Oracle® Data Foundation Cloud Service

Data Platform

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Contents

3 Issues and Actions

4 Data Maintenance Interface

5   Data Integration

6   Data Operations

1

About This Guide

This section provides supporting information for the Oracle Data Foundation Cloud Services for Banking (DFCS).

Audience

This document contains release information of Oracle Data Foundation Cloud Services for Banking (DFCS).

Documentation Accessibility

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Related Resources

- Oracle Financial Services Data Foundation Cloud Service for Banking

Conventions

The following text conventions are used in this document.

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

2
Data Platform Overview

The Data Platform is a suite of services, including Data Catalog and Data Integration services, designed to support data management for Oracle's Finance, Risk, and Compliance applications.

Data Platform services include the following:

- Data Catalog
- Data Controls
- Issues and Actions
- Data Maintenance
- Data Integration
- Data Operations

2.1 Data Catalog

Data Catalog is the logical representation of the underlying Data Model, which is contextualized by the Metadata to enable a better understanding of the Data Model and the enterprise-wide data. For example, understanding the End of Period Book Balance in the context of Loans and Securities may require two definitions of the term in discovering. A further analysis of the Metadata helps discovering, the sources, current business uses of the element, validation checks, and any privacy aspects.

The Data Catalog comprises of elements called Business Terms supporting business needs of the Banking and Financial Services Industry across the Finance, Risk, and Regulatory Compliance Functions. Data Catalog includes sourced, calculated, and master elements. Elements that require conformation to the standards will have a list of expected values. A combination of Business Terms and Entities form the underlying Data Model. The search capability allows you to explore data by different dimensions.

The Data Catalog helps you understand the business relevance of an Element and the associated Data Definition, grain through Entities and Subject Areas. You can group the Data Catalog by Subject Area and this subset is narrowed down to a business use case (For example, Basel Credit Risk).

In a multi-domain Data Catalog environment, you need to select the required Financial Domain that filters the Subject Areas relevant to the selected Domain or Service, Entities under the Subject Area, and Elements mapped to the Entities.

The Data Catalog is the gateway to create, view, or manage the physical instance of the Data Model.

You can use out-of-the-box define Pipelines (table to table process, Connector) to load data into the Entity, and execute and manage the Process.

The fundamental objectives of the Data Catalog are as follows:

- To provide a unified logical view of the Enterprise Data Model.
- To enable data discovery using predefined Metadata that is modifiable by Users.

- To support end-to-end data lineage as it connects data sources and uses.

2.2 Catalog Key Capabilities

Data Catalog provides the Data Model for the Financial Services Industry. The key capabilities of the Data Catalog are as follows:

- **Catalog Browser**: Data Catalog consists of a Viewing Framework. The Data Catalog Browser API-based Interface allows you to view the Data Catalog Components. The Catalog Browser enables the Users to go through the Data Catalog Contents and view the Business Terms by Domain, Subject Areas, and Entity. The Catalog Browser also shows the Properties of Business Terms, Contextual Definition in a User-friendly language, List of Values, Data Sourcing Components, and Data Quality Rules.

- **In-built Data Modelling Capabilities**: Data Catalog contains all the required information to establish services underlying the Data Model, which is Entities, Attributes, and the relationship between Entities and Attributes. Similar to any Entity Relationship Modelling Tool used for this purpose, the Data Catalog can build, manage and hold Data Model for the deployment purpose.

- **Data Quality Checks Rule**: Data Catalog Contents include Data Quality Checks Rule so the system incoming data can be verified and validated.

- **Catalog Extension**: Data Catalog supports a Framework to extend the Data Catalog called as the Data Catalog Extension or catalog Extension. The Catalog Extension allows user to extend the Seeded Catalog Contents to support a new or client-specific business use cases. You can add new Business Terms or customize the existing definitions when the Business Term is enforced by the external entities.

- **Comprehensive Coverage**: Data Catalog provides a collection of comprehensive Business Terms across the Business Lines and Use Cases.

- **Data Movement**: Data Catalog provides the mechanism of **Stage to Standardize to Process** to move the Data along to the Result for analytical consumption. The Catalog Services are accessed through API calls used by the Data Services Module to move data.

2.3 Catalog Architecture

Data Catalog is at the center of sources and uses of data. Along with providing comprehensive understanding of data through the available metadata about sources and uses, it is necessary to be able to enrich or modify as required. In this direction OFS Data Catalog is designed to support integration with Data Sources and downstream uses, which means predefined for known uses and extendable for the unknown. The Data Catalog by Subject Area can be further segregated as Sources, Results (calculated), and Master Data that are sourced and seeded, which helps to plan the sourcing and supplying of data based on the Enterprise needs. Considering the need to serve a conglomerate of Users, the Data Catalog is embedded with a sound Governance Framework assuring the security and privacy.

Figure 2-1   Data Catalog Architecture Diagram
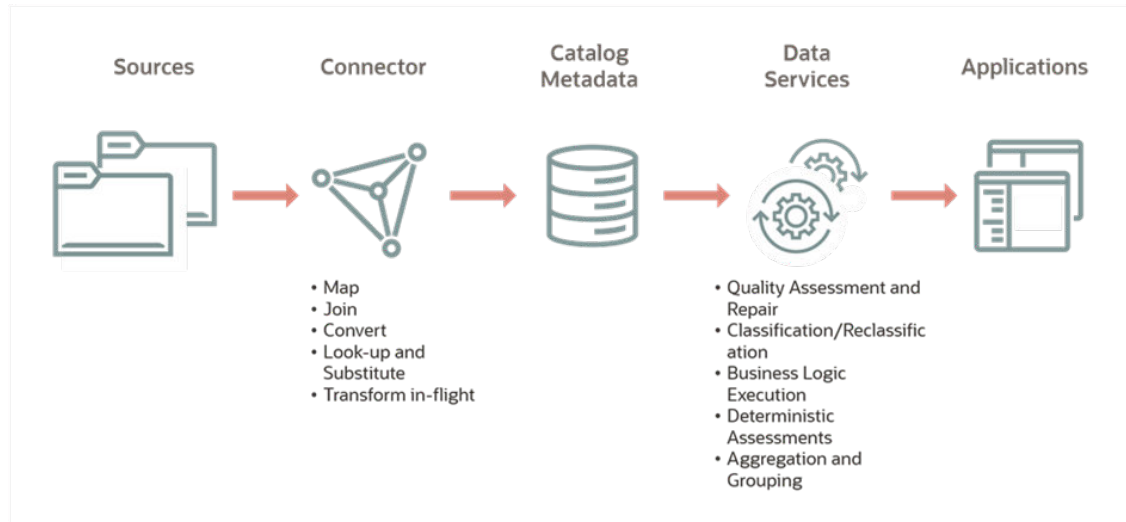
2.4 Catalog Components

A well-defined structure is followed to seed and organize the Data Catalog Contents for efficient discovery and management. The structure starts with a Domain, which for example, in the OFSAA context can be either Banking or Insurance, and for this Domain, the Contents are created. Each Domain can have multiple Subject Areas, and a collection of Entities and Business Terms associated with those Subject Areas.

Figure 2-2   Data Catalog components
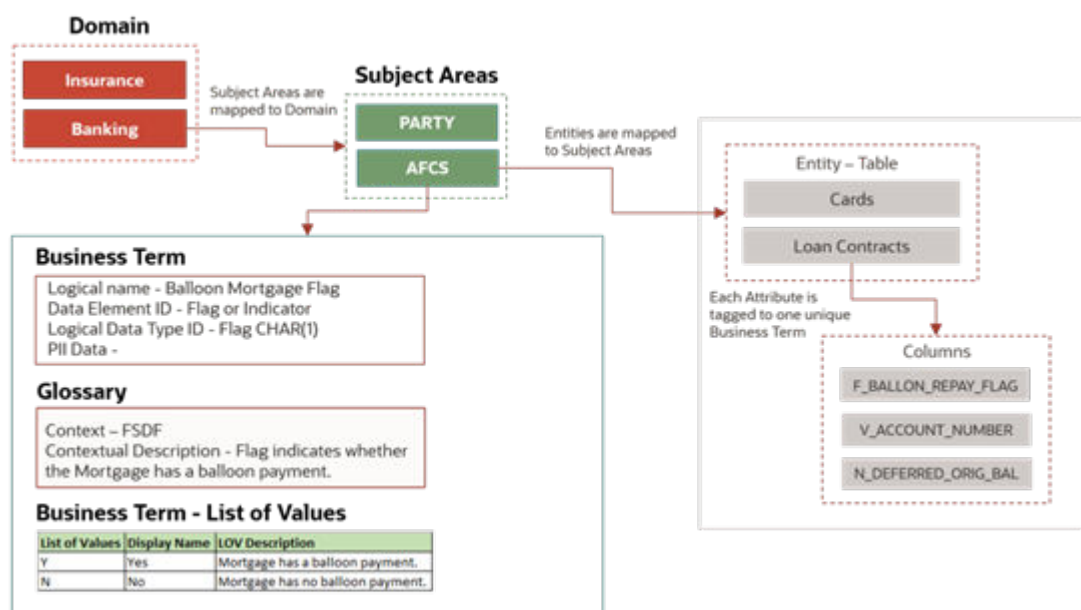
The Data Catalog consists of the following Components:

- Domain
- Subject Area
- Entity
- Business Term
- Glossary
- Data Quality Check Rules

2.4.1 Domain

A Domain represents the category of the Business in the Finance Industry.

Data Catalog consists of the Data Catalog Framework and Seeded with Contents related to a specific Line of Business or Industry, which is referred to as a Domain.

In OFSAA, select Banking Domain.

By selecting the Domain Name, you can restrict viewing the Catalog Components only to the intended Domains and deploy the Data Model also selectively.

2.4.2 Subject Area

A Subject Area represents a high-level data organization, which belongs to a group of related areas within a specific functional area of a Finance Organization.

Entities are grouped together into distinct Subject Areas based on the business functions or processing supported for a better identification and usage.

The relationship type between Domain and Subject Area is Many-to-Many.

The following are a few examples of Subject Areas in the Data Catalog:

- Data Foundation Cloud Service for Banking
- Party
- Product Processor
- Transaction
- Product

2.4.2.1 Relationship Between Subject Areas

Data Catalog has a provision to define the Parent-Child Relationship between the Subject Areas. Therefore, you can define the Parent-Child Relationship as follows if there is a business need:

- Domain to Subject Area Relationship

2.4.3 Entities

Catalog has a comprehensive list of entities to support a very wide range of analytical business use cases across Banking domains. These entities are mapped to the subject area and the domain which helps in deploying the model, either completely or selectively, based on the services the user has subscribed.

Users can navigate through the logical layer comprising of entities using the Catalog Viewer. The physical layer comprising of table and column names are inconsequential to the user, and therefore, it is hidden from them.

2.4.3.1 Entity Type

Entities in the model are grouped into the following types based on data layers they are tied to:

- Download or Staging
- Result
- Dimension
- Preparation
- Integration

Preparation and Integration Entities or layers are internal to a product. A Preparation layer contains entities used for processing while an Integration layer contains placeholders for other engines or applications to publish their processed output.

2.4.3.1.1 Stage Entity

Stage Entities are a part of the Unified Data-Sourcing layer for data for a wide variety of analytical needs. The Staging layer faces the operational (OLTP) and Front Office Systems of a bank. It consists of entities to capture key business and operational data from these systems, which is then processed by one or more Analytical Engines.

Since these entities are designed to facilitate loading efficiency, they are denormalized. Typically, this data is extracted from source systems and placed in the object store and then loaded to Staging Entities using data services.

2.4.3.1.2 Result Entity

It is a Unified Reporting or a Consumption layer. Analytical results can be simple to complex, contain quantitative and qualitative measures of a bank's Risk, Compliance, Customer and Financial Performance. The Reporting layer is a Dimensional Data Model spanning these key analytical functions. It forms the foundation of OFSAA Business Intelligence Applications but can clearly be used as the result data store for any equivalent engines and processes provided by other vendors, or custom built solutions. By providing a Single Data Repository for reporting needs, this layer provides a foundation for departmental as well as Cross-Departmental and Cross-Functional Reporting. Additionally, the schema of the reporting area is specifically built for Financial Services Analytics. As an illustration, the reporting area has a **Run Dimension** that is shared across all BI/reporting use cases. Similarly, the aggregation of shared measures/reporting into a common set of output structures (Account Summary) allows for Cross-Functional Reporting, which is increasingly the norm in Financial Institutions.

It is also the layer where all the input data sourced by the user through Staging Entities are persisted and available for reporting and consumption.

Along with the definition or structure of these entities, the catalog also provides mapping metadata to populate these entities from sourcing to PMF Data Pipeline.

Currently, this layer has entities to persist Journal, General Ledger Account, Transactions and Contract Data to cater to the needs of the DFCS solution.

> **Note:**
>
> For any existing extractions defined on Journal, Journal Header, and General Ledger Account Data, re-select the grain, entity, and attributes and save. This will enable extraction from the Persistence layer.

> **Note:**
>
> This is applicable only for the Banking domain. The PMF pipeline **Account Load Run Map Population** execution should have completed before executing the below step. This step is required for Common Account Summary and Transaction Summary data population.

Based on the domain, select **Add Domain** under **Administration**, domain specific Result Area Entities are populated.

The user must manually execute a **PMF Pipeline Result Area Entities Data Population** to populate data in the Result Area tables.

> **Note:**
>
> This is specific to Banking domain. The following Target tables Accounting Entries, Accounting Entries Header, Currency Exchange Rates, General Ledger Data, Common Account Summary and Transaction Summary are used for data population in the result area.

The user must manually execute a **PMF Pipeline Data Service Result Area Data Population** to retrieve the data in the Result Area tables. The persistence of day and period-to-date movement information is performed through this pipeline.

> **Note:**
>
> The **As of Date** parameter value passed while executing PMF Pipeline **Data Service Result Area Data Population** filters on **Effective Date** attribute in the source entity.

2.4.3.1.2.1 Execute Result Area Entities Run Pipeline

The steps to execute the Result Area Entities Run Pipeline are as follows:

Prerequisite:

The SCD pipeline execution should have completed before executing the below steps. For more details, see Slowly Changing Dimensions.

1. Execute the Run Pipeline after data is loaded in the Stage tables and processed.

2. Use the Run Execution Parameter **As of Date** to execute for each date, to get the data in the result tables. This parameter value is applied as a filter in the source entity on **As Of Date** Business term.

3. If you execute multiple times within a day, the data is loaded with different Run Execution Skey.

   For example, if the execution is done thrice a day, the data is loaded thrice into the Target table.

   > **Note:**
   >
   > You should not re run the already executed pipeline. If you re run, the execution fails due to duplicate Run Execution Skey. You can resume the execution in case of pipeline failures after fixing the errors.

4. If the execution is repeated with the new Run Skey, the entire data available in the Stage table will be loaded to the Target table.

2.4.3.2 Properties

Entity consists of a set of Attributes. Each Attribute is mapped to a unique Business Term. Each Attribute derives its characteristics such as Data Type, Constraints, and so on from the Business Definitions.

2.4.3.3 Granularity

Data Catalog defines granularity of each of the Entity it holds.

V_GRAIN_ID	V_GRAIN_NAME
DATE	Date
ACCT	Customer Account
ACCT_TXN	Customer Account Transactions
ACCT_ENT	Accounting Entries
GL_DATA	General Ledger Data
EXCHANGE_RATE	Exchange Rates
PARTY_CONSENT	Party Consent

For example, as the Loan Contracts Entity contains information at the Account Level, the grains of Loan Entity are defined as ACCT.

2.4.4 Business Term

A Business Term is a Functional Keyword that represents a unique functional aspect of the Financial Artefacts (Entities and Attributes). There is a business meaning to each Financial Artefact, and therefore, a business name is created in the form of a Business Term. Then the Business Term is used to find and fit into a purpose of different contexts. Therefore, Business Terms are expressions of the Participants/Actors, their Activities, and requirements conveyed in common business.

