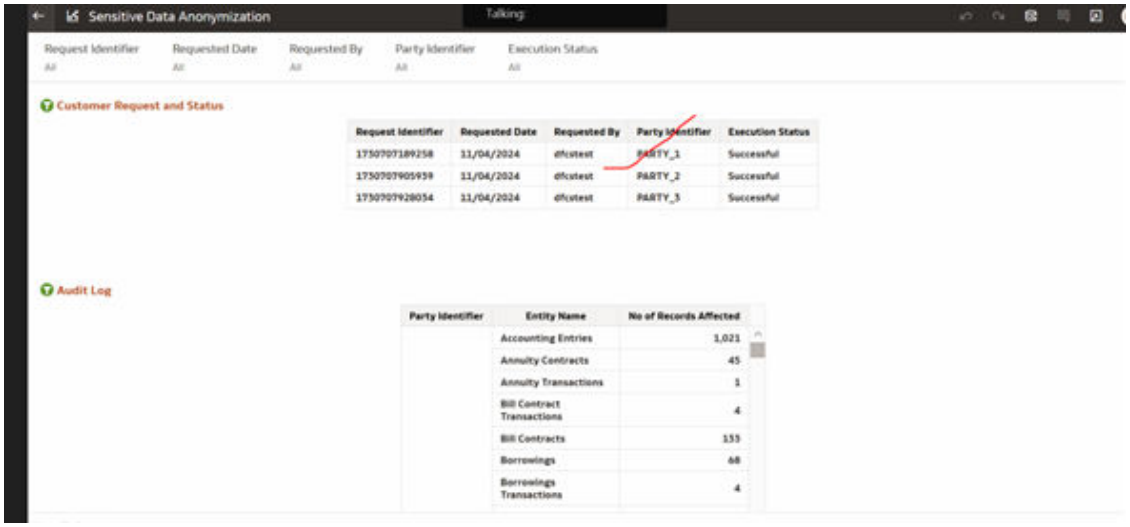
RTF Metadata Registration table is seeded with Party Identifier (Business Term - BTO3899) for which Right to Forget functionality would be carried out.

Following RTF information can be viewed in a Data Visualization (DV) report:

- RTF Customer Request table would store details for every RTF request made with Party Identifier, requested by, requested date.
- Once the RTF Engine PMF process is completed, the service would log the process execution completion status. If the Party is not available, then the service would update as "Not Available" and exits.

- RTF Audit Log would store execution status of Right to Forget Run at the Entity Level with date and number of records affected.

Figure 4-1 RTF DV Report



Once RTF is successfully executed for a particular party id and gets randomized and secured. One should check and ensure no further forgotten party id(s) re-enters the system during the load process thru multiple data sources into DFCS.

Figure 4-2 DFCS RTF UI flow– Home Page

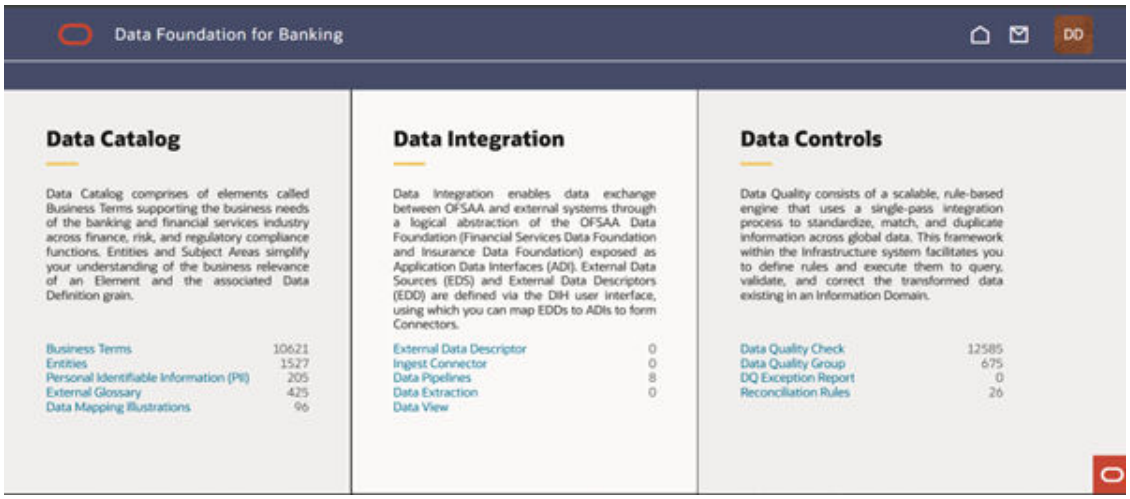


Figure 4-3 Factory Pipeline – Right To Forget

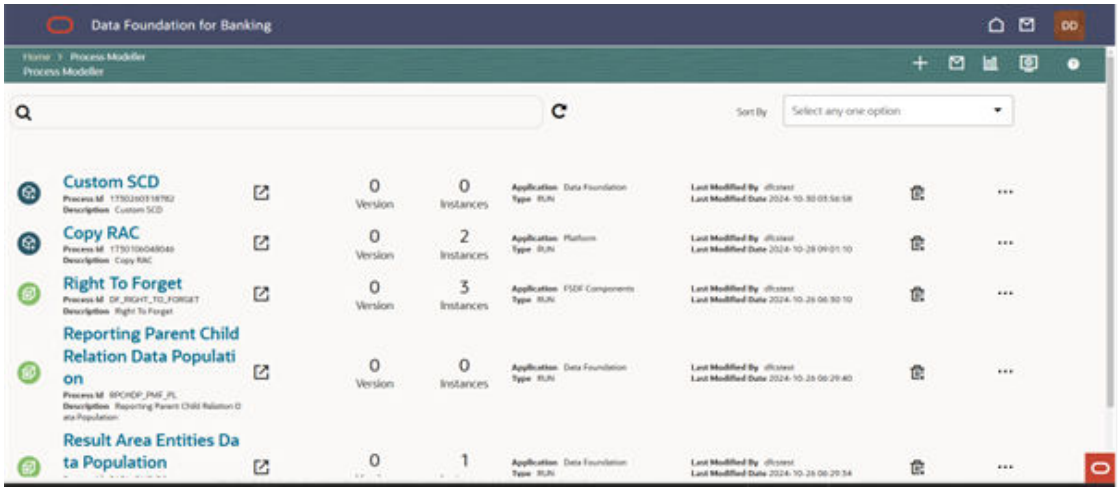


Figure 4-4 Process Flow

Figure 4-5 Process Modeller

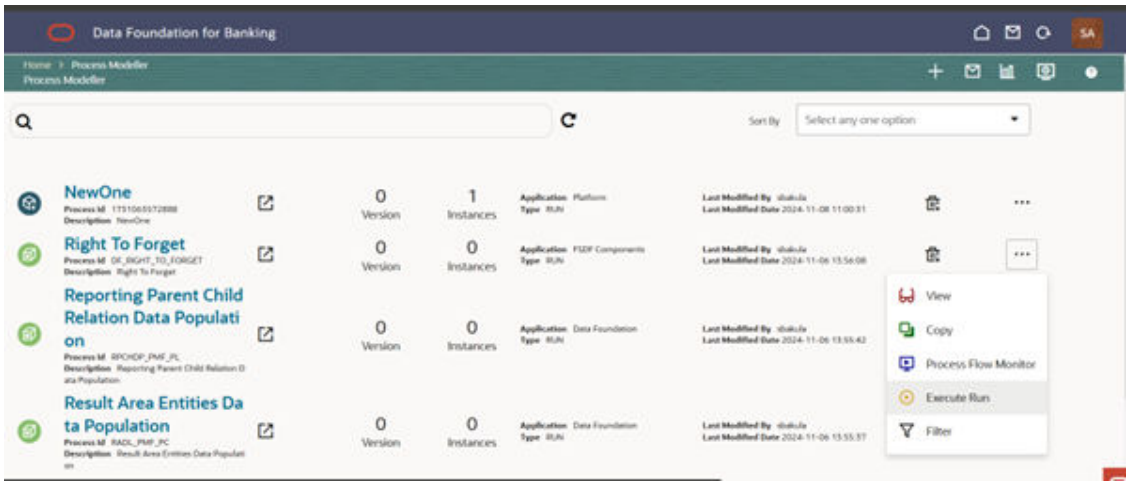


Figure 4-6 Execution

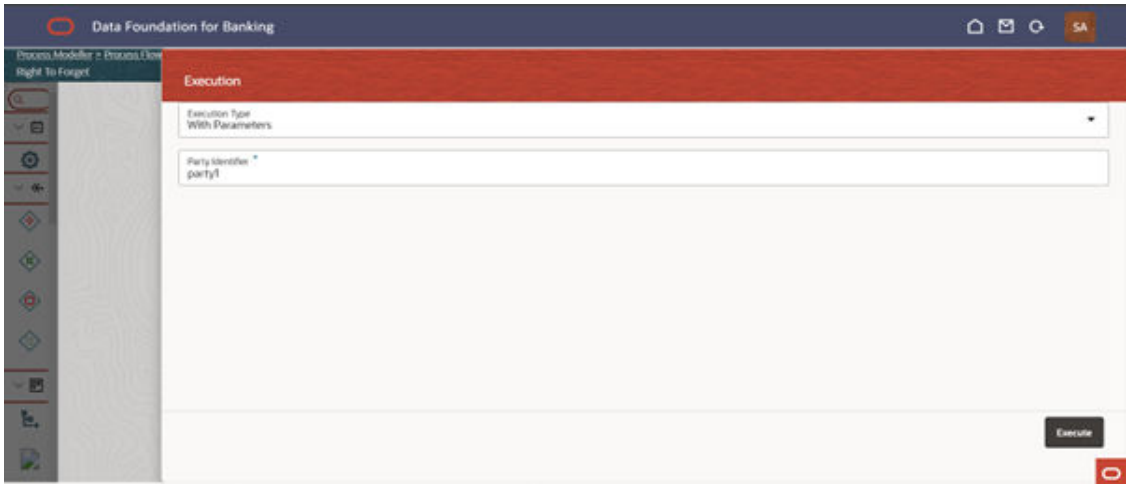


Figure 4-7 Process Flow Monitor

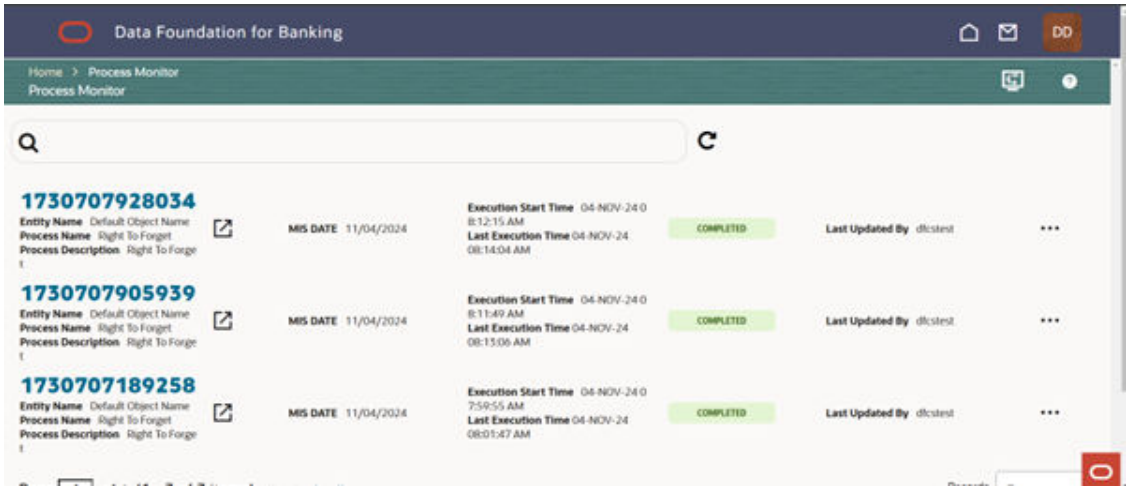


Figure 4-8 RTF Pipeline flow

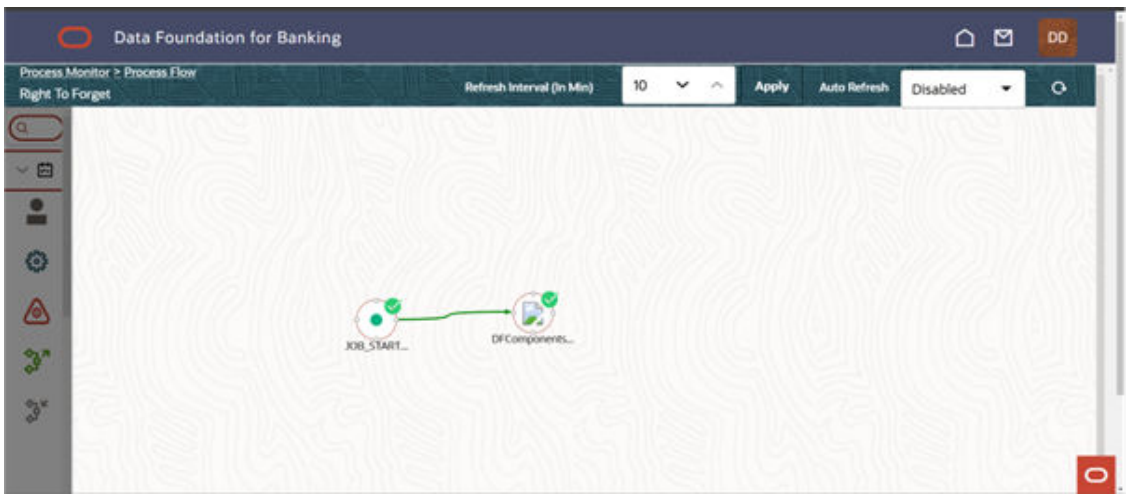
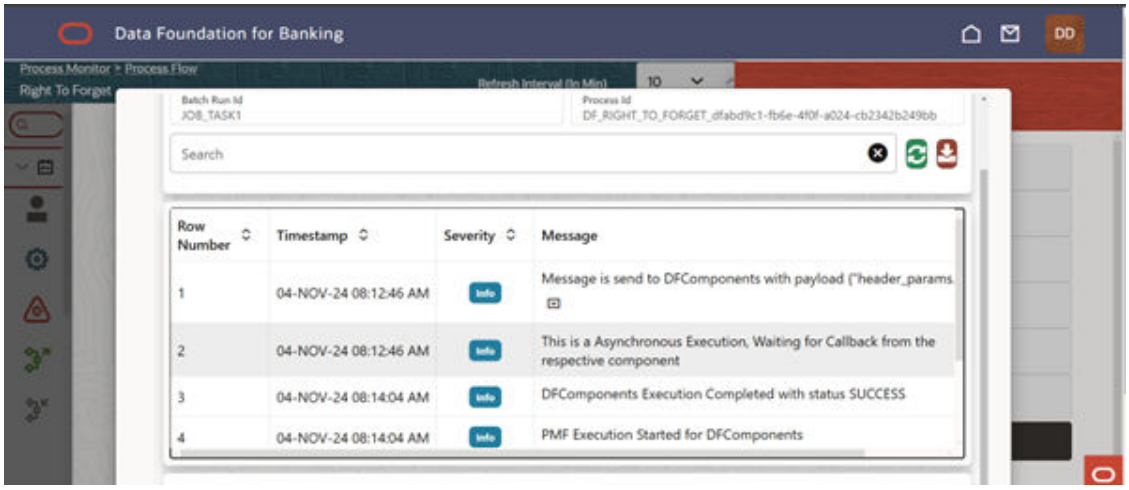


Figure 4-9 RTF Process flow

Figure 4-10 Execution Logs



4.2 Entities

Entity refers to a distinct and logically defined data object that represents a set of data in banking operations. Entities are used to structure and organize data within a database or data warehouse and are critical to maintaining consistency, traceability, and clarity in data management. The entity contains business terms. The granularity of the entity is decided by Primary Key which can be one or many business terms. The entity will hold the data from various source systems or data within Data Foundation.

4.2.1 Line of Business

Data Catalog in DFCS provides comprehensive support for data for the following lines of business.

- Retail and Personal Banking
- Wholesale Banking

- Investment Banking and Wealth Management
- Treasury
- Ancillary Lines of Business

It also has rich coverage for Reference and Market Data that are needed by the lines of business.

Additionally, it supports a rich dimensional model for storing results for a comprehensive set of use cases across Finance, Risk, and Compliance domains.

Table 4-2 Line of Business

Line of Business	Department/Subject Area	No of Entities
Retail and Personal Banking	Retail - General Banking	6
Retail and Personal Banking	Retail Liabilities	6
Retail and Personal Banking	Retail Lending	36
Wholesale Banking	Wholesale - General Banking	6
Wholesale Banking	Wholesale Liabilities	5
Wholesale Banking	Wholesale Lending	44
Wholesale Banking	Trade Finance	11
Wholesale Banking	International Banking	7
Wholesale Banking	Government Business	8
Investment Banking and Wealth Management	Portfolio Marketing	5
Investment Banking and Wealth Management	Risk Management	27
Investment Banking and Wealth Management	Portfolio Management Service	16
Investment Banking and Wealth Management	Deal Advisory	2
Treasury Services	Treasury Marketing	5
Treasury Services	Treasury Office Services	16
Ancillary Lines of Business	Mutual Funds	7
Ancillary Lines of Business	Credit Cards	16
Reference and Market Data	Reference Data	5
Reference and Market Data	Market Data	9
Reference and Market Data	Master Data	509

4.2.1.1 Grain Classification

Data Catalog in DFCS provides the grain classification. Each grain can have one or more entities. Grains represent the smallest, indivisible units of financial data that form the foundation for processing and analyzing entities. These grains ensure granular-level detail and traceability across various entities. Examples include entries such as *Customer Account*, which identifies individual customer financial details, and *Customer Account Transactions*, which record specific financial movements. *Date* serves as a temporal dimension for tracking transaction timelines, while *Exchange Rates* provide currency conversion details essential for multi-currency operations. *General Ledger Data* consolidates financial information at the account level for reporting and analysis, complemented by *Management Ledger* for managerial insights. Other granular elements, such as *Group Insurance Policy Beneficiary* and *Group Insurance Summary*, capture policy-specific details, while *Policy Claim*, *Policy Claim*

Transaction, and *Policy Commission Transactions* detail insurance operations. Finally, *Party Consent* represents customer authorization for processing sensitive financial data. These grains collectively create a robust and detailed framework for accurate and transparent financial accounting.

The list of Grains Counts are:

Table 4-3 Grain Count

Grain	No of Entities
Accounting Entries	2
Customer Account	41
Customer Account Transactions	43
Date	1
Exchange Rates	1
General Ledger Data	1
Group Insurance Policy Beneficiary	1
Group Insurance Summary	1
Management Ledger	4
Party Consent	1
Policy Claim	1
Policy Claim Transaction	1
Policy Commision Transactions	1
Policy Commissions	1
Policy Identifier	6
Reinsurance Held Policy	1
Reinsurance Issued Policy	1
Others	1367

4.2.1.2 Entity Type Classifications

Entity type classification is a structured method for organizing entities based on their purpose and functionality within a data catalog. Each entity type plays a distinct role in ensuring seamless data processing and analysis. In the provided framework, the distribution highlights the criticality of various classifications:

- **Dimension Results**: These entities offer contextual and descriptive master data.
- **Fact Results**: These entities store transactional and quantitative data that serve as the foundation for performance measurement and reporting.
- **Point of Integration**: These pivotal entities act as connectors, ensuring the smooth exchange and alignment of data across different Apps.
- **Processing**: These entities handle computational logic and business operations, transforming raw data into actionable insights.
- **Staging**: The most numerous, these entities store raw or intermediate data, playing a vital role in validation, enrichment, and data transformation workflows.

This classification ensures each entity is effectively utilized for its specific function, fostering efficiency and consistency in data-driven processes.

Table 4-4 List of Entity Type

Entity Type	Count
Dimension Results	776
Fact Results	554
Point of Integration	3
Processing	9
Staging	1201

4.2.2 Product Processor Entities

The classification of financial products based on their processor categories and catalog entities is crucial for organizing and managing data within financial systems. This systematic approach categorizes various financial instruments and contracts across different domains, ensuring accuracy and consistency. By organizing products into distinct categories such as assets, derivatives, liabilities, and off-balance sheet assets, this classification helps improve data accuracy, ensure regulatory compliance, and streamline reporting. Examples of such classifications include assets like loan contracts, overdraft accounts, and investments; derivatives like credit derivatives, swaps, and options; liabilities such as term deposits and borrowings; and off-balance sheet assets like commitments and letters of credit. This structured framework supports consistent product processing, facilitates seamless integration across financial systems, and ensures clarity in the representation of financial data.

The core products of banking are:

Table 4-5 Core Banking Products

Product Category	Catalog Entity
Asset	Bill Contracts
Asset	Cards
Asset	Correspondent Accounts
Asset	Investments
Asset	Leases Contracts
Asset	Loan Contracts
Asset	Over Draft Accounts
Asset	Repo Contracts
Derivatives	Credit Derivatives
Derivatives	Forwards Contracts
Derivatives	Futures Contracts
Derivatives	Foreign Exchange Contracts
Derivatives	Option Contracts
Derivatives	Swaps Contracts
Liability	Borrowings
Liability	Casa
Liability	Prepaid Cards
Liability	Term Deposit Contracts
Off Balance Sheet Asset	Commitment Contracts
Off Balance Sheet Asset	Letter Of Credit Contracts

4.2.3 Reference Data Entities

Reference data in a data catalog serves as a foundational component that standardizes and contextualizes data across systems and processes. It represents relatively static datasets used to provide consistency, alignment, and meaning in data-driven workflows. Examples of reference data include Catalog Entity, which organizes and identifies key entities; Currency, which defines monetary units for financial transactions; and Country, which standardizes geographical identifiers. Additional reference data like Forecast Exchange Rate provides predictive currency values essential for planning and analysis, while Macro Economic Variables and Macro Economic Variable Details capture high-level economic indicators and their granular components, respectively. By maintaining centralized, accurate, and easily accessible reference data, the data catalog ensures reliability, fosters interoperability, and enhances the integrity of analytics and reporting processes.

The following are the reference data entities.

Table 4-6 Reference Data Entities

Catalog Entity
Currency
Country
Forecast Exchange Rate
Macro Economic Variables
Macro Economic Variable Details

4.2.4 Results Area Entities

Data Foundation has ability to provide data for analytical applications in finance, risk, and compliance domains. It also has well-designed placeholders to store results data from these applications.

The key features of the design of the Results Area are as follows:

- Design: The Reporting Area data model is a dimensional data model. This means that it consists primarily of central fact tables (de-normalized), related to multiple dimension tables, also called a Star Schema. Additionally, the dimension tables are shared across the star schemas in the reporting mode, meaning they are Conformed Dimensions.
- Support for multiple scenarios of analysis: The reporting data model has been designed to support scenario analysis of the sort required by financial institutions that need to measure and report risk and performance under a variety of economic scenarios. The reporting model provides support for this kind of analysis via a Run Dimension – it allows analytical engines to load multiple result sets identified by scenarios.
- Support for Cross Functional Reporting: The third critical feature of the Reporting area design is the support for cross-functional reporting. Majority of emerging needs relate to the analytical problems at the intersection of the distinct areas of Risk, Performance, Customer Insight, and Compliance. This is addressed amply by the results area of Data Foundation.

4.3 Catalog Extensions

Extension of data catalog is carried out with due consideration for Change Management through an Issue-Action Management feature. Final step of Change Management includes a

built-in administrator level oversight for publishing the catalog changes into actionable metadata as per a schedule that does not conflict with the data pipelines under execution. For further information about how to browse and extend the Data Catalog, refer to *FRC Data Platform User Guide*.

5
Data Controls

5.1 DQ Checks

Data Quality Framework consists of a scalable rule-based engine that uses a single-pass integration process to standardize, match, and duplicate information across global data. This framework within the Infrastructure system facilitates you to define rules and execute them to query, validate, and correct the transformed data existing in an Information Domain.

Data Catalog Contents include Data Quality Check Rules and DQ Groups (logical grouping of DQ rules). These Rules are defined at the Business Term and Entity Level, and seeded as a part of the Data Catalog Content.

For instructions on how to create/edit/delete DQ rule, please refer to **FRC Data Platform user guide**.

The following is a list of pre-configured Data Quality rules included in the offering:

In the banking domain, data quality is essential for ensuring the integrity, accuracy, and reliability of financial information that supports decision-making, compliance, and operational efficiency. To maintain high standards of data quality, various validation rules are applied to the data. These rules help identify and prevent errors, inconsistencies, and incomplete data entries that could lead to incorrect business processes or regulatory violations. Common data quality rules used in banking include custom checks, list of values, referential integrity checks, range checks, and more. Below is an overview of these rules, along with examples specific to the banking domain, which highlight their importance in managing data effectively across banking systems.

Data Quality Rules	Definition	Example	Objective
Custom Check	A custom check is a rule based on business-specific or unique conditions that don’t fall under standard data quality rule categories.	A customer's AccountBalance must not be negative if the account type is 'Savings'.	To apply business-specific logic that isn't captured by standard validation rules.
List of Values or Code Check	This rule ensures that a field contains a value from a predefined list of valid values, such as bank codes, account types, or country codes.	The AccountType must be one of the following: 'Checking', 'Savings', 'Credit".	To ensure only valid and standardized data entries are used in the system.
Referential Integrity Check	Ensures that relationships between different tables or data entities are correct, typically by checking foreign keys against primary keys.	The LoanID in the PaymentHistory table must exist in the LoanAccount table.	To prevent orphaned records and ensure that linked data entities are consistent across the system.

Data Quality Rules	Definition	Example	Objective
Column Reference or Specific Value Check	Ensures that the value in one column is consistent with values in another column or a related data set.	If the AccountStatus is 'Closed', then the AccountBalance must be zero.	To ensure that business logic between columns is followed correctly.
Generic Check	A general validation check applied across various data sets, such as length checks or format checks, that doesn't belong to a specific category.	The IBAN number should be 22 characters long and contain only alphanumeric characters.	To apply basic checks that are common across different data sets.
NULL Value Check	Verifies that required fields are not missing, meaning they are not NULL.	The CustomerName field must not be NULL for all active customer records.	To ensure that essential customer or transaction information is always captured.
Range Check	Verifies that data values fall within a valid range, which is commonly used for numeric fields or dates in banking systems.	The CreditScore must be between 300 and 850.	To ensure that data, such as credit scores or loan amounts, falls within realistic and acceptable ranges.
BLANK Value Check	Ensures that fields do not contain blank or empty string values, which may represent missing or incomplete data.	The LoanAmount field must not be blank or contain only spaces in a loan application.	To prevent incomplete data from being entered into critical banking systems, ensuring full and valid records.

These banking-specific examples help ensure that critical financial data is correct, consistent, and adheres to industry standards for data integrity and compliance.

In DFCS the following number of rules are bundled /autogenerated in each category.

Table 5-1 Number of Tules that are bundled

Check Type	No of Rules
Custom Check	801
List of Values or Code Check	3266
Referential Integrity Check	7610
Column Reference or Specific Value Check	338
Generic Check	262
NULL Value Check	279
Range Check	11
BLANK Value Check	6

Following are the distribution of rules for each entity.

