



erwin Data Intelligence Suite

Metadata Management Guide

Release v10.0

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Managing Metadata

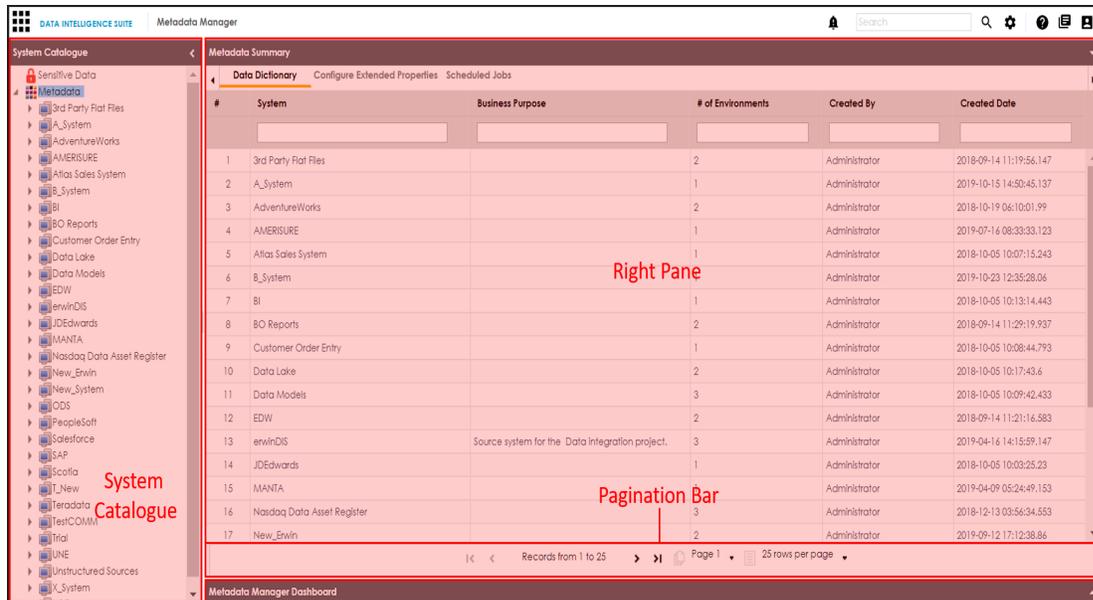
This section walks you through the metadata management. Metadata management is done via Metadata Manager. It involves scanning metadata from a data source and storing it in a central repository.

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

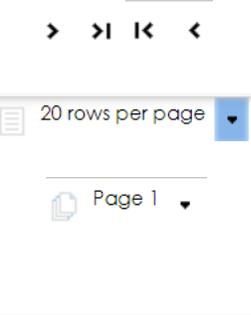
After performing source to target mappings in the Mapping Manager, you can run Forward or Reverse lineages and perform impact analysis in the Metadata Manager.

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.

UI Section	Icon	Function
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 Manager Dashboard		Expand this pane, to view consolidated reports on system 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](#)

Creating Systems

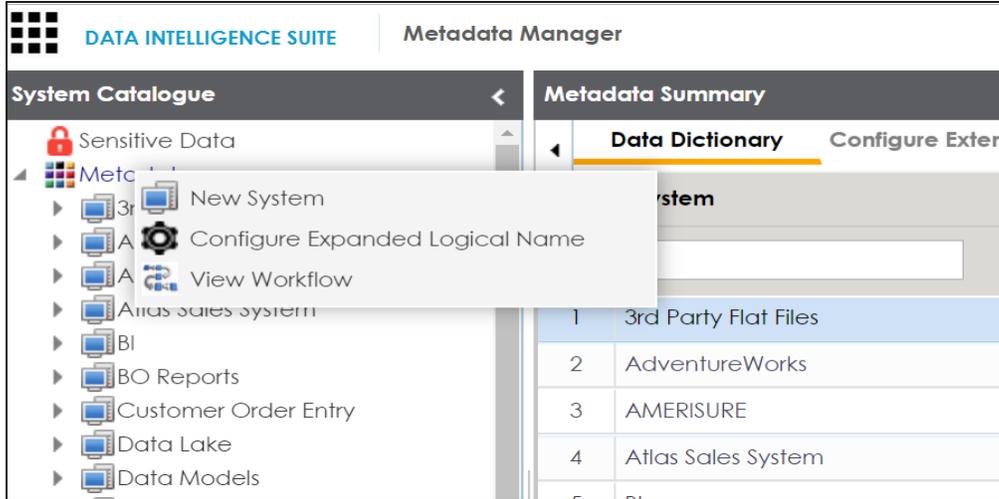
Metadata Manager enables you to harvest (scan) metadata from data sources. The scanned metadata is stored in a hierarchical manner (System > Environment > Table > Column) in the System Catalogue. To store the scanned metadata, you need to create a system.

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.

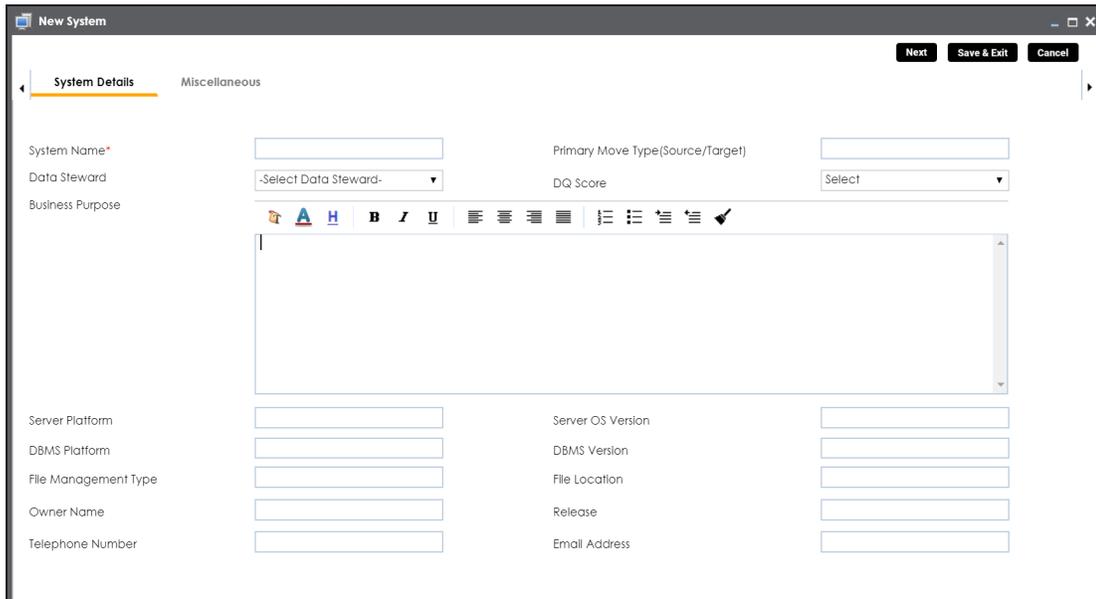
To create systems, follow these steps:

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

Field Name	Description
System Name	Enter a unique system name.
Data Steward	Select a data steward. Data steward enables an organization to take control and govern the data.
Business Purpose	Enter the purpose of the business in brief.
Server Platform	Enter the server platform.
DBMS Platform	Enter the database management system platform.
File Management Type	Enter the file management type.
Owner Name	Enter the name of the system owner.
Telephone Number	Enter a valid telephone number of the system owner.
Primary Move Type (Source/Target)	Enter whether the primary move type is source or target.
DQ Score	Select the data quality score. Data quality score can be very high (9-10), high (7-8), medium (5-6), low (2-4), or very low (0-2).
Server OS version	Enter the server's OS version.
DBMS Version	Enter the DBMS version.
File Location	Enter the file location.
Release	Enter the system release.
Email Address	Enter a system owner's valid email ID.

5. 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

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.

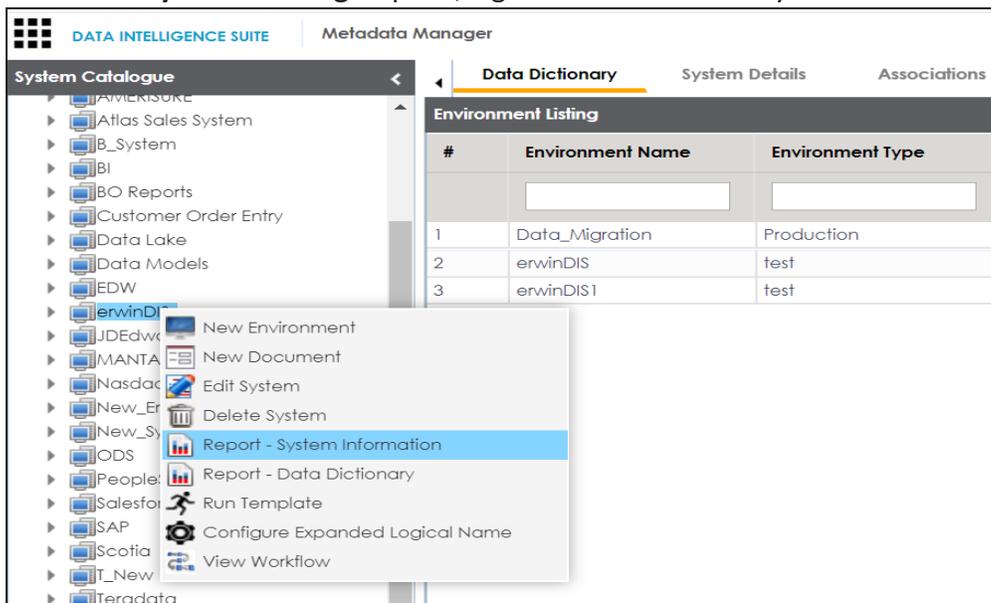
Exporting System Information

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.

System Information Report

Select System: erwinDIS Export:     

System Information Report

System Details

System Name:	erwinDIS	Primary Move Type (Source/Target):	Source
Data Steward:	janedoe	Special Instructions:	
Business Purpose:	Source system for the Data integration project.	Server OS Version:	Ubuntu 18.04.1
Server Platform:	Linux	DBMS Version:	MS Sql Server 2018
DBMS Platform:	SQL server	File Location:	
File Management Type:		ESB Q Manager Name:	
ESB Platform Type:	Mule	Total Number Of Tables:	50
Release:		End of Day Definition:	
Total DB Size:	1100MB	Average Users:	
Batch Extract Window:		Owner Full Name:	
Average Concurrent Users:	2	Email Address:	
Telephone Number:			

System Environment Details

#	Environment Name	Environment Type	Data Steward	Database Name	Database Type	IP Address	Port	User Name
1	Data_Migration	Production	jdoe	ErwinDIS931	SqlServer	localhost	1433	sa
2	erwinDIS	test		ErwinDIS931	SqlServer	localhost	1433	sa
3	erwinDIS1	test		erwinDG_v9_GA	SqlServer	localhost	1433	sa

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 ()

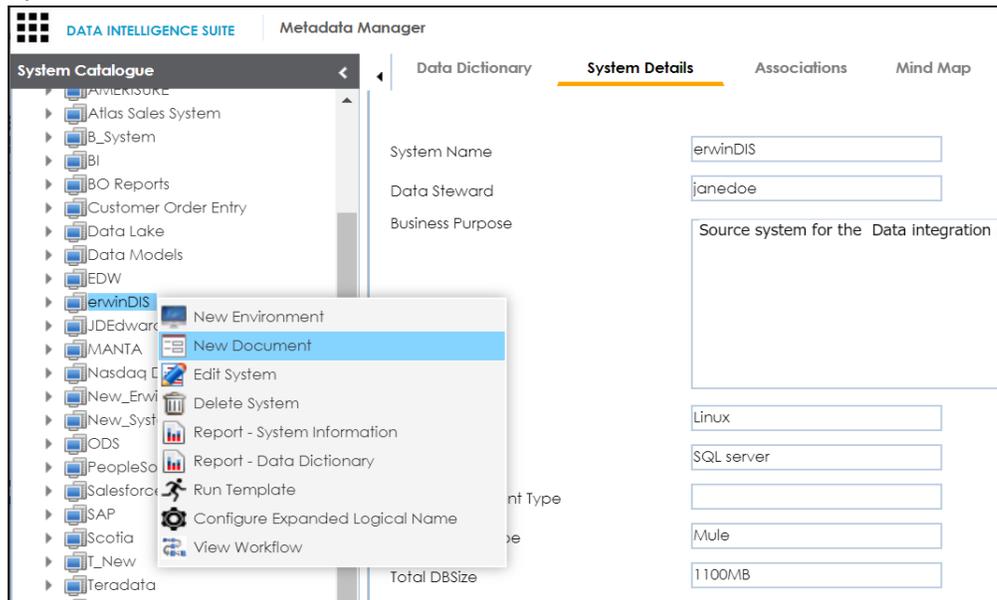
To export the system information report in .rtf format, click .

Uploading Documents

You can upload relevant documents at system level and describe its intended use. You can also update the 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 the system where document is to be uploaded.



3. Click **New Document**.

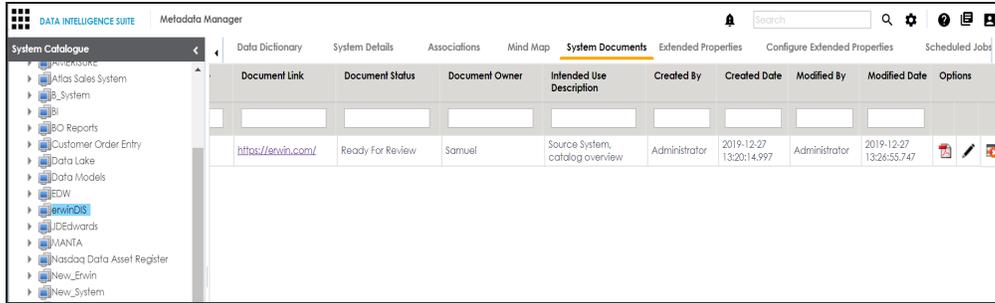
The Upload Document page appears.

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

Field Name	Description
Document Name	Enter a document name.
Document Object	Drag and drop or use  to upload relevant files.
Document Owner	Enter the document owner's name.
Document Link	Enter a Url related to document.
Intended Use Description	Describe the intended use of the document.
Approval Required Flag	Select the Approval Required Flag check box to select document status.
Document Status	Select the status of the document from the drop down. This field appears when the 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 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

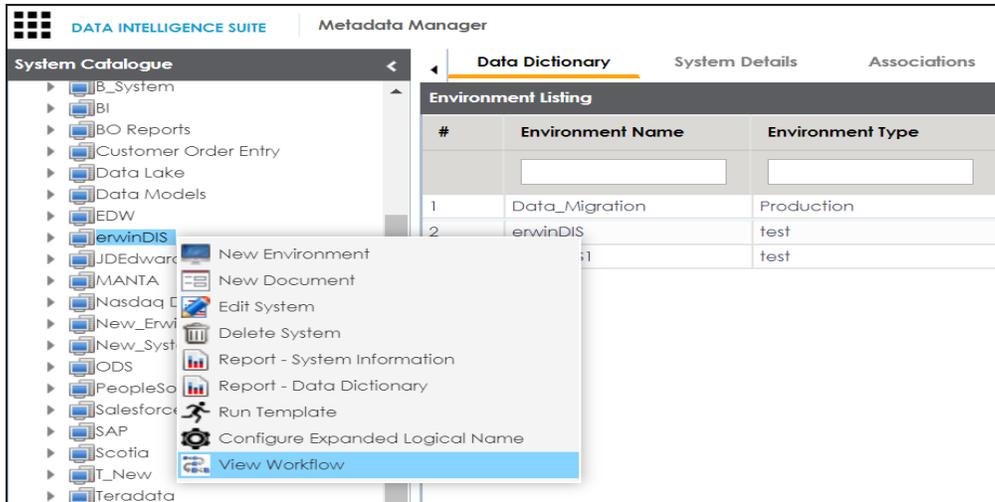
To delete the uploaded document, click .

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.

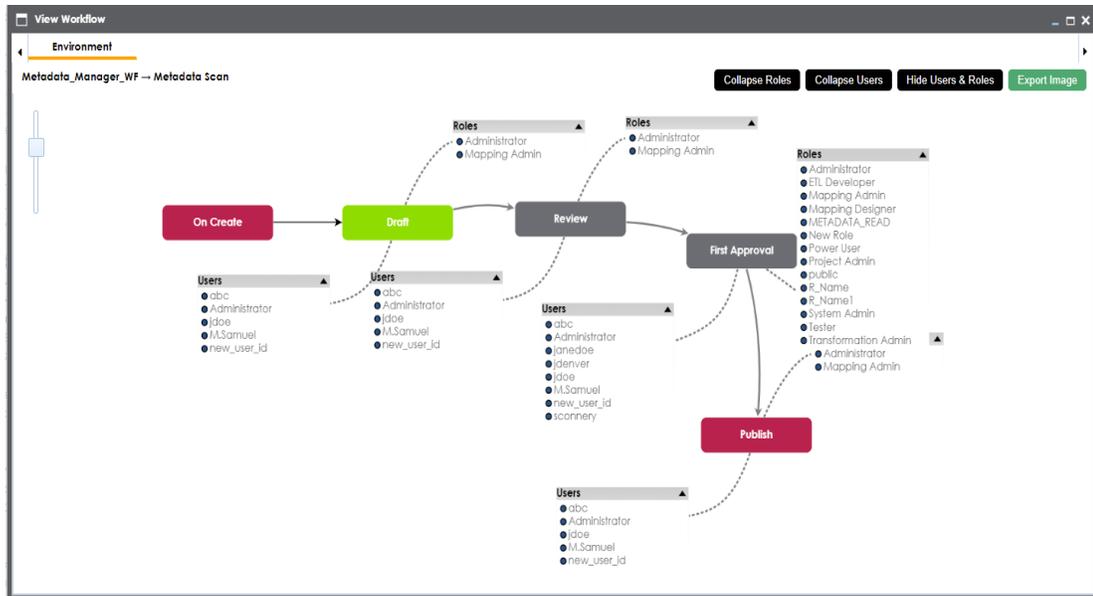
To view the workflow assigned to systems, follow these steps:

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

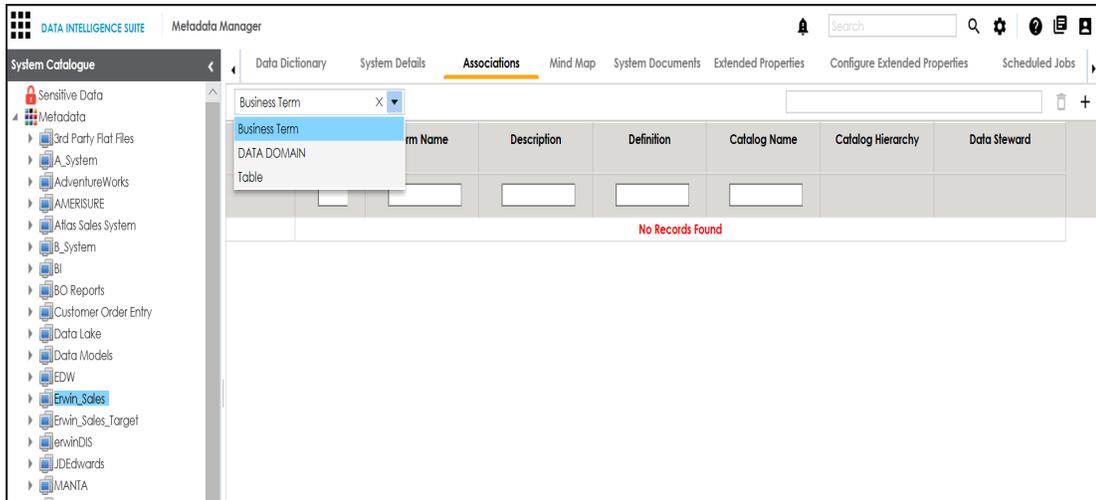
You can associate systems with business assets, systems, environments, tables, and columns. You can also view mind map and association statistics.