The approach to arrive at the Logical View of the Physical Model has inverted in the Data Catalog. Contrary to the previous practices, first the Functional Keyword or Artefacts are identified, collated, and then expressed in common business language, and then the corresponding Physical Model is developed.

Multiple Business Terms are a part of each Subject Area. A Business Term is a singular term irrespective of multiple places it appears in and the Business Term will have a recognizable naming pattern.

Metadata is attached to the Business Terms.

The Content Structure allows you to define relationship between related Business Terms for better discovery and usage in the aspect of sourcing.

Table 2-1   Example of Relationship between Business Terms

Business Term	Related Business Term	Relationship Type
Current Write Off Amount	Write Off General Ledger Code	MEASURE_GL

To create or update a Business term, see Create Business Terms.

2.4.4.1 Business Term Properties

In the process of creating a Business Term, certain characteristics are also defined that serves as input when arriving to a Physical Model Structure. These characteristics include origin, classification, logical data type, PII term indicator, list of accepted values, and data quality check applicable for a Business Term.

The Business Term Properties are as follows:

- Term ID
- Logical name
- Origin
- Data Element ID
- Language
- Logical Data Type ID
- PII Flag
- LOV Code
- Display Name
- LOV Description

> **Note:**
>
> The Business Terms for which PII Flag is set and for those Business Terms that are used in Entities, the underlying attributes of those Entities will be redacted by applying the appropriate redaction policies. A normal user cannot query or view the redacted data. Only users with exempt redaction policy role can view or query the data.

2.4.4.2 Business Term Glossary

For each Business Term, there is a corresponding Glossary. The Glossary explains the meaning and purpose of each Business Term, which is the context. The Glossary consists of the information such as description, usage, sample values, and usage examples of the Business Terms.

2.4.4.3 Business Term List of Values

Data Catalog defines and seeds the List of Values for all the Business Terms that are Flags. The List of Values help you with data sourcing and creating Data Quality Checks.

Table 2-2   Example of Business Term List of Values

List of Values	Display Name	List of Values Description
Y	Yes	Mortgage has a balloon payment
N	No	Mortgage has no balloon payment

2.4.4.4 Related Business Terms

Catalog has a provision to store the metadata to represent the relationship between two Business Terms along with the type of relationship.

Some information is later used for specific purpose. For example, In the case of `SHARED_DEFINTION` relationship type, Data Quality rules are automatically replicated for the related Business Term if there are rules existing for the Business Terms.

`MEASURE_GL` is another relationship type where the Business Term is a reconciliation measure and the related Business Term is corresponding to a GL account.

Table 2-3   Example of Related Business Term

Business Term	Related Business Term	Relationship Type
Account or Contract Number	Parent Account Number	SHARED_DEFINITION
End of Period Balance	General Ledger Account code	MEASURE_GL
Maturity Amount	Maturity Date	VALUE_AS_OF_DATE
End of Period Balance	End of Period Balance in Local Currency	CURRENCY_EQUIVALENT
Account Tenor	Tenor Unit	MULTIPLIER_UNIT

2.4.5 Data Quality Checks

Data Catalog Contents include Data Quality Check Rules. These Rules are defined at the Business Term and Entity Level, and seeded as a part of the Data Catalog Content. For more information on user-configurable Data Quality Rules, see Data Quality Framework.

2.4.5.1 Types of Data Quality Checks

The following are the types of Data Quality Checks and their definitions:

Data Quality Check	Definition
Blank Value Check	Identifies if the base column is empty considering the blank space.
Column Reference/Specific Value Check	Compares the base column data with another column of the base table or compare with any attribute of compatible data type from a referenced dimension of a base entity.

Data Quality Check	Definition
Data Length Check	Checks for the length of the base column data by using a minimum and maximum value, and identifies if it falls outside the specified range.
Duplicate Check	Is used when a combination of the column is unique and identifies all duplicate data of a base table in terms of the columns selected for the duplicate check.
List of Value Check	It can be used to verify values where a dimension/master table is not present. This check identifies if the base column data does not match with a value or specified code in a list of values.
NULL Value Check	Identifies if NULL is specified in the base column.
Referential Integrity Check	Identifies all the base column data that has not been referenced by the selected column of the referenced table. Here, the user specifies the reference table and columns.
Range Check	Identifies if the base column data falls outside a specified range of a Minimum and Maximum value. Value Needs to be between 0 and 100.
Uniqueness Check for Numeric Identifiers in Dimension	Check to identify duplicates in Numeric Identifier Attribute for a Dimension Entity. Check to identify changes in Numeric Identifier Attribute for a Dimension Entity for the same Business Key member.

> **Note:**
>
> Threshold option is currently not supported for custom check.

Special Character Check	Identify business term contains only the allowed set of special characters. Currently, DFCS has preconfigured rules for the following Business Terms:

- Legal Entity Code
- Legal Entity Description
- Legal Entity Name
- Data Source Code
- Data Source Description

> **Note:**
>
> The check category for custom DQ check referencing to dimensions will be shown as **Custom Check** in the Data Quality Result reports.

2.4.5.2 Use and Execute the Source Data Quality Check Process

Use this Run Pipeline (Process) to generate and view the Data Quality report for any of the Data Quality run execution. The Data Quality Reporting Engine Pipeline uses the 'As of Date' and the 'Run Identifier' parameters to generate the Data Quality reports for run executions which are in 'Completed' status either for a passed or a failed run execution.

> **Note:**
>
> Once the DQ Report has been generated for the failed DQ run pipeline, post the execution of this PMF, users must provide the Process Instance ID of the failed DQ run to the public API to view the DQ Groups that are breaching the threshold limit. For more information, see Data Operations Guide.

1. To access the **Source Data Quality Check Process Pipeline**, select the **Process Orchestration** from the home page.

   The **Process Modeller** page is displayed.

2. On the **Process Modeller** page, search and select the **Source Data Quality Check Process Pipeline**.

   The **Process Flow** page is displayed. This Process Flow is designed on the Drawing Canvas using the Transition, Activity, and Widgets Components available in the floating toolbar. `RUN DQ RULE` widgets representing Data Quality Groups are set up in parallel to each other. A Data Service widget called as **Data Quality Reporting Engine** is added at the end meant for reporting Data Quality Checks.

3. To view the details of any widget, double-click on the widget and the details related to its Activity, Transition, and Notification are displayed. On the drawing canvas, you can select and see the Definition, Data Fields, and Application Rule details.

4. To execute the **Run**, you can select the **Run Parameter Values** using the **Execution** button on the **Process Flow** page or on the **Process Modeller** page.

5. Go to the **Process Modeller** page to execute the **Run**.

6. Click the menu button corresponding to the **Source Data Quality Check Process** that needs to be executed.

7. Click **Execute Run**.

   The **Execution** page is displayed.

8. On the **Execution** page, to execute the **Run** with parameters, select **With Parameters** in the **Execution Type** list.

9. Select the required **As of Date** for which the Data Quality Checks need to be processed.

10. Click **Apply** to initiate the **Run Pipeline** execution.

> **Note:**
>
> The execution of the Run Pipeline is triggered using the selected Extraction Date. See the *Process Orchestration* section for more details about the Process Orchestration framework.

To verify the Run Execution of the Source Data Quality Check Process, do the following:

a. To open the **Process Monitor** page, on the Process Modeller page, click the **Process Monitor** button or select **Process Flow Monitor** on the **Process Modeller** menu.

The **Process Monitor** page is displayed, which lists all the Run Instances corresponding to the Source Data Quality Check Process.

b. On the **Process Monitor** page, search by the Process ID, or by the Process Name Source Data Quality Check Process, and select the Process Instance for the required Run Pipeline (Process) that was executed.

11. The **Process Flow** page is displayed with the Run Execution Status on each Node of the Source Data Quality Check Process.

12. To verify the Run Execution Logs, do the following:

a. On the Process Monitor page, click the required Process Instance for which you need to verify the Execution Logs. The Process Flow page is displayed with the Run Execution Status on each Node.

b. To see the Execution Status details of a Node, double-click on that Node. The Execution Status details page is displayed.

c. Click **Execution Logs**.

The Log Viewer page is displayed, which lists all the Logs related to the Process Instance. To see the details of a log entry, click the Show More Button. Click outside the Log Viewer page to close it.

2.4.6 Slowly Changing Dimensions

A Slowly Changing Dimension (SCD) is a dimension that stores and manages both current and historical data over time in a Data Warehouse.

> **✏ Note:**
>
> If you have entered the **Full Load** parameter as **YES**, you can load snapshot data for master tables and execute SCD process with additional parameters.
> In case, when you have entered the **Full Load** parameter as **YES** and if the load is incremental and does not contain all the nodes, those nodes are retired by default.
>
> When entered as **NO**, you can load incremental data for master tables and execute SCD process with additional parameters. The incremental data load for master tables is supported.
> The retired dimensions can be brought back as part of subsequent SCD load by updating the Closed Flag column to null or **N**.

Current behavior of Disabled Nodes:

• The Closed Flag attribute is not supported for the Product Processor (PP) accounts.

• A new node in the Stage Master table with Closed Flag **Y** is supported and will be ignored during SCD load.

2.4.6.1 Types of SCDs

The type of SCD Catalog supports is:

- **Type 2 SCDs** - Creating another dimension record: A Type 2 SCD retains the full history of values. When the value of a chosen attribute changes, the current record is closed. A new record is created with the changed data values and this new record becomes the current record. Each record contains the effective time and expiration time to identify the time period between which the record was active.

The Dimension Data population in the Process Orchestration displays the available SCDs with details such as Map Reference Number and Entity Name.

2.4.6.1.1 Dimension Data population

Following fields are mandatory and must be sourced.

Table 2-4   Generic Dimension attribute description

Business Term	Comments
As Of Date	The data must be valid.
Code / Business Key	The data must be unique.
Numeric Identifier	Numeric Identifier data should be unique across business key values, and no two-dimensional values should share the same numeric identifier. This can be ensured by generating unique numeric IDs using the Data Integration component. Additionally, there are Data Quality (DQ) checks in place to ensure there are no duplicate numeric identifiers.
Closed Flag	For Example: Y, N, or Null. Null will be considered as No. This value determines whether the Node is enabled or disabled.
Name	The data must be valid.
Description	The data must be valid.

2.4.6.1.2 Hierarchy Data Loading

A Business Hierarchy refers to organizing data into logical tree structure to represent the groups and relations among various levels at which measure can be viewed. A measure can be viewed at different levels depending upon the hierarchy breakdown of the dimension category.

Data Catalog supports data loading using the following Hierarchies:

- Account Hierarchy Dimension
- Cash Flow Type Hierarchy Dimension
- Employee Hierarchy Dimension
- General Ledger Hierarchy Dimension
- Legal Entity Hierarchy Dimension
- Line Of Business Hierarchy Dimension
- Organization Unit Hierarchy Dimension
- Party Hierarchy Dimension
- Product Hierarchy Dimension
- Project Hierarchy Dimension

- Ledger Hierarchy Dimension

- Business Unit Hierarchy Dimension

- Channel Hierarchy Dimension

- Branch Hierarchy Dimension

- Location Hierarchy Dimension

- Instrument Contract Hierarchy Dimension

- Business Segment Hierarchy Dimension

> **Note:**
>
> You must provide the snapshot for the Hierarchy code that has been corrected or modified when you reload the Hierarchy data.

Hierarchy data loading is a part of the Dimension Data population.

2.4.6.1.2.1 Hierarchy Data Load

Following fields are mandatory and must be sourced.

Table 2-5   Generic Dimension attribute description

Business Term	Comments
As Of Date	The data must be valid.
Hierarchy Code	Each hierarchy code for a specific As Of date must have one root node.
Effective Date	Refers to the effective date of the account or contract or interest rate or exchange rate from which it is effective. In the case of hierarchy dimension entities, it refers to the effective date of the hierarchy code, and while sourcing data, users need to provide a snapshot of the latest hierarchy code with the same effective date. The data must be valid.
Child Code	Child Code should be available in corresponding Master Table and should be unique.
Parent Code	Parent Code should be available in corresponding Master Table.
Name	The data must be valid.
Description	The data must be valid.

2.4.6.1.2.2 Account Dimension

Data Platform supports sourcing of account information from Product Processors like Annuity, Loan contracts, Repo contracts and so on. The Dimension Account must be populated through Product Processor.

> **Note:**
>
> If Product Processor contains data, then Account Dimension must be populated through Product Processor and you must not populate Account Master.

To populate Account Dimension through Product Processors, perform the following:

1. Execute **Account Load Run Map Population** pipeline containing the data in Product Processor tables.

   > **Note:**
   >
   > Account Master should not contain any data.

2. Execute **Dimension Population Process** pipeline has to be executed for all dimension table population.

2.4.6.1.3 Use and Execute the Dimension Population Process

Use this Run Pipeline (Process) to manage past and historical data for various Dimensions.

To use and execute the Dimension Population Process in the Process Orchestration, do the following:

1. To access the Dimension Population Process Pipeline, on the home page, select **Data Pipeline** for **Process Orchestration**. The **Process Modeller** page is displayed.

2. On the **Process Modeller** Page, search and select the Dimension Population Process. The **Process Flow** Page is displayed. This Process Flow is designed on the Drawing Canvas using the Transition, Activity, and Widgets Components available in the floating tool bar. SCD Widgets representing individual SCDs are set up in parallel to each other. At the end of this process, the Connectors representing Hierarchies are set in parallel.

3. To view the details of any Node, double-click on the Node and the details related to its Activity, Transition, and Notification are displayed. On the drawing canvas, you can select and see the Definition, Data Fields, and Application Rule details.

4. To execute the Run, you can select the Run Parameter Values using the **Execution** Button on the Process Flow Page or on the Process Modeller Page.

   Go to the **Process Modeller** Page to execute the Run. Click the **Menu** Button corresponding to the Dimension Population Process that needs to be executed. Click **Execute Run**. The **Execution** Page is displayed.

5. On the **Execution** Page, to execute the Run with parameters, select **With Parameters** in the **Execution Type List**. Select the required **As of Date** for which the SCDs need to be processed. Select the required **Data Source** option and click the **Apply** Button to initiate the Run Pipeline execution.

   > **Note:**
   >
   > The execution of the Run Pipeline is triggered using the selected Extraction Date. See the Process Orchestration Section for more details about the Process Orchestration.

6. To verify the Run Execution of the Dimension Population Process, do the following:

    a. To open the **Process Monitor** page, on the **Process Modeler** page, click the **Process Monitor** button or select **Process Flow Monitor** on the Process Modeler menu.

    The **Process Monitor** page is displayed, which lists all the Run Instances corresponding to the Dimension Population Process.

    b. On the **Process Monitor** page, search by the Process ID, or by the Process Name **Dimension Population Process**, and select the Process Instance for the required Run Pipeline (Process) that was executed.

7. The **Process Flow** page is displayed with the Run Execution Status on each Node of the Dimension Population Process.

8. To verify the Run Execution Logs, do the following:

    a. On the **Process Monitor** page, click the required Process Instance for which you need to verify the Execution Logs. The **Process Flow** page is displayed with the Run Execution Status on each Node.

    b. To see the Execution Status details of a Node, double-click on that Node. The Execution Status details page is displayed.

    c. Click **Execution Logs**.

    The Log Viewer page is displayed, which lists all the Logs related to the Process Instance.

    d. To see the details of a log entry, click the **Show More** button. Click outside the Log Viewer page to close it.

    Once this pipeline process is complete, ensure to run the **Reporting Parent Child Relation Data Population** process to create and refresh parent/child hierarchy data. For more details, see Create and Refresh Parent/Child Hierarchy Data.

2.4.6.1.3.1 Create and Refresh Parent/Child Hierarchy Data

OBIEE RPD is enhanced to read the data of hierarchies from database. This is achieved using views in database so that data is pre-prepared before OBIEE layer needs it. Use the Run pipeline (process) Reporting Parent Child Relation Data Population to create and refresh parent/child hierarchy data.

> **Note:**
>
> This pipeline must be executed even after completing the custom pipeline with SCD and connector data population.

