erwin Data Intelligence Suite

Metadata Management Guide

Release v10.0

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Contents

Managing Metadata

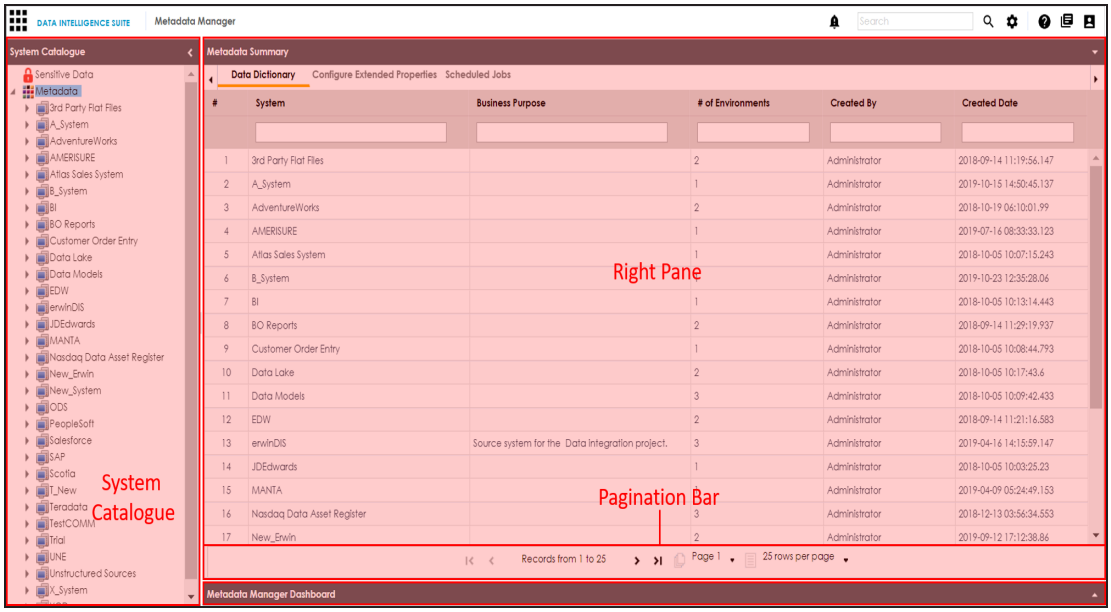
This section walks you through the metadata management. Metadata management is done via Metadata Manager. It involves scanning metadata from a data source and storing it in a central repository.

You can preview the data, profile it, generate pattern summary report and provide data quality score.

After performing source to target mappings in the Mapping Manager, you can run Forward or Reverse lineages and perform impact analysis in the Metadata Manager.

Using Metadata Manager

To access the Metadata Manager, go to **Application Menu** > **Data Catalog** > **Metadata Manager**. The Metadata Manager dashboard appears:



UI Section	Icon	Function
System Catalogue		Use this pane to browse through your metadata which is stored in an hierarchical manner, System > Environment > Table > Column.
Right Pane		Use this pane to view or work on the data based on your selection in the System Catalogue.
Pagination Bar		Use this bar to navigate through the metadata displayed on the Right Pane.
Metadata		Expand this pane, to view consolidated reports on system

UI Section	Icon	Function
Manager Dashboard		overview, system usage in mappings, system summary, and sensitive data indicators.

Managing metadata involves the following:

- Creating and managing systems
- Creating and managing environments
- Scanning metadata from data sources
- Creating new versions of environments
- Downloading and updating data dictionary
- Performing impact and lineage analysis
- Previewing and profiling data
- Configuring Extended Properties

Creating Systems

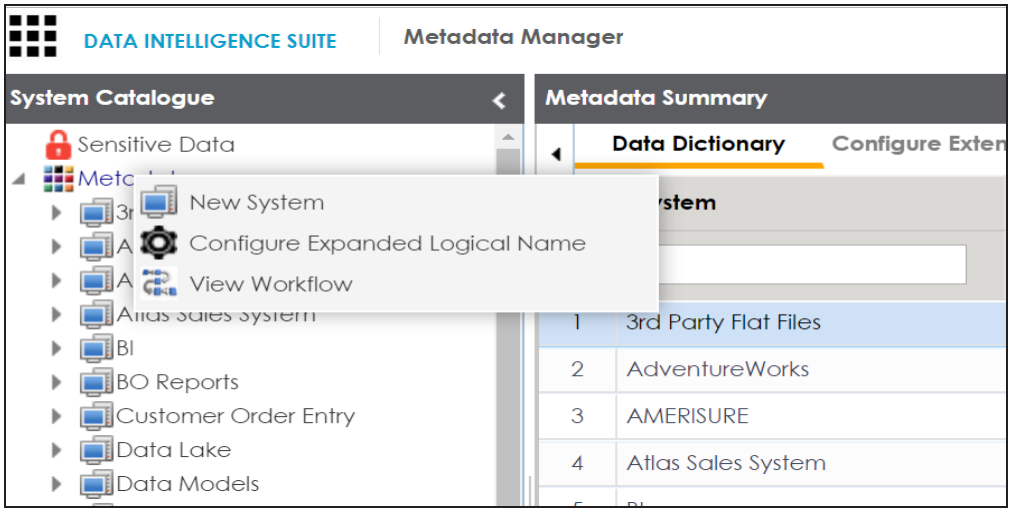
You can harvest (scan) metadata from data sources in the Metadata Manager. The scanned metadata is stored in a hierarchical manner (System > Environment > Table > Column) in the System Catalogue. To store the scanned metadata, you need to create a system.

A System is the highest node in the System Catalogue and it can contain multiple environments.
In a typical data integration project a system can be a source or target type.

You can create a system and specify data steward, system owner, and its business purpose etc.

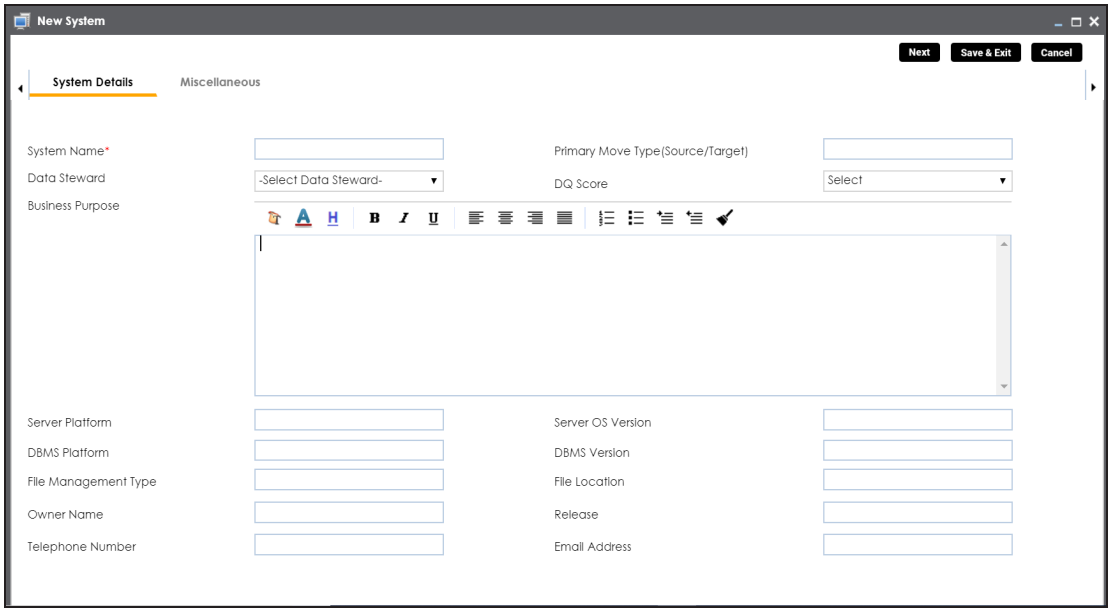
To create systems, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click the **Metadata** node.



3. Click **New System**.

   The **New System** page appears.



4. Enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
System Name	Specifies the physical name of the system. For example, Enterprise Data Warehouse. For more information on naming conventions, refer to the Best Practices section.
Data Steward	Specifies the name of the data steward responsible for the system. For example, Jane Doe. For more information on configuring list of data stewards, refer to the Configuring Data Stewards topic.
Business Purpose	Specifies the business objective of the system. For example: This is a source system to store Sales metadata of the organization for a data integration project.
Server Platform	Specifies the server platform of the system. For example, Windows.

Field Name	Description
DBMS Platform	Specifies the DBMS platform of the system (if the system is an RDBMS source). For example, SQL Server.
File Management Type	Specifies the file management system (if the system is a file-based source). For example, MS Excel.
Owner Name	Specifies the full name of the system owner. For example, Talon Smith.
Telephone Number	Specifies the telephone number of the system owner. For example, 1-800-783-7946.
Primary Move Type (Source/Target)	Specifies whether the system is source, target, or both. Valid values are: ▪ Source ▪ Target ▪ Both
DQ Score	Specifies the overall data quality score of the system. For example, High (7-8). For more information on configuring DQ scores, refer to the Configuring Data Profiling and DQ Scores topic.
Server OS version	Specifies the OS version of the system's server. For example, Windows Server 2012 R2.
DBMS Version	Specifies the DBMS version of the system (if the system is an RDBMS source). For example, SQL Server 2017.
File Location	Specifies a file path (if the system is a file-based source). For example, C:\Users\Talon Smith\erwin\Mike - Target System
Release	Specifies the system release including the point release number. For example, Oracle 18c.

Field Name	Description
Email Address	Specifies the system owner's email address. For example, talon.smith@mauris.edu

5. Click **Miscellaneous** and enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
ESB Platform Type	Specifies the enterprise platform bus type (if the system is an ESB source). For example, Mule.
ESB Q Manager Name	Specifies the ESB queue manager's name of the system (if the source is an ESB). For example, John Doe.
Total DBSize	Specifies the total physical size of the database. For example, 198 GB.
Total Number of Tables	Specifies the total number of tables associated with the system. For example, 300.
Definition of the day	Specifies the definition of the system at the end of the day. For example: Extraction of details from the source system is complete.
Batch Extract Window	Specifies the daily batch extract window of the system. For example: Batch extract from the source system is scheduled at 3:30 P.M. everyday.
Average User	Specifies the average number of system users. For example, 30.
Average Concurrent Users	Specifies the average number of concurrent system users. For example, 15.
Special Instructions	Specifies any special instructions or comments about the system. For example: The system acts as a source for creating the mapping specification.

6. Click **Save and Exit**.

A new system is created and added under the system tree.

Once a system is created, you can create environments and scan metadata from different database types.

You can also manage the system in the following ways:

- Editing Systems
- Exporting System Information
- Uploading Documents
- Viewing the Assigned Workflow
- Associating Systems
- Configuring Expanded Logical Name of Tables/Columns
- Deleting Systems

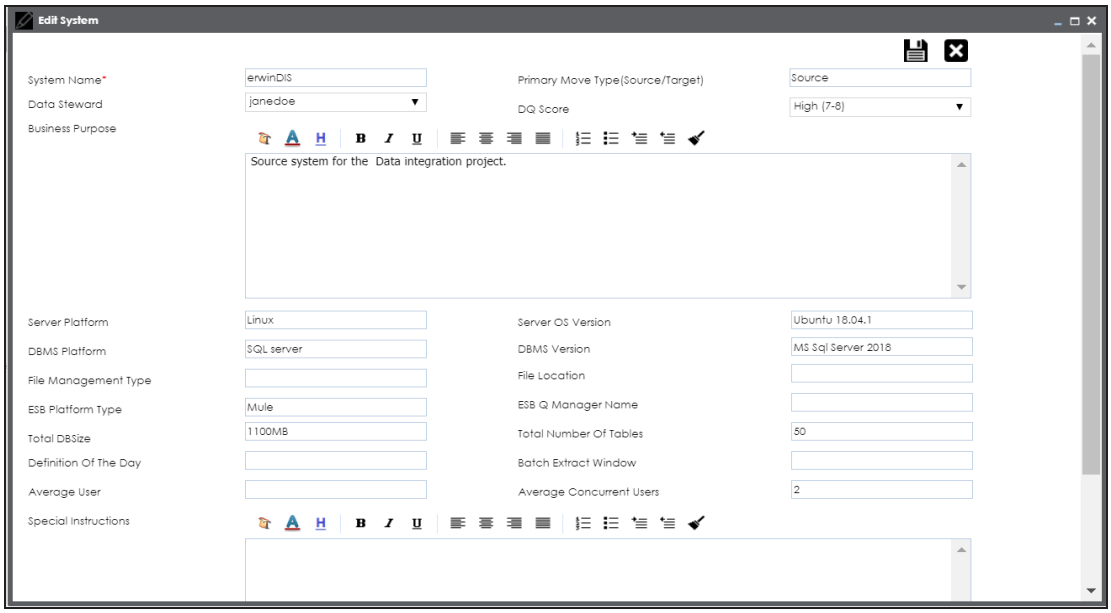
Editing Systems

You can update a system by editing it.

To edit systems, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click the system to be edited.
3. Click **Edit System**.

   The Edit System page appears.



4. Update any field as desired.
5. Click  .

   The system is updated.

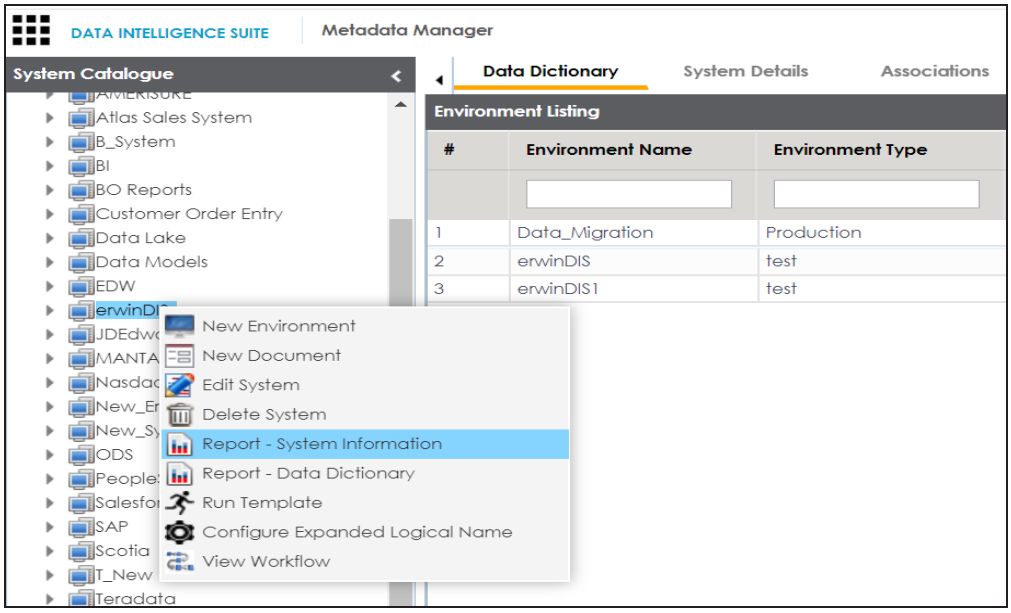
Exporting System Information

You can export system information report in the following formats:

- HTML
- PDF
- MS Excel
- MS Word
- Rich Text Format

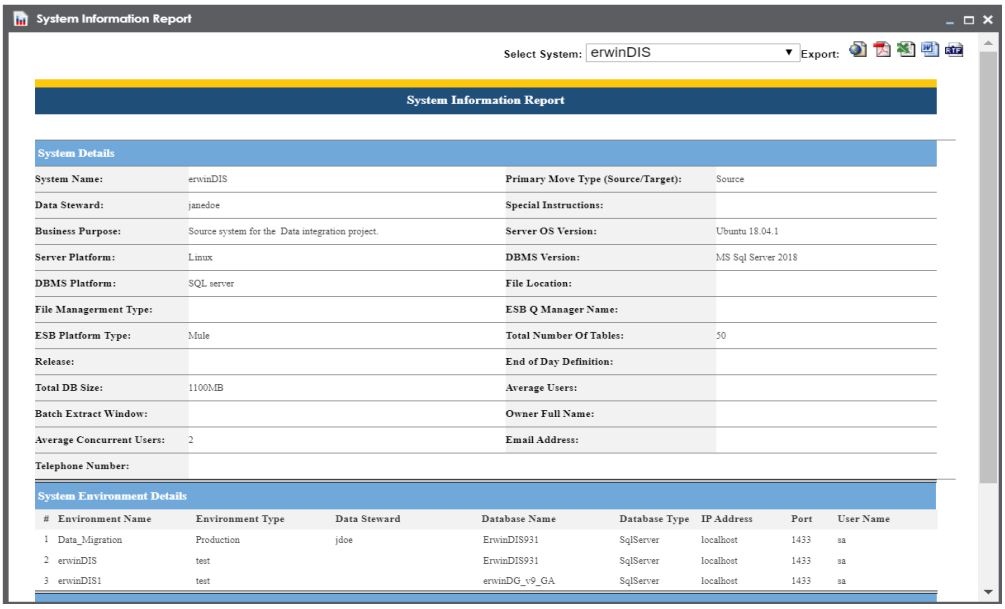
To export system information, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click the desired system.



3. Click **Report - System Information**.

   The System Information Report page appears displaying, System Details, System Environment details, and System Document Details.



4. Use the following options:

Select System

You can select a system to generate its System Information Report.

Export to HTML ( )

To export the system information report in HTML format, click .

Export to PDF ( )

To export the system information report in PDF format, click .

Export to Excel ( )

To export the system information report in .xlsx format, click .

Export to Word ( )

To export the system information report in .docx format, click .

Export to RTF ( )

To export the system information report in .rtf format, click .

Uploading Documents

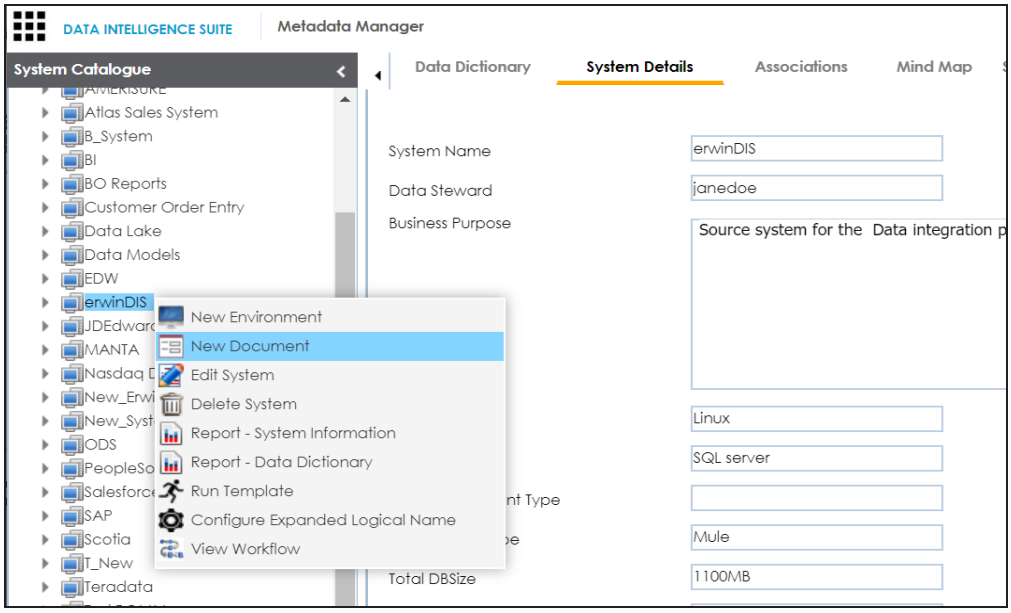
You can upload relevant documents at system level and describe its intended use.

You can also specify:

- Document name
- Document owner
- Document link
- Document status

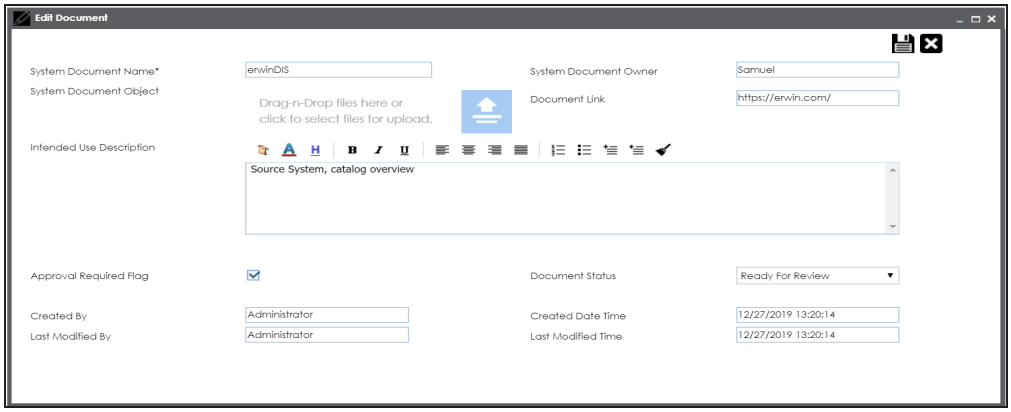
To upload documents at system level, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click a system.



3. Click **New Document**.

   The Upload Document page appears.



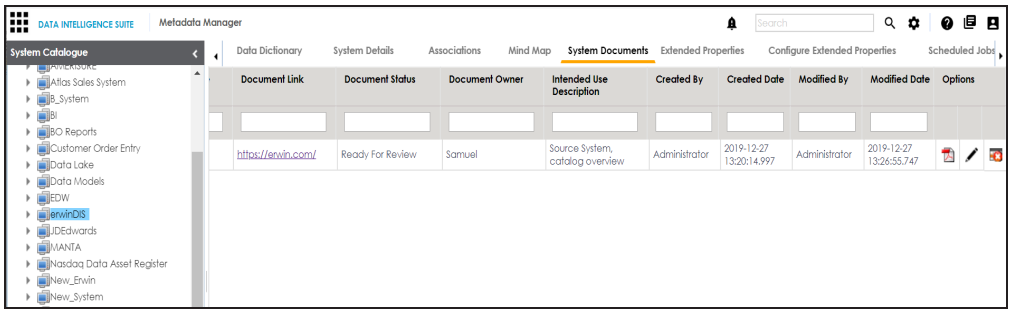
4. Enter appropriate values to the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
System Document Name	Specifies the name of the physical document being attached to the system. For example, Source System Details.
System Document Object	Drag and drop document files or use to select and upload document files.
System Document Owner	Specifies the document owner's name. For example, John Doe.
Document Link	Specifies the URL of the document. For example, https://drive.google.com/file/l/2sC2_SZIyeFKI7OOn-b5YkMBq4ptA7jhg5/view
Intended Use Description	Specifies the intended use of the document. For example: The document is to keep a record of system description and its data dictionary.
Approval Required Flag	Specifies whether the document requires approval. Select the **Approval Required Flag** check box to select the document status.
Document Status	Specifies the status of the document. For example, In Progress. This field is available only when the

Field Name	Description
	Approval Required Flag check box is selected.

5. Click  .

   The document is uploaded and saved under the System Documents tab.



6. Use the following options:

Preview ()

You can preview the document for your information. To preview the document, click  .

Edit ()

To edit the document details, click  .

Delete ()

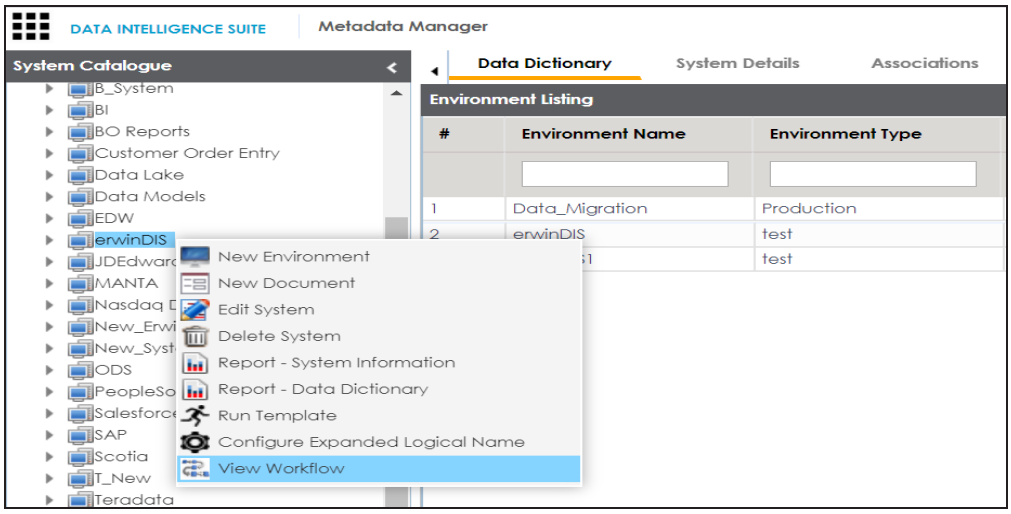
To delete the uploaded document, click  .

Viewing Workflows

You can view the assigned workflow to systems. A workflow assigned to a system is applicable to all the environments. For more information on managing metadata manager workflows, refer to the Managing Metadata Manager Workflows section.

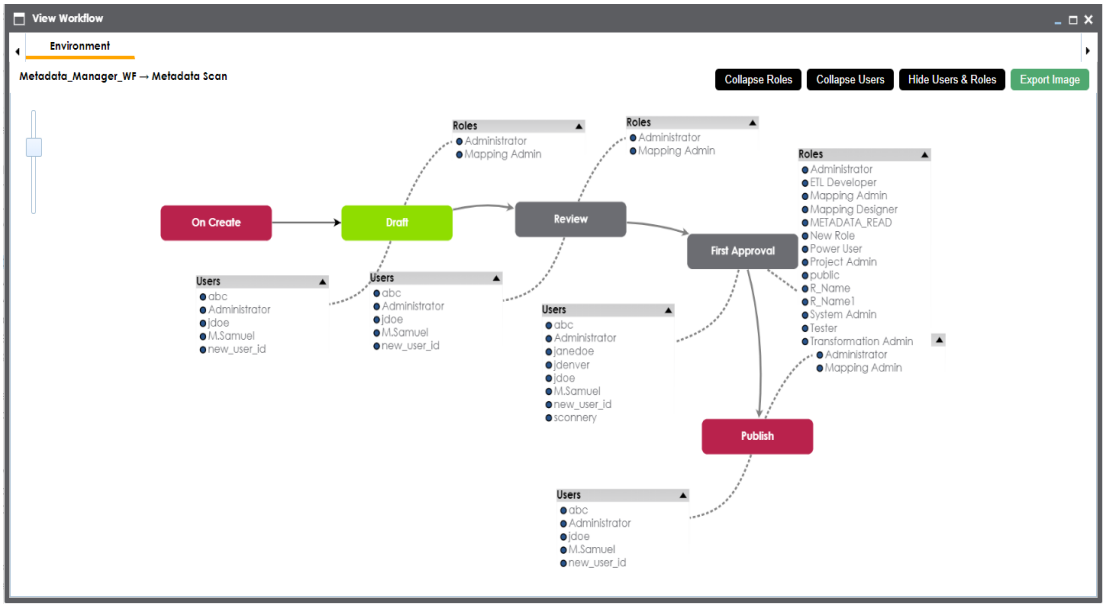
To view the workflow assigned to systems, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click a system.



3. Click **View Workflow**.

   The assigned workflow appears with users and roles corresponding to each stage of the workflow.



4. Use the following options:

Collapse Roles/Expand Roles

You can collapse roles or expand roles for all the stages using this toggle button.

Collapse Users/Expand Users

You can collapse users or expand users for all the stages using this toggle button.

Hide Users & Roles/Expand Users & Roles

You can hide users and roles or expand users and roles for all the stages using this toggle button.

Export Image

You can download the workflow image in .jpg format using this button.

Associating Systems

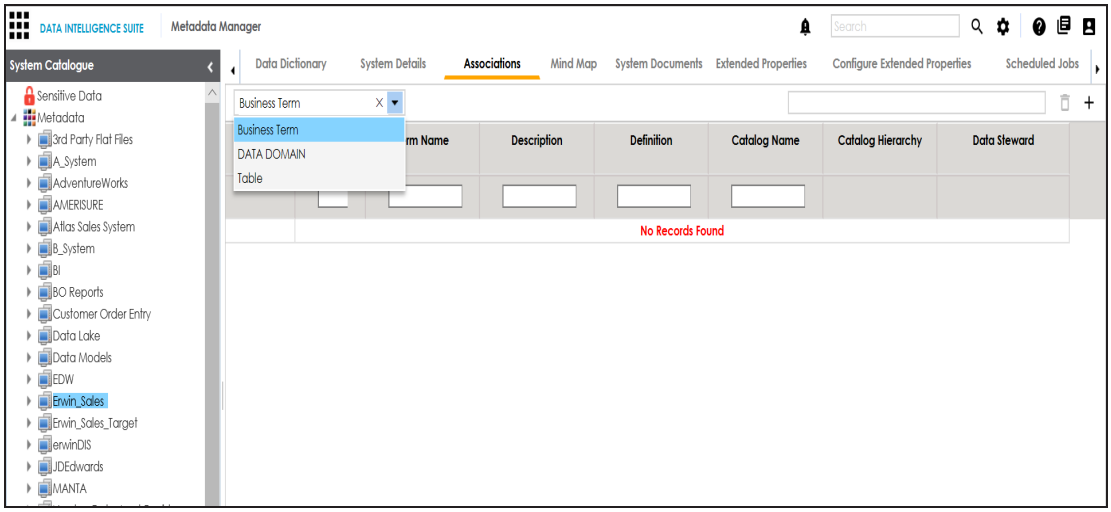
You can associate systems with business assets, systems, environments, tables, and columns. You can also view mind map and association statistics.

You need to ensure that:

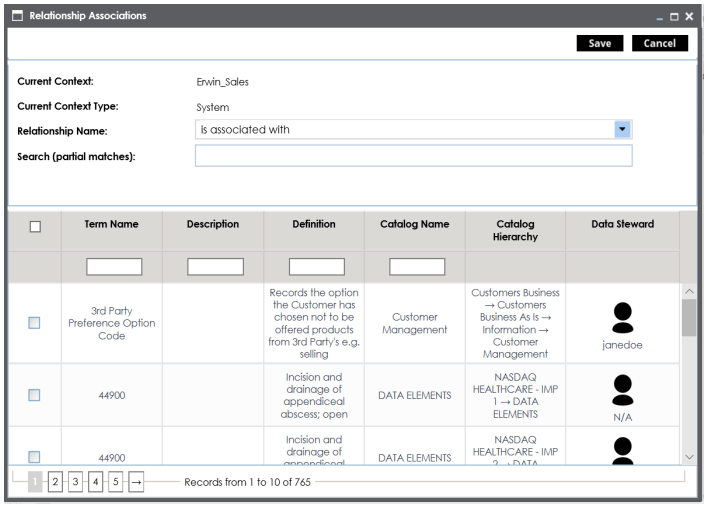
- Business assets are enabled. You can add new business assets and enable them in the Business Glossary Manager Settings.
- Relationship between system and the asset type is defined. You can define associations and relationships in the Business Glossary Manager Settings.

To associate system with asset types, follow these steps:

1. Under the **System Catalogue** pane, click the desired system and click the **Associations** tab.
2. Select the asset type from the drop down.

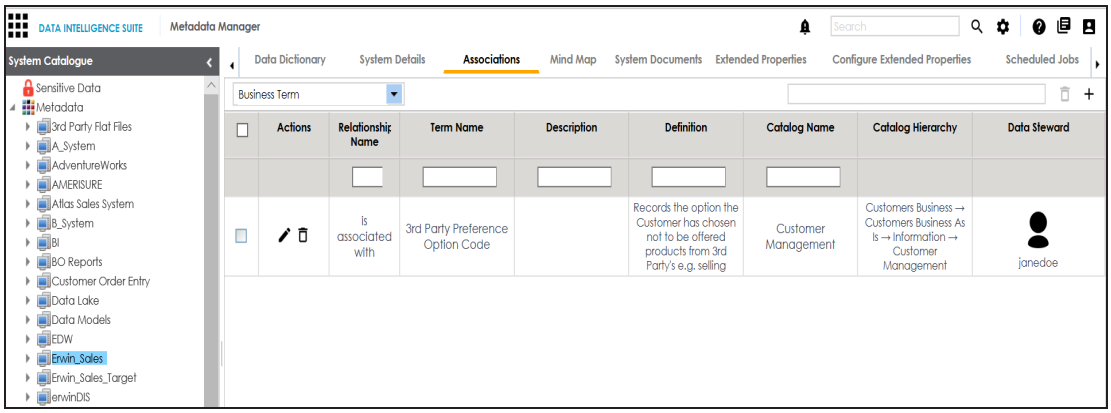


3. Click +.



4. Select the Relationship Name, and the asset type.
5. Click **Save**.

   The asset is added to the system.



6. Use the following options under **Actions**:

   Edit Association ( )

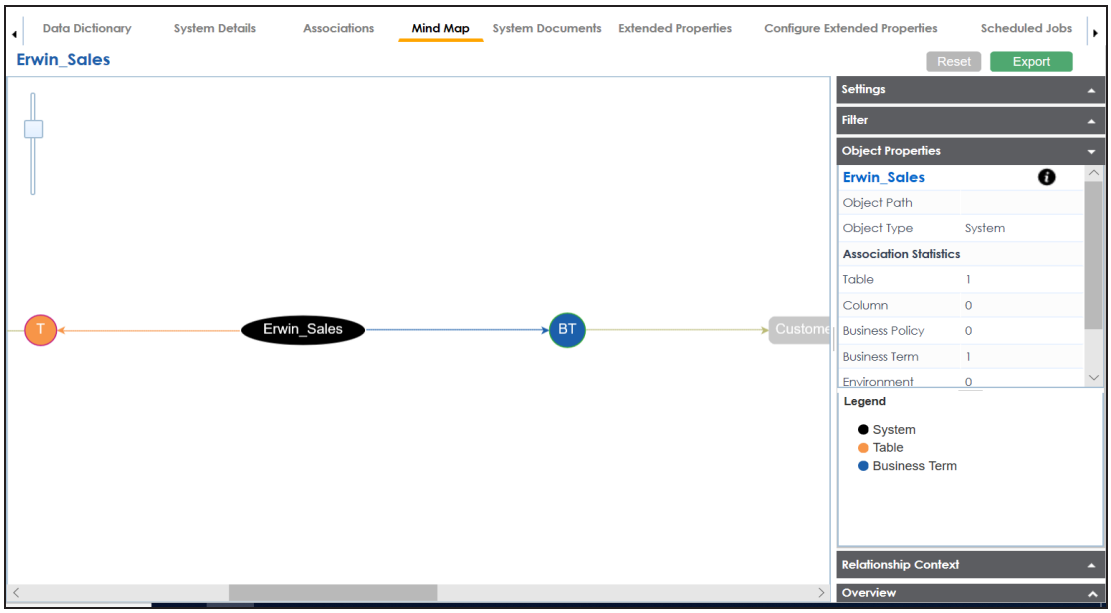
   Use this option to edit the association.

   Delete Association ( )

   Use this option to delete the association.

To view mind map, follow these steps:

1. Under the **System Catalogue** pane, click the system.
2. Click the **Mind Map** tab.



3. Use the following options to work on the mind map:

Expand (+) / Collapse (-)

To drill the mind map further, hover over the nodes, use (-) to collapse and use (+) to expand.

Export

Use this option to download the mind map to .xlsx format or .jpg format.

Settings

Layout: Select the layout as normal or orthogonal.
Custom Relations: Select the check box to display custom relations.
Show Relationships: Select the check box to display relationships.

Filter

Use this option to filter components of the mind map based on asset types or relationships.

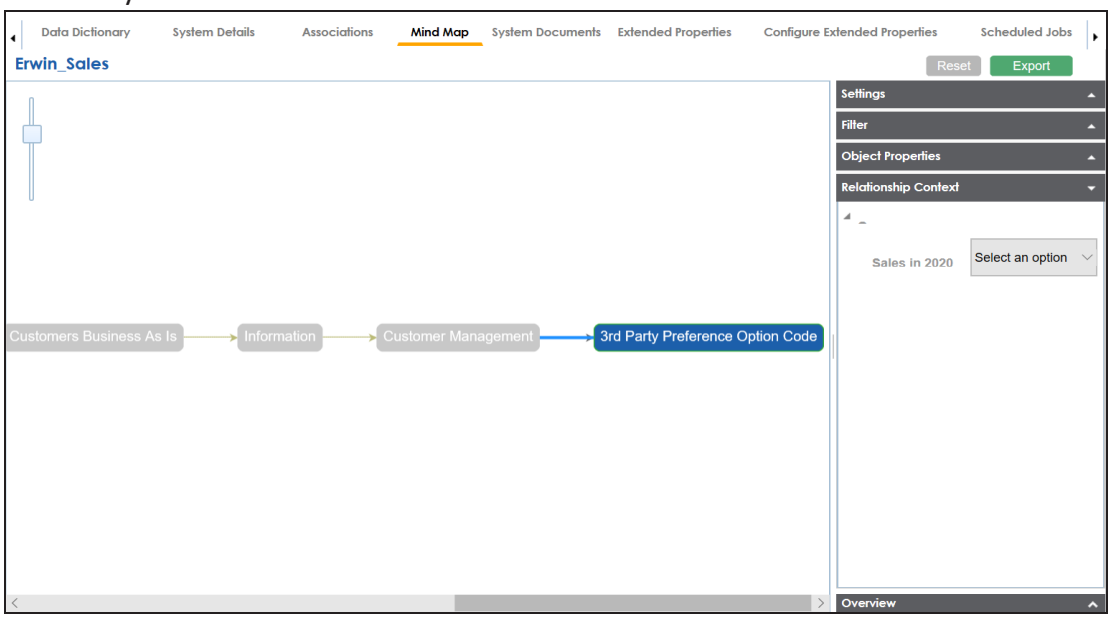
Object Properties

It displays the association statistics of the system.

Relationship Context

Use this option to view the relationship context as defined under the **Extended Properties** in Business Glossary Manager Settings for the relationship between the system and the asset type.

To view the relationship context, click the connection between the asset type and the system.



Overview

Use this option to view the overview diagram of the mind map.

Configuring Expanded Logical Name

You can update the expanded logical name for multiple tables/columns by scheduling a configuration job. The job updates the expanded logical name based on the table/column name, associated business term's name, and the associated business term's definition.

Note: You should configure expanded logical name of tables and columns after scanning metadata.

You can run the job at both, system and environment levels:

- **System level**: The expanded logical name is applied to all the tables and columns under the system. This includes all the environments under the system.
- **Environment level**: The expanded logical name is applied to all the tables and columns under the environment.

For example, consider a scenario where you want to schedule a job to configure the expanded logical name of a table, RM_Resource and a column, Resource_ID. The parameters of the job are a business term catalog that has a business term, Resource, its definition, Sales Representative, and a splitter, Underscore (_). Refer to the following table to understand the parameters and their values:

Entity	Value	Comment
Splitter (specified while scheduling the job)	_(Underscore)	
Table Name	RM_Resource	Here, the part after the underscore (splitter), Resource, matches the Business Term. Therefore, it will be replaced with the business term definition and the part before the underscore, RM, will be retained in the expanded logical name.
Column Name	Resource_ID	Here, the part before the underscore, Resource, matches with the Business Term. Therefore, it will be replaced with the business term definition and the part after the underscore, ID will be retained in the expanded logical name.
Business	Resource	This should match with a part of the table and column names

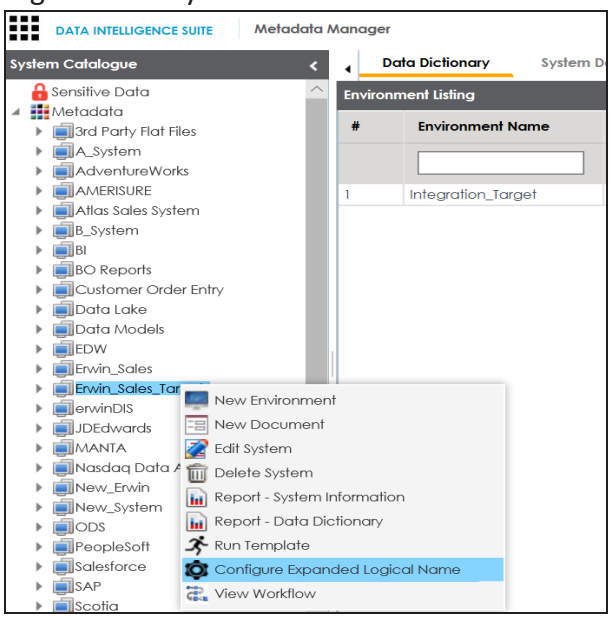
Entity	Value	Comment
Term		above.
Business Term Definition	Sales Representative	In the updated expanded logical name, this will replace the part of the table/column name that matches the business term name. That is: ▪ For the table, RM will be retained and Resource will be replaced with Sales Representative. ▪ For the column, ID will be retained and Resource will be replaced with Sales Representative.
Expanded Logical Name	<Blank>	Expanded logical name is formed from the business term definition and part of table or column names.

After the job runs successfully, the expanded logical name of the table and column is updated as mentioned in the following table:

Entity	Expanded Logical Name	Comment
Table	RM Sales Representative	Here, RM retained from the table name and Sales Representative is added from business term definition.
Column	Sales Representative ID	Here, ID is retained from the column name and Sales Representative is added from business term definition.

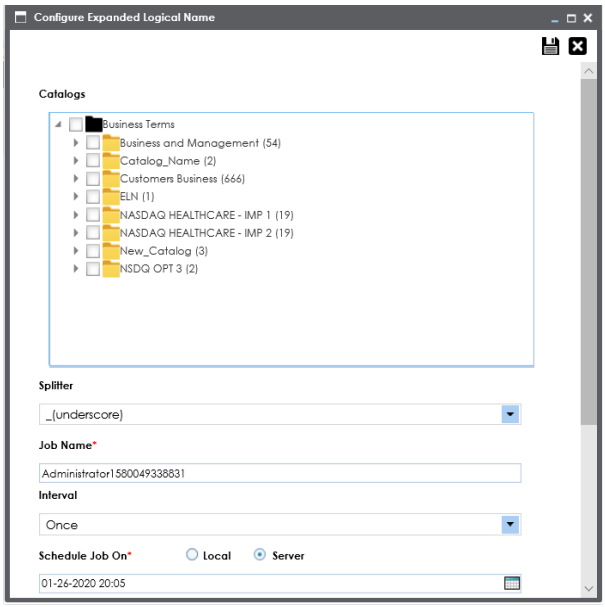
To configure expanded logical name, follow these steps:

1. Right-click a system or environment.



2. Click **Configure Expanded Logical Name**.

   The Configure Expanded Logical Name page appears.

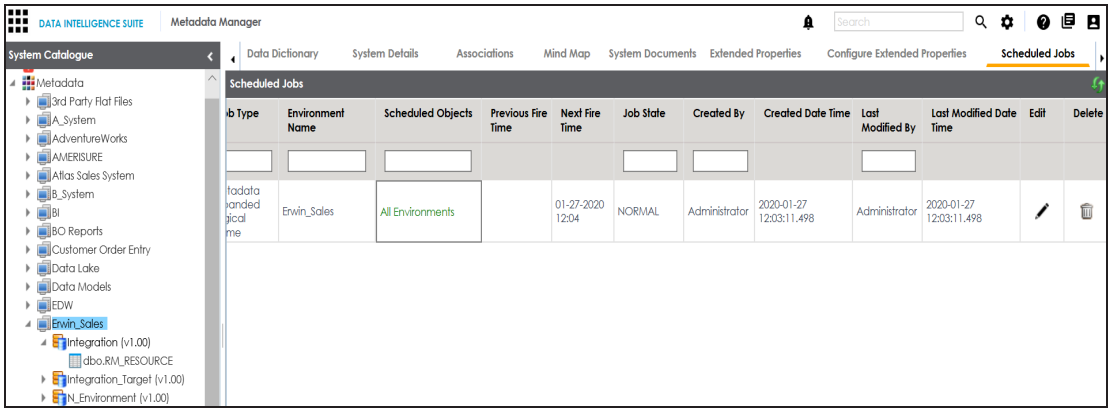


3. Select or enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
Catalogs	Select the catalog containing the desired business term.
Splitter	Select appropriate splitter based on the table name or column name.
Job Name	A default job name is autopopulated. You can modify it and enter a job name.
Interval	Select an interval of the job. Interval sets the frequency of the job. For example: If you set the interval every week then the job will be executed every week.
Local or Server	Select the machine whose clock decides the time of the scheduled scan. ▪ Local: Refers to your local machine. ▪ Server: Refers to the machine where erwinDIS has been deployed.
Schedule Job On	Select date and time of the execution of the job.
Notify Me	Turn the **Notify Me** to **ON** to receive a notification email about the scheduled job.
Notification Email	This field is autopopulated with your email ID. You receive email notifications about the scheduled job from the Admin Email ID, configured in the Email Settings. For more information on configuring Admin Email ID, refer to the Configuring Email Settings topic.
CC List	Enter a comma-separated list of email IDs that should receive the job notification.

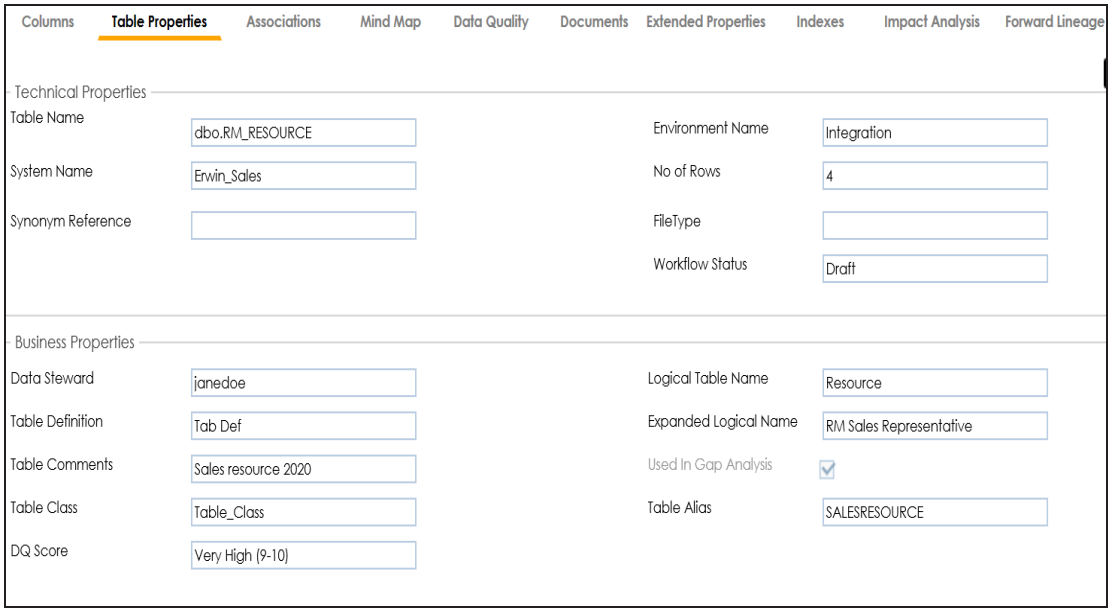
4. Click  .