Table 5-2 Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Account	11
Account Account Relationship	7
Account Address	7
Account Address Map	12
Account Alternate Currency Values	4
Account Anticipatory Profile	6
Account Balances	7
Account Cash Flows	16
Account Credit Quality Status Details	5
Account Credit Score Details	9
Account Customer Relationship Change	7
Account Deviation	5
Account Deviations Details	5
Account Effective Interest Rates	4
Account Email Map	7
Account Feature Map	13
Account Group Details	4
Account Group Master	5
Account Group Member	9
Account Hierarchy	1
Account Index Value History	6
Account Investment Objective	4
Account Lendable Percent	5
Account Management	5
Account Manager Relationship	11
Account Mitigant Map	17
Account Peer Group	4
Account Phone Map	6
Account Placed Collateral Map	7
Account Position	17
Account Position Pair	10
Account Purpose	5
Account Rate Tiers	13
Account Rating Details	16
Account Recovery Cashflows	8
Account Recovery Details	10
Account Restriction	5
Account Segment Month On Book	4
Account Status	5
Account Write Off Details	10
Accounting Entries	104
Accounting Entries Batch	5
Accounting Entries Error	5

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Accounting Entries Header	18
Accounting Head	1
Accounting Head Details	6
Acquired Firm	5
Acquisition Channel	6
Additional Insurance For High Balance	5
Address	6
Address Purpose Type	5
Annuity Contracts	241
Annuity Transactions	69
Application Decision Event	5
Application Details	114
Application Document	8
Application Document Map	10
Application Event Decision	8
Application Group	5
Application Group Details	20
Application Group Event Decision	8
Application Party Role Map	10
Application Purpose Master	5
Application Reject Reasons	5
Application Status	5
Application Type	5
Applications	5
Applications Deviations	5
Applications Document Print Log	7
Assets Sold	45
Assumed Policy	5
Assumed Policy Hierarchy	1
Attrition	5
Authorization Decision Reasons	5
Automatic Teller Machine Transactions	29
Available Intraday Liquidity Source	5
Balance Type	5
Bank Cards	3
Bank Instrument Type Master	5
Bank Positions	9
Bankruptcy Type	5
Behaviour Pattern Non Replicating Portfolio	6
Benchmark Capital Conservation Ratio	4
Benchmark Counter Cyclical Buffer	5
Benchmark Details	5
Bill Contract Transactions	48

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Bill Contracts	244
Bill Plan	5
Blocked Deposit Details	5
Borrowings	248
Borrowings Transactions	57
Branch	7
Branch Hierarchy	1
Branch Transactions	29
Broker Deposits	9
Business Class	5
Business Segment	5
Business Segment Hierarchy	1
Business Unit	5
Business Unit Hierarchy	1
Campaign	5
Campaign Channel	5
Campaign Status	5
Campaign Summary	10
Campaign Type	5
Campaign Wave	5
Capital Investments Positions	8
Capital Requirement Type	5
Card Account Mapping	6
Card Type	5
Cards	310
Cards Payments Transactions	71
Cards Settlement Transactions	48
Casa	352
Casa Transaction	70
Cash Flow Type	5
Cash Flow Type Hierarchy	1
Catastrophe Events	7
Cause Master	4
Cedent Asset Classification	5
Central Authority	5
Channel Hierarchy	1
Channel Session	5
Cheapest To Deliver Mappings	3
Claim	7
Claim Hierarchy	1
Cohort Composition	6
Collateral Debt Swap Spreads	4
Collateral Purpose	5

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Collaterals Posted	86
Collection Officer	5
Collections	20
Collector Contacts	9
Commitment Contract Transactions	33
Commitment Contracts	171
Commodities Transactions	40
Commodity	5
Commodity Contracts	44
Commodity Future Curves	4
Commodity Grade	5
Commodity Group	5
Commodity Location Details	4
Common Chart Of Accounts	5
Compensation Details	8
Compensation Type	6
Consent Purpose	5
Consolidation Approach	5
Constituted Form	5
Contact Method	5
Contract Unwind Trigger	5
Controlling Customer	5
Corporate Actions	7
Correlated Currency Mapping	6
Correspondent Account Transactions	59
Correspondent Accounts	151
Correspondent- Markets Served	3
Correspondent- Products Served	4
Country	8
Countrywise Risk Summary	8
Credit Card Balance Category	5
Credit Card Balance Summary	14
Credit Center	5
Credit Default Swap Index Composition	8
Credit Default Swap Index Name	5
Credit Derivative Fee Cash Flows	7
Credit Derivatives	163
Credit Derivatives Transactions	52
Credit Facility	16
Credit Facility Details	67
Credit Facility Purpose	5
Credit Facility Type	5
Credit Guarantee Scheme	5

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Credit Line Mitigant Map	6
Credit Line Status	5
Credit Loss Reason	5
Credit Officer	5
Credit Participation	7
Credit Participation Contract	12
Credit Participation Details	65
Credit Participation Tranche	10
Credit Participation Tranche Details	9
Credit Participation Tranche Member Map	9
Credit Quality Details	9
Credit Quality Type	5
Credit Rating	5
Credit Reason	5
Credit Score Model	5
Currency Exchange Rates	12
Currency Rate Version	6
Custodial Accounts	47
Custodian Account Transactions	28
Customer Alternate Currency Values	4
Customer Anticipatory Profile	6
Customer Attrition Plans	8
Customer Country Relation	5
Customer Education	5
Customer Employment Type Master	5
Customer Feature Map	9
Customer Product Score	6
Customer Service Enrollment	8
Data Source	6
Days Past Due Transition Matrix	5
Deal	5
Dealer	5
Dealer Group	5
Decision Status	5
Deductible	5
Depository Receipt Issue Mapping	3
Derivative Underlying	31
Deviation Reasons	5
Distance To Default	5
Dividend Payout Type	5
Dividend Protection Detail	4
Document Sub Type	5
Document Submission Status	5

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Document Type	5
Documentary Collection Contract Acceptance	9
Documentary Collection Contract Acknowledgement	7
Documentary Collection Contract Event	22
Documentary Collection Discrepancy Detail	7
Documentary Collection Shipment Detail	7
Downgrade Trigger	4
Economic Indicators	7
Economic Zone	6
Email Address Purpose Type	5
Embedded Options Schedule	11
Employee	7
Employee Expenses Details	7
Employee Hierarchy	1
Employee Phone	5
Employee Service Account	5
Employee Trading Restriction	9
Encumbrance Sources	5
Entity Allocation Factor	4
Entity Influence	5
Entity Measure Summary	5
Entity Org Exchange Map	5
Entity Parent Details	6
Equity Arbitrage Strategy Mapping	3
Equity Indices	6
Equity Other Asset Losses	6
Expected Account Cashflows	8
Expense Type	5
Exposure Seniority	5
Exposure Underlying Type	5
External Operational Risk Loss	13
External Reporting Group	3
External Scaling Factor	4
External Underlying Account Rating Details Table	13
Facility Rating Details	12
Financial Spread Map	4
Financial Statement Forecast	9
Financial Variable	5
Financial Year Master	5
Fixed Assets	15
Fixed Assets Details	33
Fixed Assets Type	5

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Forborne Status	5
Forecast Aggregate Cash Flows	11
Forecast And Plan Data	15
Forecast Balances	8
Forecast Download Net Exposure	8
Forecast Economic Indicator	3
Forecast Exchange Rate	4
Forecast Interest Rate Code	3
Forecast Liquidity Balances	10
Forecast Scenario	5
Forecasted General Ledger Data	20
Forecasted Party Share Holding Percentage	8
Forecasted Securitization Underlying Collections	7
Foreign Currency Utilization Details	5
Foreign Exchange Contracts	186
Foreign Exchange Rates	10
Forex Account Transactions	53
Forward Accumulated Fx Targets	4
Forward Exchange Rates	4
Forwards Contracts	182
Forwards Transactions	23
Fraud Reasons	5
Front Office Transaction Party	8
Fund	8
Fund Details	9
Fund Equity Investments	6
Fund Type	5
Fund Underlying Composition	9
Funds Composition	5
Futures Contracts	259
Futures Transactions	51
General Ledger Account	11
General Ledger Combination	5
General Ledger Data	33
General Ledger Hierarchy	1
Guarantor Type	5
Hedge	6
Hedge Portfolio Set	5
Hedge Portfolio Set Account Map	11
Hedge Status	5
Hedge Type	5
Hedged Instrument Map	7
Hedging Instrument Map	7

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Hedging Strategy	5
High Run Off Category	4
Home Ownership	5
Household	5
Ijarah Accounts	39
Ijarah Transactions	30
Index	9
Index Composition	11
Industry	5
Inflation Index Name	5
Inflation Index Rate	6
Inflation Rates	9
Institution Primary Function	5
Instrument Contract	61
Instrument Contract Details Table	7
Instrument Group Member	4
Instrument Lendable Percent	5
Instrument Probability Of Default Details	8
Instrument Rating Details	13
Instrument Schedule	6
Instrument Trading Restriction	5
Instruments Contracts Hierarchy	1
Insurance Coverage	6
Insurance Coverage Hierarchy	1
Insurance Loss Modeling Component	5
Insurance Loss Simulation Risk Category	5
Insurance Underwriting Issue Sub Type	5
Insurance Underwriting Issue Type	5
Interbank Transactions	36
Interest Rate Curve	7
Interest Rate Curve Rates	8
Interest Rate Curve Volume Surface Rate History	7
Interest Rate Index	3
Interest Rate Parameters	5
Interest Rate Volatility Rate History	9
Internal Allocation Factor	5
Internal Loss Correlation Matrix	7
Internal Operational Risk Loss	23
Internal Scenario Correlation Matrix	7
Internal Scenario Severity Details	8
Intraday Payment Transaction	11
Investment Transactions	60
Investments	405

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Issue Details	15
Issuer	7
Issuer Mitigant Map	11
Issuer Type	3
Istisna Accounts	39
Istisna Transactions	31
Lease Purpose	5
Leases Contracts	295
Leases Transactions	67
Ledger	6
Ledger Hierarchy	1
Legal Entity	20
Legal Entity Consolidation Map	5
Legal Entity Details	15
Legal Entity Gaap Map	6
Legal Entity Group	5
Legal Entity Hierarchy	1
Legal Entity Rating Details	6
Legal Proceeding Status	5
Letter Of Credit Contracts	171
Letter Of Credit Transactions	44
Life Events Staging	4
Line Of Business	6
Line Of Business Allocation Factor	5
Line Of Business Hierarchy	1
Litigation	5
Litigation Details	8
Loan Contracts	568
Loan Contracts Transactions	66
Loan Purpose	5
Loan Recourse Type	5
Loan Waiver Scheme	5
Loans Serviced	136
Loans Serviced Customer Relationship	5
Loans Serviced Mitigant Map	5
Location	8
Location Hierarchy	1
Loss Event	5
Loss Mitigation Program	5
Loss Share Agreement	5
Macro Economic Variable Details	14
Macro Economic Variables	5
Margins Kept With Central Counterparty	7

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Marital Status	5
Market Cell	5
Market Centre Information	5
Market Instrument Contract	6
Market News Event	6
Market Risk Asset	5
Market Risk Portfolio Actual Profit And Loss Value	5
Market Variable Details	4
Market Variables	5
Marketing Program	5
Merchant	5
Merchant Cards	127
Merchant Cards Transactions	45
Merchant Category	5
Migration Reasons	5
Mitigant	9
Mitigant Charge Details	5
Mitigant Security Interest Type Table	5
Mitigant Sub Type	5
Mitigant Types	6
Mitigants	148
Mitigants Counter Guarantee Details Table	7
Mitigants Counter Guarantee Mapping Table	4
Mnemonic Transactions	5
Mortgage Servicing Rights	5
Mudarabah Transactions	31
Mudarbah Accounts	40
Murabahah Accounts	40
Murabahah Transactions	31
Musharakah Transactions	31
Musharkah Accounts	41
Mutual Fund Breakpoint	4
Net Exposures	12
Nettable Liabilities	10
Netting Agreement	11
Non Contractual Obligation	14
Non Performing Category	5
Obligor Details	5
Offer Master	6
Online Account	5
Online Account To Account Map	7
Operating Economic Zone	5
Operation Risk External Loss Threshold	3

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Operation Risk Internal Loss Threshold	5
Operational Risk Loss Scenario Bucket Data	4
Operational Risk Reserve Schedules	10
Opportunity Activity Type	5
Opportunity Win Loss Reason Master	5
Option Contracts	280
Option Contracts Transactions	51
Options Conversion Detail	8
Org Unit	5
Organization Unit Hierarchy	1
Other Assets	26
Other Liabilities	18
Other Services	60
Other Services Transactions	41
Over Draft Accounts	380
Over Draft Accounts Transactions	64
Ownership Category	5
Participation Type	5
Partner	5
Partner Expense	5
Party	33
Party Account Role Map	17
Party Address Map	12
Party Asset Details	5
Party Central Authority Mapping	8
Party Consent	6
Party Details	12
Party Email Map	4
Party Expense Details	7
Party Financial Institution Identification Details	4
Party Financials	16
Party Hierarchy	1
Party Identification Document	16
Party Income Details	6
Party Operating Economic Zone	5
Party Other Names	8
Party Party Account Relationship	12
Party Phone Map	6
Party Probability Of Default Details	6
Party Product Type Summary	7
Party Rating Details	14
Party Relationship Type	5
Party Role	5

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Party Role Map	9
Party Shareholding Percent	8
Party To Party Relationship	13
Party Type	5
Payment Mechanism Master	1
Payment Schedule	6
Payment Settlement Accounts	13
Payment Settlement System	5
Payment Type	5
Peer Group Master	1
Peer Information	4
Peer Product Details	6
Phone Purpose Type	5
Placed Collateral	5
Placed Collateral Source Details	8
Point Of Sale Transactions	29
Policy	9
Policy Hierarchy	1
Policy Vehicle Rating Details	6
Pool Class	5
Pool Identification	5
Portfolio	6
Portfolio Data	4
Portfolio Hierarchy	1
Portfolio Type	5
Position Type	5
Premium Offset Method	5
Premium Offset Method Hierarchy	1
Premium Payment Type	5
Premium Suspense Reason	5
Premium Suspense Reason Hierarchy	1
Prepaid Cards	45
Prepaid Cards Transactions	28
Prepayment Parameters	9
Prepayment Rates	3
Prepayment Reason	5
Probability Of Default Model	5
Probability Of Default Term Structure	8
Probability Of Default Term Structure Details	5
Process Line Of Business Location Map	6
Process Master	2
Producer	6
Producer Hierarchy	1

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Product	6
Product Bundle Master	1
Product Category	5
Product Feature	5
Product Hierarchy	1
Product Rate Matrix Table	5
Product Riders	6
Product Type	5
Profession	5
Profession Sub Type	5
Program	5
Project	5
Project Hierarchy	1
Property Type	5
Prospect	10
Prospect Targeting Method	5
Provision Matrix	4
Purchase Category	5
Quote Declination Type	5
Quote Source	5
Quote Source Method	5
Quote Status	5
Quote Submission Method	5
Quote Type	5
Rate Plan	5
Rating Risk Parameter Data	4
Rating Transition Matrix	5
Recoveries	17
Recovery Agent	5
Recovery Type	5
Reg Entity Class Details	8
Region	5
Rejection Reason	5
Repo Contracts	260
Repo Transactions	43
Report Type	5
Reported Market Sale	4
Reporting Line Mapper	4
Repurchase Reasons	5
Request Type	5
Reserve Type	5
Response Type	5
Restriction List	4

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Restriction Type Master	1
Retention Offer Type	5
Risk Adjusted Pricing Details	6
Risk Position Mapping	7
Run-Off Measure	5
Salam Accounts	39
Salam Transactions	31
Sales Representative	5
Sales Representative Compensation	6
Sales Stages	5
Scenario Covariance Data	3
Securitization Activity	7
Securitization Facility Type	5
Securitization Inception Data	7
Securitization Pool	4
Securitization Pool Type	5
Securitization Program	7
Securitization Status	5
Securitization Type	5
Security Tranche Credit Enhancement Map	8
Service Charge	5
Service Plans	11
Service Representative	5
Service Requests	11
Service Slippage Reason	5
Service Team	5
Service Team Member	5
Serviced Account Credit Score Details	9
Share Holding Details	11
Shareholder	5
Shareholding Percent	6
Simulation Bucket Type	5
Sma Score Rule Staging For Influencer Score	3
Social Media	5
Social Media Post	4
Sovereign Rating Details	11
Special Term	5
Special Terms Covenants	7
Staging For Lifetime Value Of Product By Customer Segment	4
Staging For Summary Of Social Media Analytics	7
Staging Of Sma Event Types	1
Staging Table For Customer Offers Types	1

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Staging Table For Source Platforms For Social Media Analytics	1
Staging Table Of Score Types	1
Standard Accounting Head Details	10
Standard Allocation Factor	5
Standard Product Mapper	4
Standard Scenario Severity Details	8
Stock Or Index	6
Stock Ticker	5
Sukuk Accounts	47
Sukuk Transactions	31
Survey	5
Survey Response	8
Swap Account Transactions	57
Swaps Contracts	243
System Logon	3
Telebanking Transactions	28
Term Deposit Contracts	261
Term Deposits Transactions	60
Term Structure	8
Term Structure Details	5
Terminal	6
Terminal Type	5
Time To Peak Exposure	11
Trade Finance Contract Amendment Status Stage	7
Trade Finance Contract Event Acknowledgement Stage	8
Trade Finance Document	9
Trade Finance Goods	1
Trade Finance Goods Alternate Currency Values	6
Trade Finance Goods Category Table	3
Trade Finance Goods Or Services	7
Trade Finance Goods Subtype	1
Trade Finance Goods Type	1
Trade Finance To Account	5
Trading Account	71
Trading Account Transactions	53
Trading Desk	5
Transaction	6
Transaction Alternate Currency Values	4
Transaction Channel	5
Transaction Failure Reason	5
Transaction Header	13

Table 5-2 (Cont.) Distribution of Rules for each Entity

Data Quality Entity	No of Rules
Transaction Purpose	5
Transition Matrix	5
Transition Matrix Master	3
Treatment	5
Trusts	100
Trusts Transactions	54
Underlying Details	6
Underlying Type	5
Underwriter	5
Underwriting Details	12
Underwriting Positions	5
Undrawn Limit	35
Unit Of Measure Allocation Factor	4
Unit Of Measure Covariance Data	3
Unit Of Measure Distribution Parameters	5
Unit Of Measure Modeling Parameters	5
Valuation Method	5
Vehicle	6
Vehicle Body Type	5
Vehicle Lease Type	5
Vehicle Purpose	5
Vehicle Rating	5
Vehicle Type	5
Vehicle Tyre Type	5
Vendor	5
Vintage	5
Watch List	5
Watchlist Member Entry	7
Web Log Analytics Event	6
Weblog Analytics Page	5
Weight Change Response Type	5
Write-Off Reasons	5

5.2 Balance Reconciliation

Balance Reconciliation reconciles the balances from the operational systems of a bank with the balances maintained in General Ledger (GL) of the bank. The bank's operational data are sourced into standard product processor entities or other operational data entities used by the bank.

The balances in the GL of a bank are the ones that are audited and duly certified by internal and external auditors. Hence, considered to be the final version of the truth in a bank. Therefore, all data extracted from any other operating system of a bank must be reconciled with the balances maintained in the GL to ensure they are complete, accurate, and comprehensive. It acts as an authentic and reliable base for any further decision-making.

DFCS' GL Reconciliation has pre-configured definition process. Currently DFCS supports below type of reconciliation:

- General Ledger to Product Processor

> **Note:**
>
> For more information on Balance Reconciliation, see *Balance Reconciliation* in theOracle® Financial Services Data Foundation Cloud Service for Banking Data Quality .

6
Data Integration

6.1 Background and Coverage

Data Foundation comes pre-configured with capabilities for assimilating data for the following products. Assimilated data will act as single source of truth for all product related data. Data Foundation also supports extensions of the underlying platform to support unique needs of the customer not available in the pre-configured version.

While customers are expected to setup sourcing of data using EDDs, Data Foundation ships with pre-built results area connectors for the following products.

- Annuity Contracts
- Bill Contracts
- Borrowings
- Cards
- Casa (Current/Checking Accounts, Savings Accounts)
- Commitment Contracts
- Commodity Contracts
- Correspondent Accounts
- Credit Derivatives
- Forwards Contracts
- Futures Contracts
- Foreign Exchange Contracts
- Investments
- Letter Of Credit Contracts
- Leases Contracts
- Loan Contracts
- Merchant Cards
- Over Draft Accounts
- Option Contracts
- Payment Settlement Accounts
- Prepaid Cards
- Repo Contracts
- Swaps Contracts
- Term Deposit Contracts
- Other Assets

- Custodial Accounts
- Trusts
- Trading Account
- Connectors for Islamic Banking products too are supported out-of-the-box.
  - Ijarah Accounts
  - Istisna Accounts
  - Mudarbah Accounts
  - Murabahah Accounts
  - Musharkah Accounts
  - Salam Accounts
  - Sukuk Accounts

6.2 Data Sourcing and Data Egress

Data Sourcing and Data Egress refer to the processes of acquiring data from both internal and external systems (data sourcing) and transferring it to other environments or applications (data egress). Data sourcing involves identifying, extracting, and collecting data from various sources, such as transactional systems, third-party providers, or data warehouses. This data is then processed and integrated to support business operations, reporting, or analytics. In contrast, data egress deals with the movement of processed data from its original system or database to other platforms, systems, or end-users. This may include sharing data with downstream applications, regulatory reporting systems, or external partners. Both data sourcing and egress must be carefully managed to ensure data quality, security, and compliance with regulatory standards, particularly when handling sensitive financial or customer information. Effective strategies for data sourcing and egress are vital to ensuring that the right data is delivered to the right destinations in a timely, secure, and accurate manner. In DFCS, data sourcing is facilitated through Ingress Connectors using External Data Descriptors for each entity.

6.2.1 External Data Descriptors

External Data Descriptors (EDD) are definitions of specific data content from **External Data Sources (EDS)**. Each EDS may have a number of EDDs defined against it. EDD definitions can be used for ingesting data into DFCS Data Foundation or extracting data from it. This serve as metadata configurations to define, map, and transform external data before it is ingested into the DFCS. These descriptors play a crucial role in ensuring seamless data integration by specifying how external data sources, such as third-party applications or external databases, should be interpreted, formatted, and aligned with the internal data structures of the Data Catalog. By defining the structure, fields, data types, and transformation rules, **External Data Descriptors** ensure that external data can be accurately and efficiently integrated into the platform, supporting downstream processes like financial reporting, analytics, and regulatory compliance.

In DFCS External Data Descriptors are auto generated for all Sourcing Entities. Currently DFCS have 671 External Data Descriptors getting packaged.

6.2.2 Ingress Connectors

Data Catalog Ingress Connectors is a components that enable the ingestion from various data sources into a data catalog. These connectors help automate the process of ingestion of data

into DFCS from any external sources in the prescribed format of stage expectations. These connectors will be using the information from External Data Descriptors to identify the file or source system to be used for each connector. In DFCS Ingress Connectors are auto generated for all Sourcing Entities. Currently DFCS have 671 Connectors getting packaged.

Refer the Data Integration User GuideData Integration User Guide on how to setup Sourcing and Egress connectors.

7

Data Operations

Process Orchestration is a design and execution service that enables process pipeline developers to implement pipelines modeled by business analysts. Process pipeline developers use this framework to orchestrate Run Pipelines within DFCS, and also to design the artifacts that are used in the pipelines.

The Process Modeller and the Process Monitor are two key parts of Process Orchestration. The Process Modeller is used to model pipelines. It aids in representing the various artifacts required for modeling and provides implementation details of the DFCS process artifacts. The Process Monitor is used to monitor instantiated pipelines of DFCS.

DFCS supports orchestration of the Run Pipeline, which is any orchestrated pipeline consisting of DFCS tasks and service calls that run within the DFCS context.

> **Note:**
>
> For more information on *Run Pipeline*, refer https://docs.oracle.com/en/industries/financial-services/ofs-analytical-applications/accounting-foundation/24c/user/managing-processes.html.

7.1 Account Load Run Map Population

The Account Load Run Map Population process is a feature in Data Foundation Cloud Service (DFCS) that manages and organizes the loading of intra-day accounts, particularly for incremental and snapshot updates.

This section provides an overview of the operation process.

1. **Intra-Day Accounts:** Accounts are updated within a day based on specific activities or events, and the system captures these changes efficiently.
2. **Incremental and Snapshot Updates:**
   - **Incremental Updates:** Only the changes that have occurred since the last update are captured (e.g., modifications or new records such as transactions or account status changes).
   - **Snapshot Updates:** A full view of the data at a specific point in time is captured, including all account data, regardless of whether changes have occurred since the last snapshot.
3. **Load Run ID:** Each account load (whether incremental or snapshot) generates a unique Load Run ID. This ID is used to track, distinguish, audit, and ensure accurate tracing of each load process.
4. **Map Population:** The loaded account data is mapped to a predefined structure or schema within DFCS, ensuring it is correctly placed in the appropriate tables, formats, or structures for further processing or reporting.

7.1.1 Benefits

- **Data Traceability**: The Load Run ID provides an audit trail for each load operation, ensuring traceability and transparency.
- **Efficient Data Handling**: The system can process intra-day account data efficiently by only loading necessary changes with incremental updates while maintaining full data integrity with snapshots.
- **Consistency**: The process ensures that the data is loaded into DFCS consistently and accurately, making it ready for further downstream applications such as regulatory reporting, analytics, and other business processes.

In essence, the **Account Load Run Map Population** process is key in handling dynamic, intra-day account updates within DFCS, ensuring both data completeness (via snapshots) and efficiency (via incremental updates).

Load Details
Load Stage Bill Contracts To PPN Account Load Run Map
Load Stage Borrowings To PPN Account Load Run Map
Load Stage Cards To PPN Account Load Run Map
Load Stage Casa To PPN Account Load Run Map
Load Stage Commitment Contracts To PPN Account Load Run Map
Load Stage Commodity Contracts To PPN Account Load Run Map
Load Stage Correspondent Accounts To PPN Account Load Run Map
Load Stage Credit Derivatives To PPN Account Load Run Map
Load Stage Forwards Contracts To PPN Account Load Run Map
Load Stage Futures Contracts To PPN Account Load Run Map
Load Stage Foreign Exchange Contracts To PPN Account Load Run Map
Load Stage Ijarah Accounts To PPN Account Load Run Map
Load Stage Investments To PPN Account Load Run Map
Load Stage Istisna Accounts To PPN Account Load Run Map
Load Stage Letter Of Credit Contracts To PPN Account Load Run Map
Load Stage Leases Contracts To PPN Account Load Run Map
Load Stage Loan Contracts To PPN Account Load Run Map
Load Stage Merchant Cards To PPN Account Load Run Map
Load Stage Mudarbah Accounts To PPN Account Load Run Map
Load Stage Murabahah Accounts To PPN Account Load Run Map
Load Stage Musharkah Accounts To PPN Account Load Run Map
Load Stage Over Draft Accounts To PPN Account Load Run Map
Load Stage Option Contracts To PPN Account Load Run Map
Load Stage Payment Settlement Accounts To PPN Account Load Run Map
Load Stage Prepaid Cards To PPN Account Load Run Map
Load Stage Repo Contracts To PPN Account Load Run Map
Load Stage Salam Accounts To PPN Account Load Run Map
Load Stage Sukuk Accounts To PPN Account Load Run Map
Load Stage Swaps Contracts To PPN Account Load Run Map
Load Stage Term Deposit Contracts To PPN Account Load Run Map
Load Stage Other Assets To PPN Account Load Run Map

Load Details
Load Stage Custodial Accounts To PPN Account Load Run Map
Load Stage Trusts To PPN Account Load Run Map
Load Stage Trading Account To PPN Account Load Run Map
Load Stage Annuity Contracts To PPN Account Load Run Map

7.2 Results Area Load Batch

The **Results Area Load Batch** is a process in **Data Foundation Cloud Service (DFCS)** that facilitates the loading of **fact results** from the **staging results** area into the final results area for reporting purposes. This process ensures that the data is properly processed, organized, and available for consumption by downstream reporting applications.