To use and execute the Reporting Parent-Child Relation Data Population process within Process Orchestration, follow these steps:

1. On the home page, select the **Process Orchestration**. The **Process Modeller** page is displayed.

2. To execute the run, follow these steps:

    a. Navigate to the **Process Flow** page or the **Process Modeller** page.

    b. Select the **Run Parameter Values** using the **Execution** button.

    c. On the **Process Modeller** page, locate the **Reporting Parent-Child Relation Data Population** process.

d. Click the **Menu** button corresponding to the process you want to execute.

e. Click **Execute Run**. The **Execution Page** will be displayed.

To execute a run with parameters on the **Execution** page, follow these steps:

a. In the **Execution Type** list, select **With Parameters**.

b. Choose the required **As of Date** for which the SCDs need to be processed.

c. Select **NA** as the **Data Source** option.

d. Click **Execute** to initiate the Run Pipeline execution.

2.5 Catalog Extension

With Catalog Extension, you can extend the seeded Catalog data model to support new or client-specific business use cases. You can create new entity definitions or customize the existing entity definitions based on the use case.

> **Note:**
>
> The execution of the Run Pipeline is triggered using the selected Extraction Date.

Table 2-6   Enabled Data Model Extensions in Catalog

Catalog Object Type	Create	Modify	Extend	Delete
Business Term	Yes	No	No	No
Dimension Entity	Yes	No	Yes	No
Fact Entity	Yes	Yes	Yes	No
Data Quality Framework	Yes	Yes	Yes	No

All the points mentioned above are applicable to both Seeded and Custom Objects

- New Business Terms added to fact entities can be dimension references, measures, flag or indicators and alphanumeric attributes without dimensional reference.

- Fact logical entities that are allowed for extensions are product processors, account transactions, accounting entries, Accounting Entries Header and Transaction Header.

- Extensions are allowed to logical entities and physical model modification is controlled by the service.

- Required data flow for the extended entities are auto generated by the system.

- Completes basic data quality checks required for extended entities.

You must identify the additional data requirements to implement in the application through system and business use case analysis. Data model gaps need to be captured in Issues and Action governance framework.

Data model extensions must be designed based on the guidelines provided for each area.

Catalog Result layer is designed as a Star Schema for better performance of Analytical and Reporting queries. Hence it is highly recommended that Dimensional Entities must be created

for a pre-defined list of values before adding to the Fact Entities. Adding of alphanumeric attributes for Fact Entities must be avoided wherever possible.

2.5.1 Catalog Extension Process Workflow

The catalog extension process workflow is as follows:

Figure 2-3   Catalog Extension Process Workflow
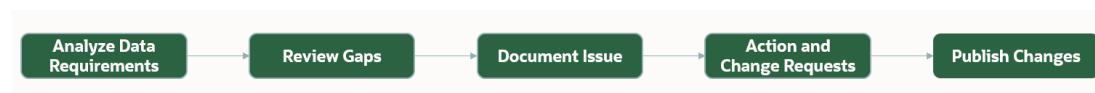
- **Analyze**
  - Analyze the requirements based on the existing details in Data Catalog.
  - Use the Catalog Viewer to understand existing Business Terms, logical entities and their properties.
- **Review**
  - Prepare the list of Gaps – additional business terms, dimensions, fact extensions and other associated properties.
  - Document the list of Gaps – group based on type and purpose of extensions.
  - Review the list of Gaps to ensure if the proposed additions are consistent and conformance according to the Data Catalog Extension Principles and Naming Standards.
- **Document**
  - An Issue Administrator will Log an Issue (Category as Catalog Extensions) based on the purpose of the extension. To know how to log an Issue, see the Issues and Actions section.
  - Document the details of the extension requirements in the Issue. Upload the analysis and requirement documents.
  - Assign to the Issue Owner.
- **Action**
  - Issue Owners create Action (Type as Catalog Extension) for the issue. It is recommended to define an action for each type of change. To learn how to create an Action, see the Issues and Actions section.
  - Upload the document containing the list of changes in Action details.
  - Action Owners create or extend the catalog objects based on the type of Change Request.
  - Action Owners submits the action for approval.
- **Publish**
  - Issue Owner reviews submitted actions and approves or rejects along with appropriate comments.
  - After approval no modification is allowed to object definitions.
  - Issue Administrator publishes the approved Action to approve the changes in the Catalog data model.

– Actions need to be published sequentially and in the logical sequence that would be reflected in schema. To use a Custom BT in a new Dimension Entity or while Extending the Fact, first create and publish the Business Term. Once the BT is published, it will be available in the list of Available Business Terms during creation of Dimension Entity and while extending a Fact.

– You can verify the published Actions from Catalog Viewer for Dimension Entity and Extend Fact Entity.

– Please note that extensions will be reflected in master repository of objects only on Publish and it is mandatory to publish before users can view or consume the object for further extensions.

– If a Publish action is successful, the action is displayed under Publish tab. If a Publish action is unsuccessful, the action is displayed under Approved tab.

> **Note:**
>
> * To publish an action, the custom DQ rule must be mapped to at least to one group. A custom rule which is not mapped to any group will not be published.
>
> * Similarly, to publish an action, the custom DQ group must be mapped to at least one rule. A custom DQ group with no DQs mapped to it will not be published.

2.5.1.1 Create Business Terms

Based on the Action created, follow the steps below to create a Business Term.

To create a custom Business Term for an Action, do the following:

1. Go to the **Inbox** by clicking the **Inbox** button on the Home page

   The Inbox page is displayed.

2. To create a custom Business Term for an Action, do the following:

   a. Select the required Action for which you need to create a custom Business Term.

      The Action Details Page is displayed.

   b. On the **Extension** tab, click **Create Business Term**.

      The **New Business Term** page is displayed.

   c. On the **Definition** tab, set the following values.

Table 2-7   Business Terms Field Names and Description on the Definition Tab

Field Name	Description
Business Term Logical Name	Type a unique name for the Business Term. By default, the logical name will be appended with the Affix Type which is Prefix and the Affix Value for this prefix is "Custom " with a space in the last before beginning the Business Term. For Example: Custom BusinessTerm1 Type a unique name for the Business Term Logical Name. • The Business Term needs to be long and meaningful. Short meaningless Abbreviations cannot be used. • The Business Term must always be in Camel case. • Logical names must have A to Z and 0 to 9 characters only • The Business Term can consist of alphanumeric without special characters. Maximum allowed length is 150 characters. A single space can be used as a Delimiter to separate the words. **✎ Note:** You should not create two Business Terms with the same logical name in different cases. For Example: Business Term1 and business term1.
Classification	Select one of the following categories for the Business Term: • Date and Timestamp • Flag or Indicator • List of Values • Monetary Amount • Numerical Non-Monetary • Text Description • Identifiers

Table 2-7   (Cont.) Business Terms Field Names and Description on the Definition Tab

Field Name	Description
Logical Data Type	Select the required Logical Data Type that defines the Data Type and Length of the Business Term. For more information, see the Logical Data Type and Data Length Table.
	Note: If you want to configure the List of Values, select the Logical Data Type from the following list: - Flag - Indicator - Code_Alphanumeric - Code_Alphanumeric_Long - Code_Numeric
	Note: It is recommended to not have more than 10 distinct LOVs (List of Values) for lov codes definition. If the number of distinct LOVs exceeds 10, it is advisable to create a new custom dimension.
Personally Identifiable Information	Select if the Business Term is personal information. The value can be a Yes or No (Enable the Toggle Switch for Yes and disable for No).
	Note: All the PII attributes created by the User is enabled for data masking while creating a cloned environment in the system.
Add	Click this button to add this Business Term in the Glossary List
Glossary Name	It is auto-populated based on the logical name of the Business Term.
Glossary Context	It is auto-populated with a pre-defined value (FSDF).
Business Term Description	Double-click on the blank space corresponding to this field and type a proper Description for the Business Term: - It must be a complete sentence with possible indication of data domain and list of values it contains along with business context. - Business term description shall be without special characters. Maximum allowed length is 4000 characters.
Delete	To delete a Glossary item, select the Glossary and click **Delete**.

Logical Data Type and Data Length

This section provides the list of the logical data type and its data length.

Table 2-8   Logical Data Type and Data Length

Logical Data Type	Data Length
Amount	NUMBER(22,3)
Amount_Long	NUMBER(38,6)
Amount_Medium	NUMBER(30,11)
Code_Alphanumeric	VARCHAR2(20)
Code_Alphanumeric_Long	VARCHAR2(60)
Code_Numeric	NUMBER(14)
Currency	VARCHAR2(3)
Date	DATE
Description_Short	VARCHAR2(100)
Description_Medium	VARCHAR2(1000)
Description_Long	VARCHAR2(4000)
Description	VARCHAR2(255)
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)
Amount_Currency	NUMBER(22,3)
Amount_Currency_Long	NUMBER(38,6)
Amount_Currency_Date	NUMBER(22,3)
Amount_Currency_Date_Long	NUMBER(38,6)

d. On the **Relationships** Tab, set the following values.

Table 2-9   Business Terms Field Names and Description on the Relationships Tab

Field Name	Description
Add	Click this button to add the Business Term in the Glossary List.
Group Code	Enter an identifier that represents that one Business Term is related to another Business Term. Group Code shall be alphanumeric with maximum 10 characters in length. An existing group code can be mentioned if the new relationship falls into existing group.
Relationship Type	Enter the relationship type that occurs between Business Terms. For more information, see the Related Business Terms.

Table 2-9　(Cont.) Business Terms Field Names and Description on the Relationships Tab

Field Name	Description
Related Business Term	Double-click on the blank space corresponding to this field and type a proper Description.
Delete	To delete a Relationship item, select the Relationship and click **Delete**.

    e.　On the **List of Values** Tab, click **Add** and set the following values.

> **✎ Note:**
>
> The Add or Delete options in List of Values tab is enabled only for the Custom Business Terms for the following Data types:
>
> - Flag
> - Indicator
> - Code_Alphanumeric
> - Code_Alphanumeric_Long
> - Code_Numeric

Table 2-10　Business Terms Field Names and Description on the List of Values Tab

Field Name	Description
Code	Enter the code for the LOV. For Example: Y. This is limited to one character and only alphanumeric character is supported and should be unique. The code is case sensitive.
Display Name	Enter the display name for the LOV.
Description	Enter the description for the LOV.

Following are the current behavior of LOV:

- The Business Term with Logical Data Type as Flag, Indicator, Code_Alphanumeric, Code_Alphanumeric_Long and Code_Numeric are allowed to have associated LOV. For other BT types, it is recommended to create a Dimension.

- LOV definition will capture Code, Display Name, and Description.

- The LOV should match the data type and data length of the Business Term.

- The Business Term follows the existing governance validations. For example: You cannot modify after the approval, only Action owner is allowed to modify, and so on. For more details, see the Approval workflow of Issues and Actions section.

Based on the list of values configured for a given custom business terms, the system auto generates data quality rules for the associated entities.

    f.　Click **Save**.

> **✎ Note:**
>
> When you create an Action for the first time and wish to extend the catalog, during a Business Term or a Dimension Entity creation, the following warning is displayed:
> "Please ensure that the affix details are configured. Click **Yes** to proceed with saving the Business Term/Dimension"

A confirmation message is displayed. Click **OK**.

g. On the **Extension** Tab, in the **Business Term Extensions** Section, the new Business Terms are listed.

h. Click **Submit** to submit the Action for approval.

A confirmation message is displayed.

i. Click **Yes** to confirm.

Your confirmation is acknowledged.

> **✎ Note:**
>
> Once a Business Term has been Approved or Published, it cannot be modified or removed from the Extension. The properties of an existing Out-of-box Business terms cannot be modified, but any new custom Business Terms which are in only **Draft** status can be modified

> **✎ Note:**
>
> If you create any custom Business Term and want to use the same in any of the custom Dimension or in extending a Fact entity, the Business Term alone must be initially published.

3. To update a draft Business Term for an Action, do the following:

a. Click the required Action for which you need to update a Business Term. The Action Details Page is displayed.

b. On the **Extension** Tab, click the Business Term that you need to update.

The Business Term Details Page is displayed.

c. You can update any Field and Click **Save**.

A confirmation message is displayed. Click OK to confirm.

d. On the **Extension** Tab, in the **Business Term Extensions** Section, the new Business Terms are listed. Click outside the Action Details Page to close it.

For information about Approval of Action (for Business Term), see the Approval workflow of Issues and Actions section.

2.5.1.2 Extend Business Terms

To extend a Business Term for an Action, do the following:

1. Go to the **Inbox** by clicking the **Inbox** button on the home page.

   The **Inbox** page is displayed.

2. To extend a Business Term for an Action, do the following:

   a. Select the required Action for which you need to extend a Business Term. The Action Details page is displayed.

   b. On the **Extension** tab, click **Extend Business Term**. The **Extend Business Term** page is displayed.

   c. Set the following values:

   Table 2-11   Business Term Field Names and Description

Field Name	Description
Available Business Terms	Based on the Logical Data Type selected during Business Term creation, select the required Business Term.
Add	Click this button to add the LOV code, name, and description.
Delete	Click this button to remove the LOV data.
LOV table	If List of Values are existing, those are displayed in the table.

   Following are the current behavior of LOV:

   - You can add `LOV` for an existing custom Business Terms for the `Data Types Flag`, `Indicator`, `Code_Alphanumeric`, `Code_Alphanumeric_Long`, and `Code_Numeric`.

   - `LOV` definition will capture Code, Display Name, and Description.

   - The `LOV` should match the data type and data length of the Business Term.

   - The published `LOV` code cannot be removed or modified.

   - You can modify the display name and description for existing `LOV` values.

   - The Business Term follows the existing governance validations. For more details, see the Approval workflow of Issues and Actions section.

Table 2-12   Business Terms Field Names and Description on the Relationships Tab

Field Name	Description
Add	Click this button to add the Relationship for Business Term.
Group Code	Enter an identifier that represents that one Business Term is related to another Business Term.
	Group Code shall be alphanumeric with maximum 10 characters in length.
	An existing group code can be mentioned if the new relationship falls into existing group.
Relationship Type	Select the relationship type that occurs between Business Terms from the drop down. For more information, see the Related Business Terms.
Related Business Term	Select the related business term from the drop down.
Delete	To delete a Relationship item, select the Relationship and click **Delete**.

> **Note:**
>
> - Users can now add relationships to the Custom Business Terms as well as Out-of-the-Box Business terms.
> - Users cannot add multiple relationships of same type for a Business Term.
> - For an Out-of-the-Box BT, users can only add the Measure GL relationship and the Business Term must be a numerical Data type.

 d. Click **Save**. A confirmation message is displayed.

 e. Click **OK**.

 f. On the **Extension** tab, in the **Entity Extensions** section, the new extended Business Term is listed.

> **Note:**
>
> Once an extended Dimension Entity has been Approved, the extension request cannot be modified.

3. If you want to update a draft Entity for an Action, do the following:

 a. Click the required Action for which you need to update a Dimension Entity. The Action Details Page is displayed.

 b. On the **Extension** tab, click the **Extend Dimension Entity** that you need to update which is in **Draft** status.

 c. The **Entity Details** page is displayed. You can update the existing values in the available fields.

 d. Click **Save**. A confirmation message is displayed.

 e. Click **OK**.

 f. On the **Extension** tab, in the **Entity Extensions** section, the new extended Dimension Entities are listed. Click outside the Action Details page to close it.

 • Only sourced or custom dimensions (Not seeded) can be extended.

 • Once the publish action is complete, the Dimensions will be added with new attributes and also their corresponding SCDs will be modified.

 • Also if the added attribute has a DQ associated with it, it will be added to the DQ Group.

 • You can view the modified changes to the Dimension using Data Catalog.

2.5.1.3 Manage Dimension Entity

Based on the Action created, follow the steps below to create a Dimension Entity.

2.5.1.3.1 Create a Dimension Entity

To create a Dimension Entity for an Action, do the following:

1. Go to the **Inbox** by clicking the **Inbox** button on the home page.

The **Inbox** page is displayed.