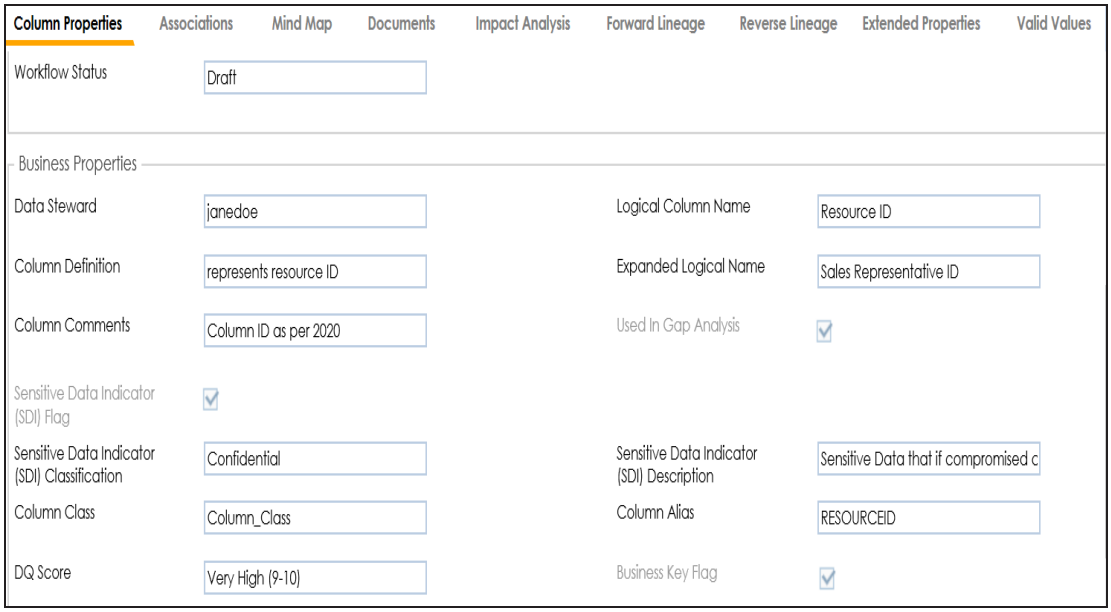
   The job is scheduled and added to the Scheduled Jobs list on the **Scheduled Jobs** tab.



You can edit the job using  or delete it using  .

The job is executed at the scheduled time and the expanded logical names of tables and columns are updated.





Note: You can use this job to update the expanded logical name only once. Alternately, you can update expanded logical names under table properties and column properties.

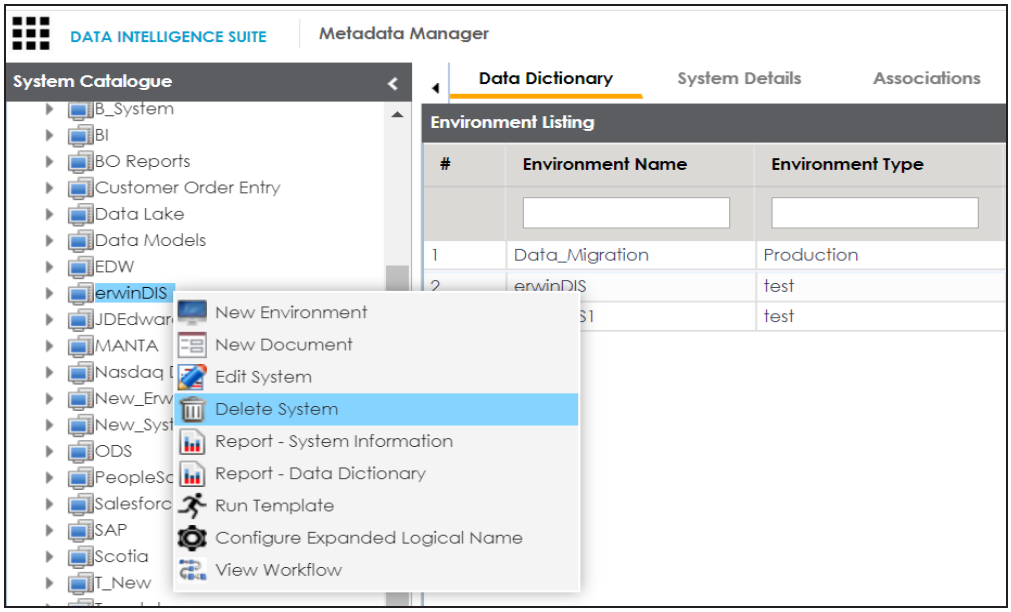
Deleting Systems

You can delete unwanted systems which are not required anymore.

Note: You can not delete a system with one or more environments under it. Ensure that you delete all the environments under it before you delete a system.

To delete systems, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click the system to be deleted.



3. Click **Delete System**.

   A warning message appears.

4. Click **Yes**.

   The system is deleted.

Creating and Managing Environments

Metadata is stored and categorized into systems and environments. Multiple environments are contained in a system. Whereas environments can denote a database, flat file, data models, etc. Environments contain database objects like Tables, Views, Synonyms, etc.

You can create environments under a system and scan metadata from a data source by providing connection parameters in the environment.

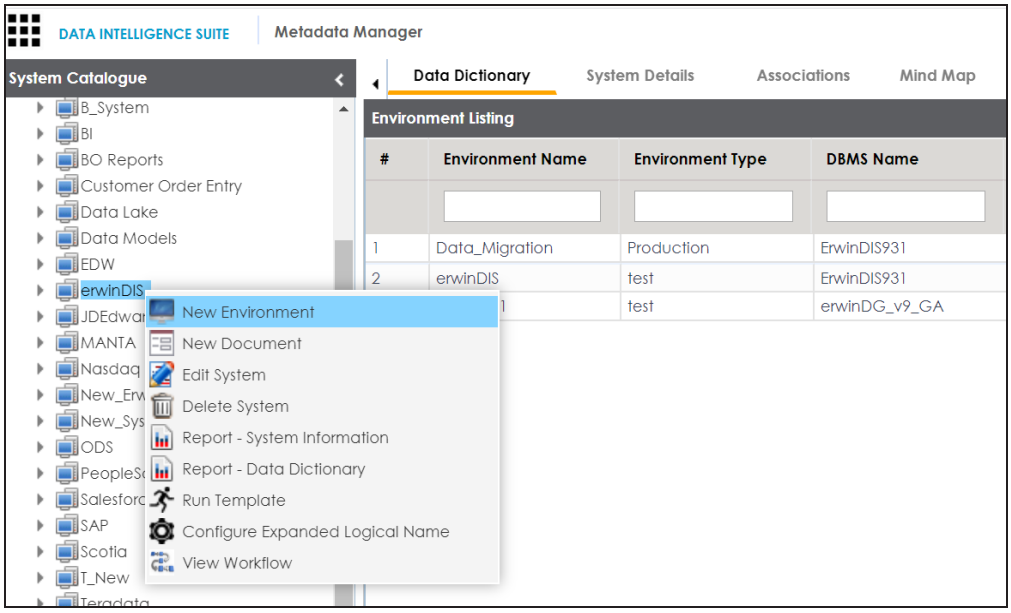
Creating and managing environments involves:

- Creating environments
- Assigning users to environments
- Managing environments
- Uploading documents
- Cloning environments
- Viewing ER diagrams
- Viewing workflow logs
- Associating Environments
- Configuring Business Properties
- Configuring Expanded Logical Name of Tables/Columns

Creating Environments

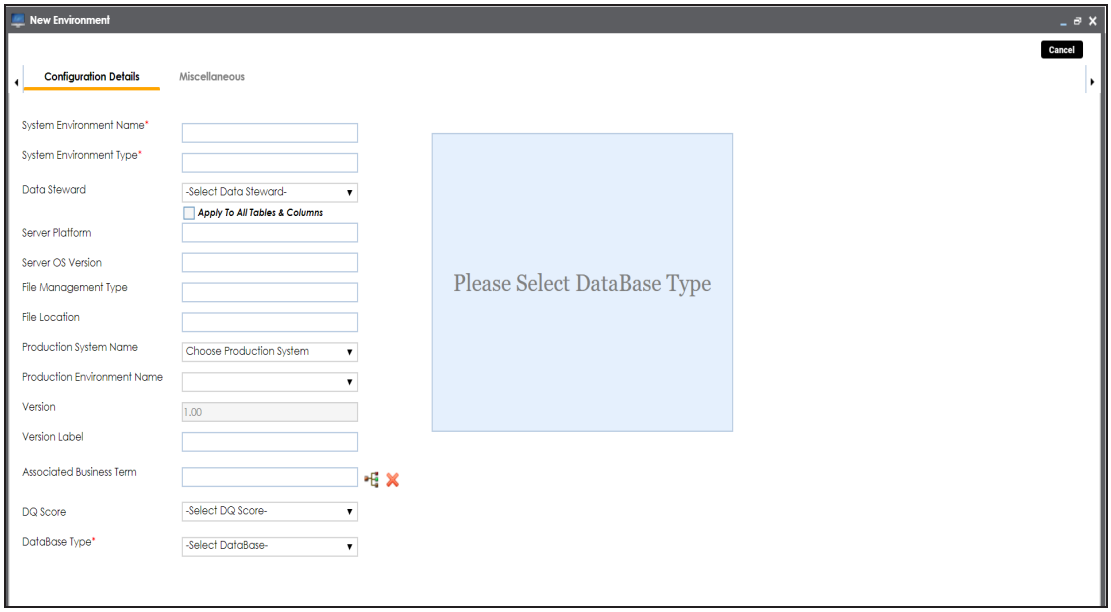
After creating a system in the Metadata Manager, you can create environments under the system. An environment can be created for different database types and flat files by fulfilling prerequisites and providing the connection parameters.

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click the system created by you.



3. Click **New Environment**.

   The New Environment page appears.



4. Enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
System Environment Name	Specifies the unique name of the environment. For example, EDW-Test. For more information on naming conventions, refer to the Best Practices section.
System Environment Type	Specifies the type of the environment. For example, development, test, or production.
Data Steward	Specifies the name of the data steward responsible for the environment. For example, Jane Doe. For more information on configuring data steward list, refer to the Configuring Data Stewards topic.
Server Platform	Specifies the server platform of the environment. For example, Windows.
Server OS Ver-	Specifies the OS version of the environment's server.

Field Name	Description
sion	For example, Windows Server 2012 R2.
File Management Type	Specifies the file management system (if the environment is a file-based source). For example, MS Excel.
File Location	Specifies a file path (if the environment is a file-based source). For example, C:\Users\Jane Doe\erwin\Mike - Target System
Production System Name	Specifies the system name being associated with the environment as the production system. For example, Enterprise Data Warehouse.
Production Environment Name	Specifies the environment name being associated with the environment as the production environment. For example, EDW-PRD.
Version Label	Specifies the version label of the environment to track change history. For example, Alpha. For more information on configuring version display, refer to the Configuring Version Display of the Environments topic.
DQ Score	Specifies the overall data quality score of the environment. For example, High (7-8). For more information on configuring DQ scores, refer to the Configuring Data Profiling and DQ Scores topic.
Database Type	Specifies the database type. For example, Sql Server. Select the type of database from where you wish to scan metadata. Depending upon your choice of database type you need to provide additional fields (connection parameters) appearing on the right hand side. **Note**: There are no additional fields for MS Excel File, and XSD.

5. Click  to test the connection.

If the connection with database is established successfully then a success message pops up.

6. Click **Save and Exit**.

   A new environment is created and stored in the environment tree.

   Once an environment is created, you can scan source or target metadata from the database type.

Different database types have different prerequisites and connection parameters:

- SQL Server - via SQL or Window authentication mode
- Oracle and Oracle RAC
- MySQL
- Snowflake
- MS Dynamics CRM
- SAP ECC R/3 and IS-U Metadata via JCO Driver

SQL Server

You can create two types of SQL Server environment:

- SQL authentication
- Windows authentication

Both the environments have same:

- Prerequisites
- Privileges
- JDBC driver details
- TLS connection details

There is a small difference between the two modes in JDBC connection parameters.

Prerequisites

Pre-requisite steps for establishing successful connection:

1. Creation of dedicated service account for erwin with Metadata Read-only privileges in SQL Server Database
2. Firewall connection open between SQL Server and erwin DI Suite application server
3. Opening of SQL Server database port to accept connections from erwin DI Suite application server

Privileges

Following are the privileges given to service account for:

- **Metadata scanning**: Grant view definition on Schema
- **Data preview**: Db_datareader

JDBC Driver Details

SQL Server JDBC driver is out of box packaged with erwin DI Suite application. Hence, no JDBC driver configuration is required from end user standpoint.

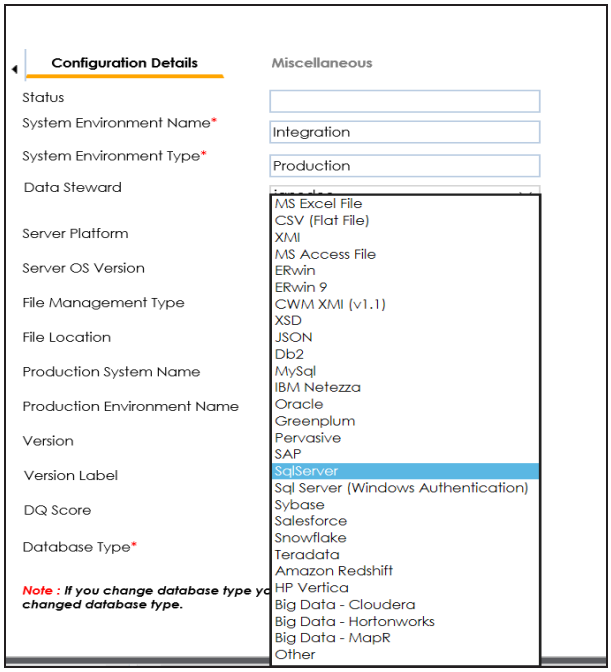
TLS Connection Details

- The SQL Server JDBC driver supports connection via TLS 1.2.
- The TLS protocol parameter needs to be added to JDBC URL string to ensure that the connection is via TLS. Otherwise, the source database will reject any incoming request in non-TLS mode.
- JDBC URL being used to connect via TLS: **jdbc:sqlserver://SERVER_NAME:PORT#;data-baseName=AdventureWorks;sslProtocol=TLSv1.2**
- Additional parameters to configure (if needed): **integratedSecurity=true;encrypt=true;trustServerCertificate=true;**

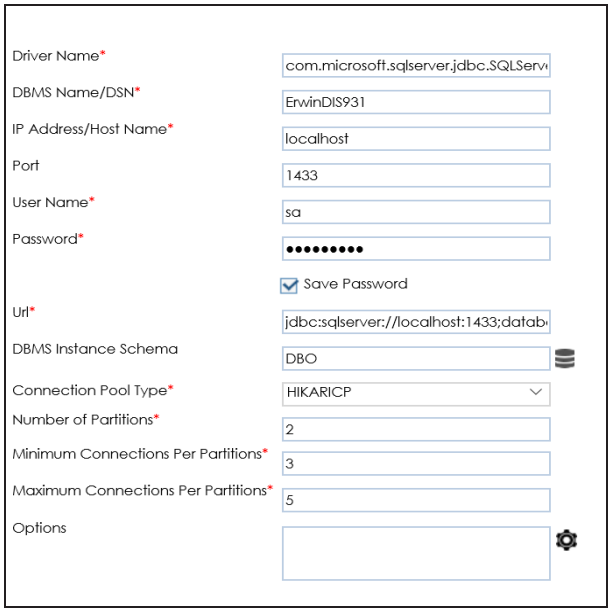
JDBC Connection Parameters

To enter SQL Server (SQL authentication) connection parameters, follow these steps:

1. Select the **Database Type** as **SqlServer** while creating the environment.



When you select database type as Sql Server, the following connection parameters appear on the right hand side.



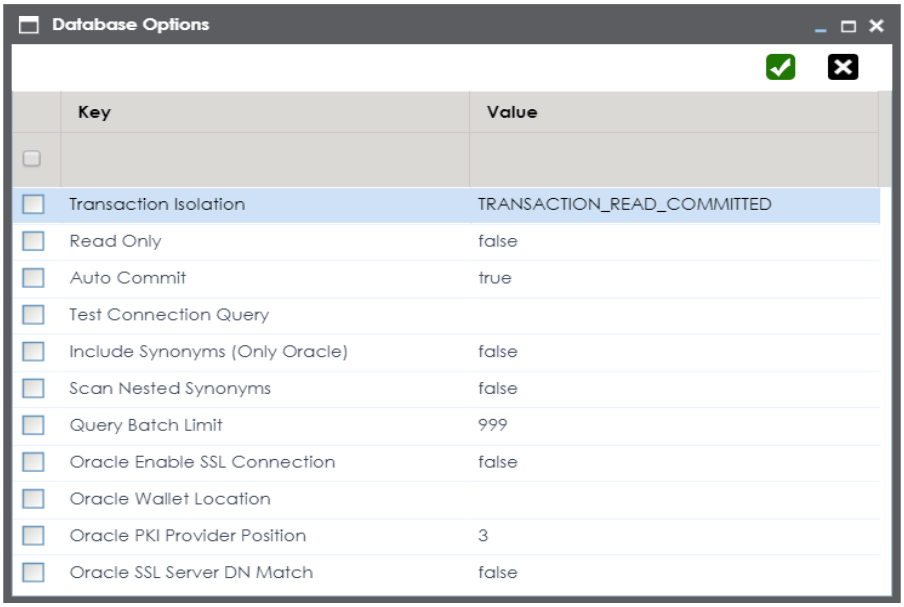
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	Specifies the JDBC driver name for connecting to the database. For example, com.microsoft.sqlserver.jdbc.SQLServerDriver
DBMS Name/DSN	Specifies the SQL Server database name being used to connect to the environment. For example, ErwinDIS931.
IP Address/Host Name	Specifies the IP address or server host name of the database. For example, localhost.
Port	Specifies the port to connect with the database. 1433 is the default port for a Sql Server database type. You can change it, if required.
User Name	Specifies the SQL Server (Service Account) user name. For example, sa.
Password	Specifies the SQL Server (Service Account) password. For example, goerwin@1.
URL	Specifies the full JDBC URL that is used to establish a connection with the database. For example, **jdbc:sqlserver://SERVER_NAME:PORT#;data-baseName=DatabaseName** It is autopopulated based on the other parameters.
DBMS Schema	Specifies the schema of the database. Use this option to select multiple or narrow down to single schema. For example, DBO.
Connection Pool Type	Specifies the connection pool type being used to connect via JDBC. For example, HIKARICP and BONECP.
Number of Par-titions	Specifies the number of partitions of the database. It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired. For example, 2.

Field Name	Description
Minimum Connections Per Partitions	Specifies the minimum connections per partitions of the database. It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired. For example, 3.
Maximum Connections Per Partitions	Specifies the maximum connections per partitions of the database. It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired. For example, 5.

3. Click  to use database options.

   The Database Options page appears displaying the different options available.



4. Use the database options in the following way:

   Key ()

   To use a key, select the corresponding check box.

   Value

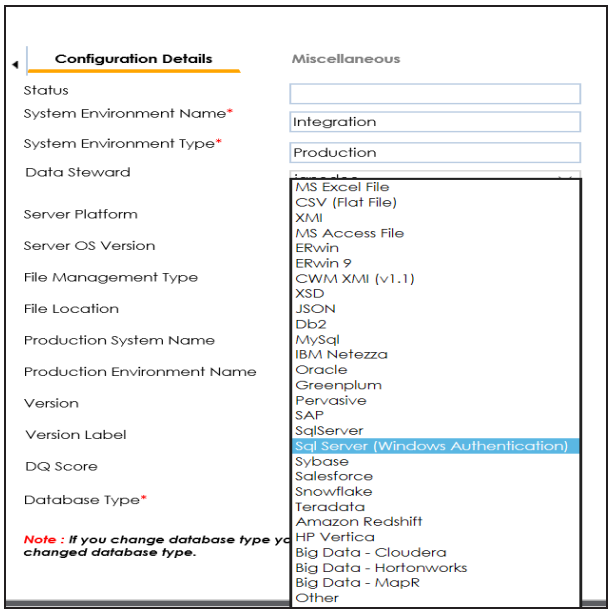
   To set the value of the selected key, double-click the corresponding cell under the **Value** column and select the appropriate value from the drop down.

OK ( )

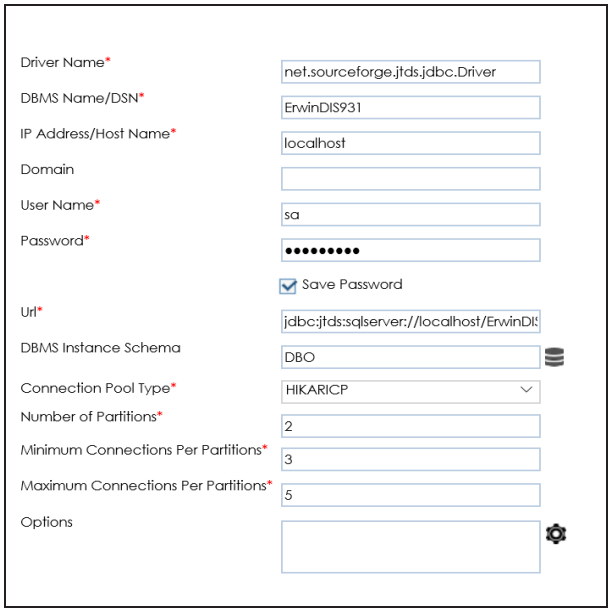
To save the database options, click .

To enter SQL Server (Window authentication) connection parameters, follow these steps:

1. Select the **Database Type** as **Sql Server (Windows Authentication)**.



When you select database type as **Sql Server (Windows Authentication)**, the following connection parameters appear on the right hand side.



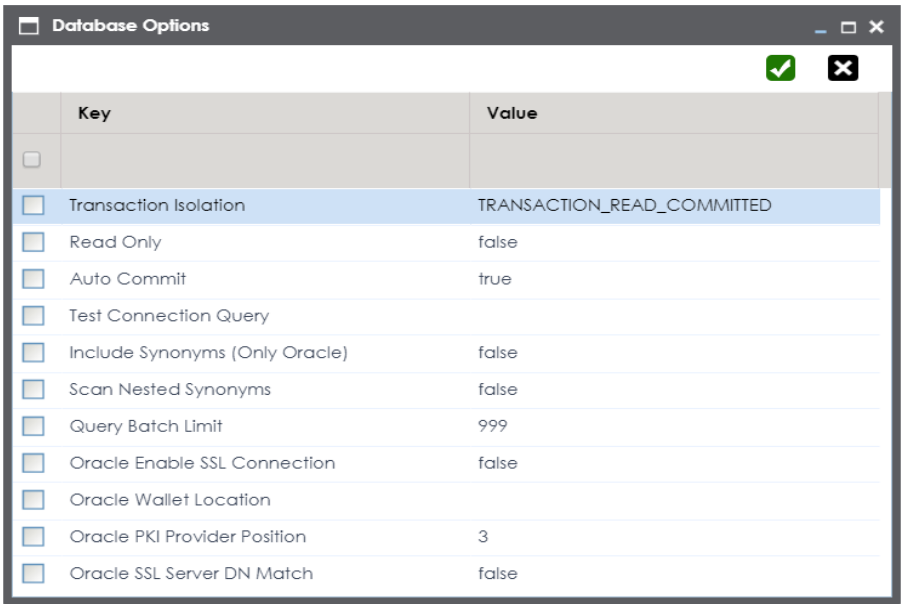
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	Specifies the JDBC driver name for connecting to the database. For example, com.microsoft.sqlserver.jdbc.SQLServerDriver
DBMS Name/DS-N	Specifies the SQL Server database name being used to connect to the environment. For example, ErwinDIS931.
IP Address/H-ost Name	Specifies the IP address or server host name of the database. For example, localhost.
Domain	Specifies the network domain name on which database resides. For example, U-DOM1.
Port	Specifies the port to connect with the database. 1433 is the default port for a Sql Server database type. You can change it, if required.

Field Name	Description
User Name	Specifies the SQL Server (Service Account) user name. For example, sa.
Password	Specifies the SQL Server (Service Account) password. For example, goerwin@1.
URL	Specifies the full JDBC URL that is used to establish a connection to the database. It is autopopulated based on the other parameters. **jdbc:jtds:sqlserver://SERVER_NAME:PORT#;databaseName=DatabaseName;domain=DomainName;useNTLMv2=true;**
DBMS Schema	Specifies the schema for the database. Use this option to select multiple or narrow down to single schema. For example, DBO.
Connection Pool Type	Specifies the connection pool type being used to connect via JDBC. For example, HIKARICP and BONECP.
Number of Partitions	Specifies the number of partitions for the database. It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired. For example, 2.
Minimum Connections Per Partitions	Specifies the minimum connections per partitions for the database. It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired. For example, 3.
Maximum Connections Per Partitions	Specifies the maximum connections per partitions for the database. It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired. For example, 5.

3. Click  to use database options.

The Database Options page appears displaying the different options available.



4. Use the database options in the following way:

Key ( )

To use a key, select the corresponding check box.

Value

To set the value of the selected key, double-click the corresponding cell under the **Value** column and select the appropriate value from the drop down.

OK ( )

To save the database options, click .

Oracle

You can create Oracle environment and can also enable RAC/Service to:

- Use Oracle cluster database
- Capture Oracle Service name in DSN field

Before creating an Oracle environment, you should take a note of the following:

- Prerequisites
- JDBC driver details
- TLS connection details
- JDBC connection parameters

Prerequisites

Prerequisite steps for establishing successful connection:

- **Creation of dedicated service account** for erwin with Metadata read-only privileges in Oracle database
- **Firewall connection open** between Oracle and erwin DI Suite application server
- **Oracle Database port** opened to accept connections from erwin DI Suite application server

JDBC Driver Details

Oracle JDBC driver is out of box packaged with erwin DI Suite application. Hence, no JDBC driver configuration is required from end user standpoint.

TLS Connection Details

- Oracle JDBC 8 driver provides native TLS 1.2 support and upgrading the driver to JDBC 8 will provide the necessary resolution.

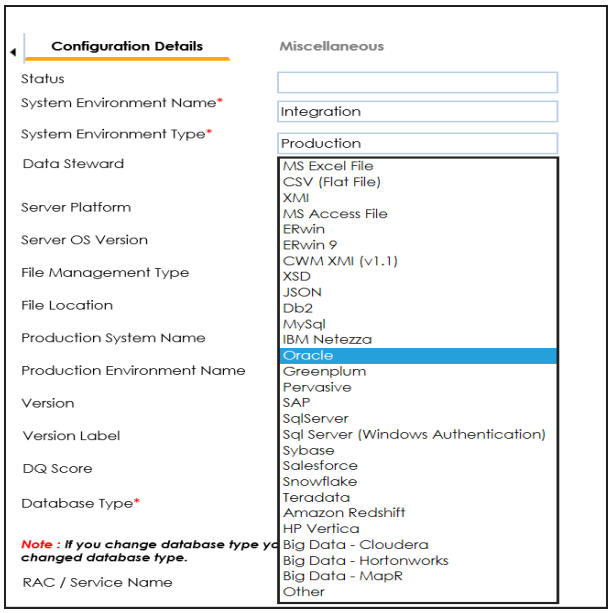
- Once the product is upgraded to the oracle JDBC 8 driver, TLS connectivity can be ensured by setting a few system parameters and also adding TLS parameters to the JDBC URL string to support connectivity using TLS 1.2

URL Format: jdbc:oracle:thin:@<Ip Address>:<Port>/< service name>+TLS params

JDBC Connection Parameters

To enter Oracle connection parameters, follow these steps:

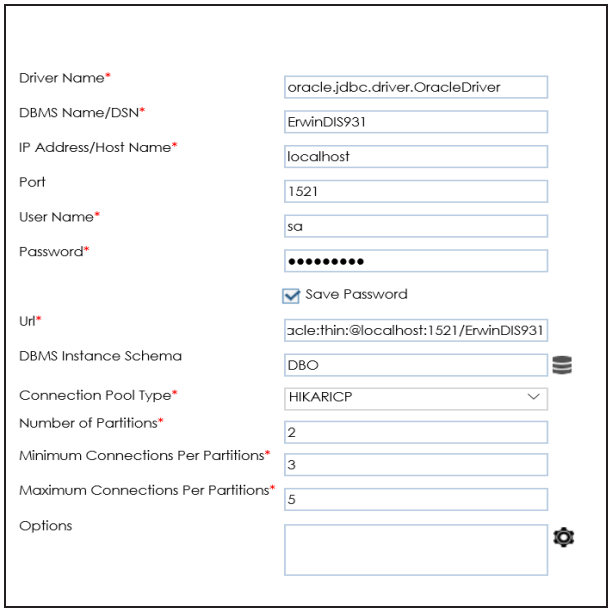
1. Select Database Type as Oracle while creating the environment.



Note: You can select the **RAC/Service** check box to :

- Use Oracle cluster database
- Capture Oracle Service name in DSN field

The following connection parameters appear on the right hand side.



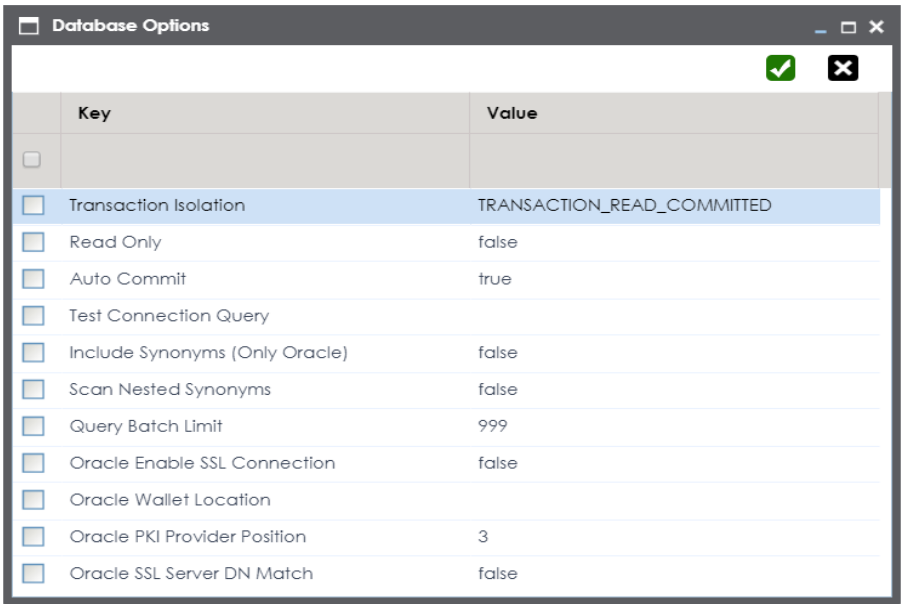
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	Specifies the JDBC driver name for connecting to the database. For example, oracle.jdbc.driver.OracleDriver
DBMS Name/DSN	Name of the Oracle Service – SID or TNS Service Name. For example, ErwinDIS931.
IP Address/Host Name	Enter the IP address or server host name. For example, 10.32.445.21
Port	Specifies the port to connect with the database. 1521 is the default port for the Oracle database. User can change it, if required.
User Name	Enter the Oracle (Service account) user name. For example, erwinuser.
Password	Enter the Oracle (Service account) password. For example, goerwin@1.
URL	It is autopopulated based on the other parameters.

Field Name	Description
	For example, **jdbc:oracle:thin:@ <Ip Address>:<Port>/< service name>**
DBMS Instant Schema	Specifies the name of the database schema. For example, DBO. Use this option to select multiple or narrow down to single schema.
Connection Pool Type	Specifies the connection pool type being used to connect via JDBC. For example, HIKARICP and BONECP. Select the appropriate connection pool type.
Number of Partitions	Specifies the number of partitions of the database. It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired. For example, 2.
Minimum Connections Per Partitions	Specifies the minimum connections per partitions of the database. It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired. For example, 3.
Maximum Connections Per Partitions	Specifies the maximum connections per partitions of the database. It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired. For example, 5.

3. Click  to use database options.

   The Database Options page appears displaying the different options available.



4. Use the database options in the following way:

Key ( )

To use a key, select the corresponding check box.

Value

To set the value of the selected key, double-click the corresponding cell under the **Value** column and select the appropriate value from the drop-down.

OK ( )

To save the database options, click .

MySQL

You can create MySQL environment by providing the necessary connection parameters.

Before creating a MySQL environment, you should take a note of the following:

- Prerequisites
- JDBC driver details
- TLS connection details
- JDBC connection parameters

Prerequisites

Prerequisite steps for establishing successful connection:

- **Creation of dedicated service account** for erwin with Metadata read-only privileges in MySQL database
- **Firewall connection open** between MySQL and erwin DI Suite application server
- **MySQL Database port** opened to accept connections from erwin DI Suite application server

JDBC Driver Details

MySQL JDBC driver is out of box packaged with erwin DI Suite application. Hence, no JDBC driver configuration is required from end user standpoint.

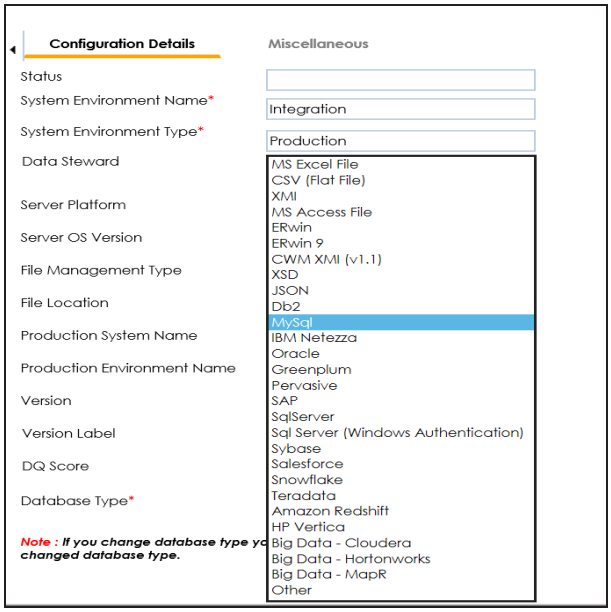
TLS Connection Details

- The MySQL JDBC driver supports connection via TLS 1.2. The TLS protocol parameter needs to be added to JDBC URL string to ensure that the connection is via TLS.
- JDBC URL being used to connect via TLS: jdbc:mysql://IPADDRESS:3306/DATABASENAME ?useSSL=true &enabledTLSProtocols=TLSv1.2

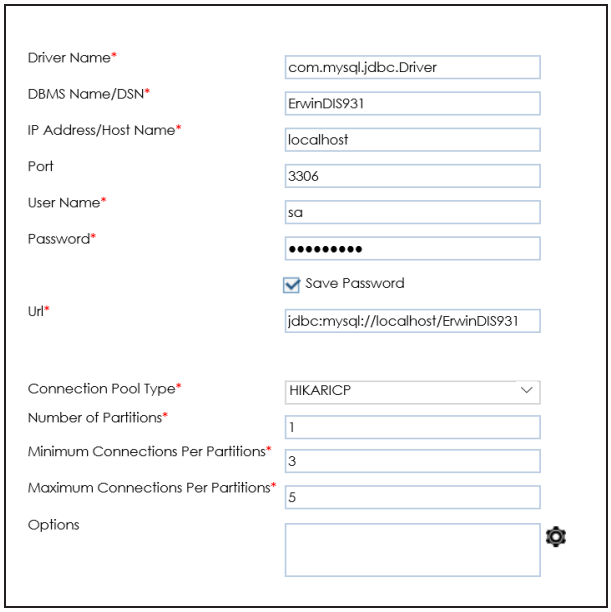
JDBC Connection Parameters

To enter MySQL connection parameters, follow these steps:

1. Select Database Type as MySQL while creating the environment.



The following connection parameters appear on the right hand side.



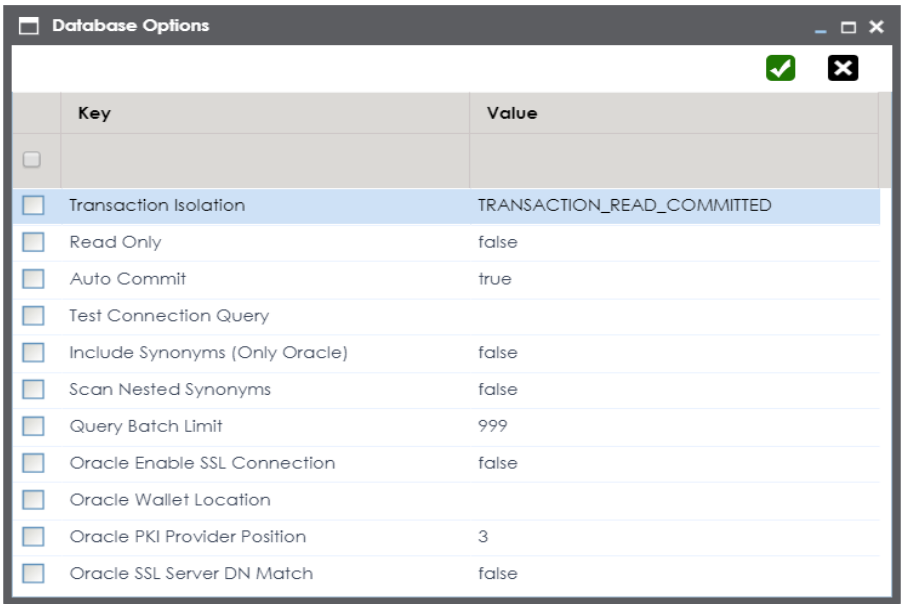
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	Specifies the JDBC driver name for connecting to the database. For example, com.mysql.jdbc.Driver
DBMS Name/DSN	Enter the MySQL database name. For example, ErwinDIS931.
IP Address/Host Name	Enter the IP address or server host name. For example, 10.32.445.21
Port	Specifies the port to connect with the database. 3306 is the default port for the MySQL database. You can change it, if required.
User Name	Enter the MySQL (Service account) user name. For example, erwinuser.
Password	Enter the MySQL (Service account) password. For example, goerwin@1.

Field Name	Description
URL	Specifies the full JDBC URL that is used to establish a connection with the database. It is autopopulated based on the other parameters. For example, jdbc:mysql://IPADDRESS:3306/DATABASENAME
Connection Pool Type	Specifies the connection pool type being used to connect via JDBC. For example, HIKARICP and BONECP.
Number of Partitions	Specifies the number of partitions of the database. It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired. For example, 1.
Minimum Connections Per Partitions	Specifies the minimum connections per partitions of the database. It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired. For example, 3.
Maximum Connections Per Partitions	Specifies the maximum connections per partitions of the database. It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired. For example, 5.

3. Click  to use database options.

   The Database Options page appears displaying the different options available.



4. Use the database options in the following way:

Key ( )

To use a key, select the corresponding check box.

Value

To set the value of the selected key, double-click the corresponding cell under the **Value** column and select the appropriate value from the drop down.

OK ( )

To save the database options, click .

Snowflake

You can create Snowflake environment by providing the necessary connection parameters.

Before creating a Snowflake environment, you should take a note of the following:

- Prerequisites
- JDBC driver details
- TLS connection details
- JDBC connection parameters

Prerequisites

Prerequisite steps for establishing successful connection:

- **Creation of dedicated service account** for erwin with Metadata read-only privileges in Snowflake database
- **Snowflake Database ports 443 and 80** should be opened via firewall to accept connections from erwin DI Suite application server

JDBC Driver Details

Currently Snowflake JDBC driver is not packaged with erwin DI Suite application. Download the Snowflake JDBC driver here.

Once downloaded, place the snowflake drivers at the following location on the erwin DI Suite application server:

\Apache Software Foundation\<Tomcat X.X>\webapps\erwinDISuite\WEB-INF\lib

TLS Connection Details

- The Snowflake packaged JDBC driver version 3.1.X and above implement TLS v1.2 providing the latest security patches on the protocol. So, you will not need to set any additional properties. The connection will use TLS 1.2 encryption by default.

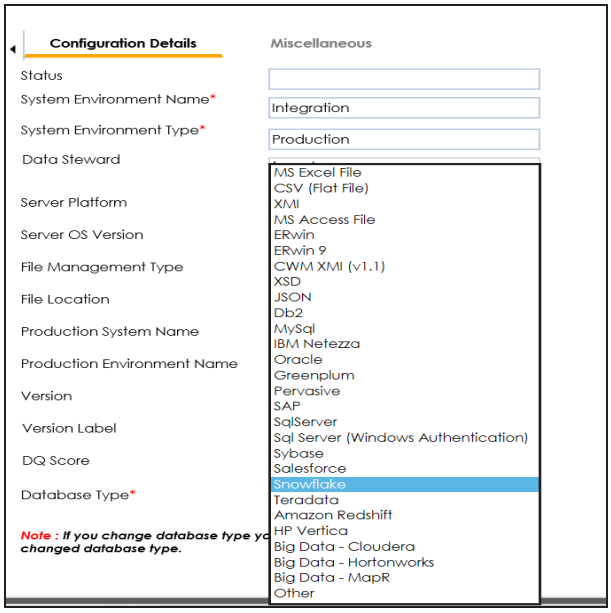
- Add SSL Parameter in Connection String (if required):

  ```
  jdbc:snowflake://<accountname>.snowflakecomputing.com/
  ?warehouse=DataWarehouseName&db=DatabaseName&schema=
  SchemaName&ssl=on
  ```

JDBC Connection Parameters

To enter Snowflake connection parameters, follow these steps:

1. Select Database Type as Snowflake while creating the environment.



   The following connection parameters appear on the right hand side.

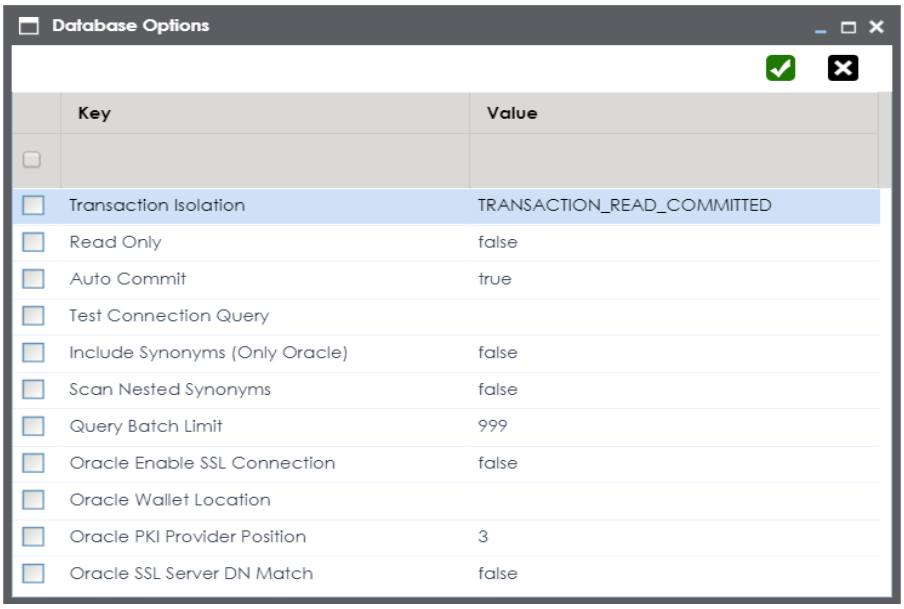
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	Specifies the JDBC driver name for connecting to the database. For example, com.snowflake.client.jdbc.SnowflakeDriver
DBMS Name/DSN	Enter the Snowflake database name. For example, AW2012_DV.
IP Address/Host Name	Enter <accountname>.snowflakecomputing.com For example, analytixds.us-east-1.snowflakecomputing.com
Port	Specifies the port to connect with the database. 443 is the default port for the Snowflake database. You can change it, if required.
User Name	Enter the Snowflake (Service account) user name. For example, shawn.
Password	Enter the Snowflake (Service account) password. For example, goerwin@1.

Field Name	Description
URL	Specifies the full JDBC URL that is used to establish a connection with the database. It is autopopulated based on the other parameters. For example, `jdb-c:snowflake://<accountname>.snowflakecomputing.com/?warehouse=DataWarehouseName&db=DatabaseName&schema=SchemaName`
DBMS Instance Schema	Specifies the schema of the database. Use this option to select multiple or narrow down to single schema.
Connection Pool Type	Specifies the connection pool type being used to connect via JDBC. For example, HIKARICP and BONECP.
Number of Partitions	Specifies the number of partitions of the database. It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired. For example, 1.
Minimum Connections Per Partitions	Specifies the minimum connections per partitions of the database. It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired. For example, 3.
Maximum Connections Per Partitions	Specifies the maximum connections per partitions of the database. It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired. For example, 5.

3. Click  to use database options.

   The Database Options page appears displaying the different options available.



4. Use the database options in the following way:

Key ( )

To use a key, select the corresponding check box.

Value

To set the value of the selected key, double-click the corresponding cell under the **Value** column and select the appropriate value from the drop down.

OK ( )

To save the database options, click .

MS Dynamics CRM

You can create MS Dynamics CRM environment by providing the necessary connection parameters.

Before creating a MS Dynamics CRM environment, you should take a note of the following:

- Prerequisites
- JDBC driver details
- TLS connection details
- JDBC connection parameters

Prerequisites

Prerequisite steps for establishing successful connection:

- **Creation of dedicated service account** for erwin with Metadata read-only privileges in MS Dynamics CRM database
- CRM Server **IP Address should be mapped with Host Names** in the file called "Hosts" which is available in the location - C:\Windows\System32\drivers\etc
- Generate CRM Domain trusted Certificate in erwin application server using InstallCert.java and place the generated "jssecacerts" file in the location - C:\Program Files\AdoptOpenJDK\jdk-XXX\jre\lib\security

  Reference: https://www.mkyong.com/webservices/jax-ws/sun-certpathbuilderexception-unable-to-find-valid-certification-path-to-requested-target/

JDBC Driver Details

The MS Dynamics CRM JDBC driver is not packaged with erwin DI Suite application. Hence, customers needs to use the jdbc driver available at their end for MS Dynamics CRM (CDATA, Progress etc.)

You can download CDATA driver from the URL mentioned below.

Download URL: https://www.cdata.com/drivers/dynamicscrm/download/

Location to configure the JDBC driver: Once downloaded, the MS Dynamics CRM drivers should be placed in the following path in erwin application server: \Apache Software Foundation\<Tomcat X.X>\webapps\erwinDISuite\WEB-INF\lib and restart the Tomcat.