You need to ensure that:

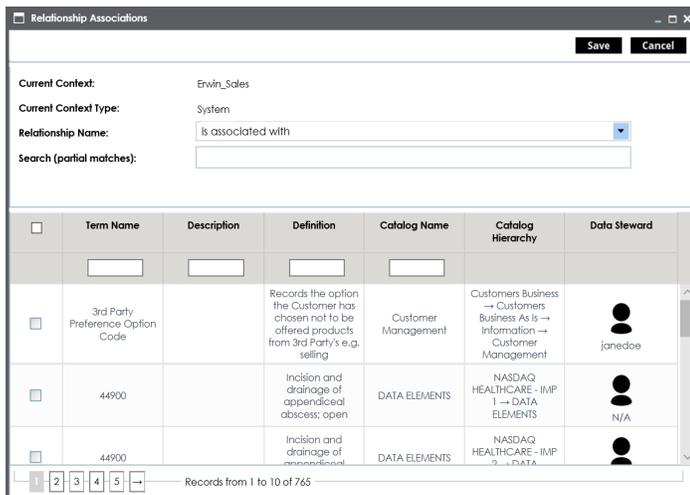
- Business assets are enabled. You can add new business assets and enable them in the Business Glossary Manager Settings.
- Relationship between system and the asset type is defined. You can define associations and relationships in the Business Glossary Manager Settings.

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.



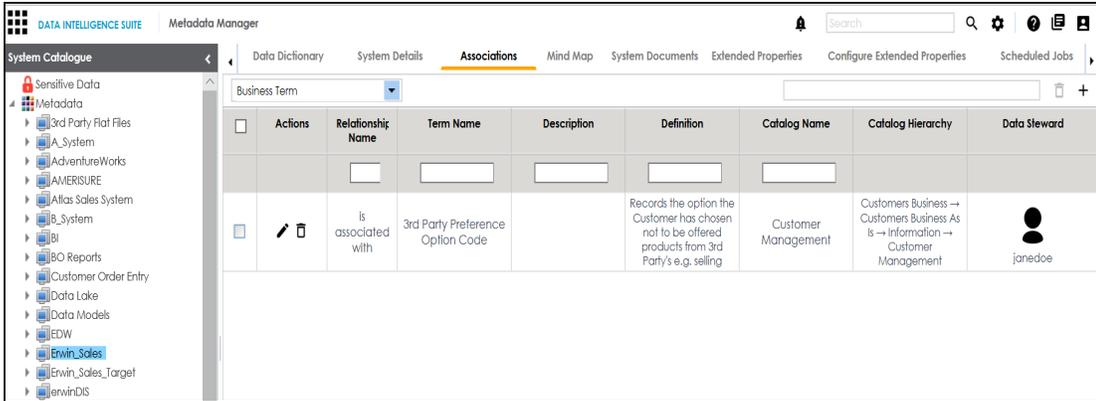
3. Click **+**.



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 ()

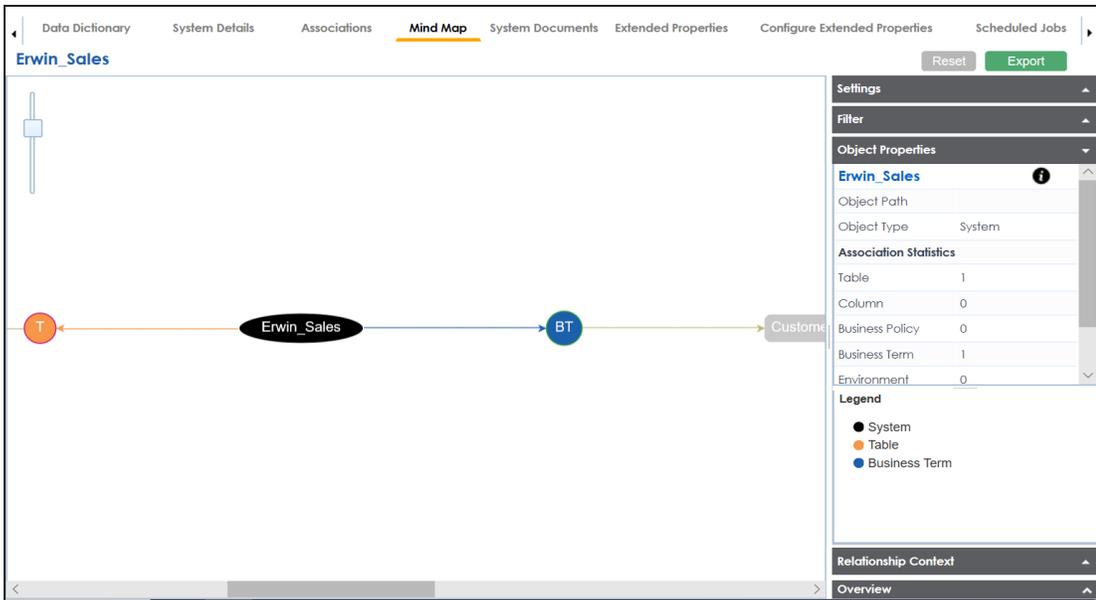
Use this option to edit the association.

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.

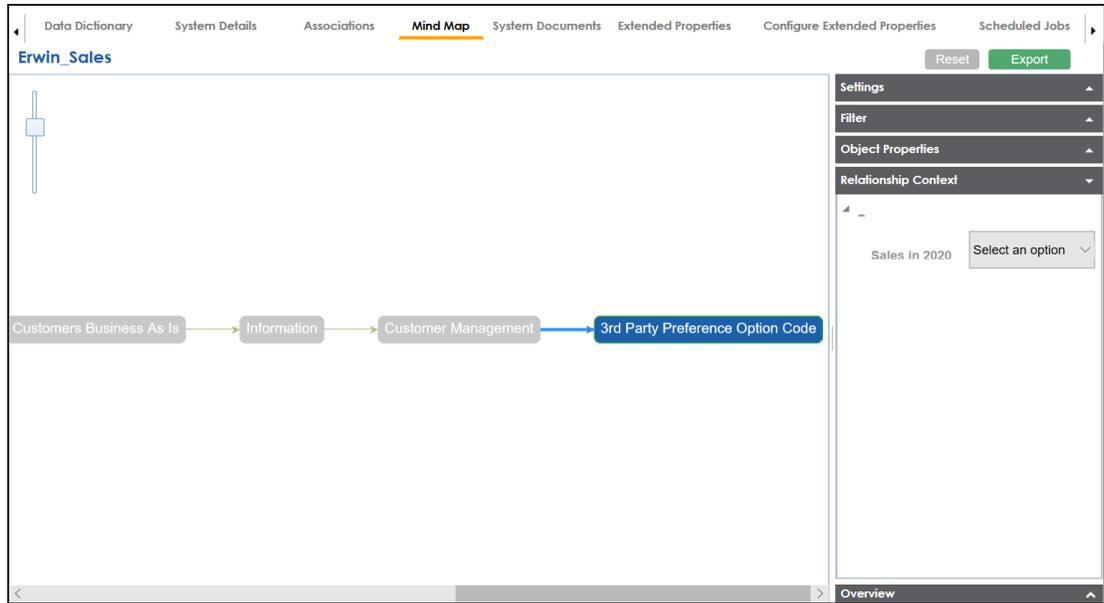
Object Properties

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.

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 Term	Resource	This should match with a part of the table and column names 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: <ul style="list-style-type: none"> ▪ 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.

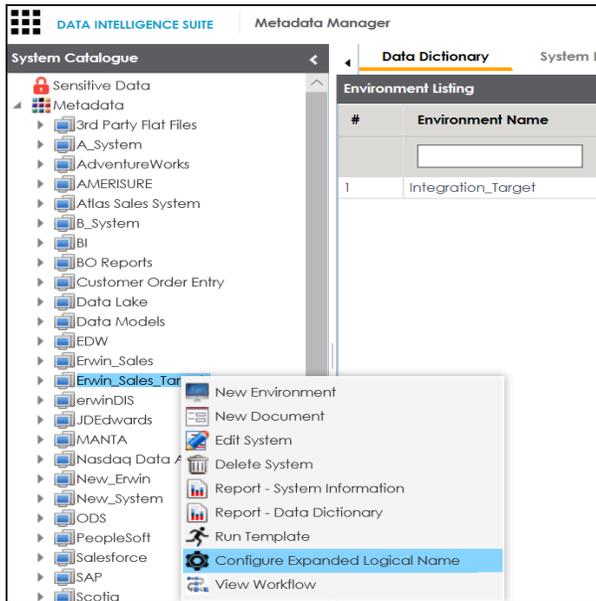
After the job runs successfully, the expanded logical name of the table and column is updated as mentioned in the following table:

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.

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

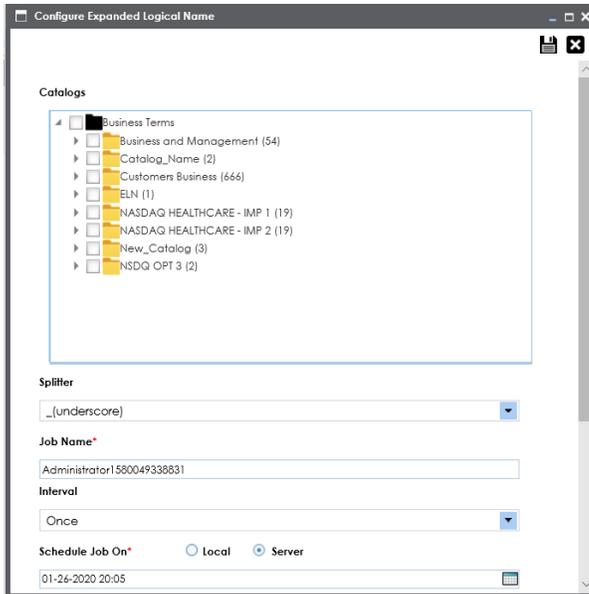
To configure expanded logical name, follow these steps:

1. Right-click a system or environment.



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

The Configure Expanded Logical Name page appears.



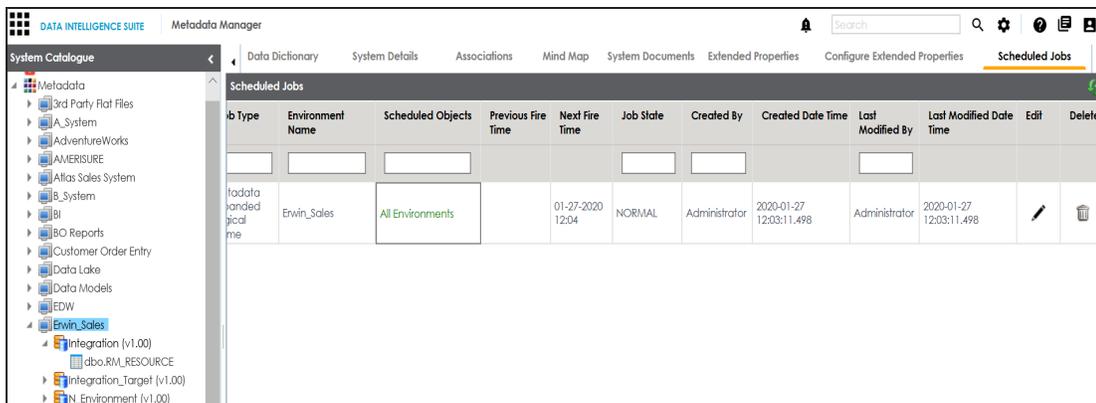
3. Select or enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

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. <ul style="list-style-type: none"> ▪ 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.

Field Name	Description
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.



Job Type	Environment Name	Scheduled Objects	Previous Fire Time	Next Fire Time	Job State	Created By	Created Date Time	Last Modified By	Last Modified Date Time	Edit	Delete
Metadata	Erwin_Sales	All Environments		01-27-2020 12:04	NORMAL	Administrator	2020-01-27 12:03:11.498	Administrator	2020-01-27 12:03:11.498		

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.

Columns	Table Properties	Associations	Mind Map	Data Quality	Documents	Extended Properties	Indexes	Impact Analysis	Forward Lineage
Technical Properties									
Table Name	<input type="text" value="dbo.RM_RESOURCE"/>	Environment Name	<input type="text" value="Integration"/>						
System Name	<input type="text" value="Erwin_Sales"/>	No of Rows	<input type="text" value="4"/>						
Synonym Reference	<input type="text"/>	FileType	<input type="text"/>						
		Workflow Status	<input type="text" value="Draft"/>						
Business Properties									
Data Steward	<input type="text" value="janedoe"/>	Logical Table Name	<input type="text" value="Resource"/>						
Table Definition	<input type="text" value="Tab Def"/>	Expanded Logical Name	<input type="text" value="RM Sales Representative"/>						
Table Comments	<input type="text" value="Sales resource 2020"/>	Used In Gap Analysis	<input checked="" type="checkbox"/>						
Table Class	<input type="text" value="Table_Class"/>	Table Alias	<input type="text" value="SALESRESOURCE"/>						
DQ Score	<input type="text" value="Very High (9-10)"/>								

Column Properties	Associations	Mind Map	Documents	Impact Analysis	Forward Lineage	Reverse Lineage	Extended Properties	Valid Values	
Workflow Status	<input type="text" value="Draft"/>								
Business Properties									
Data Steward	<input type="text" value="janedoe"/>	Logical Column Name	<input type="text" value="Resource ID"/>						
Column Definition	<input type="text" value="represents resource ID"/>	Expanded Logical Name	<input type="text" value="Sales Representative ID"/>						
Column Comments	<input type="text" value="Column ID as per 2020"/>	Used In Gap Analysis	<input checked="" type="checkbox"/>						
Sensitive Data Indicator (SDI) Flag	<input checked="" type="checkbox"/>								
Sensitive Data Indicator (SDI) Classification	<input type="text" value="Confidential"/>	Sensitive Data Indicator (SDI) Description	<input type="text" value="Sensitive Data that if compromised c"/>						
Column Class	<input type="text" value="Column_Class"/>	Column Alias	<input type="text" value="RESOURCEID"/>						
DQ Score	<input type="text" value="Very High (9-10)"/>	Business Key Flag	<input checked="" type="checkbox"/>						

Note: You can use this job to update the expanded logical name only once. Alternatively, you can update expanded logical names under [table properties](#) and [column properties](#).

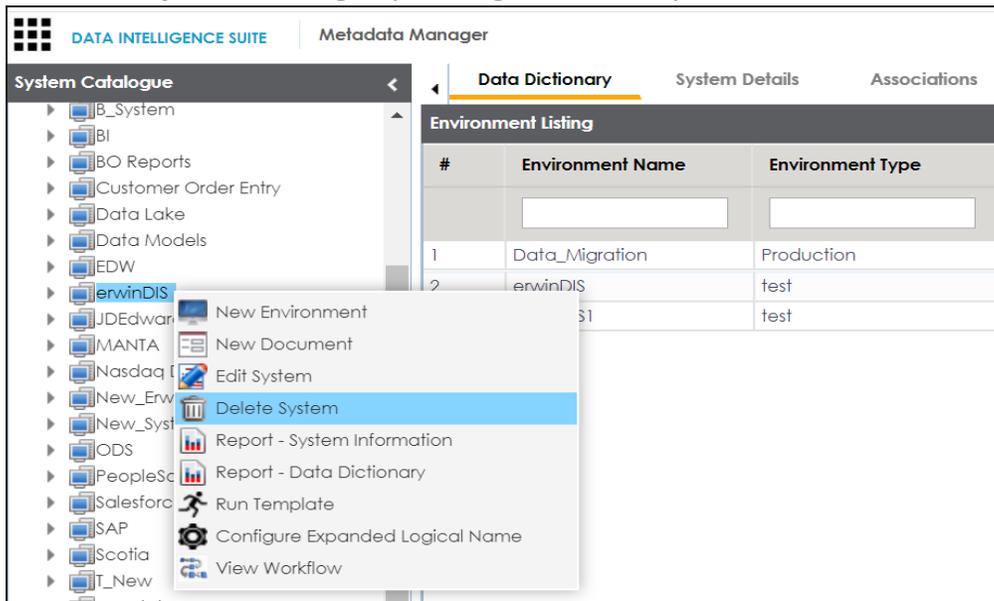
Deleting Systems

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.

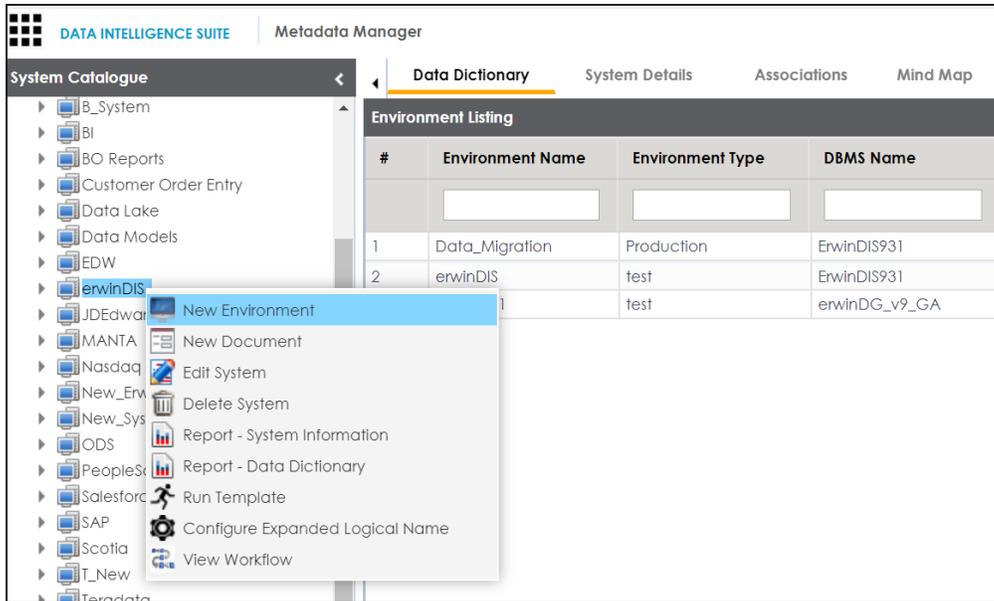
Creating and managing environments involves:

- [Creating environments](#)
- [Assigning users to environments](#)
- [Managing environments](#)
- [Uploading documents](#)
- [Cloning environments](#)
- [Viewing workflow logs](#)
- [Associating Environments](#)
- [Configuring Expanded Logical Name of Tables/Columns](#)

Creating Environments

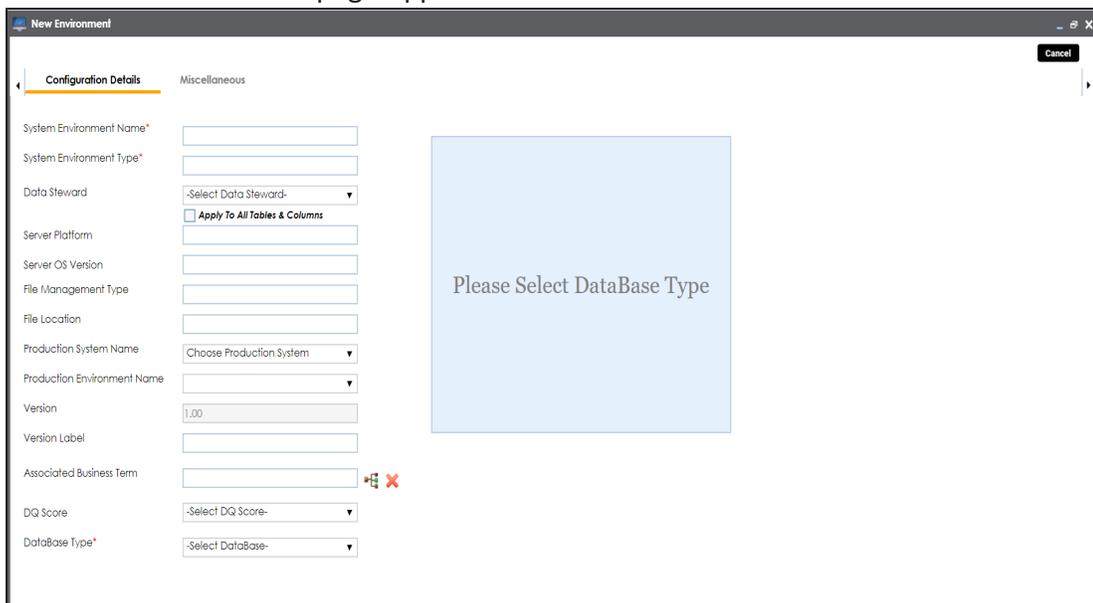
After creating a system in the Metadata Manager, you can create environments under the system. An environment can be created for different database types and flat files by fulfilling prerequisites and providing the connection parameters.