2. To create an Entity for an Action, do the following:

   a. Select the required Action for which you need to create a Dimension. The Action Details page is displayed.

   b. On the **Extension** tab, click **Create Dimension**. The **Create Dimension Entity** page is displayed.

   c. On the **Definition** tab, set the following values.

Table 2-13   Dimension Entity Field Names and Description on the Definition Tab

Field Name	Description
Entity Name	Type a unique name for the Entity. The name should start with the word **Local** with a space in the last before beginning the entity name. For Example: Custom Entity1 • Entity logical name must be in Camel case. • It must have A to Z and 0 to 9 characters only. • It must be alphanumeric with maximum length 120 characters. **✐ Note:** You should not create two Entity names with the same logical name in different cases. For Example: Custom ENTITY1 and Custom entity1.
Entity Description	Enter a description for the Entity. **✐ Note:** New line character (Enter key) should not be used in the Entity Description field. • It must be a complete sentence with possible indication of data domain and list of values it contains along with business context. • It must be alphanumeric with maximum length 4000 characters.
Is data sourced to this entity from an external system	Select if the Dimension Entity has data sourced from external system. The value can be a Yes or No (Enable the Toggle Switch for Yes and disable for No). It is recommended to always enable this switch to source data from external systems as seeded dimension data flow is not supported.

Table 2-13   (Cont.) Dimension Entity Field Names and Description on the Definition Tab

Field Name	Description
Should this Entity contain hierarchical data	Select if the Dimension Entity contains hierarchical data. The value can be a Yes or No (Enable the Toggle Switch for Yes and disable for No).
	Keep this switch enabled if not absolutely sure if the new dimension will not contain hierarchical data as modification to published dimensions are not supported and required physical structure and data flow for hierarchical data cannot be enabled later.

Table 2-13   (Cont.) Dimension Entity Field Names and Description on the Definition Tab

Field Name	Description
Available Business Terms	Based on the Logical Data Type selected during Business Term creation, select the required Business Term to be added to the Dimension entity.

> **✎ Note:**
>
> You must add a minimum of two business terms such that at least one is a business key (i.e., natural key of the dimension) with an alphanumeric code column, and one is a numerical identifier (its unique numerical value for the corresponding business key).

> **✎ Note:**
>
> An error is displayed if you are trying to create multiple dimensions with the same business terms as the business key. If role-based dimensions are required, then it is recommended to create separate business terms for each role and use them as a business key in dimensions. **For Example:** Issuer, Guarantor.

- A Business Term is displayed in the Business Terms selection column only after it is published. You can then add the relevant Business Term while creating the Dimension Entity.
- Add only slowly changing attributes to dimension entity, don't add numerical measures, surrogate key(s).
- Only add functional business terms, standard technical business terms required for a dimension entity e.g. Start Date, End Date, Latest Record Indicator, surrogate key, and Closed Flag will be added by extension service by default.
- The Business Term 'Record Creation Date' should not be used for custom extensions.
- Flag the BTs which are nullable, by default all new additions and Not Null.
- Avoid adding alphanumeric business terms to fact entity(s) which does not have an associated dimension.
- The Dimension retire parameter should not be set for custom dimensions.
- Business Terms with logical data types SurrogateKey_Long, Numeric and Code_Numeric are mapped as Numeric Identifiers.

It is recommended to add a Business Term with logical name that contains the key word name, which defines the business key of the dimension. This will be used to define the child name in hierarchical data.

Field Name	Description
Add Attribute	Click this button to add the Attribute (Business Term) in the Business Terms List.

Table 2-13   (Cont.) Dimension Entity Field Names and Description on the Definition Tab

Field Name	Description
Remove Attribute	Click this button to remove the Attribute (Business Term) from the Business Terms List.

    d. Click **Save**. A confirmation message is displayed. Click **OK**. On the **Extension** tab, in the **Entity Extensions** section, the new Dimension Entity is listed.

- Logical dimension entity definition creates all the required physical structures. The Data flow (SCD) is created by the extension service along with entity definition. You must create a pipeline to add the SCDs created by the extension service.

- When the Hierarchical data toggle button is enabled, a data Flow (Connector) is created by the extension service along with Stage Hierarchy and Dimension Hierarchy. You must create a pipeline to add the Connectors created by the extension service.

- Create a new pipeline and the Data Quality group created for new entity (if any). A single pipeline can be created to add all the newly created Data Quality groups for catalog extensions.

> **✎ Note:**
>
> Once a Dimension Entity has been Approved it cannot be modified or removed from the Extension. Once a Dimension Entity has been Approved it cannot be modified or removed from the Extension.

3. If you want to update a draft Entity for an Action, do the following:

    a. Click the required Action for which you need to update a Dimension Entity.

        The **Action Details** page is displayed.

    b. On the **Extension** tab, click the Dimension Entity that you need to update which is in **Draft** Status.

    c. The Entity Details page is displayed. You can update any Field.

    d. Click **Save**. A confirmation message is displayed. Click **OK**. On the **Extension** tab, in the **Entity Extensions** section, the new Dimension Entities are listed. Click outside the Action Details page to close it.

2.5.1.3.2 Extend Dimension Entity

To extend a Dimension Entity for an Action, do the following:

1. Go to the **Inbox** by clicking the **Inbox** button on the home page. The **Inbox** page is displayed.

2. To extend an Entity for an Action, do the following:

    a. Select the required Action for which you need to extend a Dimension. The Action Details page is displayed.

    b. On the **Extension** tab, click **Extend Dimension**. The **Extend Dimension Entity** page is displayed.

    c. On the **Definition** tab, set the following values.

Table 2-14   Dimension Entity Field Names and Description on the Definition Tab

Field Name	Description
Dimension	Select the appropriate dimension from the drop-down list.
Available Business Terms	Based on the Logical Data Type selected during Business Term creation, select the required Business Term to be added to the Dimension entity. • The Business Term 'Record Creation Date' should not be used for custom extensions. **Note:** You must not extend a Dimension or a Fact table with a Business Term of Data Type 'TimeStamp".
Selected Business Terms	This field displays the selected business terms for the extended dimension entity. • You must add a minimum of one business term. • The default value cannot be empty when nullable is disabled. • The maximum size allowed for the default value is 10.
Add Attribute	Click this button to add the Attribute (Business Term) in the Business Terms List. **Note:** You cannot add an Amount column as an attribute in the dimension.
Remove Attribute	Click this button to remove the Attribute (Business Term) from the Business Terms List.

d. Click **Save**. A confirmation message is displayed. Click **OK**.

e. On the **Extension** tab, in the **Entity Extensions** Section, the new extended Dimension Entity is listed.

> **Note:**
>
> Once an extended Dimension Entity has been Approved, the extension request cannot be modified.

3. If you want to update a draft Entity for an Action, do the following:

a. Click the required Action for which you need to update a Dimension Entity. The Action Details page is displayed.

    b.   On the **Extension** tab, click the Extend Dimension Entity that you need to update which is in **Draft** status.

    c.   The Entity Details page is displayed. You can update the existing values in the available fields.

    d.   Click **Save**. A confirmation message is displayed. Click **OK**. On the **Extension** tab, in the **Entity Extensions** section, the new extended Dimension Entities are listed. Click outside the Action Details page to close it.

- The seeded dimensions can be extended by only custom Business Terms and custom dimensions can be extended by seeded as well as custom Business Terms.

- Once the publish action is complete, the Dimensions will be added with new attributes and also their corresponding SCDs will be modified.

- Also if the added attribute has a DQ associated with it, it will be added to the DQ Group.

2.5.1.4 Manage Fact Entity

Based on the Action created, follow the steps below to create a Custom Fact Entity.

2.5.1.4.1 Custom Fact Entity

A Custom Fact Entity is a tailored data structure designed to store specific factual information within a data system. It serves as a powerful tool for analysis and reporting, enabling you to enhance the data models by integrating customized facts that address unique business needs.

This section outlines the process of creating a custom fact entity, including the necessary validations, attribute selection, and business key configuration.

Steps to Create a Custom Fact Entity

1. Log in to the OFSAA DFCS portal.

2. Click on the **Inbox** icon. The **Inbox** window is displayed.

3. Click on **Log Issue** icon. The **Create Issue** window appears.

4. In the Create Issue window, enter the following:

Table 2-15   Create Issue

Field	Description
Name	Provide a clear, concise name for the issue. This could be a title or identifier.
Description	Fill in any necessary details about the issue, explaining what is wrong or needs to be addressed.
Category	Choose the relevant category from the dropdown menu (e.g., Catalog Extension).
Criticality	Determine the urgency or importance of the issue (e.g., "Medium").
Execution Date	Pick the date when this issue should be executed or resolved, using the calendar picker.
Source	Specify where the issue is coming from (e.g., "Key Indicators").

Table 2-15   (Cont.) Create Issue

Field	Description
Owner	Choose the team responsible for addressing the issue.
Target Date	Optionally, add any extra comments or context.
Comments (Optional notes or updates)	Choose the target date for completing the issue, using the calendar.
Attach Documents (Optional upload)	If necessary, upload any relevant documents that provide context or detail about the issue.

5. Click **Save** to create the issue.

6. From the inbox window, select the Log Issue from the list, and select **Actions** > **Create**.

7.

8. In the **New Action** window, enter the following details and click **Save**.

Table 2-16   Entity Description

Field	Description
Entity Name	Enter the Entity name. Ensure the following are considered. • Must start with capital letter • No special characters allowed • Maximum 120 characters • Must be unique (no duplicates) • Must conform to prefix/suffix requirement • Must be in CamelCase.
Entity Description	Enter the description. Maximum 4000 characters Newlines, double quotes, slashes characters are not allowed
Business Terms Selection	a. System will display available Business Terms (BTs). **Note:** By default, the **As Of Date** (Nullable) and **Data Source Code** (Business Key) BT attributes will be added. b. Select relevant BTs for your fact entity. **Note:** At least one business key attribute must be enabled for fact entity creation. The Business key is the functional key of the selected entity.

Table 2-16 (Cont.) Entity Description

Field	Description
Save Attribute	**a.** Click **Save**. The Entity and Attributes is saved to the logical tables. **b.** Click **Submit** to save the data and update status on DC_CR object tables. > **Note:** > The **Load Run Identifier** is not mandated.
Validation & Submission	**a.** Click **Validate Data** to check all fields are updated. **b.** Review the confirmation prompt: Do you want to submit BT/Entities for Create Fact Entity? **c.** Click **Yes** to proceed, else click **No** to modify the fields. > **Note:** > Please ensure that the affix details are configured before proceeding.
Post-Submission	System will display confirmation: All BT/Entities have been submitted successfully for approval. The request will be tracked in the console. **a.** Click **Approve**, the **Create Fact Entity - Add Comment** window appears **b.** Enter the reason for approval and click **Save**. A confirmation message appears.
Approval Workflow	**a.** Navigate to: **Legal Entity** > **Publish Change Request**. Approvers will review the submission, once approved, the fact entity becomes available for use. > **Note:** > Hover over the Custom Fact Entity to view the details that is tagged. **b.** Click **Publish**.

> **Note:**
>
> Troubleshooting Errors:
> - **Entity Name invalid** - Verify naming rules.
> - **Business Terms not available** - Check if terms were already assigned.
> - **System timeout** - Session expires after inactivity.

> **Note:**
>
> The Custom Fact Entity created is defined under Extend Fact Entity > Null Grain > Other category. The existing published entities is listed in the Other category. For more information, see Extend Fact Entity.

2.5.1.4.2 Extend Fact Entity

Based on the Action created, follow the steps below to create an Extend Fact Entity.

To Extend Fact Entity for an Action, do the following:

1. Go to the Inbox by clicking the Inbox button on the home page. The Inbox page is displayed.

2. To Extend Fact Entity for an Action, do the following:

   a. Select the required Action for which you need to Extend Fact Entity. The Action details page is displayed.

   b. On the **Extension** tab, click **Extend Fact**. The Extend Fact Entity page is displayed.

   c. On the **Definition** tab, set the following values.

Table 2-17   Extend Fact Field Names and Description on the Definition Tab

Field Name	Description
Grain/Grain Group	Select one of the following categories for the Entity: • Customer Account Transactions • Accounting Entries • Customer Account • Others
Include Entities	Select an Entity from the list of available entities. > **Note:** > The list of unsupported entities for extension are Dimension, Stage Master and Stage Hierarchy Tables.
Add Entity	Click this button to add this Entity in the Entities List.
Remove Entity	Select the entity, and click this button to remove an entity from the added list of Entities.

Table 2-17 (Cont.) Extend Fact Field Names and Description on the Definition Tab

Field Name	Description
Available Business Terms	Select one or more Business Terms to the Fact Entity: • Nullable: If a Business Term has Null value or not • Default Value: The Default value for the Business Term • Reference Entity: The list of dimensions for which Business Terms is a Business Key. **Note:** If you disable the Nullable option for an added Business Term, then it is mandatory to add a default value for the same business term. • Verify the Business Terms that are not already part of the entity(s) to be extended. • Mark the business terms as "Not Null" only when it is absolutely essential. • In case of a BT marked as not null, system mandates to provide a default value as per the data type and data length of BT definition. • Avoid adding alphanumeric business terms to fact entity(s) which does not have an associated dimension. • The Business Term 'Record Creation Date' should not be used for custom extensions. • The system populates the dimension list referenced by a Business Term and allows you to select the referenced dimension entity in case of multiple references. In case of single reference entity, the reference entity is auto-populated. **Note:** You must not extend a Dimension or a Fact table with a Business Term of Data Type "TimeStamp".
Add Attribute	Click this button to add this Attribute in the Business Terms List.
Remove Attribute	Click this button to remove an attribute from the added list of Business Terms.

    d. Click **Save**. A confirmation message is displayed.

    e. Click **OK**.

    f. On the **Extension** tab, in the **Entity Extensions** section, the new Fact Entity is listed. You must select the appropriate grain or group for the entities to be extended and verify if the Business Terms are not already part of the entity(s) to be extended. The Best practice is to add a referenced dimension before adding an alphanumeric Business Terms to the fact entities. You must limit the number of extensions to 100 Business Terms for each Fact Entity. You can create the Data Quality pipeline for the extension generated Data Quality checks for the extended entity.

> **✎ Note:**
>
> When an Out-of-the-Box fact entity is selected, only custom business terms are displayed.

3. If you want to update a draft Extend Fact Entity for an Action, do the following:

    a. Click the required Action for which you need to update an Extend Fact Entity. The Action Details page is displayed.

    b. On the **Extension** tab, click the Extend Fact Entity that you need to update.

    c. The Entity Details page is displayed. You can update any Field.

    d. Click **Save**. A confirmation message is displayed.

    e. Click **OK**.

    f. On the **Extension** tab, in the Entity Extensions section, the new Extend Fact Entities are listed.

    g. Click outside the Action Details page to close it.

2.5.2 Publish Change Request

Approved change requests for Catalog extensions must be published by Administrators to persist the extensions and generate associated configuration.

2.5.2.1 Publish Change Request Process Workflow

Publish change request process spans across multiple components involving automation of complex configurations as explained below:

Figure 2-4   Publish Change Request Process Workflow

- **Model Upload**

    – The Data catalog extension generates a model artifact in the Object store.

    – The Physicalization of the above model and the object registration will be performed in the system.

- **Slowly Changing Dimensions Publish**

    – The Slowly Changing Dimensions (SCD) definition of new entities that are part of the model are registered with the system.

- **Data Quality Publish**

    – The Data Quality definition of new entities that are part of the model are registered with the system.

- **Data Redaction for GDPR**
  - Any PII attribute part of the Data catalog extension model is implicitly eligible for the redaction which safeguards the data against any unauthorized access and the data theft.
- **Connector Metadata Refresh (ADI Refresh)**
  - This reads the data catalog extension model uploaded in the system and creates ADIs.
  - This is a mandatory activity for any model change.

> **✎ Note:**
>
> Steps are automated and internal while triggering publish process.