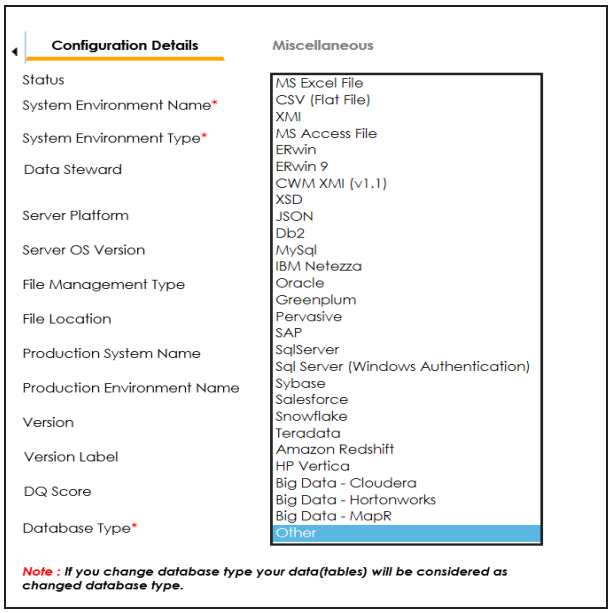
TLS Connection Details

The CDATA MS Dynamics CRM driver uses SSL by default, so you will not need to set any additional properties. The connection will use TLS 1.2 encryption.

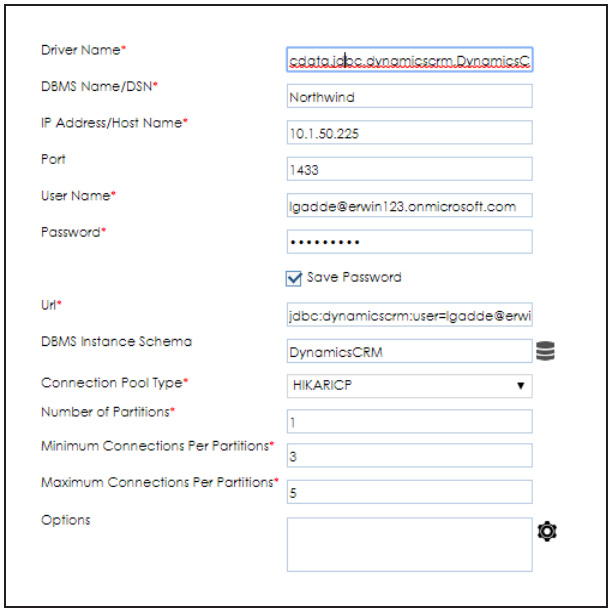
JDBC Connection Parameters

To enter MS Dynamics CRM connection parameters, follow these steps:

1. Select **Database Type** as **Other** while creating the environment.



The following connection parameters appear on the right hand side.



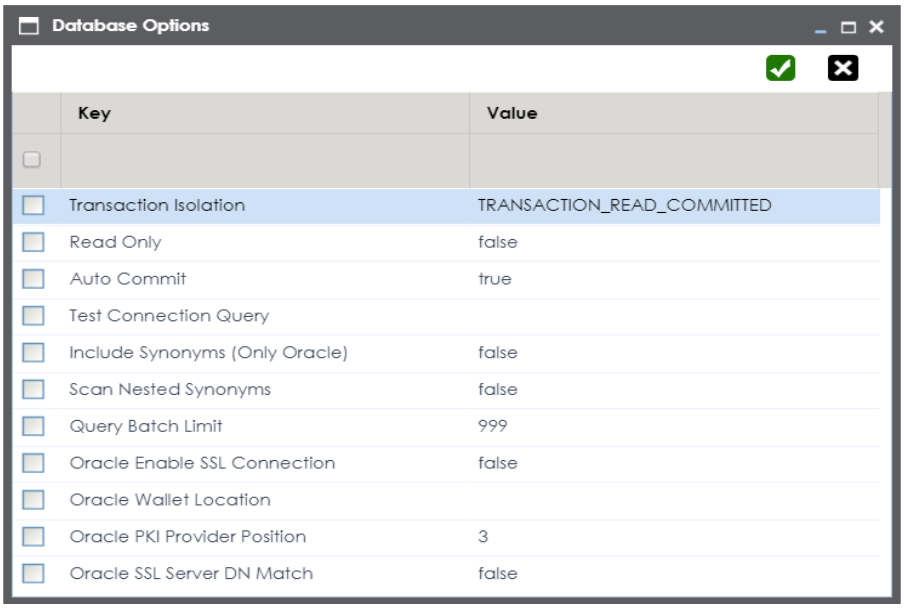
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	Specifies the JDBC driver name for connecting to the database. For example, cdata.jdbc.dynamicscrm.DynamicsCRMDriver
DBMS Name/DSN	Enter the MS Dynamics CRM Database Name. For example, CRM.
IP Address/Host Name	Enter the IP Address or Host Names of MS Dynamics CRM server. For example, 10.45.21.123
Port	Specifies the port to connect with the database. 443 is the default port for MS Dynamics CRM. You can change it, if required.
User Name	Enter the MS Dynamics CRM (Service account) user name. For example, domain\erwinuser.
Password	Enter the MS Dynamics CRM (Service account) password.

Field Name	Description
	For example, goerwin@1.
URL	Specifies the full JDBC URL that is used to establish a connection with the database. It is autopopulated based on the other parameters. For example, jdb-c:dynamicscrm:User=UserName;Password=XXX;URL=<MS Dynamics CRM URL>; **Note**: If user trying to connect CRM online version, then append the following value to above mentioned connection string CRM Version=CRM Online;
DBMS Instance Schema	Specifies the schema of the database. For example, DynamicsCRM.
Connection Pool Type	Specifies the connection pool type being used to connect via JDBC. For example, HIKARICP and BONECP.
Number of Partitions	Specifies the number of partitions of the database. It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired. For example, 1.
Minimum Connections Per Partitions	Specifies the minimum connections per partitions of the database. It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired. For example, 3.
Maximum Connections Per Partitions	Specifies the maximum connections per partitions of the database. It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired. For example, 5.

3. Click  to use database options.

   The Database Options page appears displaying the different options available.



4. Use the database options in the following way:

Key ( )

To use a key, select the corresponding check box.

Value

To set the value of the selected key, double-click the corresponding cell under the **Value** column and select the appropriate value from the drop down.

OK ( )

To save the database options, click .

SAP

You can create SAP environment by providing the necessary connection parameters.

Before creating a SAP environment, you should take a note of the following:

- Privileges
- Prerequisites
- JDBC driver details
- TLS connection details
- JDBC connection parameters

Privileges

Privileges given to service account:

- User type = System
- User group = SUPER
- Authorization profile = S_DDIC

Prerequisites

Prerequisite steps for establishing successful connection:

- **Creation of dedicated service account** for erwin with Metadata read-only privileges in SAP system
- Open Firewall connection between SAP and erwin DI Suite application server
- Get the SAP System Number and Client details

JDBC Driver Details

The SAP JCO driver is not packaged with erwin DI Suite application. Hence, customer must get the JCO driver from their respective SAP team and deploy the same in erwin application server.

The following sapjco files are required:

- Sapjco.jar
- Sapjco3.dll

Location to place these files

- Copy sapjco.jar into webinf/lib folder
- Copy sapjco3.dll copy into windows/system32 folder

Note: The tool connects to the SAP system directly using SAP JCO drivers and not to SAP backend database.

TLS Connection Details

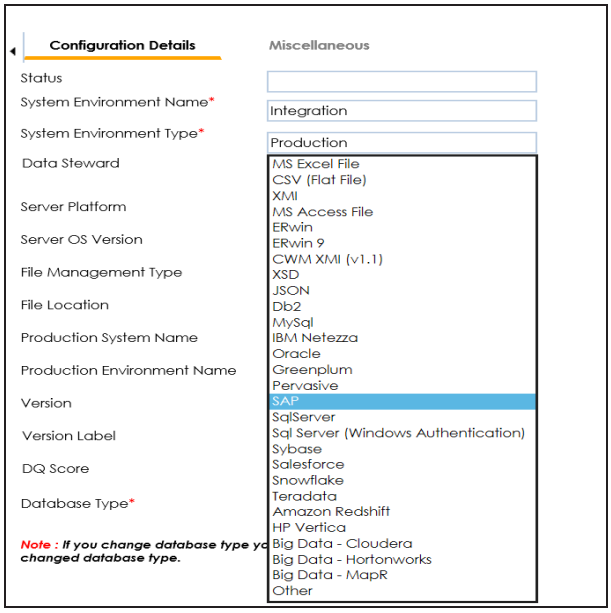
In order to use SSL with the JCO, we will need to:

- Set up the SAP system for SSL (SNC setup)
- Create a certificate (X509) for the user
- Pass the user as $X509CERT$ (check JCO doc)
- Pass some key from the cert as passwd in the JCO

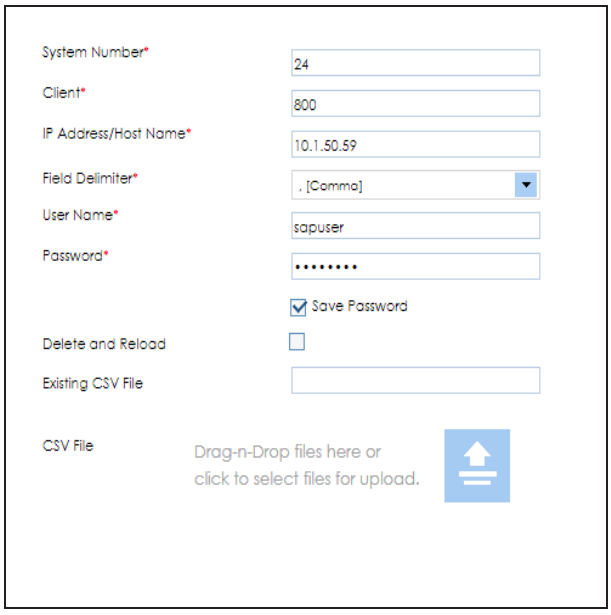
JCO Connection Parameters

To enter SAP connection parameters, follow these steps:

1. Select Database Type as SAP while creating the environment.



The following connection parameters appear on the right-hand side.



2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

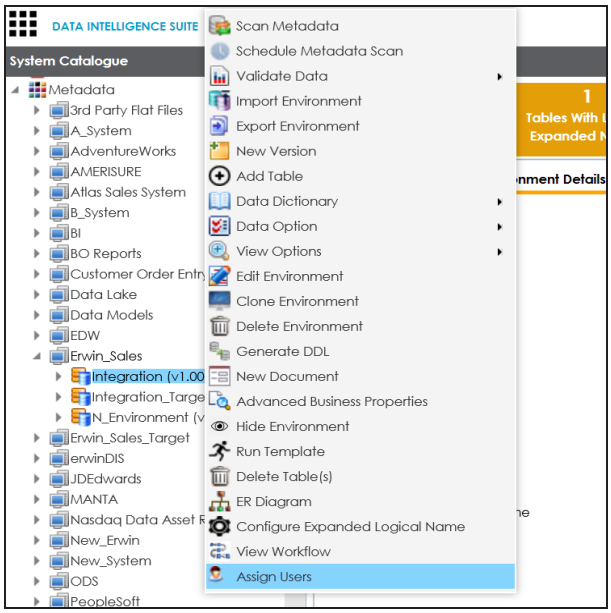
Field Name	Description
System Number	Specifies the SAP System Instance Number (range 0-99). For example, 24.
Client	Specifies the SAP Client number (range 000-999). For example, 800.
IP Address/Host Name	Specifies the IP address or server host name of the database. For example, 192.168.100.200
User Name	Specifies the SAP (Service account) username. For example, sapuser.
Password	Specifies the SAP (Service account) password. For example, goerwin@1.
CSV File Upload	Browse the CSV file which contains name of SAP tables to be harvested.
Field Delimiter	Select the required delimiter. For example: , [Comma].

Assigning Users

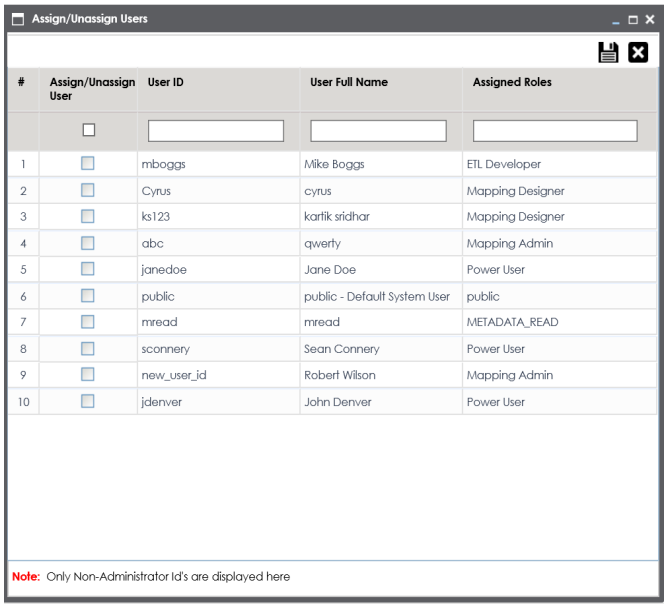
You can assign users to an environment and provide them read / write access to all the tables and columns in the environment.

To assign users to environments, follow these steps:

1. Right-click the desired environment.



2. Click **Assign Users**.



3. Select the check box to assign the user to the environment.

   Note: You can select multiple check boxes.

4. Click  .

   The users are assigned to the environment.

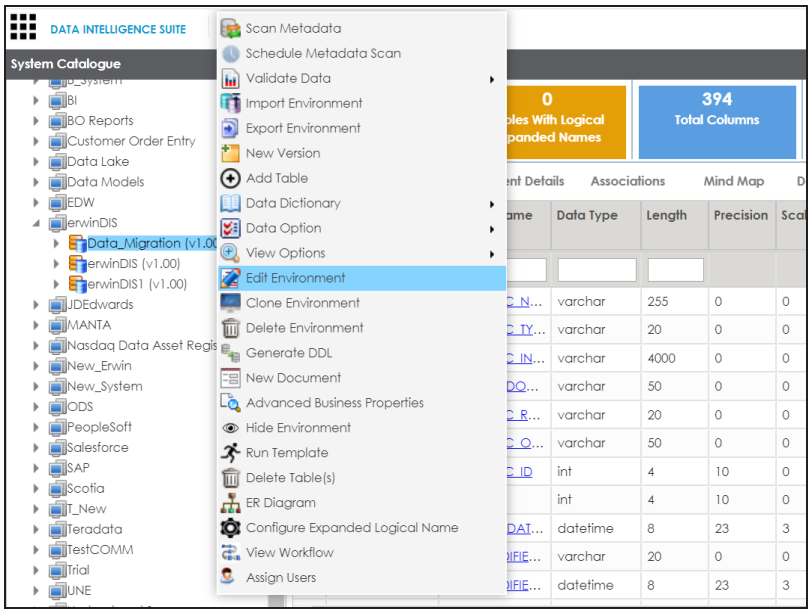
Managing Environments

Managing Environments involves:

- Editing environments
- Importing metadata from different environments
- Deleting environments

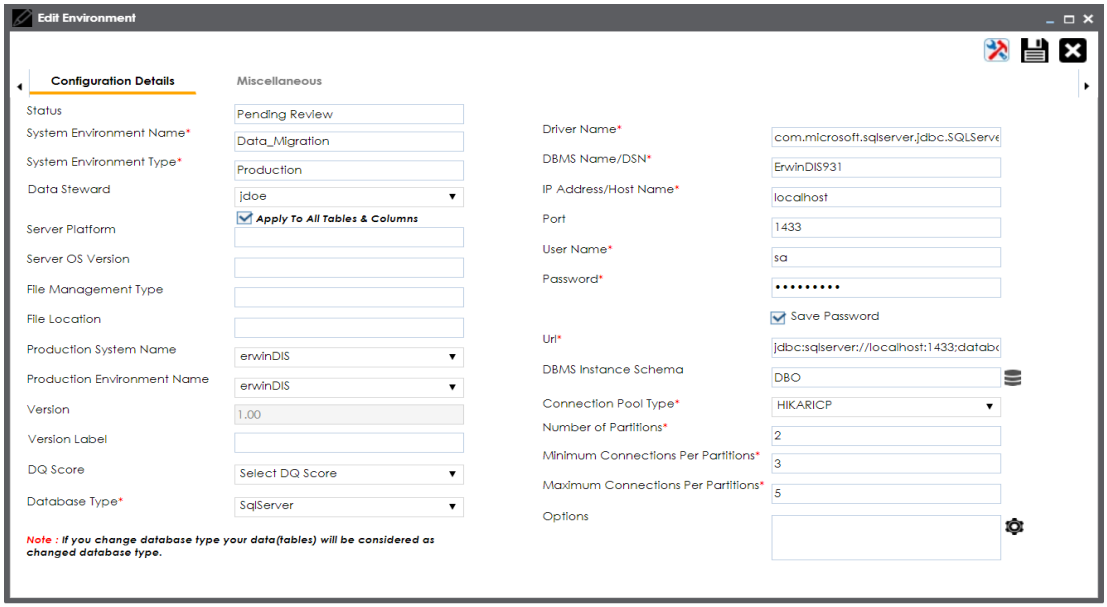
To edit environments, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click the desired environment.



3. Click **Edit Environment**.

   The Edit Environment page appears.



4. Update the environment.
5. Click  .

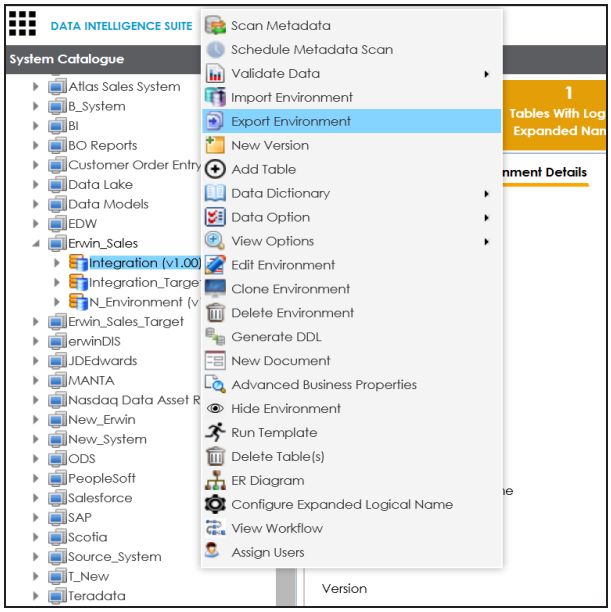
   The environment is updated.

   Note: Status of an environment is displayed according to the workflow assigned to the environment. For more information on assigning workflow to environments, refer to the Managing Metadata Manager Workflows section.

You can update an environment by importing metadata from another environment. You can also create a version of the environment while importing the metadata.

To import metadata from an environment, follow these steps:

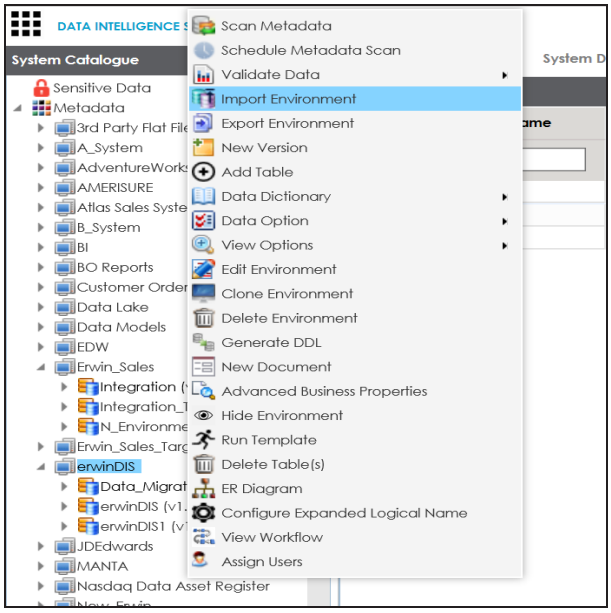
1. Right-click the desired environment.



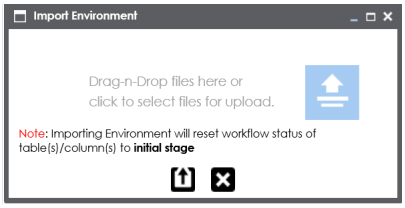
2. Click **Export Environment**.

   The environment is exported in .amp format.

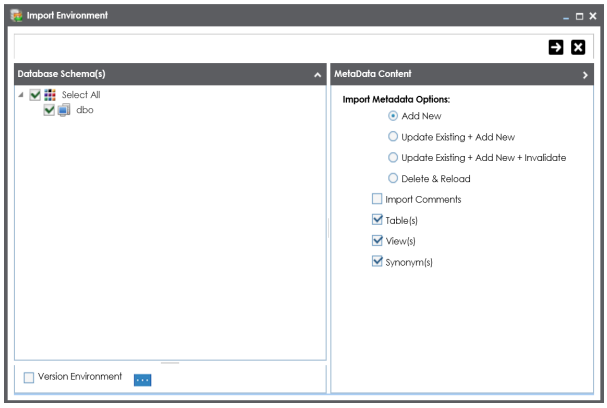
3. Right-click the desired environment where you want to import it.



4. Click **Import Environment**.



5. Drag and drop or use  to browse the exported .amp file.
6. Click  .



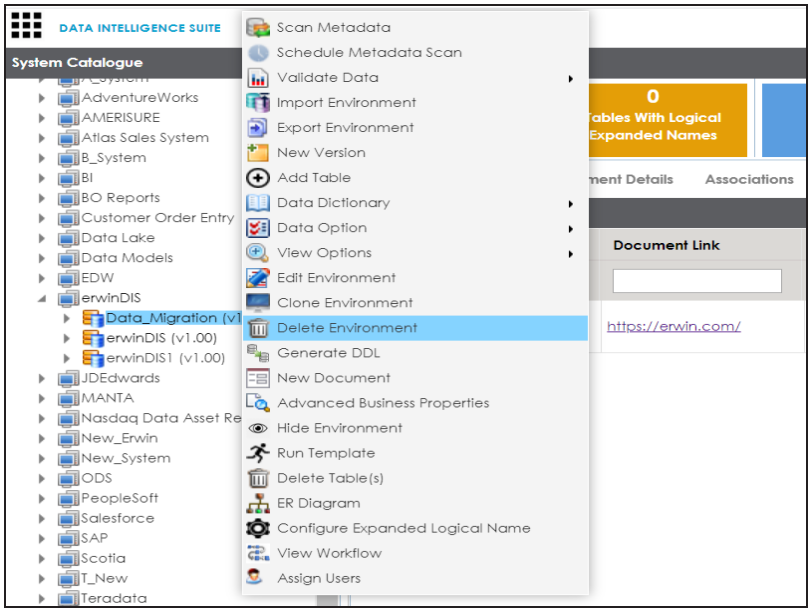
7. Select Schemas and appropriate import metadada options.

   Note: Select the **Version Environment** check box to create version of the environment.
8. Click  .
9. Select the tables and click  .

   The environment is updated.

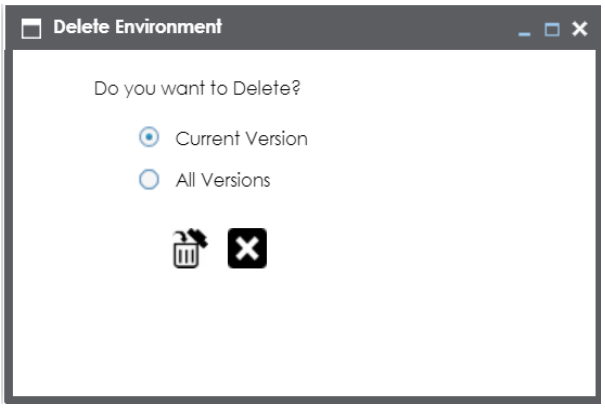
To delete environments, follow these steps:

1. Right-click the desired environment.



2. Click **Delete Environment**.

   The Delete Environment page appears.



3. Use the following options:

   Current Version

   Select **Current Version** to delete the current version.

   All Versions

Select **All Versions** to delete all versions of the environment.

4. Click  .

   Warning message appears.

5. Click **Yes**.

   The environment's current or all versions are deleted depending on the selection.

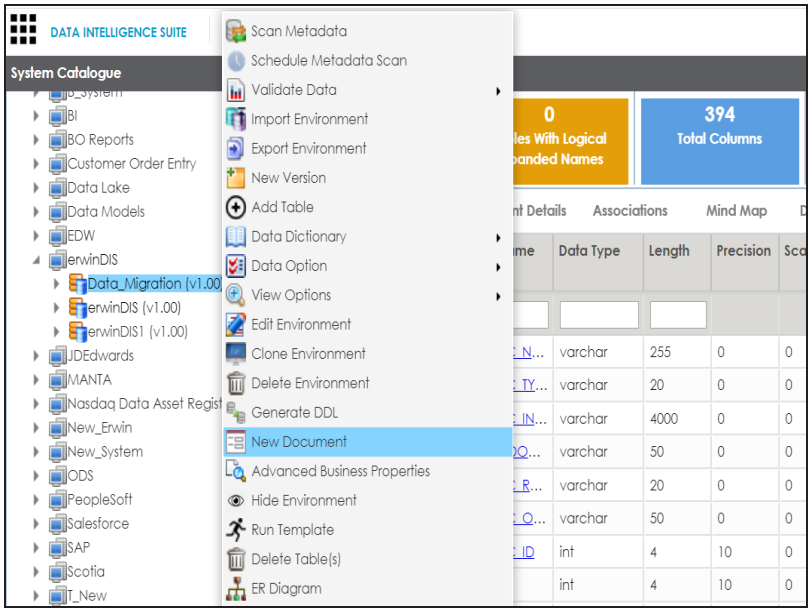
Uploading Documents

You can upload documents at environment level and specify:

- Document name
- Document owner
- Document link
- Document status

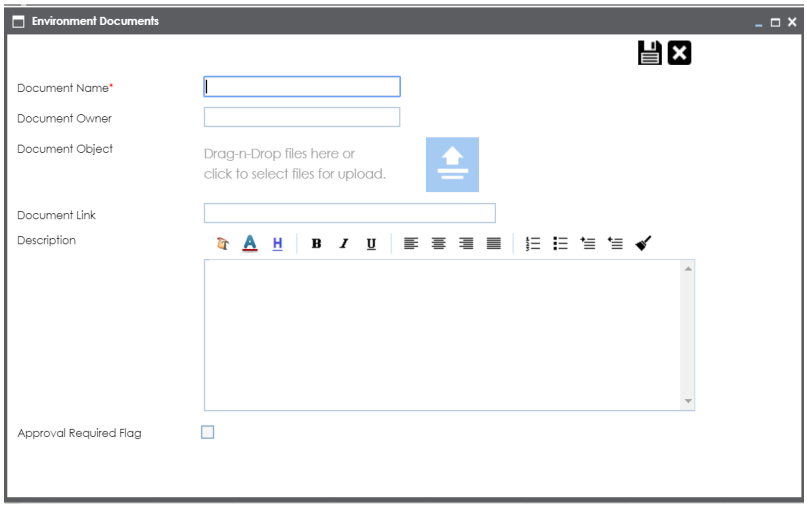
To upload documents at environment level, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click an environment.



3. Click **New document**.

   The Environment Documents page appears.



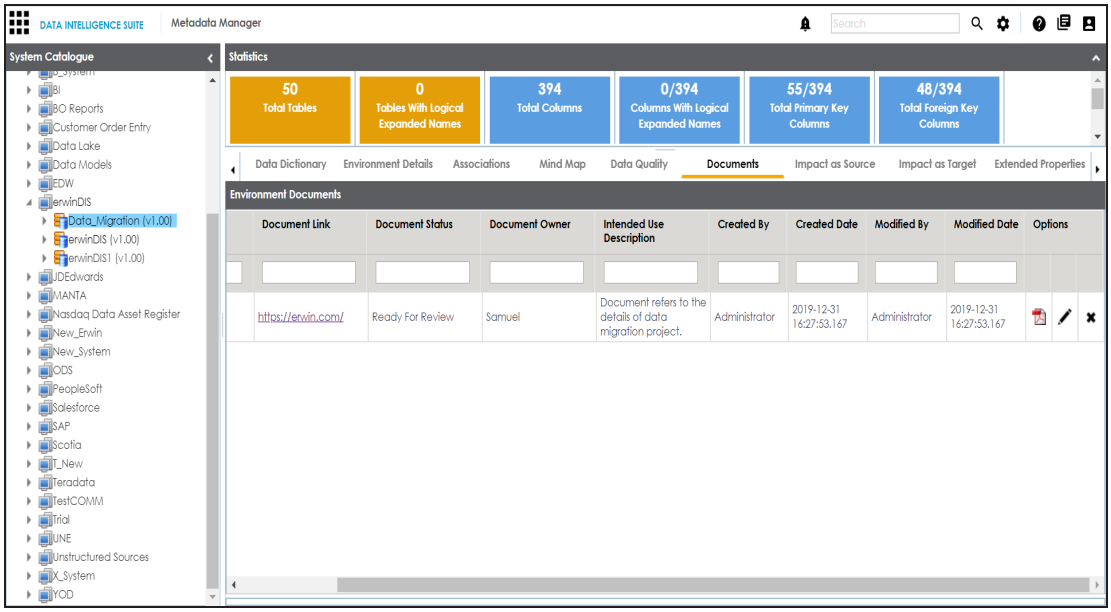
4. Enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
Document Name	Specifies the name of the physical document being attached to the environment. For example, Source Environment Details.
Document Object	Drag and drop document files or use to select and upload document files.
Document Owner	Specifies the document owner's name. For example, John Doe.
Document Link	Specifies the URL of the document. For example, https://drive.google.com/file/l/2sC2_SZIyeFKI7OOn-b5YkMBq4ptA7jhg5/view
Description	Specifies the description about the document. For example: The document has information about the environment details.
Approval Required Flag	Specifies whether the document requires approval. Select the **Approval Required Flag** check box to select the document status.

Field Name	Description
Document Status	Specifies the status of the document. For example, In Progress. This field is available only when the **Approval Required Flag** check box is selected.

5. Click  .

   The document is uploaded and saved under the Documents tab.



6. Use the following options under the **Options** column:

   Preview

   You can preview the document for your information. To preview the document, click  .

   Edit ()

   To edit the document details, click  .

   Delete ()

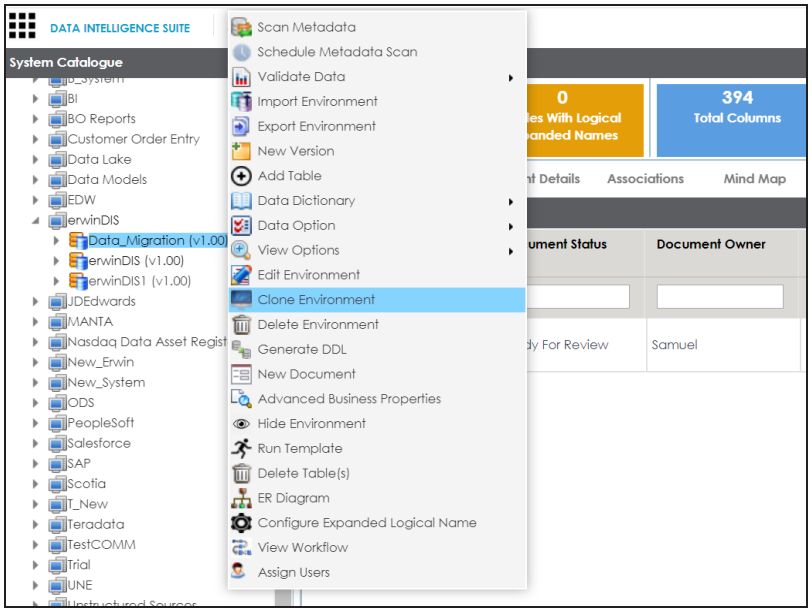
   To delete the uploaded document, click  .

Cloning Environments

You can clone an environment under a system and use the same or different connection parameters in the cloned environment. The cloned environment is saved under the system.

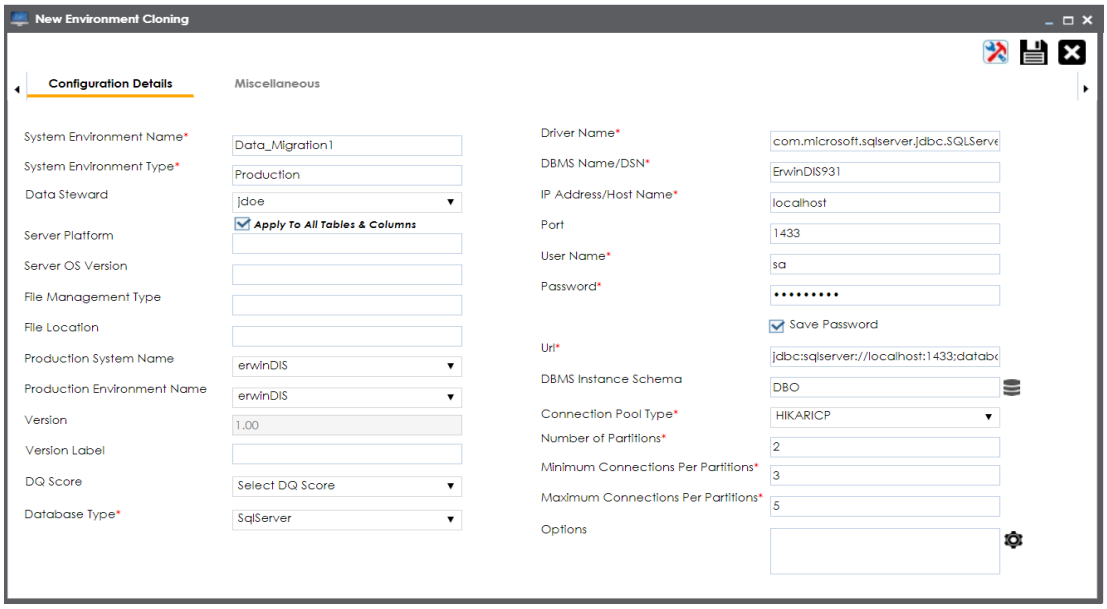
To clone environments, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, expand the required system.
3. Right-click an environment.



4. Click **Clone Environment**.

   The New Environment Cloning page appears.



5. Enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
System Environment Name	Specifies the unique name of the environment. For example, EDW-Test. For more information on naming conventions, refer to the Best Practices section.
System Environment Type	Specifies the type of the environment. For example, development, test, or production.
Data Steward	Specifies the name of the data steward responsible for the environment. For example, Jane Doe. For more information on configuring data steward list, refer to the Configuring Data Stewards topic.
Server Platform	Specifies the server platform of the environment. For example, Windows.
Server OS	Specifies the OS version of the environment's server.

Field Name	Description
Version	
File Management Type	Specifies the file management system (if the environment is a file-based source). For example, MS Excel.
File Location	Specifies a file path (if the environment is a file-based source). For example, C:\Users\Jane Doe\erwin\Mike - Target System
Production System Name	Specifies the system name being associated with the environment as the production system. For example, Enterprise Data Warehouse.
Version Label	Specifies the version label of the environment to track change history. For example, Alpha. For more information on configuring version display, refer to the Configuring Version Display of the Environments topic.
DQ Score	Specifies the overall data quality score of the environment. For example, High (7-8). For more information on configuring DQ scores, refer to the Configuring Data Profiling and DQ Scores topic.
Database Type	Specifies the database type. For example, Sql Server. Select the type of database from where you wish to scan metadata. Depending upon your choice of database type you need to provide additional fields (connection parameters) appearing on the right hand side. **Note**: There are no additional fields for MS Excel File, and XSD.

6. Click  to test the connection.

   If the connection with database is established successfully then a success message pops up.

7. Click  .

   The environment is cloned and the cloned environment is saved under the system.

Different database types have different prerequisites and connection parameters:

- SQL Server - via SQL or Window authentication mode
- Oracle and Oracle RAC
- MySQL
- Snowflake
- MS Dynamics CRM
- SAP ECC R/3 and IS-U Metadata via JCO Driver

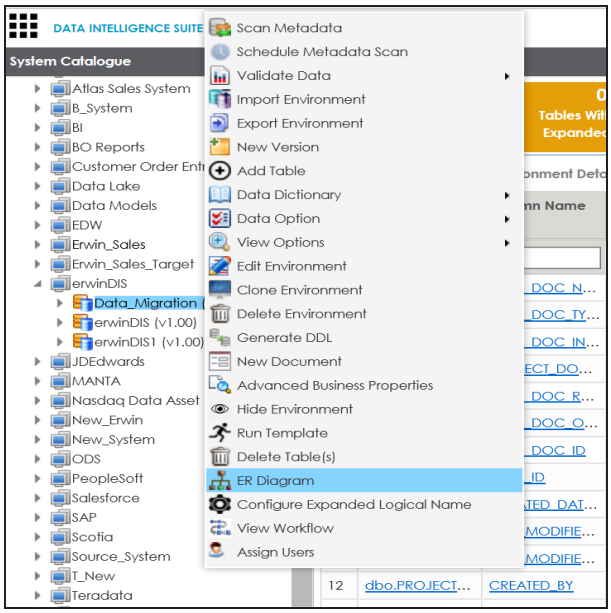
Viewing ER Diagram

You can view entity relationship (ER) diagram at environment level and export it in .jpg format.

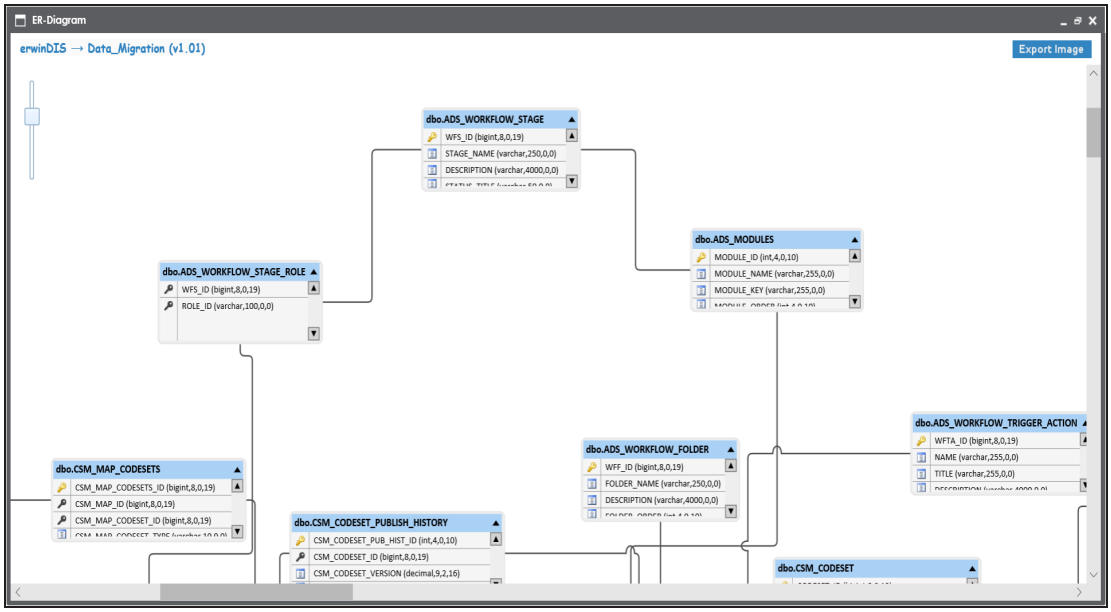
Note: You can view ER diagram after scanning or importing metadata in an environment.

To view entity relationship diagram, follow these steps:

1. Under the System Catalogue pane, right-click an environment.



2. Click **ER Diagram**.



3. Click Export Image to download ER diagram in .jpg format.

   The ER diagram is exported.

Viewing Workflow Logs

You can view workflow logs of environments in the Metadata Manager.

It involves viewing:

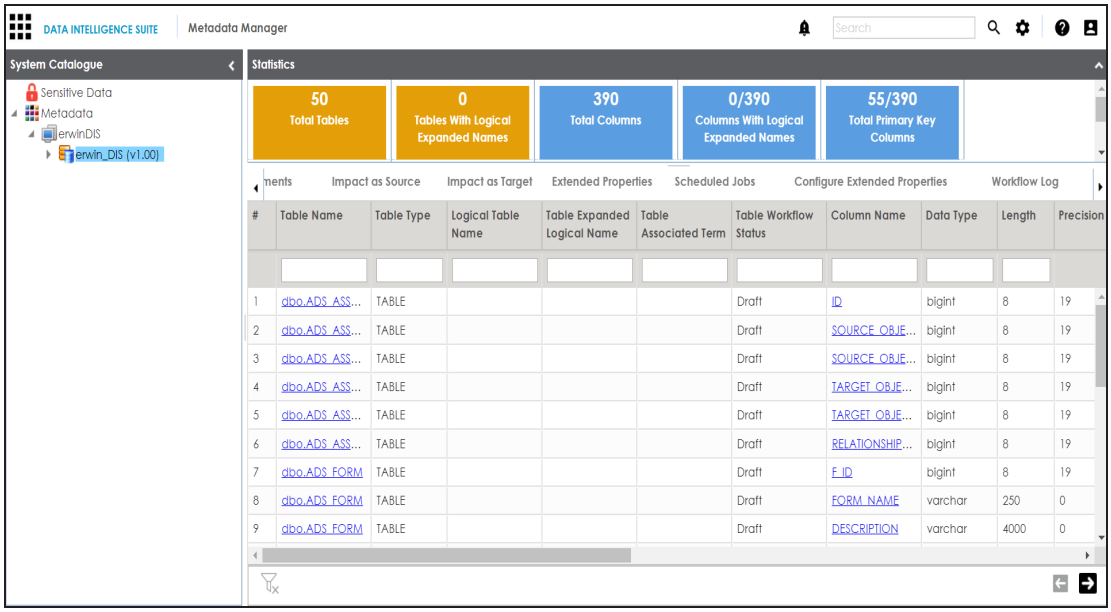
- Current workflow log status of an environment
- Users and roles assigned to all the stages of the workflow
- Comments entered by users while moving the object to the next stage of the workflow

You can also export the workflow log image.

To view workflow log of environments in the Metadata Manager, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Expand the desired system.
3. Click the desired environment.

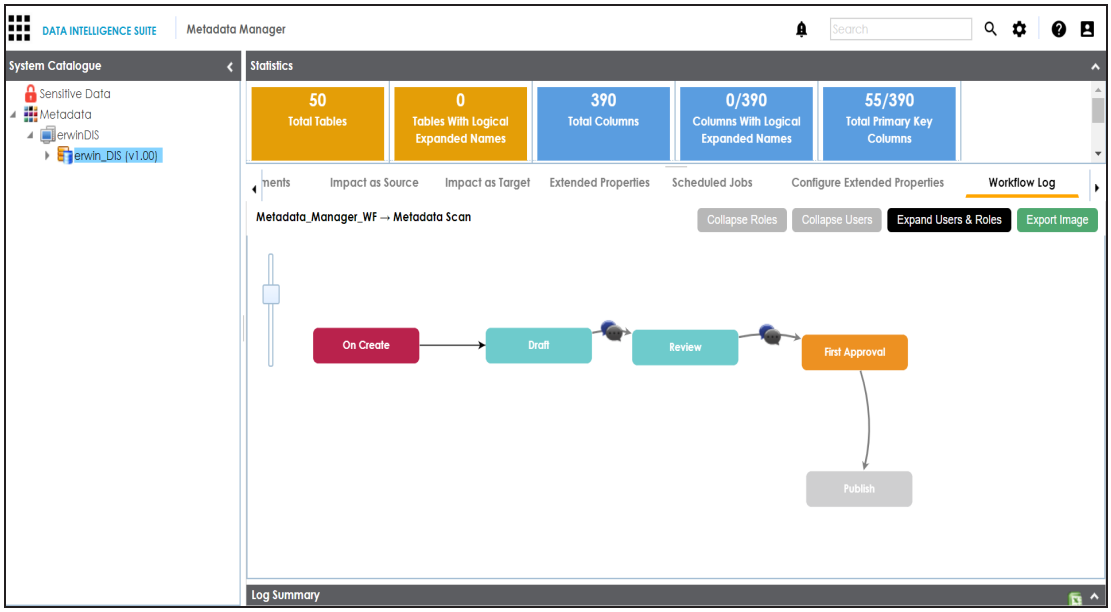
   The following page appears.



4. Click **Workflow Log**.

   The current workflow log status of the environment is shown.

Note: The current workflow stage blinks in the diagram.



5. To view the user and the comments entered by the user while moving it to the next stage, hover over  .
6. To view users and roles assigned to all the stages, click **Expand Users and Roles**.
7. To download the workflow log image, click **Export Image**.

Associating Environments

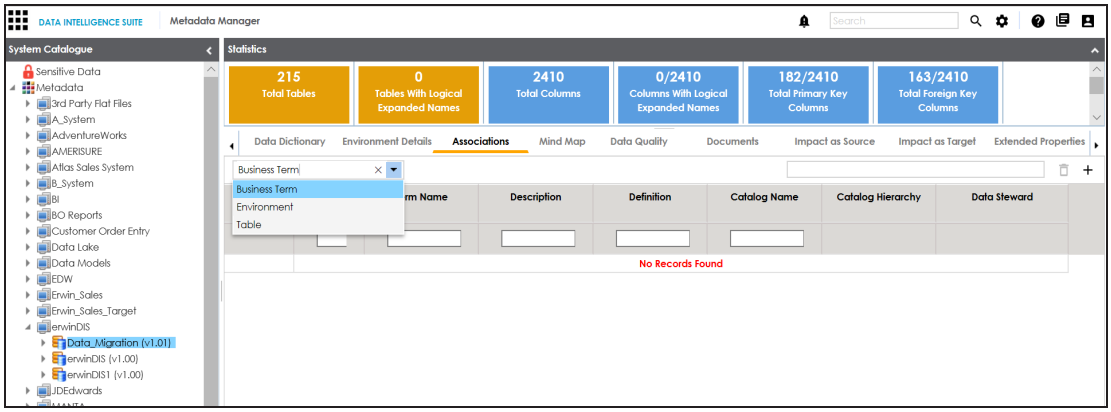
You can associate environments with business assets, systems, environments, tables, and columns. You can also view mind map and association statistics.

You need to ensure that:

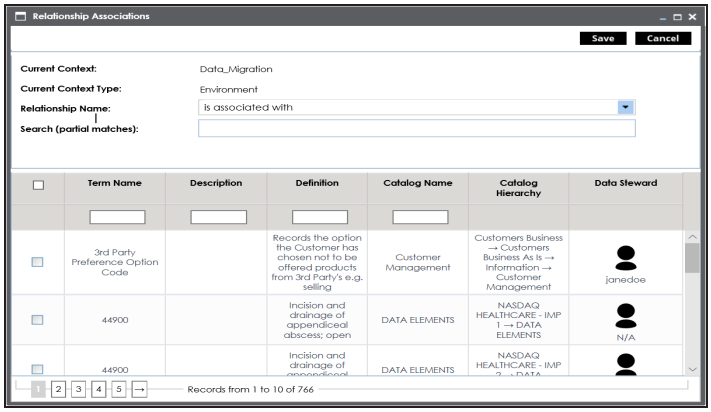
- Business assets are enabled. You can add new business assets and enable them in the Business Glossary Manager Settings.
- Relationship between environment and the asset type is defined. You can define associations and relationships in the Business Glossary Manager Settings.