1. **Loading Fact Results**:
   - **Fact results** are essentially the processed data that is typically used for reporting, analytics, and business intelligence purposes.
   - These facts could include various financial and transactional data points, such as accounting entries, general ledger (GL) data, currency exchange rates, and so on.
   - The data in the **staging area** may be raw, intermediate, or partially processed, and the **Results Area Load Batch** is responsible for moving it into the final results area where it is aggregated, cleansed, and made ready for reporting.
2. **Run Surrogate Key**:
   - The **Run Surrogate Key** is a unique identifier that allows for tracking and managing multiple **load runs**.
   - Since data loads may occur multiple times a day, the surrogate key helps to differentiate between different runs of the same type of fact data (e.g., accounting entries or GL data). This ensures that even if the data loads are similar, each load can be identified and handled independently.
   - The surrogate key is important for data traceability, ensuring that each batch can be traced back for auditing, version control, and historical analysis.
3. **Examples of Fact Loads**:
   - **Load Fact Accounting Entries**: This process loads detailed accounting data, which includes financial transactions that affect accounts, such as debits, credits, account balances, and other related financial details.
   - **Load Fact GL Data**: Loads general ledger data, which is aggregated and provides a summarized view of financial transactions by categories such as account codes, periods, and balances.
   - **Load Fact Currency Exchange Rates**: Loads data regarding the exchange rates between different currencies, which are essential for converting financial amounts into consistent currency representations across different regions.
   - **Load Fact Accounting Entries Header**: This is the header-level data associated with accounting entries, which may include metadata such as transaction type, reference numbers, and other summary information.

7.2.1 Benefits

- **Continuous Data Updates**: By supporting multiple load runs per day, the system ensures that the most up-to-date fact data is always available for reporting purposes.
- **Efficient Tracking and Management**: The use of a **Run Surrogate Key**.

No	Task
1	Load Fact Accounting Entries
2	Load Fact GL Data
3	Load Fact Currency Exchange Rates
4	Load Fact Accounting Entries Header
5	Load Stage Annuity Transactions To Fact Transaction Summary
6	Load Stage Bill Contract Transactions To Fact Transaction Summary
7	Load Stage Borrowings Transactions To Fact Transaction Summary
8	Load Stage Cards Payments Transactions To Fact Transaction Summary
9	Load Stage Cards Settlement Transactions To Fact Transaction Summary
10	Load Stage Casa Transaction To Fact Transaction Summary
11	Load Stage Commitment Contract Transactions To Fact Transaction Summary
12	Load Stage Commodities Transactions To Fact Transaction Summary
13	Load Stage Correspondent Account Transactions To Fact Transaction Summary
14	Load Stage Credit Derivatives Transactions To Fact Transaction Summary
15	Load Stage Forex Account Transactions To Fact Transaction Summary
16	Load Stage Forwards Transactions To Fact Transaction Summary
17	Load Stage Futures Transactions To Fact Transaction Summary
18	Load Stage Ijarah Transactions To Fact Transaction Summary
19	Load Stage Investment Transactions To Fact Transaction Summary
20	Load Stage Istisna Transactions To Fact Transaction Summary
21	Load Stage Letter Of Credit Transactions To Fact Transaction Summary
22	Load Stage Leases Transactions To Fact Transaction Summary
23	Load Stage Loan Contracts Transactions To Fact Transaction Summary
24	Load Stage Merchant Cards Transactions To Fact Transaction Summary

No	Task
25	Load Stage Mudarabah Transactions To Fact Transaction Summary
26	Load Stage Murabahah Transactions To Fact Transaction Summary
27	Load Stage Musharakah Transactions To Fact Transaction Summary
28	Load Stage Over Draft Accounts Transactions To Fact Transaction Summary
29	Load Stage Option Contracts Transactions To Fact Transaction Summary
30	Load Stage Prepaid Cards Transactions To Fact Transaction Summary
31	Load Stage Repo Transactions To Fact Transaction Summary
32	Load Stage Salam Transactions To Fact Transaction Summary
33	Load Stage Sukuk Transactions To Fact Transaction Summary
34	Load Stage Swap Account Transactions To Fact Transaction Summary
35	Load Stage Term Deposits Transactions To Fact Transaction Summary
68	Load Stage Annuity Contracts To Fact Common Account Summary
69	Load Stage Bill Contracts To Fact Common Account Summary
70	Load Stage Borrowings To Fact Common Account Summary
71	Load Stage Cards To Fact Common Account Summary
72	Load Stage Casa To Fact Common Account Summary
73	Load Stage Commitment Contracts To Fact Common Account Summary
74	Load Stage Commodity Contracts To Fact Common Account Summary
75	Load Stage Correspondent Accounts To Fact Common Account Summary
76	Load Stage Credit Derivatives To Fact Common Account Summary
77	Load Stage Forwards Contracts To Fact Common Account Summary
78	Load Stage Futures Contracts To Fact Common Account Summary
79	Load Stage Foreign Exchange Contracts To Fact Common Account Summary
80	Load Stage Ijarah Accounts To Fact Common Account Summary
81	Load Stage Investments To Fact Common Account Summary

No	Task
82	Load Stage Istisna Accounts To Fact Common Account Summary
83	Load Stage Letter Of Credit Contracts To Fact Common Account Summary
84	Load Stage Leases Contracts To Fact Common Account Summary
85	Load Stage Loan Contracts To Fact Common Account Summary
86	Load Stage Merchant Cards To Fact Common Account Summary
87	Load Stage Mudarbah Accounts To Fact Common Account Summary
88	Load Stage Murabahah Accounts To Fact Common Account Summary
89	Load Stage Musharkah Accounts To Fact Common Account Summary
90	Load Stage Over Draft Accounts To Fact Common Account Summary
91	Load Stage Option Contracts To Fact Common Account Summary
92	Load Stage Payment Settlement Accounts To Fact Common Account Summary
93	Load Stage Prepaid Cards To Fact Common Account Summary
94	Load Stage Repo Contracts To Fact Common Account Summary
95	Load Stage Salam Accounts To Fact Common Account Summary
96	Load Stage Sukuk Accounts To Fact Common Account Summary
97	Load Stage Swaps Contracts To Fact Common Account Summary
98	Load Stage Term Deposit Contracts To Fact Common Account Summary
173	Load Stage Run Execution Parameters To Fact Run Execution Parameters
174	Load Stage Standard Product Mapper To Fact Standard Product Mapper
175	Load Stage Leases Contracts To Fact Loan Account Summary
176	Load Stage Loan Contracts To Fact Loan Account Summary
177	Load Stage Over Draft Accounts To Fact Loan Account Summary
178	Load Stage Casa To Fact Deposits
179	Load Stage Term Deposit Contracts To Fact Deposits
180	Load Stage Forwards Contracts To Fact Financial Derivatives
181	Load Stage Futures Contracts To Fact Financial Derivatives

No	Task
182	Load Stage Foreign Exchange Contracts To Fact Financial Derivatives
183	Load Stage Option Contracts To Fact Financial Derivatives
184	Load Stage Repo Contracts To Fact Financial Derivatives
185	Load Stage Swaps Contracts To Fact Financial Derivatives
186	Load Stage Credit Derivatives To Fact Credit Derivatives
187	Load Stage Bill Contracts To Fact Bills Acceptances
188	Load Stage Investments To Fact Investments
189	Load Stage Other Assets To Fact Common Account Summary
190	Load Stage Custodial Accounts To Fact Common Account Summary
191	Load Stage Trusts To Fact Common Account Summary
192	Load Stage Trading Account To Fact Common Account Summary
193	Load Stage Annuity Contracts To Fact Common Account Derived Attributes
194	Load Stage Bill Contracts To Fact Common Account Derived Attributes
195	Load Stage Borrowings To Fact Common Account Derived Attributes
196	Load Stage Cards To Fact Common Account Derived Attributes
197	Load Stage Commitment Contracts To Fact Common Account Derived Attributes
198	Load Stage Other Assets To Fact Common Account Derived Attributes
199	Load Stage Commodity Contracts To Fact Common Account Derived Attributes
200	Load Stage Correspondent Accounts To Fact Common Account Derived Attributes
201	Load Stage Ijarah Accounts To Fact Common Account Derived Attributes
202	Load Stage Istisna Accounts To Fact Common Account Derived Attributes
203	Load Stage Mudarbah Accounts To Fact Common Account Derived Attributes
204	Load Stage Murabahah Accounts To Fact Common Account Derived Attributes
205	Load Stage Musharkah Accounts To Fact Common Account Derived Attributes
206	Load Stage Salam Accounts To Fact Common Account Derived Attributes
207	Load Stage Sukuk Accounts To Fact Common Account Derived Attributes

No	Task
208	Load Stage Credit Derivatives To Fact Common Account Derived Attributes
209	Load Stage Casa To Fact Common Account Derived Attributes
210	Load Stage Forwards Contracts To Fact Common Account Derived Attributes
211	Load Stage Futures Contracts To Fact Common Account Derived Attributes
212	Load Stage Foreign Exchange Contracts To Fact Common Account Derived Attributes
213	Load Stage Investments To Fact Common Account Derived Attributes
214	Load Stage Letter Of Credit Contracts To Fact Common Account Derived Attributes
215	Load Stage Leases Contracts To Fact Common Account Derived Attributes
216	Load Stage Loan Contracts To Fact Common Account Derived Attributes
217	Load Stage Merchant Cards To Fact Common Account Derived Attributes
218	Load Stage Custodial Accounts To Fact Common Account Derived Attributes
219	Load Stage Trusts To Fact Common Account Derived Attributes
220	Load Stage Over Draft Accounts To Fact Common Account Derived Attributes
221	Load Stage Trading Account To Fact Common Account Derived Attributes
222	Load Stage Option Contracts To Fact Common Account Derived Attributes
223	Load Stage Payment Settlement Accounts To Fact Common Account Derived Attributes
224	Load Stage Prepaid Cards To Fact Common Account Derived Attributes
225	Load Stage Repo Contracts To Fact Common Account Derived Attributes
226	Load Stage Swaps Contracts To Fact Common Account Derived Attributes
227	Load Stage Term Deposit Contracts To Fact Common Account Derived Attributes
228	Load Stage Trading Account Transactions To Fact Transaction Summary
229	Load Stage Custodian Account Transactions To Fact Transaction Summary
230	Load Stage Trusts Transactions To Fact Transaction Summary
231	Load Stage Reporting Line Mapper To Fact Reporting Line Mapper
232	Load Stage Party Details To Fact Party Details
233	Load Stage Account Email Map To Fact Account Email Map

No	Task
234	Load Stage Account Phone Map To Fact Account Phone Map
235	Load Stage Account Position To Fact Account Position
236	Load Stage Card Account Mapping To Fact Card Account Mapping
237	Load Stage Hedged Instrument Map To Fact Hedged Instrument Map
238	Load Stage Hedging Instrument Map To Fact Hedging Instrument Map
239	Load Stage Intraday Payment Transaction To Fact Intraday Payment Transaction
240	Load Stage Party Operating Economic Zone To Fact Party Operating Economic Zone
241	Load Stage Provision Matrix To Fact Provision Matrix
242	Load Stage Margins Kept With Central Counterparty To Fact Margins Kept With Central Counterparty
243	Load Stage Transaction Header To Fact Transaction Header
244	Load Stage Net Exposures To Fact Net Exposures
245	Load Stage Instrument Contract Details Table To Fact Instrument Contract Details Table
250	Load Stage Application Details To Fact Application Details
251	Load Stage Collections To Fact Collections
252	Load Stage Forecast Interest Rate Code To Fact Forecast Interest Rate Code
253	Load Stage Mitigants To Fact Mitigants
254	Load Stage Party Rating Details To Fact Party Rating Details
255	Load Stage Applications Document Print Log To Fact Applications Document Print Log
256	Load Stage Credit Card Balance Summary To Fact Credit Card Balance Summary
257	Load Stage Applications Deviations To Fact Applications Deviations
258	Load Stage Account Mitigant Map To Fact Account Mitigant Map
259	Load Stage Application Document Map To Fact Application Document Map
260	Load Stage Party Financials To Fact Party Financials
261	Load Stage Party To Party Relationship To Fact Party To Party Relationship
262	Load Stage Party Role Map To Fact Party Role Map
263	Load Stage Collaterals Posted To Fact Collaterals Posted

No	Task
264	Load Stage Party Shareholding Percent To Fact Party Shareholding Percent
265	Load Stage Account Placed Collateral Map To Fact Account Placed Collateral Map
266	Load Stage Credit Facility Details To Fact Credit Facility Details
267	Load Stage Downgrade Trigger To Fact Downgrade Trigger
268	Load Stage Party Address Map To Fact Party Address Map
269	Load Stage Documentary Collection Contract Acknowledgement To Fact Documentary Collection Contract Acknowledgement
270	Load Stage Documentary Collection Contract Acceptance To Fact Documentary Collection Contract Acceptance
271	Load Stage Documentary Collection Discrepancy Detail To Fact Documentary Collection Discrepancy Detail
272	Load Stage Documentary Collection Contract Event To Fact Documentary Collection Contract Event
273	Load Stage Credit Participation Tranche Details To Fact Credit Participation Tranche Details
274	Load Stage Credit Participation Contract To Fact Credit Participation Contract
275	Load Stage Credit Participation Tranche Member Map To Fact Credit Participation Tranche Member Map
276	Load Stage Application Group Details To Fact Application Group Details
277	Load Stage Application Event Decision To Fact Application Event Decision
278	Load Stage Application Document To Fact Application Document
279	Load Stage Party Identification Document To Fact Party Identification Document
280	Load Stage Party Party Account Relationship To Fact Party Party Account Relationship
281	Load Stage Credit Participation Details To Fact Credit Participation Details
282	Load Stage Documentary Collection Shipment Detail To Fact Documentary Collection Shipment Detail
283	Load Stage Credit Line Mitigant Map To Fact Credit Line Mitigant Map
284	Load Stage Party Phone Map To Fact Party Phone Map
285	Load Stage Party Email Map To Fact Party Email Map
286	Load Stage Standard Accounting Head Details To Fact Standard Accounting Head Details

No	Task
287	Load Stage Sovereign Rating Details To Fact Sovereign Rating Details
288	Load Stage Share Holding Details To Fact Share Holding Details
289	Load Stage Securitization Inception Data To Fact Securitization Inception Data
290	Load Stage Security Tranche Credit Enhancement Map To Fact Security Tranche Credit Enhancement Map
291	Load Stage Securitization Activity To Fact Securitization Activity
292	Load Stage Account Balances To Fact Account Balances
293	Load Stage Benchmark Capital Conservation Ratio To Fact Benchmark Capital Conservation Ratio
294	Load Stage Benchmark Counter Cyclical Buffer To Fact Benchmark Counter Cyclical Buffer
295	Load Stage Instrument Rating Details To Fact Instrument Rating Details
296	Load Stage Instrument Probability Of Default Details To Fact Instrument Probability Of Default Details
297	Load Stage Hedge Portfolio Set Account Map To Fact Hedge Portfolio Set Account Map
298	Load Stage Index Composition To Fact Index Composition
299	Load Stage Macro Economic Variable Details To Fact Macro Economic Variable Details
300	Load Stage Entity Allocation Factor To Fact Entity Allocation Factor
301	Load Stage Unit Of Measure Distribution Parameters To Fact Unit Of Measure Distribution Parameters
302	Load Stage Trade Finance To Account To Fact Trade Finance To Account
303	Load Stage Time To Peak Exposure To Fact Time To Peak Exposure
304	Load Stage Application Party Role Map To Fact Application Party Role Map
305	Load Stage Account Account Relationship To Fact Account Account Relationship
306	Load Stage Account Credit Score Details To Fact Account Credit Score Details
307	Load Stage Account Recovery Cashflows To Fact Account Recovery Cashflows
308	Load Stage Account Recovery Details To Fact Account Recovery Details
309	Load Stage Account Write Off Details To Fact Account Write Off Details
310	Load Stage Party Income Details To Fact Party Income Details

No	Task
311	Load Stage Party Expense Details To Fact Party Expense Details
312	Load Stage Account Address To Fact Account Address
313	Load Stage Account Address Map To Fact Account Address Map
314	Load Stage Restriction List To Fact Restriction List
315	Load Stage Account Deviations Details To Fact Account Deviations Details
316	Load Stage Account Group Details To Fact Account Group Details
317	Load Stage Account Group Member To Fact Account Group Member
318	Load Stage Account Index Value History To Fact Account Index Value History
319	Load Stage Account Investment Objective To Fact Account Investment Objective
320	Load Stage Account Manager Relationship To Fact Account Manager Relationship
321	Load Stage Account Peer Group To Fact Account Peer Group
322	Load Stage Reg Entity Class Details To Fact Reg Entity Class Details
323	Load Stage Foreign Exchange Rates To Fact Foreign Exchange Rates
324	Load Stage Rating Risk Parameter Data To Fact Rating Risk Parameter Data
325	Load Stage Account Rate Tiers To Fact Account Rate Tiers
326	Load Stage Account Cash Flows To Fact Account Cash Flows
327	Load Stage Account Feature Map To Fact Account Feature Map
328	Load Stage Account Segment Month On Book To Fact Account Segment Month On Book
329	Load Stage Bank Positions To Fact Bank Positions
330	Load Stage Broker Deposits To Fact Broker Deposits
331	Load Stage Capital Investments Positions To Fact Capital Investments Positions
332	Load Stage Probability Of Default Term Structure Details To Fact Probability Of Default Term Structure Details
333	Load Stage Credit Default Swap Index Composition To Fact Credit Default Swap Index Composition
334	Load Stage Commodity Future Curves To Fact Commodity Future Curves
335	Load Stage Party Probability Of Default Details To Fact Party Probability Of Default Details
336	Load Stage Controlling Customer To Fact Controlling Customer

No	Task
337	Load Stage Corporate Actions To Fact Corporate Actions
338	Load Stage Correlated Currency Mapping To Fact Correlated Currency Mapping
339	Load Stage Party Other Names To Fact Party Other Names
340	Load Stage Party Central Authority Mapping To Fact Party Central Authority Mapping
341	Load Stage Party Asset Details To Fact Party Asset Details
342	Load Stage Other Liabilities To Fact Other Liabilities
343	Load Stage Customer Attrition Plans To Fact Customer Attrition Plans
344	Load Stage Customer Feature Map To Fact Customer Feature Map
345	Load Stage Operational Risk Reserve Schedules To Fact Operational Risk Reserve Schedules
346	Load Stage Online Account To Account Map To Fact Online Account To Account Map
347	Load Stage Economic Indicators To Fact Economic Indicators
348	Load Stage Embedded Options Schedule To Fact Embedded Options Schedule
349	Load Stage Employee Expenses Details To Fact Employee Expenses Details
350	Load Stage Equity Indices To Fact Equity Indices
351	Load Stage Facility Rating Details To Fact Facility Rating Details
352	Load Stage Forecast Aggregate Cash Flows To Fact Forecast Aggregate Cash Flows
353	Load Stage Forecast Liquidity Balances To Fact Forecast Liquidity Balances
354	Load Stage Forecast Download Net Exposure To Fact Forecast Download Net Exposure
355	Load Stage Forecasted Securitization Underlying Collections To Fact Forecasted Securitization Underlying Collections
356	Load Stage Mitigants Counter Guarantee Mapping Table To Fact Mitigants Counter Guarantee Mapping Table
357	Load Stage Financial Statement Forecast To Fact Financial Statement Forecast
358	Load Stage Forecast And Plan Data To Fact Forecast And Plan Data
359	Load Stage Forecasted General Ledger Data To Fact Forecasted General Ledger Data
360	Load Stage Forecasted Party Share Holding Percentage To Fact Forecasted Party Share Holding Percentage

No	Task
361	Load Stage Forward Exchange Rates To Fact Forward Exchange Rates
362	Load Stage Market Variable Details To Fact Market Variable Details
363	Load Stage Fund Details To Fact Fund Details
364	Load Stage Market News Event To Fact Market News Event
365	Load Stage Fund Underlying Composition To Fact Fund Underlying Composition
366	Load Stage Funds Composition To Fact Funds Composition
367	Load Stage Issuer Mitigant Map To Fact Issuer Mitigant Map
368	Load Stage Loans Serviced Mitigant Map To Fact Loans Serviced Mitigant Map
369	Load Stage Line Of Business Allocation Factor To Fact Line Of Business Allocation Factor
370	Load Stage Customer Service Enrollment To Fact Customer Service Enrollment
371	Load Stage Customer Product Score To Fact Customer Product Score
372	Load Stage Non Contractual Obligation To Fact Non Contractual Obligation
373	Load Stage Expected Account Cashflows To Fact Expected Account Cashflows
374	Load Stage Forecast Exchange Rate To Fact Forecast Exchange Rate
375	Load Stage Employee Service Account To Fact Employee Service Account
376	Load Stage Internal Loss Correlation Matrix To Fact Internal Loss Correlation Matrix
377	Load Stage Instrument Schedule To Fact Instrument Schedule
378	Load Stage Interest Rate Parameters To Fact Interest Rate Parameters
379	Load Stage Internal Scenario Severity Details To Fact Internal Scenario Severity Details
380	Load Stage Policy Vehicle Rating Details To Fact Policy Vehicle Rating Details
381	Load Stage Issue Details To Fact Issue Details
382	Load Stage Service Team To Fact Service Team
383	Load Stage Service Team Member To Fact Service Team Member
384	Load Stage Portfolio Data To Fact Portfolio Data
385	Load Stage Placed Collateral Source Details To Fact Placed Collateral Source Details
386	Load Stage Process Line Of Business Location Map To Fact Process Line Of Business Location Map

No	Task
387	Load Stage Sales Representative Compensation To Fact Sales Representative Compensation
388	Load Stage Risk Position Mapping To Fact Risk Position Mapping
389	Load Stage Trade Finance Goods Or Services To Fact Trade Finance Goods Or Services
390	Load Stage Trade Finance Document To Fact Trade Finance Document
391	Load Stage Standard Scenario Severity Details To Fact Standard Scenario Severity Details
392	Load Stage Standard Allocation Factor To Fact Standard Allocation Factor
393	Load Stage Special Terms Covenants To Fact Special Terms Covenants
394	Load Stage Loans Serviced Customer Relationship To Fact Loans Serviced Customer Relationship
395	Load Stage Serviced Account Credit Score Details To Fact Serviced Account Credit Score Details
396	Load Stage Transition Matrix To Fact Transition Matrix
397	Load Stage Term Structure Details To Fact Term Structure Details
398	Load Stage Undrawn Limit To Fact Undrawn Limit
399	Load Stage Underwriting Details To Fact Underwriting Details
400	Load Stage Underlying Details To Fact Underlying Details
401	Load Stage Trade Finance Contract Event Acknowledgement Stage To Fact Trade Finance Contract Event Acknowledgement Stage
402	Load Stage Trade Finance Contract Amendment Status Stage To Fact Trade Finance Contract Amendment Status Stage
403	Load Stage Loans Serviced To Fact Loans Serviced
404	Load Stage Assets Sold To Fact Assets Sold
405	Load Stage Account Rating Details To Fact Account Rating Details
406	Load Stage Fixed Assets Details To Fact Fixed Assets Details
407	Load Stage Benchmark Details To Fact Benchmark Details
408	Load Stage Accounting Head Details To Fact Accounting Head Details
409	Load Stage Campaign Summary To Fact Campaign Summary
410	Load Stage Collateral Debt Swap Spreads To Fact Collateral Debt Swap Spreads
411	Load Stage Collector Contacts To Fact Collector Contacts

No	Task
412	Load Stage Shareholding Percent To Fact Shareholding Percent
413	Load Stage Equity Other Asset Losses To Fact Equity Other Asset Losses
414	Load Stage Forecast Economic Indicator To Fact Forecast Economic Indicator
415	Load Stage Market Instrument Contract To Fact Market Instrument Contract
416	Load Stage Payment Schedule To Fact Payment Schedule
417	Load Stage Days Past Due Transition Matrix To Fact Days Past Due Transition Matrix
418	Load Stage Other Services To Fact Other Services
419	Load Stage Interbank Transactions To Fact Interbank Transactions
420	Load Stage Recoveries To Fact Recoveries
421	Load Stage Service Requests To Fact Service Requests
422	Load Stage Service Plans To Fact Service Plans
423	Load Stage Branch Transactions To Fact Branch Transactions
424	Load Stage Account Effective Interest Rates To Fact Account Effective Interest Rates
425	Load Stage Rating Transition Matrix To Fact Rating Transition Matrix
426	Load Stage Account Position Pair To Fact Account Position Pair
427	Load Stage Entity Parent Details To Fact Entity Parent Details
428	Load Stage Channel Session To Fact Channel Session
429	Load Stage Partner Expense To Fact Partner Expense
430	Load Stage Operation Risk External Loss Threshold To Fact Operation Risk External Loss Threshold
431	Load Stage Peer Information To Fact Peer Information
432	Load Stage Social Media Post To Fact Social Media Post
433	Load Stage Account Restriction To Fact Account Restriction
434	Load Stage Internal Operational Risk Loss To Fact Internal Operational Risk Loss
435	Load Stage Prepayment Parameters To Fact Prepayment Parameters
436	Load Stage Prepayment Rates To Fact Prepayment Rates
437	Load Stage Mitigants Counter Guarantee Details Table To Fact Mitigants Counter Guarantee Details Table

No	Task
438	Load Stage Interest Rate Curve Rates To Fact Interest Rate Curve Rates
439	Load Stage Inflation Rates To Fact Inflation Rates
440	Load Stage External Underlying Account Rating Details Table To Fact External Underlying Account Rating Details Table
441	Load Stage External Operational Risk Loss To Fact External Operational Risk Loss
442	Load Stage Account Anticipatory Profile To Fact Account Anticipatory Profile
443	Load Stage Employee Trading Restriction To Fact Employee Trading Restriction
444	Load Stage Instrument Trading Restriction To Fact Instrument Trading Restriction
445	Load Stage Mitigant Charge Details To Fact Mitigant Charge Details
446	Load Stage Interest Rate Volatility Rate History To Fact Interest Rate Volatility Rate History
447	Load Stage Litigation Details To Fact Litigation Details
448	Load Stage Account Credit Quality Status Details To Fact Account Credit Quality Status Details
449	Load Stage Behaviour Pattern Non Replicating Portfolio To Fact Behaviour Pattern Non Replicating Portfolio
450	Load Stage Credit Quality Details To Fact Credit Quality Details
451	Load Stage Credit Derivative Fee Cash Flows To Fact Credit Derivative Fee Cash Flows
452	Load Stage Cheapest To Deliver Mappings To Fact Cheapest To Deliver Mappings
453	Load Stage Distance To Default To Fact Distance To Default
454	Load Stage Depository Receipt Issue Mapping To Fact Depository Receipt Issue Mapping
455	Load Stage Equity Arbitrage Strategy Mapping To Fact Equity Arbitrage Strategy Mapping
456	Load Stage External Reporting Group To Fact External Reporting Group
457	Load Stage Fund Equity Investments To Fact Fund Equity Investments
458	Load Stage Nettable Liabilities To Fact Nettable Liabilities
459	Load Stage Obligor Details To Fact Obligor Details
460	Load Stage Risk Adjusted Pricing Details To Fact Risk Adjusted Pricing Details
461	Load Stage Foreign Currency Utilization Details To Fact Foreign Currency Utilization Details
462	Load Stage Issuer Type To Fact Issuer Type
463	Load Stage Internal Allocation Factor To Fact Internal Allocation Factor