2.5.2.2 System Restrictions during Publish Change Request Operations

This section provides information on the operations that can be performed and the system restrictions during a Publish Change Request.

2.5.2.2.1 Operations which can be performed during Publish Change Request

The following activities are allowed by the system during a Publish Change Request operation.

- Browse Data Catalog
- Balance Reconciliation
- Catalog Extension
- Issues and Actions
- Upload and Download files
- Legal Entity
- Report Analysis
- Access Data Visualization
- System Administration - creating users and modifying user access

2.5.2.2.2 Operations which cannot be performed during Publish Change Request

The following activities are restricted by the system during a Publish Change Request operation.

- Data Ingestion Connector creation or modification or copy
- Data Extraction
- Process Pipeline Executions

2.5.3 Publish an Action

To publish an Action, do the following:

1. Go to **My Profile** by clicking the **My Profile** button on the home page.
2. Select **Administration**. The Administration page is displayed.

3. Navigate to the **Publish Change Request** tab. The list of Actions in **Approved** status is displayed.

4. To publish an Action, do the following:

   a. Select the required Action and click **Publish**.

   A confirmation message is displayed. Click **OK** to acknowledge the message.

   b. To view the list of **Fail to publish** actions, click the **Approved** button. The list of actions to be published are displayed.

   > **Note:**
   >
   > If a Publish action is unsuccessful, the action is displayed under **Approved** button. You can publish this action again or contact My Oracle Support (MOS) for further assistance.

   c. To view the list of ongoing publish operations, click the **Ongoing** button. The list of ongoing publish operations is displayed.

   > **Note:**
   >
   > The publish operation might take up to 2 hours to complete and the User can navigate out of the User Interface and comeback later to check the status of the event. If the publish operation is still **Ongoing** after 2 hours, contact My Oracle Support (MOS) for further assistance.
   > Publish action cannot be performed during an ongoing Process Pipeline execution. The user can perform the Publish action once all the PMF executions are complete.
   >
   > Similarly, Process Pipeline execution should not be performed during an ongoing Publish operation of a Change Request. If a process is triggered during an ongoing Publish, the process will be cancelled automatically, and the status is displayed as **CANCELLED** in the Process Monitor Summary page with an error message **Auto-cancellation could be due to Catalog Publish running in parallel**.

   d. To view the list of published actions, click the **Published** button. The list of published actions is displayed.

   After a Publish action is successful, the User can perform Data Ingestion, view the Catalog Framework and Design pipeline.

2.6 Data Controls

Data Controls 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.

For more information, refer to Oracle® Financial Services Data Foundation Cloud Service for Banking Data Controls.

2.6.1 Data Quality Framework

The **Data Quality Framework** is a robust, scalable system that provides tools for ensuring the accuracy, consistency, and completeness of data across various domains.

2.6.1.1 Create a Rule

You can create a Data Quality Rule definition by specifying the DQ Definition details.

The following capabilities are supported:

- Ability to create three types of Custom DQ rules: Mandatory, Range, Comparison.
- Ability to edit Custom DQ rules in Draft, Returned and Published status.
- Ability to delete Custom DQ Rules in Draft or Returned status.

Mandatory

Custom DQ Mandatory rule is a combination of Null Value and Blank Value. Check for alphanumeric or character type of base attribute and it is Null Value Check for other types of base attribute.

Range

The Range option is supported only for attributes of numeric and date types.

Comparison

- The comparison check allows you to compare the attributes with the following options:
  - Specific Value- This option allows you to compare the base attribute with a specific value based on the type of base attribute selected.

    > **✎ Note:**
    >
    > Single quote special character is not allowed in the value field.

  - Another attribute- This option allows you to compare the Comparison Base Attribute with the Comparison Attribute, where the Comparison Base Attribute and Comparison Attribute are the attributes of the base entity or of the associated dimensions that are referenced by the base entity.

  To compare using another attribute option, enter information in the following fields:

  - Comparison Base Entity- This dropdown lists the base entity along with the associated dimensions that are referenced by the base entity. By default, this field is populated with base entity.

  - Comparison Base Attribute- This dropdown lists all the attributes of the entity selected in the Comparison Base Entity field. By default, this field is populated with base attribute.

  - Operator- Select the appropriate value from the dropdown list.

  - Comparison Entity- This dropdown lists the base entity along with the associated dimensions that are referenced by the base entity.

  - Comparison Attribute- This dropdown lists all the attributes of the entity selected in the Comparison Entity field.

- The comparison option allows you to compare the attributes which are only compatible to be compared. When you use this option with alphanumeric or character type of Comparison Base Attribute, equal sign operator alone is supported.

Ensure the Issue is created with the Category as **Data Accuracy** and Source as **Catalog** and the Action Type as **Data Accuracy**.

To create a Data Quality Rule, complete the following steps:

1. From the **Inbox** page, click the action for which you want to create a DQ rule.

   Now click **Control Extensions** from the LHS menu.

   > ✏️ **Note:**
   >
   > You can create a rule only from the action which is in **New** or **Returned** status.

2. Click **Create Rule**.

   The **Create Rule** window is displayed.

   > ✏️ **Note:**
   >
   > The **Action ID** is populated by default.

3. Enter a **Description** or related information about the rule definition.

4. Add **Comments**, if required.

5. Select the entity for the rule from the **Entity Name** drop-down list.

   Based on this selection, the associated attributes are populated in the **Attribute Name** list.

6. Select the attribute from the **Attribute Name** drop-down list.

7. Select the **Rule Type**. The options are **Mandatory**, **Range**, and **Comparison**.

8. Based on the **Rule Type** selected, additional fields are displayed. Provide the required information.

9. Click **Add** button to add or select the **Data Quality Rule Filter**. The Data Quality Rule Filter screen is displayed.

   Click **Add Filter** icon and enter the name for the filter. Click **+ Condition** button to enter the filter conditions. The selected conditions are displayed in the **Expression** field and click **Save**.

   Custom Data Quality framework supports defining advanced filters on referred dimensional attributes of the base entity on which the data quality check is being defined. To define the filter referencing dimensions, in the **Comparison Entity** drop-down, select the reference/base entity and in the **Comparison Attribute** drop-down, select the attribute of comparison entity. Comparison attribute can be compared against the specific value or attribute of the base entity based on the radio button selection.

   Users may define filters to compare attributes of comparison entity to base entity attributes as well as to a specific value or list of values (using IN/NOT IN operators).

> **Note:**
>
> Following are the behavior of the Custom DQ Filters:
>
> - Mapping a filter to a custom DQ rule is not mandatory. So, a custom DQ rule can be saved and published with or without filter.
> - Filters can be reused across custom DQ rules.
> - Filter cannot be edited or deleted if it is mapped to a custom DQ rule.
> - You can only change or un-map a filter from a custom DQ rule, whenever a custom DQ rule is in Draft, Returned or Published state.
> - Filter conditions can only be defined on the attributes of an entity on which filter is defined.
> - Filter conditions defined on text columns only supports **Equals**, **Not Equals**, **IN**, and **NOT IN** operator when compared against value(s).
> - The value field of filter conditions defined on text based columns can only contain following special characters: hyphen, comma, underscore and full stop.
> - The filter name should be unique throughout an entity and can only contain following special characters: hyphen, comma, underscore and full stop.
> - The maximum supported length for a filter expression having no dimension entity reference is 3800 characters.

10. Click **Save**.

    The Rule code is automatically populated, and the rule is displayed in the **Control Extensions** page.

2.6.1.2 Edit a Rule

You can edit the existing Data Quality Rule definition details.

To edit a Data Quality Rule, complete the following steps:

1. From the **Inbox** page, click the action for which you want to edit the DQ rule. Now click **Control Extensions** from the LHS menu.

> **Note:**
>
> You can edit a rule only from the action which is in **New** or **Returned** status.

2. Click the rule which you want to edit.

> **✎ Note:**
>
> - Custom DQ Rules in Draft, Returned, or Published status can only be edited.
> - Rule Type cannot be edited.
> - Base Entity and Attribute cannot be edited for Custom DQ Rules in Published status.

3. Modify the details and click **Save**.

   The Rule is updated.

2.6.1.3 Delete a Rule

You can delete the existing Data Quality Rules.

To delete a Data Quality Rule, complete the following steps:

1. From the **Inbox** page, click the action for which you want to delete the DQ rule. Now click **Control Extensions** from the LHS menu.

   > **✎ Note:**
   >
   > You can delete a rule only from the action which is in **New** or **Returned** status.

2. Click the **Edit Rule** option.

   The **Edit Rule** page is displayed.

3. Select the rule which you want to delete and click the **Delete** icon.

   > **✎ Note:**
   >
   > Custom DQ Rules in **Draft** or **Returned** status can only be deleted.

   The Rule is deleted.

2.6.1.4 Create a Group

Data Quality Groups facilitate the logical grouping of the defined DQ definitions and to schedule their execution.

The following capabilities are supported in Data Quality Group:

- Ability to create Custom DQ groups based either on an entity or on an existing group.
- Ability to map the following three types of rules to the group:
  - Seeded DQ Rules
  - Published Custom DQ Rules
  - Unpublished Custom DQ Rules of the same action

> **Note:**
>
> A custom DQ group can be created only from Rules of same Entity. If you want to change the entity and rule selected, close the Create Group screen and open it again.
> No DQ rule is deleted or created while editing a Custom Group. Only the mapping is updated.
>
> • Ability to delete Custom DQ groups in Draft or Returned status.
>
> • Ability to edit group name, description, and DQ rules mapped to the Custom DQ group in Draft or Returned status.
>
> To create a Data Quality Group, complete the following steps:

1. From the **Inbox** page, click the action for which you want to create a DQ Group. Now click **Control Extensions** from the LHS menu.

   > **Note:**
   >
   > You can create a Data Quality Group only from the action which is in **New** or **Returned** status.

2. Click **Create Group**.
   The **Create Group** window is displayed.

3. Enter the Name of the group. The name can consist of alphanumeric characters and an underscore (_).

4. Enter a **Description** or related information about the group.

   > **Note:**
   >
   > The description field only supports the following special characters: comma (,) , full-stop/dot (.) and underscore (_).

5. Select an **Entity**.

6. However, if you want to create a new group from an existing group, enable the **Create Data Quality Group from an existing DQ group** option and select the required group from the Copied from **Data Quality Group** drop-down list.

7. Click **+** to link the DQ rules for the selected entity. Select the required rules and click Link.

8. Click **Save**.
   The group code is automatically populated, and the group is displayed in the **Control Extensions** page.

User can subscribe to add-on services available in DFCS. Each customer gets a prescribed set of credits along with DFCS subscription. These credits can be used to subscribe add-on services. Add-on services can be a Data application, Recipe, External Dataset or Analytical Model.

2.6.1.5 Edit a Group

To edit a Data Quality Group, complete the following steps:

1. From the **Inbox** page, click the action for which you want to edit the DQ Group. Now click **Control Extensions** from the LHS menu.

> **Note:**
>
> You can edit a Data Quality Group only from the action which is in **New** or **Returned** status.

2. Click the group which you want to edit.

> **Note:**
>
> Custom DQ Groups can be edited in Draft, Returned, or Published status. Group's description and DQ rules that are mapped to the Custom DQ Group can be edited in Draft, Returned, or Published status. However, Group's name can only be edited for Custom DQ Groups that are in Draft or Returned status.

3. Modify the details and click **Save**.

   The group details are updated and displayed in the **Control Extensions** page.

2.6.1.6 Delete a Group

You can delete the existing Data Quality Groups.

To delete a Data Quality Group, complete the following steps:

1. From the **Inbox** page, click the action for which you want to delete the DQ Group. Now click **Control Extensions** from the LHS menu.

> **Note:**
>
> You can delete a Data Quality Group only from the action which is in **New** or **Returned** status.

2. Click the **Edit Group** option.

3. Click on the DQ Group which you want to delete and click the **Delete** icon.

> **Note:**
>
> Custom DQ Groups in Draft, or Returned status can only be deleted.

The Group is deleted.

2.6.1.7 Limitations

Following are the behavior of Data Quality Rules and Groups:

- Multiple entities' rules are not allowed in the DQ Group. You must define DQ group only for one entity.

- You cannot delete custom DQ Rules/Groups which are in Published, Approved, or Submitted status. You can only delete custom DQ rules/groups that are in the Draft or Returned status.

3
Issues and Actions

In **Issues and Actions**, the following tasks can typically be performed:

- Catalog Extension
- Data Privacy
- Data Security
- Data Authorization
- Data Availability
- Data Accuracy
- Data Entry

The Issues and Actions feature enables users to address and resolve data-related issues within the cloud framework. These issues may include Data Quality, Privacy, Security, Availability, Accuracy, and Adjustments. Additionally, users can perform Catalog Extensions, such as creating and extending Business Terms, extending Fact Entities, and Dimension Entities.

3.1 Issues

On the **Inbox** Page, you can log an Issue and create a set of Actions for that Issue. Users can select the appropriate **Action Type** based on the requirement. For instructions to log or manage an Issue, see the Manage an Issue section in the Tracking and Work flow section.

3.2 Actions

After logging an issue, you can define a set of actions for it on the **Inbox** page. As part of an action, you have the option to create a Business Term. For detailed instructions on logging or managing an action, refer to the Manage an Issue section in the Tracking and Workflow section.

3.3 Tracking and Work flow

The Inbox page displays all user tasks, including Issues and Actions. Issues can be logged manually, initiated by a Governance Process, or reassigned from another user. Actions, which are remedial tasks to resolve an issue, can involve various processes such as adjustments, catalog extensions, direct data entry into stage tables via DMI, and Data Quality name creation. The Notification tab provides an overview of the latest tasks assigned to the user.

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Figure 3-1   Tracking and Work flow
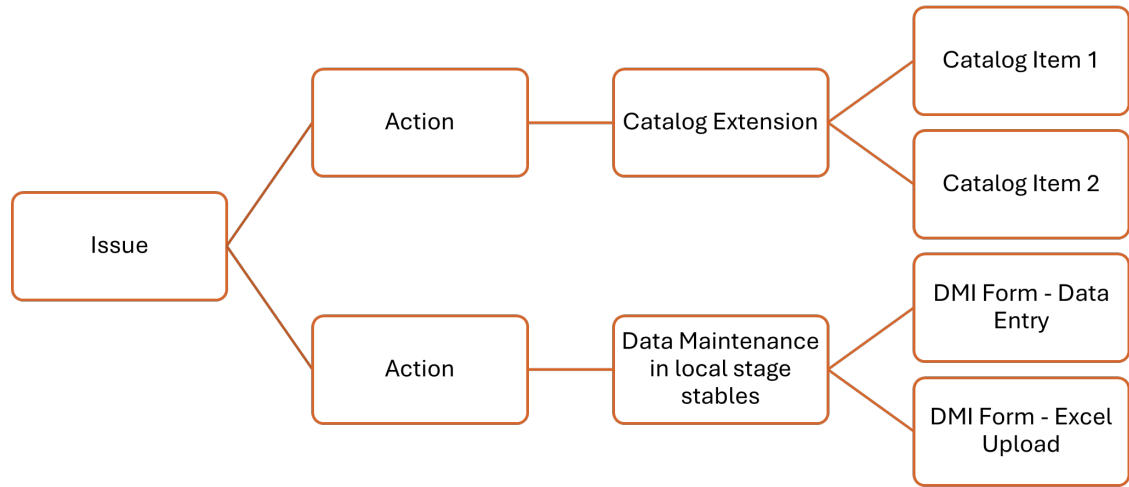
3.3.1 Manage an Issue

This section outlines how to create, update, close, reopen, or delete an issue within the system.

3.3.2 Create or Log an Issue

To create an Issue, perform the following steps:

1. Navigate to the Inbox by clicking **Inbox** on the home page.

    The Inbox page is displayed.

2. On the **Inbox** page, click **Log Issue**.

    The **Create Issue** page is displayed.

3. Set the following values.

    Table 3-1   Issues Field Names and Description

Field Name	Description
Name	Type a unique name.
Description	Type a description.