To associate environments with asset types, follow these steps:

1. Under the **System Catalogue** pane, click the desired environment and click the **Associations** tab.
2. Select the asset type from the drop down.

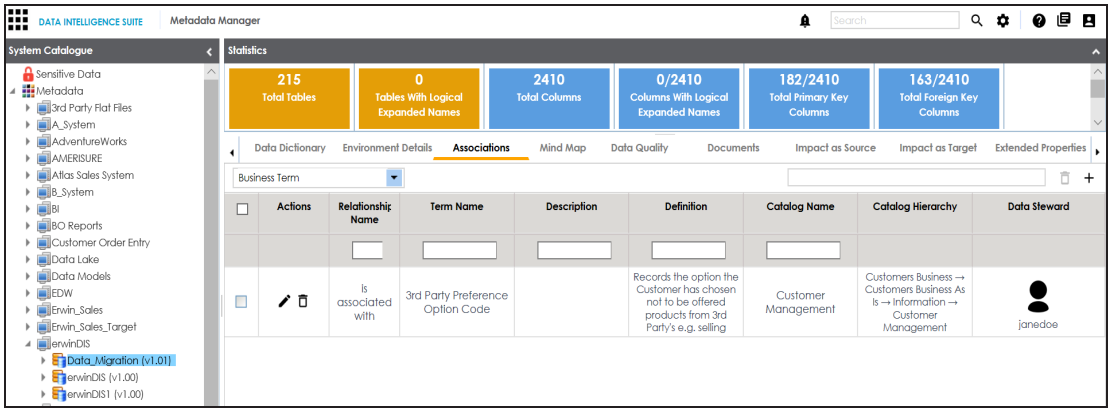


3. Click +.



4. Select the Relationship Name, and the asset.
5. Click **Save**.

   The asset is added to the environment.



6. Use the following options under **Actions**:

   Edit Association ( )

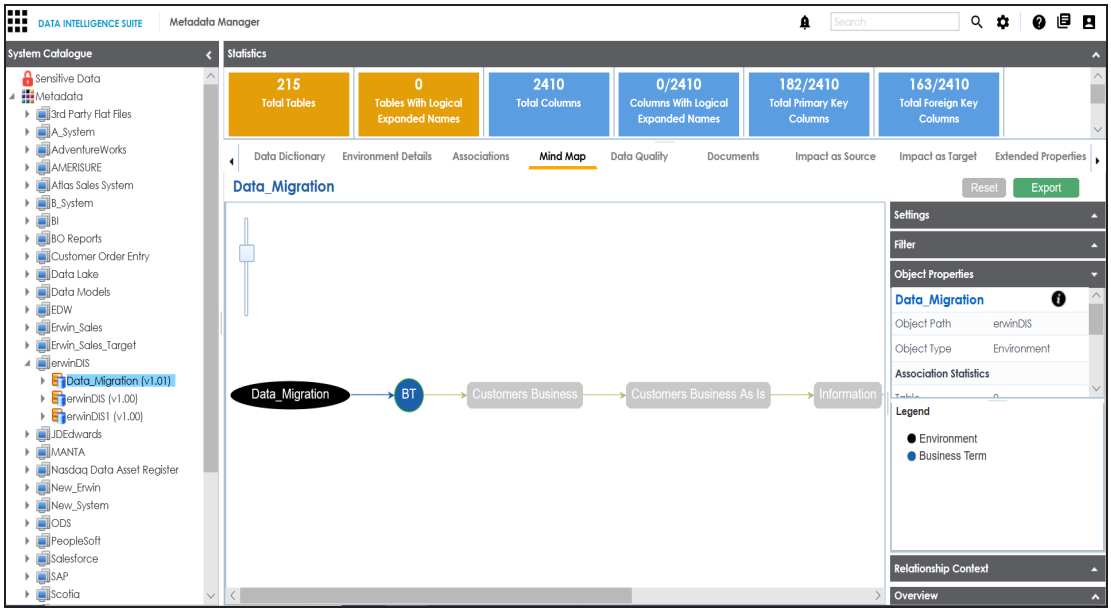
   Use this option to edit the association.

   Delete Association ( )

   Use this option to delete the association.

To view mind map, follow these steps:

1. Click the **Mind Map** tab.



2. Use the following options to work on the mind map:

Expand (+) / Collapse (-)

To drill the mind map further, hover over the nodes, use (-) to collapse and use (+) to expand.

Export

Use this option to download the mind map to .xlsx format or .jpg format.

Settings

Layout: Select the layout as normal or orthogonal.
Custom Relations: Select the check box to display custom relations.
Show Relationships: Select the check box to display relationships.

Filter

Use this option to filter components of the mind map based on asset types or relationships.

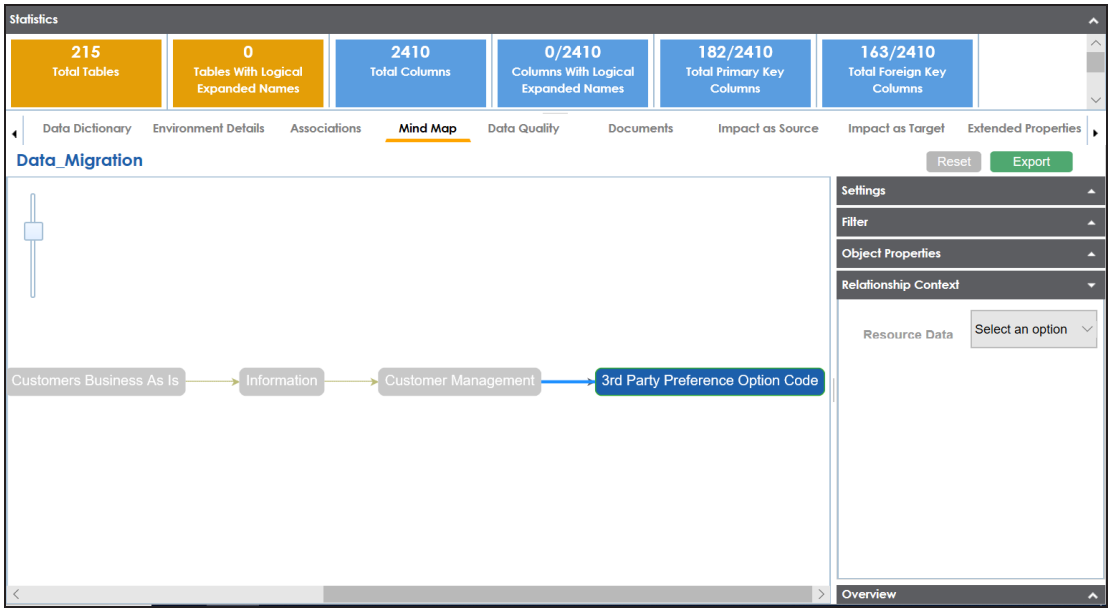
Object Properties

It displays the association statistics of the environment.

Relationship Context

Use this option to view the relationship context as defined under the **Extended Properties** in Business Glossary Manager Settings for the relationship between the environment and the asset type.

To view the relationship context, click the connection between the asset type and the environment.



Overview

Use this option to view the overview diagram of the mind map.

Configuring Business Properties

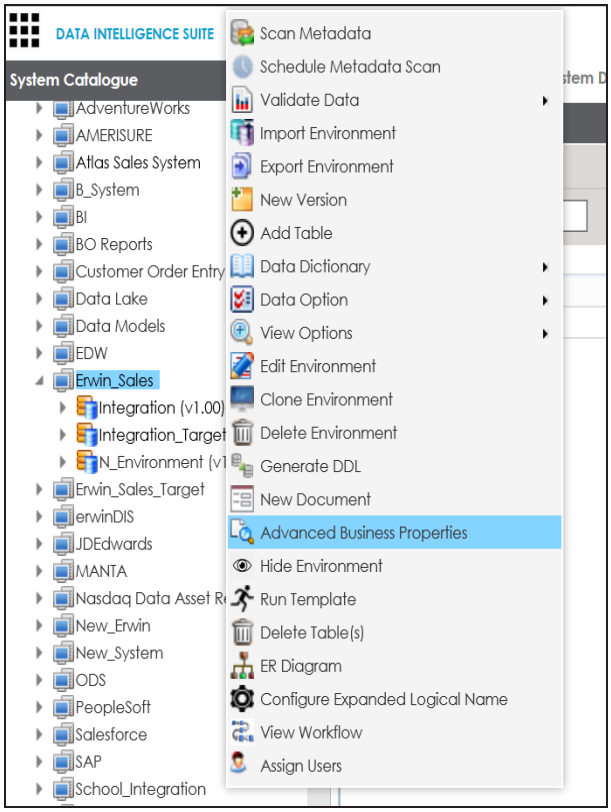
You can configure business properties of all the tables and columns under an environment.

You can also configure business properties at table level and update business properties of a table and business properties of its columns.

Note: You can configure business properties only after importing/scanning metadata into an environment.

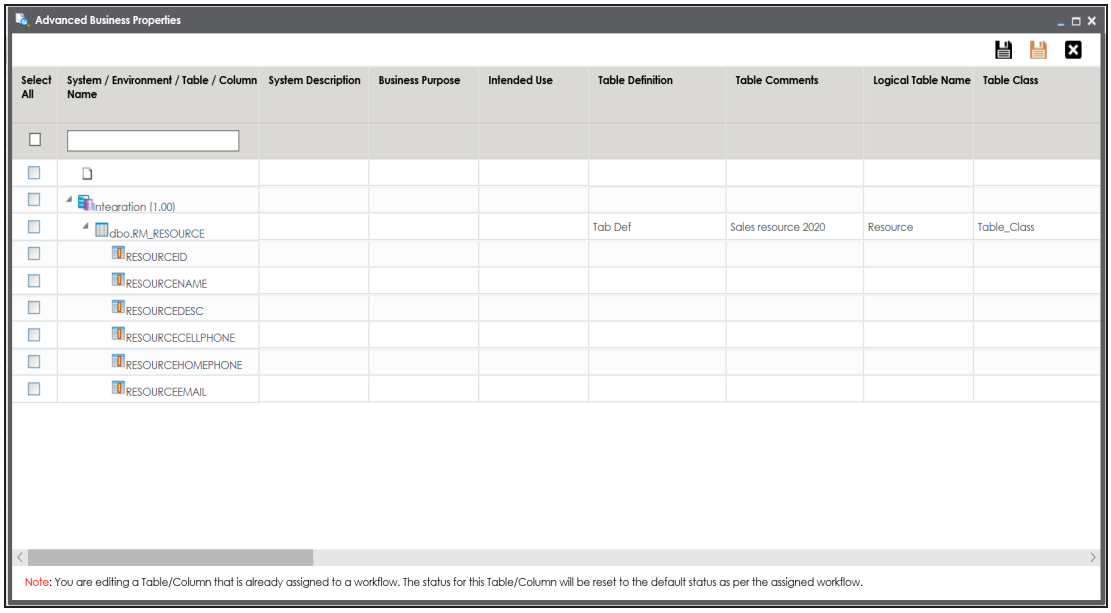
To configure business properties at environment level, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click an environment.



3. Click **Advanced Business Properties**.

   The Advanced Business Properties page appears.

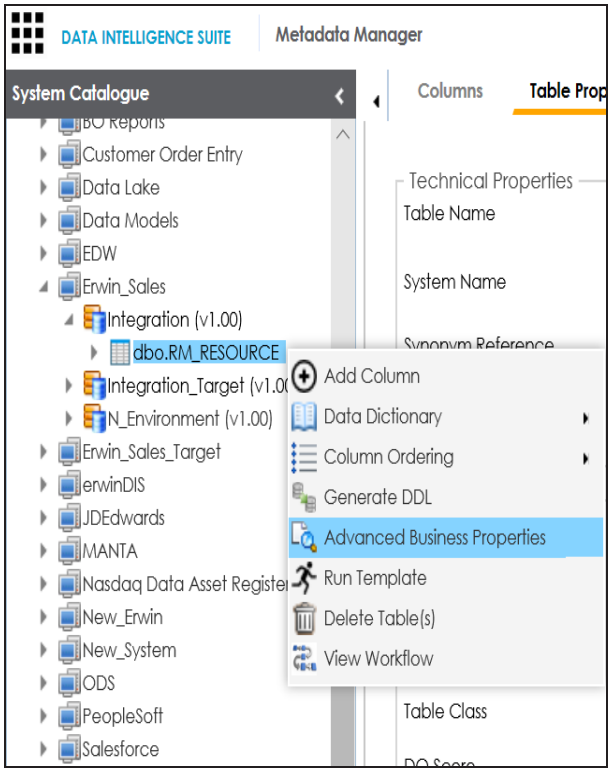


4. Double-click cells to enter business properties of tables and columns.
5. Click  to apply changes.
6. Click  .

   The business properties of all the tables and columns under the environment are updated.

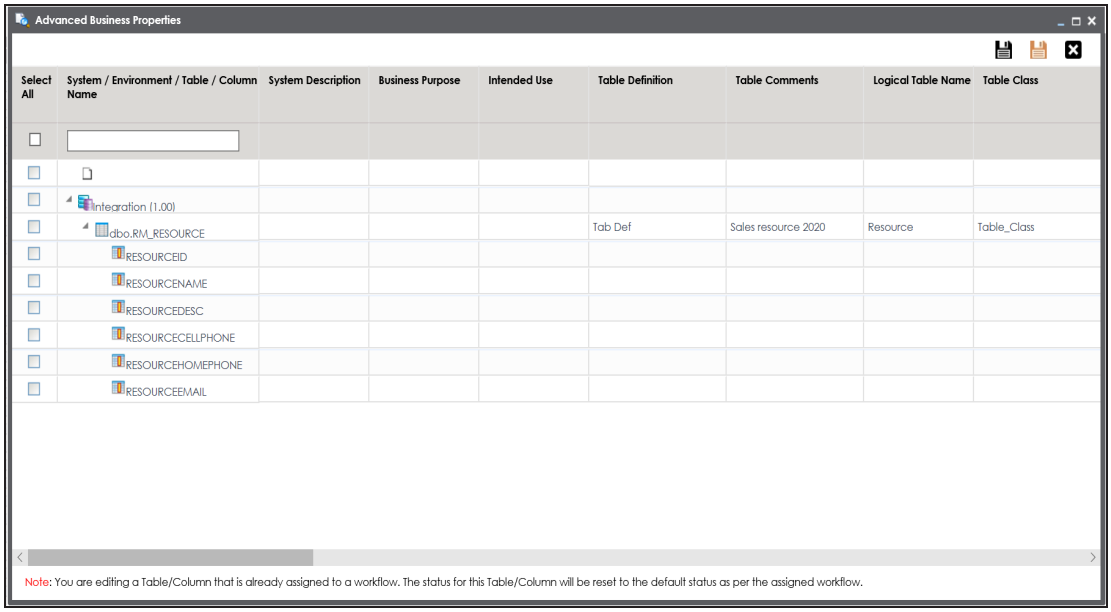
To configure business properties at table level, follow these steps:

1. Under the **System Catalogue** pane, right-click a table.



2. Click **Advanced Business Properties**.

   The Advanced Business Properties page appears.



3. Double-click cells to enter table and column properties.
4. Click  to apply changes.
5. Click  .

   The business properties of the table and its columns are updated.

Configuring Expanded Logical Name

You can update the expanded logical name for multiple tables/columns by scheduling a configuration job. The job updates the expanded logical name based on the table/column name, associated business term's name, and the associated business term's definition.

Note: You should configure expanded logical name of tables and columns after scanning metadata.

You can run the job at both, system and environment levels:

- **System level**: The expanded logical name is applied to all the tables and columns under the system. This includes all the environments under the system.
- **Environment level**: The expanded logical name is applied to all the tables and columns under the environment.

For example, consider a scenario where you want to schedule a job to configure the expanded logical name of a table, RM_Resource and a column, Resource_ID. The parameters of the job are a business term catalog that has a business term, Resource, its definition, Sales Representative, and a splitter, Underscore (_). Refer to the following table to understand the parameters and their values:

Entity	Value	Comment
Splitter (specified while scheduling the job)	_(Underscore)	
Table Name	RM_Resource	Here, the part after the underscore (splitter), Resource, matches the Business Term. Therefore, it will be replaced with the business term definition and the part before the underscore, RM, will be retained in the expanded logical name.
Column Name	Resource_ID	Here, the part before the underscore, Resource, matches with the Business Term. Therefore, it will be replaced with the business term definition and the part after the underscore, ID will be retained in the expanded logical name.
Business	Resource	This should match with a part of the table and column names

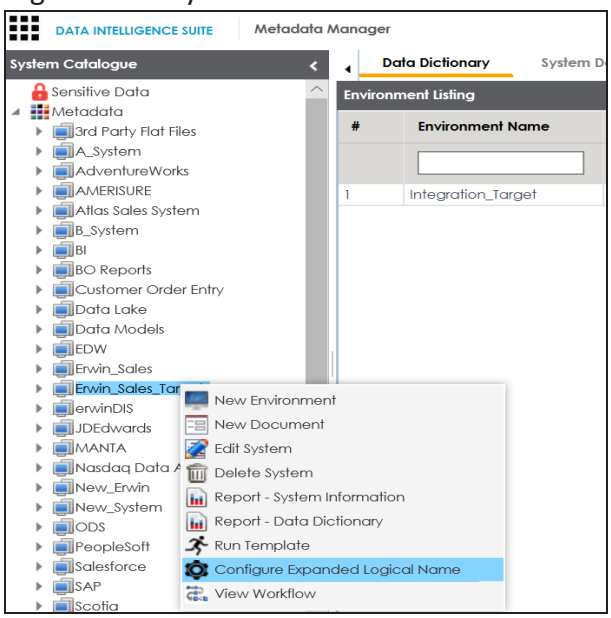
Entity	Value	Comment
Term		above.
Business Term Definition	Sales Representative	In the updated expanded logical name, this will replace the part of the table/column name that matches the business term name. That is: ▪ For the table, RM will be retained and Resource will be replaced with Sales Representative. ▪ For the column, ID will be retained and Resource will be replaced with Sales Representative.
Expanded Logical Name	<Blank>	Expanded logical name is formed from the business term definition and part of table or column names.

After the job runs successfully, the expanded logical name of the table and column is updated as mentioned in the following table:

Entity	Expanded Logical Name	Comment
Table	RM Sales Representative	Here, RM retained from the table name and Sales Representative is added from business term definition.
Column	Sales Representative ID	Here, ID is retained from the column name and Sales Representative is added from business term definition.

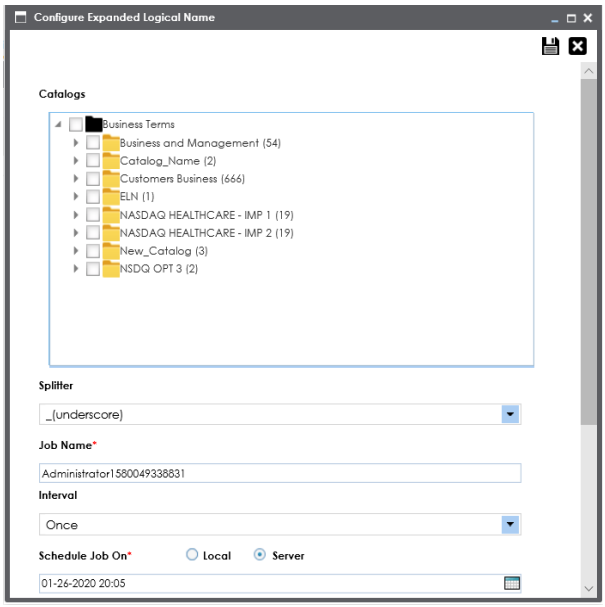
To configure expanded logical name, follow these steps:

1. Right-click a system or environment.



2. Click **Configure Expanded Logical Name**.

   The Configure Expanded Logical Name page appears.

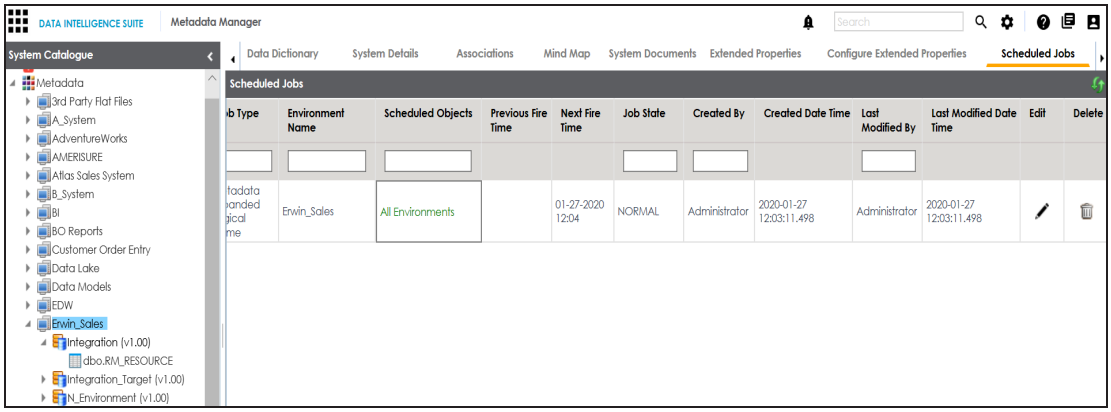


3. Select or enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
Catalogs	Select the catalog containing the desired business term.
Splitter	Select appropriate splitter based on the table name or column name.
Job Name	A default job name is autopopulated. You can modify it and enter a job name.
Interval	Select an interval of the job. Interval sets the frequency of the job. For example: If you set the interval every week then the job will be executed every week.
Local or Server	Select the machine whose clock decides the time of the scheduled scan. ▪ Local: Refers to your local machine. ▪ Server: Refers to the machine where erwinDIS has been deployed.
Schedule Job On	Select date and time of the execution of the job.
Notify Me	Turn the **Notify Me** to **ON** to receive a notification email about the scheduled job.
Notification Email	This field is autopopulated with your email ID. You receive email notifications about the scheduled job from the Admin Email ID, configured in the Email Settings. For more information on configuring Admin Email ID, refer to the Configuring Email Settings topic.
CC List	Enter a comma-separated list of email IDs that should receive the job notification.

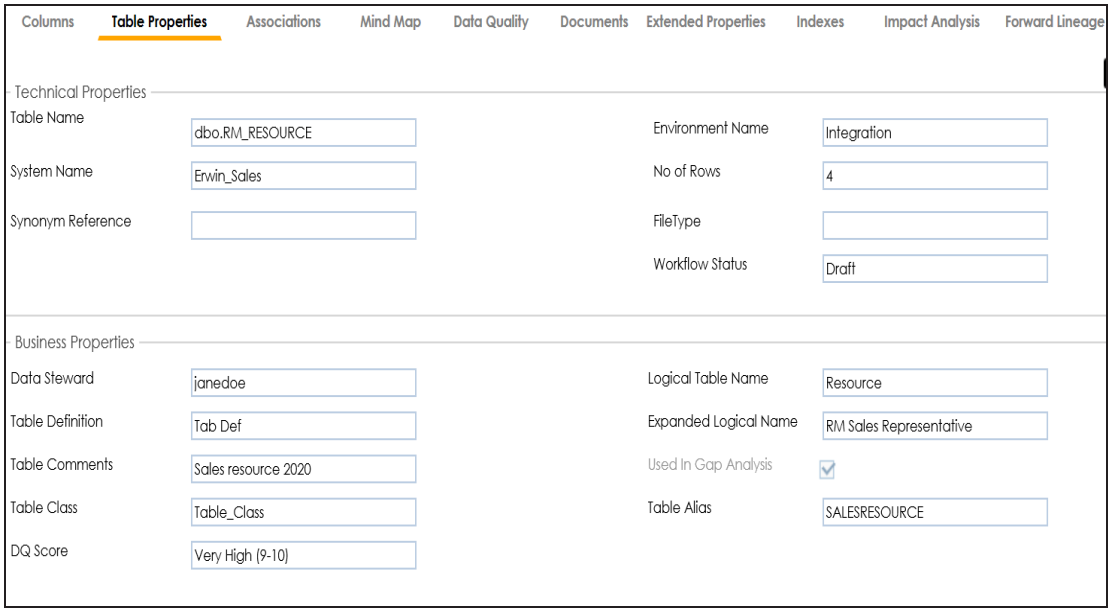
4. Click  .

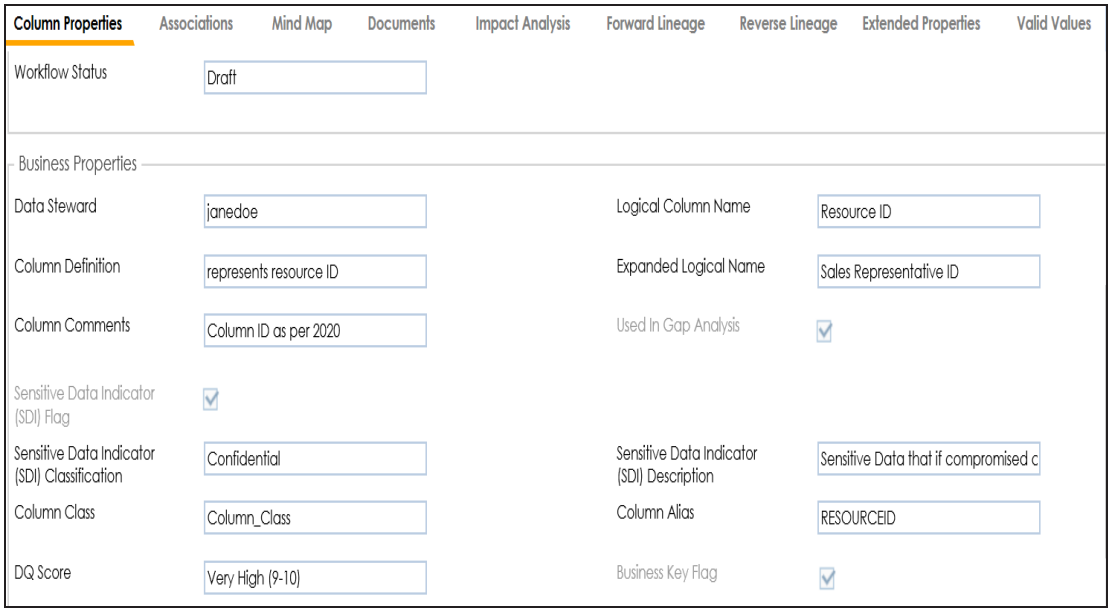
   The job is scheduled and added to the Scheduled Jobs list on the **Scheduled Jobs** tab.



You can edit the job using  or delete it using  .

The job is executed at the scheduled time and the expanded logical names of tables and columns are updated.





Note: You can use this job to update the expanded logical name only once. Alternately, you can update expanded logical names under table properties and column properties.

Scanning and Managing Metadata

Metadata Manager enables you to scan source and target metadata from different Databases, Data Models, Flat Files etc. Connectivity parameters are different for different data sources. You can also schedule a metadata scan and the metadata is scanned at the scheduled time.

The metadata scan adds data dictionary, table properties, and column properties which can be validated and updated. Codesets can be assigned to a column as valid values. Tables and columns can be associated with business assets, systems, environments, tables, and columns. You can also assign workflows to tables and columns using the Workflow Manager and view workflow logs.

Scanning and managing metadata involves:

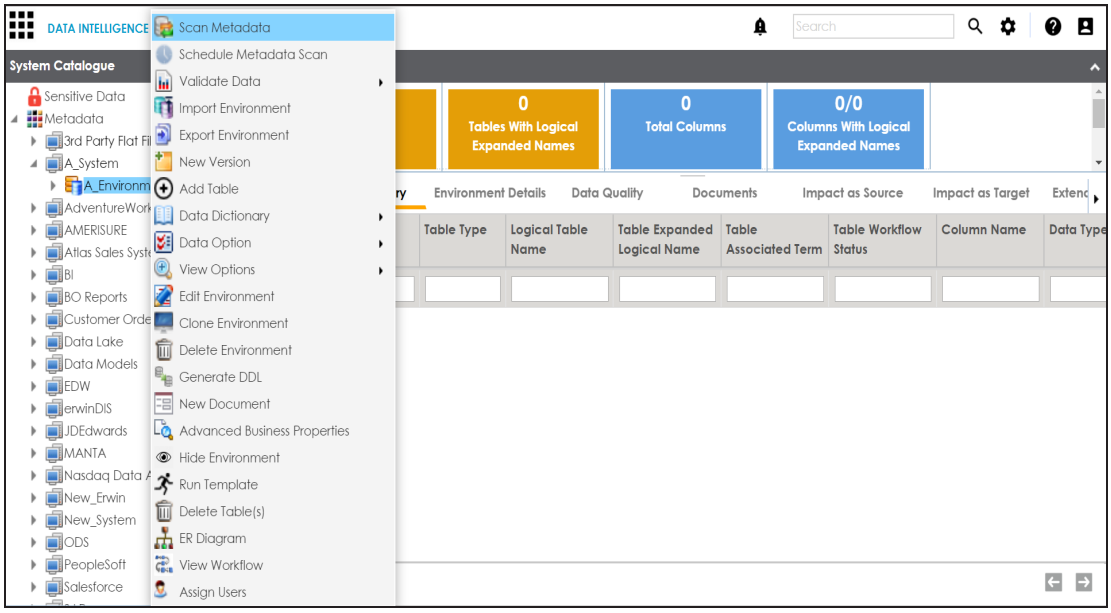
- Scanning metadata from data sources
- Adding tables manually
- Deleting tables
- Scheduling metadata scans
- Updating table properties
- Updating column properties
- Validating data
- Assigning codesets to columns
- Viewing workflow logs of tables
- Viewing workflow logs of columns
- Associating tables
- Associating columns

Scanning Metadata

After creating system and environment, the next logical step is to scan source/target metadata. You can also import metadata from MS Excel file, JSON, CSV (Flat File), XMI, MS Access File, and XSD.

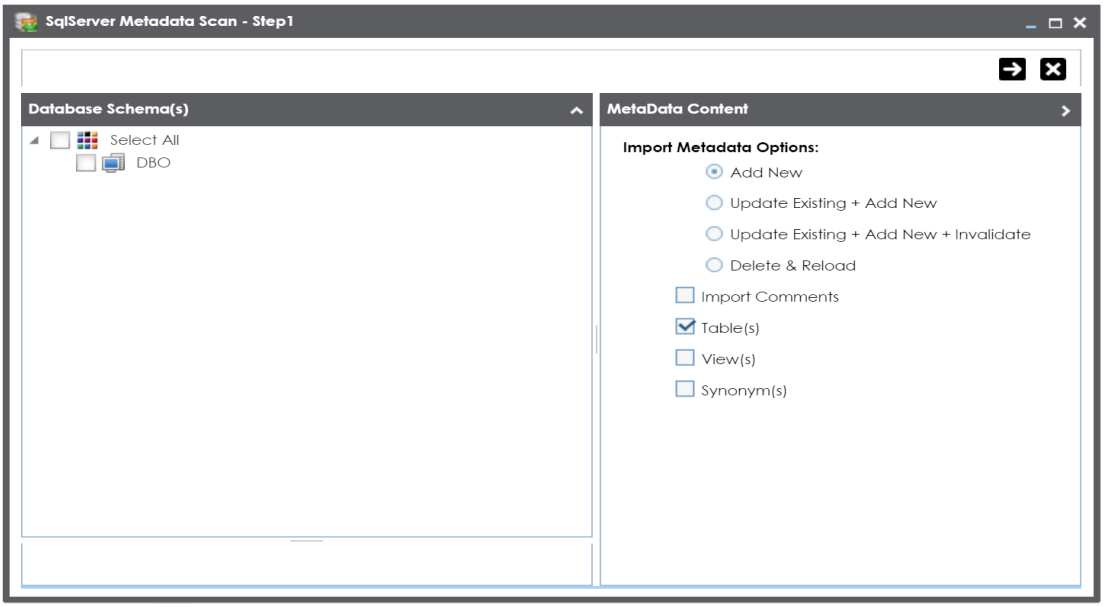
To scan source or target metadata, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, expand the system created by you.
3. Right-click the Environment node created by you.



4. Click **Scan Metadata**.

   Metadata Scan-Step 1 wizard appears.



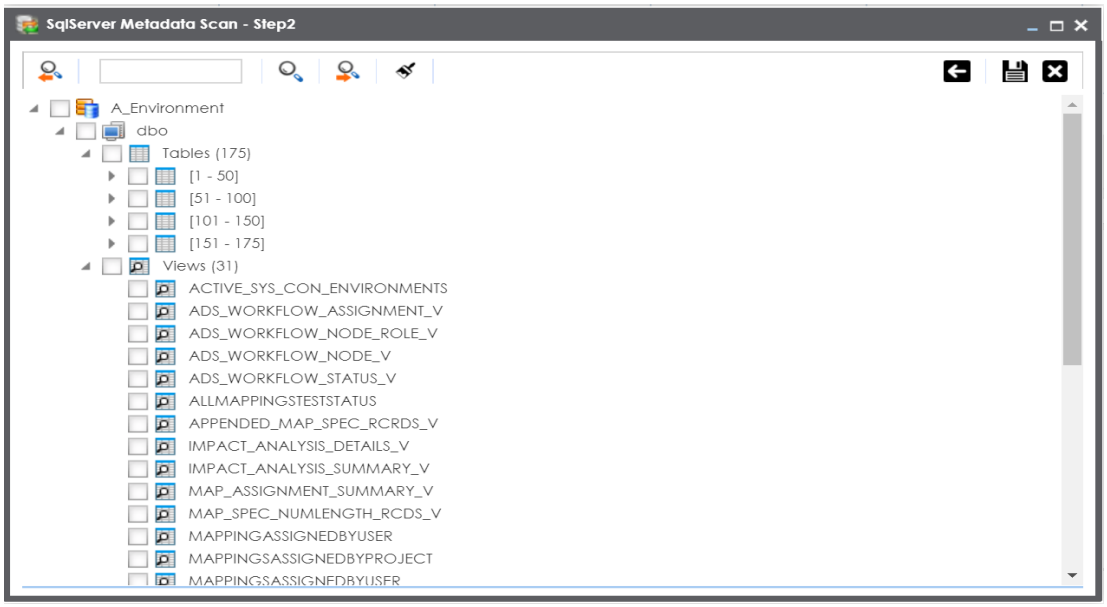
5. Select appropriate **Import Metadata Options** by selecting or .

Note: If you are scanning the metadata for the first time, then select **Add New**.

Import Metadata Options	Description
Add New	This option adds new objects to the existing object list. Existing metadata is not refreshed.
Update Existing + Add New	This option adds new objects to the existing list and at the same time the existing metadata is also refreshed.
Update Existing + Add New + Invalidate	This option adds new objects to the existing list, refreshes existing and invalidate table/column during the scanning process.
Delete & Reload	This option deletes all existing metadata and scans only the new objects that have been selected.
Import Comments	Select the check box to import comments.
Table(s)	Select the check box to import Tables.
View(s)	Select the check box to import Views.
Synonym(s)	Select the check box to import Synonyms.

6. Select the appropriate **Database Schema** check box.
7. Click  to move to next step.

   Metadata Scan Step-2 Wizard appears. It pulls up the objects selected in **Metadata Scan Step-1** like Tables, Views and Synonyms.



8. Select the objects to be imported by selecting the appropriate check box.
9. Click  .

   The metadata is scanned successfully and saved under the environment node.

You can also import metadata from:

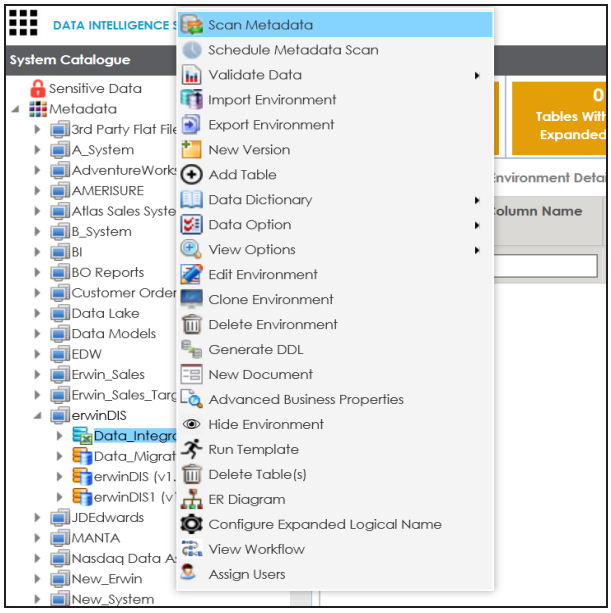
- MS Excel File
- JSON
- CSV (Flat File)
- XMI
- MS Access File
- XSD

Importing Metadata from MS Excel

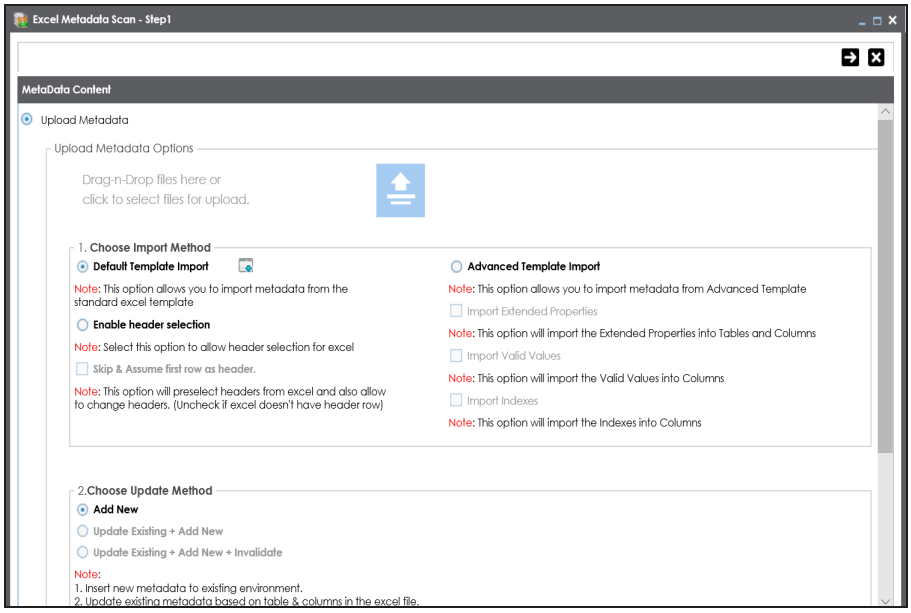
You can import metadata from MS Excel files after creating a MS Excel environment.

To import metadata from MS Excel files, follow these steps:

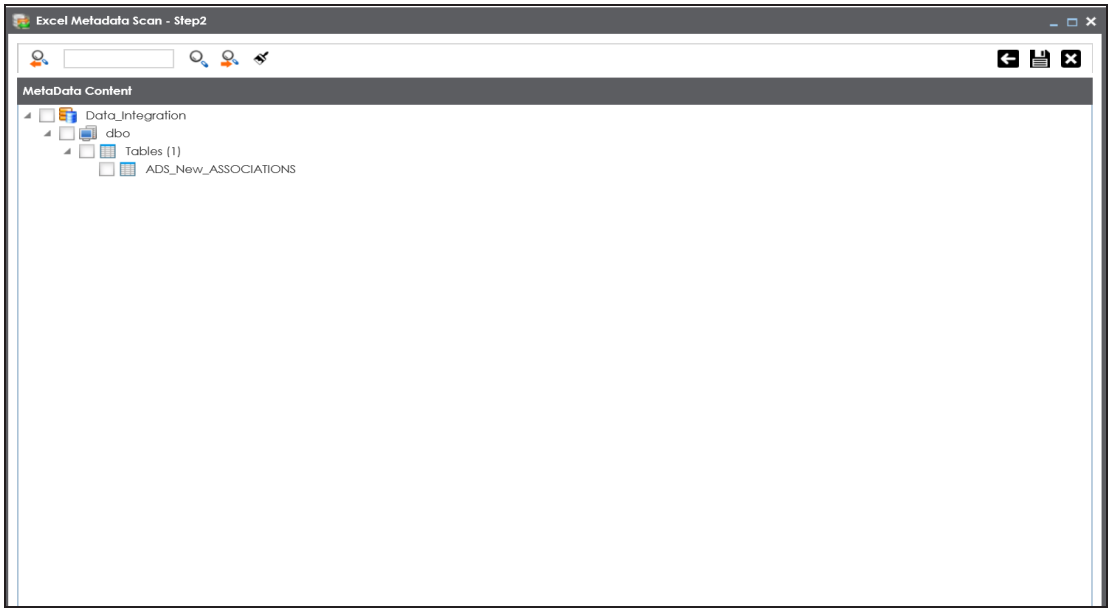
1. Under the **System Catalogue** pane, right-click a MS Excel environment.



2. Click **Scan Metadata**.



3. Use or drag and drop the MS Excel file.
4. Choose an import method.
5. Choose an update method.
6. Click .



7. Select the tables to import them.
8. Click  .

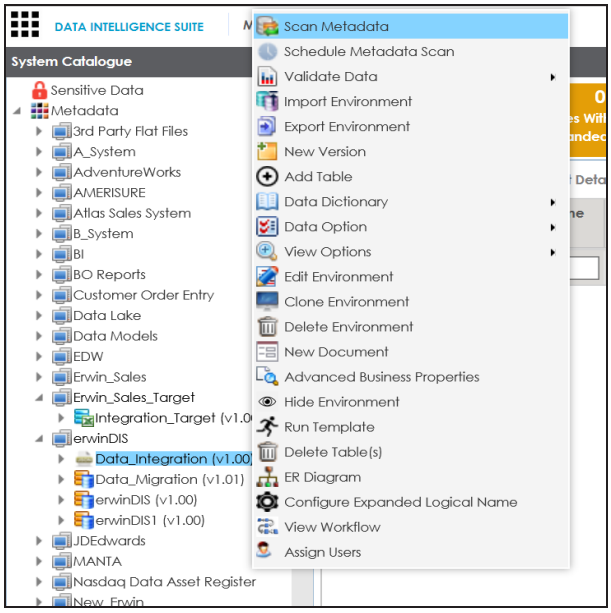
   The metadata is scanned and saved in the environment.

Importing Metadata from JSON

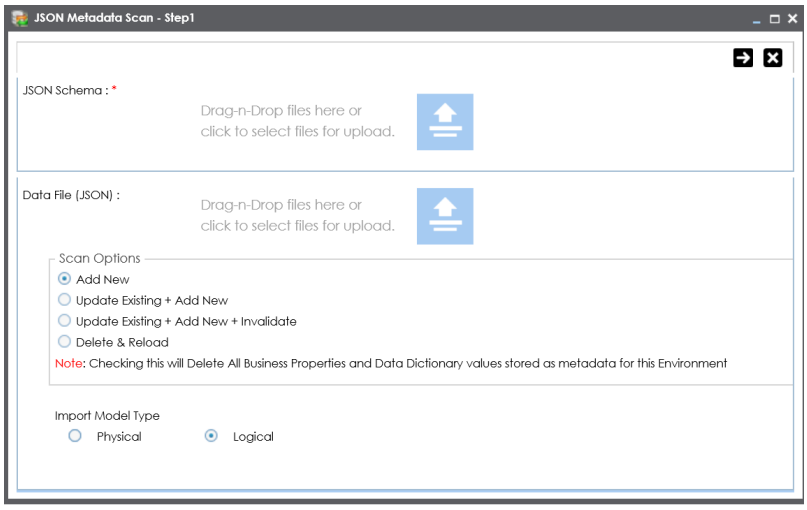
You can import metadata from JSON files after creating a JSON environment.

To import metadata from JSON files, follow these steps:

1. Under the **System Catalogue** pane, right-click a JSON environment.



2. Click **Scan Metadata**.



3. Use or drag and drop the JSON Schema file.
4. Use or drag and drop the Data File JSON.
5. Choose a scan option:

   Add New

   Select this option to insert new metadata to the environment.

   Update Existing + Add New

   Select this option to update existing metadata based on table and columns in the JSON file.

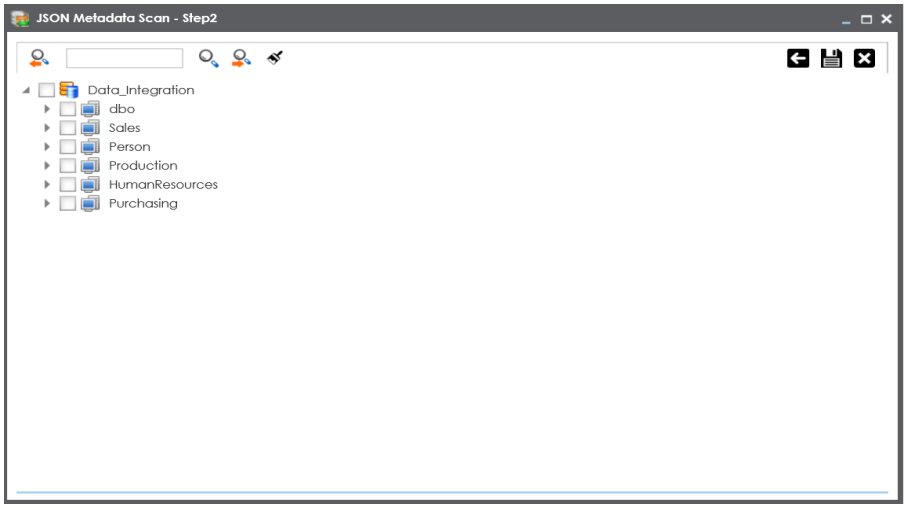
   Update Existing + Add New + Invalidate

   Select this option to update existing metadata. It will not delete the existing metadata.

   Delete & Reload

   Use this option to delete all business properties and data dictionary stored as metadata for this environment.

6. Choose the **Import Model Type**.
7. Click .



8. Select the schema and tables to import them.

9. Click  .

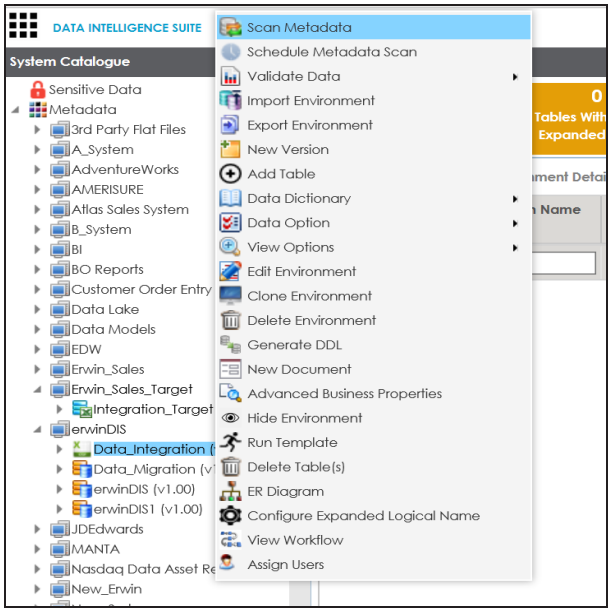
   The metadata is scanned and saved in the environment.