No	Task
464	Load Stage Internal Scenario Correlation Matrix To Fact Internal Scenario Correlation Matrix
465	Load Stage Reported Market Sale To Fact Reported Market Sale
466	Load Stage Correspondent Markets Served To Fact Correspondent Markets Served
467	Load Stage Correspondent Products Served To Fact Correspondent Products Served
468	Load Stage Customer Country Relation To Fact Customer Country Relation
469	Load Stage Employee Phone To Fact Employee Phone
470	Load Stage Mutual Fund Breakpoint To Fact Mutual Fund Breakpoint
471	Load Stage Instrument Group Member To Fact Instrument Group Member
472	Load Stage Operation Risk Internal Loss Threshold To Fact Operation Risk Internal Loss Threshold
473	Load Stage Peer Product Details To Fact Peer Product Details
474	Load Stage Product Riders To Fact Product Riders
475	Load Stage Legal Entity Rating Details To Fact Legal Entity Rating Details
476	Load Stage High Run Off Category To Fact High Run Off Category
477	Load Stage Forecast Balances To Fact Forecast Balances
478	Load Stage Underwriting Positions To Fact Underwriting Positions
479	Load Stage Account Customer Relationship Change To Fact Account Customer Relationship Change
480	Load Stage Unit Of Measure Allocation Factor To Fact Unit Of Measure Allocation Factor
481	Load Stage Product Rate Matrix Table To Fact Product Rate Matrix Table
482	Load Stage Financial Spread Map To Fact Financial Spread Map
483	Load Stage Operational Risk Loss Scenario Bucket Data To Fact Operational Risk Loss Scenario Bucket Data
484	Load Stage External Scaling Factor To Fact External Scaling Factor
485	Load Stage Account Lendable Percent To Fact Account Lendable Percent
486	Load Stage Blocked Deposit Details To Fact Blocked Deposit Details
487	Load Stage Additional Insurance For High Balance To Fact Additional Insurance For High Balance
488	Load Stage Instrument Lendable Percent To Fact Instrument Lendable Percent

No	Task
489	Load Stage Staging For Lifetime Value Of Product By Customer Segment To Fact Staging For Lifetime Value Of Product By Customer Segment
490	Load Stage Options Conversion Detail To Fact Options Conversion Detail
491	Load Stage Dividend Protection Detail To Fact Dividend Protection Detail
492	Load Stage Forward Accumulated Fx Targets To Fact Forward Accumulated Fx Targets
493	Load Stage Legal Entity Consolidation Map To Fact Legal Entity Consolidation Map
494	Load Stage Trade Finance Goods Category Table To Fact Trade Finance Goods Category Table
495	Load Stage Application Group Event Decision To Fact Application Group Event Decision
496	Load Stage Inflation Index Rate To Fact Inflation Index Rate
497	Load Stage Entity Org Exchange Map To Fact Entity Org Exchange Map
498	Load Stage Trade Finance Goods Alternate Currency Values To Fact Trade Finance Goods Alternate Currency Values
499	Load Stage Party Financial Institution Identification Details To Fact Party Financial Institution Identification Details
500	Load Stage Commodity Location Details To Fact Commodity Location Details
501	Load Stage Customer Anticipatory Profile To Fact Customer Anticipatory Profile
502	Load Stage Survey Response To Fact Survey Response
503	Load Stage Compensation Details To Fact Compensation Details
504	Load Stage Entity Measure Summary To Fact Entity Measure Summary
505	Load Stage Unit Of Measure Covariance Data To Fact Unit Of Measure Covariance Data
506	Load Stage Scenario Covariance Data To Fact Scenario Covariance Data
507	Load Stage Unit Of Measure Modeling Parameters To Fact Unit Of Measure Modeling Parameters
508	Load Stage Sma Score Rule Staging For Influencer Score To Fact Sma Score Rule Staging For Influencer Score
509	Load Stage Interest Rate Curve Volume Surface Rate History To Fact Interest Rate Curve Volume Surface Rate History
510	Load Stage Legal Entity Gaap Map To Fact Legal Entity Gaap Map
511	Load Stage Market Risk Portfolio Actual Profit And Loss Value To Fact Market Risk Portfolio Actual Profit And Loss Value

No	Task
512	Load Stage Interest Rate Index To Fact Interest Rate Index
513	Load Stage Legal Entity Details To Fact Legal Entity Details
514	Load Stage Party Account Role Map To Fact Party Account Role Map
515	Load Stage Watchlist Member Entry To Fact Watchlist Member Entry

8

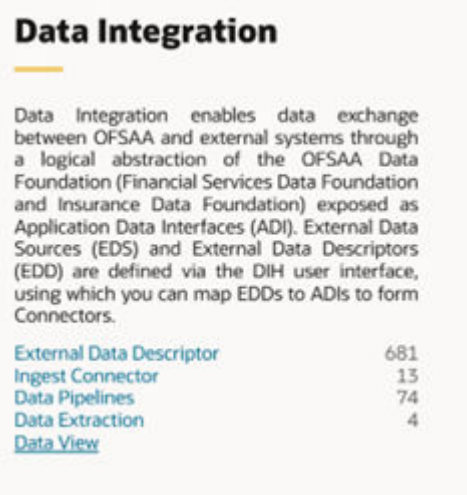
Data Visualization

Data Foundation Cloud Service (DFCS) provides users with a powerful Data Visualization feature to visualize loaded source data and processed results data directly via user interface. The process of data visualization is very user friendly and does not require any query language skills like SQL. Custom visualization report can be generated via direct drag and drop feature and can further be used to analyze data insights effectively. This feature enables users to explore and visualize data across the following key sections:

- Source data
- Results data
- Sample reports and KPIs
- Data Quality dashboard
- General Ledger Reconciliation dashboard
- Custom attributes
- Data Visualization is available via the below path:

  DFCS Main landing page -> View Data

Figure 8-1 Data Integration



8.1 Data Browser

8.1.1 Source Data

Source data visualization enables the user to view raw data loaded into staging entities post data loading. This enables user to view the loaded data and ensure that it is as expected. Data visualization is supported for pre-built datasets and is best suited for scenarios where a query will return a few rows of the output.

Source Data Visualization is intended to provide authorized users tactical access to data that is moved into DFCS Data Store. Such tactical access is used for verification purposes, primarily in Test and Non-Production instances.

There are two ways to view source data:

1. Custom source data view
2. Pre-configured source data View

8.1.1.1 Custom Source Data View

User can create new visualization reports to view data for specific attributes that are not a part of pre-configured staging data visualization.

User can create new visualization reports to view data for specific attributes that are not a part of pre-configured staging data visualization.

Create (top right of screen) -> Workbook -> Datasets -> Search for relevant source entity

- Navigate to **Create** on top right of the screen, select **Workbook** > **Datasets** > **Search** for relevant entity.

Figure 8-2 Custom source data view

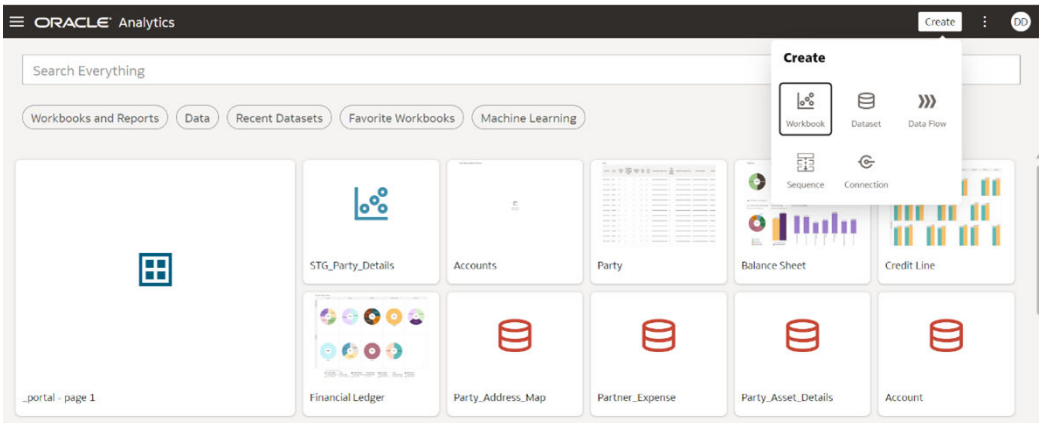


Figure 8-3 Custom source data view 2

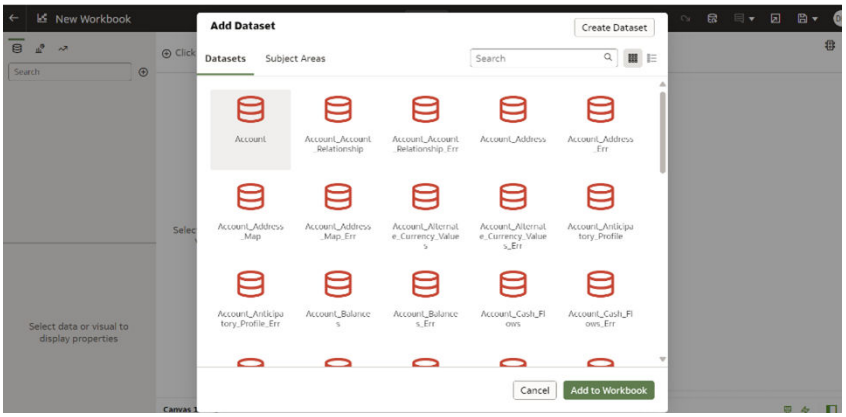
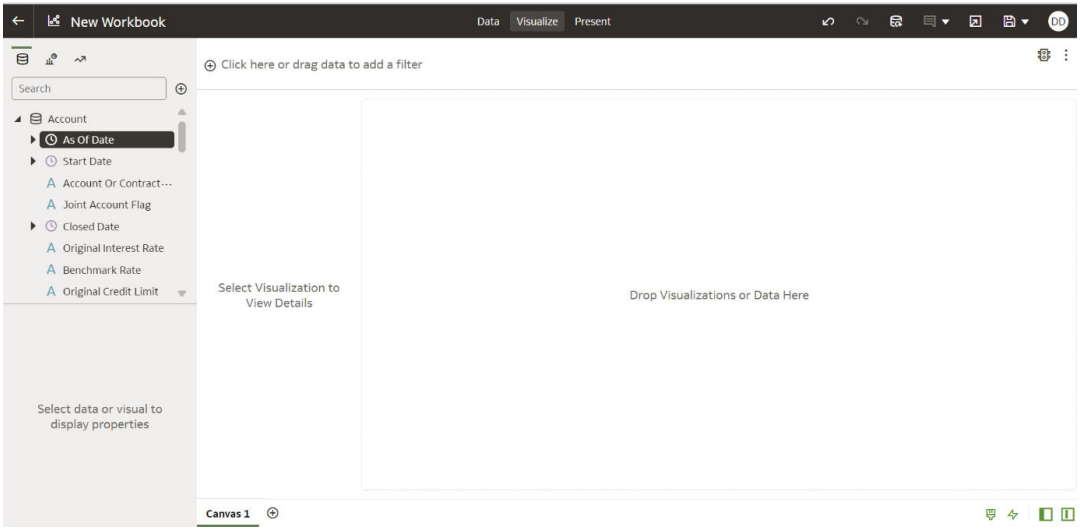


Figure 8-4 Custom source data view 3



8.1.1.2 Pre-configured source data View

User can view subset of staging data that is loaded from the source systems for a selected pre-configured set of attributes. This is a restricted view that allows users to view only selected attributes that hold the most commonly referred data. The benefit of having this restricted view is faster data load and focused visualization of important data only. The solution also aggregate queries with appropriate filters for use against any dataset.
Data Visualization provided with DFCS can be accessed via following navigation paths:

- Home -> Catalog -> Shared folders -> Data Foundation reports -> Source Data -> Banking -> Subject Area -> Individual source entity.

Figure 8-5 Pre-configured source data view

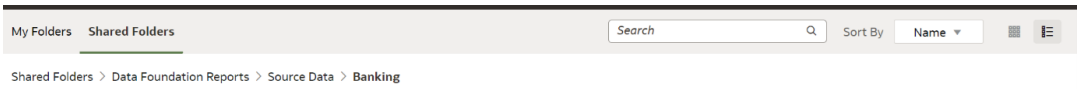
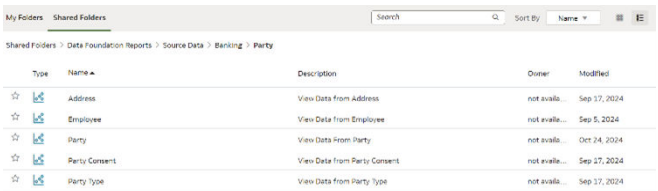


Figure 8-6 Pre-configured source data view 2



8.1.1.3 Exporting data

Data visualization (source data or results data) can be exported in various format like excel, csv, PowerPoint and image.

Steps to export data:

1. Right click on **Data** -> **Edit**-> **Copy** -> **Paste** to excel.
2. Right click on **Data** -> **Export** -> **File** -> **Chose** format (PowerPoint, image, pdf or csv).

Figure 8-7 Party Financials

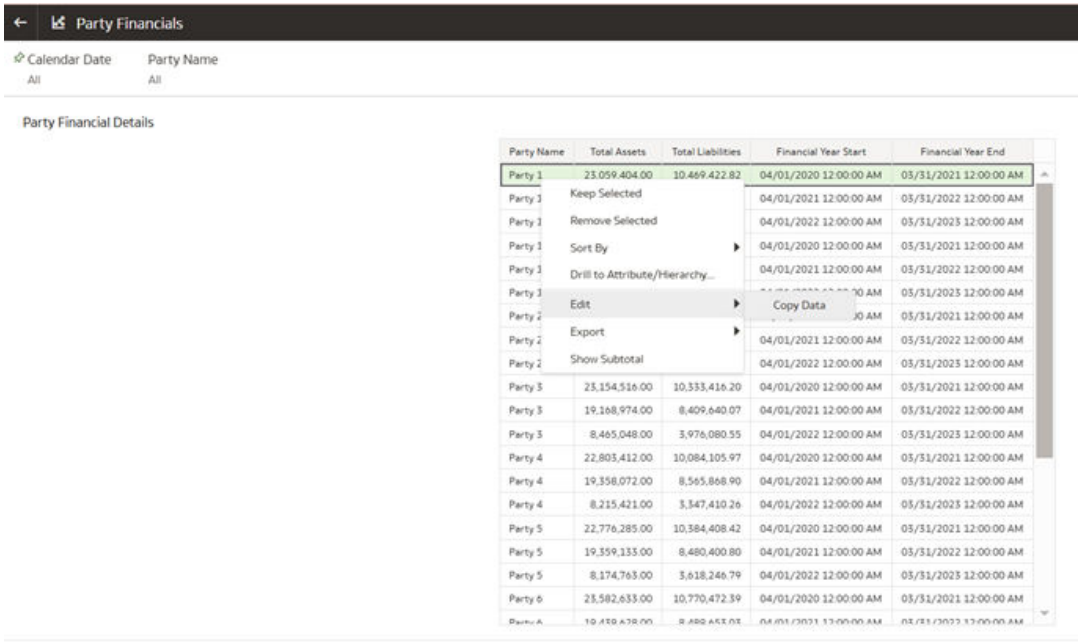


Figure 8-8 Party Financials Export

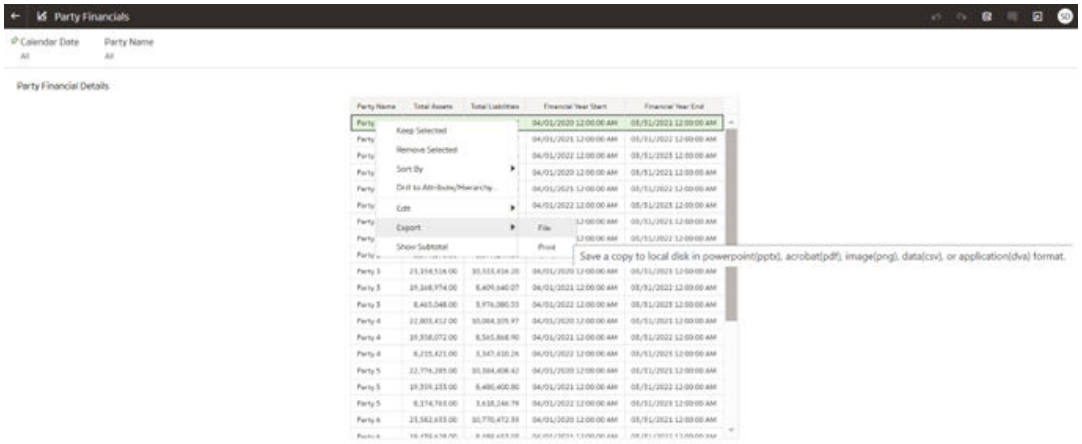
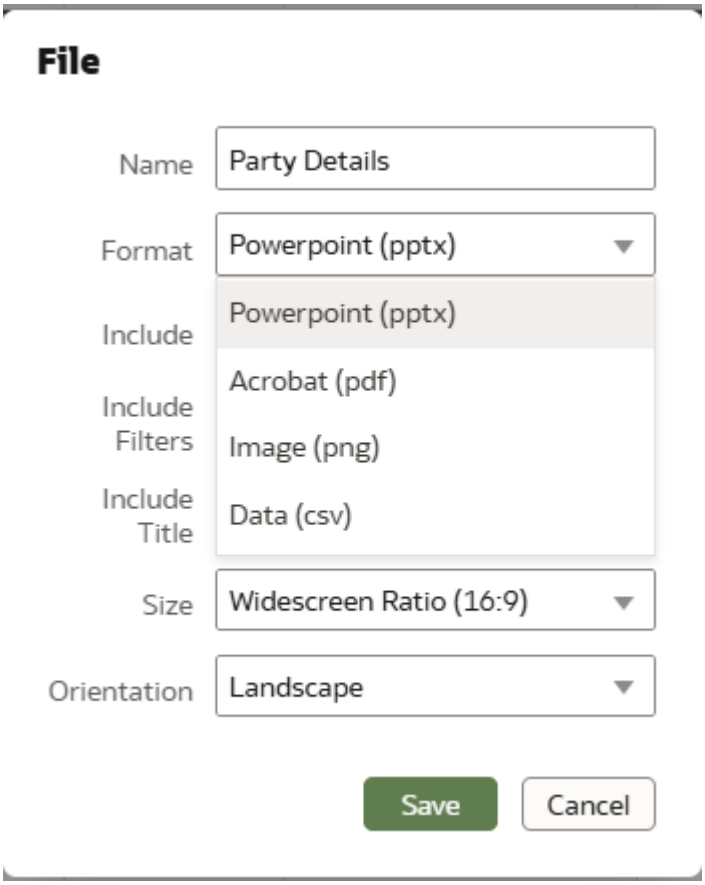


Figure 8-9 Party Financials File



8.1.2 Results Data

DFCS supports result entities' data visualization based on pre-defined out-of-the-box datasets called subject areas. Each **subject area** is a pre-configured dataset that brings together all fact entities of similar grain and includes pre-defined relationships with their related dimension entities. **Customized results data visualization canvases** can be created by user to enable them or other staff to access and analyze results data more as per their specific requirement for a given subject area. The service offering also includes pre-built sample dashboards called **sample reports** for user to view results data.

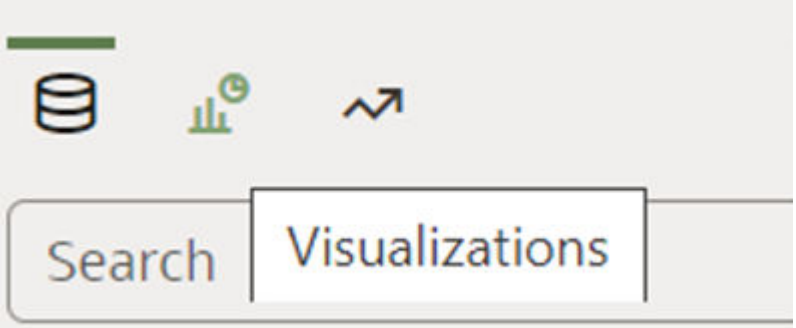
Results Data visualization represents view of results (fact) data either via tables or via various graphics forms such as charts, pie graphs, scatter plots and other such sophisticated forms. Visualization can be for out-of-the box sample dashboards or custom requirements of user. There are many visualizations options that help user display data in the form of tables or various graphs and charts. Visualizations options include but are not limited to tabular data, pivots, bar graphs (Vertical, horizontal, stacked bar, etc.) pie charts, line graphs, scatter graphs, tree map, etc. This makes it easier for user to spot patterns and trends in massive data sets that are hard to identify with the naked eye. These interactive dashboards can be created by a business user to enable self and other staff to access information more easily, as data visualizations created by one user can be shared with other users too. Each graphical element has the potential to provide granular information that updates all visualizations in the dashboard as the user drills down into finer and finer detail even on a single given visualization.

To summarize, the main goal of results data visualization is to:

- Make results (fact) data available for user for each subject area or granularity.
- Make results (fact) data available for user for tabular view without the need to write complex SQL queries or without any dependency on any third party application.
- Make results (fact) data available via graphic visualizations for data analysis and MIS reporting.
- Access out of the box sample pre-built visualizations and sample reports for each subject area.
- Access granular data via drill through.
- Share data visualizations custom created by one user with other users within the organization.
- Access sample Key performance Indicators (KPIs).
- Options to export reports to multiple formats such as Microsoft Excel, Microsoft PowerPoint, PDF, and so on.

Visualization options can be seen in LHS top under the **Visualizations** button.

Figure 8-10 Visualization



There are two ways to view results data:

1. Custom results data view

2. Pre-configured sample reports

8.1.2.1 Subject Area

Subject Area (SA) is defined as a pre-configured dataset of all fact entities (including their attributes) and their related dimension entities that are relevant to a given functional area. For Eg: Accounts subject area enables user to access all results data for account granularity, including the relevant dimensions like product type, party type, account rating, etc. Subject Areas will help users to access specific list of entities and attributes needed for a particular functional area so they can easily view data within that domain. Most subject areas combine entities within same grain, but some can have more than 1 granularity as well. For Eg: Account subject area has most entities of account grain, but does have some other granularities like account-rating, account-address grain. For optimum data extraction, it is very helpful for a user to go through Subject Area Granularity before extracting data within a given subject area.

8.1.2.2 List of subject areas supported

The subject areas will be enhanced in future releases to accommodate for more specific granularities.

Below is the list of subject areas currently supported:

- Accounts
- Credit Line
- Data Quality Results
- Financial Accounting Entries
- Financial Ledger
- GL Reconciliation
- Party Details

> **Note:**
>
> Subject Areas come as part of out-of-the-box configuration and can't be created or modified by user. For any requirement related to subject area update, user will need to raise a support request.

8.1.2.2.1 Subject Area Glossary

Each subject area has it's pre-defined glossary that documents below:

- List of all result entities included in the subject area
- Entity granularity of each result entity based on it's primary keys
- Attribute name and detailed attribute description for all primary keys
- Entity relationships that define relation of attributes with related dimension entity and the related attribute

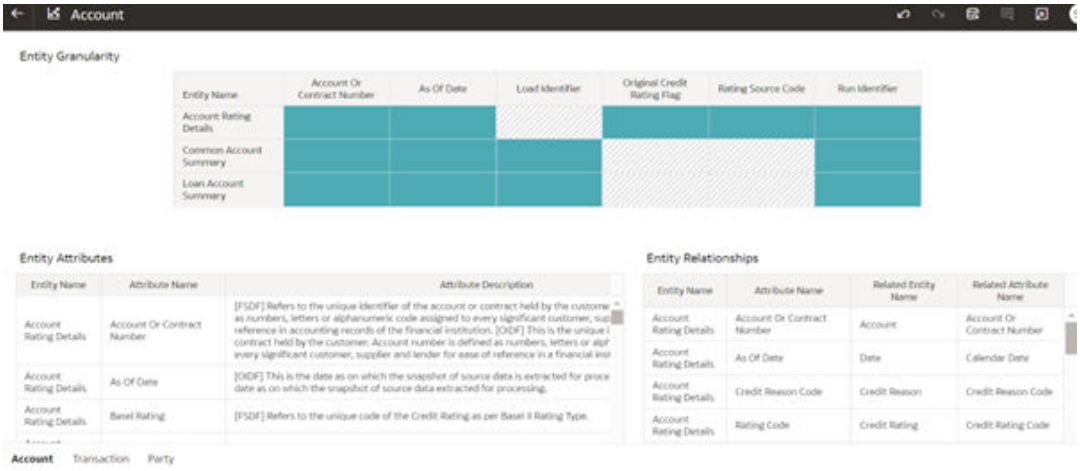
Subject Area Glossary is very useful for user to determine which attributes can be combined together in a single visualization to give meaningful data. A single visualization should include attributes of similar granularities, else the data may lead to Cartesian join issue.

For Example: All attributes from Common Account Summary and Loan Account Summary can be viewed in a single visualization. However, Value measures attributes like End of Period Balance (EOP Bal) for loans can't be combined from Account Rating Details and Common Account Summary. As an example, if an account has 3 credit ratings from multiple rating agencies, it will have 3 rows for same account with 1 row for each account, and hence repeating EOP Bal in each row, which might lead to EOP balance being aggregated thrice for a single account. The only logical single visualization recommended in such cases is to view rating and account mapping, without including any measure attributes and without aggregating them.

Subject Area Glossary can be accessed as below:

- Home -> Catalog -> Shared folders -> Subject Area Glossary

Figure 8-11 Subject Area Glossary



8.1.2.3 Custom results data view

User can create new visualization reports to view data for specific attributes of results entities. Steps to view custom source data in Data View UI are as below.