Table 3-1   (Cont.) Issues Field Names and Description

Field Name	Description
Category	Select the required Category: • **Data Authorization** • **Data Privacy** • **Data Security** • **Data Accuracy** • **Data Availability** • **Timeliness** • **Catalog Extension**: Use this if you want to extend the out-of-the-box Data Structure.
Criticality	Set the criticality level for the Issue as: • **Low** • **Medium** • **High**
Target Date	Select the date till when you need this Issue to be active.
Execution Date	Select the date for executing this Issue.
Source	Select a source for the Issue: • – **Controls**: Defines the operational and quality controls on every data element and monitors the effectiveness of the control. – **Key Indicators**: Monitors all the key metrics, trends of the metrics, variances, and so on, for the data elements. – **Catalog**: To create the Business Term that comprises of elements supporting the business needs of the financial industry.
Owner	Select the required owner for the Issue.
Comments	Add comments for the Issue, if required.
Attach Documents	Use this to attach documents relevant for this Issue. The file format can be of type: .xls, .pdf, .txt or .doc.

4. Click **Save**.

    A confirmation message is displayed.

5. Acknowledge the confirmation message. The new Issue is listed on the **Inbox** page marked with **New** status along with its details.

3.3.3 Update an Issue

To update an existing Issue, perform the following steps:

1. Navigate to the Inbox by clicking **Inbox** on the home page.

    The Inbox page is displayed.

2. On the **Inbox** page, click the required Issue.

    The **Issue Details** page is displayed.

3. You can edit the **Description**, **Category**, **Criticality**, **Target Date**, **Owner**, **Comments**, and **Attach Documents** fields.

4. Click **Update**.

   A confirmation message is displayed. Acknowledge the confirmation message.

3.3.4 Close an Issue

To close an existing Issue, perform the following steps:

1. On the **Inbox** page, click the required Issue.

   The **Issue Details** page is displayed.

2. Click **Close**.

   A confirmation message is displayed.

3. To close the Issue, click **Yes**.

   A confirmation message is displayed. Acknowledge the message.

3.3.5 Reopen an Issue

To reopen a closed issue, follow these steps:

1. Navigate to the **Inbox** page and select the closed issue you wish to reopen.

   The Issue Details page will be displayed.

2. Click the **Re-open** button.

   A confirmation message will appear.

3. To confirm and reopen the issue, click **Yes**.

   Another confirmation message will be displayed. Acknowledge the confirmation message to complete the process.

3.3.6 Delete an Issue

To delete an Issue, perform the following steps:

1. On the **Inbox** page, select the required **Issue**.

2. Click **Delete**.

   A confirmation message is displayed.

   > **Note:**
   >
   > Ensure that you close all the Actions associated with the Issue and then close the Issue.

3. To delete the Issue, click **Yes**.

   A confirmation message is displayed. Acknowledge the confirmation message.

   Alternatively, to re-open, close, delete an Issue, on the **Inbox** page, select the required Issue, click the menu associated with the Issue, and select **Re-open** or **Close** or **Delete** respectively, and follow further instructions as mentioned in the preceding sections.

3.3.7 Manage an Action

This section outlines how to create, update, close, reopen, or delete an action.

3.3.8 Create an Action

To create an Action, perform the following steps:

1. Navigate to the Inbox by clicking the **Inbox** button on the home page.

   The **Inbox** page is displayed.

2. On the **Inbox** page, select the required Issue for which you need to create an Action.

   The **Issue Details** page is displayed.

3. On the **Actions** tab, click **Create**.

4. Set the following values.

Table 3-2   Actions Field Names and Description

Field Name	Description
Action Type	Select the required **Action Type**: • **Data Adjustments - DQ Errors** • **Data Adjustments -Others** • **Data Adjustments - Regulatory Reporting** • **Reconciliation Adjustments** • **Others** • **Catalog Extension**: Use this to extend the out-of-the-box Data Structure. • **Note:** If you select the **Adjustment** based Action Type, then on the **Action Details** page, **Adjustments Tab** is displayed, where you can create an Adjustment for the Action. If you select the **Catalog Extension** Action Type, then on the **Action Details** page, **Extension Tab** is displayed, where you can create a Business Term for the Action. • **Data Entry**: Use this if you want to edit or add data to the master table directly. This allows to edit data through Data Entry forms and through Excel upload as well.
Criticality	Set one of the following criticality levels for the Action: • **Low** • **Medium** • **High**
Start Date	Select the beginning date in the range on which you need this Action to be executed.

Table 3-2   (Cont.) Actions Field Names and Description

Field Name	Description
Target Date	Select the last date in the range within which you need this Action to be executed.
Owner	Assign the required Owner for the Action.
Comments	Add comments for the Action, if required.
Attach Documents	Use this to attach documents relevant for this Action. The file format can be of type: .xls, .pdf, .txt and .doc.

5. Click **Save**.

   A confirmation message is displayed. Acknowledge the confirmation message.

6. Click outside the Action Details page to close it. The new Action is listed on the **Inbox** page with the status marked as **New** along with the other Action details.

3.3.9 Create an Action for Data Management – Data Entry and Excel Uploads through DMI

To Add/Edit data directly in the Stage master entities, follow these steps:

Ensure the **DMI forms** have been created and approved for the specific entity before making any changes.

- For detailed steps on creating a DMI form, refer to:

  – **Creating Forms using Excel Upload**: For bulk entries through Excel uploads.

  – **Creating Forms using Data Entry**: For single or limited entries through the Data Entry Designer form.

Once the DMI form is ready and approved, you can proceed with adding, modifying, or deleting data in the Stage Master.

3.3.9.1 Adding Data to Entity – Forms created using Data Entry

For Data Management through Data Entry.

1. Navigate to the inbox by clicking **Inbox** button on the home page.

   The **Inbox** page is displayed.

2. On the **Inbox** page, select the required Issue for which you need to create an **Action**.

3. Select **Data Entry** in the Action Type.

4. You can edit the Description, Criticality, Start Date, Target Date, Owner, Comments, and Attach Documents fields.

5. Click **View more** to open Data Entry tile.

6. Select the **Form ID**. Refer to Creating Forms Using Data Entry Option for creating the form.

7. The Data Entry form for the Stage entity associated with the Form name is displayed in a new window.

8. Click on **Add** [+] button to start adding data. For adding subsequent data, the user can click on the three dots and then select the **Edit** button.

9. Enter data as in accordance to the Data Type for the specific field in the entity.

10. Click **Update** to add to data list. Repeat the above steps to keep adding data.

11. To edit a row, click the three dots in the Actions column and select **Edit**.

12. To Delete any row(s), select the intended row(s) and click the **Delete** icon to delete the selected row(s).

13. Once Data is added / modified, click on **Save** in the inner Data Entry window.

> **Note:**
>
> You can edit an existing entity record and save the changes. Clicking **Delete** will remove all unsaved records, even those that have not been selected.

14. You can return to the saved form any number of times before submitting the action. After submitting the action, the form can still be viewed, but modifications are only allowed when the action is in a **New** or **Returned** state.

> **Note:**
>
> **Changing the Form**:
>
> • Users can select a different form from the drop-down menu when the action is in either **Draft** or **Returned** state.
>
> • Only one form can be associated with a specific Data Entry type action.
>
> If the user selects a different form:
>
> • A **confirmation message** will be displayed.
>
> • If confirmed, **all intermediate data** (draft or awaiting records) from the previous form will be deleted.
>
> • **Note:** The user must have **Delete permission** mapped for the previous form under User Security in order to perform this action.
>
> **Closing Data Entry Action:**
>
> • Closing a data entry action will also **clean up all its intermediate data** (draft/awaiting records).
>
> • For the user to close the data entry action and delete the intermediate data, the **Delete permission** must be mapped for the form under **User Security**.

15. When the form is ready for submission, click the **Submit** button on the Action screen. The Action will then be sent to the Action owner for approval.

    Submitting the Data Entry form will move the records from Draft Status to Awaiting Status.

    Refer to Approve an Action and Return an Action for Approving or Returning the action.

16. Once the Action Owner approves the action, the form is ready to be Published.

    Refer to Publish an Action to Publish the Data Entry action.

> **Note:**
>
> Entities list is cached in a service, which gets refreshed every 2 hours. When you create a new dimension via Catalog, it would get reflected after the next refresh cycle. Only one form can be associated to one Data Entry type of action and if user picks a different form then a confirmation message will be displayed, and when confirmed then all the intermediate data (draft/awaiting records) of previous form's will be deleted.

> **Note:**
>
> * Closing a Data Entry action will also remove all its intermediate data.
> * Only one form can be associated with a Data Entry type action. If the user selects a different form, a confirmation message will appear. Upon confirmation, all intermediate data (draft/awaiting records) from the previous form will be deleted.
> * The user who submits a Data Entry action cannot return or publish the same action.

17. **Submitting a Data Entry Action**: The user who submits a Data Entry type action cannot return or publish the same action.

18. **Post-Publish Action**: Once the action is published, successful records will be published, and failed records will be moved back to the Draft state of the same form. A new action can be created with the same form to edit the failed records (moved back to Draft) for correction.

19. **Viewing Record Counts**: The count of failed and successful records can be viewed by clicking on the **Published Actions** > **Publish Change Request** tab.

20. **Troubleshooting Failed Records**: For failed records moved back to the Draft state, click on the Options (three dots) and then select **Audit** to view the reason for the failure.

3.3.9.2 Adding Data to Entity – Forms created using Excel Upload Excel Workflow

For Data Management through Excel Upload.

Figure 3-2   Upload Excel Workflow
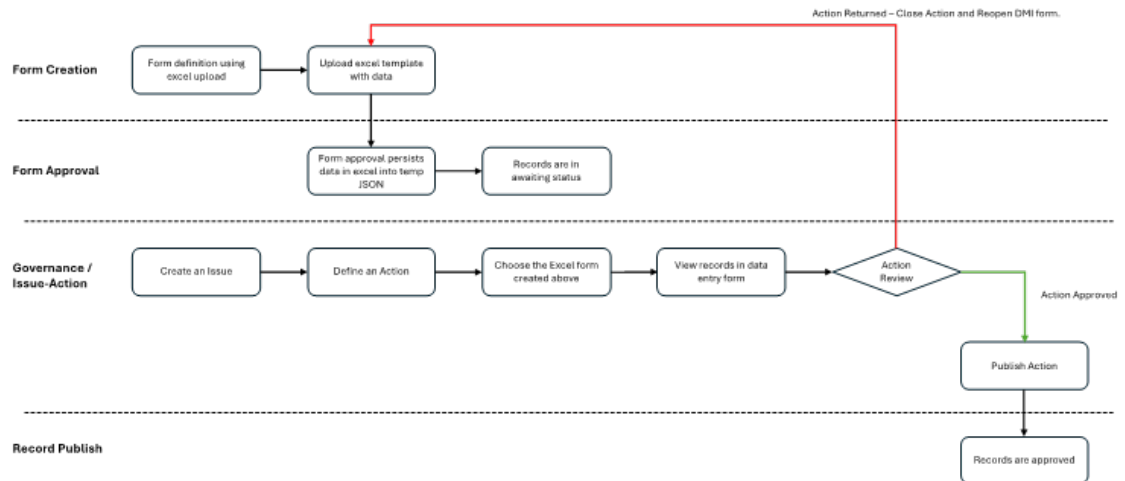
1. Create a form in DMI using the Creating Forms Using Excel Upload. The excel template with the actual data is uploaded in the from creation.

2. Approve the DMI form.

3. Navigate to the Inbox by clicking the Inbox button on the home page. The Inbox page is displayed.

4. On the Inbox page, select the required Issue for which you need to create an Action.

5. Select **Data Entry** in the Action Type.

6. You can edit the Description, Criticality, Start Date, Target Date, Owner, Comments, and Attach Documents fields.

7. Click **View more** to open Data Entry tile.

8. Select the Form created in step 1 with the Excel upload.

9. The Designer form for the Stage table associated with the Form name is displayed.

10. The Form is already in the **Awaiting** status. No modifications are allowed in this stage.

11. Click the **Submit** button on the Action screen. The Action goes to the Action owner for approval.

12. Once the Action Owner approves the action, the form is ready to be Published.

13. Refer to Approve an Action and Return an Action for Approving or Returning the action.

14. Refer to Publish an Action to Publish the Data Entry action.

> ✎ **Note:**
>
> No validation of data in the excel is currently performed. The user needs to manually verify the data before proceeding to upload while creating the DMI form. Should there be errors at the time of Publish Change Request, the user will be notified the numbers of records Passed and Failed. The user can remediate for the failed records using the Issue/Action – Publish procedure.

3.3.9.3 Update an Action

Follow these steps to update an existing Action:

1. On the **Inbox** page, click the required Action.

   The **Action Details** page is displayed.

2. You can edit the **Description**, **Action Type**, **Criticality**, **Start Date**, **Target Date**, **Owner**, **Comments**, and **Attach Documents** fields.

3. Click **Update** to save the modifications.

   A confirmation message is displayed.

4. Review and acknowledge the confirmation message.

5. Click outside the **Action Details** page to exit.

3.3.9.4 Approval Workflow for Issues and Actions

This section provides information on the approval workflow for the created issue and the submitted action in Data Foundation.

3.3.9.5 Issue Action Workflow

The Issue owner has the privilege to view and approve the Actions submitted by the Action owner. Actions once approved cannot be edited further; all the extensions will be disabled for further modifications.

Figure 3-3   Approval Workflow for Issues and Actions
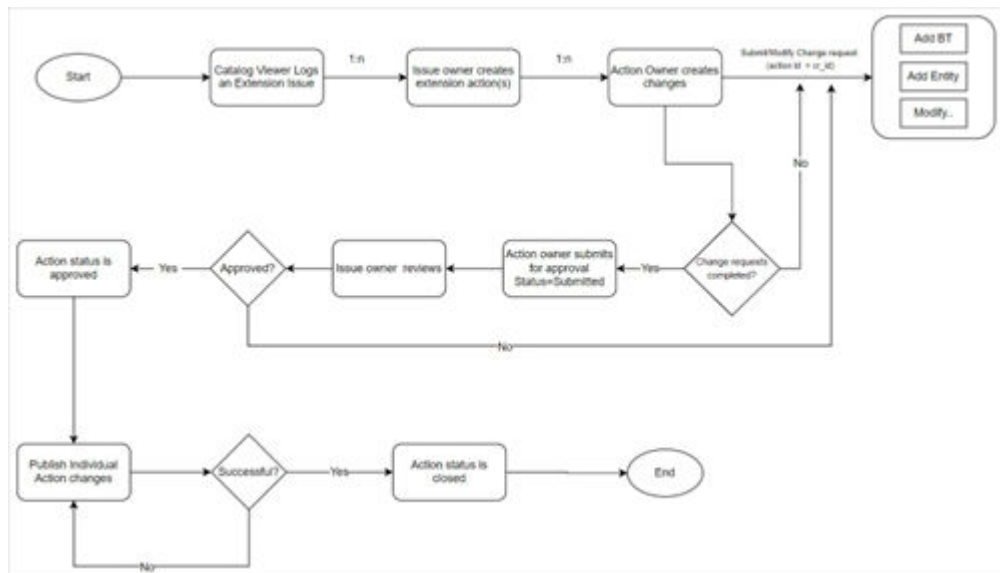
Figure 3-4   Approval Workflow for Issues and Actions Start
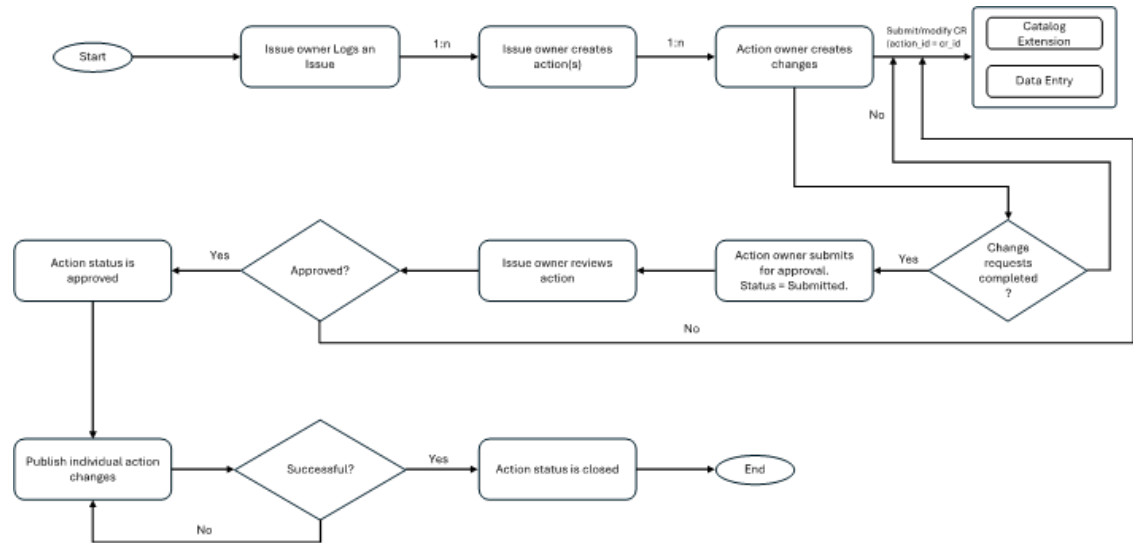
3.3.9.6 Approve an Action

To approve an Action, follow these steps:

1. On the **Inbox** page, click the required **Action** that is in **Submitted** status.

2. View the submitted action and the corresponding **Business Term** details.

3. Click **Approve** to proceed.

   A confirmation message is displayed.