Importing Metadata from CSV

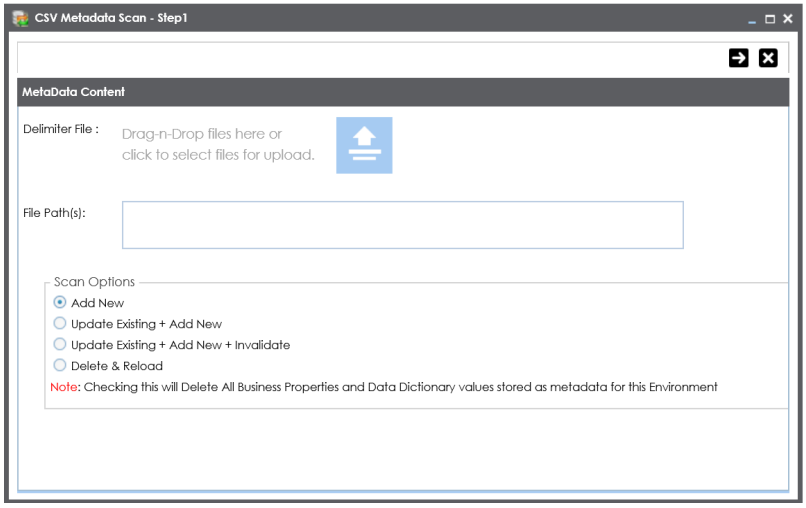
You can import metadata from CSV files after creating a CSV environment.

To import metadata from CSV files, follow these steps:

1. Under the **System Catalogue** pane, right-click a CSV environment.



2. Click **Scan Metadata**.



3. Use  or drag and drop the Delimiter File.
4. Enter the file path.
5. Choose a scan option:

   Add New

   Select this option to insert new metadata to the environment.

   Update Existing + Add New

   Select this option to update existing metadata based on table and columns in the JSON file.

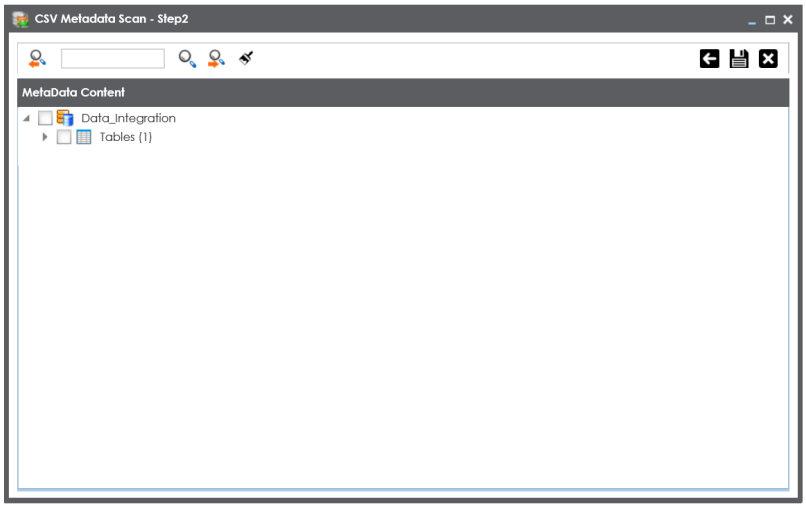
   Update Existing + Add New + Invalidate

   Select this option to update existing metadata. It will not delete the existing metadata.

   Delete & Reload

   Use this option to delete all business properties and data dictionary stored as metadata for this environment.

6. Click  .



7. Select the tables to import them.
8. Click  .

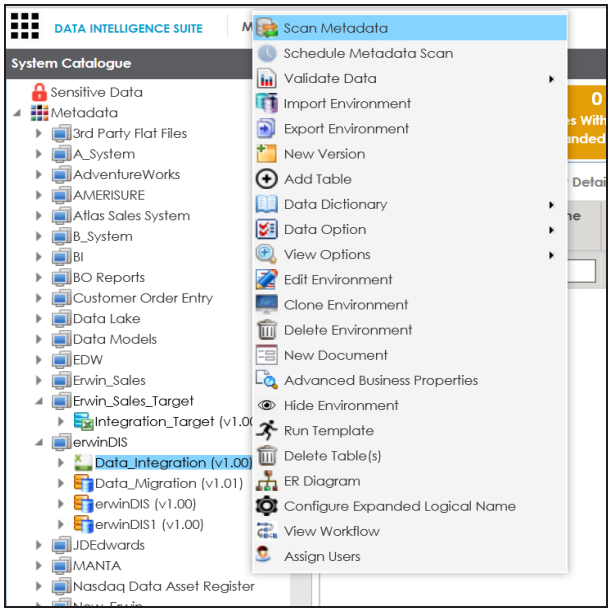
The metadata is scanned and saved in the environment.

Importing Metadata from XMI

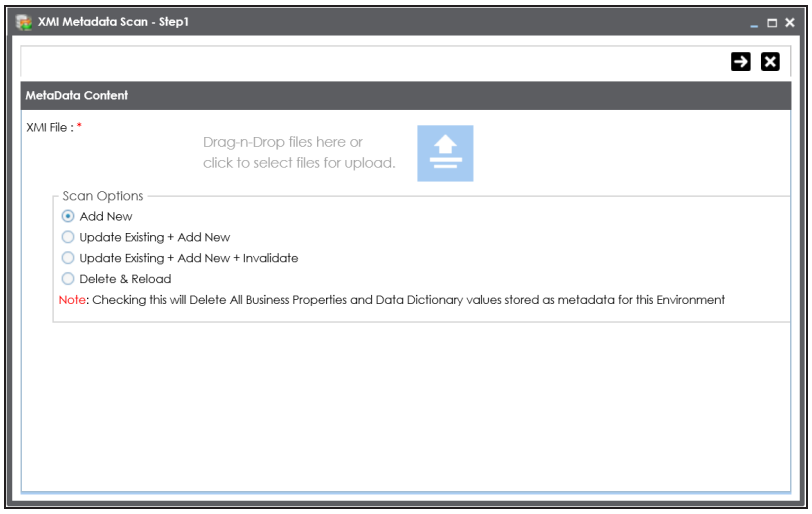
You can import metadata from XMI files after creating a XMI environment.

To import metadata from XMI files, follow these steps:

1. Under the **System Catalogue** pane, right-click a XMI environment.



2. Click **Scan Metadata**.



3. Use  or drag and drop the XMI file.
4. Choose an update method.
5. Choose a scan option:

   Add New

   Select this option to insert new metadata to the environment.

   Update Existing + Add New

   Select this option to update existing metadata based on table and columns in the JSON file.

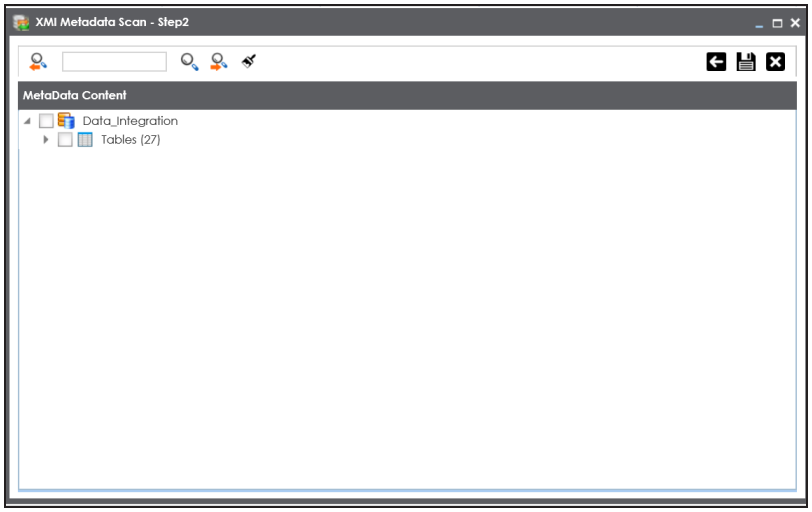
   Update Existing + Add New + Invalidate

   Select this option to update existing metadata. It will not delete the existing metadata.

   Delete & Reload

   Use this option to delete all business properties and data dictionary stored as metadata for this environment.

6. Click  .



7. Select the tables to import them.
8. Click  .

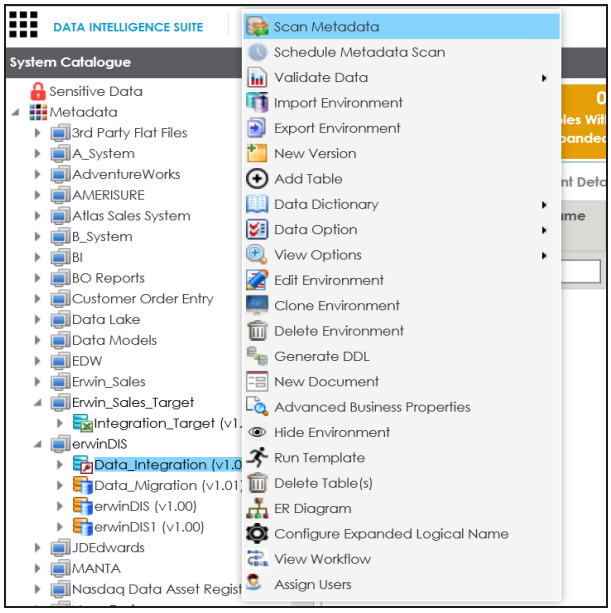
The metadata is scanned and saved in the environment.

Importing Metadata from MS Access File

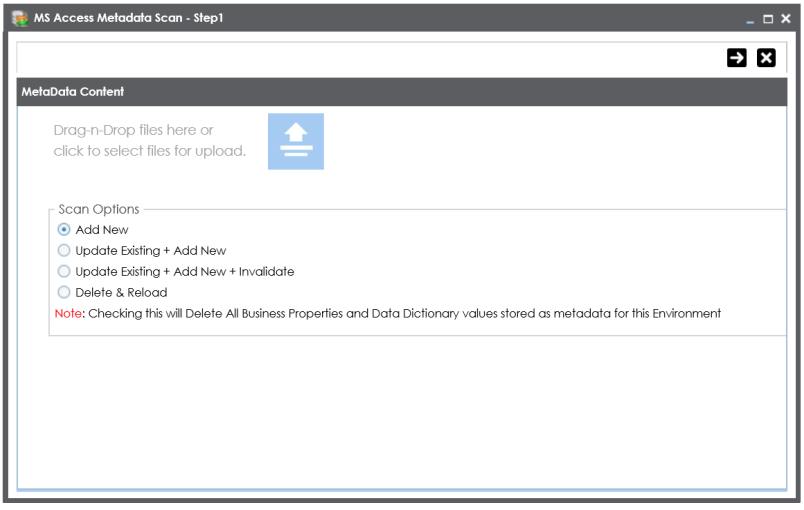
You can import metadata from MS Access files after creating a MS Access environment.

To import metadata from MS Access files, follow these steps:

1. Under the **System Catalogue** pane, right-click a MS Access environment.



2. Click **Scan Metadata**.



3. Use  or drag and drop the MS Access file.
4. Choose an update method.
5. Choose a scan option:

   Add New

   Select this option to insert new metadata to the environment.

   Update Existing + Add New

   Select this option to update existing metadata based on table and columns in the JSON file.

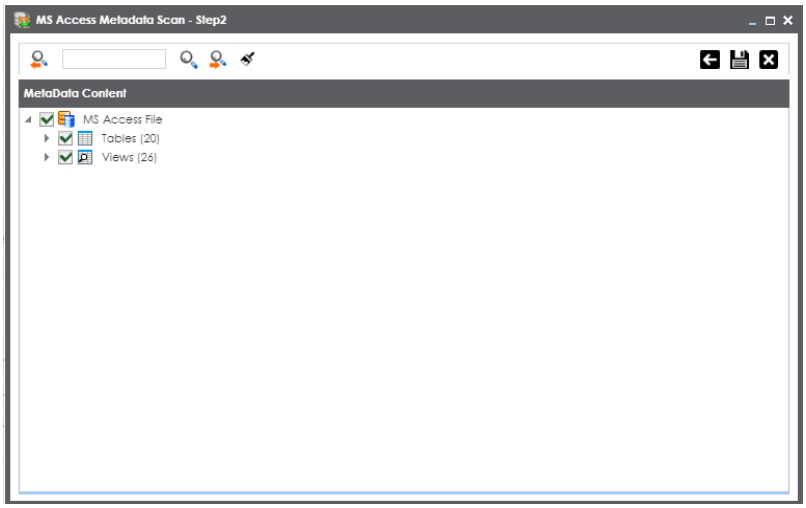
   Update Existing + Add New + Invalidate

   Select this option to update existing metadata. It will not delete the existing metadata.

   Delete & Reload

   Use this option to delete all business properties and data dictionary stored as metadata for this environment.

6. Click  .



7. Select the tables to import them.
8. Click  .

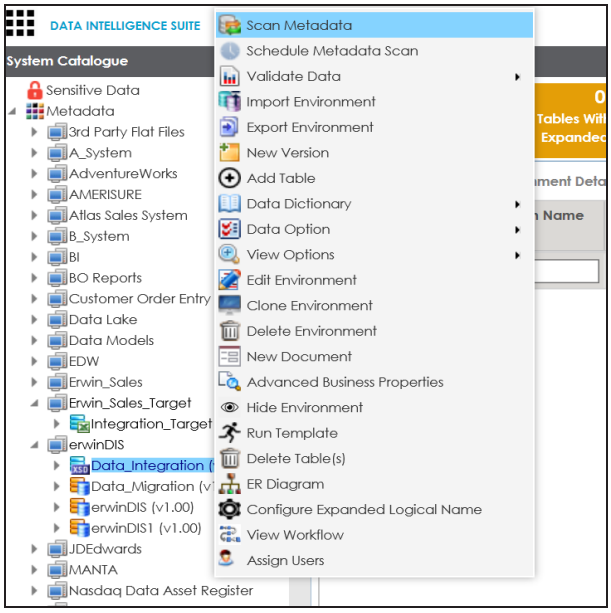
The metadata is scanned and saved in the environment.

Importing Metadata from XSD

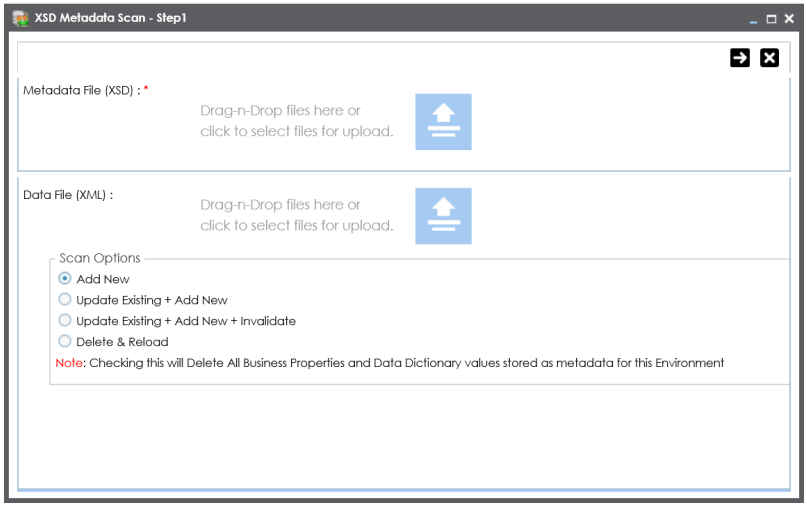
You can import metadata from XSD files after creating a XSD environment.

To import metadata from XSD files, follow these steps:

1. Under the **System Catalogue** pane, right-click a XSD environment.



2. Click **Scan Metadata**.



3. Use  or drag and drop the Metadata File with .xsd extension.
4. Use  or drag and drop the Data File with .xml extension.
5. Choose a scan option:

   Add New

   Select this option to insert new metadata to the environment.

   Update Existing + Add New

   Select this option to update existing metadata based on table and columns in the JSON file.

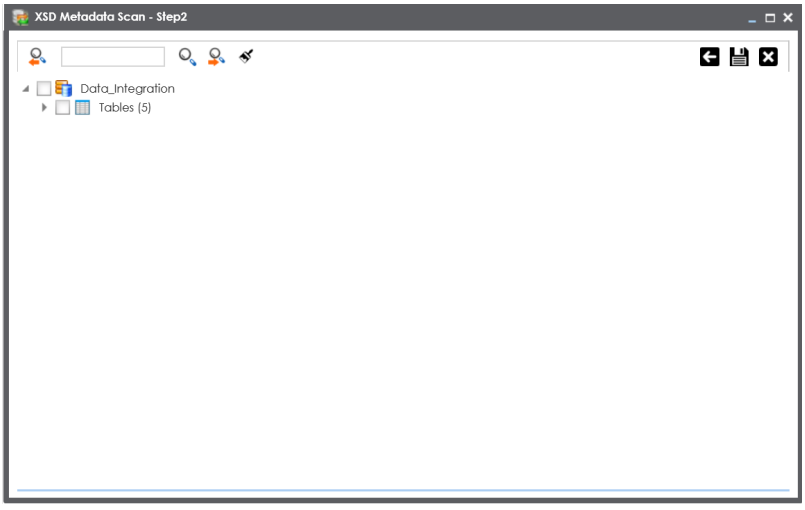
   Update Existing + Add New + Invalidate

   Select this option to update existing metadata. It will not delete the existing metadata.

   Delete & Reload

   Use this option to delete all business properties and data dictionary stored as metadata for this environment.

6. Click  .



7. Select the tables to import them.
8. Click  .

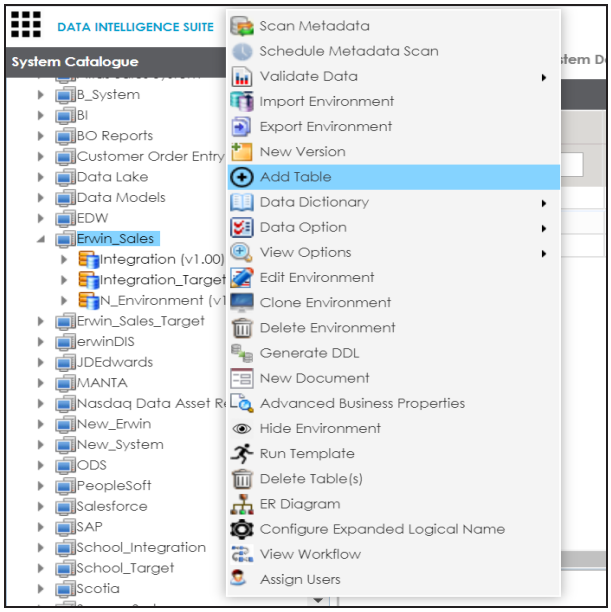
The metadata is scanned and saved in the environment.

Adding Tables Manually

You can add tables in an environment manually and enter technical and business properties of a table. You can also use User Defined Fields to enter additional properties of a table. UI labels of user defined fields can be configured in Language Settings.

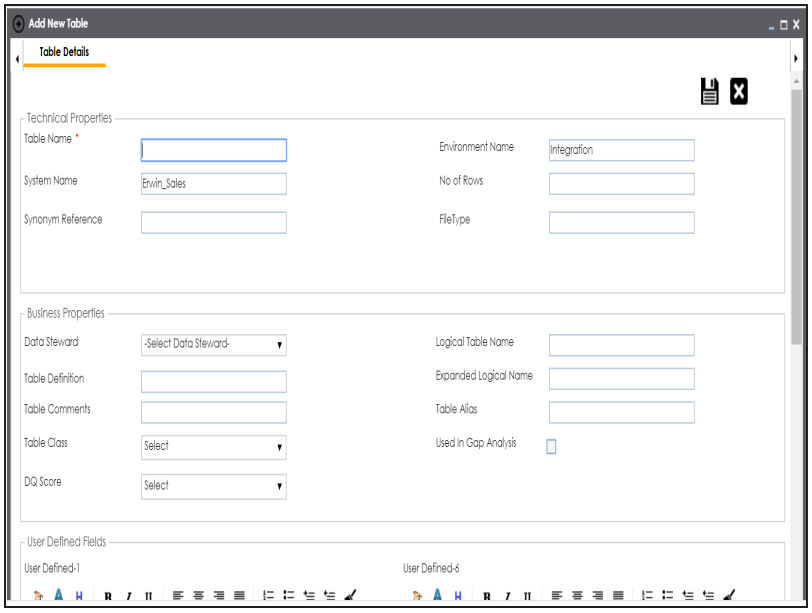
To add tables in environments manually, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click an environment.



3. Click **Add Table**.

   The Add New Table page appears.



4. Enter or select appropriate values in the fields. Refer to the following table for field description.

Field Name	Sub-Field	Description
Technical Properties	Table Name	Specifies the physical name of the table. For example, Account or Currency.
	System Name	Specifies the physical name of the system under which the table exists. For example, Enterprise Data Warehouse. It cannot be edited.
	Synonym Reference	Specifies the synonym reference of the table. For example, Sales_Rep_Information. It gets its value while scanning the metadata. You cannot enter it manually.
	Environment Name	Specifies the physical name of the environment under which the table exists. It cannot be edited. For example, EDW-Test.

Field Name	Sub-Field	Description
	No of Rows	Specifies the total number of rows in the table. For example, 100.
	Workflow Status	Specifies the workflow status of the table. For example, draft. By default, Metadata_Manager_Default_Workflow_1 is assigned to all the tables in the Metadata Manager. You can create and re-assign a workflow to all the tables in an environment. For more information on workflow status, refer to the Assigning Workflows to Tables topic.
Business Properties	Data Steward	Specifies the name of the data steward responsible for the table. For example, Jane Doe. For more information on configuring list of data stewards, refer to the Configuring Data Stewards topic.
	Table Definition	Specifies the definition of the table. For example: The table contains five columns with emp ID column as the primary key.
	Table Comments	Specifies comments about the table. For example: The table contains details of the employees.
	Table Class	Specifies the table class property. For more information on configuring table class, refer to Configuring Table and Column Class topic.
	DQ Score	Specifies the overall data quality score of the table. For example, High (7-8). For more information on configuring DQ scores, refer to the Configuring Data Profiling and DQ Scores topic.
	Logical Table Name	Specifies the logical name of the table. For example, if the physical name of a table is DIM_Customer, then the logical name of the table is Customer Dimen-

Field Name	Sub-Field	Description
		sion.
	Expanded Logical Name	Specifies the expanded logical name of the table. For example, if the physical name of a table is RM_Resource, then the expanded logical name of the table is RM Sales Representative. You can configure expanded logical name of tables in bulk at system and environment level.
	Used in Gap Analysis	Specifies whether the table is being used as part of a gap analysis to check table usage in mappings. Select the check box if the table is used in gap analysis. For more information on performing table gap analysis, refer to the Performing Table Gap Analysis topic.
	Table Alias	Specifies the alias name of the table. For example, Sales_Representative_Table.

5. Click  .

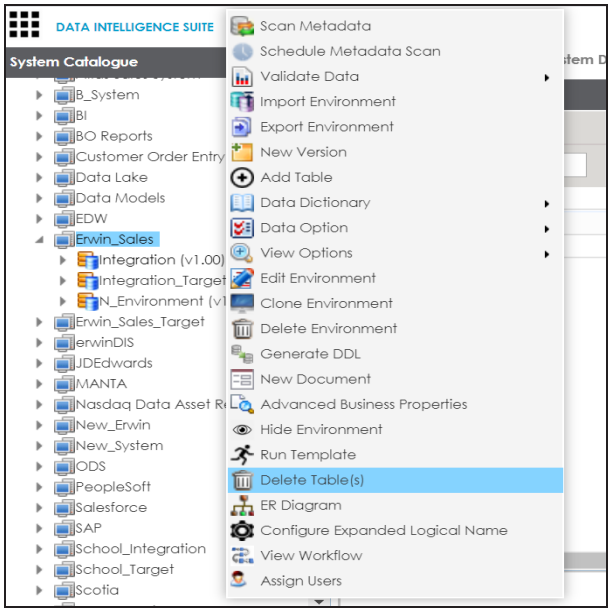
   The table is added to the environment.

Deleting Tables

You can delete tables from an environment after importing or scanning metadata from a data source.

To delete tables from environments, follow these steps:

1. Go to Application Menu > Data Catalog > Metadata Manager.
2. Under the **System Catalogue** pane, right-click an environment.



3. Click **Delete Table(s)**.

   The DeleteTables page appears.

4. Select tables and click  .

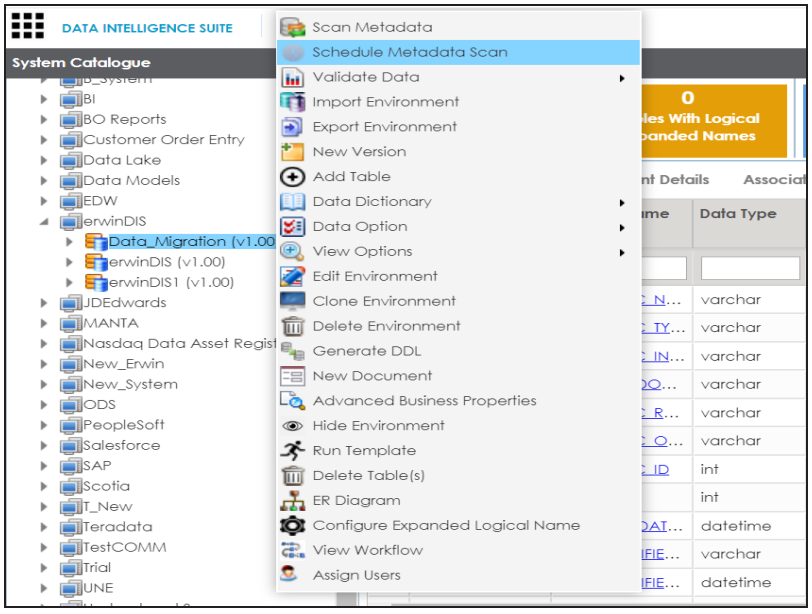
   The selected tables are deleted from the environment.

Scheduling Metadata Scans

You can schedule a metadata scan only if either schema is selected or the environment is scanned at least once.

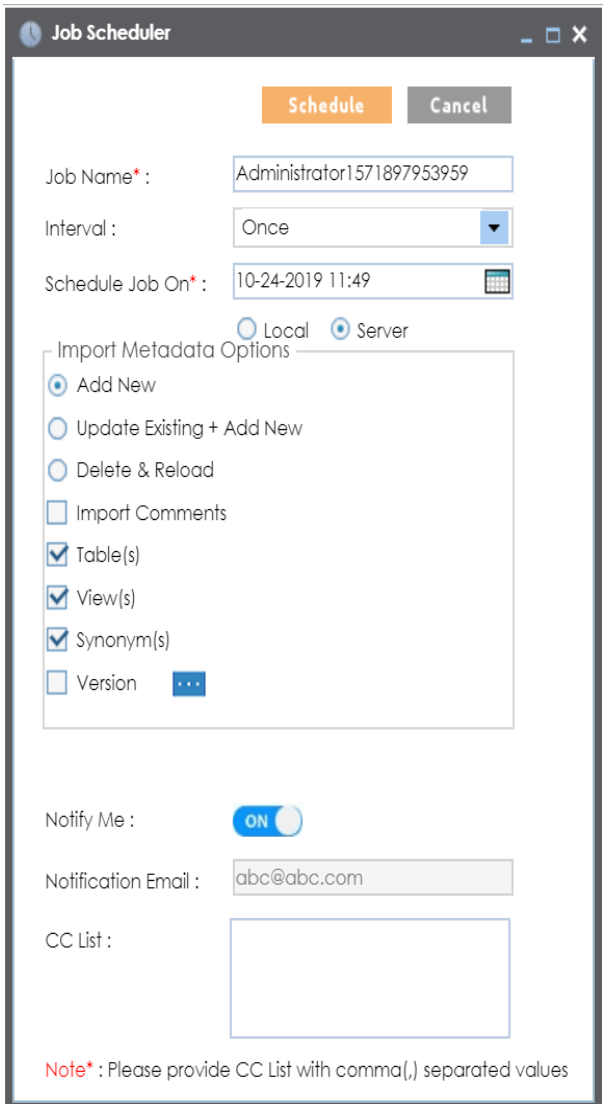
To schedule a metadata scan, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click an environment.



3. Click **Schedule Metadata Scan**.

   The Job Scheduler page appears.



4. Enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

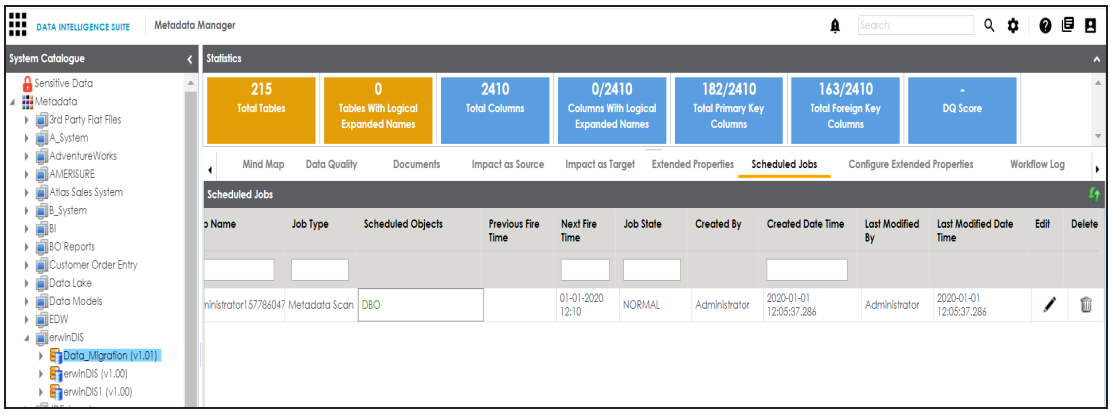
Field Name	Description
Job Name	Specifies the job name. For example, Administrator1585030550001. This field autopopulates with a job name. You can edit it and enter a dif-

Field Name	Description
	ferent job name.
Interval	Specifies the frequency of the job. For example, Every Week.
Schedule Job On	Set the date and time of the job using  . For example, 03-24-2020 11:45.
Local or Server	Select the machine whose clock decides the time of the scheduled scan. ▪ Local: Refers to your local machine. ▪ Server: Refers to the machine where erwinDIS has been deployed.
Import Metadata Options	▪ **Add New**: This option adds new objects to the existing object list. Existing metadata is not refereshed. ▪ **Update Existing + Add New**: This option adds new objects to the existing list and at the same time the existing metadata is also refreshed. ▪ **Delete & Reload**: This option deletes all the existing metadata and scans only the new objects that have been selected. ▪ **Import Comments**: Select the check box to import comments. ▪ **Table(s)**: Select the check box to import Tables. ▪ **View(s)**: Select the check box to import Views. ▪ **Synonym(s)**: Select the check box to import Synonyms. ▪ **Version**: Select the check box to create a new version of the environment. To enter version label and change description, click  .
Notify Me	Turn the **Notify Me** to **ON** to receive a job notification. For more information on configuring notifications, refer to the Configuring Notifications on Scanning Metadata topic.
Notification Email	This field is autopopulated with your email ID. You receive email notifications about the scheduled job from the administrator's email ID. For more information on configuring the administrator's email ID, refer to

Field Name	Description
	the Configuring Email Settings topic.
CC List	Enter a comma-separated list of email IDs that should receive email notifications about the scheduled job. For example, ab.dav@xyz.com, cal.kai@xyz.com

5. Click **Schedule**.

   The metadata scan is scheduled and the scheduled job appears in the **Scheduled Jobs** tab.



6. Use the following options:

   Edit ( )

   To edit the scheduled job, click .

   Delete ( )

   To delete the scheduled job, click .

   The metadata is scanned at the scheduled time and the environment is updated.

   Note: If you have opted to create new version of the environment, then a new version is created and the old version is archived.

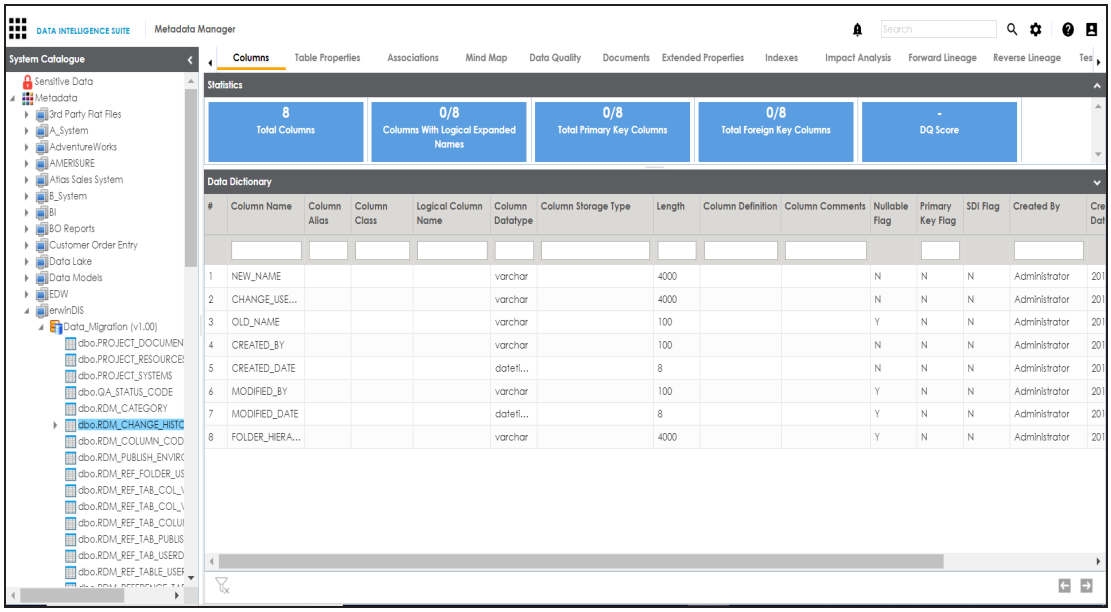
Updating Table Properties

Table properties are classified as technical properties and business properties. You can also define your own new properties using user defined fields.

To update Table Properties, follow these steps:

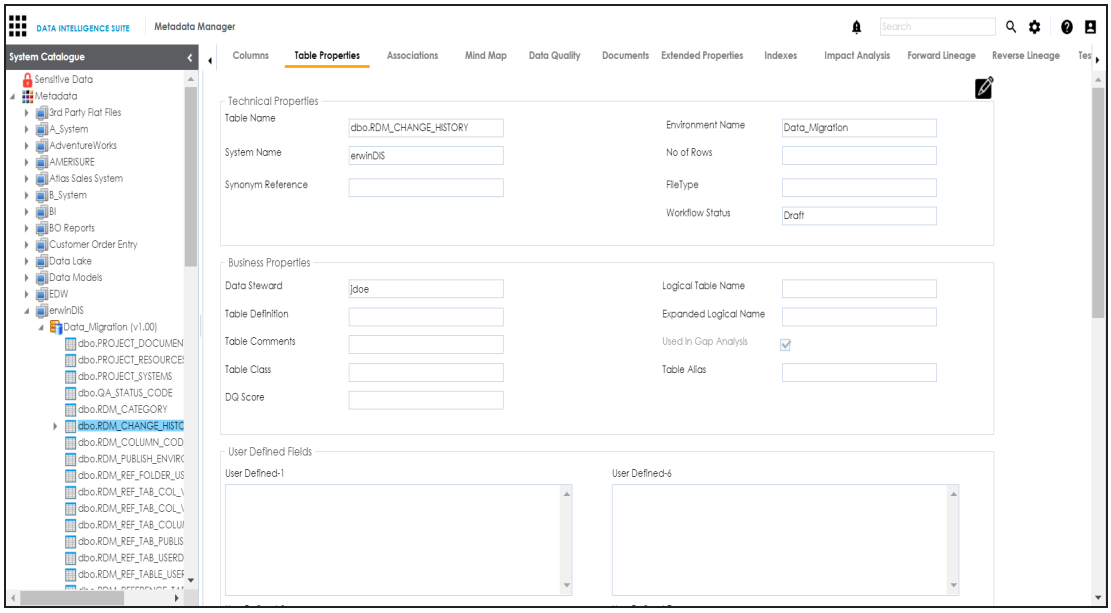
1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click a table.

   The following page appears.



3. Click the **Table Properties** tab.

   The table properties page appears.



4. Click  .

5. Enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Sub-Field	Description
Technical Properties	Table Name	Specifies the physical name of the table. For example, Account or Currency.
	System Name	Specifies the physical name of the system under which the table exists. For example, Enterprise Data Warehouse. It cannot be edited.
	Synonym Reference	Specifies the synonym reference for the table. It gets its value while scanning the metadata. You cannot enter it manually. For example, Sales_Rep_Information.
	Environment	Specifies the physical name of the environment under which

Field Name	Sub-Field	Description
	Name	the table exists. For example, EDW-Test. It cannot be edited.
	No of Rows	Specifies the total number of rows in the table. For example, 100.
	Workflow Status	Specifies the workflow status of the table. For example, draft. By default, Metadata_Manager_Default_Workflow_1 is assigned to all the tables in the Metadata Manager. You can create and re-assign a workflow to all the tables in an environment. For more information on workflow status, refer to the Assigning Workflows to Tables topic.
Business Properties	Data Steward	Specifies the name of the data steward responsible for the table. For example, Jane Doe. For more information on configuring list of data stewards, refer to the Configuring Data Stewards topic.
	Table Definition	Specifies the definition of the table. For example: The table contains five columns with emp ID column as the primary key.
	Table Comments	Specifies comments about the table. For example: The table contains details of the employees.
	Table Class	Specifies the table class property. For more information on configuring table class, refer to Configuring Table and Column Class topic.
	DQ Score	Specifies the overall data quality score of the table. For example, High (7-8). For more information on configuring DQ scores, refer to the Configuring Data Profiling and DQ Scores topic.

Field Name	Sub-Field	Description
	Logical Table Name	Specifies the logical name of the table. For example, if the physical name of a table is DIM_Customer, then the logical name of the table is Customer Dimension.
	Expanded Logical Name	Specifies the expanded logical name of the table. For example, if the physical name of a table is RM_Resource, then the expanded logical name of the table is RM Sales Representative. You can configure expanded logical name of tables in bulk at system and environment level.
	Used in Gap Analysis	Specifies whether the table is being used as part of a gap analysis to check table usage in mappings. Select the check box if the table is used in gap analysis. For more information on performing table gap analysis, refer to the Performing Table Gap Analysis topic.
	Table Alias	Specifies the alias name of the table. For example, Sales_Representative_Table.

6. Click  .

   The table properties are updated.

   You can use user defined fields with different UI labels. For more information on using UI labels for user defined fields, refer to the Configuring Language Settings topic.

   You can also hide or display user defined fields. For more information on hiding or displaying user defined fields, refer to the Displaying User Defined Fields topic.

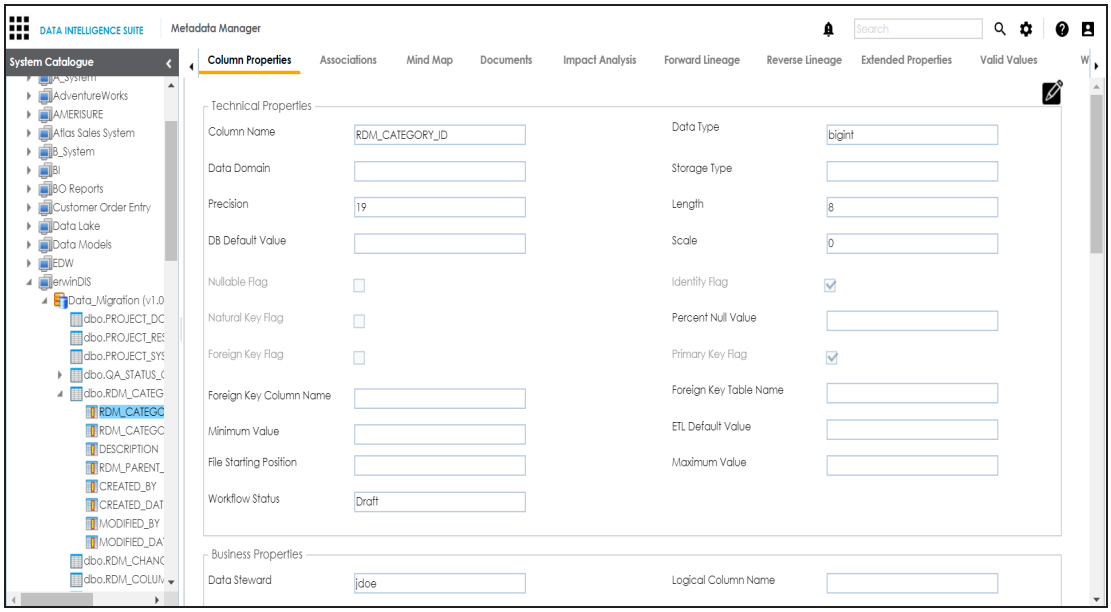
Updating Column Properties

Column properties are classified as technical properties and business properties. You can also define your own new properties using user defined fields.

To update Column Properties, follow these steps:

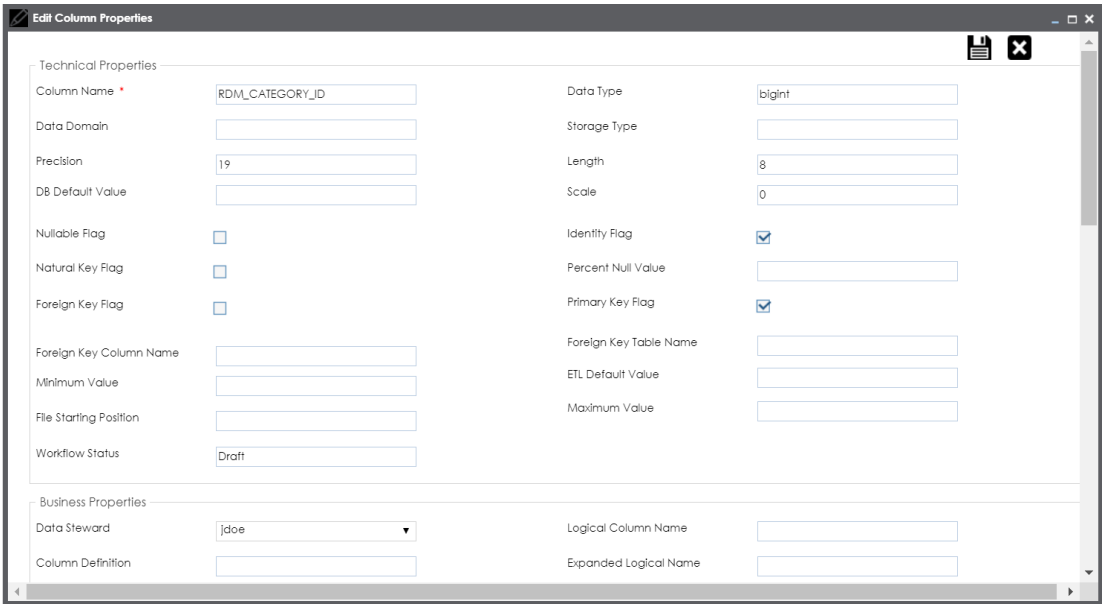
1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click a column.

   The Column Properties page appears.



3. Click  .

   The Edit Column Properties page appears.



4. Enter appropriate values in the fields. Fields marked with red asterisk are mandatory. Refer to the following table for field descriptions.

Fields	Description
Column Name	Specifies the physical name of the column. For example, Object_ID.
Data Domain	Specifies the data domain values for the column. For example, data domain of a Gender column is M and F.
Precision	Specifies the precision of the column. For example: 5, the number 123.45 has a precision of 5 and a scale of 2.
DB Default Value	Specifies the default value of the column in the database. For example, True.
Nullable Flag	Specifies whether the column allows null values. Select the check box if the column allows null values.
Natural Key Flag	Specifies whether the column is a natural key. Select the check box if the column is a natural key.

Fields	Description
Foreign Key Flag	Specifies whether the column is a foreign key. Select the check box if the column is a foreign key.
Foreign Key Column Name	Specifies the actual column name where the column is listed as a PK (in case the current column being an FK). For example, ID.
Minimum Value	Specifies the minimum value of the column. For example, minimum value of ID column can be 424.
File Starting Position	Specifies the starting position in the file.
Workflow Status	Specifies the workflow status of the column. For example, draft. By default, Metadata_Manager_Default_Workflow is assigned to all the columns in the Metadata Manager. You can create and re-assign a workflow to all the columns in a table. For more information on the workflow status, refer to the Assigning Workflows to the Columns topic.
Data Type	Specifies the physical data type of the column. For example, varchar.
Storage Type	Specifies the storage type of the column. For example, row store/column store in the case of SAP systems.
Length	Specifies the physical length of the column. For example, if the column datatype is char(5), then its physical length is 5.
Scale	Specifies the physical scale of the column. For example: The number 123.45 has a precision of 5 and a scale of 2.
Identity Flag	Specifies whether the column is used as an identity flag. Select the check box if the column is used as an identity flag.
Percent Null Value	Specifies the percentage of null values in the column. For example, 10%.
Primary Key	Specifies whether the column is a primary key.

Fields	Description
Flag	Select the check box if the column is used as the primary key.
Foreign Key Table Name	Specifies the actual table name where the column is listed as a PK (in case of the current column being an FK).
ETL Default Value	Specifies the default ETL value of the column during the load process.
Maximum Value	Specifies the maximum value of the column. For example, maximum value of ID column can be 1503.
Data Steward	Specifies the data steward responsible for the column. For example, Jane Doe. For more information on configuring list of data stewards, refer to the Configuring Data Stewards topic.
Column Definition	Specifies the definition of the column. For example: The column is a primary key that allows 5 alpha-numeric characters.
Column Comments	Specifies the comments about the column. For example: The column provides unique identification of employee in the employee table.
Sensitive Data Indicator (SDI) Flag	Specifies whether the column contains sensitive data. Select the check box to categorize the data in the column as sensitive.
Sensitive Data Indicator (SDI) Classification	Specifies the SDI classification of the column. Select the appropriate SDI classification like confidential, internal only, public, or restricted. You can configure SDI classification in Metadata Manager settings.
Column Class	Specifies the column class property. Select a column class. For more information on configuring column class, refer to the Configuring Table and Column Class topic.
DQ Score	Specifies the overall data quality score of the column. For example, High (7-8).

Fields	Description
	For more information on configuring DQ scores, refer to the Configuring Data Profiling and DQ Scores topic.
Logical Column Name	Specifies the logical name of the column. For example, if the physical name of the table is CUST_ID_NUM, then the logical name of the table is Customer Identification Number.
Expanded Logical Name	Specifies the expanded logical name of the column. For example, if the physical name of the column is Resource_ID, then the logical name of the . You can also configure expanded logical name of columns in bulk at system and environment level.
Used in Gap Analysis	Specifies whether the column is being used in a gap analysis for usage in mappings. Select the check box if the column is used in the gap analysis. For more information on performing column gap analysis, refer to the Performing Column Gap Analysis topic.
Sensitive Data Indicator (SDI) Description	Specifies the description of the sensitive data classification of the column. For example: The column contains sensitive data and it is for internal use only.
Column Alias	Specifies the alias name of the column. For example, Resource_ID.
Business Key Flag	Specifies whether the column is a business key. Select the check box if the column is a business key.