- Top Right Corner -> Create -> Workbook -> Subject Area -> Choose Subject Area -> (new Workbook is created)

Figure 8-12 Custom results data view

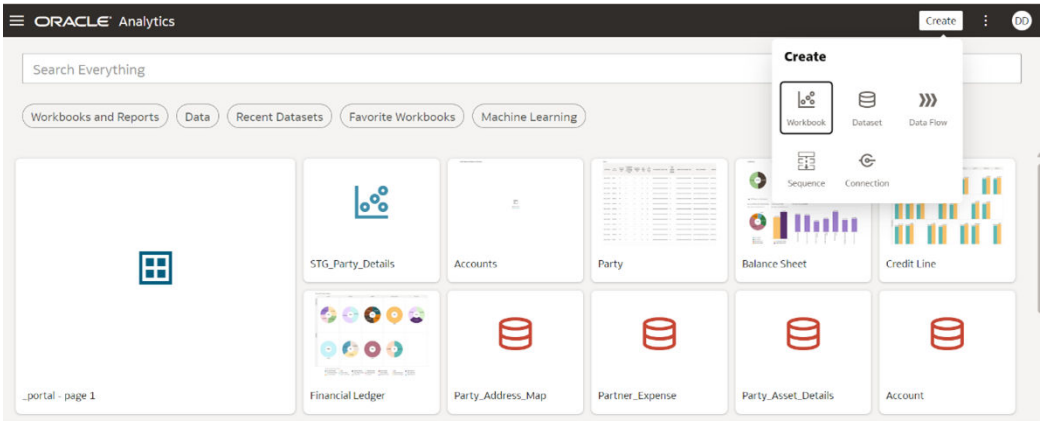


Figure 8-13 Add Dataset

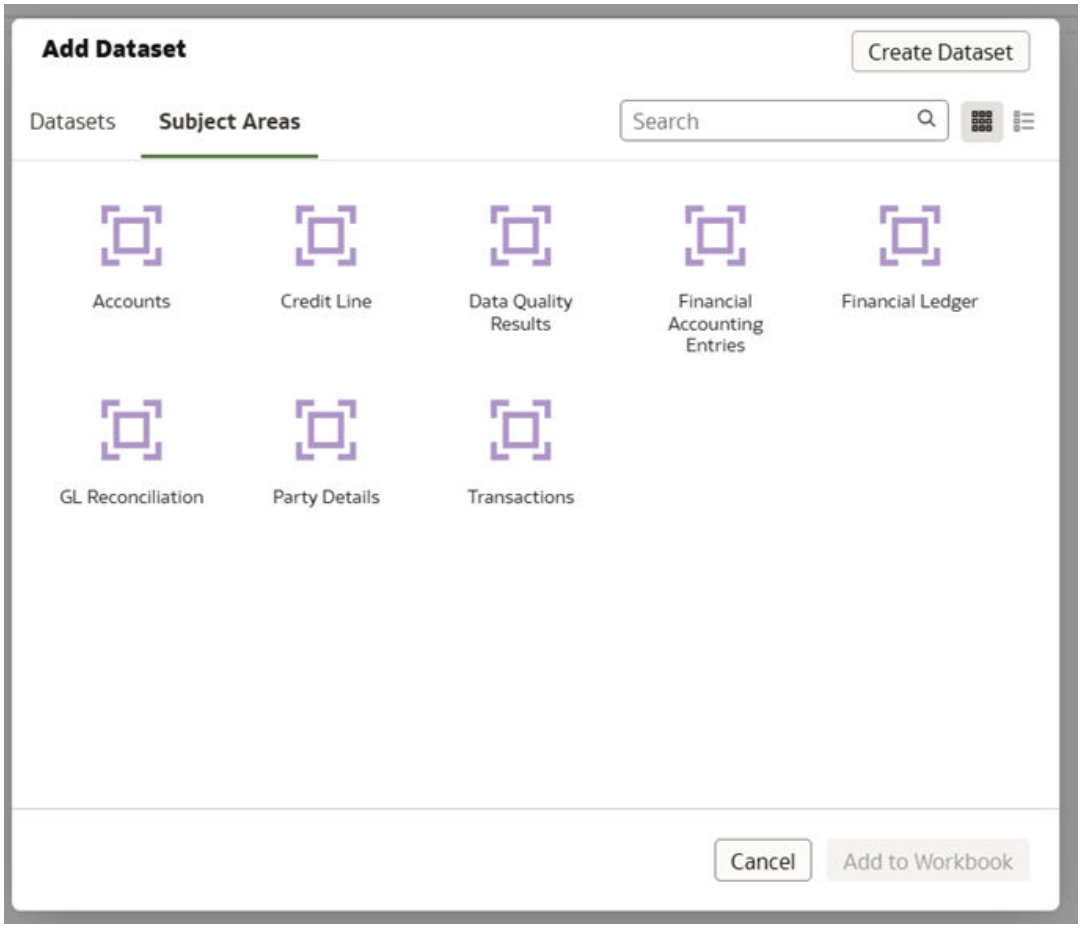
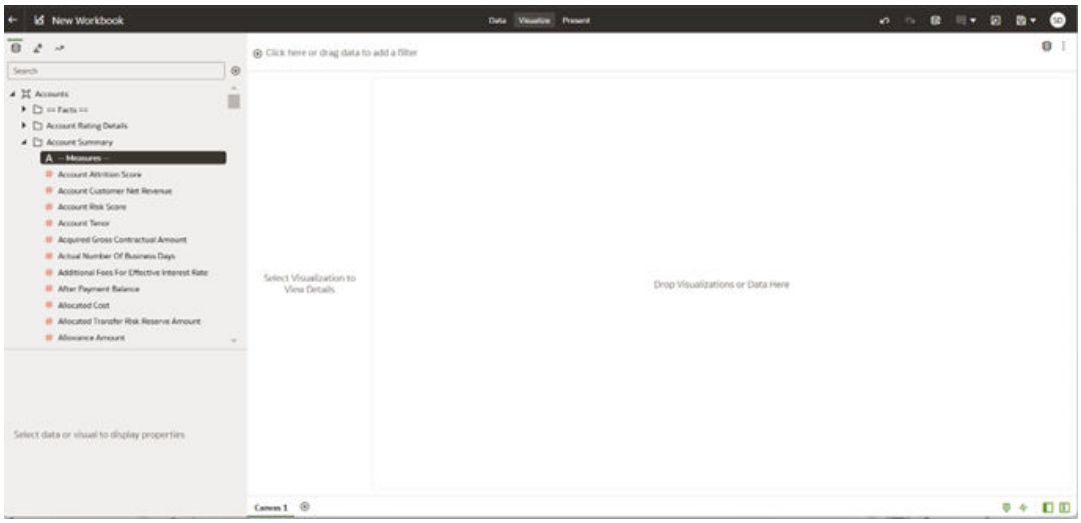


Figure 8-14 New Workbook



Each workbook can have multiple Canvases, similar to the way excel workbook has multiple sheets.

Each Canvas can have multiple visualizations, similar to the way single excel sheet can have multiple graphs in single sheet. Maximum of 6 visualization are recommended in a single canvas for optimum system performance.

User can drag and drop attributes required for analysis from left hand side (LHS) under **data** button. This process is very user-friendly and doesn't require the abilities of SQL query writing to fetch data.

Figure 8-15 Data button

Attributes are displayed in data tab in following order:

- Fact entities in alphabetical order based on Entity logical name
- Dimension entities based on alphabetical order
- Attributes displayed in alphabetical order within fact and dimension entities
- 'My Calculations' on left bottom will display any calculation formulae added by user

Users can add calculation formula for value measures displayed in the view.

Users can also save and share these custom report created with other users.

8.1.2.4 Exporting Data

Data visualization (source data or results data) can be exported in various format like excel, csv, PowerPoint and image.

Steps to export data:

1. Right click on **Data** -> **Edit**-> **Copy** -> **Paste** to excel.
2. Right click on **Data** -> **Export** -> **File** -> Chose format (PowerPoint, image, pdf or csv).

Figure 8-16 Data visualization Party Financial Details

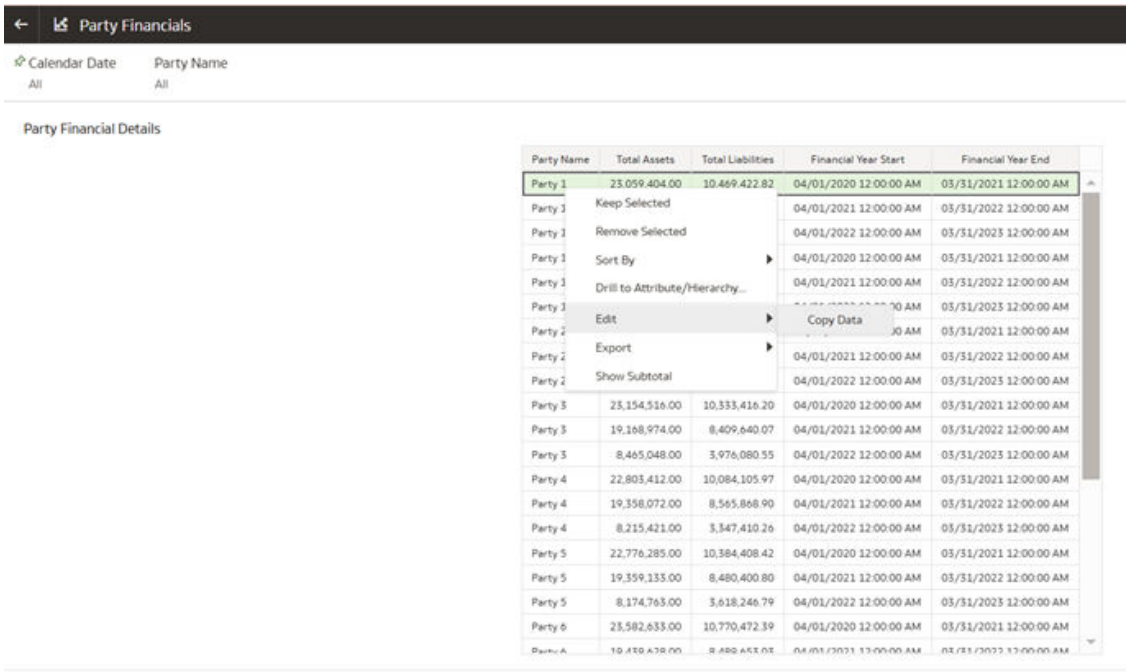


Figure 8-17 Data visualization Party Financial Details Export

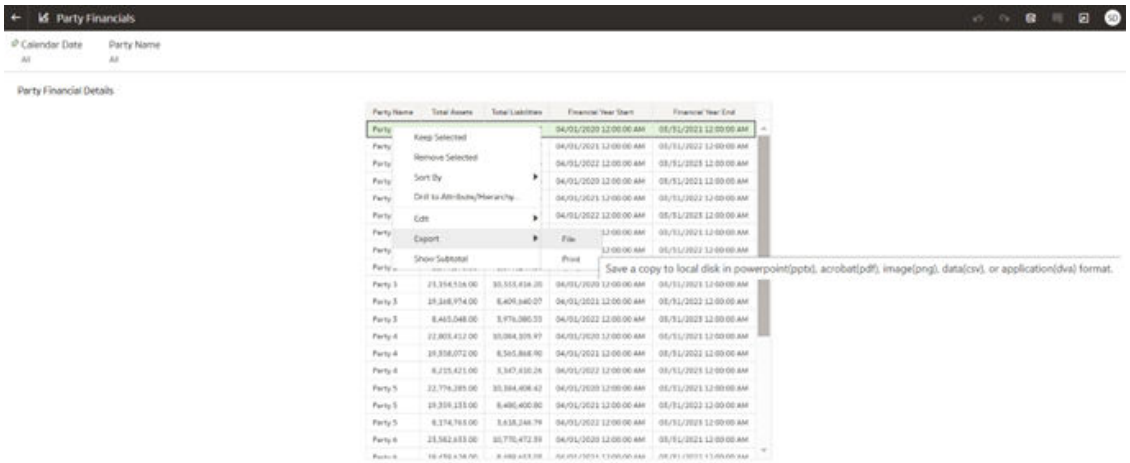
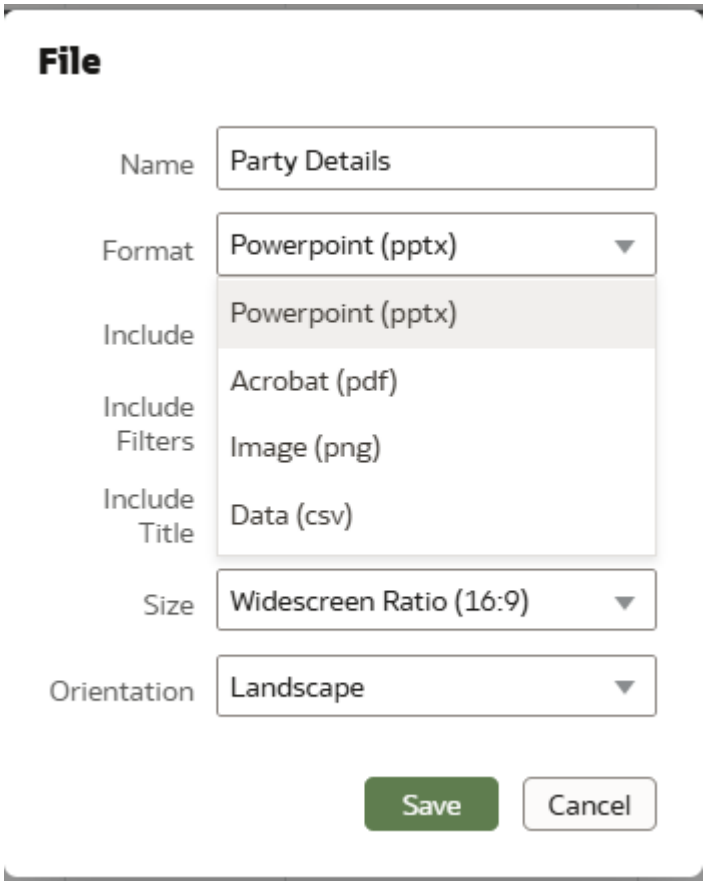


Figure 8-18 Data visualization Party Financial Details Export File



8.1.2.5 Sample Key Performance Indicators (KPIs)

Key Performance Indicators (KPIs) are pre-calculated values in the solution that measure performance for a specific objective over time. KPIs provide measurable metrics for businesses to track over time and gauge their progress. They also help with insights that help FI business leaders to make data driven decisions, measure their performance and plan at a strategic level.
Some sample KPIs are packaged in out-of-the box product and can't be modified by the user. However, user has the flexibility to create their own KPIs.

The solution aims to cover most indicators used across the banking and FI industry.

Currently, the solution supports Account based KPIs for Loans and Deposits.

To access these visualizations, navigate through the following path:

1. **Home → Catalog → Shared Folders → Data Foundation Custom Reports à Key Performance Indicators à Balance Sheet**

The dashboard has a default set of filters as shown below and further filters can be added by the user.

Figure 8-19 Sample Key Performance Indicators (KPIs)

- To access these visualizations, navigate through the following path: Home → Catalog → Shared Folders → Data Foundation Custom Reports à Key Performance Indicators à Balance Sheet The dashboard has a default set of filters as shown below and further filters can be added by the user.

8.1.2.5.1 Sample Loans and Deposits KPIs

KPIs related to Loans and Deposits KPIs are included as part of out of the box product. Users can create their own KPIs and visualizations for that for their custom requirements.

> **Note:**
>
> This user guide does not explain individual visualization chart details, their calculation logic and their interpretation as that is included as part of KPI glossary.

8.1.2.5.1.1 End of Period

This report presents a comparative analysis of Total Loans and Total Deposits as of specific date, allowing users to examine the balance sheet dynamics and assess the relationship between lending activities and deposit mobilization. Please refer to KPI Glossary in solution for further details.

Users have options to choose values for pre-configured filter attributes or add their own filters.

Figure 8-20 End of Period

8.1.2.5.1.1.1 Time Series

This report gives a view into trend analysis of total outstanding loans, deposits and investments over multiple time periods and how they have changed over time. It gives breakdown of deposit types accepted and loan types floated in the market. It also shows

snapshot of Debt and Equity Investments over multiple time periods . Users have options to choose values for pre-configured filter attributes or add their own filters.

Figure 8-21 Time Series

8.1.2.5.1.1.2 Deposit Growth

The Deposit Growth Visualization provides an insightful analysis of a financial institution's deposit portfolio, focusing on key deposit categories of Current or check-in Account and Savings Accounts and their movement over time periods. By offering detailed insights into CASA ratio, total deposits, CASA deposits, and term deposits, users can effectively track and analyze growth trends across different deposit categories.

Figure 8-22 Deposit Growth

8.1.2.5.1.1.2.1 Loans Growth

The Loans Growth Report offers a detailed analysis of loan, credit cards and overdraft performance, highlighting both the total outstanding amounts and growth percentages for each category. It enables users to evaluate lending trends across segments such as personal, business, and auto loans, as well as credit card usage in retail and business domains.

The charts display the total outstanding loan balances across all types of loans and their corresponding growth percentages. It provides an overall view of the organization's lending portfolio and its growth trends over time.

Figure 8-23 Loans Growth Report

8.1.2.5.1.1.2.2 KPI Glossary

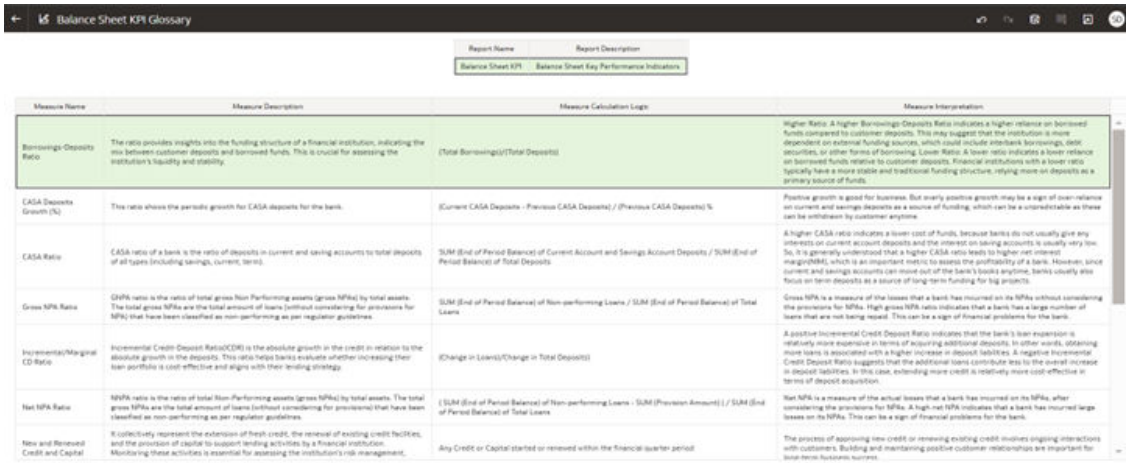
All KPIs come with KPI Glossary that details below:

- KPI Name
- Description
- Calculation logic
- Logical Interpretation

KPI Glossary is made available by right clicking on any of the KPI visualizations as shown below:

Figure 8-24 KPI Glossary

Figure 8-25 KPI Glossary Report



8.1.2.5.1.1.2.3 Drill through for KPIs

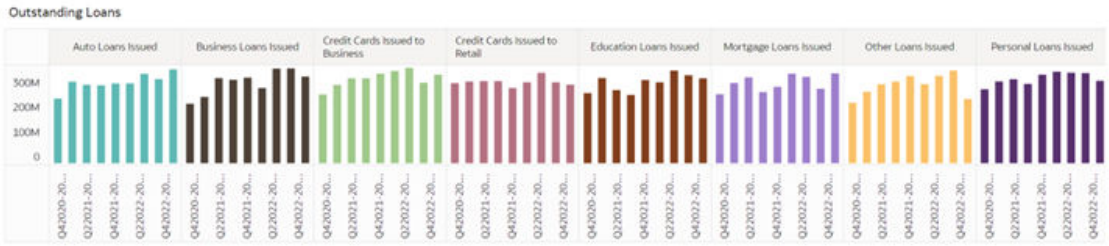
Drill-down functionality enables user to view KPI data at the lowest granularity.

User starts sample report **visualization from results** (fact entities based) -> drill down to **more granular results** (multiple levels of drill down in fact entities) -> View data at **lowest granularity**.

Example:

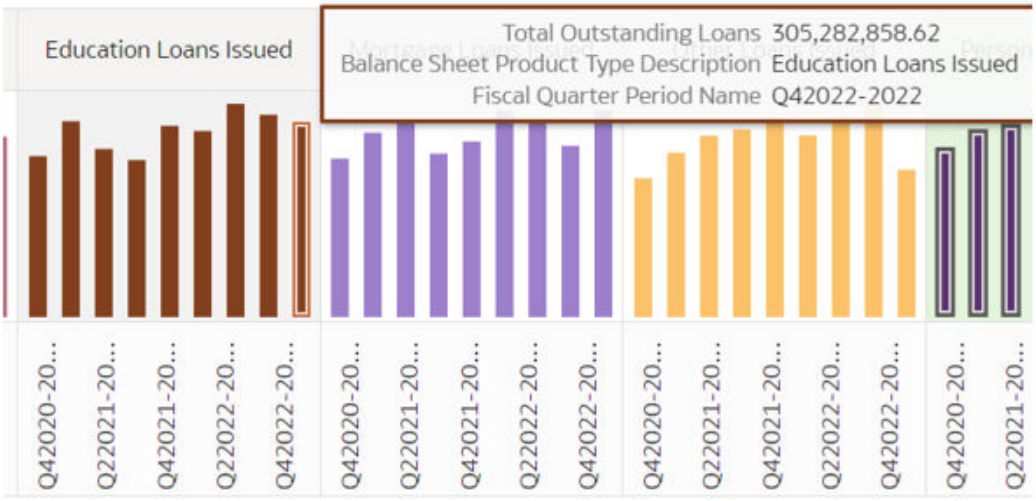
Time Series report -> Education Loans KPI -> Country name drill down -> Party type (or party name) drill down -> Account skey in fact common account summary -> Stage Loan Contracts

Figure 8-26 Drill through for KPIs



Hover over education loans as shown below to look at overall numbers:

Figure 8-27 Balance Sheet KPIs



Right click and select Country name from drill down option as below:

Figure 8-28 Drill

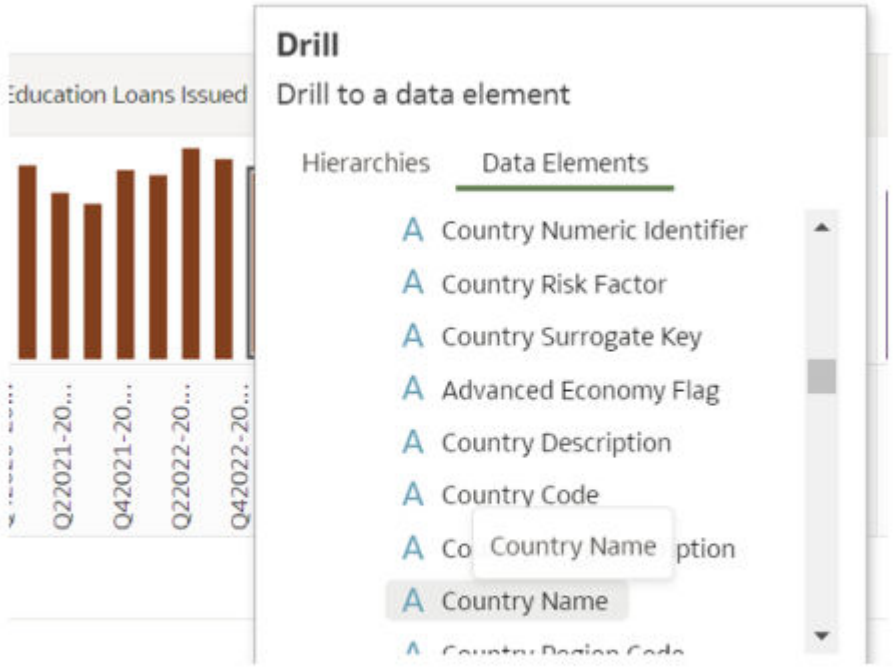


Figure 8-29 Drilldown at Country

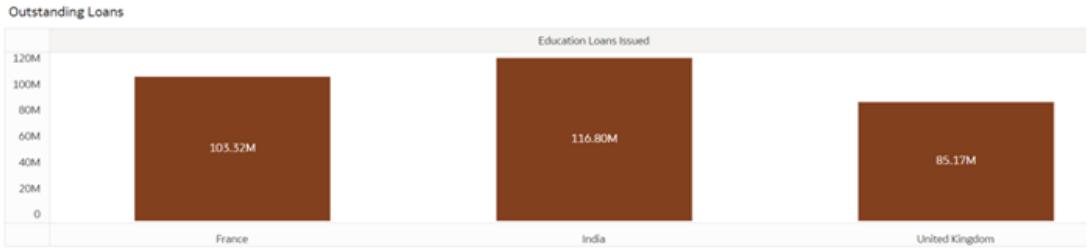


Figure 8-30 Drill down to Party Name

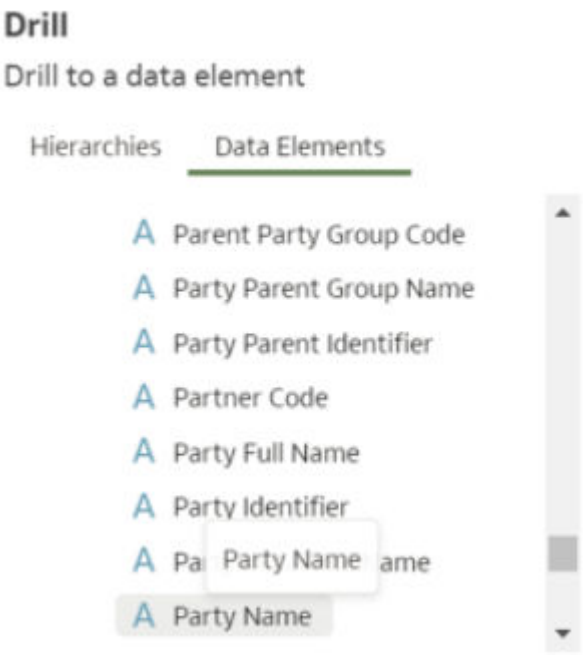


Figure 8-31 Party Name Drill down

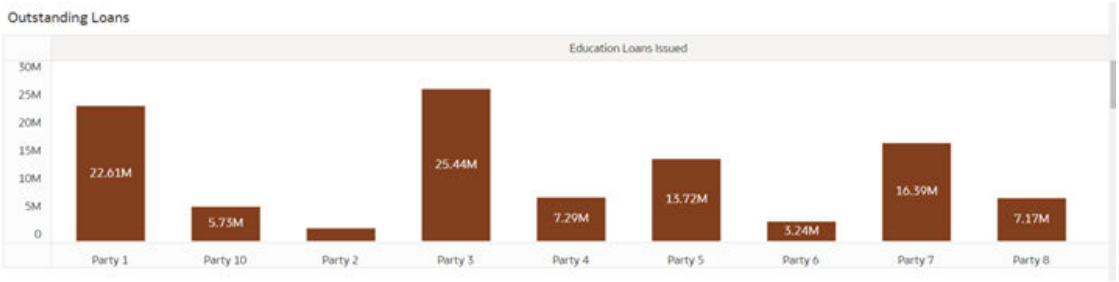


Figure 8-32 Drill down for account level

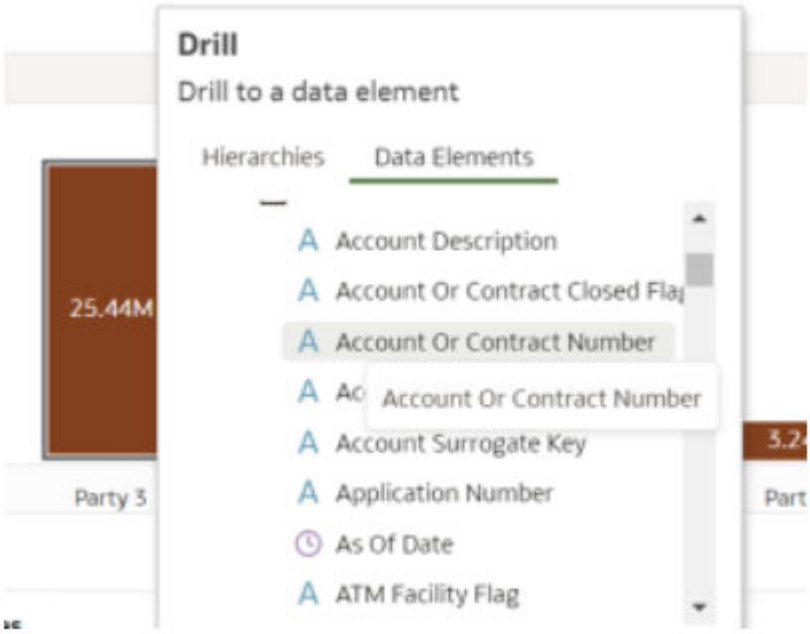
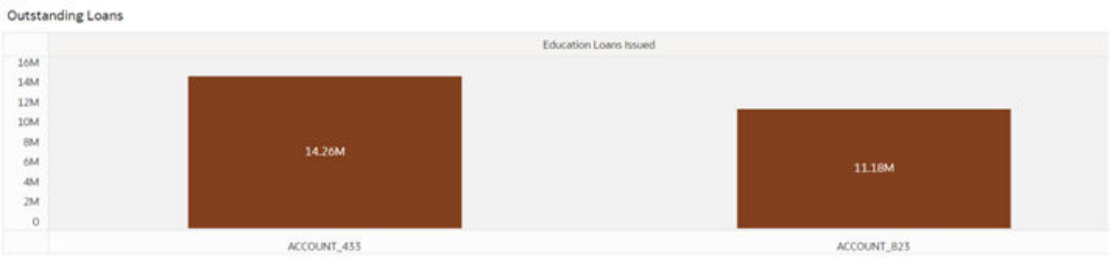


Figure 8-33 Account drilldown



8.1.3 Sample reports

Most of the subject areas have a corresponding sample report for results data visualization. Sample reports have pre-configured tabular data and data visualization dashboards from the entities within the subject area. User can view data for the pre-configured set of attributes in these dashboards. Users will have Read-only access to these reports as they are configured out-of-the-box.