1. Go to **Application Menu > Data Catalog > Metadata Manager**.
2. Under the **System Catalogue**, right-click the system node 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	Enter a unique system environment name.
System Environment Type	Enter the type of the environment. For an instance the environment type could be test or production.
Data Steward	Select a data steward. Data steward enables an organization to take control and govern the data. For more information on configuring data steward list, refer to the Configuring Data Stewards topic.
Server Platform	Enter the server platform.
Server OS Version	Enter the server OS version.
File Management Type	Enter the file management type.
File Location	Enter the path of the file location.
Production System Name	Select the production system name.
Version Label	Enter the version label. For more information on version label, refer to the Configuring Version Display of the Environments topic.
DQ Score	Select data quality score from the drop down.
Database Type	Select the type of database from where you wish to scan metadata. Use the drop down to choose the type of database. 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](#)
- [Salesforce](#)
- [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 DIS application server
3. Opening of SQL Server database port to accept connections from erwin DIS 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 DIS application. Hence, no JDBC driver configuration is required from end user standpoint.

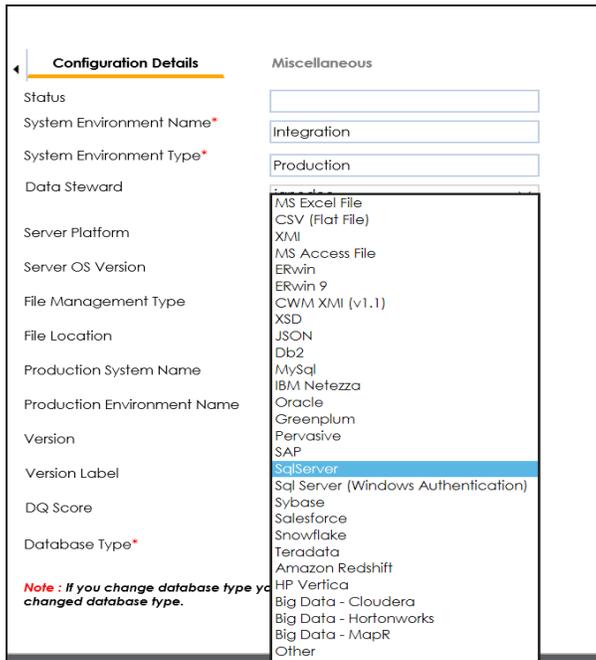
TLS Connection Details

- 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:

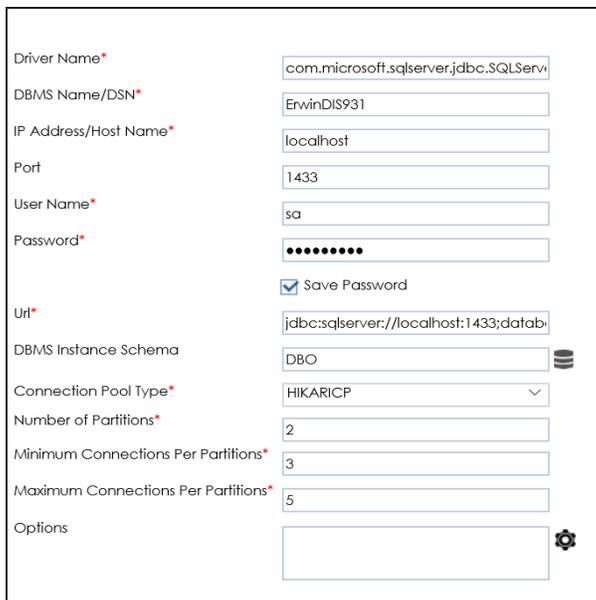
1. Select the **Database Type** as **SqlServer** while creating the environment.



Configuration Details	Miscellaneous
Status	
System Environment Name*	Integration
System Environment Type*	Production
Data Steward	
Server Platform	MS Excel File CSV (Flat File) XMI
Server OS Version	MS Access File ERwin ERwin 9
File Management Type	CWM XMI (v1.1) XSD
File Location	JSON Db2
Production System Name	MySQL IBM Netezza Oracle
Production Environment Name	Greenplum Pervasive SAP
Version	SqlServer
Version Label	Sql Server (Windows Authentication)
DQ Score	Sybase Salesforce Snowflake Teradata Amazon Redshift HP Vertica
Database Type*	Big Data - Cloudera Big Data - Hortonworks Big Data - MapR Other

Note : If you change database type you changed database type.

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



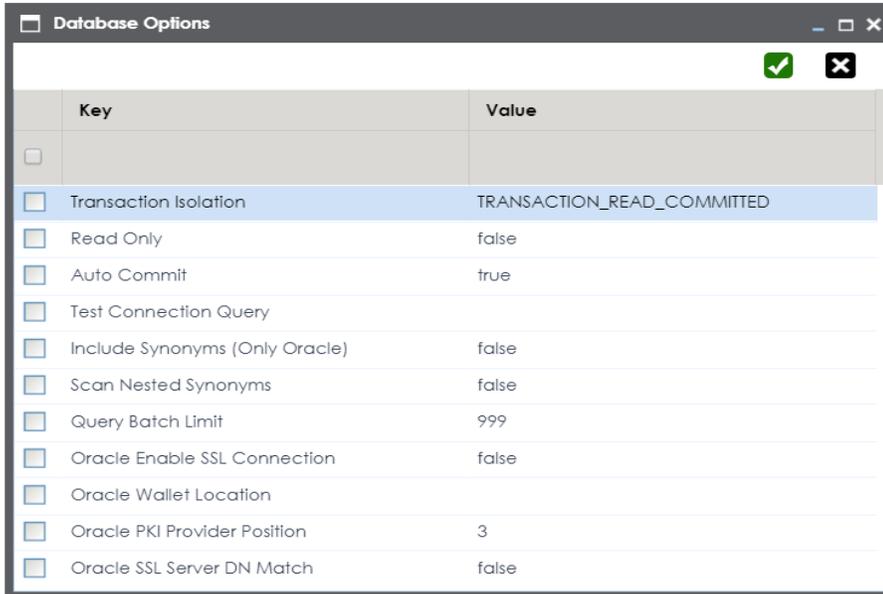
Driver Name*	com.microsoft.sqlserver.jdbc.SQLServer
DBMS Name/DSN*	ErwinDIS931
IP Address/Host Name*	localhost
Port	1433
User Name*	sa
Password*	●●●●●●●●
	<input checked="" type="checkbox"/> Save Password
Url*	jdbc:sqlserver://localhost:1433;datab
DBMS Instance Schema	DBO
Connection Pool Type*	HIKARICP
Number of Partitions*	2
Minimum Connections Per Partitions*	3
Maximum Connections Per Partitions*	5
Options	

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

Field Name	Description
Driver Name	com.microsoft.sqlserver.jdbc.SQLServerDriver
DBMS Name/DSN	Enter the SQL Server database name.
IP Address/Host Name	Enter the IP address or server host name.
Port	1433 (default). You can change it, if required.
User Name	Enter the SQL Server (Service Account) username.
Password	Enter the SQL Server (Service Account) password.
Url	It is autopopulated based on the other parameters. jdbc:sqlserver://SERVER_NAME:PORT#;data-baseName=DatabaseName
DBMS Schema	Use this option to select multiple or narrow down to single schema.
Connection Pool Type	Select the appropriate connection pool type.
Number of Partitions	It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired.
Minimum Connections Per Partitions	It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired.
Maximum Connections Per Partitions	It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired.

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)**.

The screenshot shows a configuration window with two panes: 'Configuration Details' on the left and 'Miscellaneous' on the right. The 'Database Type*' field in the 'Configuration Details' pane is selected, and a dropdown menu is open in the 'Miscellaneous' pane. The dropdown menu lists various database types, with 'Sql Server (Windows Authentication)' highlighted in blue. A note at the bottom left of the 'Miscellaneous' pane reads: 'Note : If you change database type you changed database type.'

Configuration Details	Miscellaneous
Status	
System Environment Name*	Integration
System Environment Type*	Production
Data Steward	
Server Platform	MS Excel File
Server OS Version	CSV (Flat File)
File Management Type	XMI
File Location	MS Access File
Production System Name	ERwin
Production Environment Name	ERwin 9
Version	CWM XML (v1.1)
Version Label	XSD
DQ Score	JSON
Database Type*	Db2
	MySql
	IBM Netezza
	Oracle
	Greenplum
	Pervasive
	SAP
	SqlServer
	Sql Server (Windows Authentication)
	Sybase
	Salesforce
	Snowflake
	Teradata
	Amazon Redshift
	HP Vertica
	Big Data - Cloudera
	Big Data - Hortonworks
	Big Data - MapR
	Other

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

The screenshot shows a configuration window with various connection parameters for a SQL Server database. The parameters are as follows:

Driver Name*	net.sourceforge.jtds.jdbc.Driver
DBMS Name/DSN*	ErwinDIS931
IP Address/Host Name*	localhost
Domain	
User Name*	sa
Password*	●●●●●●●●
	<input checked="" type="checkbox"/> Save Password
Uri*	jdbc:jtds:sqlserver://localhost/ErwinDI!
DBMS Instance Schema	DBO
Connection Pool Type*	HIKARICP
Number of Partitions*	2
Minimum Connections Per Partitions*	3
Maximum Connections Per Partitions*	5
Options	

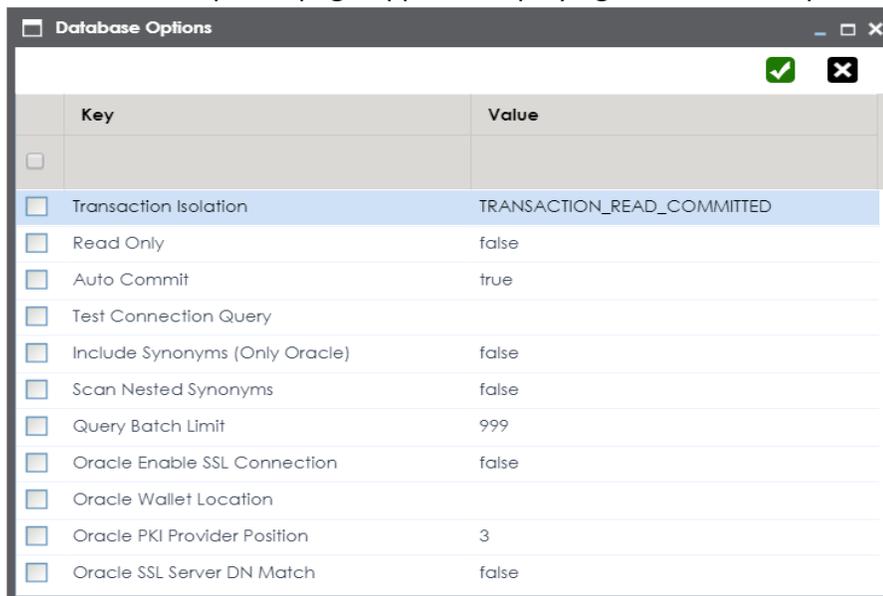
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	com.microsoft.sqlserver.jdbc.SQLServerDriver
DBMS Name/DSN	Enter the SQL Server database name.
IP Address/Host Name	Enter the IP address or server host name.
Domain	Enter the domain.
Port	1433 (default). You can change it, if required.
User Name	Enter the SQL Server (Service Account) username.
Password	Enter the SQL Server (Service Account) password.
Url	It is autopopulated based on the other parameters. jdbc:jtds:sqlserver://SERVER_NAME:PORT#;databaseName=DatabaseName;domain=DomainName;useNTLMv2=true;
DBMS Schema	Use this option to select multiple or narrow down to single schema.
Connection Pool Type	Select the appropriate connection pool type.
Number of Partitions	It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired.
Minimum Connections Per Partitions	It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired.

Field Name	Description
Maximum Connections Per Partitions	It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired.

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 DIS application server
- **Oracle Database port** opened to accept connections from erwin DIS application server

JDBC Driver Details

Oracle JDBC driver is out of box packaged with erwin DIS 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:

- Select Database Type as Oracle while creating the environment.

Configuration Details	Miscellaneous
Status	<input type="text"/>
System Environment Name*	Integration
System Environment Type*	Production
Data Steward	<input type="text"/> MS Excel File CSV (Flat File) XML MS Access File ERwin ERwin 9 CWM XML (v1.1) XSD JSON Db2 MySql IBM Netezza Oracle Greenplum Pervasive SAP SqlServer Sql Server (Windows Authentication) Sybase Salesforce Snowflake Teradata Amazon Redshift HP Vertica Big Data - Cloudera Big Data - Hortonworks Big Data - MapR Other
Server Platform	
Server OS Version	
File Management Type	
File Location	
Production System Name	
Production Environment Name	
Version	
Version Label	
DQ Score	
Database Type*	
<p>Note : If you change database type you changed database type.</p>	
RAC / Service Name	

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.

Driver Name*	<input type="text" value="oracle.jdbc.driver.OracleDriver"/>
DBMS Name/DSN*	<input type="text" value="ErwinDIS931"/>
IP Address/Host Name*	<input type="text" value="localhost"/>
Port	<input type="text" value="1521"/>
User Name*	<input type="text" value="sa"/>
Password*	<input type="password" value="••••••••"/>
	<input checked="" type="checkbox"/> Save Password
Uri*	<input type="text" value="acle:thin:@localhost:1521/ErwinDIS931"/>
DBMS Instance Schema	<input type="text" value="DBO"/> 
Connection Pool Type*	<input type="text" value="HIKARICP"/> 
Number of Partitions*	<input type="text" value="2"/>
Minimum Connections Per Partitions*	<input type="text" value="3"/>
Maximum Connections Per Partitions*	<input type="text" value="5"/>
Options	<input type="text"/> 

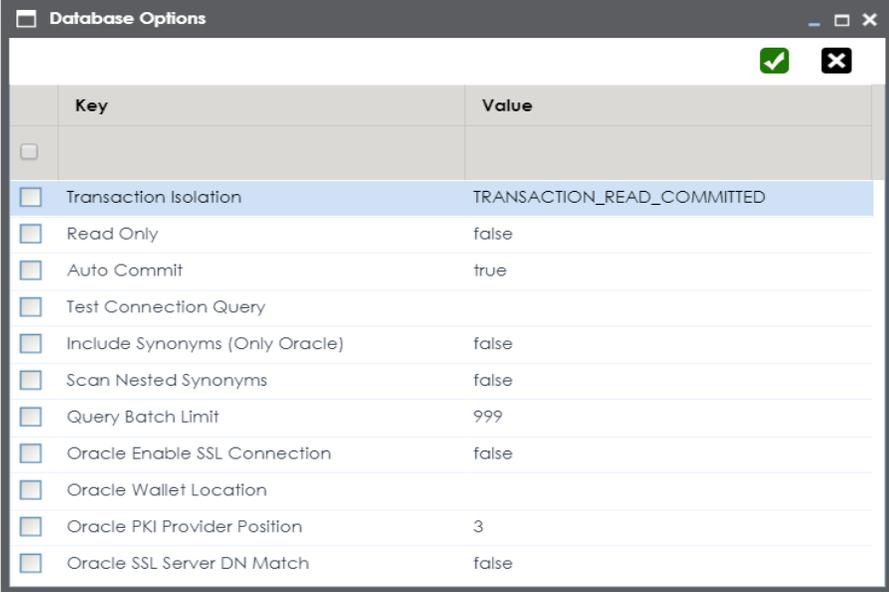
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	oracle.jdbc.driver.OracleDriver
DBMS Name/DSN	Name of the Oracle Service – SID or TNS Service Name.
IP Address/Host Name	Enter the IP address or server host name.
Port	1521 (default). User can change if required.
User Name	Enter the Oracle (Service account) username.
Password	Enter the Oracle (Service account) password.
Url	It is autopopulated based on the other parameters. jdbc:oracle:thin:@ <Ip Address>:<Port>/< service name>
DBMS Instant Schema	Use this option to select multiple or narrow down to single schema.
Connection Pool Type	Select the appropriate connection pool type.
Number of Par-	It is autopopulated with default number of partitions. You can edit

Field Name	Description
titions	and provide the number of partitions as desired.
Minimum Connections Per Partitions	It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired.
Maximum Connections Per Partitions	It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired.

3. Click  to use database options.

The Database Options page appears displaying the different options available.



	Key	Value
<input type="checkbox"/>		
<input type="checkbox"/>	Transaction Isolation	TRANSACTION_READ_COMMITTED
<input type="checkbox"/>	Read Only	false
<input type="checkbox"/>	Auto Commit	true
<input type="checkbox"/>	Test Connection Query	
<input type="checkbox"/>	Include Synonyms (Only Oracle)	false
<input type="checkbox"/>	Scan Nested Synonyms	false
<input type="checkbox"/>	Query Batch Limit	999
<input type="checkbox"/>	Oracle Enable SSL Connection	false
<input type="checkbox"/>	Oracle Wallet Location	
<input type="checkbox"/>	Oracle PKI Provider Position	3
<input type="checkbox"/>	Oracle SSL Server DN Match	false

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 DIS application server
- **MySQL Database port** opened to accept connections from erwin DIS application server

JDBC Driver Details

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

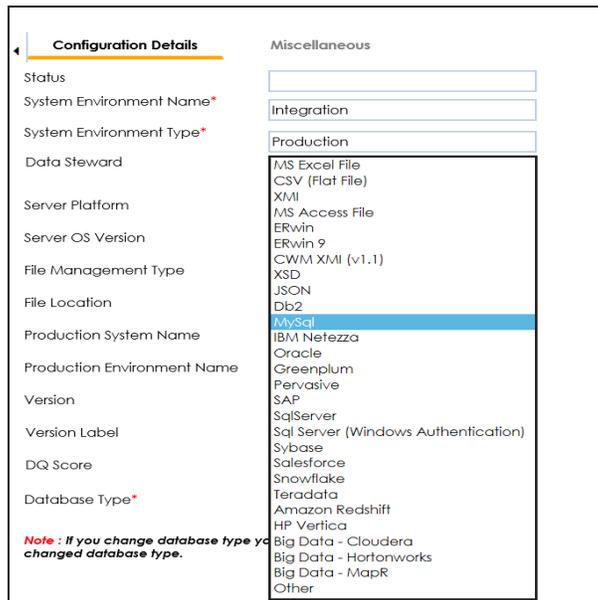
TLS Connection Details

- 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 screenshot shows a configuration window with two panes: 'Configuration Details' on the left and 'Miscellaneous' on the right. The 'Database Type*' field in the 'Configuration Details' pane is expanded, showing a list of database options. 'MySQL' is highlighted in blue. A red note is visible at the bottom left of the 'Miscellaneous' pane.