4. Enter the reason for approving the submitted action, and click **Save** to confirm.

5. Review and close the acknowledgment message.

6. Click outside the **Action Details** page to close it.

3.3.9.7 Return an Action

To return an Action, follow these steps:

1. On the **Inbox** page, click the required Action.

   The **Action Details** page is displayed.

2. View the submitted Action and its corresponding **Business Term** details.

3. Click **Return** to proceed.

   A confirmation message is displayed.

4. Enter the reason for rejecting the submitted action, and click **Save**.

   A confirmation message is displayed.

> ✎ **Note:**
>
> You can modify Action details and re-submit it for approval.

5. Close the acknowledgment.

6. Click outside the **Action Details** page to close it.

3.3.9.8 Close an Action

To close an Action, follow these steps:

1. On the **Inbox** page, click the required Action. The **Action Details** page is displayed.

2. Click **Close**. A confirmation message is displayed.

3. To close the Action, click **Yes**.

4. Close the acknowledgment. A confirmation message is displayed.

5. Close the acknowledgment.

6. Click outside the **Action Details** page to close it.

3.3.9.9 Reopen an Action

To reopen an Action, follow these steps:

1. On the **Inbox** page, click the closed Action that you want to reopen. The **Action Details** page is displayed.

2. Click **Re-open**. A confirmation message is displayed.

3. To reopen the Action, click **Yes**. A confirmation message is displayed.

4. Review and close the acknowledgment message.

5. Click outside the **Action Details** page to close it.

3.3.9.10 Delete an Action

To delete an Action, follow these steps:

1. On the **Inbox** page, select the required Action.

2. Click **Delete**. A confirmation message is displayed.

3. To delete the Action, click **Yes**. A confirmation message is displayed.

4. Close the acknowledgment.

5. Click outside the **Action Details** page to close it.

   Alternative Method:
   To **Re-open, Close, or Delete** an Action:

   a. On the **Inbox** page, select the required Action.

   b. Click the **menu** associated with the Action.

   c. Choose **Re-open, Close, or Delete** as needed and follow the relevant instructions from the preceding sections.

3.3.9.11 Create or Update a Business Term

To create or update a Business Term for an Action, see the Manage Business Terms section in the *OFS DFCS Data Catalog User Guide*.

4

Data Maintenance Interface

Data Maintenance Interface (DMI) helps to design a Data Form in a user-specified format. Further, it allows to perform maintenance activities using the Designed Form.

Designer View

The Designer allows the user to design a form to maintain the underlying data.

Data View

This allows the user to maintain the data either through the form that has been defined or do a bulk upload using the excel upload mechanism. A strong data governance process is enabled through an approval workflow of the data maintained.

4.1 DMI Process Overview

The DMI Process starts with a user creating forms in the Form Designer. After the creation of forms, a user with Authorization Privileges authorizes the forms. The Authorized Forms are then used by users to enter data into the database.

Figure 4-1   DMI Process Flowchart
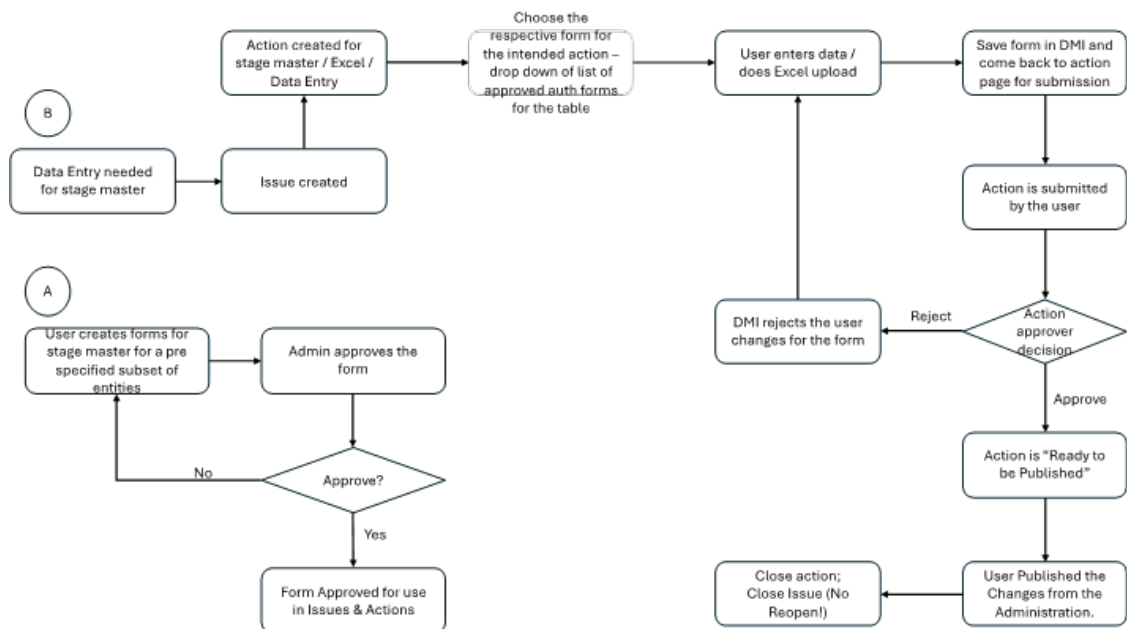
4.2 User Role Mapping and Access Rights

User access to the DMI UI and the ability to perform functions in it is dependent on the mapping of the user profile to the roles and the access rights assigned.

To access the DMI features and edit forms, you must be mapped to the following roles:

Table 4-1   User Role Mapping for Data Maintenance Interface

Role Code	Role Name	Functionality
DMIDSGNREAD	Data Designer Read	Assign this role to the user to access the Configure View menu from Navigation Tree.

> **Note:**
>
> The mapping of this role does not allow view, edit, and add actions.

Role Code	Role Name	Functionality
DMIDSGNSUM	Designer Records List	Assign this role to view the list of Designer Records.
DMIDSGNAUTH	Data Designer Auth	Assign this role to the user to Authorize, Excel Upload, and Designer Summary.
DMIDSGNREJ	Data Designer Reject	Assign this role to the user to Reject, Excel Upload, and Designer Summary.
DMIDGNFORM	Data Designer Form	Assign this role to the user to Create Designer Form Definition.
DMIDGNTEMPLATE	Data Designer Template	Assign this role to the user to Create Excel upload Definition.
DMIDSGNDEL	Data Designer Delete	Assign this role to the user to Delete, Excel upload, and Designer Summary.
DMIDGNVIEW	Data Designer View	Assign this role to the user to Create View Definition.
DMIDSGNWRITE	Data Designer Write	Assign this role to the user to Add, Edit and Copy all kinds of definitions in Designer screen.
DMIDATAREAD	Data Entry Read	Assign this role to the user to access the Data View menu from the Navigation Tree.

> **Note:**
>
> The mapping of this role does not allow view, edit, and add actions.

Role Code	Role Name	Functionality
DMIDATAALL	Data All Summary	Assign this role to view the list of all Component Records in Data Entry Screen.
DMIDATAWRITE	Data Entry Write	Assign this role to the user to Add, Edit Records in Data Entry Screen.
DMIDATADEL	Data Entry Delete	Assign this role to the user to Delete a Record Summary Data Entry Screen
DMIDATAAUTH	Data Entry Auth	Assign this role to Authorize a Record Summary in Data Entry Screen.
ENB_DMIDGN	DMI Designer UI Component	The user mapped to this function will have access to DMI Data Entry Components
DMIDATADSG	Designer Records List	Assign this role to view the list of Designer Records
DMIDATAREJ	Data Entry Reject	Assign this role to Reject a Record Summary in Data Entry Screen.

Table 4-1   (Cont.) User Role Mapping for Data Maintenance Interface

Role Code	Role Name	Functionality
DMIDGNAUTO	Enable Auto Approve	The user mapped to this function will have access to create Auto Approved Forms
DMIALLSUM	Designer, Excel, Data Export and View List	To show records in designer summary page
DMIEXLSUM	Excel Uploaded Records List	Assign this role to view the list of Excel Records
DMIDATAEXL	Excel Uploaded Records List	Assign this role to view the list of Excel Records
DMIDGNAMND	To enable Amendment of Approved definition	The user mapped to this function will have access to Amend any Approved definition. Definition could be View, Designer, Excel Template or Data Exporter.

> **Note:**
>
> All the DMI roles are mapped to a single group, Data Maintenance admin group. If a user is mapped to this group all the DMI roles are automatically assigned to the user.

4.3 Access the Data Maintenance Interface

To access the Data Maintenance Interface (DMI):

1. Login to your Oracle Cloud account, with the required credentials to access DMI.

2. Select the Profile button and click on DMI to access DMI Designer.

3. The form definition summary lists all of the DMI forms created so far along with option to add new form.

> **Note:**
>
> The navigation steps vary for different applications. Refer to the respective application documentation for accessing Data Maintenance Interface.

4.4 Form Designer Summary Page

Access the list of Form definitions already created in the environment.

The Form Definitions Summary lists all the existing Form Definitions in the application.

You can create forms from the Form Designer View. The forms in the application are created with details configured for data maintenance and require authorization for use after creation. You can also edit, view, and delete forms, from the Forms Definitions Summary, based on the assigned roles and privileges. For more information, refer User Role Mapping and Access Rights.

To access the Data Maintenance Interface (DMI):

1. Login to your Oracle Cloud account, with the required credentials to access DMI.

2. Select the **Profile** button and click on **DMI** to access DMI Designer.

3. Click **Designer View** in the DMI navigation list to access the **Form Definitions Summary**.

   The following details are included the Summary page.

   - **Name** - The unique name of the Form Definition

   - **Description** - The Form Definition description.

   - Type - The form definition type:

     – **Excel Upload** – creates form based on uploaded Excel Sheet.

     > **Note:**
     >
     > Make sure the Excel files are saved in the Microsoft Office 2016 Standard version. Excel files saved in Office 365 version cause compatibility issues.

     – **Data Exporter** – creates form based on an entity table.

     – **Data Entry** – creates the form based on the entities, attributes and rulesets provided by the user.

   - **Status** - The processing status of the form definition. The various processing statuses are:

     – **Draft** – when the form is under development and is yet to be submitted for approval.

     – **Pending Approval** – When the approval is pending.

     – **Approved** – When the form definition is approved.

   - **Created By** - The Username of the logged in User who created the form.

   - **Actions** - View, copy or edit or amend a form definition.

   - **Info** - The form definition details including:

     – Created Date

     – Last Modified By

     – Authorizer

     – Authorizer comments

   Use **Search** to quickly access the required forms or check the Forms tile to view a list of existing forms. To search for a specific Form Definition, input search terms in the **Form Name** or **Description** field, or use a combination of both, and click **Search**. Click **Cancel** to clear the search criteria and view all form records.

   Sort the Form Definition based on **Name**, **Description**, and **Created By** fields. You can also sort the page in ascending/descending order.

   To filter and view Form definitions with a specific processing status, click the respective status name at the top of the page.

4.5 Creating New Forms in Form Designer

Form creation involves selecting entities, displaying columns with attributes on the form, and if required, selecting authorization of data. Security settings provide for the creation of specific-user access for the forms and authorization.

To add a form:

1. In the **Data Maintenance Interface** page, click **Add**, to access the **Create Forms Definition** page.

2. Click **Start** and select the form definition type:

   - **Excel Upload** – creates form based on uploaded Excel sheet.

   - **Data Exporter** – creates form based on an entity table.

   - **Data Entry** – creates the form based on the entities, attributes and rulesets provided by the user.

   For more information about creating various form definitions:

   - Creating Forms Using Excel Upload

   - Creating Forms Using Data Entry Option

4.5.1 Creating Forms Using Excel Upload

Excel Upload Definition Type creates new forms based on the uploaded Excel file that has column names as per the table in the application data source.

While creating forms using Excel Upload, you can also modify the mapping for the attributes. After the new form is approved from the Forms Definition Summary Page, users with the necessary role and permission can perform Data Entry for the records updated by the Excel file.

> **Note:**
>
> Make sure the Excel files are saved in the Microsoft Office 2016 Standard version. Excel files saved in Office 365 version cause compatibility issues.

To create forms using Excel Upload:

1. Select Excel Upload in the Create Form Definition page and add the following details.

   - **Code** - The unique Form code. This value is auto-generated.

   - **Name** - The Form Name. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.

   - **Description** - The Form Definition description. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.

   - **Auto Map Entities** - Enable this option to auto map the attributes in the Excel file with the attributes in the Entity Table.

> **Note:**
>
> Auto Map attributes feature does not always map all attributes between the user defined excel and the entities. In such a case where Auto Mapping fails, the user should manually map such attributes which were not auto mapped.

At any point of time during the form creation, click **Save** to add the new form to the Form Summary. The form is saved in the **Draft** format. Click **Actions** and select **Edit**, to update the form definition.

2. Click **Continue** to access the **File Upload** tab.

3. In the **File Upload** tab, enter the following details:

   - **Template Name** and **Description** for the excel template.

   - Click **Drag and Drop** and select the excel file to update the required table.

   > **Note:**
   >
   > You can also drag and drop the required excel file to the **Drag and Drop** area.

   The excel file is uploaded and a confirmation box is displayed, and the **Mapped Entities Tab** is displayed.

4. After entering the **File Upload** information, click **Continue** to access the **Mapped Entities** tab.

5. In the **Mapped Entities** tab, select the **Primary Entity** name of the table that needs to be modified.

6. Click **Continue**, to proceed with the **Mapped Attributes** tab.

7. Click the drop-down arrow corresponding to the table in the Entity Name.

8. Click the required mapping in the **Override Mapping Column** and enter the required attribute name if you want to change the default mapping.

9. Click **Continue** to proceed to the **User Security** tab.

10. Select the user or user groups who can perform data entry to maintain the data in the table. For more information about adding user security, refer to Enabling User Security for New Form Definitions.

11. Click **Data Preview** to preview the form data.

12. Click **Save** if you want to save the forms definition in draft format. The form is added to the **Form Summary** with **Draft** status.

13. Click **Submit** when Forms Definition is ready for approval. Post approval, the form will be available in the Data Entry Action in Issues and Actions. For more information refer to Approving and Rejecting New Form Definitions. After approval, the form is added to the Form Definition Summary.