5. Click  .

   The column properties are updated.

   You can use user defined fields with different UI labels. For more information on using UI labels for user defined fields, refer to the Configuring Language Settings topic.

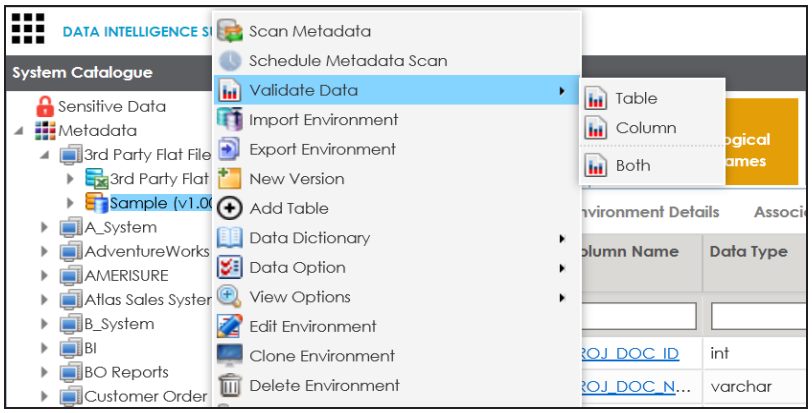
   You can also hide user defined fields in the Column Properties tab. For more information on hiding user defined fields, refer to the Displaying User Defined Fields topic.

Validating Data

You can validate the data in the environment at table and column levels. The data is validated against the forms (Table Properties or Column Properties) associated with the environment. The forms can be created, configured, and associated with environments in the Form Validation Settings.

To validate data, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click an environment.



3. Hover over **Validate Data**.
4. Use the following options:

   Table

   To validate tables in the environment, click **Table**.

   Column

   To validate columns in the environment, click **Column**.

   Both

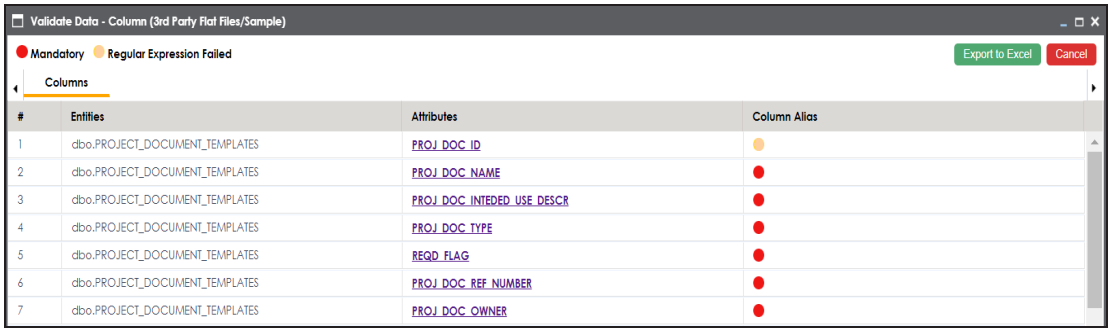
   To validate tables and columns both, click **Both**.

   The data is validated.

   The columns or tables which fail mandatory field criterion are marked with red.

The columns or tables which fail regular expression criterion are marked with orange.

For more information, on creating, configuring, and associating forms (Table Properties and Column Properties), refer to the Configuring Form Validation Settings section.



5. Click **Export to Excel** to export the validations.

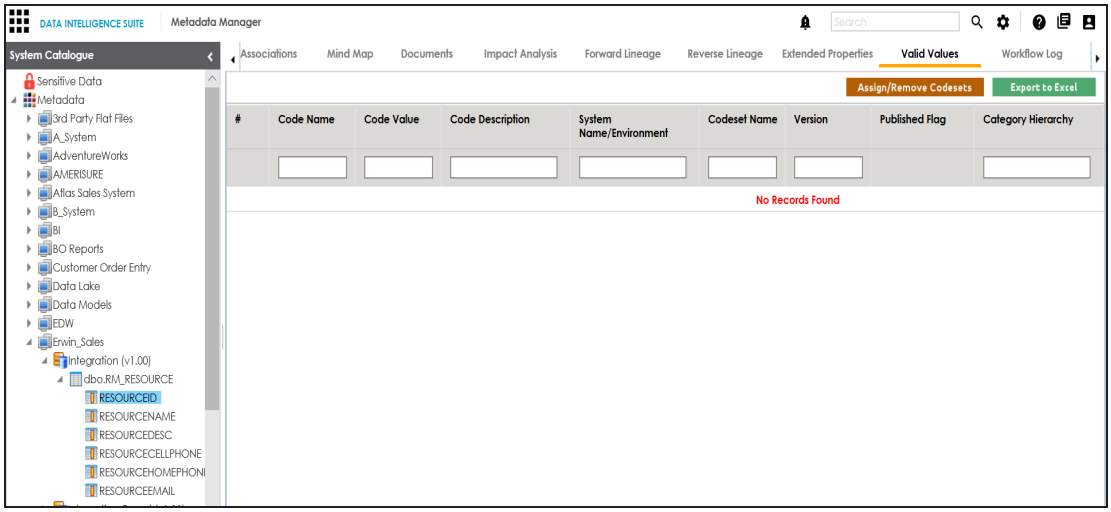
   The validation report is downloaded in .xlsx format.

Assigning Codesets to Columns

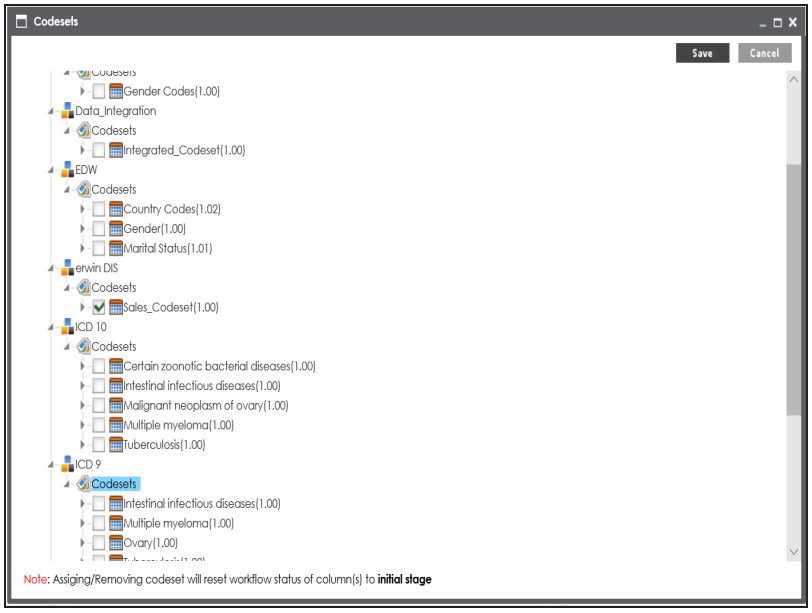
You can create codesets in the Codeset Manager and assign them to a source or target column as valid values. You can also export the valid values in MS Excel format.

To assign codesets to columns, follow these steps:

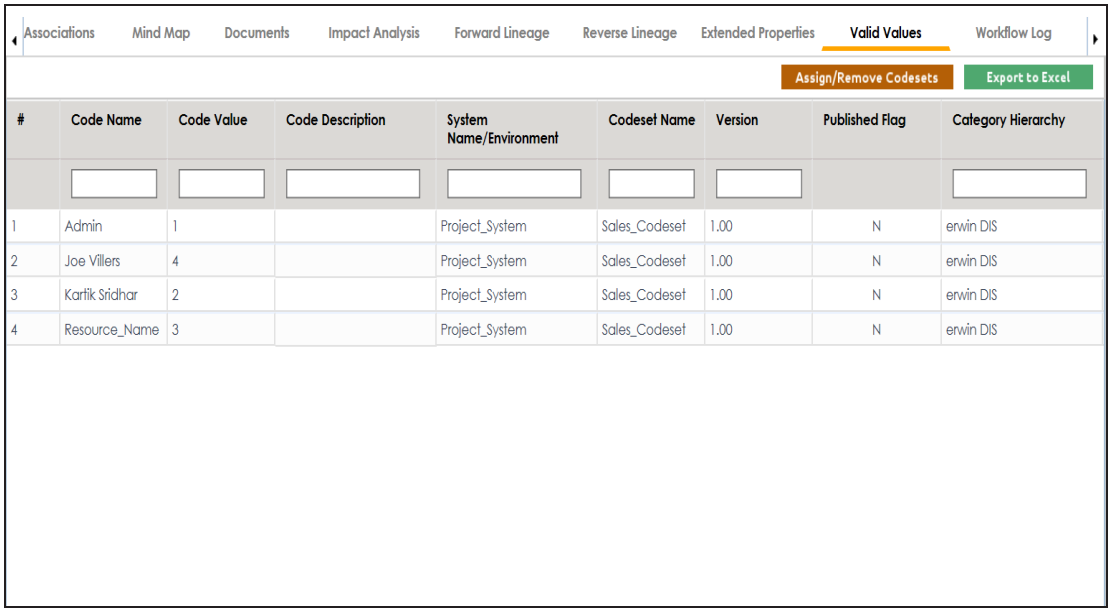
1. Under the **System Catalogue** pane, click a column.
2. Click the **Valid Values** tab.



3. Click **Assign/Remove Codesets** .



4. Select the codesets and click **Save**.



The codesets are saved under the **Valid Values** tab.

5. Click **Export to Excel** to download the valid value grid in .xlsx format.

For more information on managing codesets, refer to the Maintaining Enterprise Codesets section.

Viewing Sensitive Data Dashboard

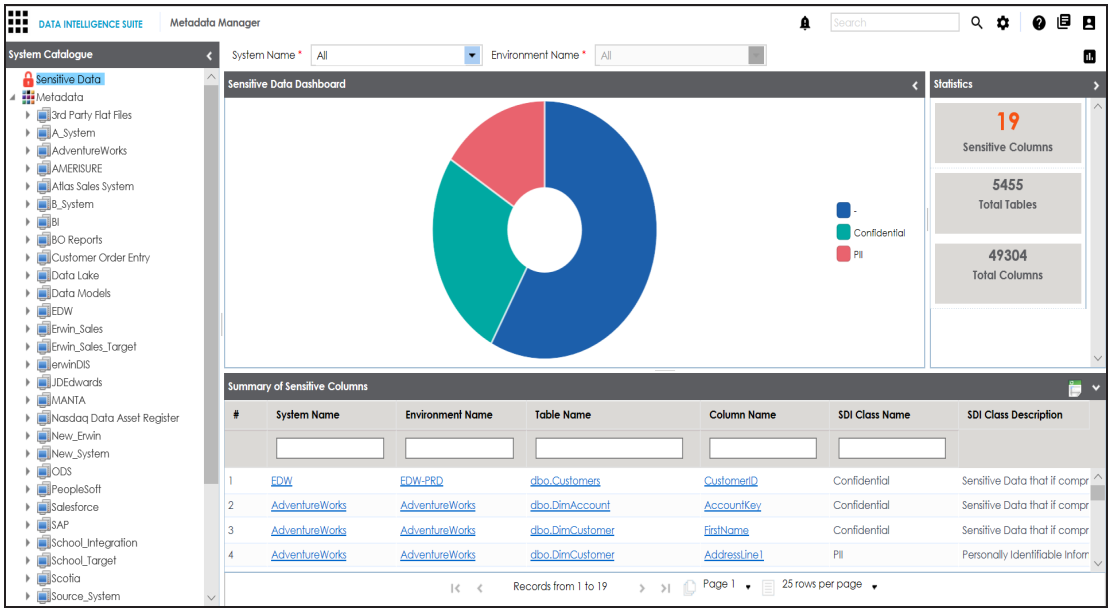
You can select an appropriate Sensitive Data Indicator (SDI) classification for a column while updating column properties. You can also add SDI class as per your requirements in the Metadata Manager Settings. For more information on updating column properties, refer to the Updating Column Properties topic.

The Metadata Manager enables you to view Sensitive Data Dashboard displaying summary and statistics of sensitive columns.

To view sensitive data dashboard, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click **Sensitive Data**.

   The Sensitive Data Dashboard page appears and you can also view Summary of Sensitive Columns.



3. Use **System Name** and **Environment Name** to filter the statistics and summary of the sensitive columns.

A summary and statistics of sensitive columns of the selected environment are displayed.

Viewing Workflow Logs of Tables

You can view workflow logs of a table in the Metadata Manager.

It involves viewing:

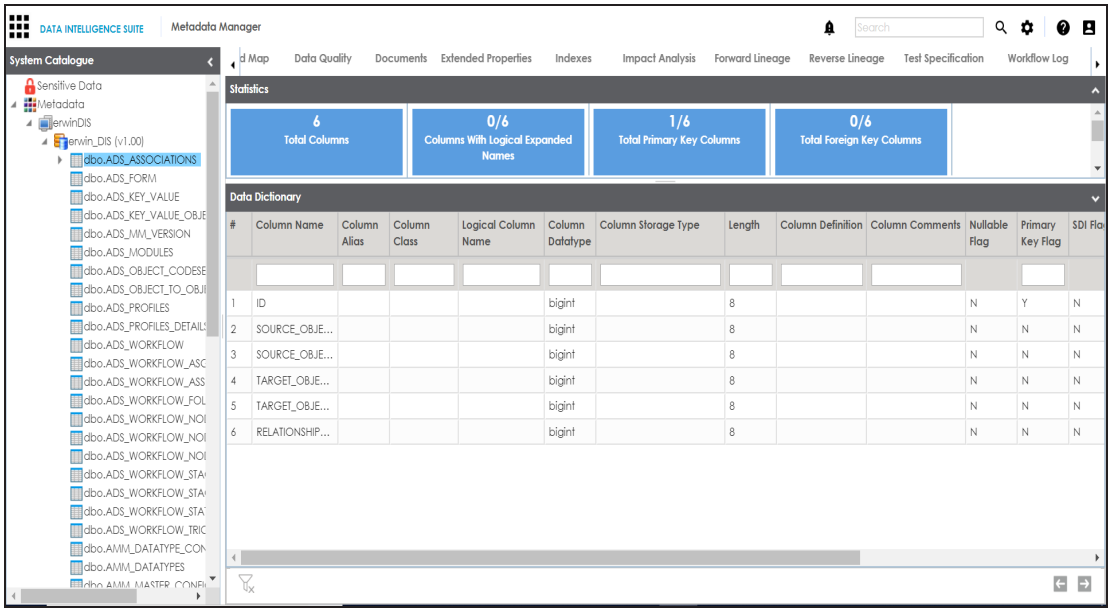
- Current workflow log status of the table
- Users and roles assigned to all the stages of the workflow
- Comments entered by users while moving the table to the next stage of the workflow

You can also export the workflow log image.

To view workflow log of tables in the Metadata Manager, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click a table.

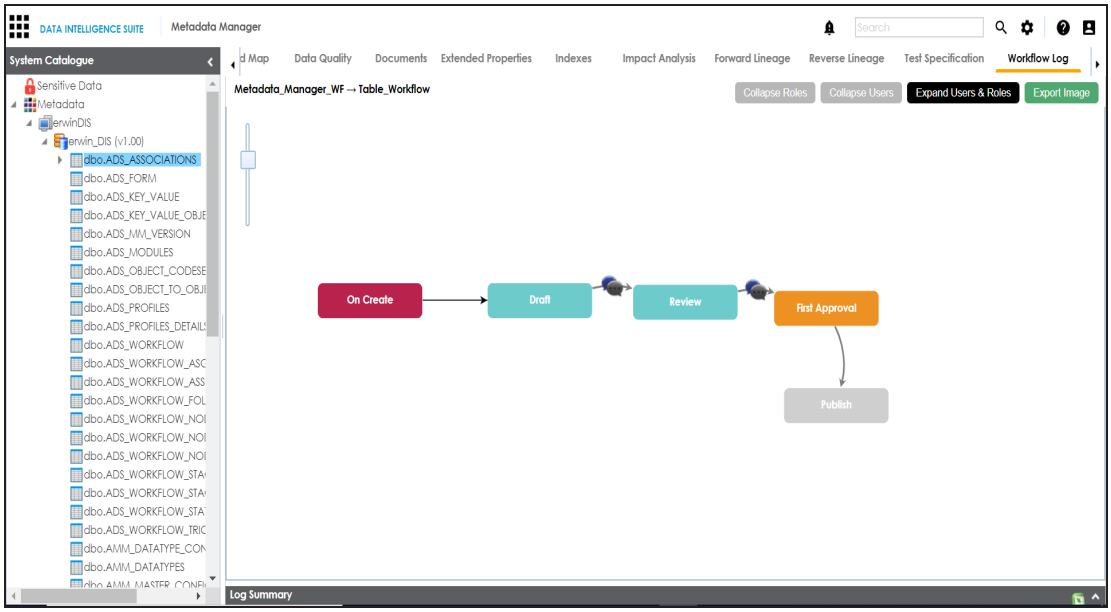
   The following page appears.



3. Click the **Workflow Log** tab.

   The current workflow log status of the selected table is shown.

   Note: The current workflow stage blinks in the diagram.



4. To view the user and the comments entered by the user while moving it to the next stage, hover over .
5. To view users and roles assigned to all the stages, click **Expand Users and Roles**.
6. To download the workflow log image, click **Export Image**.

Viewing Workflow Logs of Columns

You can view workflow logs of a column in the Metadata Manager.

It involves viewing:

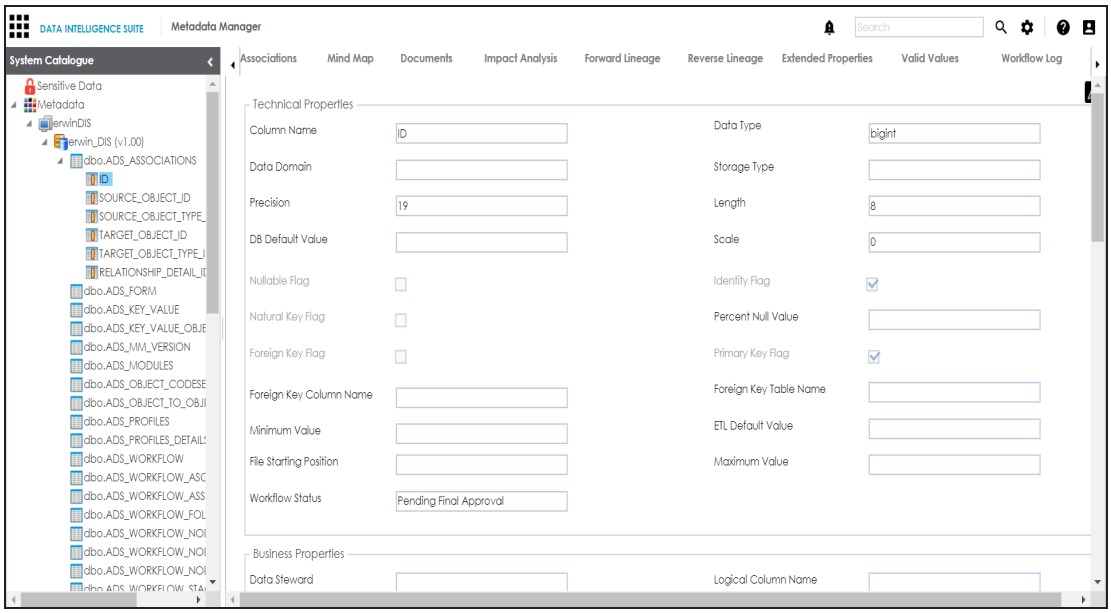
- Current workflow log status of the column
- Users and roles assigned to all the stages of the workflow
- Comments entered by users while moving the table to the next stage of the workflow

You can also export the workflow log image.

To view workflow log of columns in the Metadata Manager, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click a column.

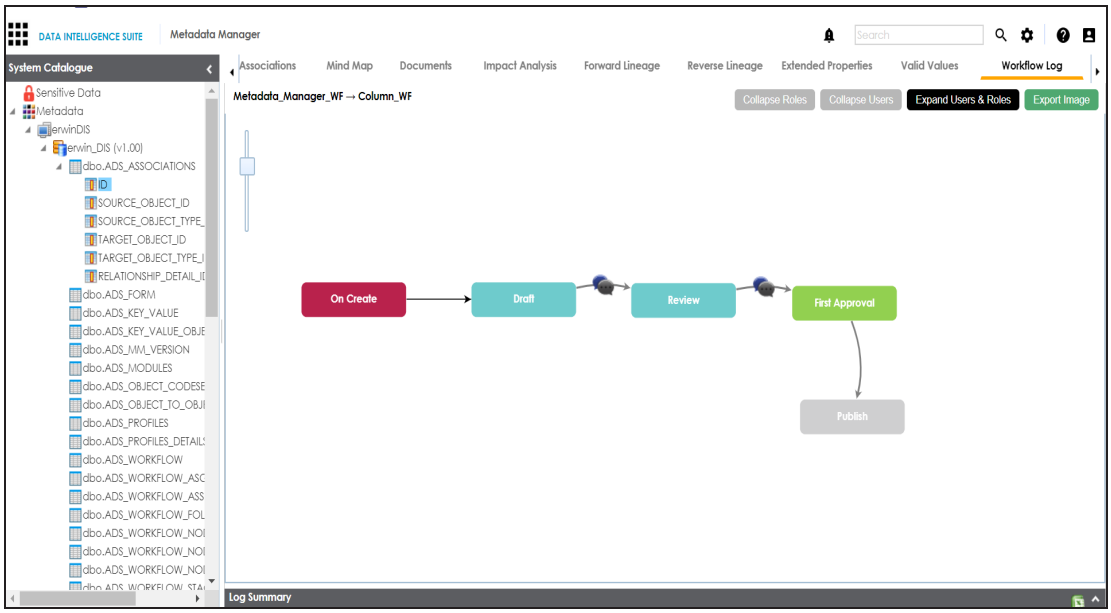
   The following page appears.



3. Click the **Workflow Log** tab.

   The current workflow log status of the selected column is shown.

Note: The current workflow stage blinks in the diagram.



4. To view the user and the comments entered by the user while moving it to the next stage, hover over  .
5. To view users and roles assigned to all the stages, click **Expand Users and Roles**.
6. To download the workflow log image, click **Export Image**.

Associating Tables

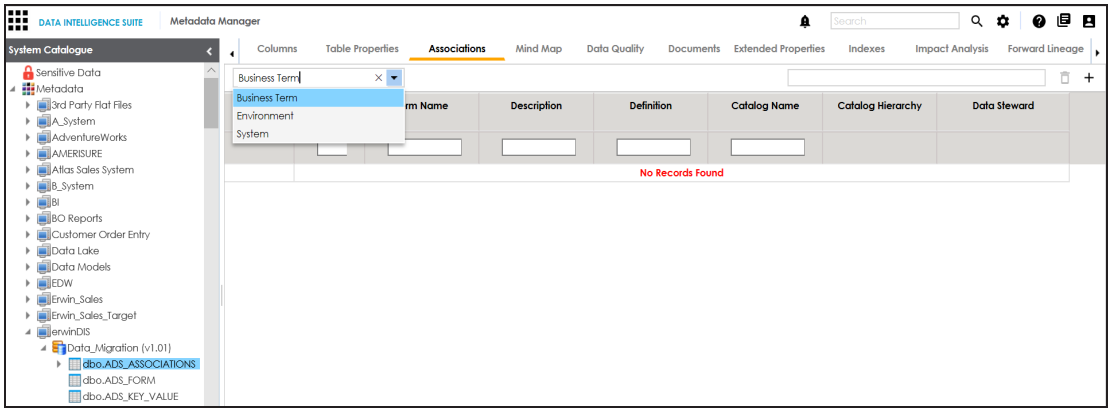
You can associate tables with business assets, systems, environments, tables, and columns. You can also view mind map and association statistics.

You need to ensure that:

- Business assets are enabled. You can add new business assets and enable them in the Business Glossary Manager Settings.
- Relationship between table and the asset type is defined. You can define associations and relationships in the Business Glossary Manager Settings.

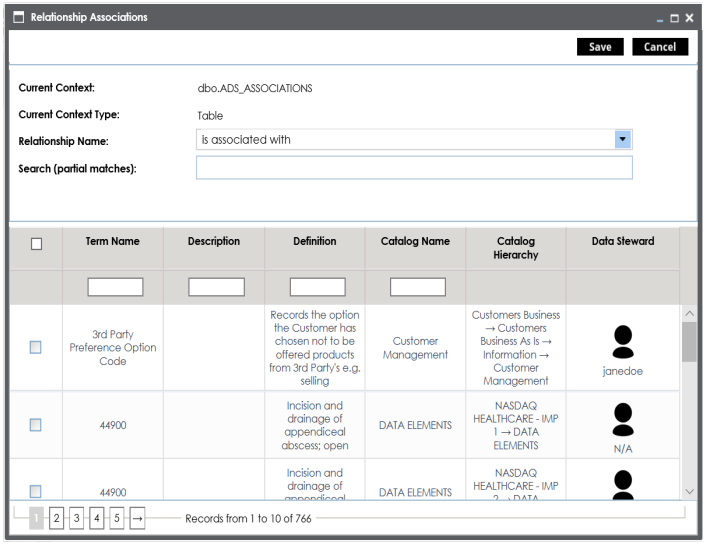
To associate table with asset types, follow these steps:

1. Under the **System Catalogue** pane, click the required table and click the **Associations** tab.
2. Select the asset type from the drop down.



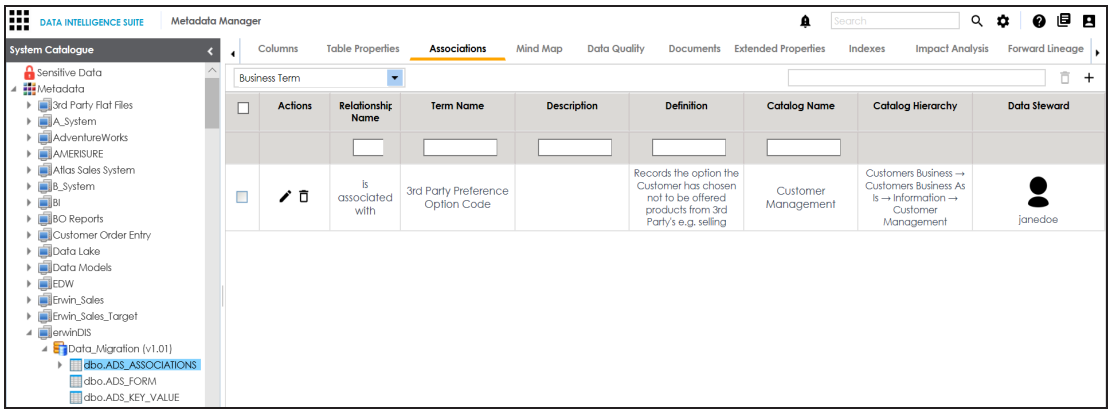
3. Click +.

   The Relationship Associations page appears.



4. Select **Relationship Name**, and the asset type.
5. Click **Save**.

   The asset is added to the table.



6. Use the following options under **Actions**:

   Edit Association ( )

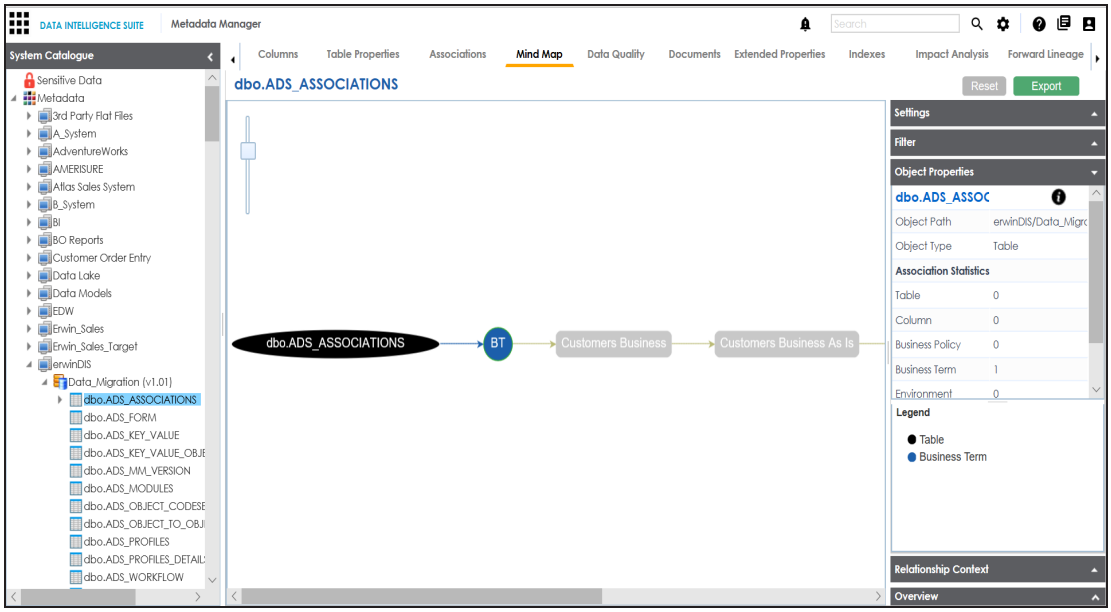
   Use this option to edit the association.

   Delete Association ( )

   Use this option to delete the association.

To view mind map, follow these steps:

1. Click the **Mind Map** tab.



2. Use the following options to work on the mind map:

Expand (+) / Collapse (-)

To drill the mind map further, hover over the nodes, use (-) to collapse and use (+) to expand.

Export

Use this option to download the mind map to .xlsx format or .jpg format.

Settings

Layout: Select the layout as normal or orthogonal.
Custom Relations: Select the check box to display custom relations.
Show Relationships: Select the check box to display relationships.

Filter

Use this option to filter components of the mind map based on asset types or relationships.

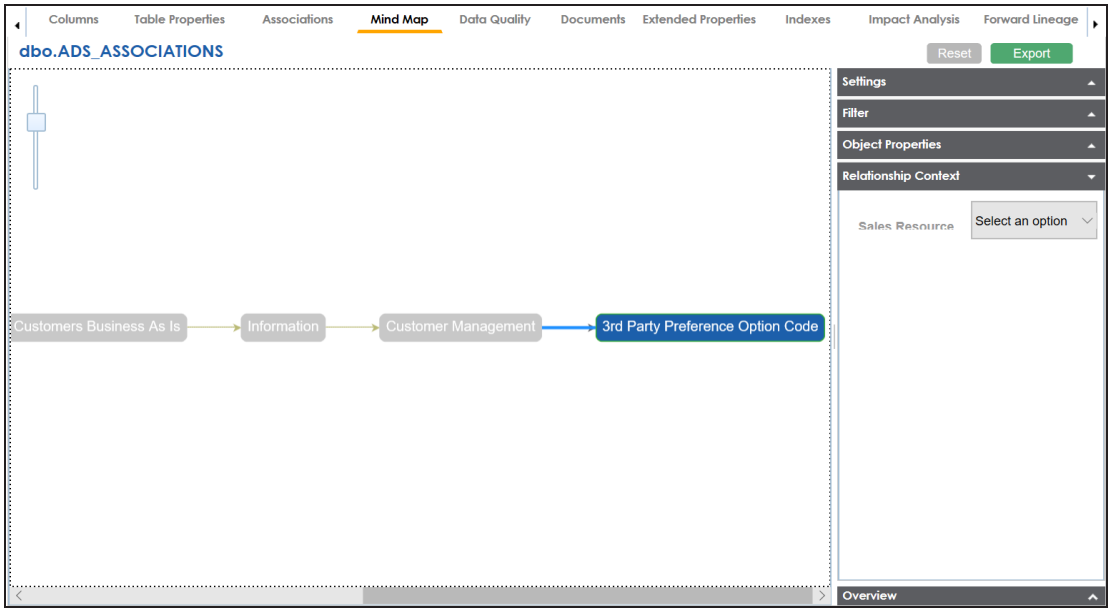
Object Properties

It displays the association statistics of the system.

Relationship Context

Use this option to view the relationship context as defined under the **Extended Properties** in Business Glossary Manager Settings for the relationship between the table and the asset type.

To view the relationship context, click the connection between the asset type and the table.



Overview

Use this option to view the overview diagram of the mind map.

Associating Columns

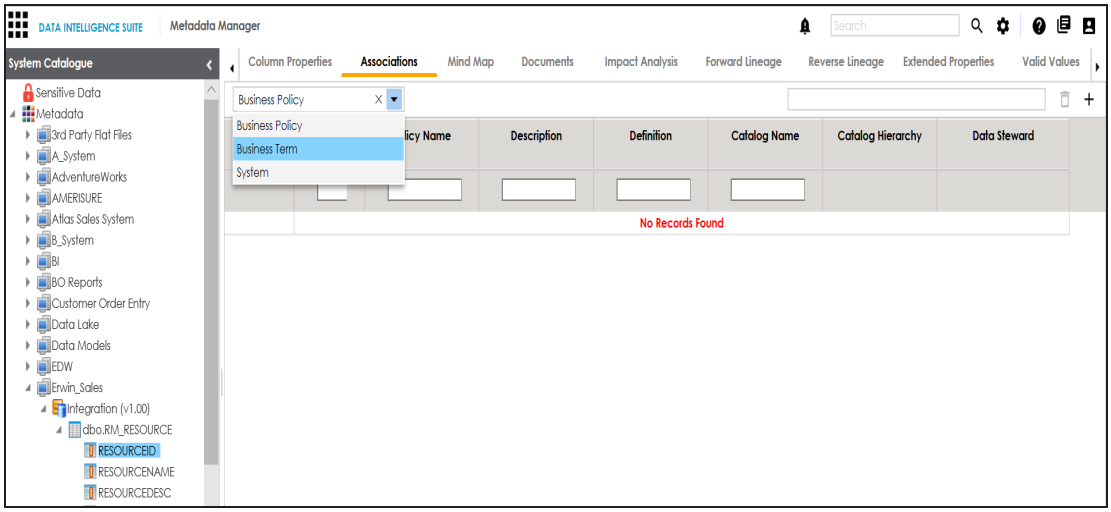
You can associate columns with business assets, systems, environments, tables, and columns. You can also view mind map and association statistics.

You need to ensure that:

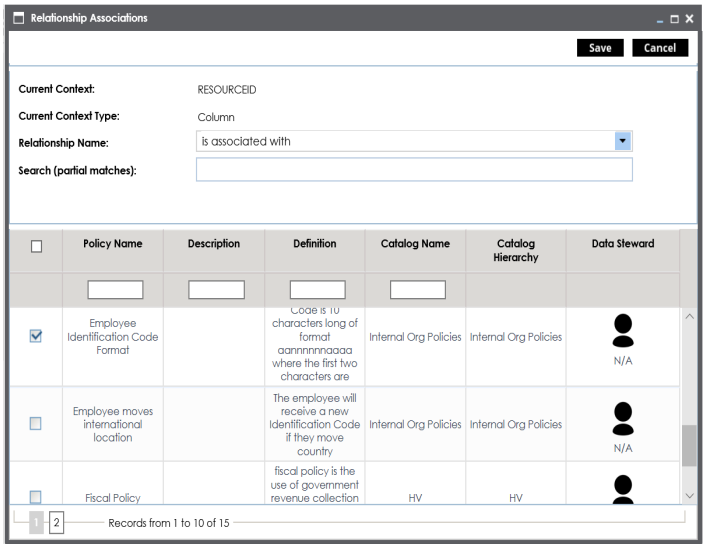
- Business assets are enabled. You can add new business assets and enable them in the Business Glossary Manager Settings.
- Relationship between column and the asset type is defined. You can define associations and relationships in the Business Glossary Manager Settings.

To associate column with asset types, follow these steps:

1. Under the **System Catalogue** pane, click the desired column and click the **Associations** tab.
2. Select the asset type from the drop down.

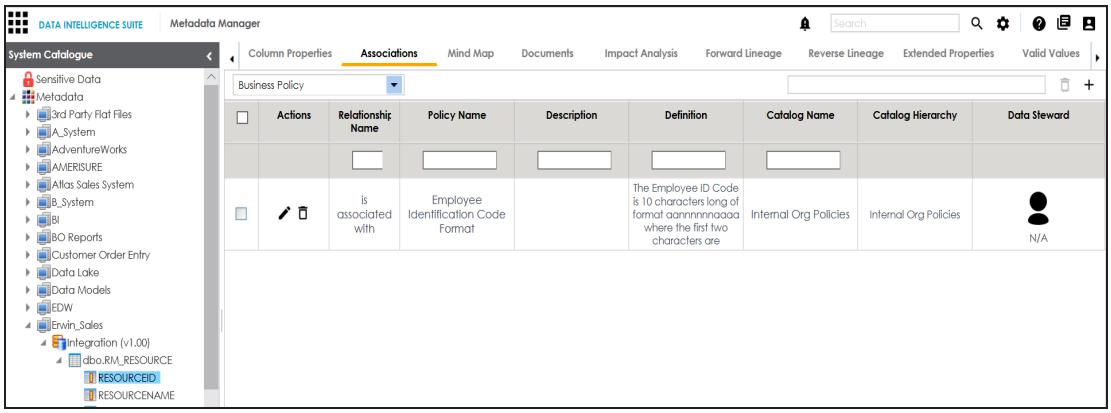


3. Click +.



4. Select **Relationship Name**, and asset type.
5. Click **Save**.

   The asset is added to the column.



6. Use the following options under **Actions**:

   Edit Association ( )

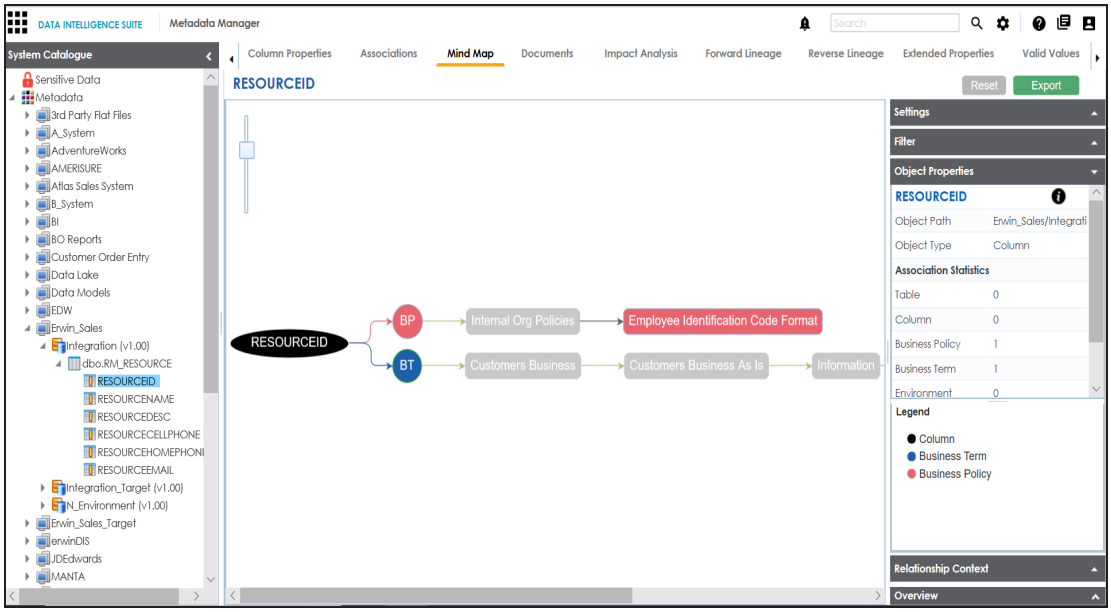
   Use this option to edit the association.

   Delete Association ( )

   Use this option to delete the association.

To view mind map, follow these steps:

1. Click the **Mind Map** tab.



2. Use the following options to work on the mind map:

Expand (+) / Collapse (-)

To drill the mind map further, hover over the nodes, use (-) to collapse and use (+) to expand.

Export

Use this option to download the mind map to .xlsx format or .jpg format.

Settings

Layout: Select the layout as normal or orthogonal.
Custom Relations: Select the check box to display custom relations.
Show Relationships: Select the check box to display relationships.

Filter

Use this option to filter components of the mind map based on asset types or relationships.

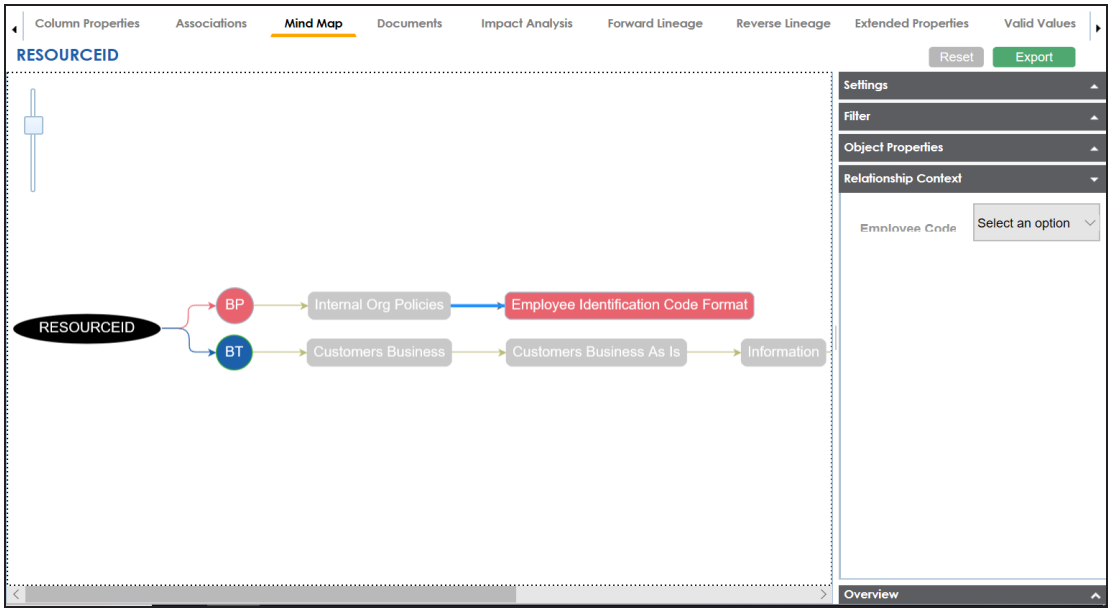
Object Properties

It displays the association statistics of the column.

Relationship Context

Use this option to view the relationship context as defined under the **Extended Properties** in Business Glossary Manager Settings for the relationship between the column and the asset type.

To view the relationship context, click the connection between the asset type and the column.



Overview

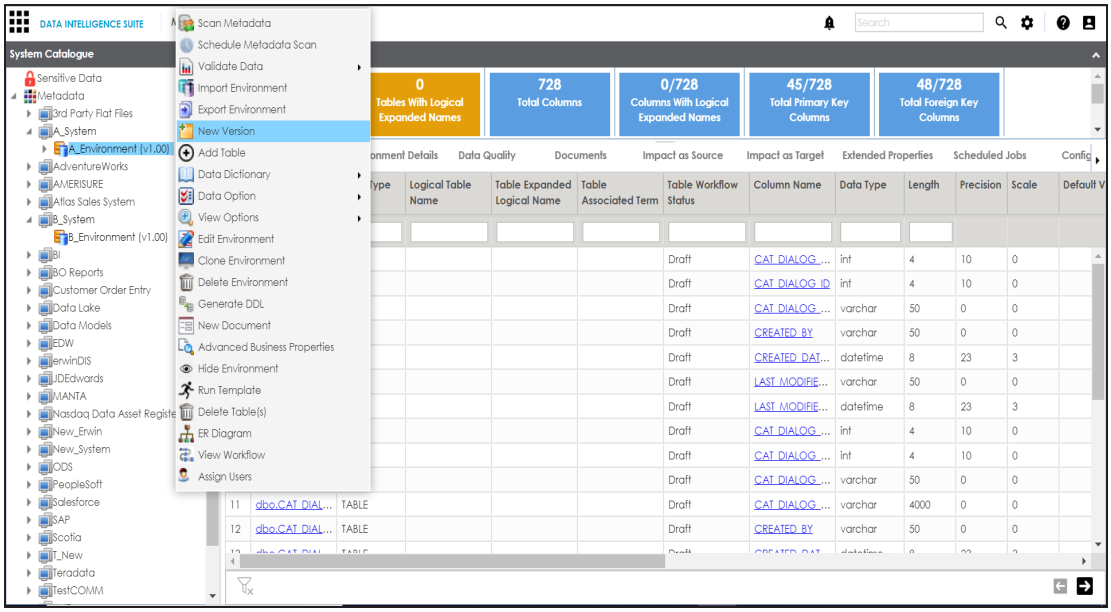
Use this option to view the overview diagram of the mind map.

Versioning Environments

You can create versions of an environment and keep a legacy of old metadata. You can also track changes by comparing the two versions of the environment.

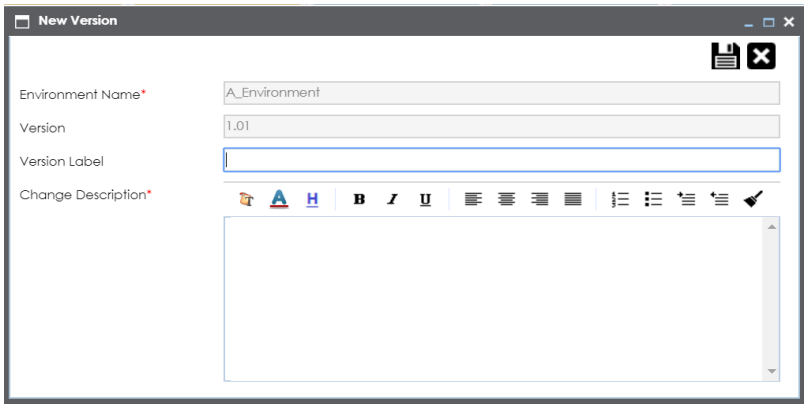
To create new versions of environments, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click the required environment.



3. Click **New Version**.

   The New Version page appears.



4. Enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
Environment Name	Specifies the name of the environment. For example, EDW-Test.
Version	Specifies the new version of the environment. For example, 1.02.
Version Label	Specifies the version label of the environment. For example, Beta. For more information on configuring version display of environments, refer to the Configuring Version Display topic.
Change Description	Specifies the description of the changes made in the environment. For example: A new table, EMP_Details was added in the environment.

5. Click .

   A new version of the environment is created and stored in the environment tree.

   The old version of the environment is archived. You can also compare the two versions of the environment.