Configuration Details	Miscellaneous
Status	
System Environment Name*	Integration
System Environment Type*	Production
Data Steward	MS Excel File
Server Platform	CSV (Flat File)
Server OS Version	XMI
File Management Type	MS Access File
File Location	ERwin
Production System Name	ERwin 9
Production Environment Name	CWM XML (v1.1)
Version	XSD
Version Label	JSON
DQ Score	Db2
Database Type*	MySQL
	IBM Netezza
	Oracle
	Greenplum
	Pervasive
	SAP
	SqlServer
	Sql Server (Windows Authentication)
	Sybase
	Salesforce
	Snowflake
	Teradata
	Amazon Redshift
	HP Vertica
	Big Data - Cloudera
	Big Data - Hortonworks
	Big Data - MapR
	Other

Note : If you change database type you changed database type.

The following connection parameters appear on the right hand side.

Driver Name*	<input type="text" value="com.mysql.jdbc.Driver"/>
DBMS Name/DSN*	<input type="text" value="ErwinDIS931"/>
IP Address/Host Name*	<input type="text" value="localhost"/>
Port	<input type="text" value="3306"/>
User Name*	<input type="text" value="sa"/>
Password*	<input type="password" value="••••••••"/>
	<input checked="" type="checkbox"/> Save Password
Url*	<input type="text" value="jdbc:mysql://localhost/ErwinDIS931"/>
Connection Pool Type*	<input type="text" value="HIKARICP"/>
Number of Partitions*	<input type="text" value="1"/>
Minimum Connections Per Partitions*	<input type="text" value="3"/>
Maximum Connections Per Partitions*	<input type="text" value="5"/>
Options	<input type="text"/> 

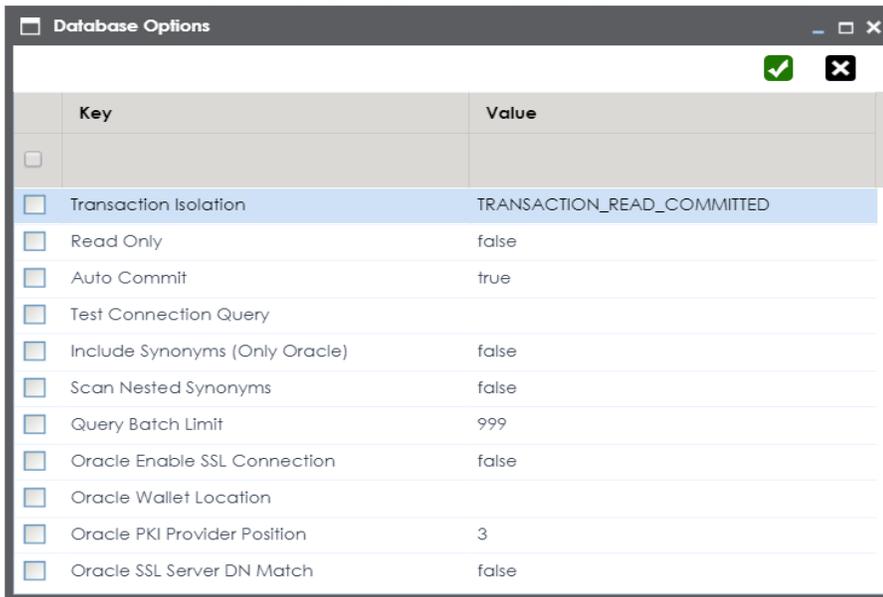
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	com.mysql.jdbc.Driver
DBMS Name/DSN	Enter the MySQL database name.
IP Address/Host Name	Enter the IP address or server host name.
Port	3306 (Default) - user can change if required.
User Name	Enter the MySQL (Service account) username.
Password	Enter the MySQL (Service account) password.
Url	It is autopopulated based on the other parameters. jdbc:mysql://IPADDRESS:3306/DATABASENAME
Connection Pool Type	Select the appropriate connection pool type.
Number of Partitions	It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired.
Minimum Con-	It is autopopulated with default minimum connections per par-

Field Name	Description
nections Per Par-titions	titions. You can edit and provide the minimum connections per par-titions as desired.
Maximum Con-nections Per Par-titions	It is autopopulated with default maximum connections per par-titions. You can edit and provide the maximum connections per par-titions as desired.

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 DIS application server

JDBC Driver Details

Currently Snowflake JDBC driver is not packaged with erwin DIS application. Hence, Snowflake JDBC driver should be downloaded from the below mentioned URL.

Download URL: <https://docs.snowflake.net/manuals/user-guide/jdbc-download.html#downloading-the-driver>