4.5.2 Creating Forms Using Data Entry Option

Use the Data Entry option to create a Forms Definition and select the table and attributes that you want to modify.

You can enter the values for the table records in the approved Forms Definition from Data Entry, after the new Forms Definition is approved from the Forms Definition Summary Page.

To create a forms definition:

1. Select **Data Entry** in Create New Form Definition page and enter the required details.

2. Enter the following details:

   • **Code** - Unique form code. This value is auto-generated.

   • **Name** - The form name. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.

   • **Description** - The form definition description. You can enter between 3 to 100 characters. Only alphabets, numbers, spaces, and underscores are allowed.

   • **Threshold** - The maximum number edits allowed per row.

3. Click **Continue** to access the **Entities** tab.

4. Select the table that you want to modify in the **Primary Entity** Field.

5. Click **Continue**, to proceed with the **Attributes** tab.

6. Select the **Filter** from the existing filters in the drop-down list or click **Filter** to define a new one for the form definition. The use of Filters is optional.

7. Click the drop-down arrow corresponding to the table in the **Entity Name**, to view the attributes in the entity table.

8. Select the attributes for which you want to modify the data from the **Attribute Name**.

9. Click **Continue** and proceed to the **User Security** tab.

10. Click **User Security** to select the user or user groups who can perform data entry to maintain the data in the table. For more information, refer Enabling Data Security for New Form Definitions.

11. Click **Submit** if you want to submit the Forms Definition for manual/auto approval.

    For more information refer to Approving and Rejecting New Form Definitions. After approval/auto approval, the form is added to the **Form Definition Summary**.

4.5.3 Creating Data Filters for New Form Definitions

Filters help to view and export specific set of data from data exporter forms.

Complete the following steps if you want to add filters to the Forms Definition:

1. Click on **Launch Filter Condition**, to access the Filter Condition pane.

2. Enter/ select the following details.

   • **Column** - Select the column from the applying the filter.

   • **Condition** - Select one of the following filter conditions, to filter the column data.

     – **Comparison** - '=', '!=', '< >', '>', '<', >=, <=,'IN', 'NOT IN', 'ANY', 'BETWEEN', 'LIKE', 'IS NULL', and 'IS NOT NULL'.

- **Filter Value** - Select/enter the filter value.

> **Note:**
>
> For Language Placeholder the default locale language is displayed and cannot be modified.

3. Click **Add** to add a new Filter expression. You can add multiple Filter expressions to the same filter.

   The filter is added to the list of filters.

   Mouse-over the place holder filter, to view more details about the filter.

4. Click **Validate** to verify the filter condition is valid.

   A confirmation is message is displayed, if the filter is valid.

5. Click **Apply**, to add the new filter to the filter condition.

6. Click **Reset**, to clear all the filter expressions and create a new expression.

7. Click **Delete** to delete an existing filter expression.

8. Click **Edit** to modify a filter expression. After editing the expression, click **Validate**, to verify if the condition is valid. If user wants to update any filter condition, the user can select the existing condition and then change the condition or filter value and click on Validate to verify if the condition is valid.

9. Click **Apply** to add the filter expression to the form definition.

4.5.4 Enabling Data Security for New Form Definitions

Data security conditions allows you to apply certain filters when a user performs the data entry for the table records for each approved Forms Definition from the Data Entry page.

Consider that you configure the condition `COUNTRY_NAME = 'INDIA'` for the reference table **DIM_COUNTRY**. When a user performs the data entry for this Forms Definition from the Forms Definition - Summary Page and enters a country name other than 'INDIA', the record gets rejected by the application when another user approves this record.

Complete the following steps to configure Data Security for the Forms Definition:

1. Select the check box next to the **Attribute Name**, in the **Mapped Attributes** Column.

> **Note:**
>
> Data Security information must be configured for each attribute name, separately.

2. Click the **Lock** icon, to access the **Data Security page**.

3. Select the **Reference Table** based on which you want to build your condition from the Reference Table drop-down list.

4. Select the required column, condition, and filter value, and build the required expression.

5. Click **Apply**, to enable the data security for the new form definitions.

4.5.5 Enabling User Security for New Form Definitions

The User Security option helps you to select the users/user groups who can add, edit, delete and/or authorize forms.

To enable user security:

- Select the required user group or user to assign permissions from the **Map Users / Groups**, to complete the user security configuration.

  When you select the user group or user, the permissions for each approved Forms Definition are displayed. These permissions are the actions that the selected user group or user can perform while performing Data Entry.

Table 4-2   Permissions in the Map Users / Groups Pane

Option	Description
Add /Edit	Add or modify records in an approved Forms Definition
Delete	Deletion of all intermediate work (draft / awaiting records) of a form 1. While closing the action associated to the form. 2. While picking another form in an action which already has a form associated to it. All the intermediate work is deleted / cleaned up from the previous form before opening the new form.
Authorize	Authorize the records, Return the Action and Publish action in which the form is present. > **Note:** > A user who submits the form cannot approve or reject the same form.
Duration From	Optional. Select the start date for which the permissions are available to the user or user group.
Duration To	Optional. Select the end date for which the permissions are available to the user or user group.

> **Note:**
> If you select a user group for User Security, you can view the users mapped to that group by clicking the **Users** icon.

4.6 Approving and Rejecting New Form Definitions

You can validate and approve the new Forms Definition if you have the required role assigned to you.

If the configuration in the Forms Definition is incorrect, you can reject the Forms Definition. The rejected Forms Definition changes into Draft status. You can then request the required user to edit the Forms Definition and submit it for approval again.

You can also view, copy, and edit each Forms Definition from the Forms Definition – Summary page by clicking Menu. These actions are available based on the roles assigned to you. For more information, refer User Role Mapping and Access Rights.

4.6.1 Approving a Forms Definition

You can approve new forms based on the assigned roles.

To check about the assigned roles, refer User Role Mapping and Access Rights.

To approve a Forms Definition:

1. In the Designer View, click **Menu** in the Forms Definition that is in **Pending Approval** status, and then click **Approve**, to access the **Configure page**.

2. Click **Approve** and then enter the required description for the approval in the Comments field.

3. Click **Submit**, to approve the form definition and view it in the **Data Entry page**.

    Once the form is approved, you can Editing/Amending Form Definitions if you have **DMIDGNAMND** role assigned.

4.6.2 Rejecting a Forms Definition

You can reject new forms based on the assigned roles.

To check about the assigned roles, refer User Role Mapping and Access Rights.

To reject a Forms Definition:

1. In the Designer View, click **Menu** in the Forms Definition that is in **Pending Approval** status, and then click **Reject**, to access the **Configure page**.

2. Click **Reject** and then enter the required description for the approval in the Comments field.

3. Click **Submit**.

    The Forms Definition is rejected, moved to **draft** status. The form definition is displayed in Forms Definition Summary page. You can then edit the Forms Definition in draft status and submit it for approval again.

    For more information on editing a Forms Definition, see Editing/Amending Form Definitions.

4.7 Managing Form Definitions

You can view, edit, copy, and delete the existing Form Definitions from the Form Definition Summary Page, based on the assigned roles.

To check about the assigned roles, refer to User Role Mapping and Access Rights.

In the Summary Page, highlight a specific Definition and click **Action**. The following options are displayed:

Table 4-3   Action Details

Action	Description
Viewing Form Definitions	View the **Member details** for a specific Member Definition.
Editing/Amending Form Definitions	Edit/amend the **Member details** of a form definition.
Copying Form Definitions	Copy the Member Definition Details and create another Member Definition by changing Alphanumeric Code, Numeric Code and Name.
Re-Uploading Form Definitions	Upload a new Excel sheet for an Excel upload form definition. You need to delete the attached excel sheet before uploading the new data.
Deleting Form Definitions	If you have the required role, you can delete a new Form that is in Awaiting Approval status.
Approving and Rejecting New Form Definitions	If you have the required role, you can reject a new Form that is in Awaiting Approval status.

4.8 Viewing Form Definitions

You can view the form definition details using the View option, based on the assigned roles.

To check about the assigned roles, refer User Role Mapping and Access Rights.

You can view the details of an individual Form Definition:

1.   Highlight the Form Definition and click **Action**.

2.   Click **View**, to access the **Form Definition page** with the selected Form definition details.

4.9 Editing/Amending Form Definitions

You can modify both approved and rejected form definitions, based on the assigned roles.

To check about the assigned roles, refer User Role Mapping and Access Rights. Forms that are already approved cannot be edited. You can amend the approved forms if you have **DMIDGNAMND** role assigned.

> **Note:**
>
> You cannot amend an approved form, if the form has any pending data entry activity.

To edit individual form details:

1.   Highlight the form definition and click the **Action**.

2.   Click **Edit**, to access the **Form Definition page** with the details.

     To modify an approved form, click **Amend**.

3.   Update the required information and click **Submit**.

You can also **auto-approve** the form during submission.

The modified form definition is updated in the form design summary.

4.10 Copying Form Definitions

You can copy individual Definition Details, to recreate another new Definition, if you have assigned roles.

To check about the assigned roles, refer User Role Mapping and Access Rights.

To copy an existing form definition:

1. Highlight the Definition and click **Action**.

2. Click **Copy**, to view the **Form Definition Page**.

3. Edit the unique information and modify details like entity table, attribute filters, user and data security details and click **Save**, to create a new form definition.

4.10.1 Re-Uploading Form Definitions

You can attach a new Excel Sheet to an Excel upload form definition and re-upload the form definition, based on the assigned roles.

To check about the assigned roles, refer to User Role Mapping and Access Rights.

To re-upload an Excel upload form definition:

1. Highlight the Definition and click **Action**.

2. Click **Re-Upload**, to access the **Form Definition page**.

3. In the **File Upload** tab, click **Remove**, to delete the existing Excel sheet.

4. Click **Drag and Drop** and select the new Excel sheet to be uploaded.

4.11 Deleting Form Definitions

You can delete the form definitions that are in Draft status, based on the assigned roles.

To check about the assigned roles, refer User Role Mapping and Access Rights.

To delete a form definition:

1. Highlight the form definition and click the **Action**.

2. click **Delete**.

The selected form definition is deleted after confirmation.

4.12 Data View

The Data View feature of Data Maintenance Interface (DMI) enables you to maintain or modify the table data by using the Forms Definition that is created and approved from Forms Definition Summary page.

If the approved Forms Definition is created by using the designer option, a user with the necessary role can add or modify the records in the table as per the configuration in the Forms Definition. These records are then sent to another user with the necessary permission for final approval.

If the approved Forms Definition is created by using an Excel file, a user with the necessary permission can verify and approve the records that are modified with the values from the Excel file. If the records modified by the Excel file are incorrect, the user can reject the records. The rejected record can be modified by a different user with the necessary role and can be sent for the final approval again. The Forms Definitions that are created by using an Excel file are labelled with an Excel icon in Data Entry.

4.12.1 Adding Data to Entity – Forms Created Using Data Entry

Once a Data Entry Form is created, the user with the necessary role can add records and also update the values for the table records as per the configuration in the Forms Definition. Issues and Actions Governance is followed for adding, approving and Publishing Data using the form.

These records are then submitted for approval to another user with the necessary role. For more information, refer to User Role Mapping and Access Rights.
To update/delete data in the table records:

1. Highlight the record and click the **Action**.

2. Click **Edit**, to update the records. The records are classified based on the following status:

3. **Draft** – Records that are created but not submitted. In Draft state, you can add new rows or delete/edit an existing row submitted for auto-approval.

4. **Ready** – Records that are approved. You can only edit the records.

   For adding/deleting records and editing existing draft or Ready records, refer to the following sections:

   Related Topics

   • Adding/Editing a Draft Record: You can add a record to the table or edit a record set in the Draft status. The added record is set to Draft status.

   • Deleting Draft Records

4.12.2 Adding/Editing a Draft Record

You can add a record to the table or edit a record set in the Draft status. The added record is set to Draft status.

To add or edit a draft record:

1. Select **Draft** from the **Status** drop-down list, to view all the entity records set to **Draft** status.

2. To add a new record, click **Add**.

   A new entry set to **Draft** status is added to Entity details page. This entry is empty. Edit the record to add the attribute details.

3. To edit a record, click **Edit** next to the record.

4. In the **Edit** page, enter the values in the attributes that you want to modify and click **OK**.

   You can repeat the steps for all the records for which the data needs to be entered.

5. To modify all the entries in a specific column, click **Bulk Update**.

   a. Select the column to modify the data.

   b. Enter the new value and click **OK**.

6. Click the modified record in draft status, and then click **Submit**.

7. After Publish, the status is changed from Awaiting to Ready status. Refer Editing Published Records, to edit the records in **Ready** status.

4.12.3 Deleting Draft Records

You can delete the records in Draft status. If the record is approved and moved to Ready status, it cannot be deleted.

1. Select **Draft** from the Status drop-down list.

   The entity records with Draft status are displayed for entering data are displayed.

2. Select a record and click **Delete**.

4.12.4 Editing Published Records

The published records are set to Ready Status.

When you edit the record, it is moved to Draft Status.

1. Select **Ready** from the Status drop-down list, to view the entity records with Ready status are displayed.

2. To edit a record, click **Edit** next to the record.

3. Update the values for the attributes that you want to modify and click **OK**.

   User will have the ability and should not edit the Business Key or 'As of Date' attribute of the entity. You can repeat the steps for all the records for which the data needs to be entered.

4. To modify all the entries in a specific column, click **Bulk Update**.

   a. Select the column to modify the data.

   b. Enter the new value and click **OK**.

5. Click the modified record in draft status, and then click **Submit for Approval**.

4.12.5 Forms Created Using Excel Upload

When a Forms Definition created using an Excel file is approved from Forms Definition Summary Page, the table records in the selected table are updated using the data in the Excel file.

The records are set to **Awaiting** status for the approved forms definition in data entry page. You can verify the records modified by the Excel file records and approve them if you are assigned to the necessary role. If the records modified by the Excel file are incorrect, you can reject the records. The status of the rejected records is changed to Draft. A user with the necessary role can edit the records in draft status and submit them for approval again.

- – To approve records, see Approving and Rejecting Records.
  - – To reject records, see Rejecting a Record.
  - – To edit a record in draft status, see Editing a Rejected Record .

4.12.5.1 Approving and Rejecting Records

A user with the necessary role can approve or reject the edited records.

For more information related to user roles, refer to User Role Mapping and Access Rights.

4.12.5.1.1 Approving Draft Records

You can approve the records set to Draft status.

To approve records:

1. In the **Data Entry** page, select **Draft** from the **Status** drop-down list.

   The entity records with Draft status are displayed.

2. Select the required record.

   You can select multiple records, to perform bulk Approval. Bulk Approval is enabled only if Bulk Authorization is activated during Form Creation.

3. Enter the required comment in the Comments Field, and then click **Approve**.

   The record is approved successfully with the values from the Excel file.

4.12.5.2 Rejecting a Record

You can reject a record set to Awaiting status.

To reject a record:

1. Click **Menu** in the required Forms Definition from the Data Entry page.

2. Click **Edit**.

   The Entity Details page is displayed. The records that are waiting for the final approval are displayed here.

   Select the required record, and then click **Reject**.

   You can select multiple records to perform bulk rejection. Bulk rejection is enabled only if Bulk Authorization is activated during Form Creation.

3. Enter the required comment in the Comments field, and then click **Reject**.

   The record is rejected, and the status is changed to **Draft**. A user with the necessary role can now edit the record.

4.12.5.3 Editing a Rejected Record

You can edit the records that are in draft status and send them approval to the user with the necessary role.

To edit a record:

1. Select **Draft** from the **Status** drop-down list.

2. Click **Edit** in the record that you want to edit.

3. Modify the required attributes, and click **OK**.

4. Select the record and then click **Send for Approval**.

   The modified record is now moved to **Awaiting** status. A user with the necessary role can approve the record.

5
Data Integration

Refer to Oracle® Financial Services Data Foundation Cloud Service for Banking Data Integration Guide.

6
Data Operations

Refer to Oracle® Financial Services Data Foundation Cloud Service for Banking Data Operations Guide.