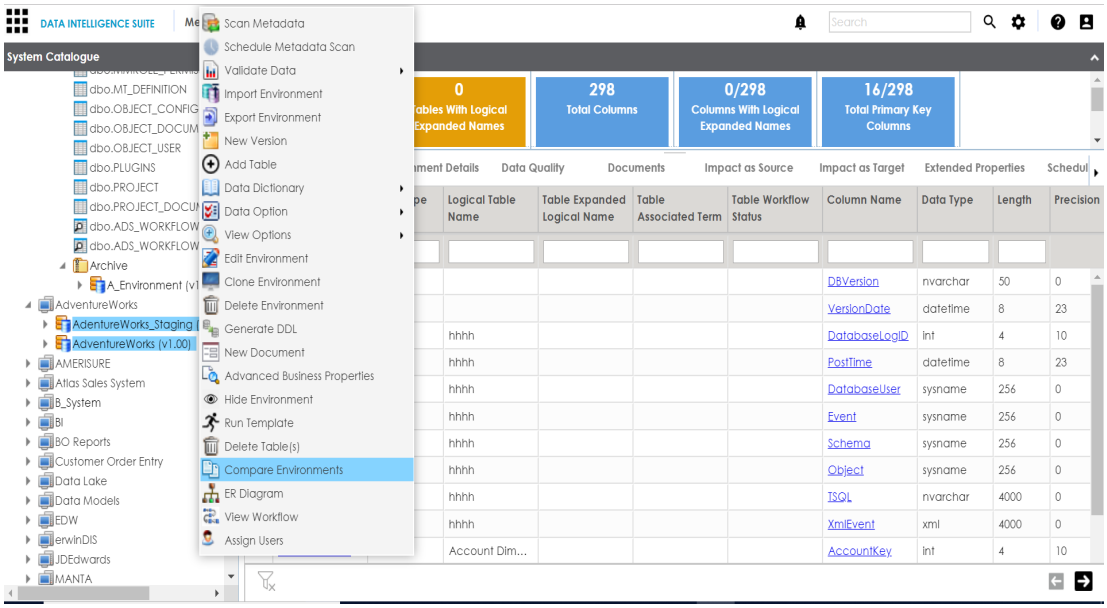
Comparing Environments

You can compare any two environments in the Metadata Manager.

To compare two environments, follow these steps:

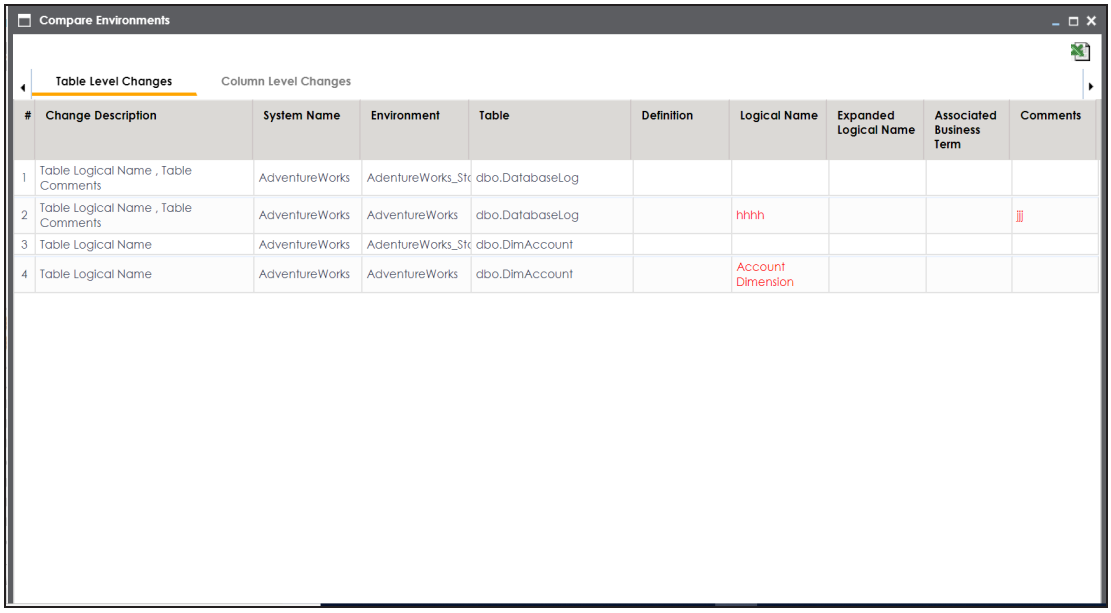
1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, expand the desired system.
3. Select the two environments.

   Note: Use CTRL Key to select two environments.



4. Click **Compare Environments**.

   The Compare Environments page appears displaying table level changes.



5. Click **Column Level Changes**.

   Column level changes are displayed.

6. Click  to download the comparison report.

   The comparison report is downloaded in the .xlsx format.

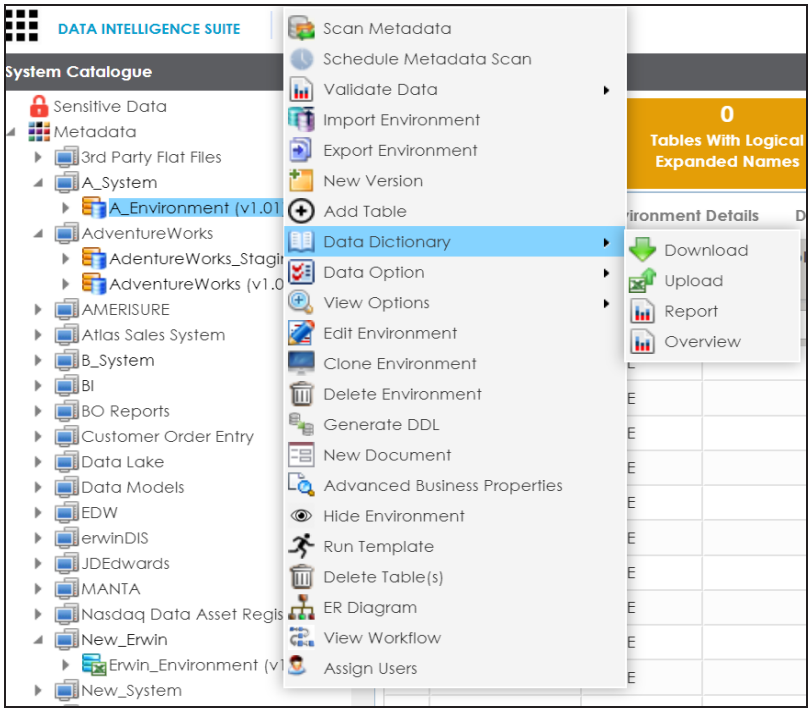
Downloading Data Dictionaries

Once the metadata is scanned and stored in the repository, you can instantly view and export data dictionary at the environment and table level.

Downloading the data dictionary at environment level will include definitions of all the tables and columns available in the selected environment.

To download data dictionaries at environment level, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, expand the desired system node.
3. Right-click the environment whose data dictionary is to be downloaded.
4. Hover over **Data Dictionary**.



5. Click **Download**.

   The Data Dictionary-Download Options page appears.

It gives you two options: Default Template Download and Advanced Template Download.

6. Refer to the following table to select an appropriate template.

Option	Description
Default Template Download	This options allows to download data dictionary with default template. The default template will include technical properties and business properties for tables and columns. The default template cannot be customized.
Advanced Template Download	This option allows you to download data dictionary with advanced template. The advanced template allows you to add or exclude additional information like Indexes Summary and Extended Properties for Tables and Indexes, Valid Values and Extended Properties for columns.

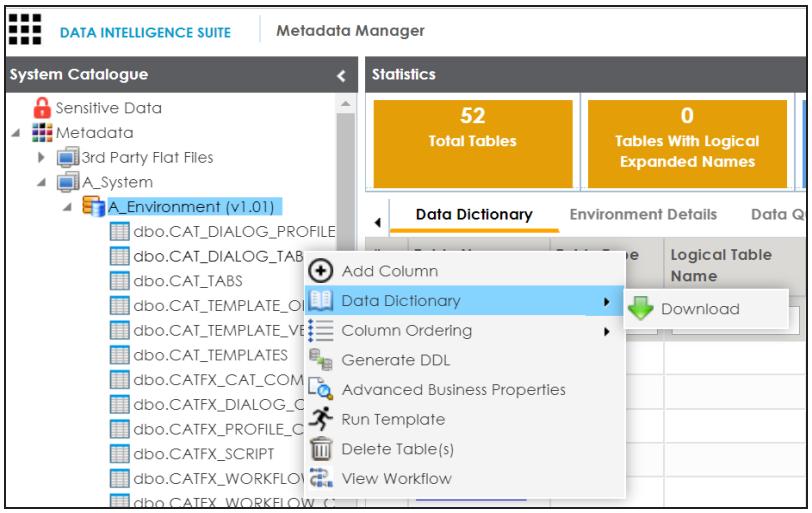
7. Click  .

   Data dictionary is downloaded in .xlsx format.

Downloading the data dictionary at table level will include the definitions of the selected table and its columns.

To download data dictionaries at table level, follow these steps:

1. Under the **System Catalogue** pane, right-click the desired table.
2. Hover over **Data Dictionary**.



3. Click **Download**.

The data dictionary of the selected table is downloaded in .xlsx format.

You can also view data dictionary report at system level and update data dictionary at environment level.

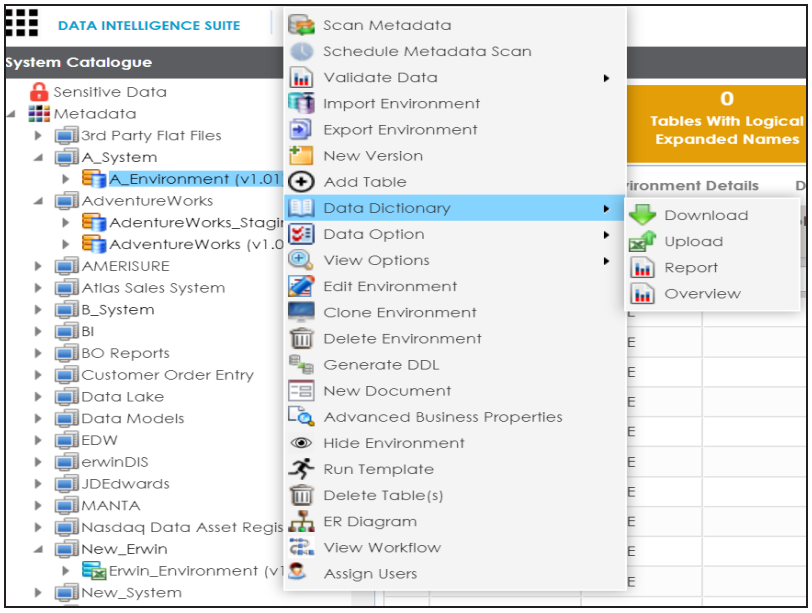
Updating Data Dictionary

Updating data dictionary at environment level involves:

1. Downloading the data dictionary in .xlsx format
2. Updating the data data dictionary in the .xlsx file
3. Uploading the data dictionary

To update data dictionaries at environment level, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click an environment.
3. Hover over **Data Dictionary**.



4. Click **Download**.

   The Data Dictionary-Download Options page appears.

   It gives you two options: Default Template Download and Advanced Template Download.

5. Refer the following table to select the appropriate template.

Option	Description
Default Template Download	This options allows to download data dictionary with default template. The default template will include technical properties and business properties for tables and columns. The default template cannot be customized.
Advanced Template Download	This option allows you to download data dictionary with advanced template. The advanced template allows you to add or exclude additional information like Indexes Summary and Extended Properties for Tables and Indexes, Valid Values and Extended Properties for columns.

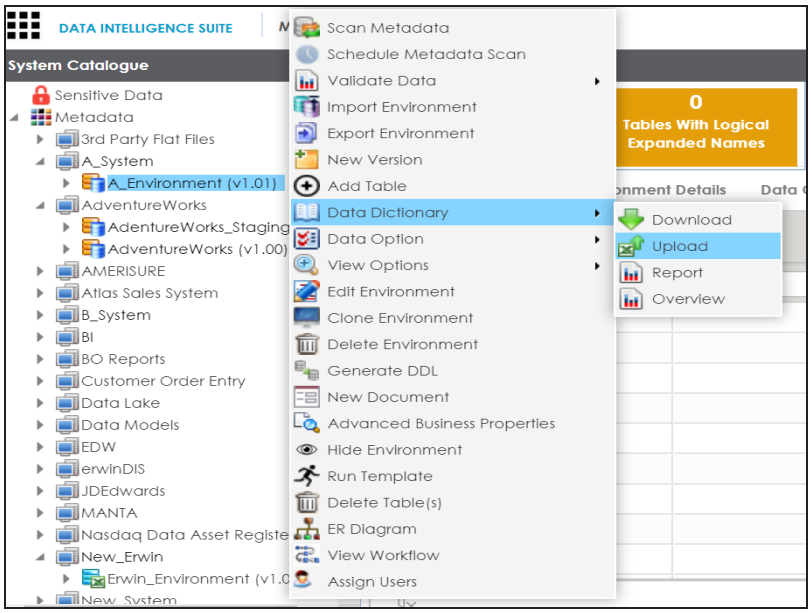
6. Click  .

   Data dictionary is downloaded in .xlsx format.

7. Update the data dictionary manually in the same sheet.

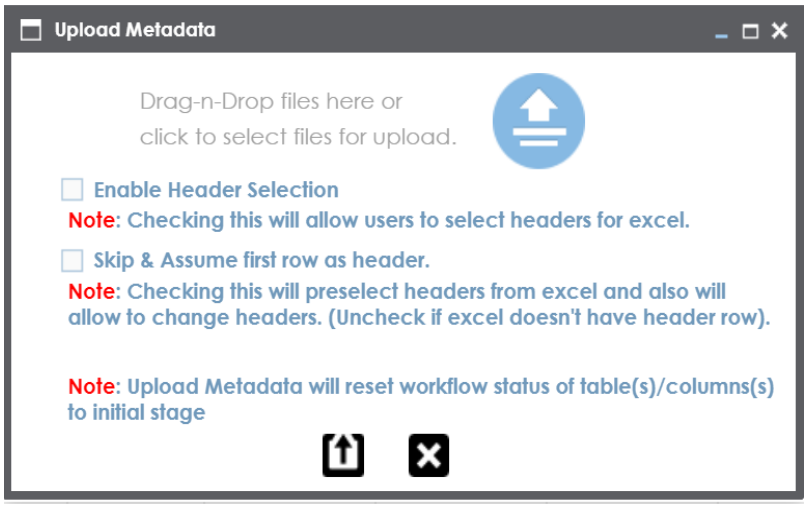
8. Right-click the environment where data dictionary is to be uploaded.

9. Hover over **Data Dictionary**.



10. Click **Upload**.

    The Upload Metadata page appears.



11. Drag and drop the updated data dictionary sheet or use to upload the sheet.
12. Click .

    The data dictionary is updated at the environment level.

Viewing Data Dictionary Report

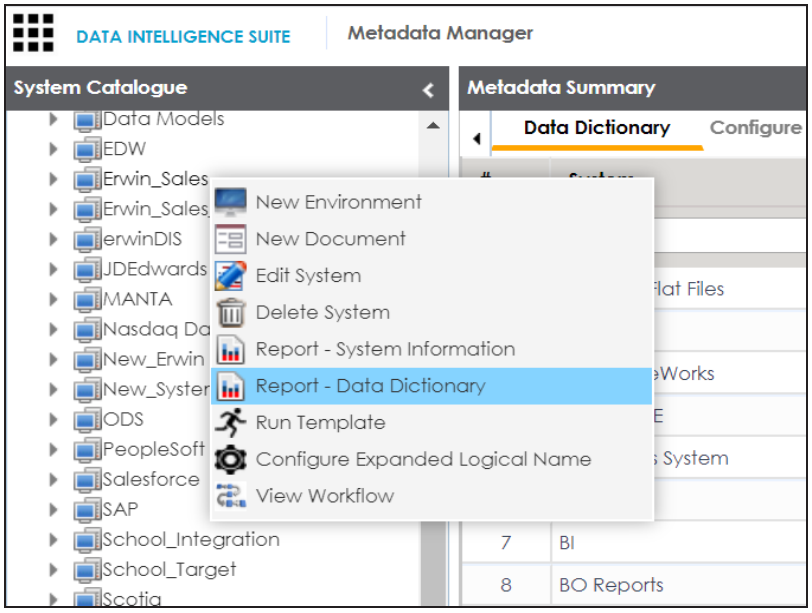
You can view a data dictionary report at system level. All environments under a system are included in the report and the report can be exported in :

- HTML
- PDF
- MS Excel
- MS Word
- RTF

Note: It is meaningful to view data dictionary report after scanning metadata into an environment.

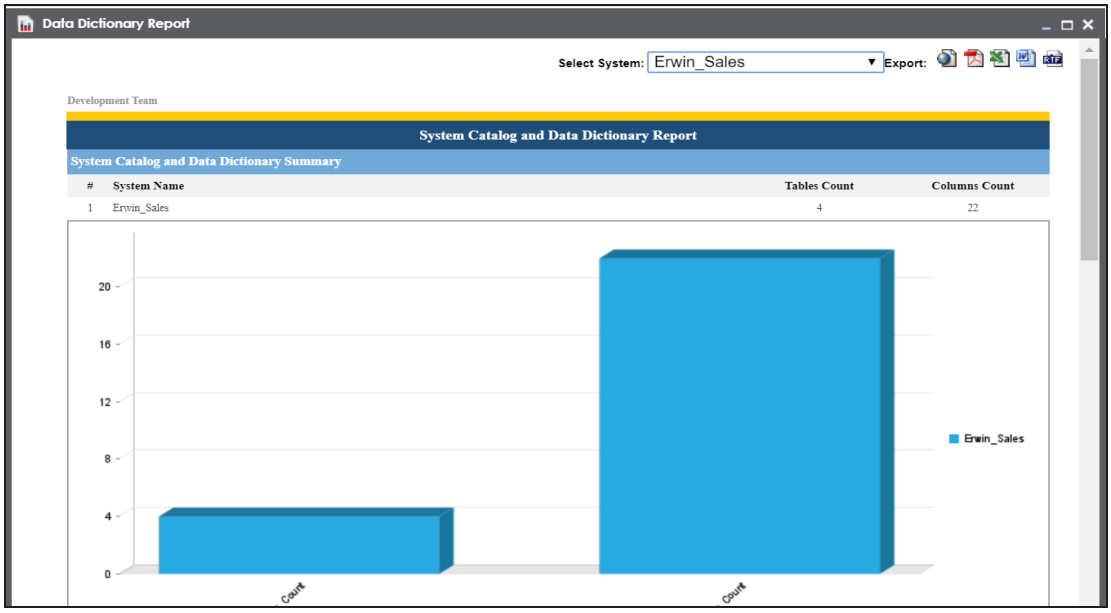
To view data dictionary at system level, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, right-click a system.



3. Click **Report - Data Dictionary**.

The System Catalog and Data Dictionary Report appears.



4. Use the following options:

HTML ( )

To export the report in HTML, click .

PDF ( )

To export the report in PDF, click .

MS Excel ( )

To export the report in .xlsx, click .

MS Word ( )

To export the report in MS Word, click .

RTF ( )

To export the report in RTF, click .

Performing Impact and Lineage Analysis

Impact and lineage analysis can be done after you perform source to target mappings in the Mapping Manager. Impact analysis reports can be generated at environment, table or column level. You can run lineage analysis (forward and reverse) on a particular table or column to determine its upstream and downstream dependencies.

Impact analysis involves performing:

- Impact analysis at column level
- Impact analysis at table level
- Impact analysis at environment level

Lineage analysis involves performing:

- Lineage analysis at table level
- Lineage analysis at column level

Impact Analysis at Column Level

You can run impact analysis on a column and export the analysis in .xlsx and .pdf format.

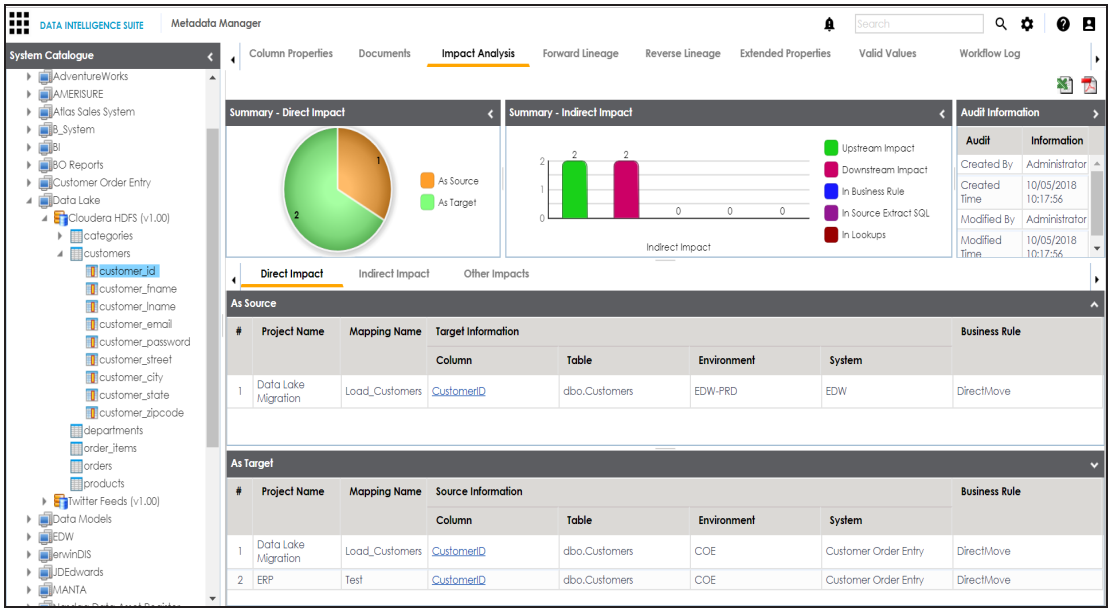
You can also view its:

- Direct impact
- Indirect impact
- Other impact

To perform impact analysis on columns, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click a column.
3. Click the **Impact Analysis** tab.

   The Impact Analysis page appears showing the Direct Impact.



4. Use the following options:

   Indirect Impact

   To view indirect impact, click **Indirect Impact**.

Other Impacts

To view other impacts, click **Other Impacts**.

Export

To download the impact analysis, click  or  .

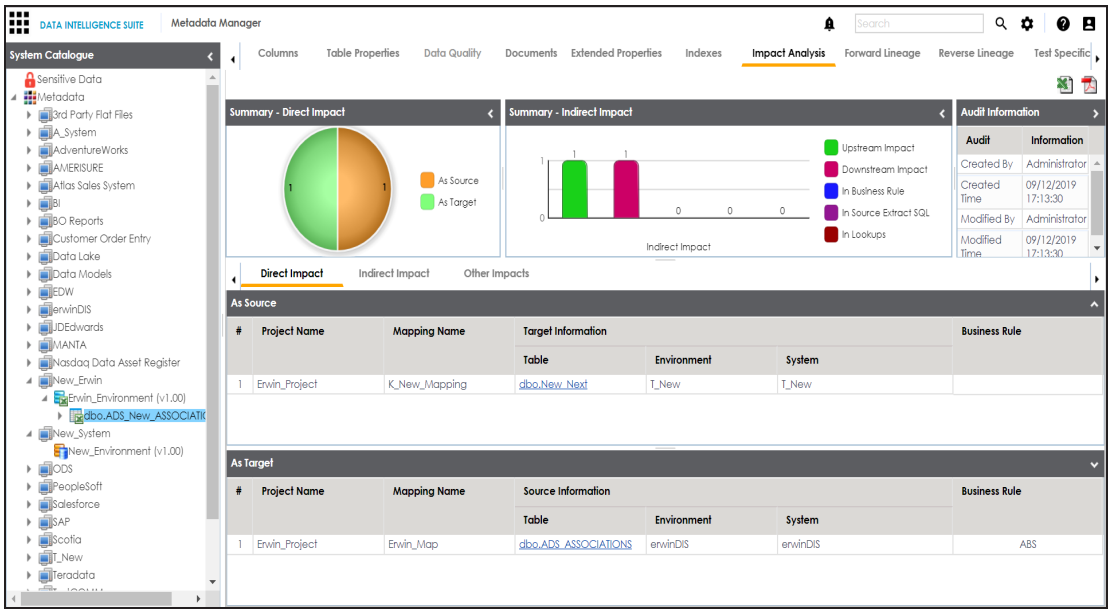
Impact Analysis at Table Level

Once you are done with mappings in Mapping Manager, you can perform impact analysis on the metadata (table level). The Metadata Manager enables you to perform end to end impact analysis.

To perform impact analysis in the Metadata Manager, follow these steps:

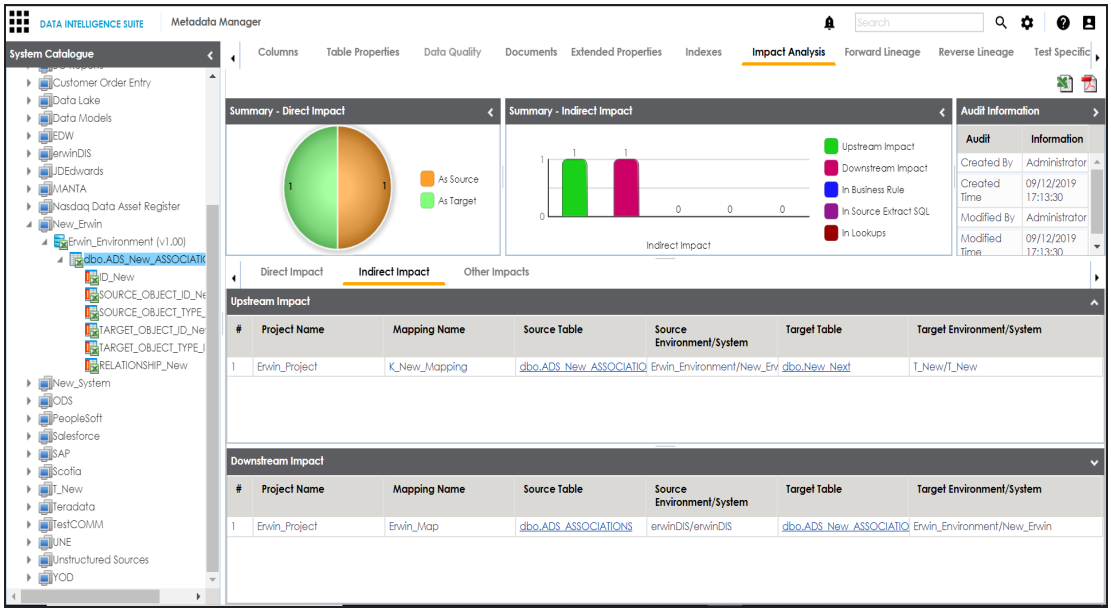
1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click a table.
3. Click **Impact Analysis**.

   Impact analysis report is displayed where Direct Impact as source and as target are shown.



4. Click **Indirect Impact** to view Indirect Impact, .

   The Indirect Impact page appears. You can analyze upstream impact and downstream impact.



You can also perform:

- Impact Analysis at Environment Level.
- Impact Analysis at Column Level.

Performing Impact Analysis at Environment Level

You can perform impact analysis on an environment and analyze its impact as:

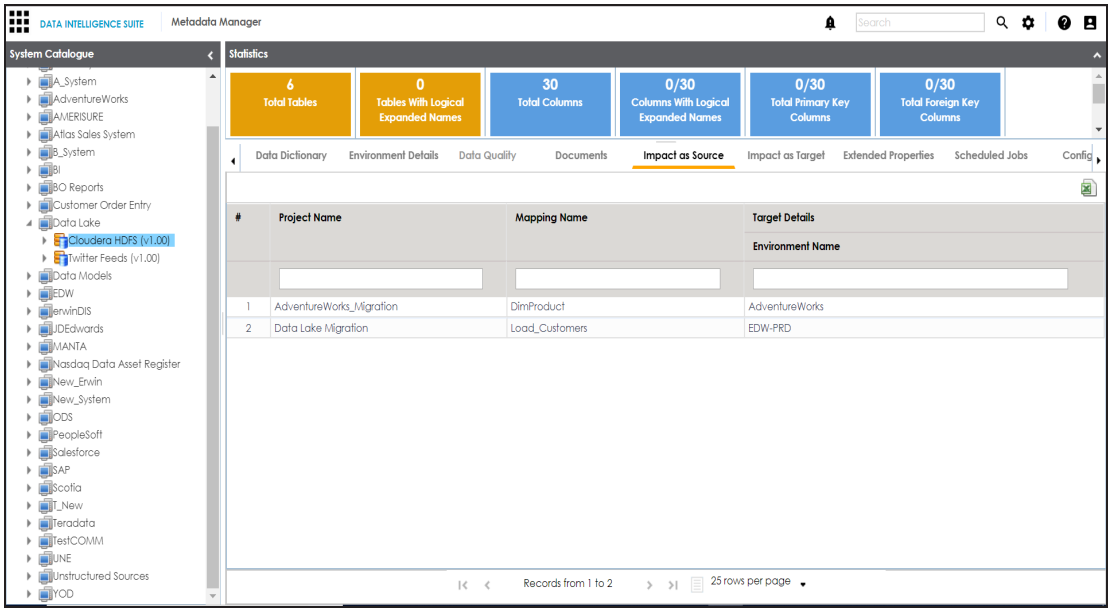
- Source
- Target

You can also export the impact analysis in .xlsx format.

To perform impact analysis at environment level, follow these steps:

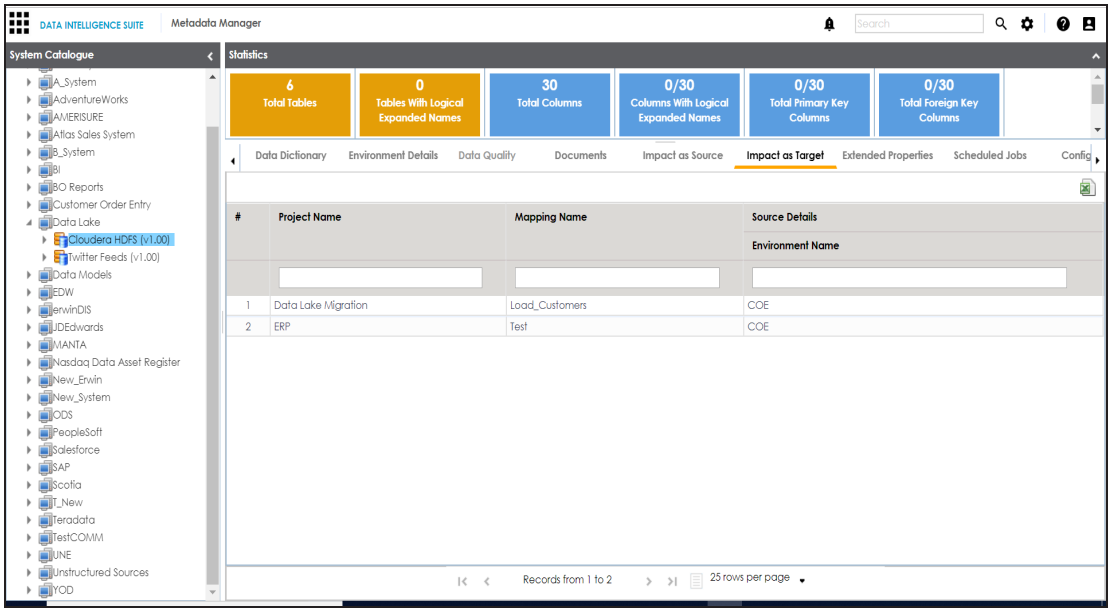
1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click an environment.
3. Click **Impact as Source** to analyze the impact as source,.

   The following page appears, showing all the instances where the selected environment was used as source.



4. Click **Impact as Target** to analyze the impact as target.

   The following page appears showing all the instances where the selected environment was used as target.



5. Click to download the analysis.

   The analysis is downloaded.

You can also perform:

- Impact analysis at table level
- Impact analysis at column level

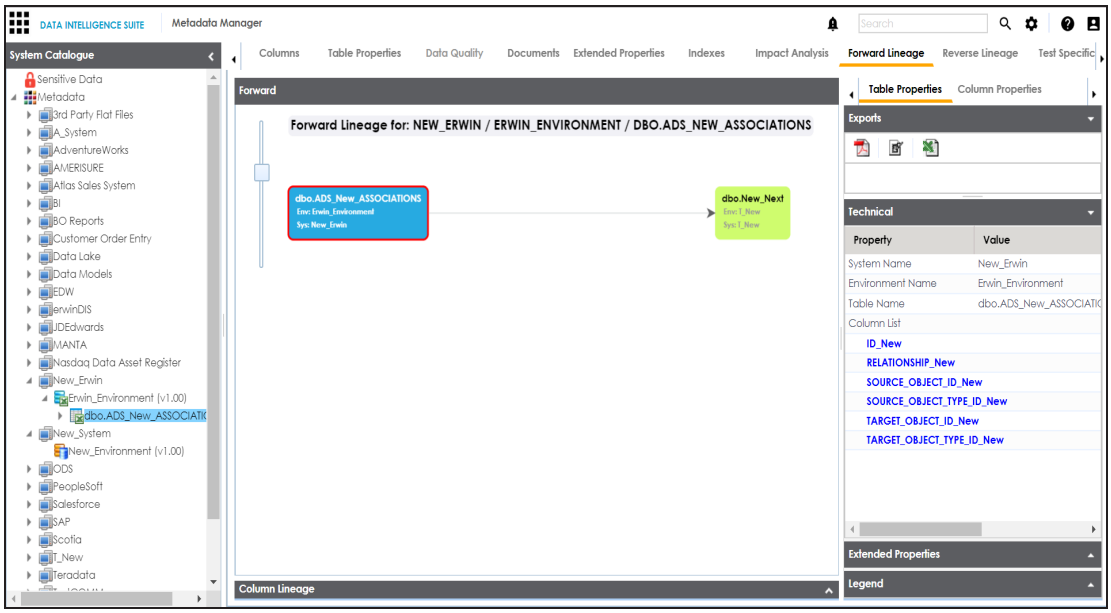
Lineage Analysis at Table Level

Once you are done with source to target mappings in the Mapping Manager, you can perform lineage analysis on a particular table/column. The Metadata Manager allows you to perform end to end forward and backward lineage analysis to determine the upstream and downstream dependencies.

To perform lineage analysis at table level in the Metadata Manager, follow these steps:

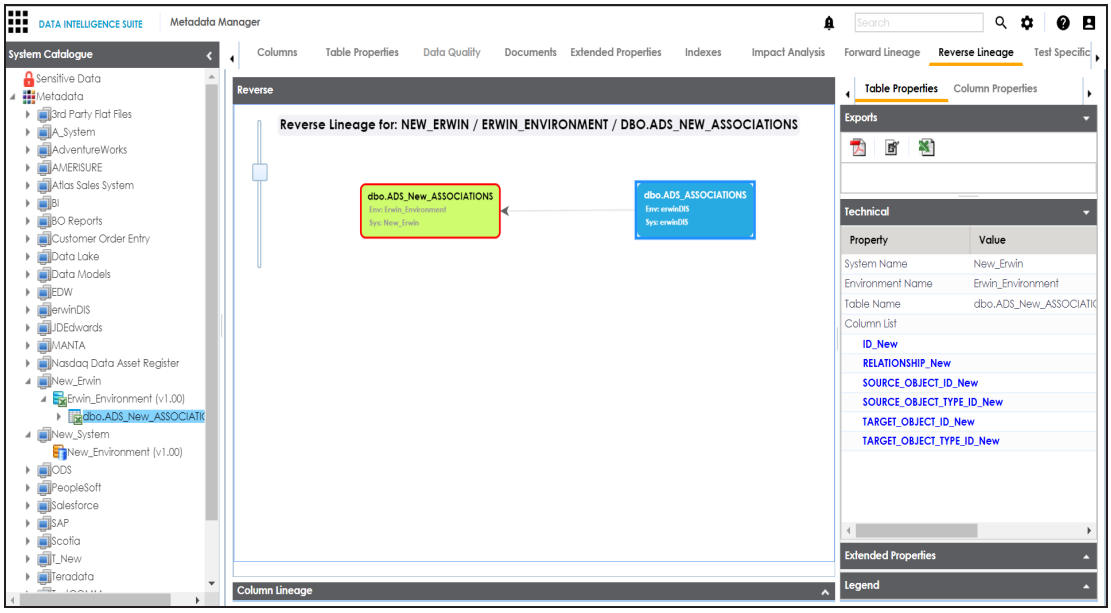
1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click a table.
3. Click **Forward Lineage** to perform forward lineage analysis.

   End to end forward lineage is displayed.



4. Click **Reverse Lineage** to perform reverse lineage analysis.

   End to end reverse lineage is displayed.



You can also perform lineage analysis at column level.

Lineage Analysis at Column Level

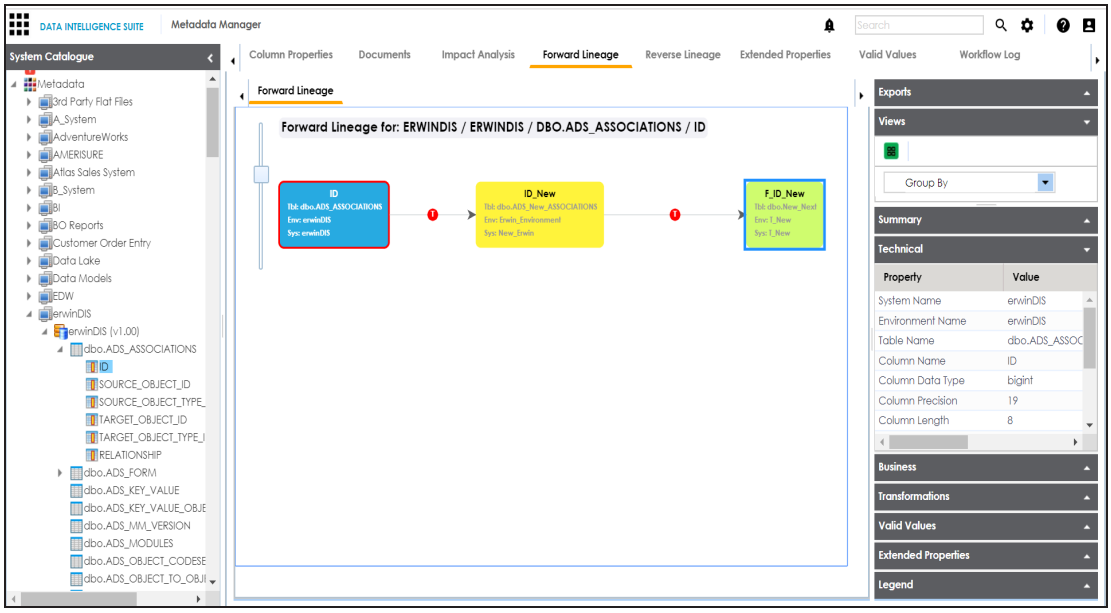
You can perform forward and reverse lineage analysis on a column. You can also export the lineage analysis in the following format:

- .pdf
- .jpg
- .xlsx

To perform lineage analysis at column level, follow these steps:

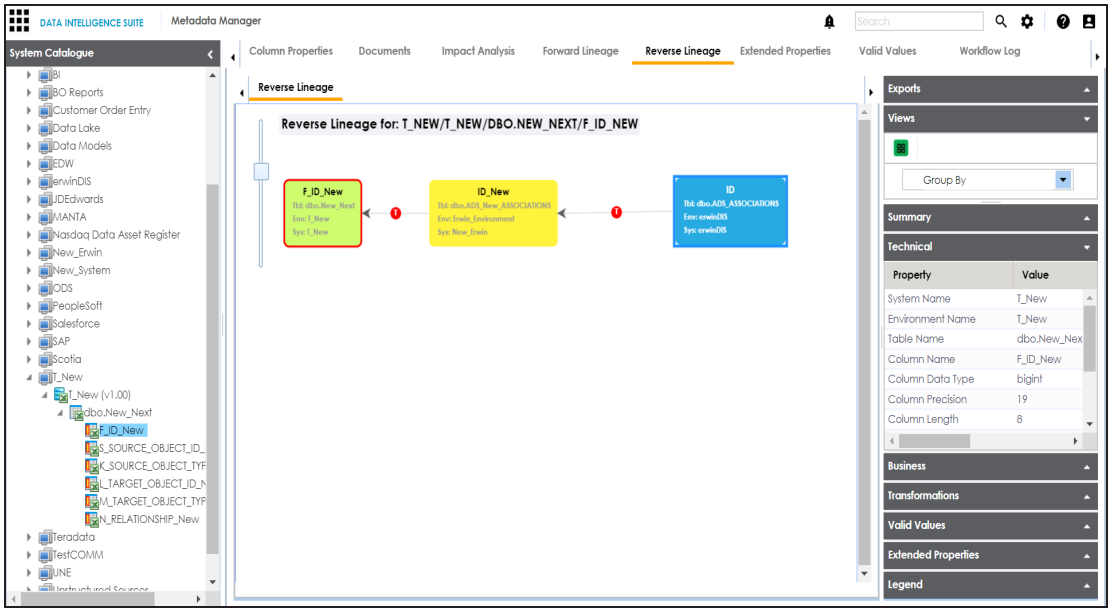
1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click a column.
3. Click **Forward Lineage** to perform forward lineage analysis on the selected column.

   The Forward Lineage page appears.



4. Click **Reverse Lineage** to perform reverse lineage analysis on the selected column.

   The Reverse Lineage page appears.



5. Expand the **Export** node on right pane and click the appropriate format of the report to download the lineage analysis.

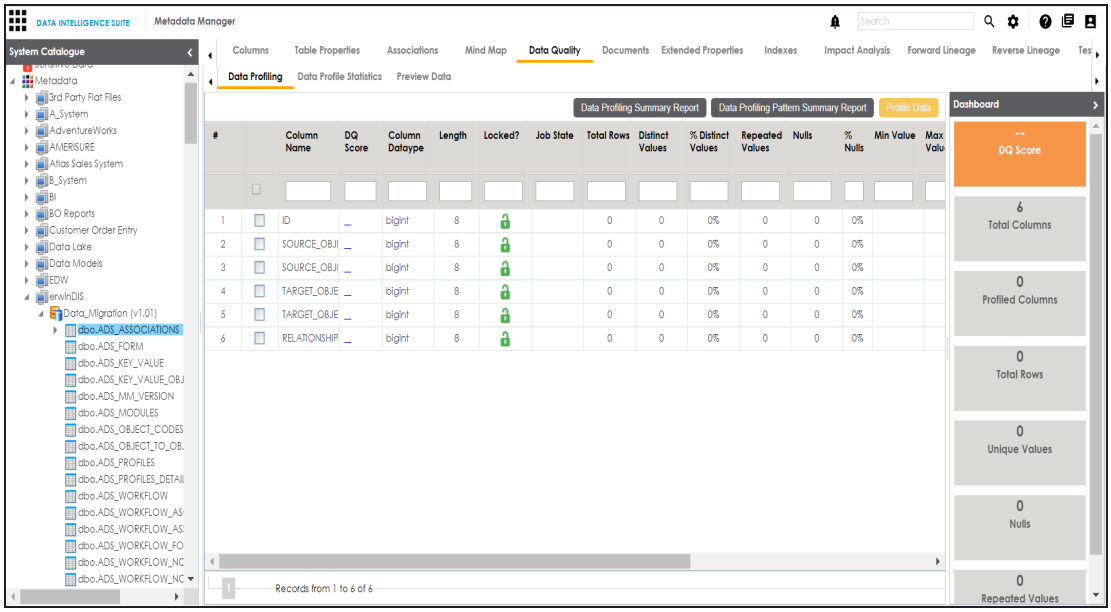
   The lineage report is downloaded.

Previewing Data

You can preview data at table level using SQL queries. Data previewing capability at table level enables you to view data instantly and profile the data. You can also schedule a data profiling job
and view data profiling summary report at the scheduled time.

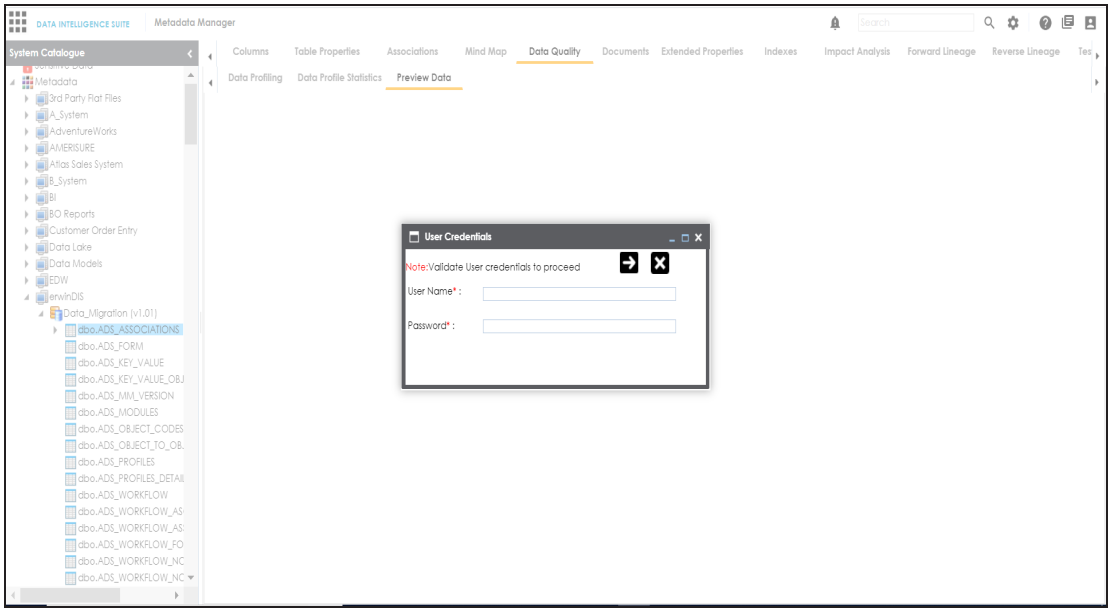
To view table data, follow these steps:

1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click a table.
3. Click the **Data Quality** tab.