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

TLS Connection Details

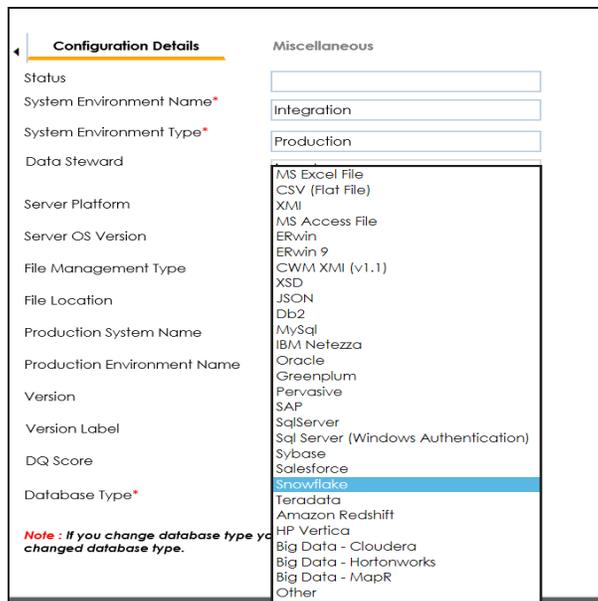
- The Snowflake packaged JDBC driver version 3.1.X and above implement TLS v1.2 providing the latest security patches on the protocol. So, you will not need to set any additional properties. The connection will use TLS 1.2 encryption by default.
- Add SSL Parameter in Connection String (if required):

```
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 screenshot shows a configuration form with two main sections: 'Configuration Details' and 'Miscellaneous'. The 'Database Type*' field is expanded, showing a list of options. 'Snowflake' is highlighted in blue. A note at the bottom left of the form reads: 'Note: If you change database type you changed database type.'

Configuration Details	Miscellaneous
Status	
System Environment Name*	Integration
System Environment Type*	Production
Data Steward	
Server Platform	MS Excel File CSV (Flat File) XMI
Server OS Version	MS Access File ERwin ERwin 9
File Management Type	CWM XMI (v1.1)
File Location	XSD JSON Db2
Production System Name	MySQL IBM Netezza
Production Environment Name	Oracle Greenplum Pervasive SAP
Version	SqServer
Version Label	Sql Server (Windows Authentication)
DQ Score	Sybase Salesforce
Database Type*	Snowflake Teradata Amazon Redshift HP Vertica Big Data - Cloudera Big Data - Hortonworks Big Data - MapR Other

The following connection parameters appear on the right hand side.

Driver Name*	<input type="text" value="net.snowflake.client.jdbc.SnowflakeD"/>
DBMS Name/DSN*	<input type="text" value="ErwinDIS931"/>
IP Address/Host Name*	<input type="text" value="localhost"/>
Port	<input type="text" value="443"/>
User Name*	<input type="text" value="sa"/>
Password*	<input type="password" value="••••••••"/>
	<input checked="" type="checkbox"/> Save Password
Url*	<input type="text" value="jdbc:snowflake://localhost:null/?db=E"/>
DBMS Instance Schema	<input type="text" value="DBO"/> 
Connection Pool Type*	<input type="text" value="HIKARICP"/> 
Number of Partitions*	<input type="text" value="1"/>
Minimum Connections Per Partitions*	<input type="text" value="3"/>
Maximum Connections Per Partitions*	<input type="text" value="5"/>
Options	<input type="text"/> 

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

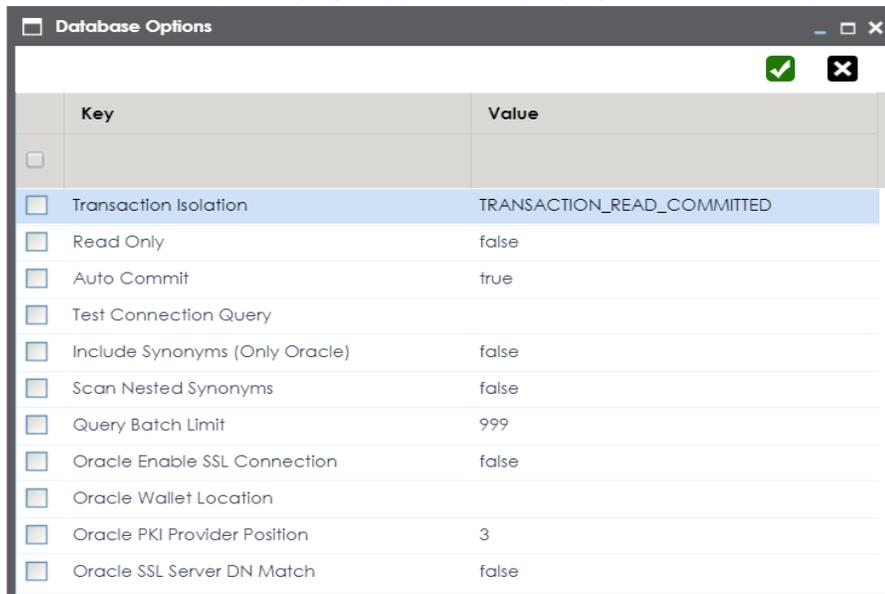
Field Name	Description
Driver Name	com.snowflake.client.jdbc.SnowflakeDriver
DBMS Name/DSN	Enter the Snowflake database name.
IP Address/Host Name	Enter <accountname>.snowflakecomputing.com
Port	Enter the value 443 and it can be changed if required.
User Name	Enter the Snowflake (Service account) username.
Password	Enter the Snowflake (Service account) password.

Field Name	Description
Url	<p>It is autopopulated based on the other parameters.</p> <p>jdb- c:s- now- flake://<ac- count- name>.s- now- flake- com- put- ing.- com/?ware- house=DataWarehouseName&db=DatabaseName&schema=SchemaName</p>
DBMS Instance Schema	<p>Use this option to select multiple or narrow down to single schema.</p>
Connection Pool Type	<p>Select the appropriate connection pool type.</p>
Number of Partitions	<p>It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired.</p>
Minimum	<p>It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired.</p>

Field Name	Description
Connections Per Partitions	
Maximum Connections Per Partitions	It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired.

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 .

Salesforce

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

Before creating a Salesforce 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 Salesforce database
- **Salesforce Security Token** should be generated and kept ready. You will find this from My Settings -> Personal -> Reset My Security Token. The security token is sent to your registered email id.

JDBC Driver Details

The Salesforce JDBC driver is not packaged with erwin DIS application. Hence, you need to use the jdbc driver available at your end for Salesforce (CDATA, Progress etc.).

You can download CDATA driver from the URL mentioned below.

Download URL: <https://www.cdata.com/drivers/salesforce/download/>

Location to Configure the JDBC driver: Once downloaded, the Salesforce drivers should be placed in the following path in erwin DIS application server:

\\Apache Software Foundation\<Tomcat X.X>\webapps\erwinDISuite\WEB-INF\lib and restart the Tomcat server

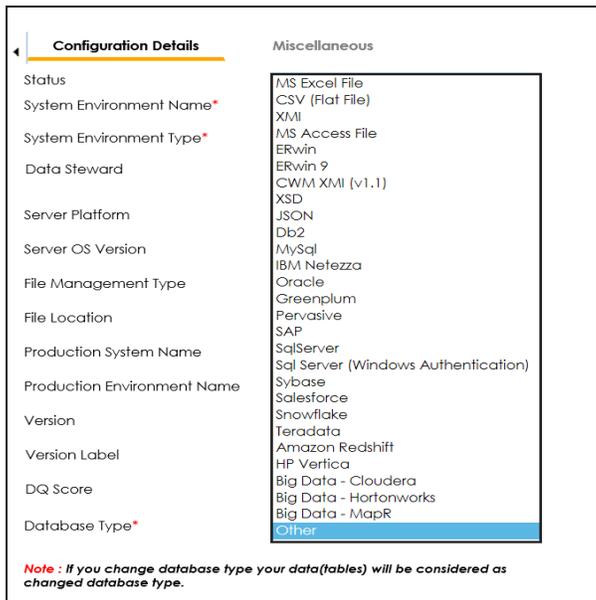
TLS Connection Details

The CDATA Salesforce 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 Salesforce connection parameters with CDATA driver, follow these steps:

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



The following connection parameters appear on the right hand side.

Driver Name*	<input type="text" value="cdata.jdbc.salesforce.SalesforceDrive"/>
DBMS Name/DSN*	<input type="text" value="Northwind"/>
IP Address/Host Name*	<input type="text" value="10.1.50.225"/>
Port	<input type="text" value="1433"/>
User Name*	<input type="text" value="sridharsai.55@gmail.com"/>
Password*	<input type="password" value="....."/>
	<input checked="" type="checkbox"/> Save Password
Url*	<input type="text" value="jdbc:salesforce:user=sridharsai.55@gn"/>
DBMS Instance Schema	<input type="text" value="Salesforce"/> 
Connection Pool Type*	<input type="text" value="HIKARICP"/> 
Number of Partitions*	<input type="text" value="1"/>
Minimum Connections Per Partitions*	<input type="text" value="3"/>
Maximum Connections Per Partitions*	<input type="text" value="5"/>
Options	<input type="text"/> 

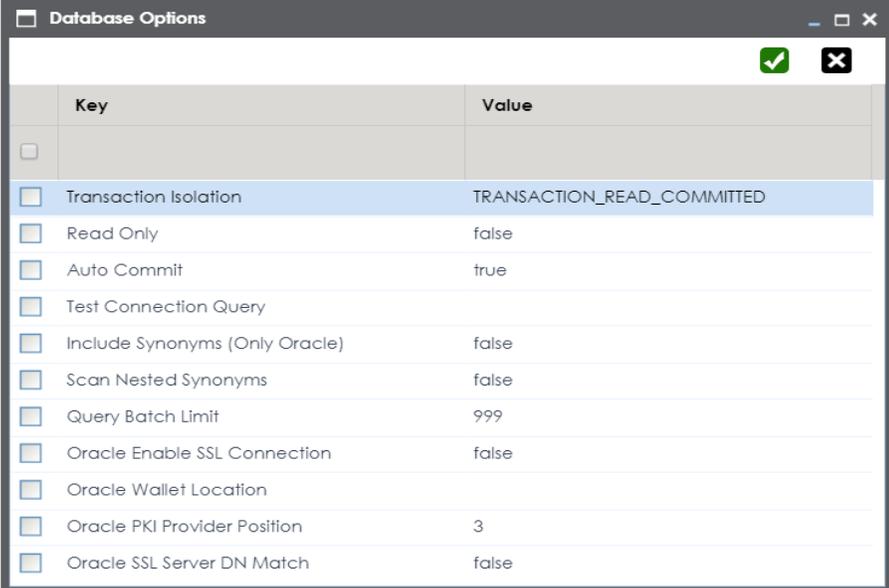
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	cdata.jdbc.salesforce.SalesforceDriver
DBMS Name/DSN	Enter the Salesforce database name.
IP Address/Host Name	Enter the Salesforce URL (<Accoutname>.salesforce.com)
Port	Enter the value 443 and it can be changed if required.
User Name	Enter the Salesforce (Service account) username.
Password	Enter the Salesforce (Service account) password.
Url	It is autopopulated based on the other parameters. jdbc:salesforce:Login URL=<Salesforce URL>;User-r=<username>.<InstanceName>; Password=XXX;Security Token=XXX;
DBMS Instance Schema	Select Salesforce .
Connection Pool Type	Select the appropriate connection pool type.

Field Name	Description
Number of Partitions	It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired.
Minimum Connections Per Partitions	It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired.
Maximum Connections Per Partitions	It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired.

3. Click  to use database options.

The Database Options page appears displaying the different options available.



Key	Value
<input type="checkbox"/>	
<input type="checkbox"/> Transaction Isolation	TRANSACTION_READ_COMMITTED
<input type="checkbox"/> Read Only	false
<input type="checkbox"/> Auto Commit	true
<input type="checkbox"/> Test Connection Query	
<input type="checkbox"/> Include Synonyms (Only Oracle)	false
<input type="checkbox"/> Scan Nested Synonyms	false
<input type="checkbox"/> Query Batch Limit	999