To access these reports, navigate through the following path:

1. Home → Catalog → Shared Folders → Data Foundation Reports.

Figure 8-34 Catalog Shared Folders

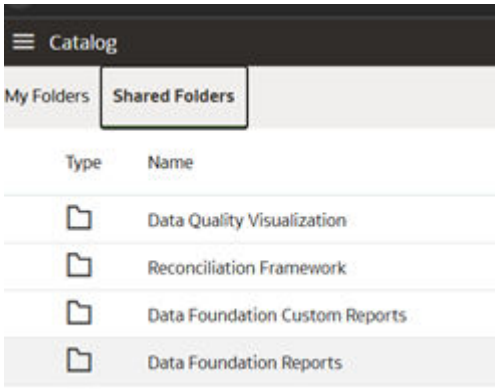


Figure 8-35 Catalog Shared Folders Sample Reports

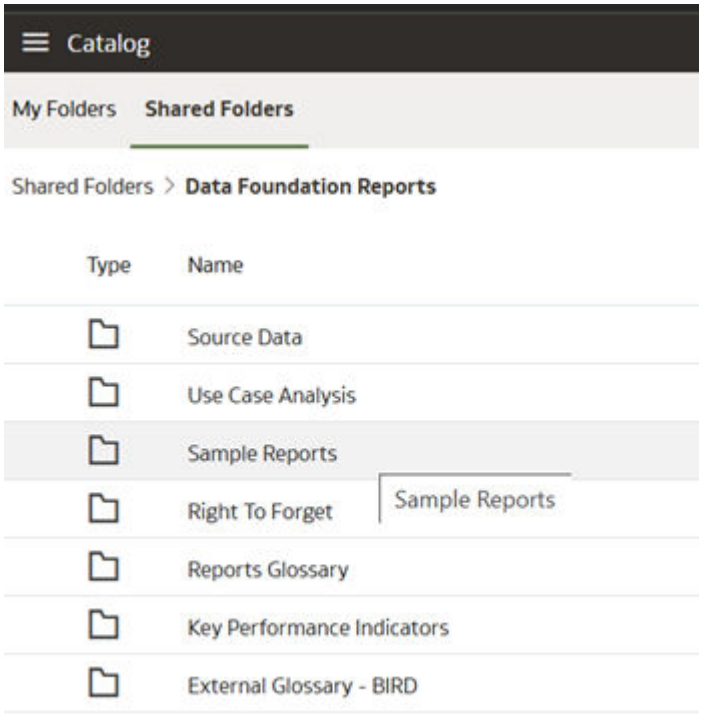
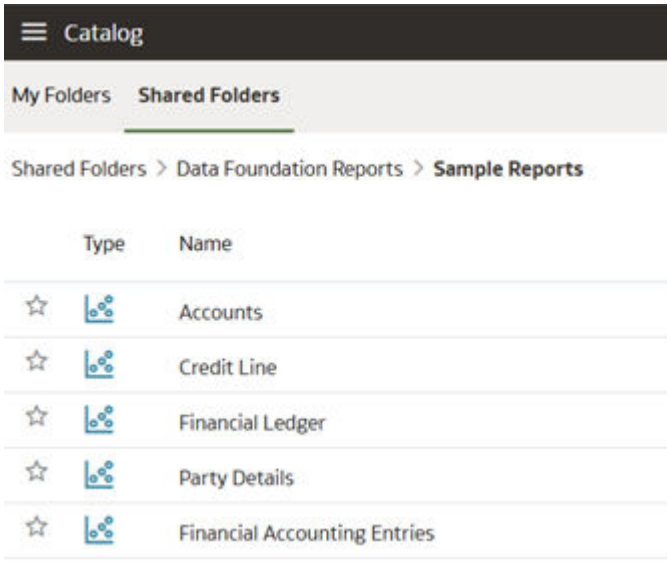


Figure 8-36 Catalog Shared Sample Report



8.1.3.1 Navigation Path

To access these reports, navigate through the following path:

- Home → Catalog → Shared Folders → Data Foundation Reports.

8.1.3.2 Sample Financial Ledger Reporting

Financial Ledger sample report is based on subject area by the same name. It provides stakeholders with an overall summary of institutions' **Chart of Accounts (CoA)** as of the selected date.

General Ledger Analysis and GL Account Distribution

The first two dashboards feature a series of donut visualizations that display the 5 main CoA categories i.e. **Assets**, **Expenses**, **Liabilities**, **Owner's Equity**, and **Revenue.** Each CoA category has separate donut view for every currency where bank has exposure. The donut shows breakdown for the CoA by the types of General Ledger (GL) data for each currency.

For example: For CoA of Assets, banks may have data spread across various currencies. Donut will show view for Assets spread across their natural currencies by various GL types (means asset types here) like Cash, Inventory, Fixed Assets, and so on.

First dashboard shows the data in local currency, whereas second dashboard shows data in common accounting currency. Third dashboard shows data spread across various GL Accounts for Budgeted Vs Actual Vs Forecasted numbers.

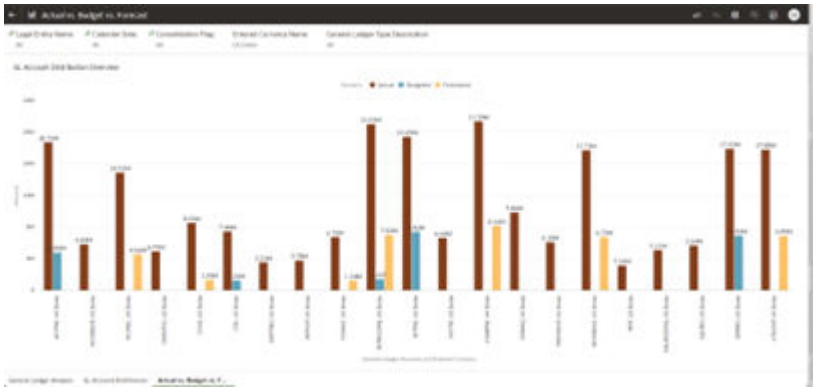
Figure 8-37 General Ledger Analysis

Actual vs Budget vs Forecast

The Actual vs. Budget vs. Forecast visualization provides a view of budgeted GL numbers and their comparison with actual numbers and forecasted numbers for future periods.

By visually depicting these differences, it enables banks to analyze the accuracy of their budgeting and pinpoint areas of over- or under-budget spending, assess alignment with financial goals, and refine future budgets to enhance accuracy and effectiveness in financial planning. Forecasted numbers can give a view into future projections vs current numbers.

Figure 8-38 Actual vs Budget vs Forecast

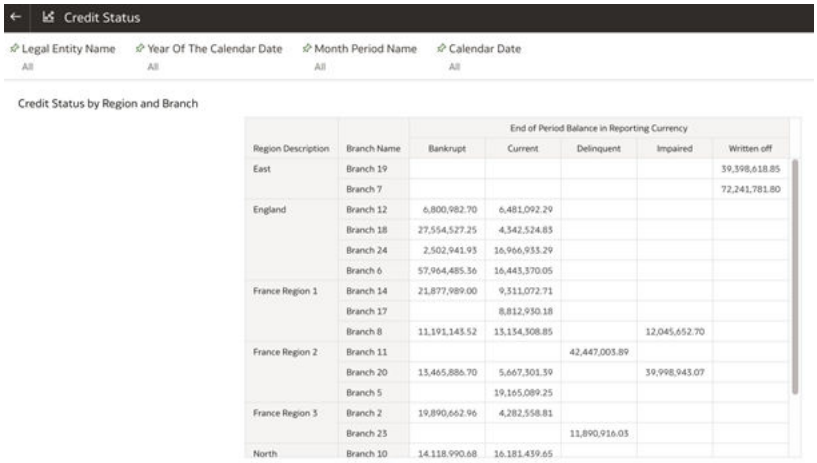


8.1.3.3 Sample Accounts Reporting

This sample report is based on Accounts subject area. It provides stakeholders with an overall summary of credit status of institution'sassets such as loans as of the selected date.

Credit Status: This provides a view of end-of-period balance in the reporting currency by credit status across regions and branches. It enables stakeholders to assess the health of credit portfolios and identify areas requiring attention. This helps in monitoring regional and branch-level credit performance and risk exposure and helps identifying if any specific region or branch needs attention.

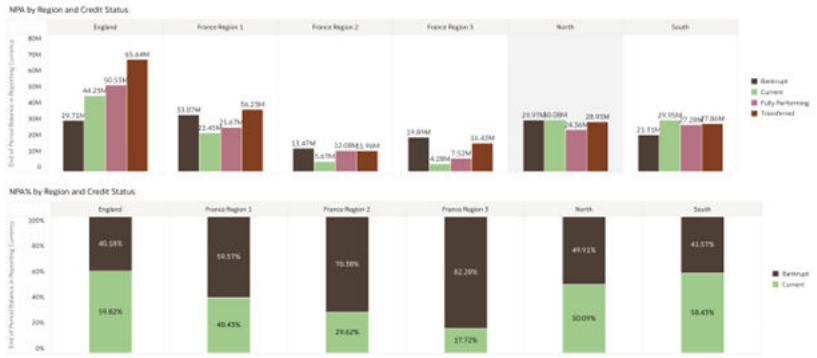
Figure 8-39 Credit Status



Region Description	Branch Name	End of Period Balance in Reporting Currency				
		Bankrupt	Current	Delinquent	Impaired	Written off
East	Branch 19					39,398,618.85
	Branch 7					72,241,781.80
England	Branch 12	6,800,982.70	6,481,092.29			
	Branch 18	27,554,527.25	4,342,524.83			
	Branch 24	2,502,941.93	16,966,933.29			
	Branch 6	57,964,485.36	16,443,370.05			
France Region 1	Branch 14	21,877,989.00	9,311,072.71			
	Branch 17		8,812,930.18			
	Branch 8	11,191,143.52	13,134,308.85		12,045,652.70	
France Region 2	Branch 11			42,447,003.89		
	Branch 20	13,465,886.70	5,667,301.39		39,998,943.07	
	Branch 5		19,165,089.25			
France Region 3	Branch 2	19,890,662.96	4,282,558.81			
	Branch 23			11,890,916.03		
North	Branch 10	14,118,990.68	16,181,439.65			

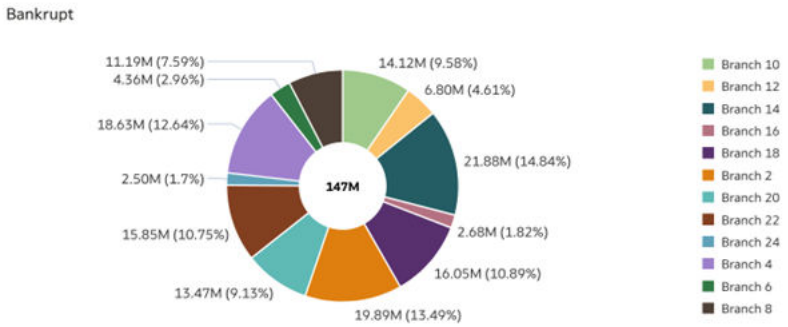
Non Performing Assets: Provides a visual representation of non performing assets (NPAs), where definition of non performing asset is as per jurisdictional regulator and user provides data marking accounts as NPA. This visualization is based on across regions using bar charts. It offers insights into the distribution and health of non-performing assets (NPAs) by region.

Figure 8-40 Non Performing Assets



Branchwise NPA - This displays the distribution of non-performing assets (NPAs) across branches for a particular region, segmented into various credit status categories such as *Bankrupt*, *Impaired*, *Written Off*, and *Delinquent*. This chart provides a view of NPA composition for each branch, enabling stakeholders to quickly assess and compare the extent and type of financial risk across different branches of a given region. This is especially helpful if user sees unexpected data for a given region in previous visualization, and wants to view data spread across branches for that region.

Figure 8-41 Branchwise NPA

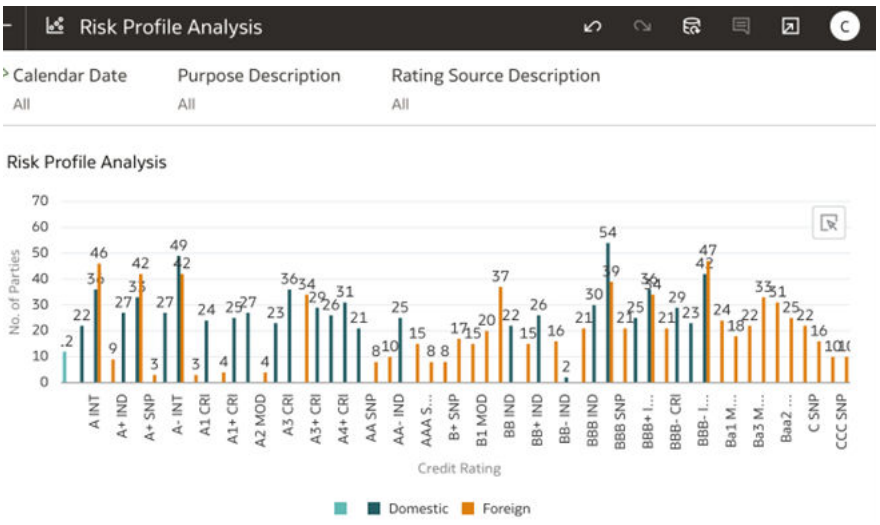


8.1.3.4 Sample Party Details Reporting

This sample report is based on party subject area. It provides stakeholders with an overall summary of parties to which bank has exposure. It gives view into parties and their related parties, along with the financial exposure numbers like total assets vs liabilities outstanding against all parties. It also gives view into parties' risk profile analysis based on their credit rating

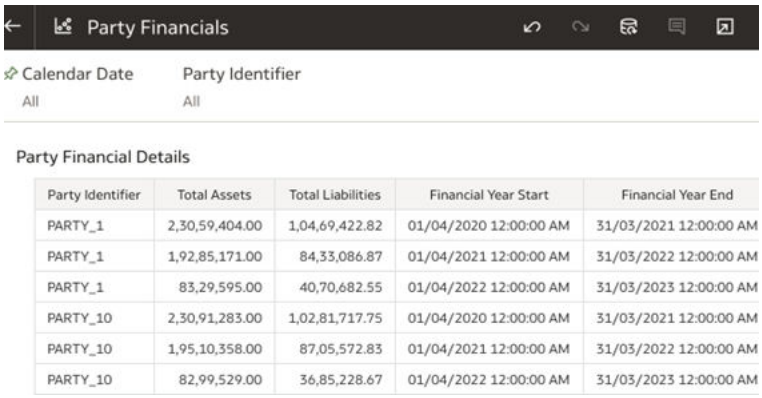
- **Risk Profile Analysis:** This visualization's illustrates the risk profile of parties to which bank has credit exposure to based on their credit ratings as of the selected date. Bar chart displays Credit ratings and number of parties for each credit rating. User has option to filter for Domestic Vs Foreign ratings and rating source code i.e. rating agency based on filter attributes on top of visualization. Each rating source code is represented along with the corresponding count of party identifiers providing a clear view of the distribution of risk ratings. This visualization facilitates in assessing the overall risk landscape of institutions assets like loans, allowing for informed decision-making and risk management strategies. The dashboard features several default filters, such as Calendar date, Purpose description for Domestic/Foreign ccy ratings, Rating Source description enabling users to customize their view based on specific preferences or needs.
  - **Objective**: To highlight the number of parties for each credit rating by a specific Credit Agency and rating purpose.

Figure 8-42 Risk Profile Analysis



- **Party Financial Details:** The visualization displays the total assets and liabilities of the parties for the financial period as per selected Calendar date. Each party is listed with its corresponding asset and liability amount, highlighting their financial position/obligation for the selected calendar date. This analysis provides insights into the key contributors to the organization's asset/liability base, aiding in performance assessment. This analysis also facilitates insights into risk assessment and financial planning. User also has the option to select specific party name from filter attribute on top and get view for a specific party.
  - **Objective** – To highlight total amount of asset and liabilities against all parties or specific party as of specific date

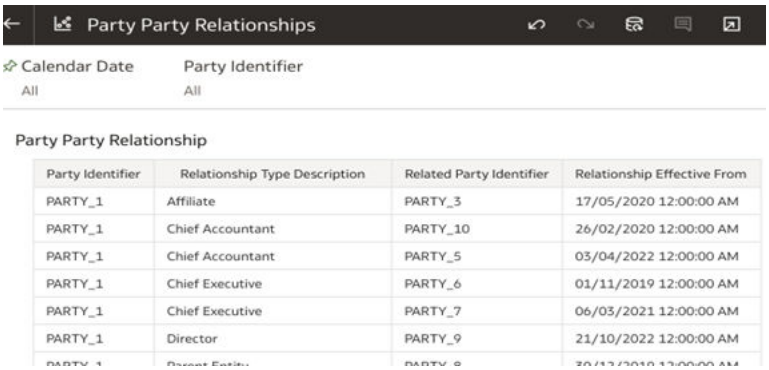
Figure 8-43 Party Financial Details



Party Identifier	Total Assets	Total Liabilities	Financial Year Start	Financial Year End
PARTY_1	2,30,59,404.00	1,04,69,422.82	01/04/2020 12:00:00 AM	31/03/2021 12:00:00 AM
PARTY_1	1,92,85,171.00	84,33,086.87	01/04/2021 12:00:00 AM	31/03/2022 12:00:00 AM
PARTY_1	83,29,595.00	40,70,682.55	01/04/2022 12:00:00 AM	31/03/2023 12:00:00 AM
PARTY_10	2,30,91,283.00	1,02,81,717.75	01/04/2020 12:00:00 AM	31/03/2021 12:00:00 AM
PARTY_10	1,95,10,358.00	87,05,572.83	01/04/2021 12:00:00 AM	31/03/2022 12:00:00 AM
PARTY_10	82,99,529.00	36,85,228.67	01/04/2022 12:00:00 AM	31/03/2023 12:00:00 AM

  - **Party Party Relationships** and **Party Party Account Relationship**: Party relationship visualizations provides a view of party relationships and their associated accounts details. Relationship between related party and primary party could be personal like spouse, parent, etc. of primary account holder or professional like CEO, Director of an organization that is bank's customer.
- **Party Party Relationships:**
  - **Objective** – To highlight the relationship between different parties and relationship effective date.

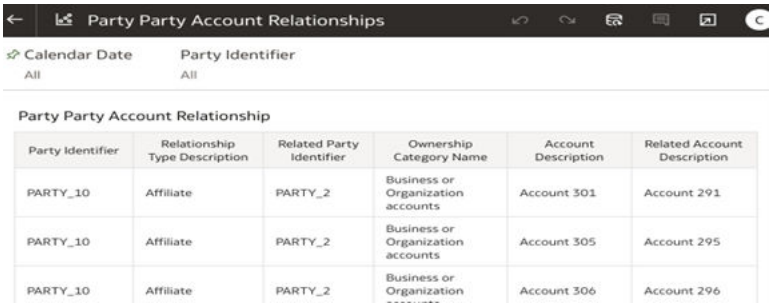
Figure 8-44 Party Party Relationships



Party Identifier	Relationship Type Description	Related Party Identifier	Relationship Effective From
PARTY_1	Affiliate	PARTY_3	17/05/2020 12:00:00 AM
PARTY_1	Chief Accountant	PARTY_10	26/02/2020 12:00:00 AM
PARTY_1	Chief Accountant	PARTY_5	03/04/2022 12:00:00 AM
PARTY_1	Chief Executive	PARTY_6	01/11/2019 12:00:00 AM
PARTY_1	Chief Executive	PARTY_7	06/03/2021 12:00:00 AM
PARTY_1	Director	PARTY_9	21/10/2022 12:00:00 AM

- **Party Party Account Relationship**:
  - **Objective** – The dashboard gives view of party relationships and their associated accounts.

Figure 8-45 Party Party Account Relationship

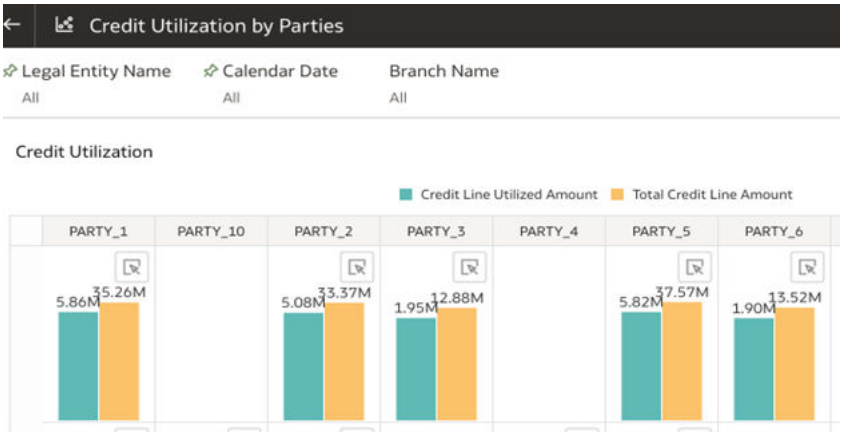


8.1.3.5 Sample Credit Line Reporting

This sample report is based on Credit Line subject area. It gives an overview.

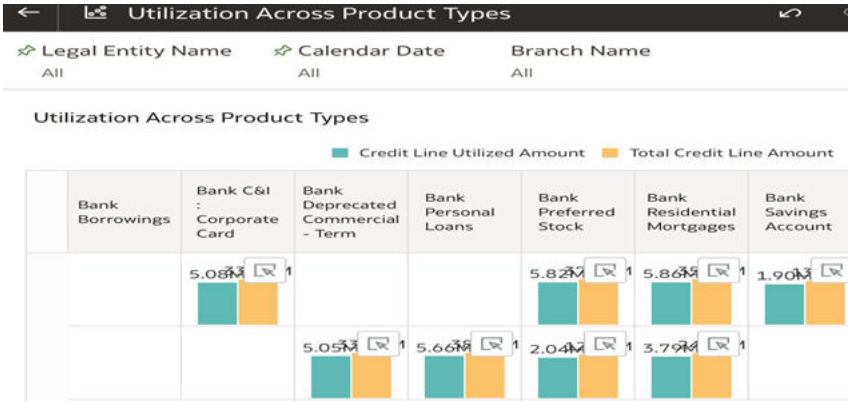
- **Credit Utilization by Parties:** This bar graph illustrates total credit line against the utilized amount, and helps bank quickly assess the overall credit utilization rate. This helps in identifying trends over time, such as increases in credit usage which might indicate economic stress among borrowers or a growing confidence and spending capability. The visualization helps user analyze credit utilization numbers for each party and currency as of date and analysis can be done at branch level.
  - **Objective** – To highlight the total credit line and utilized amount for various parties across different currencies as of given date for selected branch/branches.

Figure 8-46 Credit Utilization by Parties



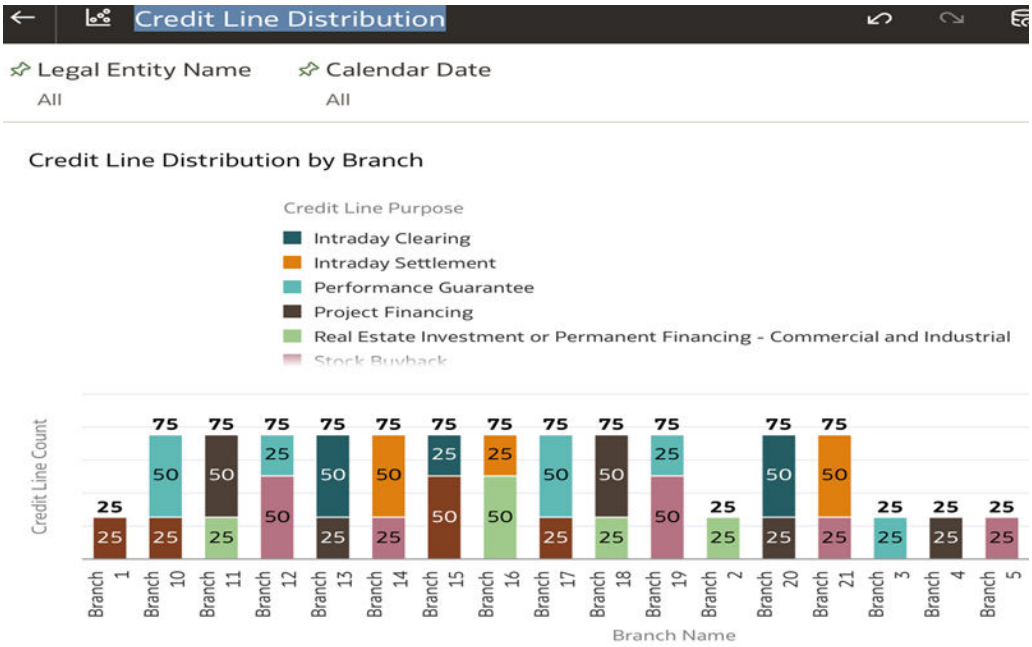
- **Utilization Across Product Types :** The visualization illustrates the total credit line commitment amounts and the utilized amounts across different products denoted in multiple currencies. This helps to analyze which products are most and least utilized, banks can identify successful features or gaps in their offerings. This information can drive the development of new products or adjustments to existing ones to better meet customer needs.
  - **Objective** – To highlight the total credit line amount and utilized amount by different product types for selected branch/branches.

Figure 8-47 Utilization Across Product Types



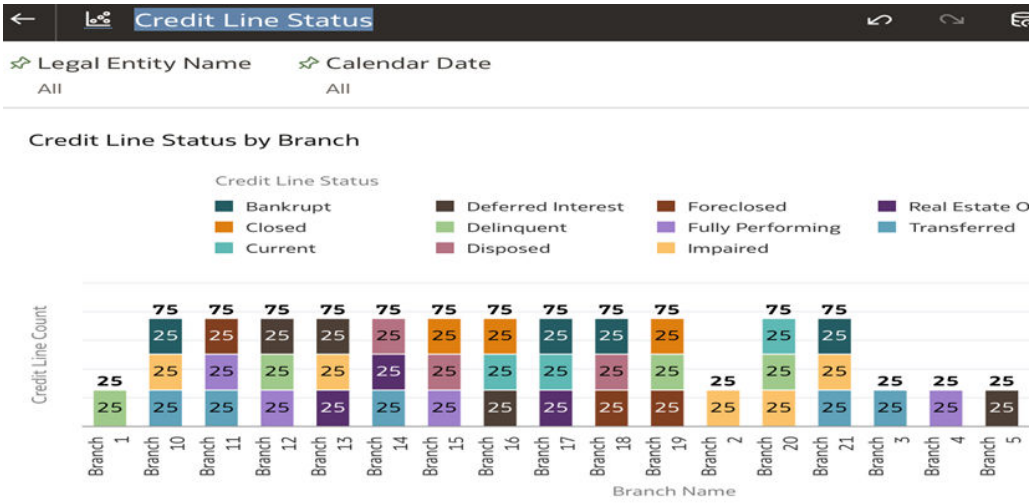
- **Credit Line Distribution:** The Visualization provides insight into the predominant credit line purposes at each branch allows a bank to tailor its products to better match local demand. This helps management to assess the commitment track to aid in performance review and Risk management.
  - **Objective** – To view number of credit lines by credit line purpose for each branch within the legal entity.