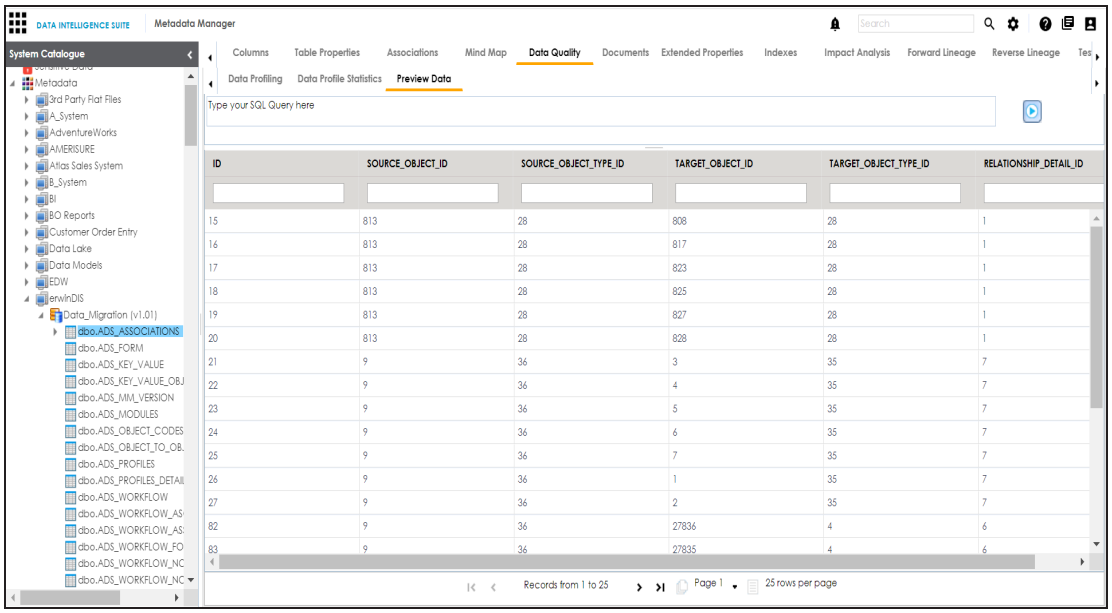
4. Click the **Preview Data** tab.

   The User Credentials page appears. For more information on enforcement of user credentials, refer to the Enforcing Credentials for Data Access or Preview topic.



5. Enter credentials to connect with the database.

   Data at table level can be viewed. You can use SQL Editor to execute a SQL query to preview data.



You can also profile data at table level and provide data quality score.

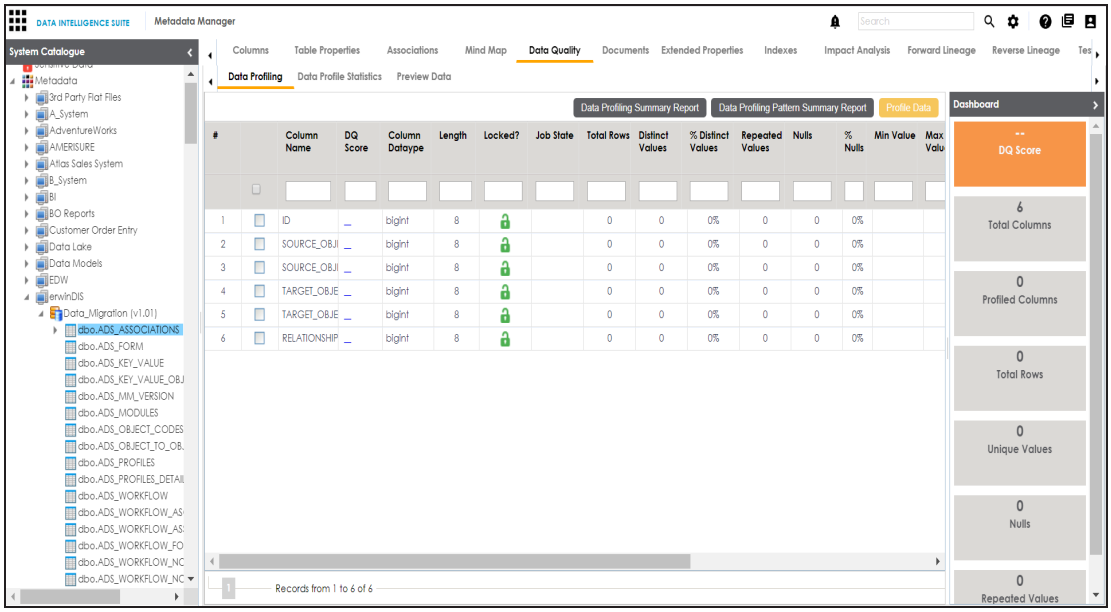
Profiling Data at Table Level

You can assess your data quality by profiling the data at table level. You need to schedule a data profiling job and provide the data quality score by assessing the data quality.

To profile data at table level, follow these steps:

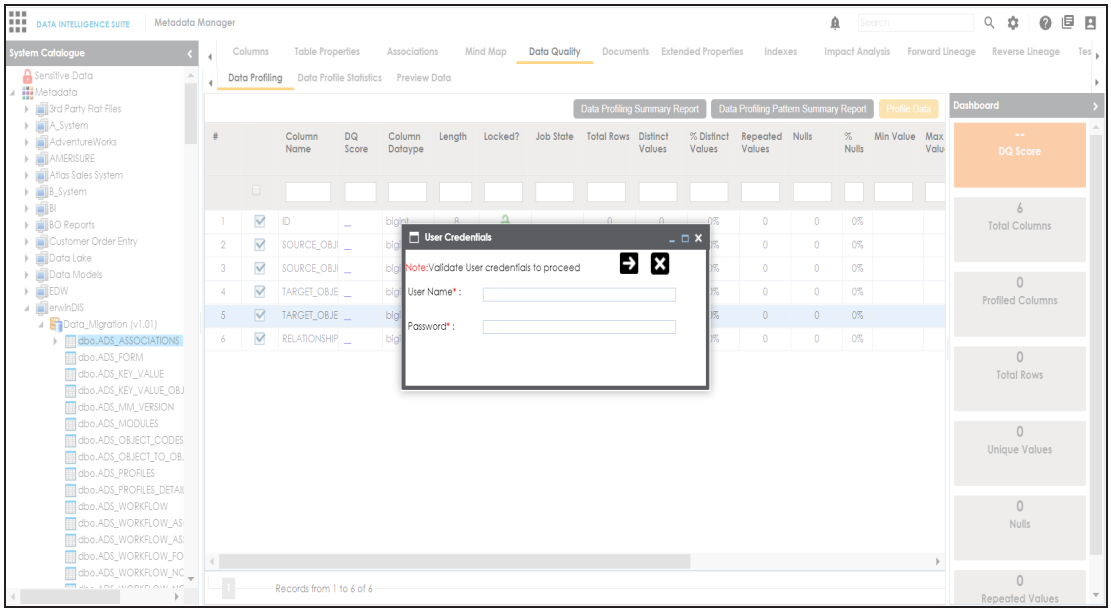
1. Go to **Application Menu** > **Data Catalog** > **Metadata Manager**.
2. Under the **System Catalogue** pane, click a table.
3. Click **Data Quality**.

   The Data Profiling page appears.



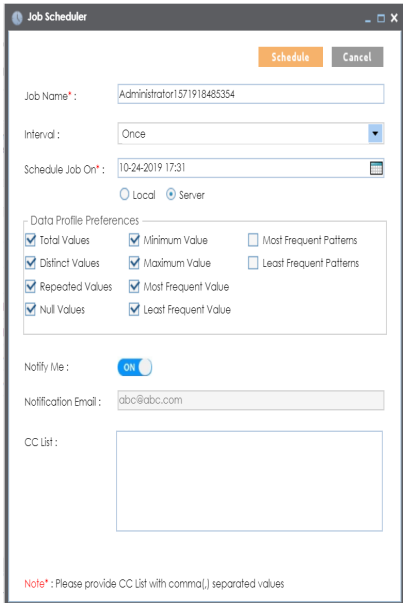
4. Select columns.
5. Click the **Profile Data** button.

   The User Credentials page appears. For more information on enforcement of user credentials, refer to the Enforcing Credentials for Data Access or Preview topic.



6. Enter credentials to connect with the database.

   The Job Scheduler page appears.



7. Enter appropriate values to the fields. Fields marked with red asterisk are mandatory. Refer to the following table for field descriptions.

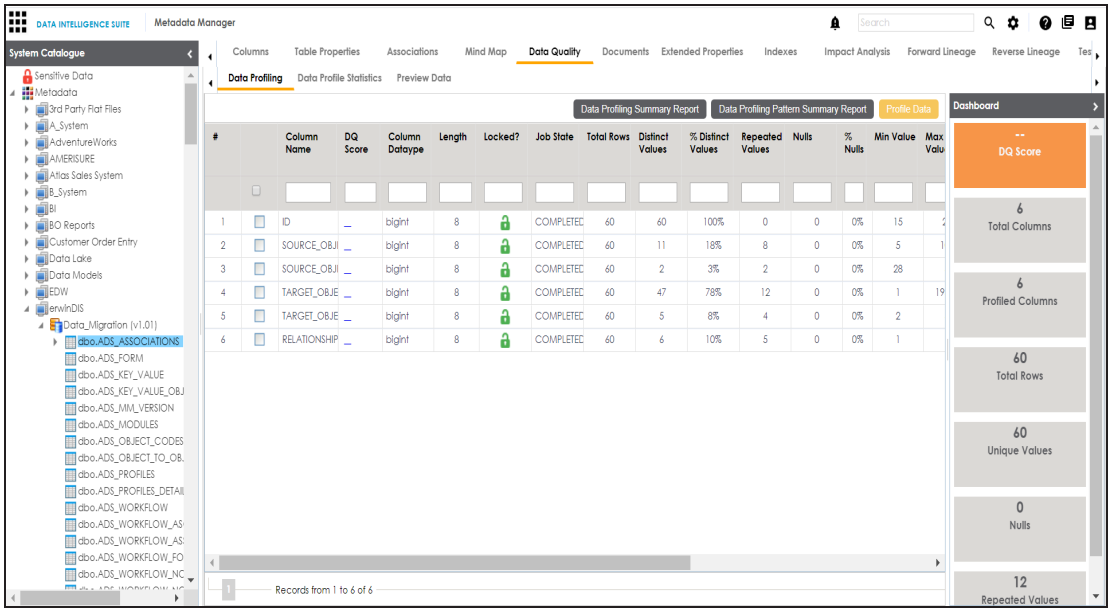
Option	Description
Job Name	Specifies the job name. For example, Administrator1585030550001. This field autopopulates with a job name. You can edit it and enter a different job name.
Interval	Specifies the frequency of the job. Valid values are: ▪ Once ▪ Every Day ▪ Every Week ▪ Every Month
Scheduled Job On	Set the date and time of the job using  . For example, 03-24-2020 11:45.
Local or Server	Select the machine whose clock decides the time of the scheduled scan. ▪ Local: Refers to your local machine. ▪ Server: Refers to the machine where erwinDIS has been deployed.
Data Profile Preferences	Select the corresponding check boxes to give your data profile preferences in the profile grid report. ▪ **Total Values**: Select the check box to display the total number of rows in the selected columns. ▪ **Distinct Values**: Select the check box to display the number of distinct values in the selected columns. ▪ **Repeated Values**: Select the check box to display the number of repeated values in the selected columns. ▪ **Null Values**: Select the check box to display the number of null values in the selected columns. ▪ **Minimum Value**: Select the check box to display the minimum value in the selected columns. You can enable or disable analysis of minimum value for character data. For more information on

Option	Description
	this, refer to the Configuring Data Profiling and DQ Scores topic. ▪ **Maximum Value**: Select the check box to display the maximum value in the selected columns. For more information on this, refer to the Configuring Data Profiling and DQ Scores topic. ▪ **Most Frequent Value**: Select the check box to display the most frequent values in the selected columns. ▪ **Least Frequent Value**: Select the check box to display the least frequent values in the selected columns. ▪ **Most Frequent Patterns**: Select the check box to display the most frequent patterns in the selected columns. For more information on this, refer to the Configuring Data Profiling and DQ Scores topic. ▪ **Least Frequent Patterns**: Select the check box to display the least frequent patterns in the selected columns. For more information on this, refer to the Configuring Data Profiling and DQ Scores topic.
Notify Me	Switch **Notify Me** to ON to receive email notification. For more information on this, refer to the Configuring Notification on Profiling Data topic.
Notification Email	This field is autopopulated with your email ID. If you enable notifications in the Metadata Manager Settings, you can receive email notifications from the administrator's email ID about the scheduled job.
CC list	Enter a comma-separated list of email IDs that should receive email notifications about the scheduled job. For example, ab.dav@xyz.com, cal.kai@xyz.com

8. Click **Schedule**.

   The data profiling job is scheduled.

The data profiling job is completed at the scheduled time and the job state changes to **COMPLETED**.

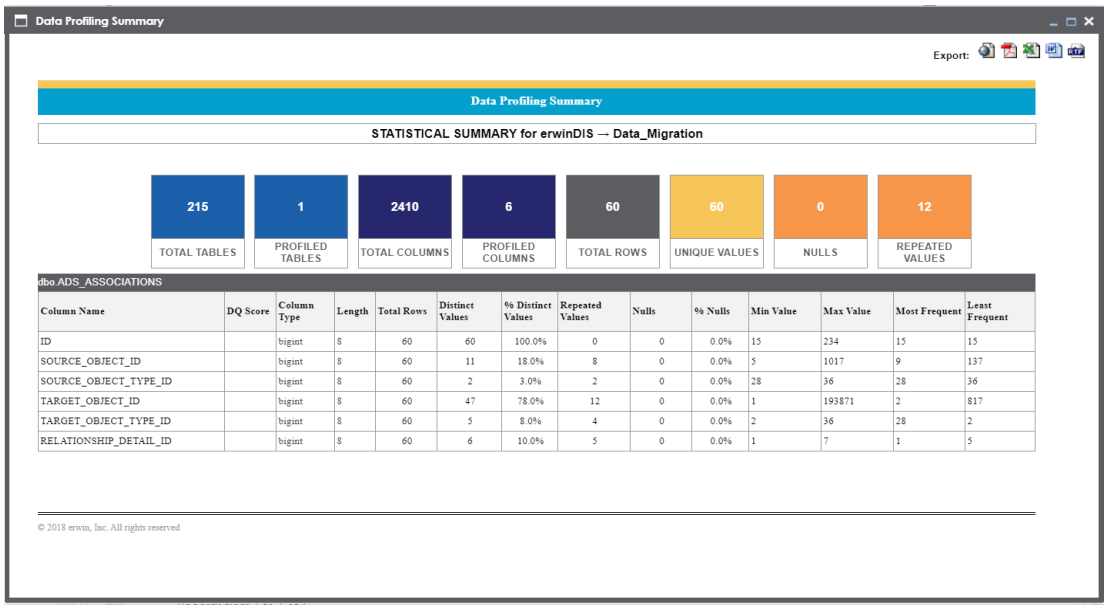


9. Use the following options:

Data Profiling Summary Report

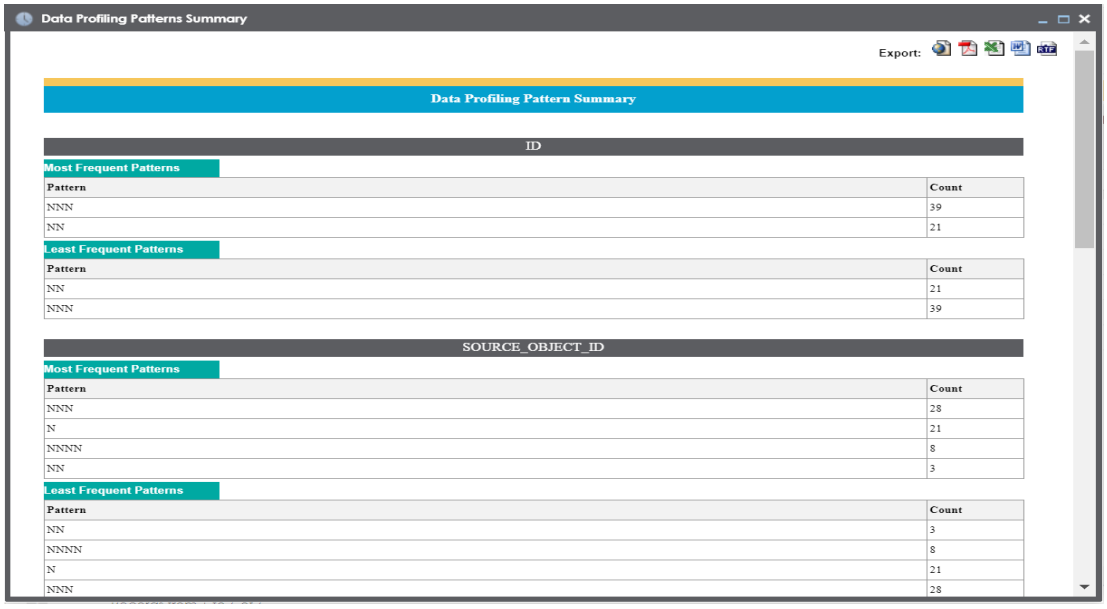
To view data profiling summary, click **Data Profiling Summary Report**.

Data Profiling Summary page appears.



Data Profiling Pattern Summary

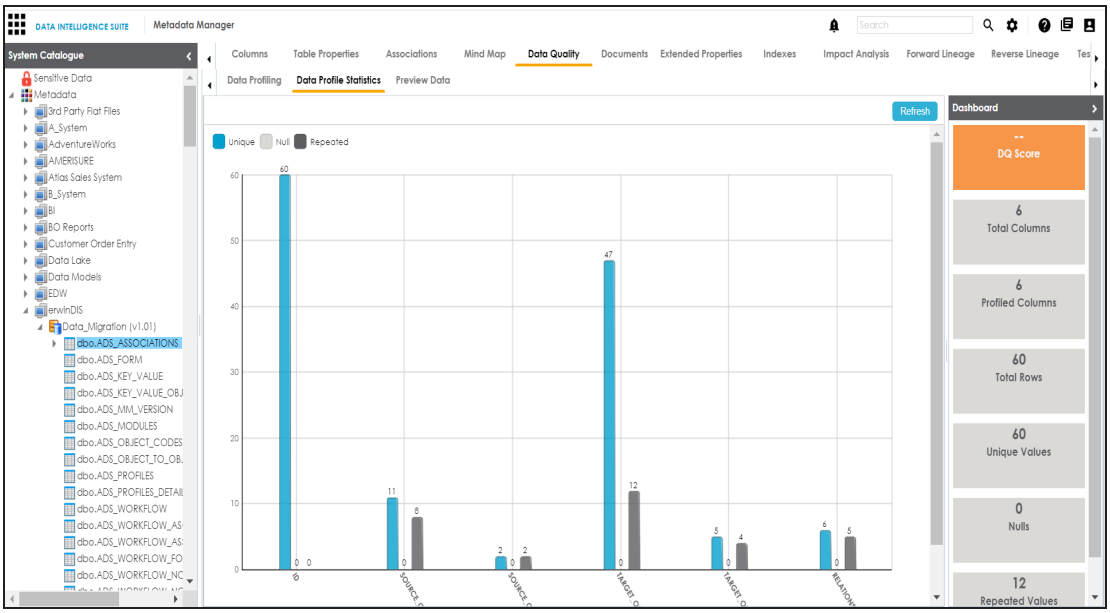
To view data profiling pattern summary report, click **Data Profiling Pattern Summary Report**.The Data Profiling Pattern Summary page appears.



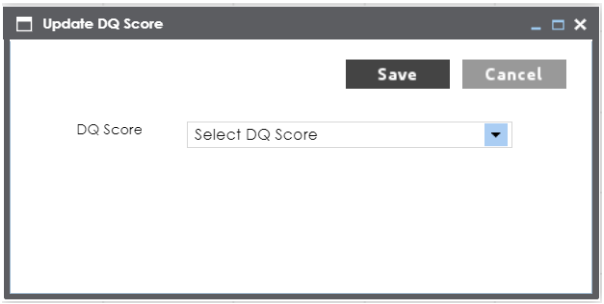
Data Profile Statistics

To view data profile statistics, click **Data Profile Statistics**.

The following page appears with data profile statistics.



Click **DQ Score** to update data quality score. The Update DQ Score page appears.



Select **DQ Score** and click **Save**. The DQ Score is updated.

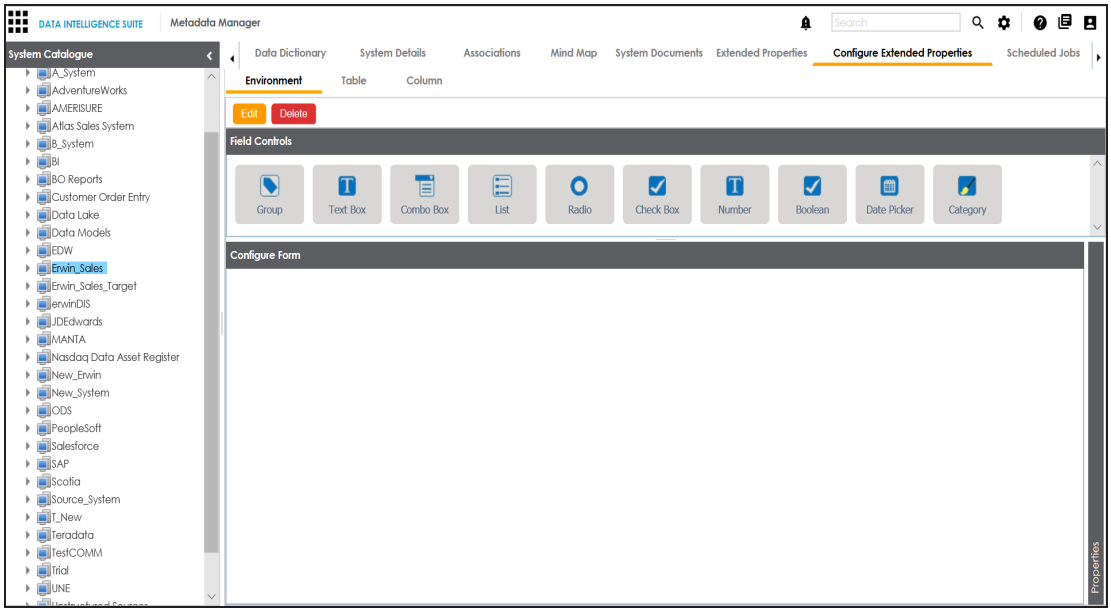
Configuring Extended Properties

You can configure extended properties at System level for three objects:

- **Environments**: Extended properties configured at system level for environments are applicable to all the environments under the system.
- **Tables** : Extended properties configured at system level for tables are applicable to all the tables under the system.
- **Columns**: Extended properties configured at system level for columns are applicable to all the columns under the system.

To configure extended properties at system level, follow these steps:

1. Under the **System Catalogue** pane, click the desired system and click the **Configure Extended Properties** tab.



   The Configure Extended Properties tab contains the following sections:

   - **Field Controls**: This pane displays the available UI elements.
   - **Configure Form**: Use this pane to design forms using the available UI elements in the **Field Controls** pane.

- **Properties**: This pane displays the properties of the selected UI element in the **Configure Form** pane.

2. Use the following tabs:

Environment

Select this tab to configure extended properties for environments under the selected system.

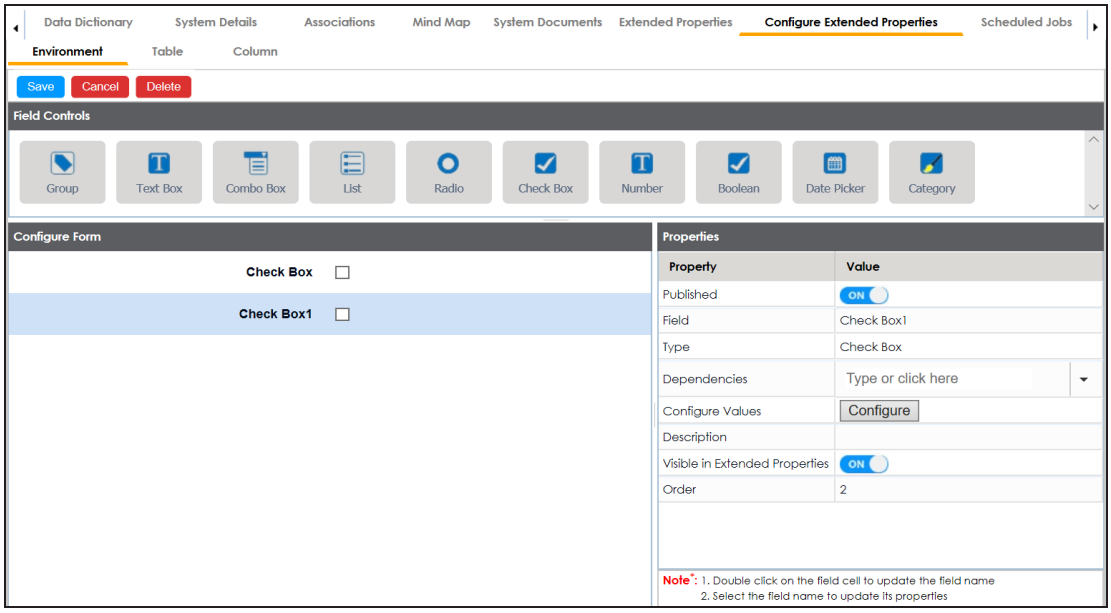
Table

Select this tab to configure extended properties for tables under the selected system.

Column

Select this tab to configure extended properties for columns under the selected system.

3. Click **Edit** and double-click or drag and drop the required UI elements from the **Field Controls** pane to the **Configure Form** pane.
4. Select UI elements, one at a time, and configure their properties in the **Properties** pane.



Note: The available properties differ based on the type of UI element.

Refer to the following table for property descriptions:

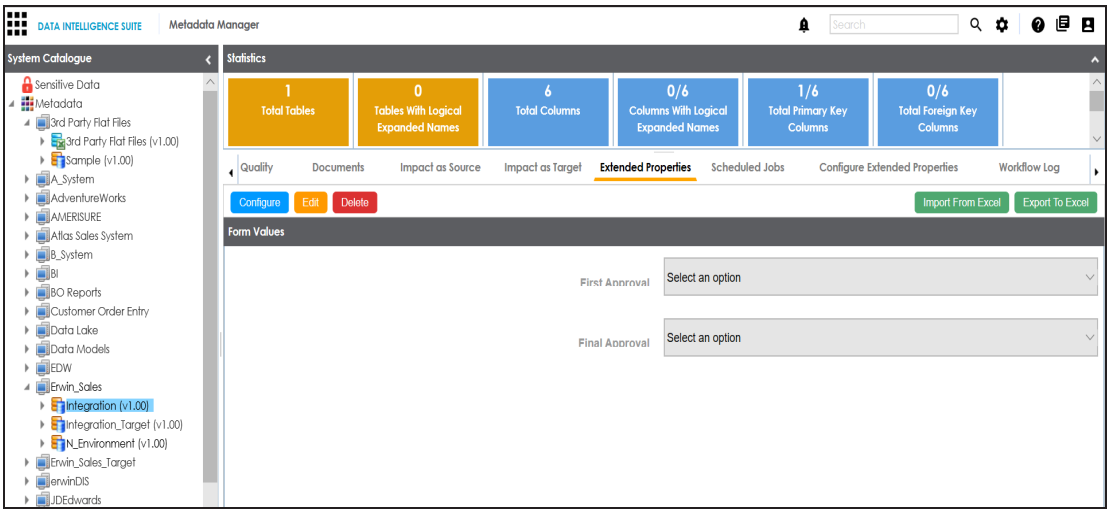
Property	Description
Published	Toggle the switch to **ON** to publish the field.
Field	Double-click the corresponding **Value** cell to change the label of the field.
Type	Double-click the corresponding **Value** cell to select different types of the field.
Configure Values	Click **Configure Values** to enter option values. You can use: ▪ **Default connector**: It enables you to enter options manually. ▪ **Reference Data Manager** : It enables you to pull the data from reference tables in the Reference Data Manager.
Mandatory	Select the check box to make the field mandatory in the form.
Description	Double-click the corresponding Value cell to enter a description of the field.
Visible in Extended Properties	Toggle the switch to ON to make it visible.
Order	Displays the order of the field. You can drag and drop the field in the **Configure Form** pane to change its order.

5. Click **Save**.

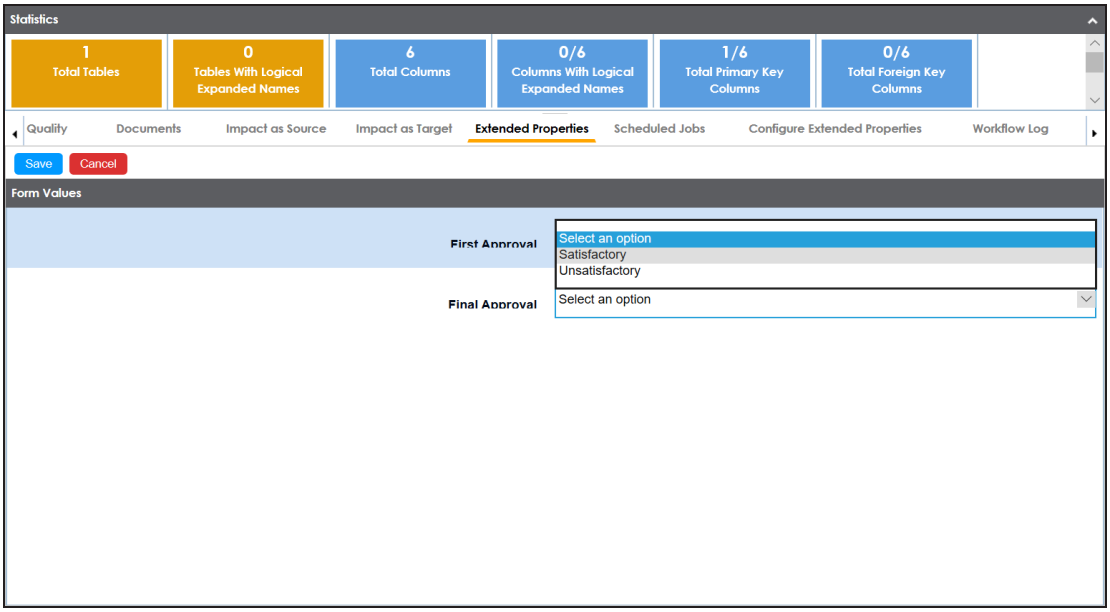
The form is saved and it is available under the Extended Properties tab of the selected object (Environment, Table, or Column).

To use the form, follow these steps:

1. Under the **System Catalogue** pane, click the desired object (Environment, Table, or Column).
2. Click the **Extended Properties** tab.



3. Click **Edit** and use the form.



4. Click **Save**.

You can also configure extended properties specific to:

- Systems
- Environments
- Tables

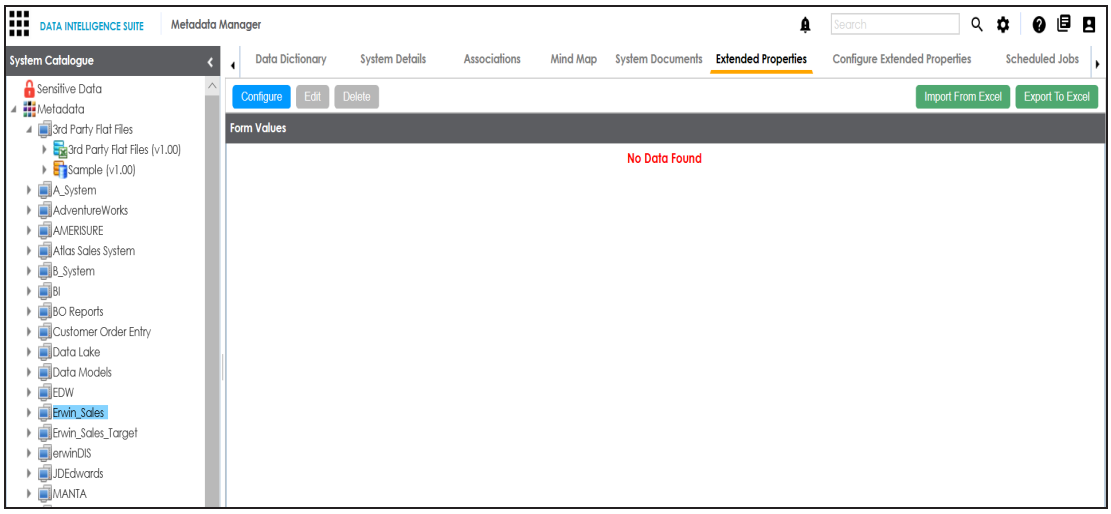
- Columns

Extending System Properties

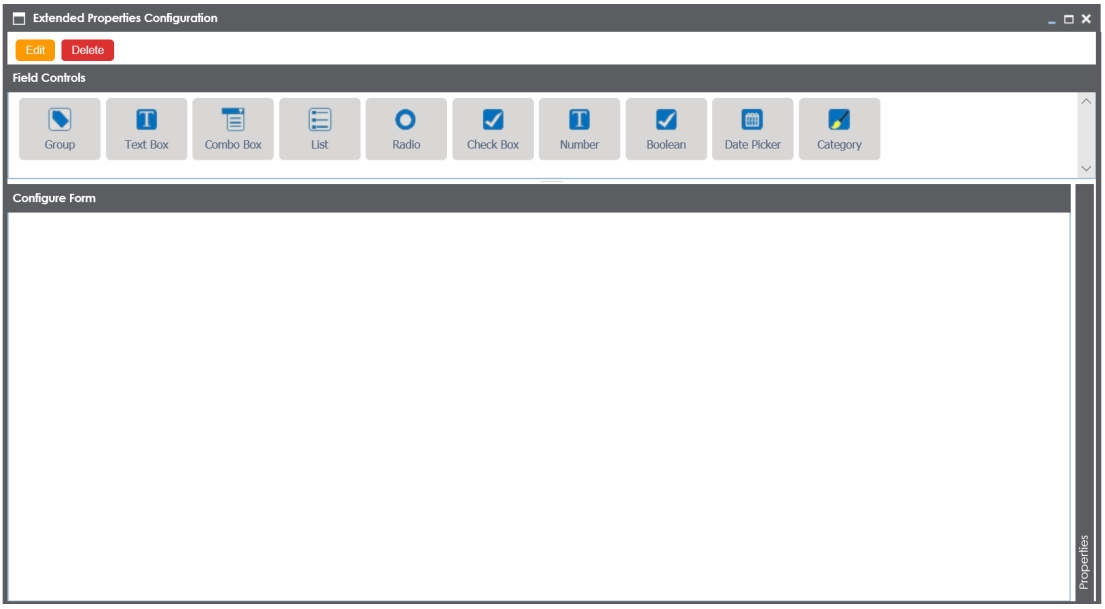
You can configure and use extended properties specific to a system.

To configure system specific extended properties, follow these steps:

1. Under the **System Catalogue** pane, click the desired system.
2. Click the **Extended Properties** tab.



3. Click **Configure**.



The **Extended Properties Configuration** page contains the following sections:

- **Field Controls**: This pane displays the available UI elements.
- **Configure Form**: Use this pane to design forms using the available UI elements in the **Field Controls** pane.
- **Properties**: This pane displays the properties of the selected UI element in the **Configure Form** pane.

4. Click **Edit** and double-click or drag and drop the required UI elements from the **Field Controls** pane to the **Configure Form** pane.
5. Select UI elements, one at a time, and configure their properties in the **Properties** pane.
6. Click **Save**.

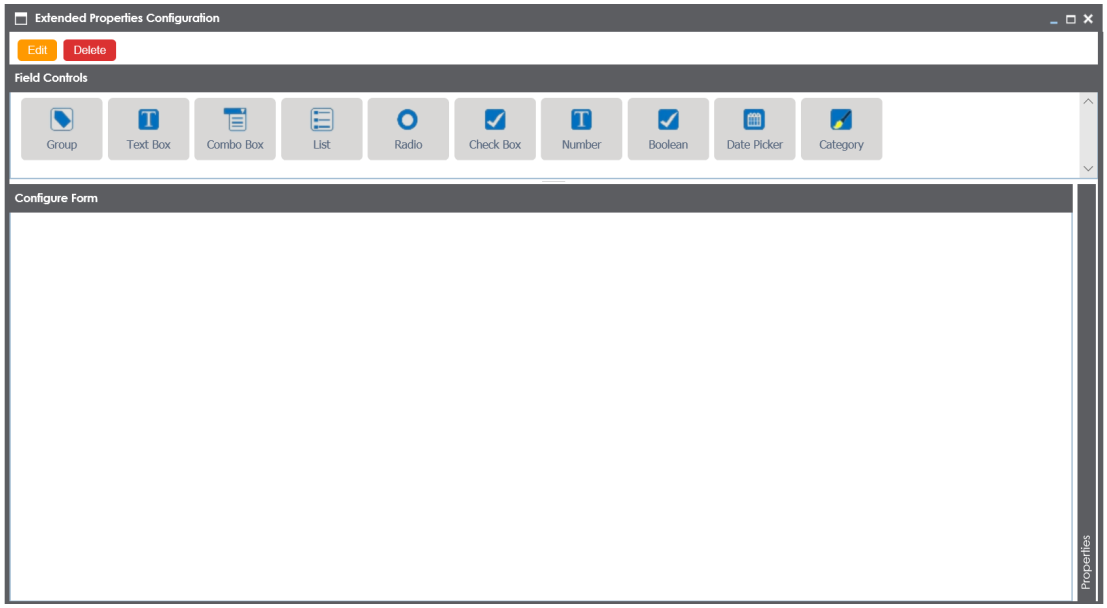
The form is saved under the **Extended Properties** tab.

Extending Environment Properties

You can configure and use extended properties specific to an environment.

To configure environment specific extended properties, follow these steps:

1. Under the **System Catalogue** pane, click the desired environment.
2. Click the **Extended Properties** tab and click **Configure**.



The **Extended Properties Configuration** page contains the following sections:
Field Controls: This pane displays the available UI elements.

Configure Form: Use this pane to design forms using the available UI elements in the **Field Controls** pane.

Properties: This pane displays the properties of the selected UI element in the **Configure Form** pane.

3. Click **Edit** and double-click or drag and drop the required UI elements from the **Field Controls** pane to the **Configure Form** pane.
4. Select UI elements, one at a time, and configure their properties in the **Properties**

pane.

5. Click **Save**.

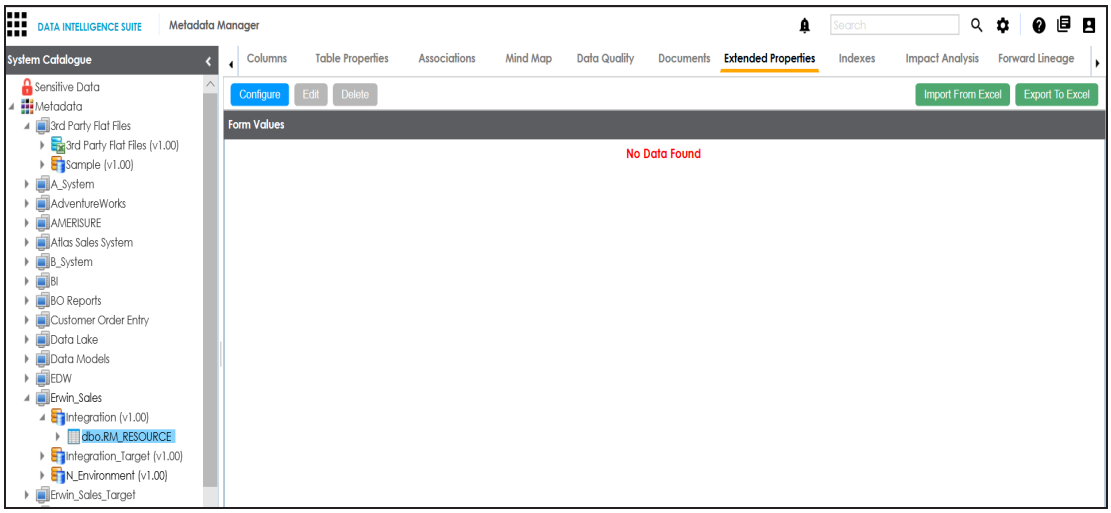
The form is saved under the **Extended Properties** tab.

Extending Table Properties

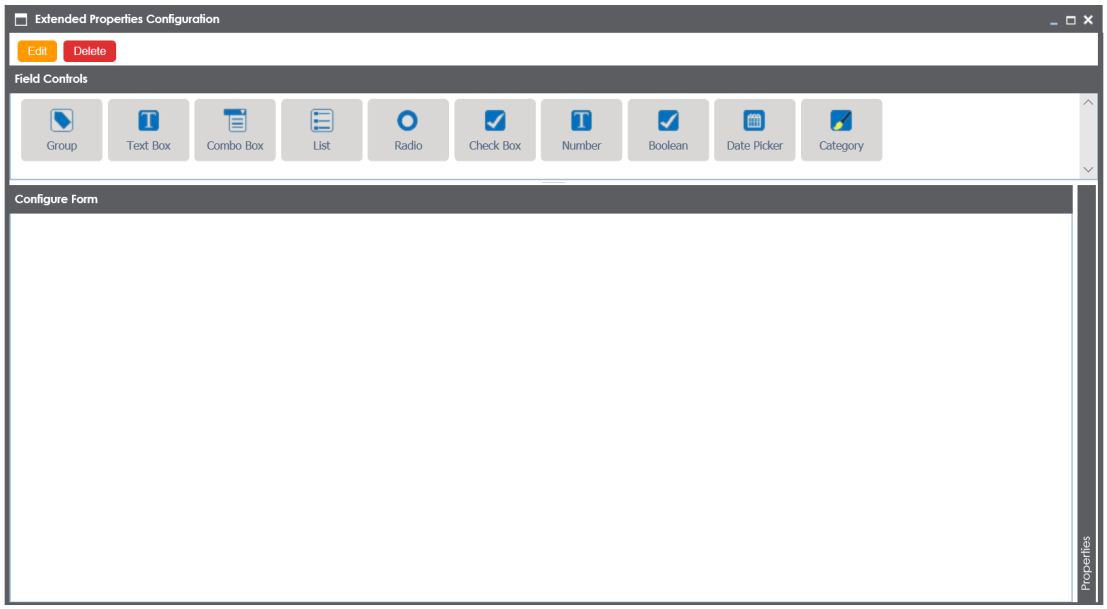
You can configure and use extended properties specific to a table.

To configure table specific extended properties, follow these steps:

1. Under the **System Catalogue** pane, click the desired table.



2. Click the **Extended Properties** tab and click **Configure**.



The **Extended Properties Configuration** page contains the following sections:
Field Controls: This pane displays the available UI elements.

Configure Form: Use this pane to design forms using the available UI elements in the **Field Controls** pane.

Properties: This pane displays the properties of the selected UI element in the **Configure Form** pane.

3. Click **Edit** and double-click or drag and drop the required UI elements from the **Field Controls** pane to the **Configure Form** pane.
4. Select UI elements, one at a time, and configure their properties in the **Properties** pane.
5. Click **Save**.

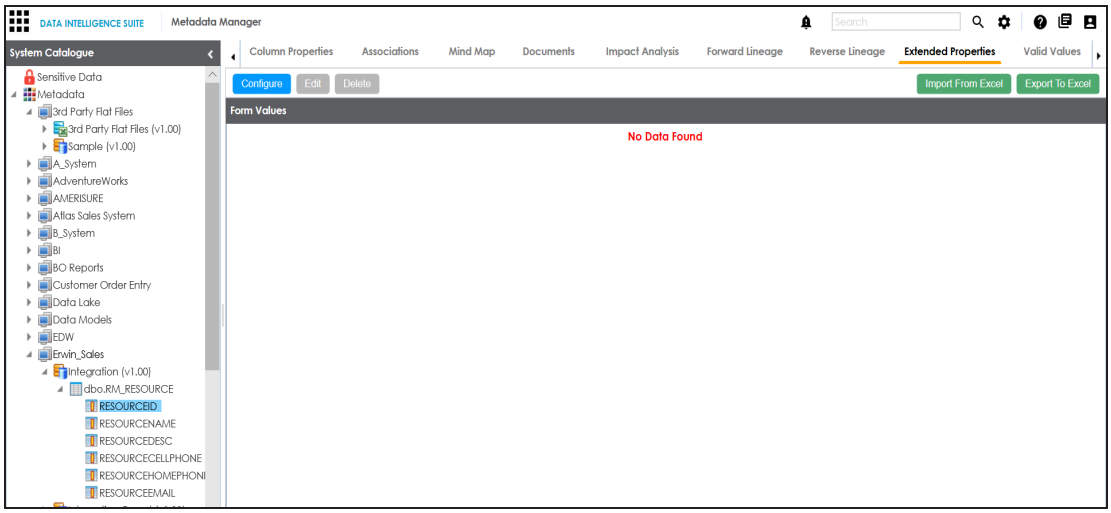
The form is saved under the **Extended Properties** tab.

Extending Column Properties

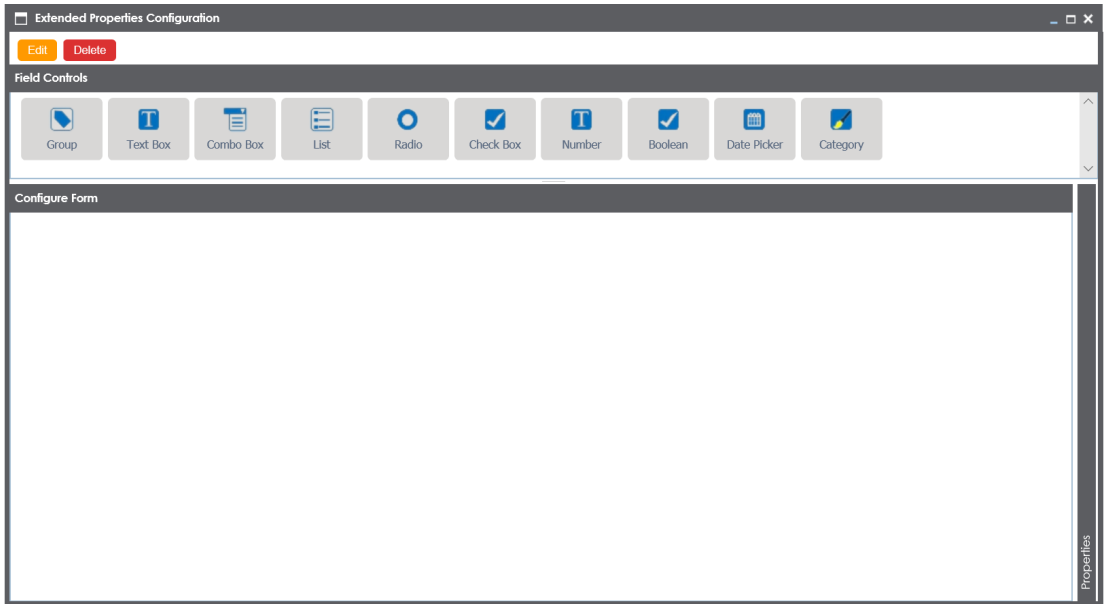
You can configure and use extended properties specific to a column.

To configure column specific extended properties, follow these steps:

1. Under the **System Catalogue** pane, click the desired column.



2. Click the **Extended Properties** tab and click **Configure**.



The **Extended Properties Configuration** page contains the following sections:
Field Controls: This pane displays the available UI elements.

Configure Form: Use this pane to design forms using the available UI elements in the **Field Controls** pane.

Properties: This pane displays the properties of the selected UI element in the **Configure Form** pane.

3. Click **Edit** and double-click or drag and drop the required UI elements from the **Field Controls** pane to the **Configure Form** pane.
4. Select UI elements, one at a time, and configure their properties in the **Properties** pane.
5. Click **Save**.

The form is saved under the **Extended Properties** tab.