<input type="checkbox"/> Oracle Enable SSL Connection	false
<input type="checkbox"/> Oracle Wallet Location	
<input type="checkbox"/> Oracle PKI Provider Position	3
<input type="checkbox"/> Oracle SSL Server DN Match	false

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.

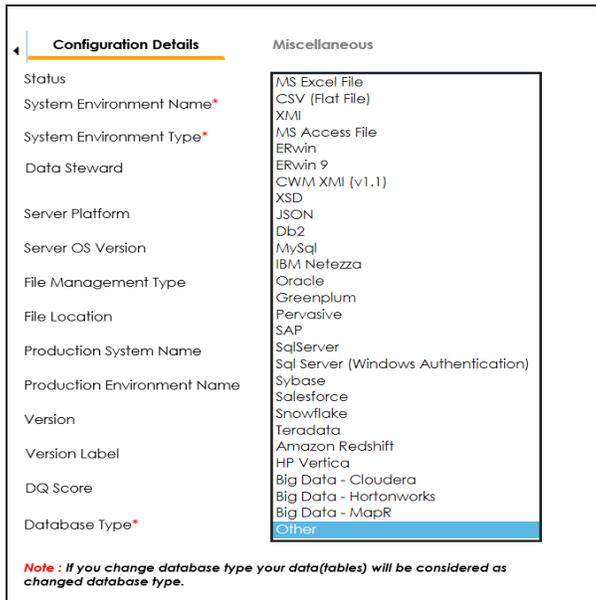
TLS Connection Details

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.

Driver Name*	<input type="text" value="cdata.jdbc.dynamicscrm.DynamicsCRMDriver"/>
DBMS Name/DSN*	<input type="text" value="Northwind"/>
IP Address/Host Name*	<input type="text" value="10.1.50.225"/>
Port	<input type="text" value="1433"/>
User Name*	<input type="text" value="lgadde@erwin123.onmicrosoft.com"/>
Password*	<input type="password" value="*****"/>
	<input checked="" type="checkbox"/> Save Password
Url*	<input type="text" value="jdbc:dynamicscrm:user=lgadde@erwin123.onmicrosoft.com"/>
DBMS Instance Schema	<input type="text" value="DynamicsCRM"/> 
Connection Pool Type*	<input type="text" value="HIKARICP"/> 
Number of Partitions*	<input type="text" value="1"/>
Minimum Connections Per Partitions*	<input type="text" value="3"/>
Maximum Connections Per Partitions*	<input type="text" value="5"/>
Options	<input type="text"/> 

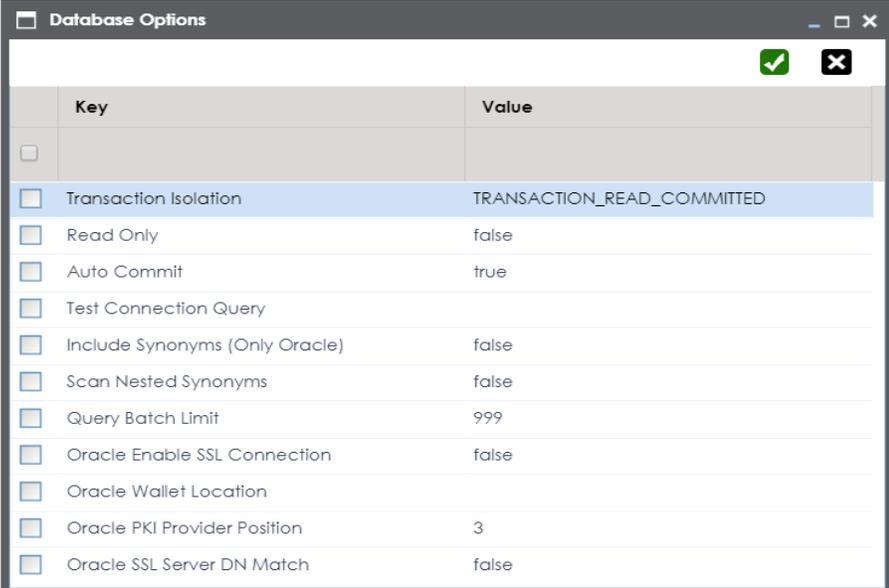
2. Enter appropriate values in the fields (connection parameters). The fields marked with a red asterisk are mandatory.

Field Name	Description
Driver Name	cdata.jdbc.dynamicscrm.DynamicsCRMDriver
DBMS Name/DSN	Enter the MS Dynamics CRM Database Name.
IP Address/Host Name	Enter the IP Address or Host Names of MS Dynamics CRM server.
Port	Enter the value 443 and it can be changed if required.
User Name	Enter the MS Dynamics CRM (Service account) username.
Password	Enter the MS Dynamics CRM (Service account) password.
Url	<p>It is autopopulated based on the other parameters.</p> <p>jdbc:dynamicscrm:User=UserName;Password=XXX;URL=<MS Dynamics CRM URL>;</p> <p>Note: If user trying to connect CRM online version, then append the following value to above mentioned connection string</p> <p>CRM Version=CRM Online;</p>

Field Name	Description
DBMS Instance Schema	Select DynamicsCRM.
Connection Pool Type	Select the appropriate connection pool type.
Number of Partitions	It is autopopulated with default number of partitions. You can edit and provide the number of partitions as desired.
Minimum Connections Per Partitions	It is autopopulated with default minimum connections per partitions. You can edit and provide the minimum connections per partitions as desired.
Maximum Connections Per Partitions	It is autopopulated with default maximum connections per partitions. You can edit and provide the maximum connections per partitions as desired.

3. Click  to use database options.

The Database Options page appears displaying the different options available.



Database Options	
Key	Value
<input type="checkbox"/>	
<input type="checkbox"/> Transaction Isolation	TRANSACTION_READ_COMMITTED
<input type="checkbox"/> Read Only	false
<input type="checkbox"/> Auto Commit	true
<input type="checkbox"/> Test Connection Query	
<input type="checkbox"/> Include Synonyms (Only Oracle)	false
<input type="checkbox"/> Scan Nested Synonyms	false
<input type="checkbox"/> Query Batch Limit	999
<input type="checkbox"/> Oracle Enable SSL Connection	false
<input type="checkbox"/> Oracle Wallet Location	
<input type="checkbox"/> Oracle PKI Provider Position	3
<input type="checkbox"/> Oracle SSL Server DN Match	false

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 DIS 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 screenshot shows a configuration form with two tabs: 'Configuration Details' and 'Miscellaneous'. The 'Configuration Details' tab is active. The 'Database Type*' field is highlighted, and its dropdown menu is open, showing a list of database options. 'SAP' is selected and highlighted in blue. A red note at the bottom left of the dropdown states: 'Note : If you change database type you changed database type.'

Field	Value
Status	
System Environment Name*	Integration
System Environment Type*	Production
Data Steward	MS Excel File CSV (Flat File) XML
Server Platform	MS Access File
Server OS Version	ERwin ERwin 9
File Management Type	CWM XML (v1.1) XSD
File Location	JSON
Production System Name	Db2 MySQL
Production Environment Name	IBM Netezza Oracle Greenplum Pervasive
Version	SAP
Version Label	SqlServer Sql Server (Windows Authentication)
DQ Score	Sybase Salesforce Snowflake
Database Type*	Teradata Amazon Redshift HP Vertica Big Data - Cloudera Big Data - Hortonworks Big Data - MapR Other

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

The screenshot shows a form for connection parameters. Fields marked with a red asterisk are mandatory. The 'Save Password' checkbox is checked.

System Number*	24
Client*	800
IP Address/Host Name*	10.1.50.59
Field Delimiter*	. [Comma]
User Name*	sapuser
Password*	*****
Save Password	<input checked="" type="checkbox"/>
Delete and Reload	<input type="checkbox"/>
Existing CSV File	
CSV File	Drag-n-Drop files here or click to select files for upload.

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

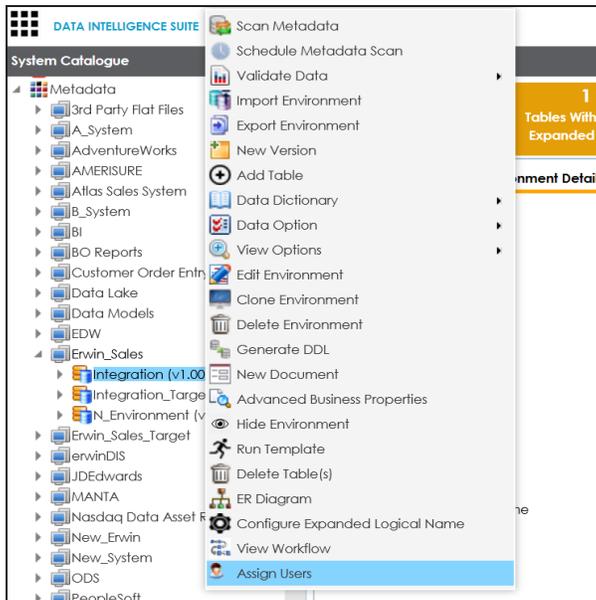
Field Name	Description
System Number	Enter the SAP System Instance Number (range 0-99).
Client	Enter the SAP Client number (range 000-999).
IP Address/Host Name	Enter the SAP IP Address or Server Host Name.
User Name	Enter the SAP (Service account) username.
Password	Enter the SAP (Service account) password.
CSV File Upload	Browse the CSV file which contains name of SAP tables to be harvested.
Field Delimiter	Select the required delimiter like, [Comma] etc.

Assigning Users

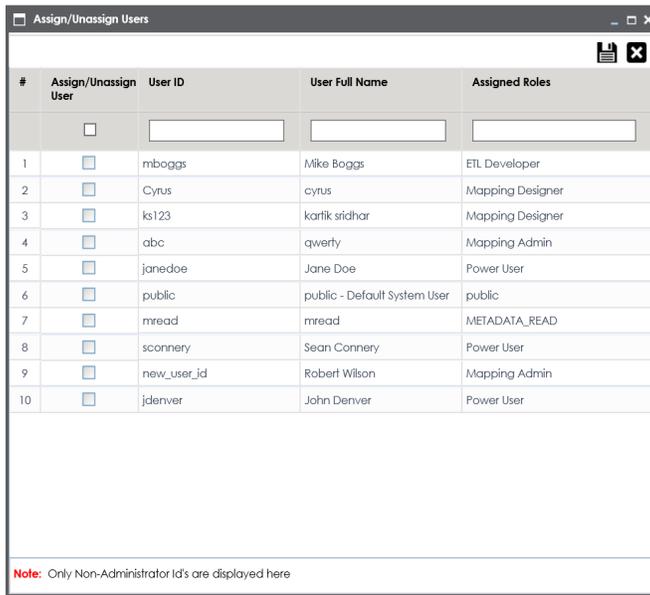
You can assign users to an environment and provide them read / write access to all the tables and columns in the environment.

To assign users to environments, follow these steps:

1. Right-click the desired environment.



2. Click **Assign Users**.



#	Assign/Unassign User	User ID	User Full Name	Assigned Roles
	<input type="checkbox"/>			
1	<input type="checkbox"/>	mboggs	Mike Boggs	ETL Developer
2	<input type="checkbox"/>	Cyrus	cyrus	Mapping Designer
3	<input type="checkbox"/>	ks123	karfik srldhar	Mapping Designer
4	<input type="checkbox"/>	abc	qwerty	Mapping Admin
5	<input type="checkbox"/>	janedoe	Jane Doe	Power User
6	<input type="checkbox"/>	public	public - Default System User	public
7	<input type="checkbox"/>	mread	mread	METADATA_READ
8	<input type="checkbox"/>	sconnery	Sean Connery	Power User
9	<input type="checkbox"/>	new_user_id	Robert Wilson	Mapping Admin
10	<input type="checkbox"/>	jdenver	John Denver	Power User

Note: Only Non-Administrator Id's are displayed here

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.

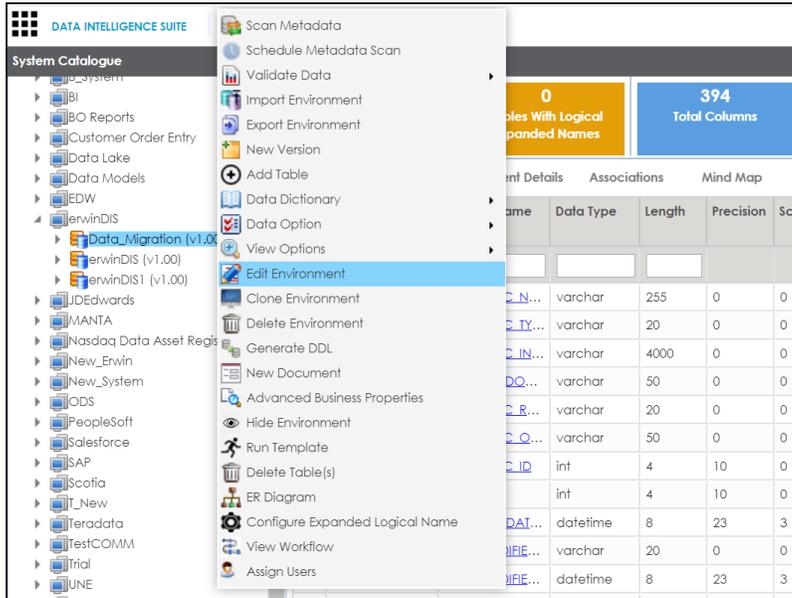
Managing Environments

Managing Environments involves:

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

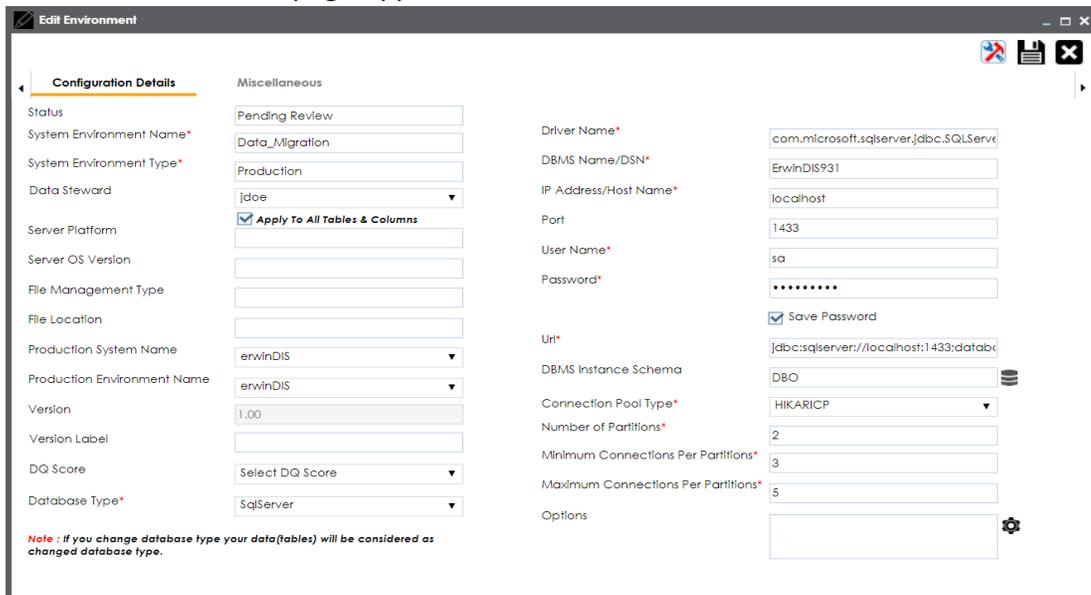
To edit environments, follow these steps:

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 .

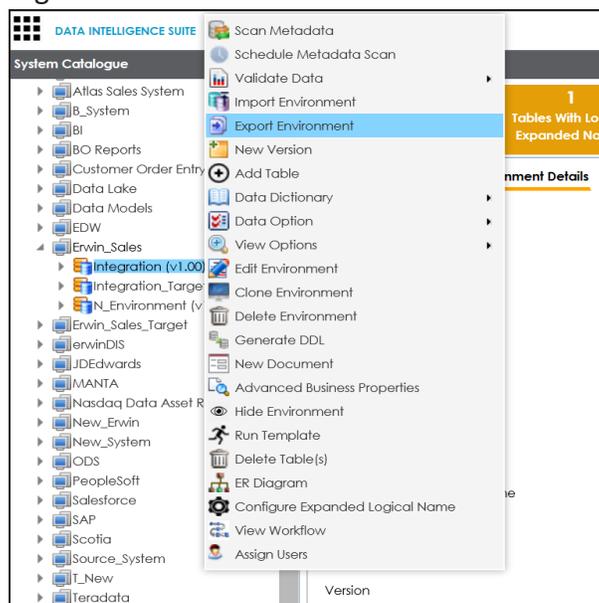
The environment is updated.