Figure 8-48 Credit Line Distribution



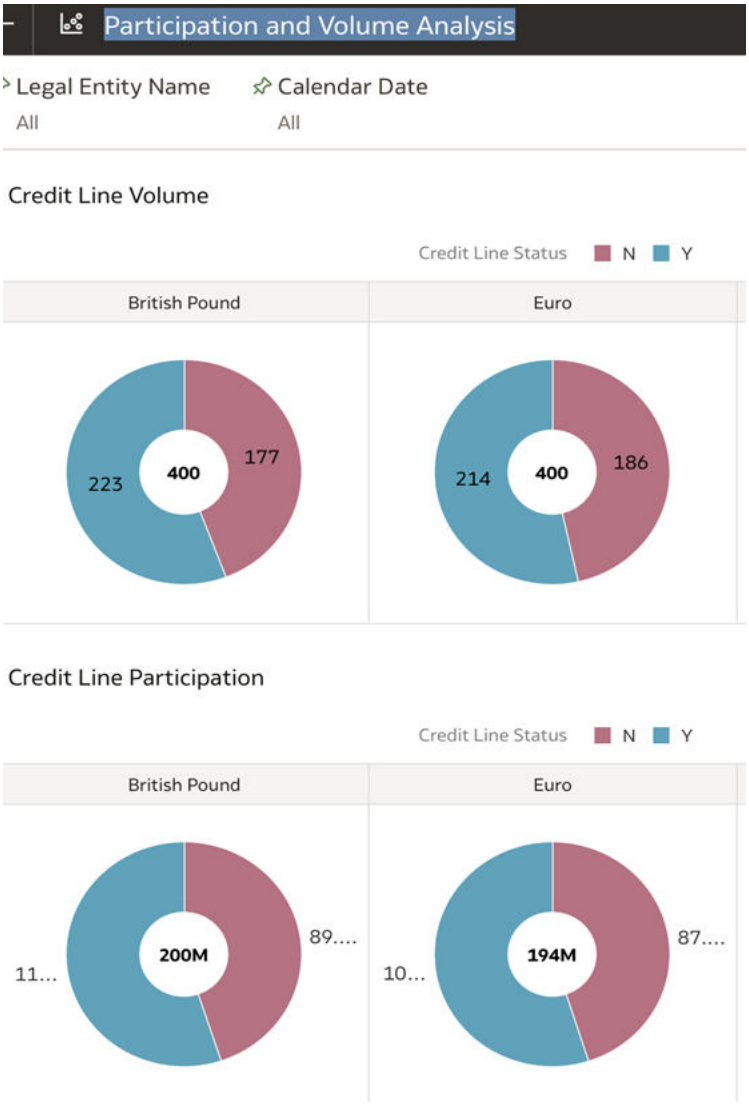
- **Credit Line Status**: The dashboard illustrates the segregation of credit lines into various credit status categories such as fully performing, delinquent and impaired. This helps Banks to quickly identify areas of concern, particularly the proportion of non performing or delinquent accounts. This allows for early intervention strategies to be deployed, such as reaching out to customers who are falling behind on payments to offer restructuring or support services that might prevent further delinquencies.
- **Activity - Results Data Browsing**
  - **Objective** – To view number of credit lines by credit line status like fully performing, delinquent, impaired for each branch within the legal entity.

Figure 8-49 Credit Line Status



- **Participation and Volume Analysis:** The visualizations show the participation flag for credit lines alongside the sum of total credit line amounts tagged with that flag which helps banks in analyzing how participation in specific credit programs impacts their overall credit portfolio. Participation flag indicates if the credit line facility is a part of the syndication.
  - **Objective** – To highlight the total credit line amounts and Participation counts by Legal entity and Calendar date.

Figure 8-50 Participation and Volume Analysis



8.1.3.6 Drill through option

Drill-down functionality enables user to view data at the lowest granularity. The lowest granularity level at which the user is able to drill is specific to a given subject area (SA) on which visualization is based and attributes present in that subject area. For Eg: In Account subject area, the lowest level granularity would be accounts (account key in fact entities and account identifier in stage entities). Similarly for transaction subject area, lowest level granularity available for viewing via drill through will be transaction identifier.

The solution currently supports drill-through upto data in results entities, and not for stage entities.

Functionality is available for all sample reports for attributes that are contributing towards data for that sample report. Drill through can be done for all types of visualizations including but not limited to tabular, pivots, graphical, pie charts, time series, and so on.

Data viewed post drill-through pre-applies all the filters and shows user the specific granular data that user was viewing before drill through.

1. Go to chart where user needs to see specific data -> Right click -> Drill to attribute/ Hierarchy -> Select specific hierarchy for which user wants to view data

Figure 8-51 Drill through option

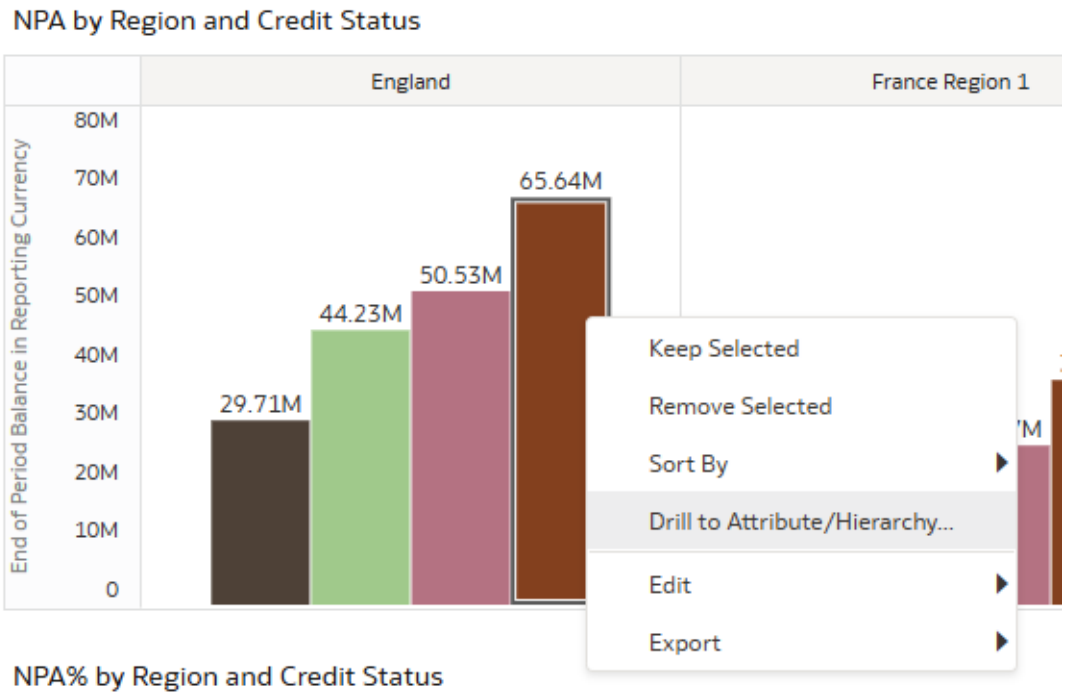
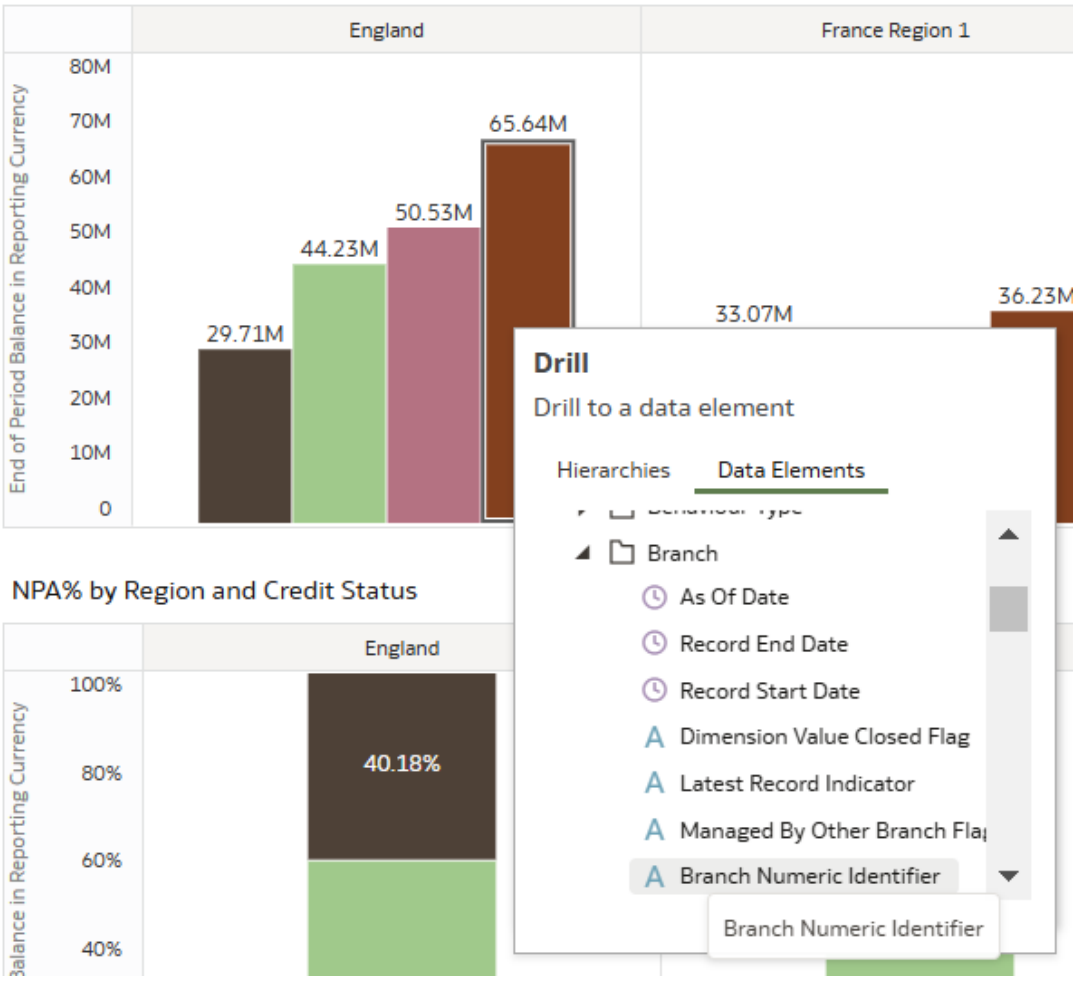


Figure 8-52 Drill through option Data Elements



8.1.4 Sample Key Performance Indicators (KPIs)

Key Performance Indicators (KPIs) are pre-calculated values in the solution that measure performance for a specific objective over time. KPIs provide measurable metrics for businesses to track over time and gauge their progress. They also help with insights that help FI business leaders to make data driven decisions, measure their performance and plan at a strategic level.
Some sample KPIs are packaged in out-of-the box product and can't be modified by the user. However, user has the flexibility to create their own KPIs.

The solution aims to cover most indicators used across the banking and FI industry.

Currently, the solution supports Account based KPIs for Loans and Deposits.

To access these visualizations, navigate through the following path:

1. **Home → Catalog → Shared Folders → Data Foundation Custom Reports à Key Performance Indicators à Balance Sheet**

The dashboard has a default set of filters as shown below and further filters can be added by the user.

Figure 8-53 Sample Key Performance Indicators (KPIs)

- To access these visualizations, navigate through the following path: Home → Catalog → Shared Folders → Data Foundation Custom Reports à Key Performance Indicators à Balance Sheet The dashboard has a default set of filters as shown below and further filters can be added by the user.

8.1.4.1 Sample Loans and Deposits KPIs

KPIs related to Loans and Deposits KPIs are included as part of out of the box product. Users can create their own KPIs and visualizations for that for their custom requirements.

> **Note:**
>
> This user guide does not explain individual visualization chart details, their calculation logic and their interpretation as that is included as part of KPI glossary.

8.1.4.1.1 End of Period

This report presents a comparative analysis of Total Loans and Total Deposits as of specific date, allowing users to examine the balance sheet dynamics and assess the relationship between lending activities and deposit mobilization. Please refer to KPI Glossary in solution for further details.

Users have options to choose values for pre-configured filter attributes or add their own filters.

Figure 8-54 End of Period

8.1.4.1.2 Time Series

This report gives a view into trend analysis of total outstanding loans, deposits and investments over multiple time periods and how they have changed over time. It gives breakdown of deposit types accepted and loan types floated in the market. It also shows snapshot of Debt and Equity Investments over multiple time periods . Users have options to choose values for pre-configured filter attributes or add their own filters.

Figure 8-55 Time Series

8.1.4.1.3 Deposit Growth

The Deposit Growth Visualization provides an insightful analysis of a financial institution's deposit portfolio, focusing on key deposit categories of Current or check-in Account and Savings Accounts and their movement over time periods. By offering detailed insights into CASA ratio, total deposits, CASA deposits, and term deposits, users can effectively track and analyze growth trends across different deposit categories.

Figure 8-56 Deposit Growth

8.1.4.1.4 Loans Growth

The Loans Growth Report offers a detailed analysis of loan, credit cards and overdraft performance, highlighting both the total outstanding amounts and growth percentages for each category. It enables users to evaluate lending trends across segments such as personal, business, and auto loans, as well as credit card usage in retail and business domains.

The charts display the total outstanding loan balances across all types of loans and their corresponding growth percentages. It provides an overall view of the organization's lending portfolio and its growth trends over time.

Figure 8-57 Loans Growth Report

8.1.4.1.5 KPI Glossary

All KPIs come with KPI Glossary that details below:

- KPI Name
- Description
- Calculation logic
- Logical Interpretation

KPI Glossary is made available by right clicking on any of the KPI visualizations as shown below:

Figure 8-58 KPI Glossary

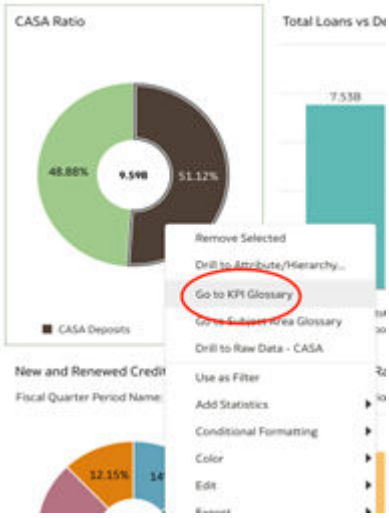
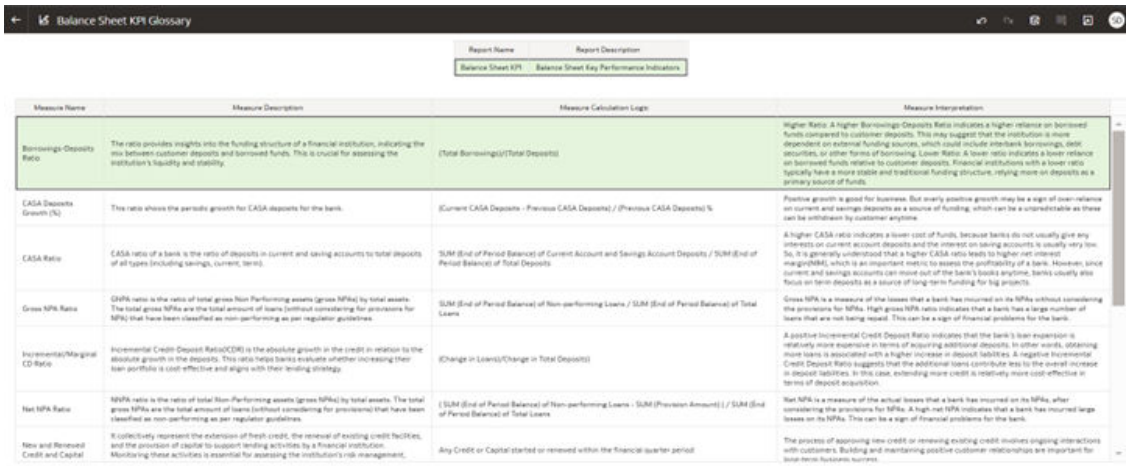


Figure 8-59 KPI Glossary Report



8.1.4.1.6 Drill through for KPIs

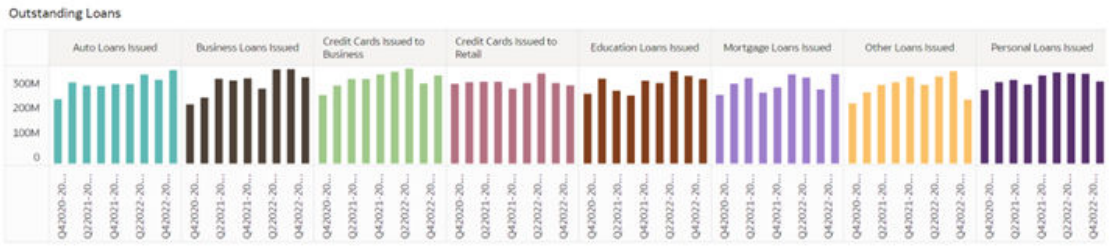
Drill-down functionality enables user to view KPI data at the lowest granularity.

User starts sample report **visualization from results** (fact entities based) -> drill down to **more granular results** (multiple levels of drill down in fact entities) -> View data at **lowest granularity**.

Example:

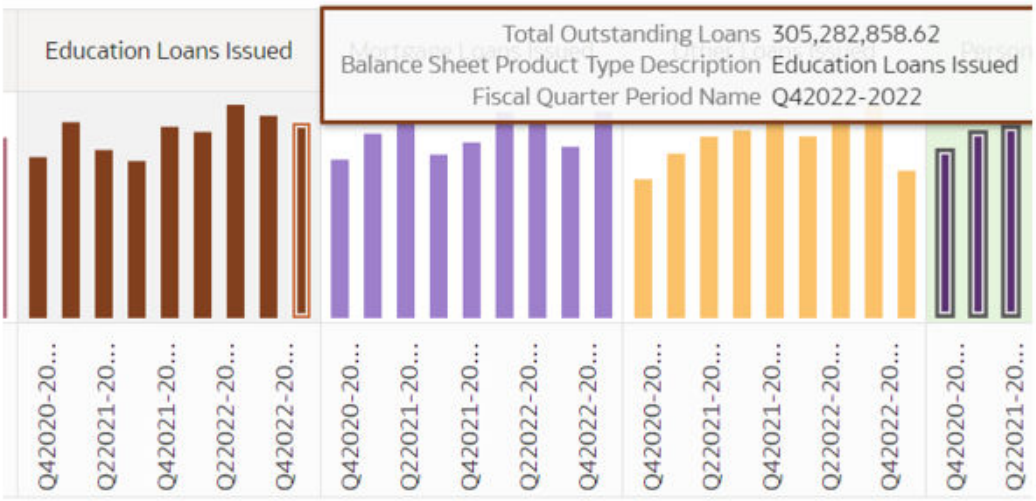
Time Series report -> Education Loans KPI -> Country name drill down -> Party type (or party name) drill down -> Account skey in fact common account summary -> Stage Loan Contracts

Figure 8-60 Drill through for KPIs



Hover over education loans as shown below to look at overall numbers:

Figure 8-61 Balance Sheet KPIs



Right click and select Country name from drill down option as below:

Figure 8-62 Drill

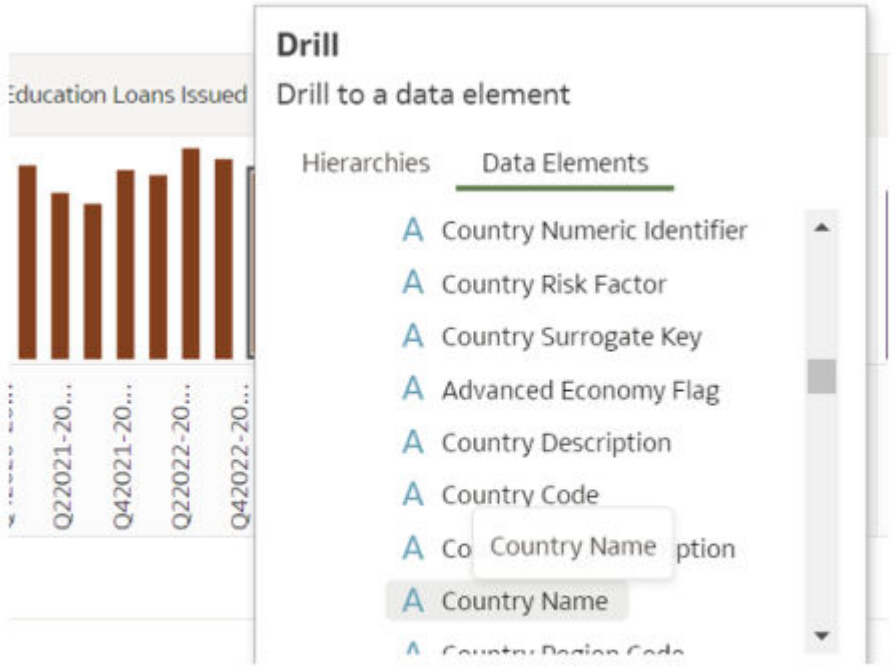


Figure 8-63 Drilldown at Country

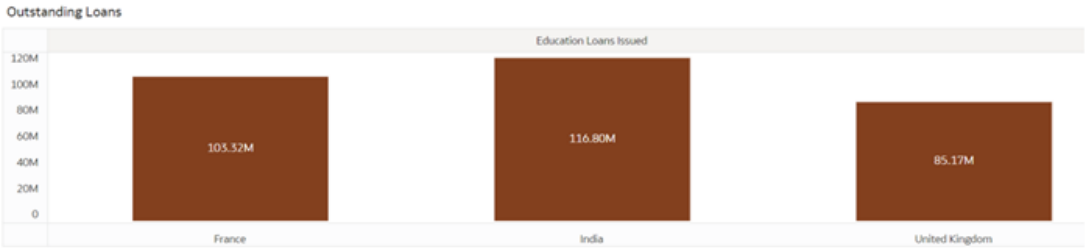


Figure 8-64 Drill down to Party Name

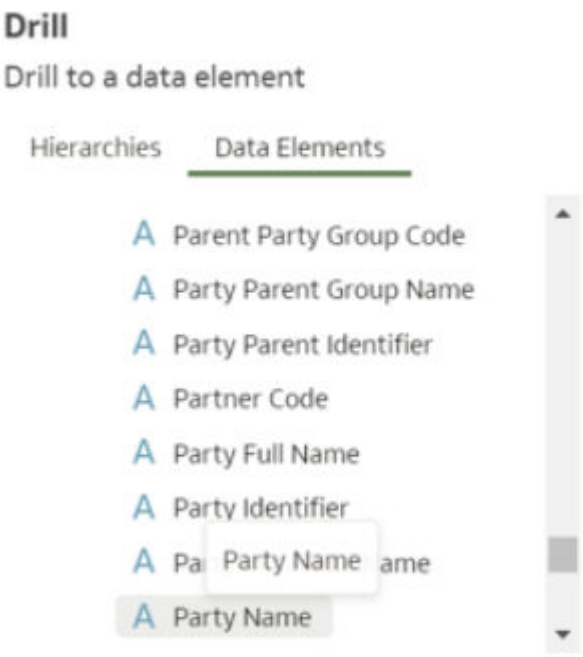


Figure 8-65 Party Name Drill down

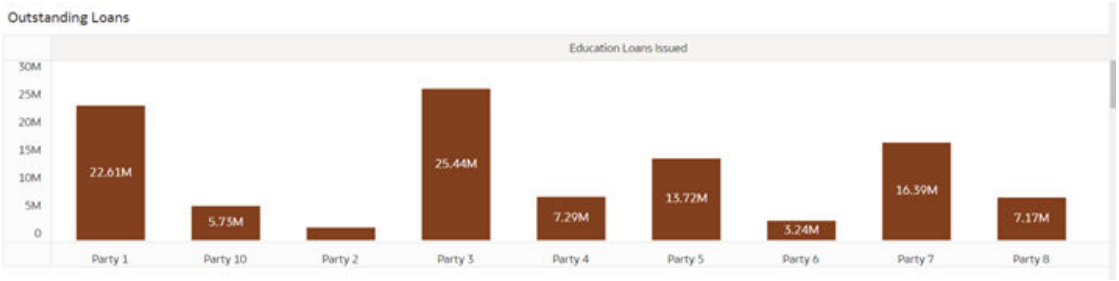


Figure 8-66 Drill down for account level

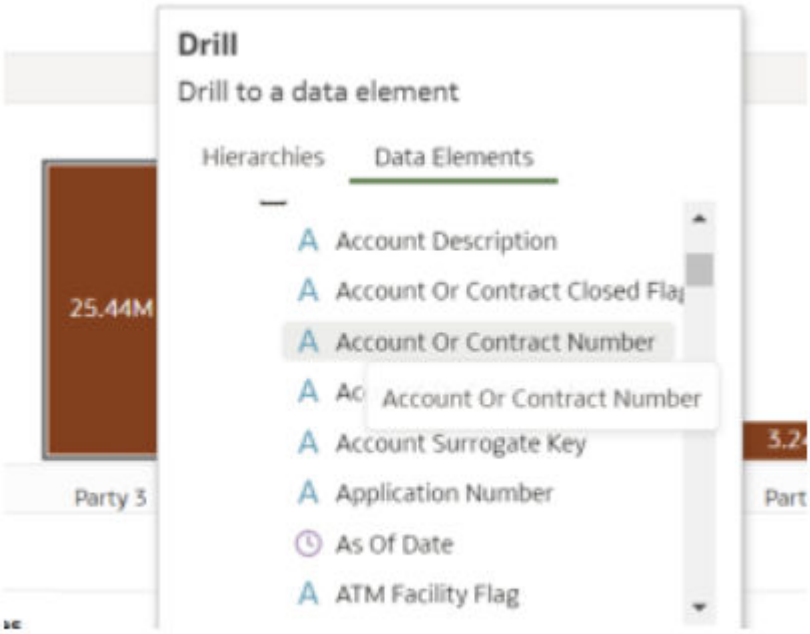
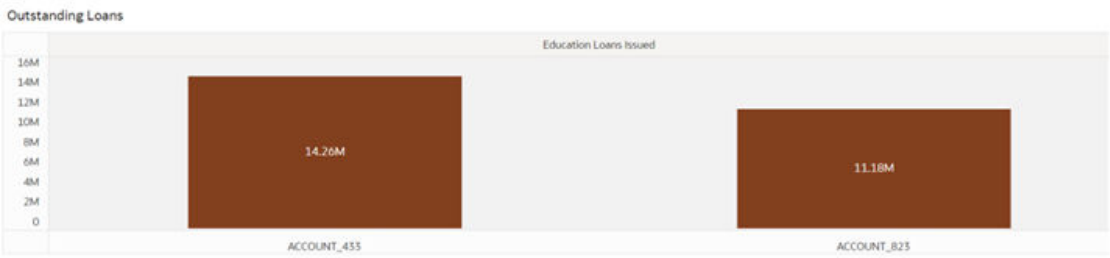


Figure 8-67 Account drilldown



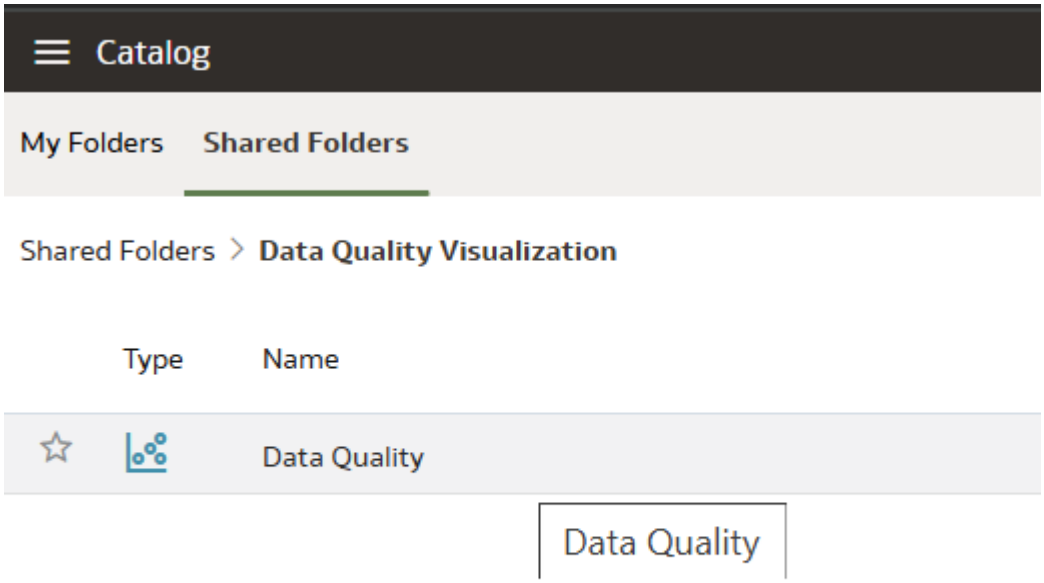
8.2 Data Quality Visualizations

The Data Quality Visualization offers insights into data quality issues detected post running data quality rules (DQ rules) by DFCS solution. The solution runs rules and publishes the results in dashboards. DQ dashboards provide view of error records associated with specific entities to identify data inconsistencies.