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:

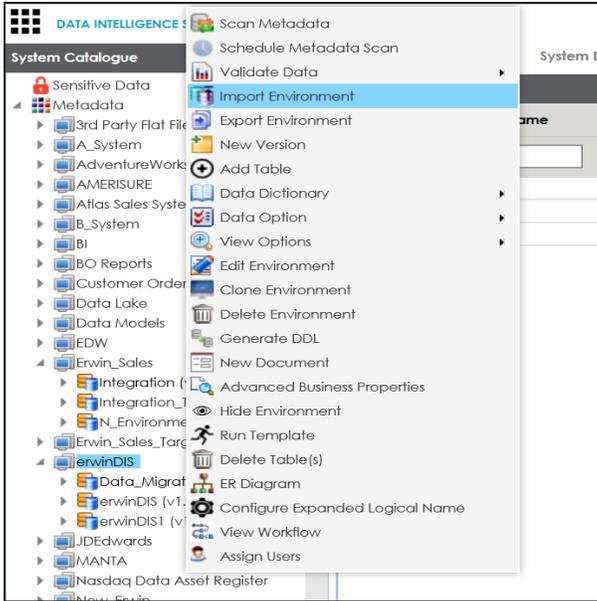
1. Right-click the desired environment.



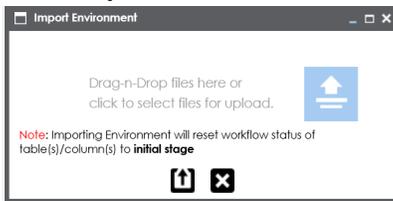
2. Click **Export Environment**.

The environment is exported in .amp format.

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

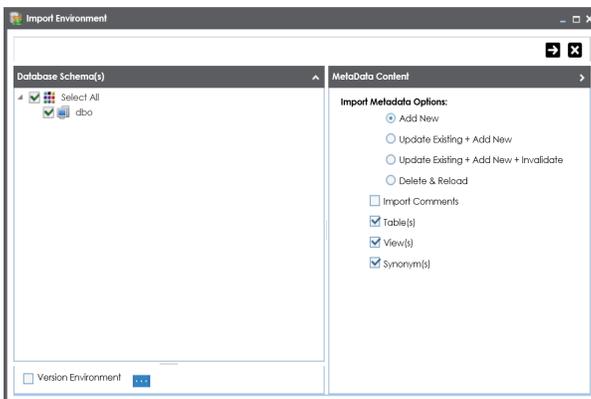


4. Click **Import Environment**.



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.

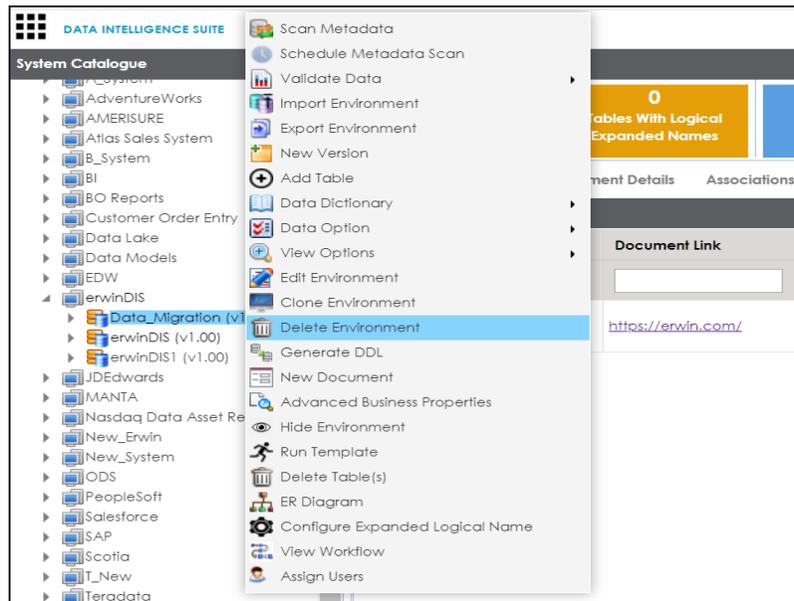
8. Click .

9. Select the tables and click .

The environment is updated.

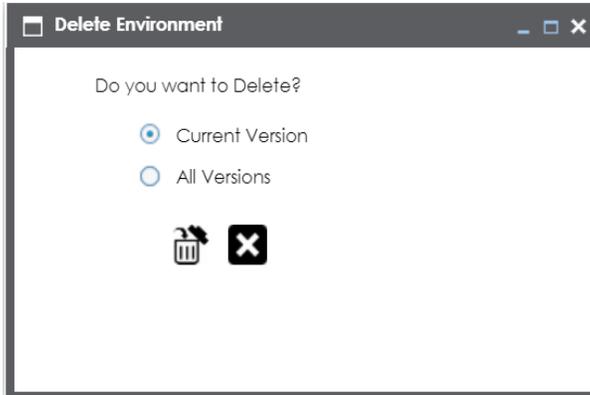
To delete environments, follow these steps:

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.

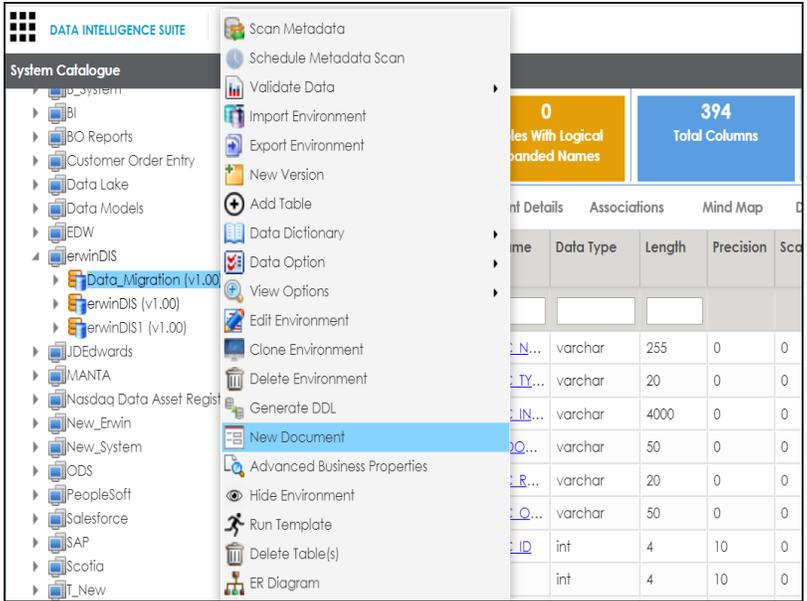
5. Click **Yes**.

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

Uploading Documents

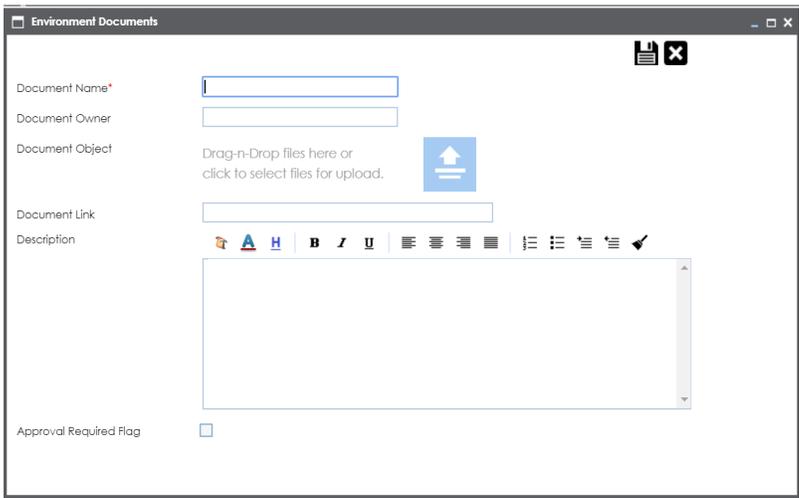
To upload documents at environment level, follow these steps:

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 where document is to be uploaded.



4. Click **New document**.

The Environment Documents page appears.



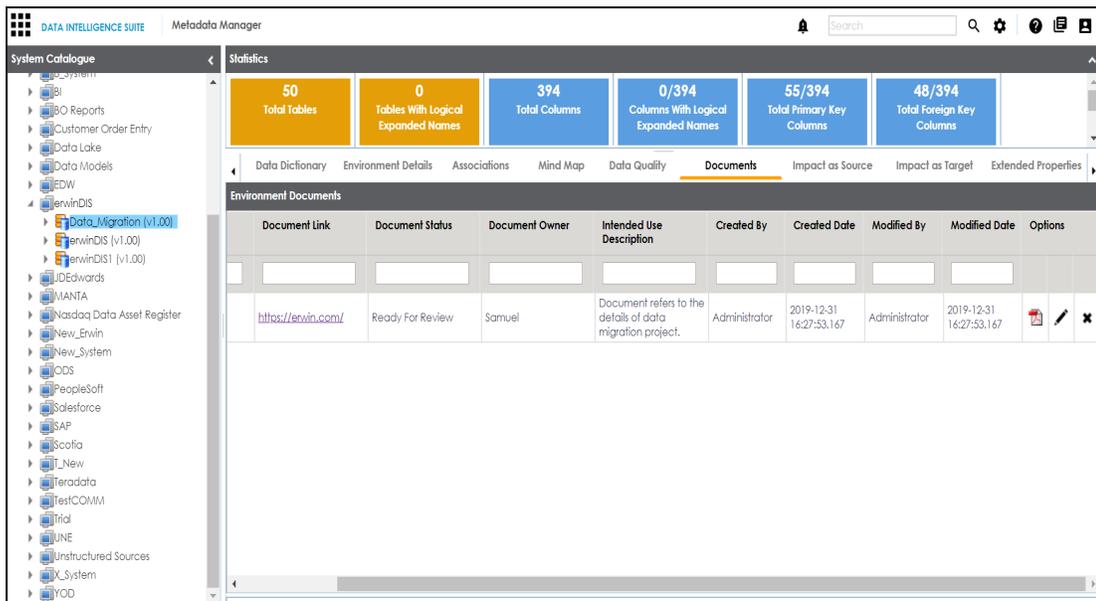
5. Enter appropriate values to the fields. Fields marked with red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
Document	Enter the name of the document.

Field Name	Description
Name	
Document Object	Drag and drop or use  to upload relevant files.
Document Owner	Enter the document owner's name.
Document Link	Enter Url related to the document.
Description	Enter a small description of the document.
Approval Required Flag	Select the Approval Required Flag check box to select document status.
Document Status	Select the status of the document from the drop down. This field appears when the Approval Required Flag checkbox is selected.

6. Click .

The document is uploaded and saved under the Documents tab.



The screenshot shows the Metadata Manager interface. On the left is the System Catalogue with a tree view of various systems. The main area is titled 'Statistics' and contains several summary cards: 50 Total Tables, 0 Tables With Logical Expanded Names, 394 Total Columns, 0/394 Columns With Logical Expanded Names, 55/394 Total Primary Key Columns, and 48/394 Total Foreign Key Columns. Below the statistics is a navigation bar with tabs for Data Dictionary, Environment Details, Associations, Mind Map, Data Quality, Documents (selected), Impact as Source, Impact as Target, and Extended Properties. The 'Documents' tab displays a table of Environment Documents. The table has the following columns: Document Link, Document Status, Document Owner, Intended Use Description, Created By, Created Date, Modified By, Modified Date, and Options. One document is listed with the link 'https://erwin.com/', status 'Ready For Review', owner 'Samuel', and a description 'Document refers to the details of data migration project.' The table also shows creation and modification dates and names for the document.

7. 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 .

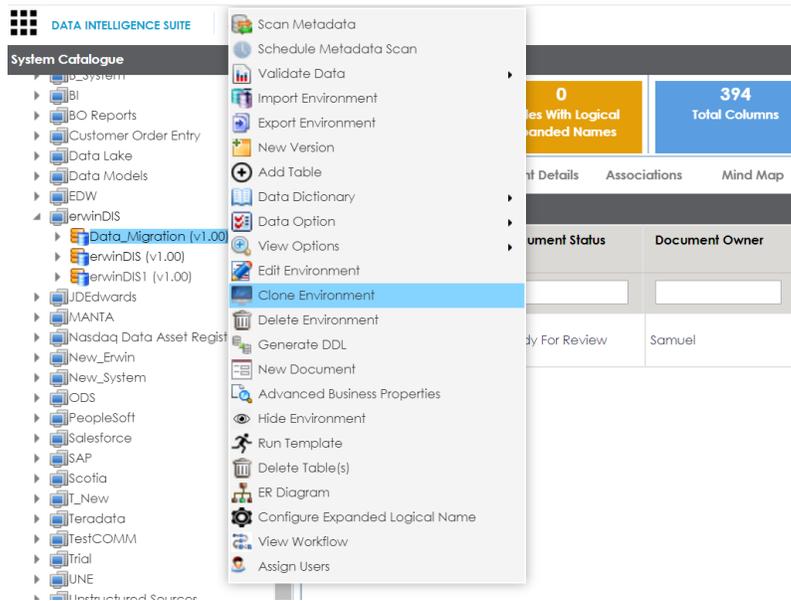
Delete ()

To delete the uploaded document, click .

Cloning Environments

To clone environments, 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 to be cloned.



4. Click **Clone Environment**.

The New Environment Cloning page appears.

Field	Value
System Environment Name*	Data_Migration1
System Environment Type*	Production
Data Steward	jdoe
Server Platform	<input checked="" type="checkbox"/> Apply To All Tables & Columns
Server OS Version	
File Management Type	
File Location	
Production System Name	erwinDIS
Production Environment Name	erwinDIS
Version	1.00
Version Label	
DQ Score	Select DQ Score
Database Type*	SqlServer
Driver Name*	com.microsoft.sqlserver.jdbc.SQLServe
DBMS Name/DSN*	ErwinDIS931
IP Address/Host Name*	localhost
Port	1433
User Name*	sa
Password*	*****
Save Password	<input checked="" type="checkbox"/>
Uri*	jdbc:sqlserver://localhost:1433:datab
DBMS Instance Schema	DBO
Connection Pool Type*	HIKARICP
Number of Partitions*	2
Minimum Connections Per Partitions*	3
Maximum Connections Per Partitions*	5
Options	

5. Edit the System Environment Name if required.

6. Click .

The environment is cloned and the cloned environment is saved in the environment tree.

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 a environment.

To view entity relationship diagram, follow these steps:

Viewing Workflow Logs

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

It involves viewing:

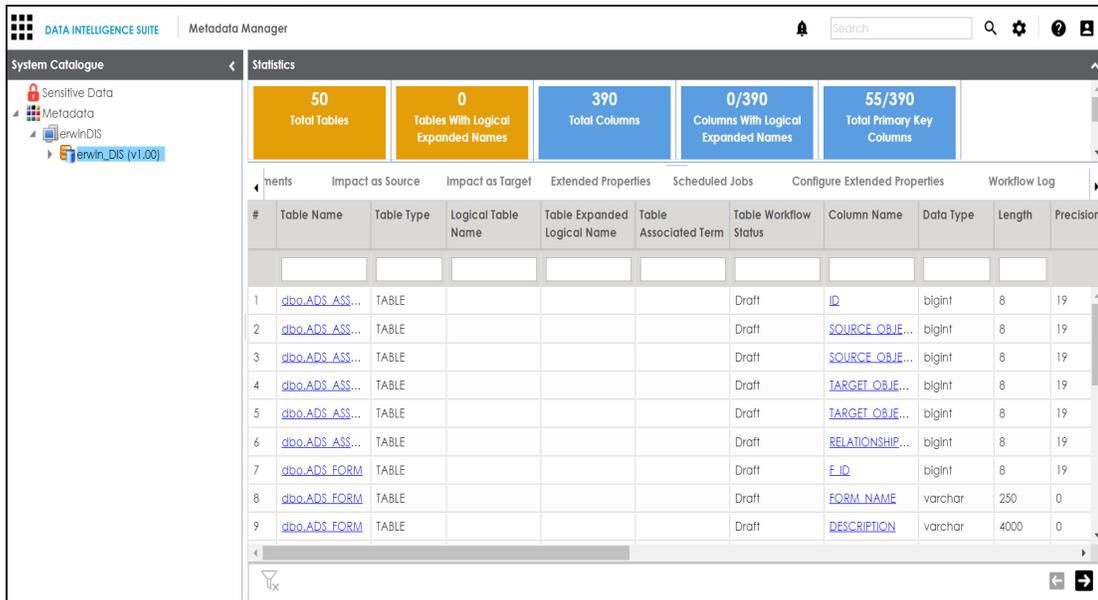
- Current workflow log status of an environment
- Users and roles assigned to all the stages of the workflow
- Comments entered by users while moving the object to the next stage of the workflow

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.

The screenshot shows the Metadata Manager interface. At the top, there's a search bar and navigation icons. Below that, a 'Statistics' section displays five metrics: 50 Total Tables, 0 Tables With Logical Expanded Names, 390 Total Columns, 0/390 Columns With Logical Expanded Names, and 55/390 Total Primary Key Columns. The main area shows a workflow diagram for 'Metadata Manager_WF -> Metadata Scan'. The workflow consists of five stages: 'On Create' (red), 'Draft' (teal), 'Review' (teal), 'First Approval' (orange), and 'Publish' (grey). The 'First Approval' stage is currently selected and highlighted. A 'Log Summary' button is visible at the bottom right of the workflow 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

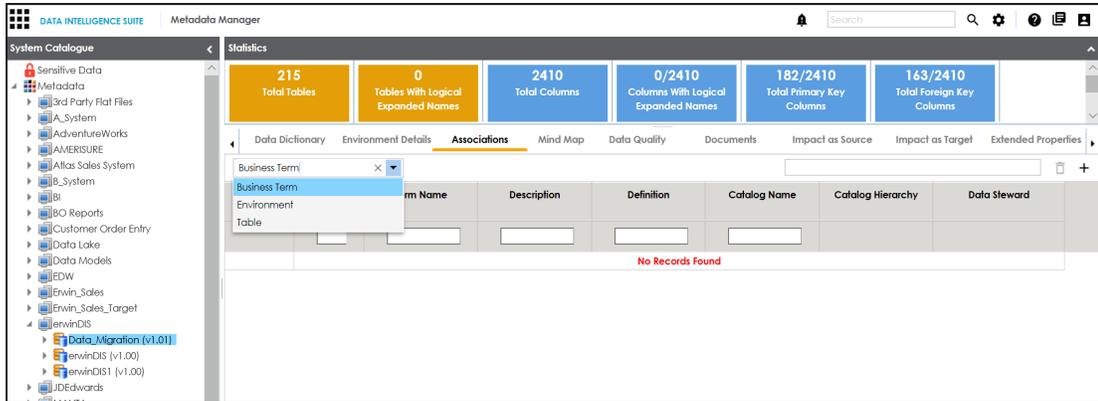
You can associate environments with business assets, systems, environments, tables, and columns. You can also view mind map and association statistics.

You need to ensure that:

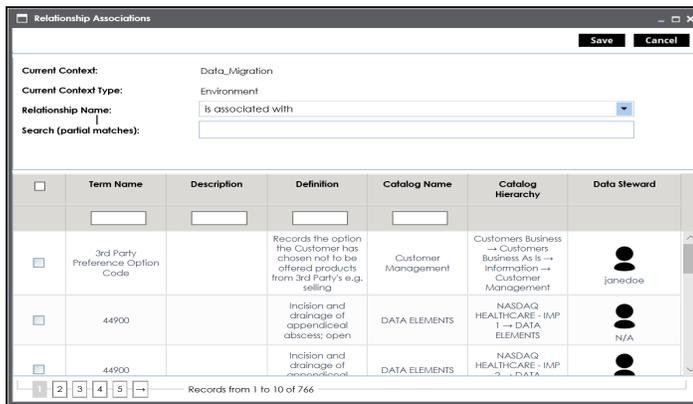
- Business assets are enabled. You can add new business assets and enable them in the Business Glossary Manager Settings.
- Relationship between environment and the asset type is defined. You can define associations and relationships in the Business Glossary Manager Settings.

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.

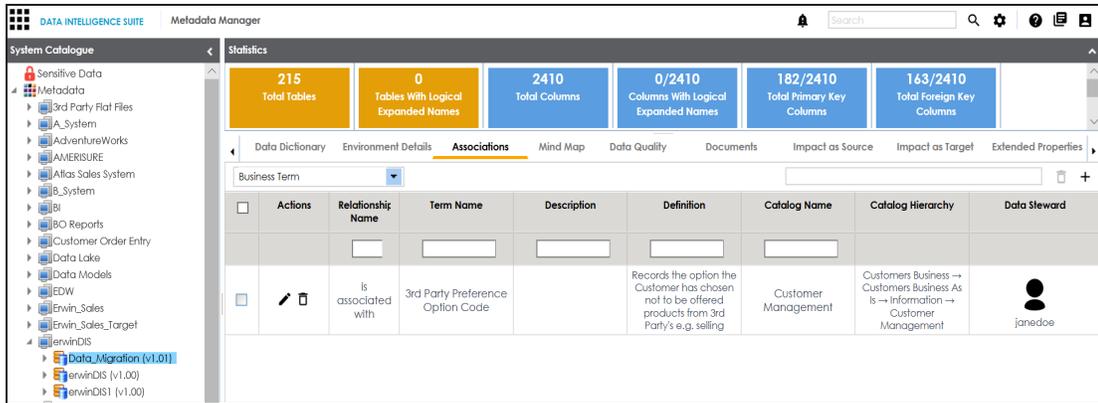


3. Click **+**.



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 (✎)

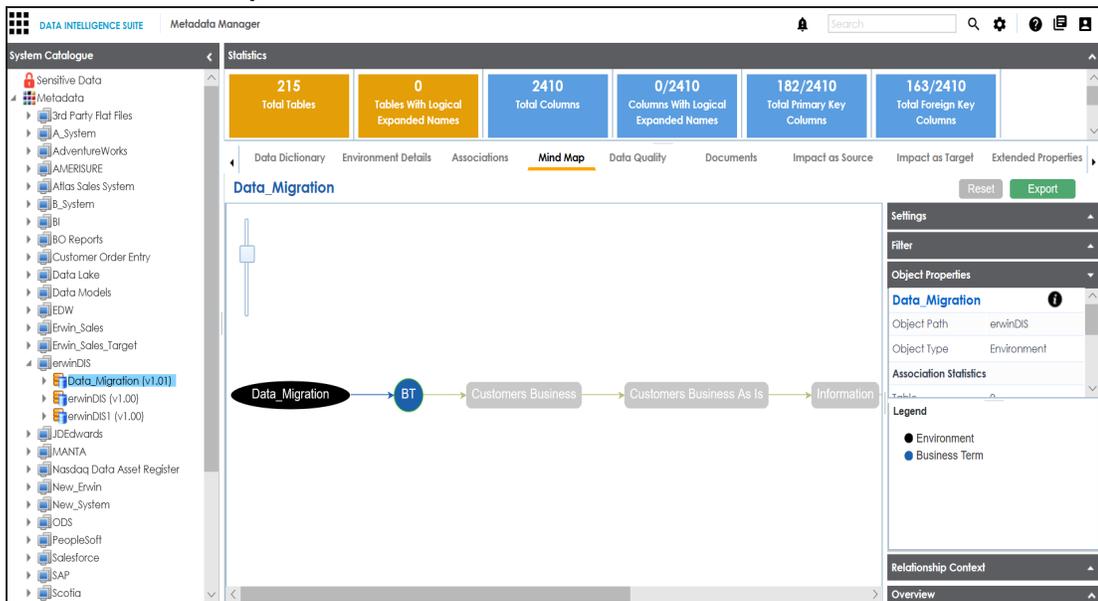
Use this option to edit the association.

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.

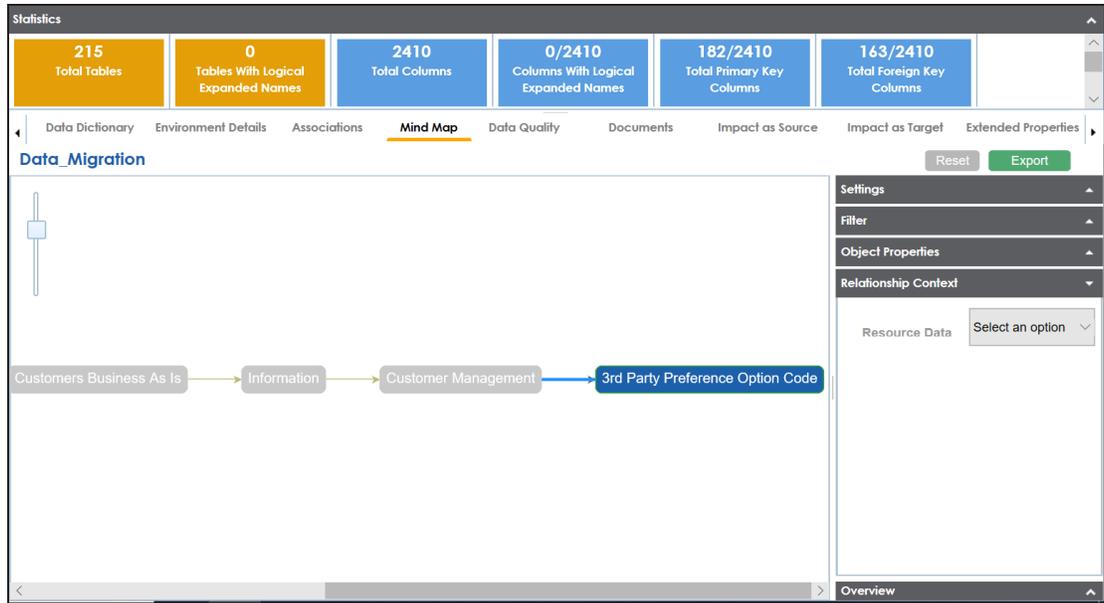
Object Properties

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 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.

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 Term	Resource	This should match with a part of the table and column names 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: <ul style="list-style-type: none"> ▪ 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.

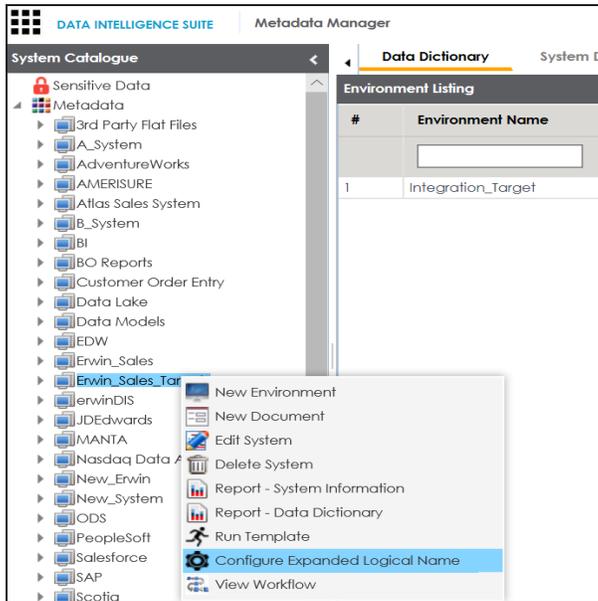
After the job runs successfully, the expanded logical name of the table and column is updated as mentioned in the following table:

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.

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