To access DQ dashboards:

Shared folders -> Data Quality Visualizations -> Data Quality

Figure 8-68 DQ dashboards



This section provides information on the Data Quality results for Data Visualization reports.

To access the Data Quality for Data Visualization Reports in AFCS, complete the following steps:

- On the Home page, from the LHS menu, click **Catalog**.
- Under the **Shared Folders** tab, select **Data Quality Visualization** and then **select data Quality Reports** to view the details of the Data Quality results.
- Data Quality Results for Data Visualization Reports page
  You can navigate among the following canvases in the Data Visualization report:
  - Data Quality Registry
  - Data Quality Summary
  - Data Quality Executions
  - Data Quality Results

Figure 8-69 Data Visualization report

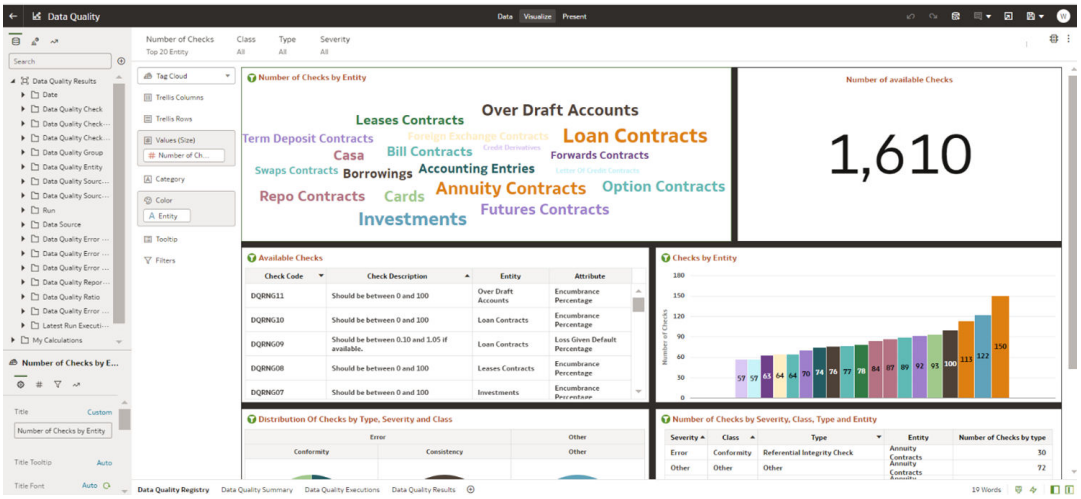


Figure 8-70 Data Quality

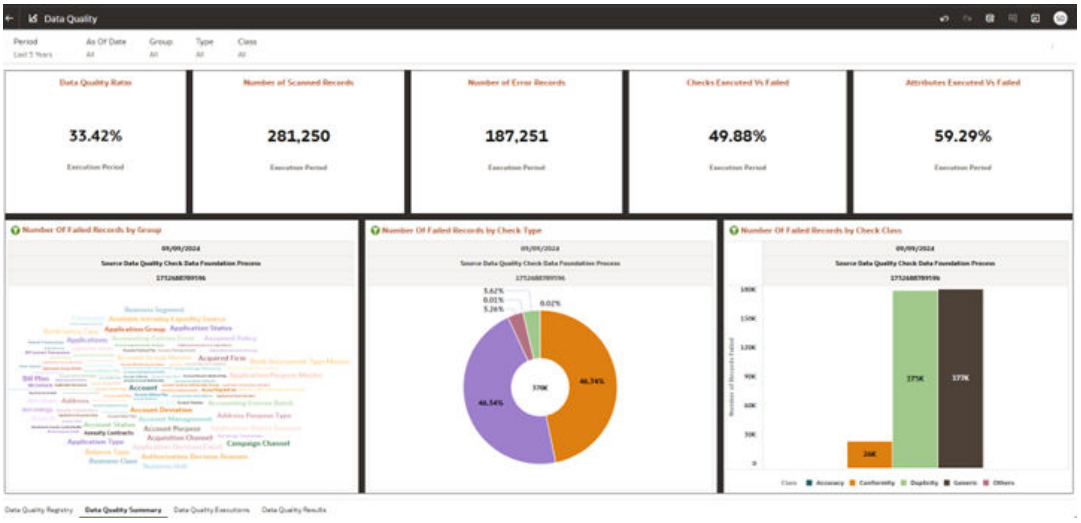


Figure 8-71 Data Quality Execution

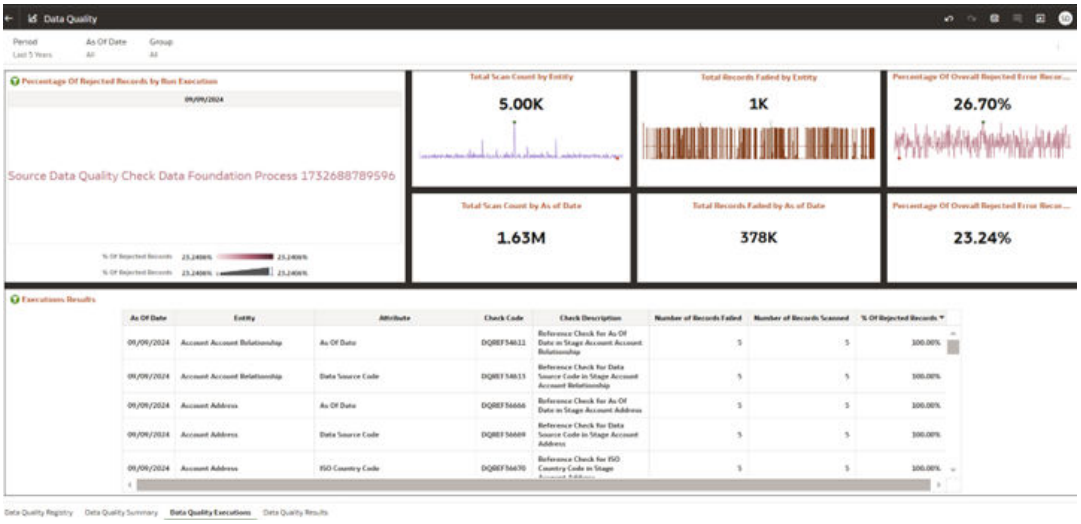
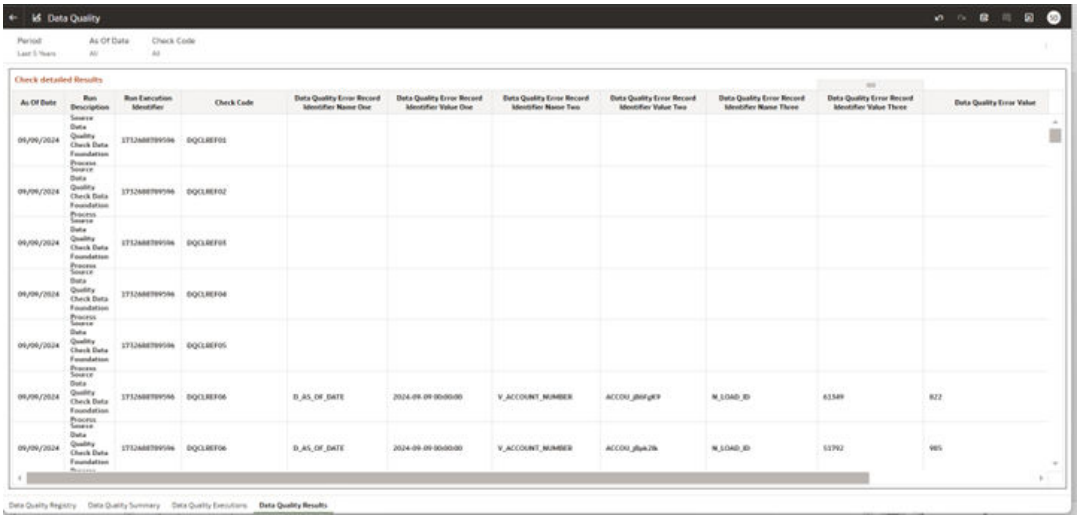


Figure 8-72 Data Quality Results



8.3 GL Reconciliation Visualizations

For The Reconciliation Framework Analytics Dashboard, refer to **GL Reconciliation user guide**

8.4 Custom Attributes

Catalog extension – it is not update the OBIEE catalog automatically.

User should add equal number of attributes for the respective entities being extended and map the same individually as per the changes in the catalog.

DFCS supports Custom Attributes in out of the box dimensions for Accounts Subject Area. Users can use the Reporting Configuration window to map the Custom Attributes in OOB dimensions.

8.4.1 Custom Attributes creation

To define a custom attribute in OOB table, complete the following steps:

1. On the DFCS Home page, click the **My Profile** icon and select **Administration**.
2. Click **Report Configuration**.
3. Select the OOB table and click on the Edit icon.
4. Select the attribute based on data type needed like date, numeric or string.
5. Click on the Edit icon in the Attribute mapping window.
6. Select the Attribute name from the dropdown list and click **Save**.
7. To delete a custom attribute, select the attribute and click on Delete icon.

Figure 8-73 Custom Attributes creation

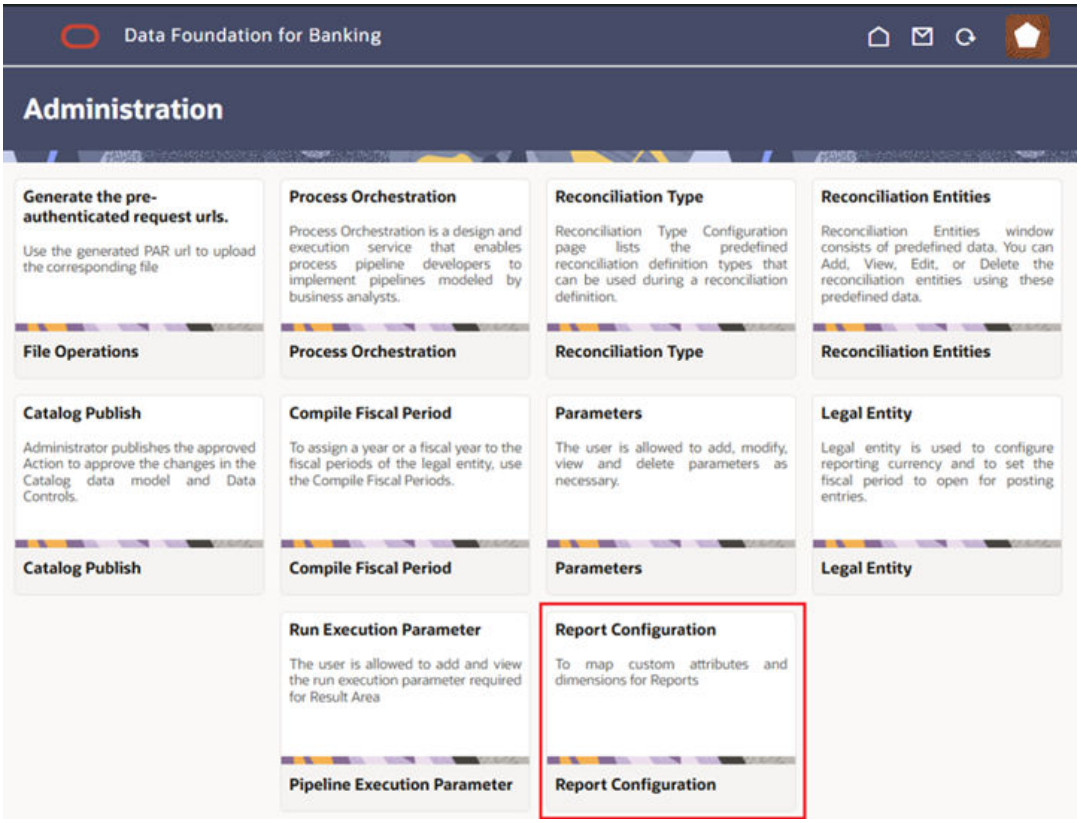


Figure 8-74 Report Configuration

Figure 8-75 Report Configuration Dimension Mapping

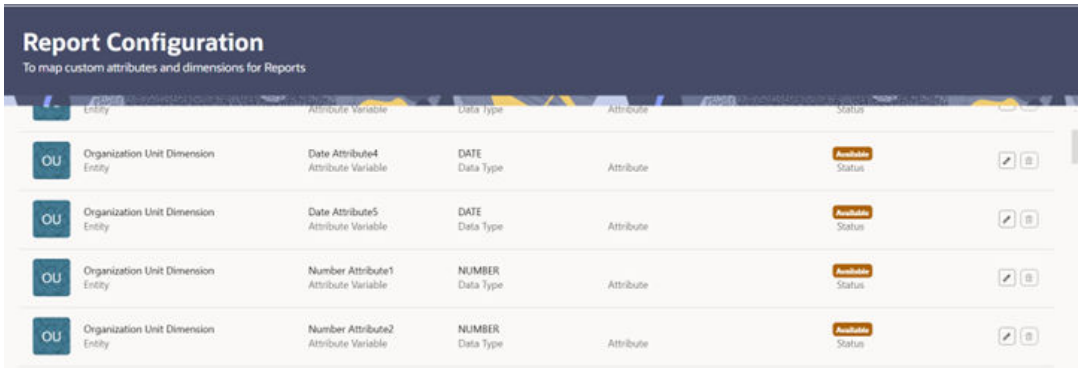
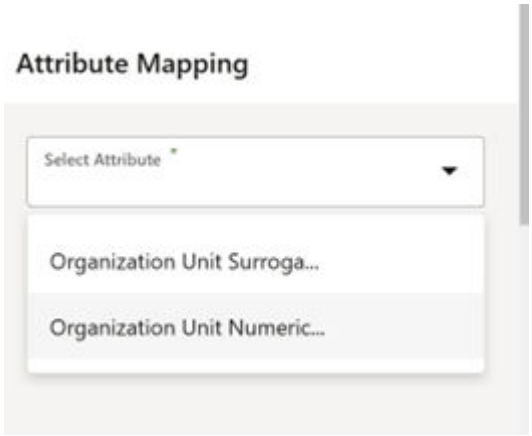


Figure 8-76 Attribute Mapping



Note:

User cannot Edit or Delete the OOTB dimension, it will display NA flag in the Dimension Mapping window. The available and mapped flag for Custom Attributes are displayed in the Attribute Mapping window to show the availability of attributes.

Following are the number of custom attributes by data type that can be defined for existing OOB entities supported in the current release for Accounts subject area:

PRESENTATION ENTITY NAME	NUMERIC	STRING	DATE
Organization Unit	55	110	5
General Ledger Account	55	110	5
Product	20	20	5
Legal Entity	20	20	5
Branch	20	20	5
Business Unit	20	20	5
Account	10	41	8
Location	20	20	5
Account Summary	30	10	10

8.4.2 Custom Attributes Visualization

In order to view the extended custom attributes in a staging table and view their logical names, user can create a Dataset and generate reports in the Data Visualization using OAS interface using Create Dataset Option available on top right.

To create a dataset and view the custom attributes in staging tables in the Data Visualization canvas in DFCS, complete the following steps:

1. On the Home page, click the **Create** icon and then click **Dataset**.
2. The Dataset page is displayed.
    a. Click Create and select Dataset from the available list.

    The Create Dataset window is displayed with the list of available connections.

    a. Double click on the **DS Connection** and the New Dataset page is displayed.
    b. From the LHS menu, double click on the **Manual Query**, the Manual Query button is displayed.
    c. Double click on the **Manual Query** button, and enter the SQL query under the **Statement** window.
    d. Click **Get Preview Data** to preview the data of the entered query.
    e. Click **Save** and the **Save Dataset As** window is displayed.
    f. Enter the **Name** and **Description** of the dataset and click **OK**.

    You can view the list of extended columns in the staging table.

Figure 8-77 Custom Attributes Visualization

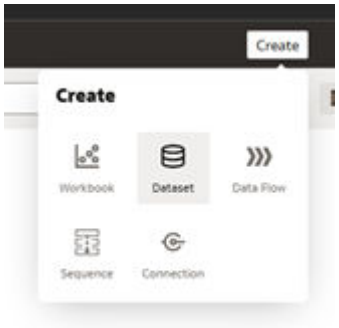


Figure 8-78 Create Dataset

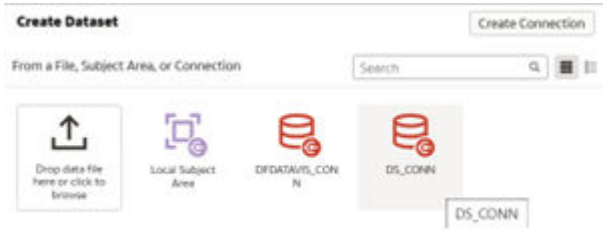
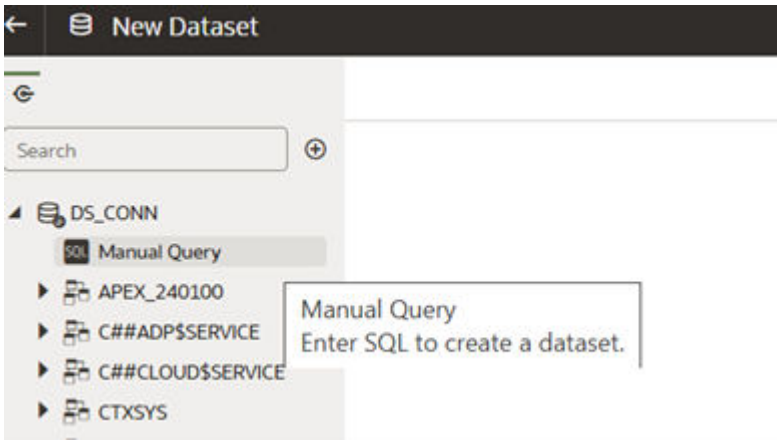


Figure 8-79 New Dataset



9
Change Management

Users can resolve any data issue identified in the Cloud framework by creating Issues and appropriate Actions on the **Inbox** page. Data Issues such as Data Quality failures, Variance breaches, or even known issues can be fixed using the **Adjustment Framework** option in **Action**. The adjustment entries posted are audit trailed and data traceability enabled.

For further details on how to use feature of “Issues and Actions”, please refer to **FRC Data Platform user guide**

10

Issues and Actions

You can resolve any data issue identified in the Cloud framework by creating Issues and appropriate Actions on the Inbox page. Data Issues such as Data Quality failures, Variance breaches, or even known issues can be fixed using the Adjustment Framework option in Action. The adjustment entries posted are audit trailed and data traceability enabled.

11

Key Terms and FAQs

- **Adjustment Entry**
  An entry passed in the Product Processor (PP) to reconcile it with the associated GL for the amount equivalent to the difference and an entry in the Contra GL Account with the opposite sign for the same amount.
- **Adjustment Entry Floor**
  If the difference between Source and Target is less than the Adjustment Entry Floor specified in the definition, the calculated difference is not eligible for adjustment, and the entry will not be logged in the Adjustment Entry Table.
- **Attributed Dimension**
  A dimension whose members can have other properties or qualifiers known as Dimension Attributes.
- **Dataset**
  A dimension used for segregating data into different sets according to its use or its source. For example, to separate actuals data, budget data, and encumbrances data. Other uses include separating test data from production data and creating separate data sets for What-if Analysis.
- **Dimension**
  A structure that can be used to categorize business data. A dimension contains members; it can be hierarchical (you can organize the members into one or more hierarchies), or non- hierarchical.
- **Dimension Attributes**
  A property or qualifier that further describes a dimension member. An attribute can be a date, a number, or a character string. For example, the Geography dimension can have an attribute - Population, that designates how many people live in that area. Each member of the Geography dimension, therefore, has an associated Population.
- **Hierarchy**
  A structure of dimension members organized by parent-child relationships.
- **GlobalThreshold**
  Global Threshold is applied at an execution level where all the reconciliation differences for execution are added and checked across the absolute sum of source balance.
- **Inherit toChild**
  This feature is used to find child legal entities under the hierarchy node of a Legal Entity that is selected at the definition level. If used while defining the GL Reconciliation rule, all child nodes will participate in the reconciliation process.
- **Reconciliation**
  Reconciliation is the process of comparing information from one data source to another. An Account Reconciliation is for a specific period. Reconciliations consist of account balances (obtained from the Source System for the period) and account properties.
- **ReconciliationDifference**
  Reconciliation difference is the difference in the balance between the Source and the Target.
- **Threshold**

A tolerance level you must set in terms of either the maximum difference allowed in any single Product Processor and its corresponding GL or the maximum number of Product Processors having differences in the GL Reconciliation.

- **Positive Threshold**
  These values are used to identify the breach types categorized as: Negative Percentage Threshold (NPT), Positive Percentage Threshold (PPT), Negative Absolute Threshold (NAT), Positive Absolute Threshold (PAT), and Not Breached (NB). The Breach Type is identified at run time during the reconciliation process, and Audit Trail entries are posted with this information.
- **Negative Threshold**
  These values are used to identify the breach types categorized as: Negative Percentage Threshold (NPT), Positive Percentage Threshold (PPT), Negative Absolute Threshold (NAT), Positive Absolute Threshold (PAT), and Not Breached (NB). The Breach Type is identified at runtime during the reconciliation process, and Audit Trail entries are posted with this information.
- **Threshold Breached Type**
  The different types of threshold breaches are listed here.
  - PAT - Positive AbsoluteThreshold
  - NAT - Negative AbsoluteThreshold
  - PPT - Positive Percentage Threshold
  - NPT - Negative PercentageThreshold
  - G - Global
  - NB - Notbreached
- **General Ledger to ProductProcessor**
  General Ledger to Product Processor Reconciliation identifies the difference between GL system and Product Processor data. It nullifies the difference by posting the adjustment entries up to the amount of difference.
- **General Ledger to Product ManagementLedger**
  In General Ledger to Management Ledger (GL to ML) reconciliation, the difference between two sources of the Ledger for the same Legal Entity and the Consolidation Type is identified. This difference is identified at the granularity of the GL code for the selected hierarchy, the mandatory dimensions, and the selected optional dimensions. Adjustments are not passed in General Ledger to Management Ledger reconciliation.
- **ConsolidationType**
  Two consolidation types aresupported:
  - **Solo**
    When a legal entity is selected with consolidation type as Solo, all the exposures of that particular legal entity are selected for processing. Manual reconciliation definition can process solo legal entity data.
  - **Consolidated**
    When a parent legal entity is selected as Consolidated, all the exposures of that legal entity and exposure of each level (or levels) of descendant child legal entities (without intra-group exposures) are selected for processing. In intra-group exposures, the counterparty is a child descendant of any level. For an intra-group scenario (where the GL Structure has specific intra-group GL Code in addition to regular GL Codes), intra GL Codes are considered only from the GL side for processing. Non-Intra is a scenario where no GL Codes are present for reconciliation definition.
  - **Inherit toChild**

This feature is used to find child legal entities under the hierarchy node of a Legal Entity that is selected at the definition level. If used when defining the GL Reconciliation rule, all child nodes will participate in the Reconciliation Process.

- **Manual ReconciliationDefinition**
  In manual reconciliation definition, user input is sought on the GL side and PP side to determine the course of reconciliation. This is applicable to both GL level and map level reconciliation. In GL level reconciliation, unique GL codes are identified from the GL code mapping. At the map level, GL codes do not form a part of the reconciliation definition. A manual reconciliation definition can be used for a solo or consolidated legal entity. The reconciliation definition for a consolidated GL, having an intra-group GL structure, is computed from GL Data and not from PP Data. Therefore, any account present in the PP but unavailable in GL is not captured in the reconciliation definition.
- **GL LevelReconciliation**
  In GL level reconciliation, the difference between GL system and Product Processors Systems at each reconciliation dimension node level within a GL Code is identified. For manual reconciliation definition, unique GL codes are identified from the GL side. If it is at the solo level, exposures originating in the legal entity are selected. If it is at the consolidated level, exposures originating in the selected legal entity and its Child Entities (with or without intra- group exposures depending on GL Structure) are selected.

  The adjustment entry allocation depends on the reconciliation type selected. In GL level reconciliation, after a definition is executed, the differences that emerge as a part of the reconciliation definition (GL–PP level reconciliation) are reported in the Adjustment Entry Table. This table shows all the entries of an executed map that requires adjustment. The difference in amount can either be posted to Product Processors or an external table. For more information on the external table, see the Data Requirement section.
- **Map LevelReconciliation**
  In map level reconciliation, the difference between GL Data and PP Data at each reconciliation dimension node level across all PPs is identified. Unlike GL level reconciliation, map level reconciliation is computed at an aggregate level of the reconciliation definition; by ignoring the GL code and by considering reconciliation dimensions. Map level reconciliation is applied at the legal entity level - either solo or consolidated. If it is at the solo level, then exposures originating in a particular legal entity are selected. If it is at the consolidated level, then exposures originating in the selected legal entity and its child entities (excluding intra-group exposure depending on GL structure) are selected.

  The adjustment entry allocation depends on the reconciliation type selected. In map level reconciliation, after a definition has been executed the differences that emerge as a part of the reconciliation (General Ledger–Product Processor Level Reconciliation) are reported in the Adjustment Entry Table. This table shows all the entries of an executed map that requires adjustment. The difference in amount can either be posted to Product Processors or an external table. The adjustment allocation can be either automatic or manual.

11.1 Frequently Asked Questions

You can refer to the Frequently Asked Questions, which is developed with the interest to help you resolve some of the DFCS Installation and Configuration Issues. This intends to share the knowledge of problem resolution to a few of the Known Issues. This is not an official support document and just attempts to share the knowledge of problem resolution to a few of the Known Issues.

1. What happens when users tries to log in during a maintenanceperiod?
   When the instance is under maintenance, a “Maintenance Page” is displayed.
2. What happens for the users that are loggedin?
   If users are already logged in, all further actions are blocked. On refresh, users are directed to the Maintenance Page.
3. Can APIs be invoked during maintenance period? No. The API requests areblocked.
   No. The API requests are blocked.
4. What happens to ongoingbatches?
   Batches will continue, however, it is recommended to ensure all processes are completed before maintenance begins.

Glossary

Index