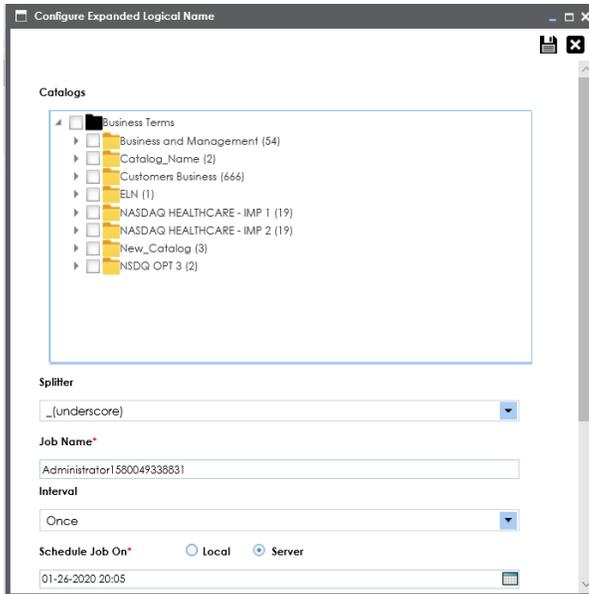
To configure expanded logical name, follow these steps:

1. Right-click a system or environment.



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

The Configure Expanded Logical Name page appears.



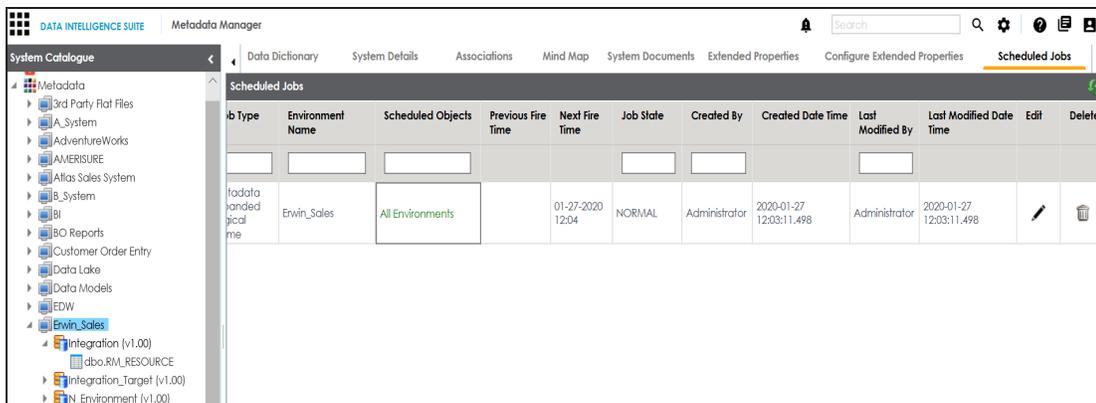
3. Select or enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

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. <ul style="list-style-type: none"> ▪ 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.

Field Name	Description
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.



Job Type	Environment Name	Scheduled Objects	Previous Fire Time	Next Fire Time	Job State	Created By	Created Date Time	Last Modified By	Last Modified Date Time	Edit	Delete
Integration (v1.00)	Erwin_Sales	All Environments		01-27-2020 12:04	NORMAL	Administrator	2020-01-27 12:03:11.498	Administrator	2020-01-27 12:03:11.498		

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.

Columns	Table Properties	Associations	Mind Map	Data Quality	Documents	Extended Properties	Indexes	Impact Analysis	Forward Lineage
Technical Properties									
Table Name	<input type="text" value="dbo.RM_RESOURCE"/>	Environment Name	<input type="text" value="Integration"/>						
System Name	<input type="text" value="Erwin_Sales"/>	No of Rows	<input type="text" value="4"/>						
Synonym Reference	<input type="text"/>	FileType	<input type="text"/>						
		Workflow Status	<input type="text" value="Draft"/>						
Business Properties									
Data Steward	<input type="text" value="janedoe"/>	Logical Table Name	<input type="text" value="Resource"/>						
Table Definition	<input type="text" value="Tab Def"/>	Expanded Logical Name	<input type="text" value="RM Sales Representative"/>						
Table Comments	<input type="text" value="Sales resource 2020"/>	Used In Gap Analysis	<input checked="" type="checkbox"/>						
Table Class	<input type="text" value="Table_Class"/>	Table Alias	<input type="text" value="SALESRESOURCE"/>						
DQ Score	<input type="text" value="Very High (9-10)"/>								

Column Properties	Associations	Mind Map	Documents	Impact Analysis	Forward Lineage	Reverse Lineage	Extended Properties	Valid Values	
Workflow Status	<input type="text" value="Draft"/>								
Business Properties									
Data Steward	<input type="text" value="janedoe"/>	Logical Column Name	<input type="text" value="Resource ID"/>						
Column Definition	<input type="text" value="represents resource ID"/>	Expanded Logical Name	<input type="text" value="Sales Representative ID"/>						
Column Comments	<input type="text" value="Column ID as per 2020"/>	Used In Gap Analysis	<input checked="" type="checkbox"/>						
Sensitive Data Indicator (SDI) Flag	<input checked="" type="checkbox"/>								
Sensitive Data Indicator (SDI) Classification	<input type="text" value="Confidential"/>	Sensitive Data Indicator (SDI) Description	<input type="text" value="Sensitive Data that if compromised c"/>						
Column Class	<input type="text" value="Column_Class"/>	Column Alias	<input type="text" value="RESOURCEID"/>						
DQ Score	<input type="text" value="Very High (9-10)"/>	Business Key Flag	<input checked="" type="checkbox"/>						

Note: You can use this job to update the expanded logical name only once. Alternatively, 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:

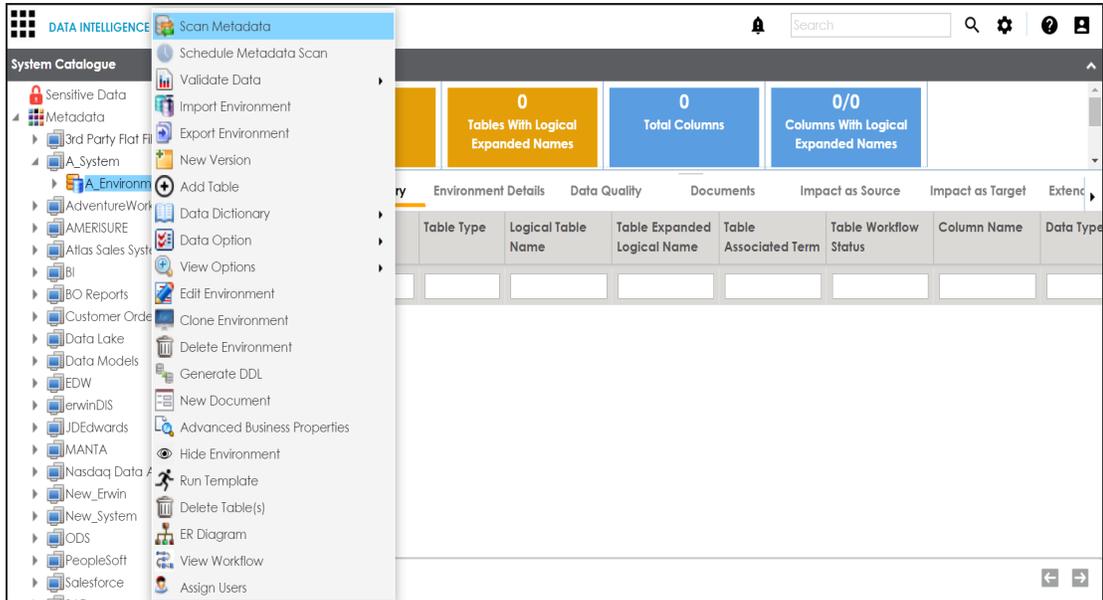
- [Scanning metadata from data sources](#)
- [Scheduling metadata scans](#)
- [Configuring expanded logical name](#)
- [Updating table properties](#)
- [Updating column properties](#)
- [Validating data](#)
- [Assigning codesets to columns](#)
- [Viewing workflow logs of tables](#)
- [Viewing workflow 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.

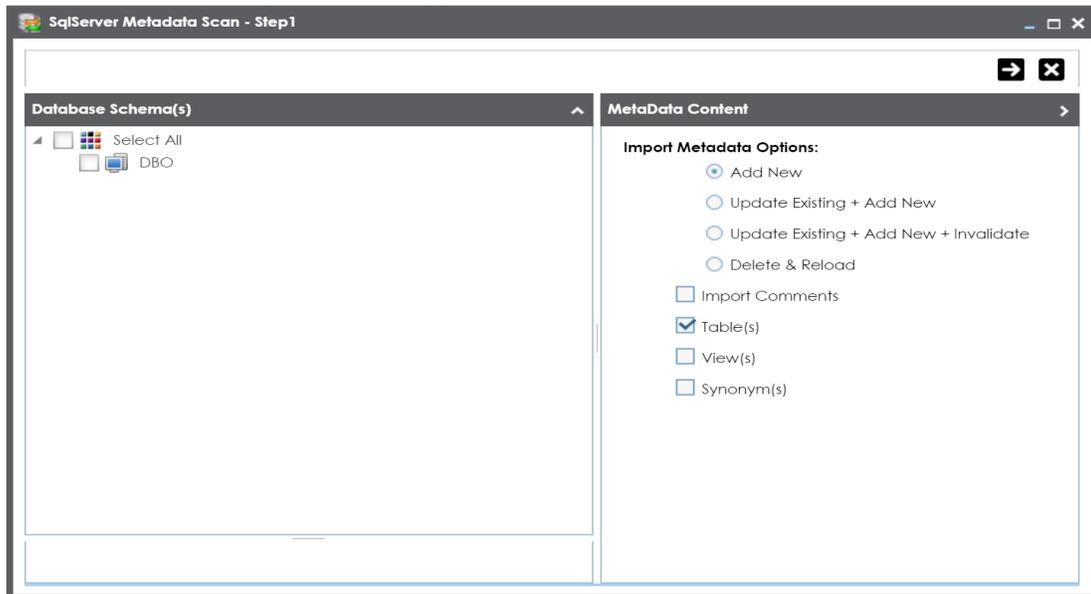
To scan source or target metadata, follow these steps:

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.



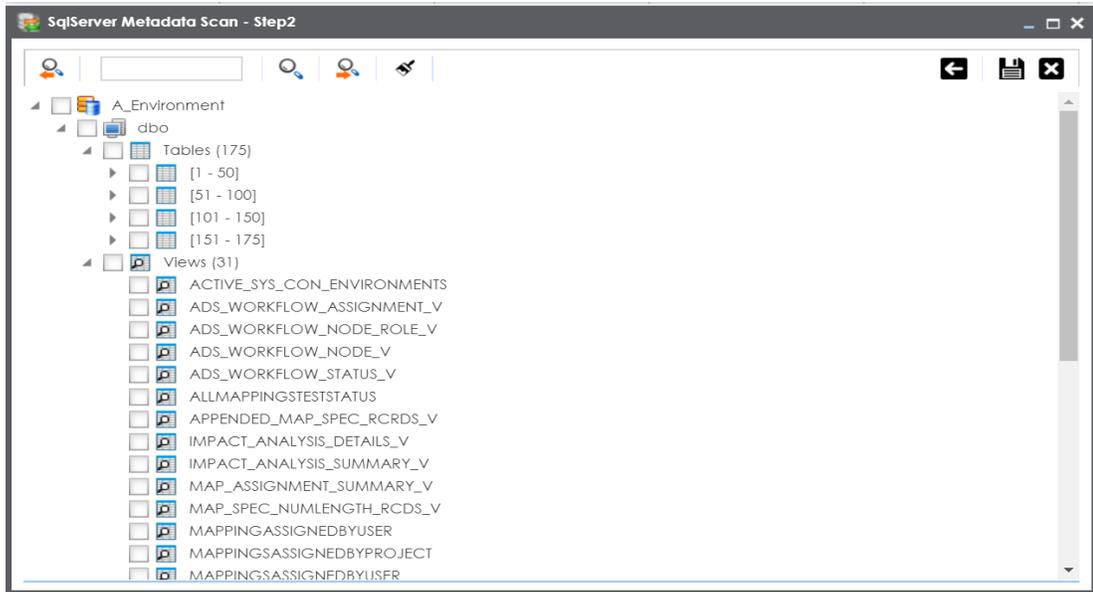
5. Select appropriate **Import Metadata Options** by selecting or .

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:

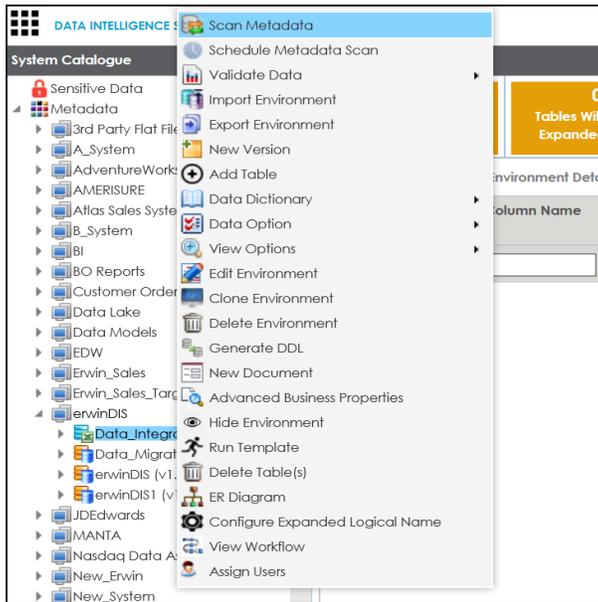
- [MS Excel File](#)
- [JSON](#)
- [CSV \(Flat File\)](#)
- [XMI](#)
- [MS Access File](#)
- [XSD](#)

Importing Metadata from MS Excel

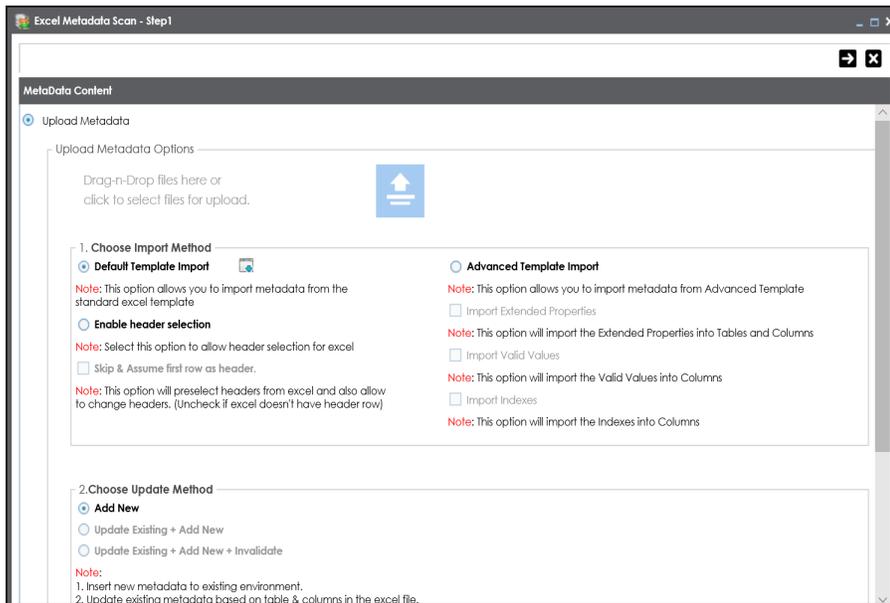
You can import metadata from MS Excel files after creating a MS Excel environment.

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

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

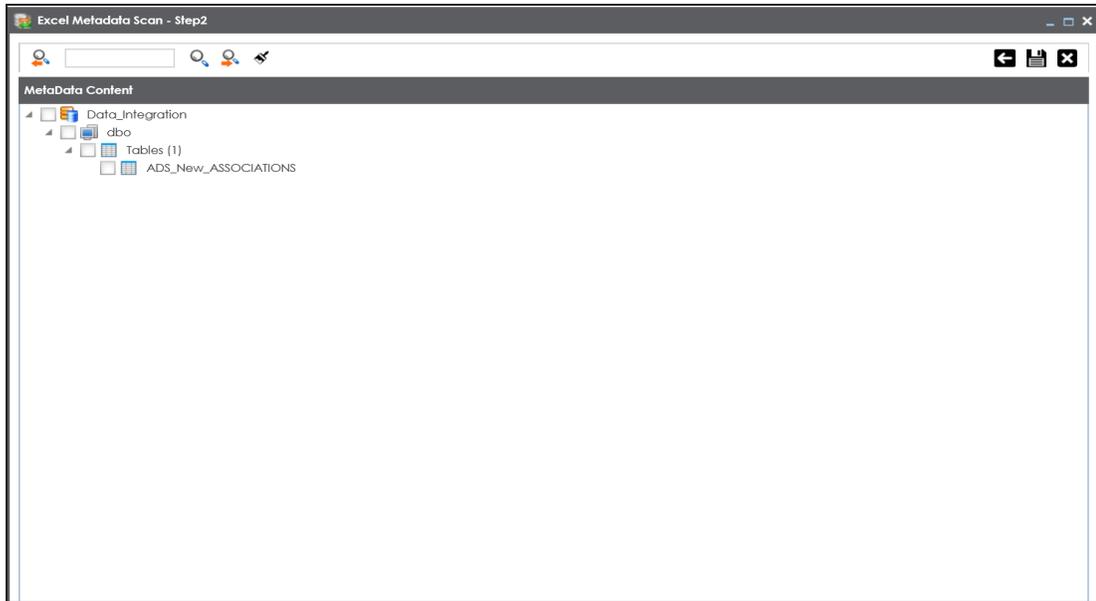


2. Click **Scan Metadata**.



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 .

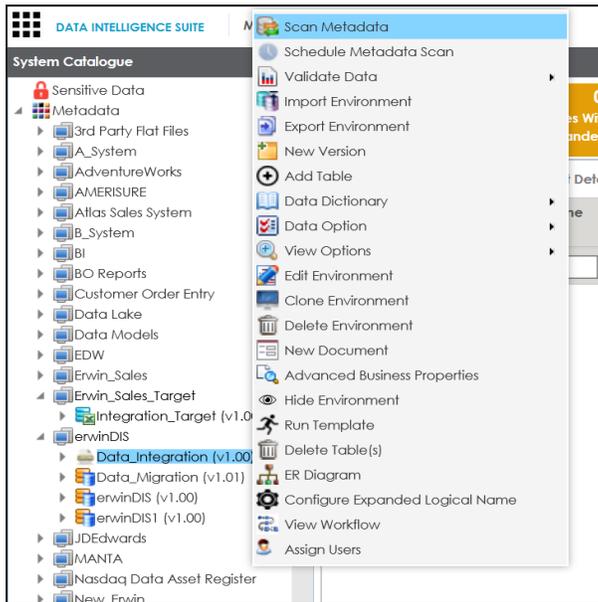
The metadata is scanned and saved in the environment.

Importing Metadata from JSON

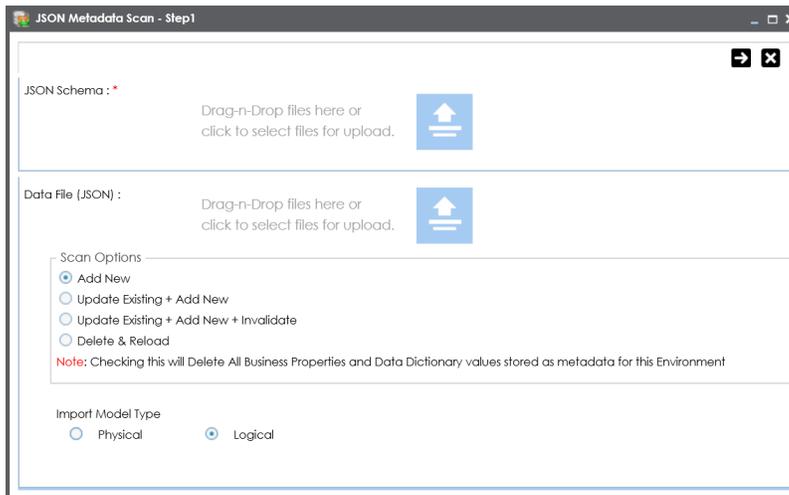
You can import metadata from JSON files after creating a JSON environment.

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

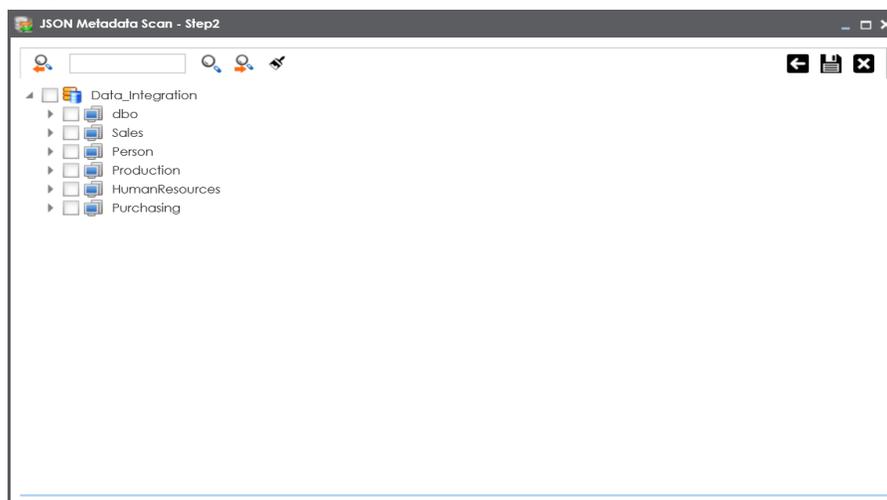
Select this option to update existing metadata. It will not delete the existing metadata.

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 .

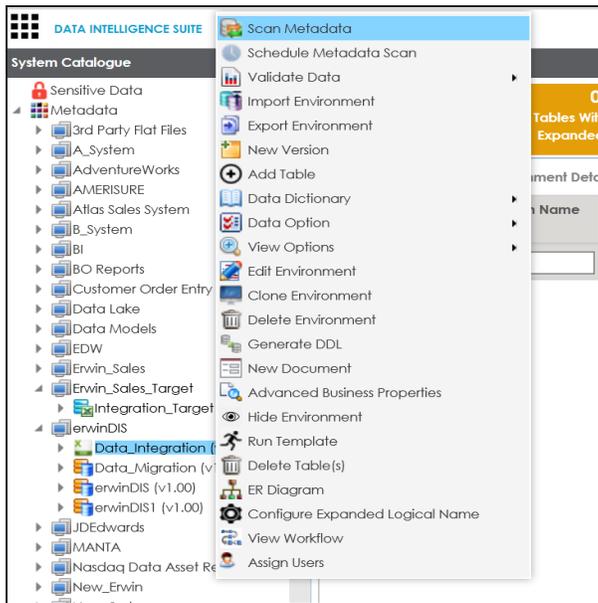
The metadata is scanned and saved in the environment.

Importing Metadata from CSV

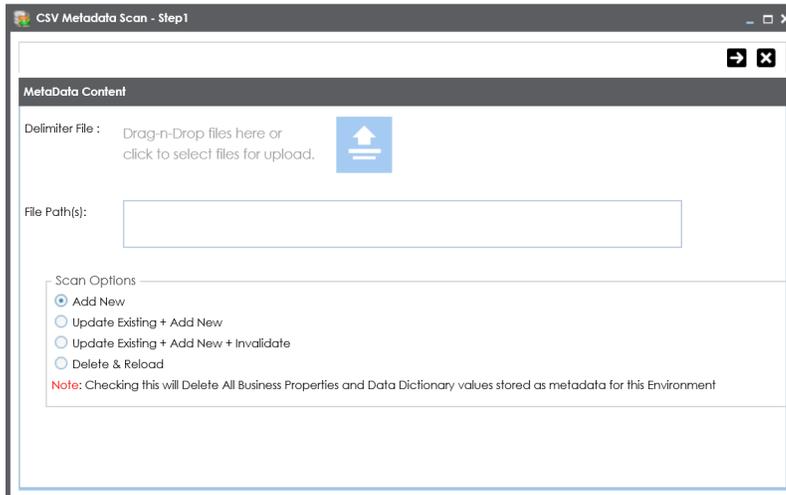
You can import metadata from CSV files after creating a CSV environment.

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.

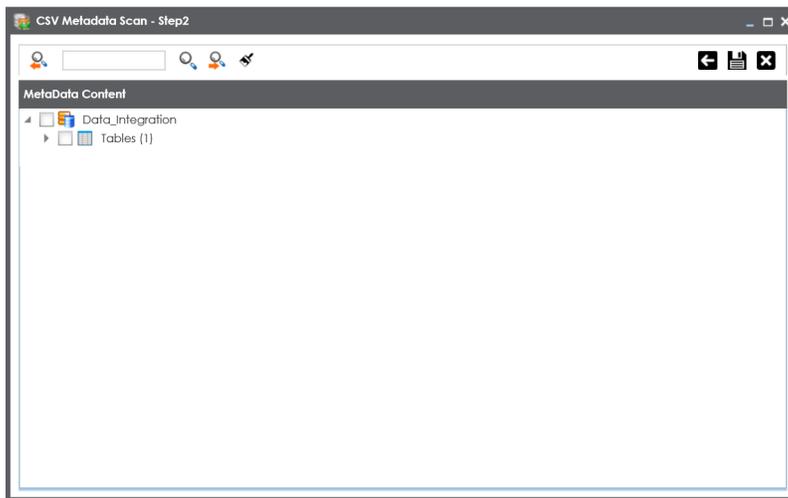
Update Existing + Add New + Invalidate

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 .

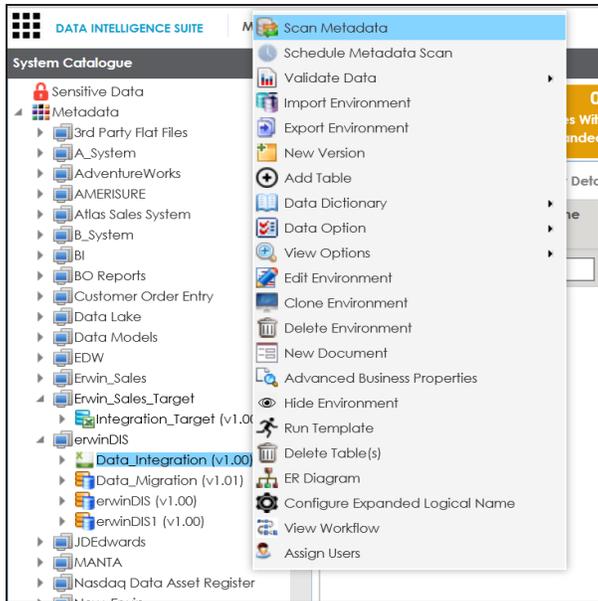
The metadata is scanned and saved in the environment.

Importing Metadata from XMI

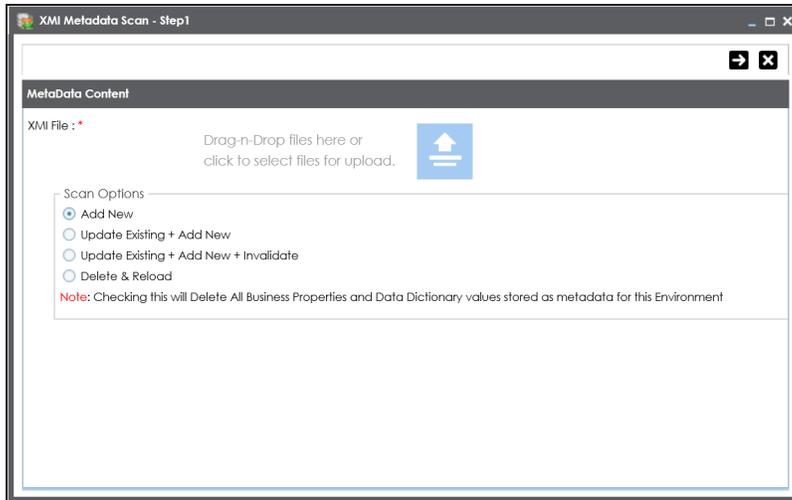
You can import metadata from XMI files after creating a XMI environment.

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.

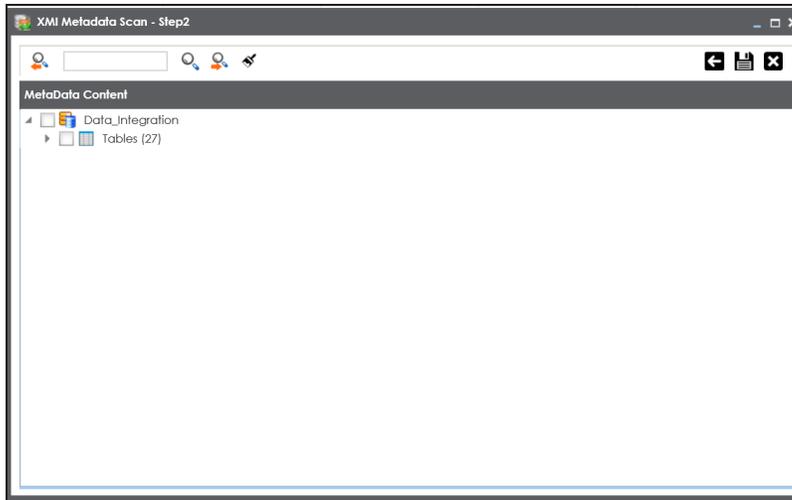
Update Existing + Add New + Invalidate

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 .

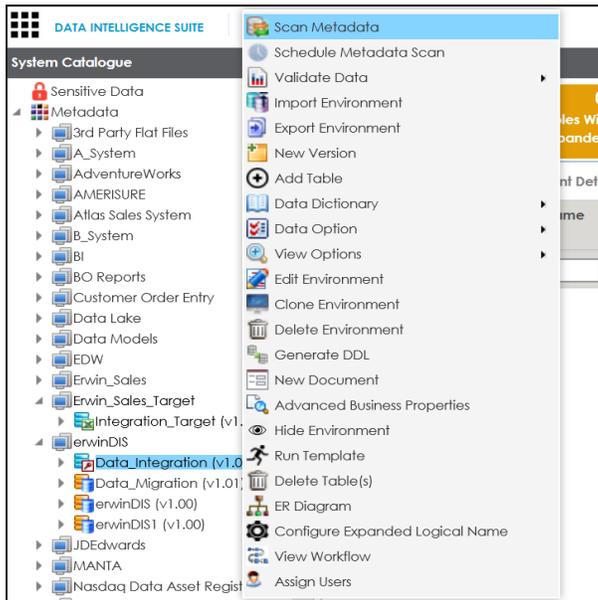
The metadata is scanned and saved in the environment.

Importing Metadata from MS Access File

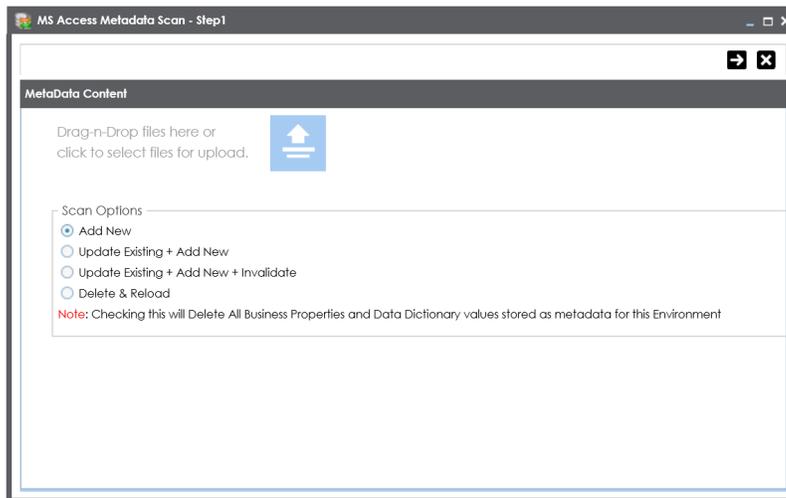
You can import metadata from MS Access files after creating a MS Access environment.

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.

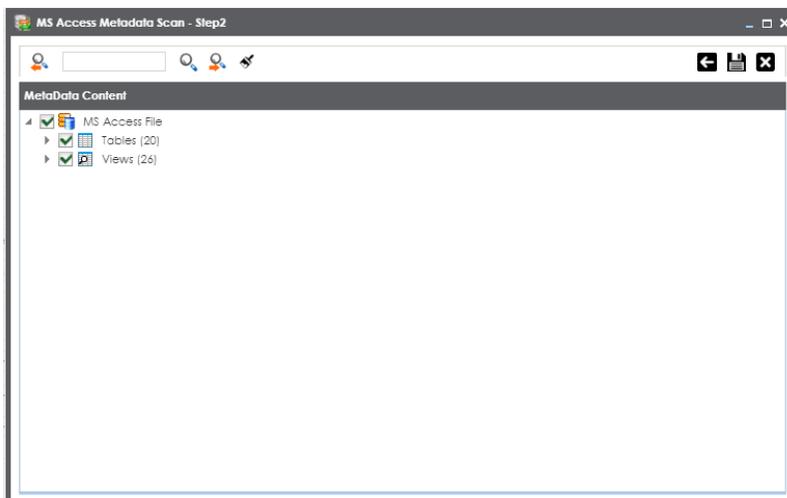
Update Existing + Add New + Invalidate

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 .

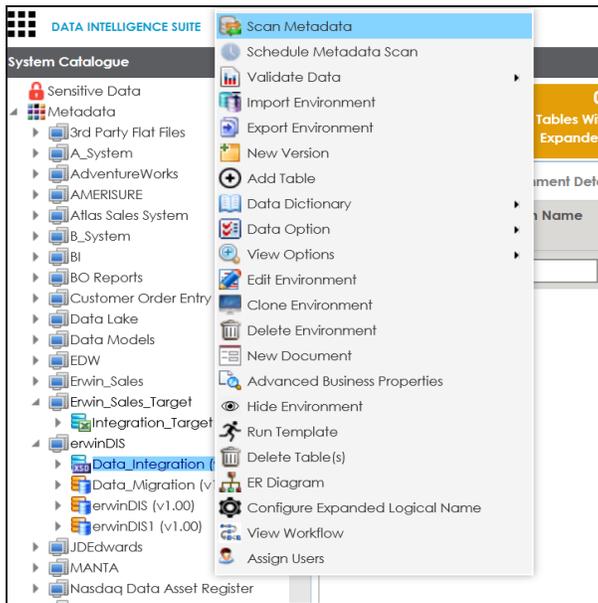
The metadata is scanned and saved in the environment.

Importing Metadata from XSD

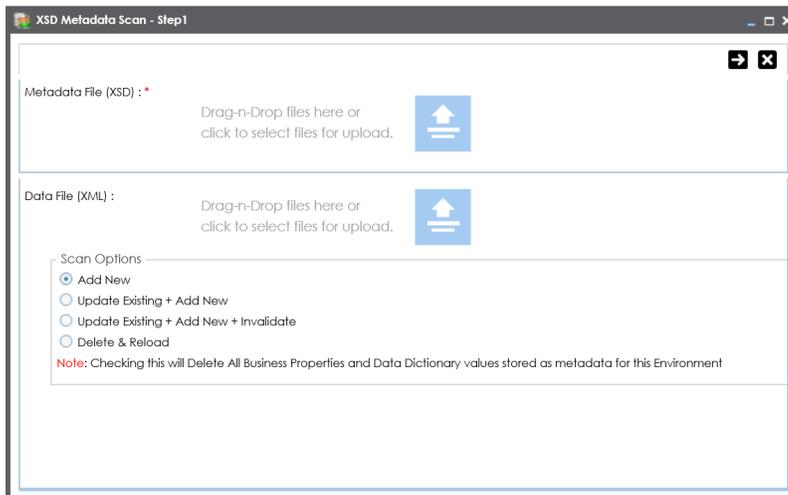
You can import metadata from XSD files after creating a XSD environment.

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.

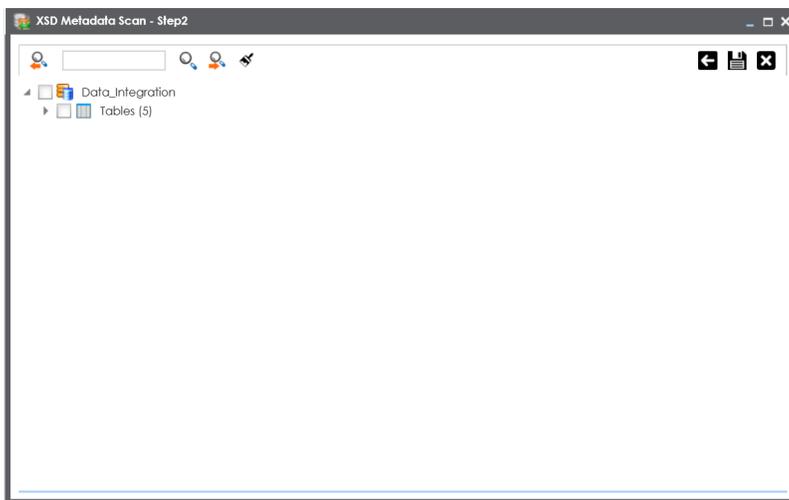
Update Existing + Add New + Invalidate

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 .

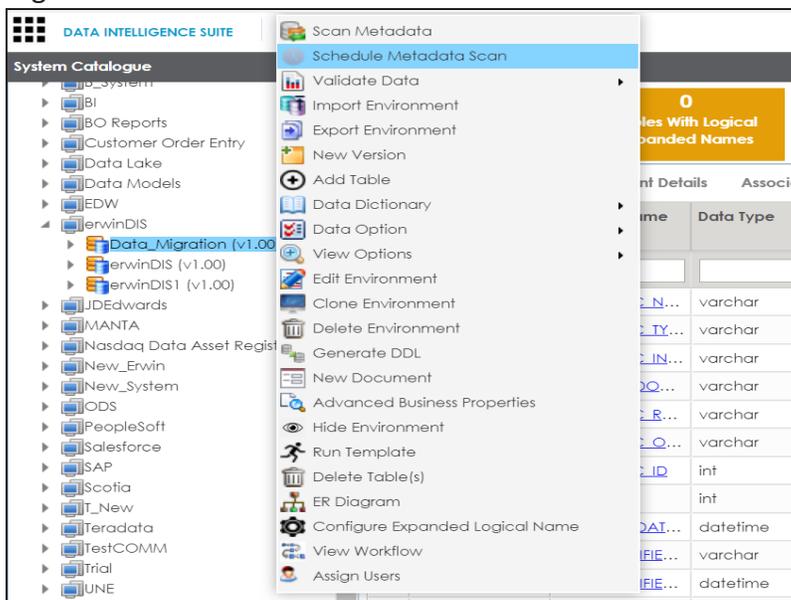
The metadata is scanned and saved in the environment.

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, expand the desired system.
3. Right-click the desired environment.



4. Click **Schedule Metadata Scan**.

The Job Scheduler page appears.

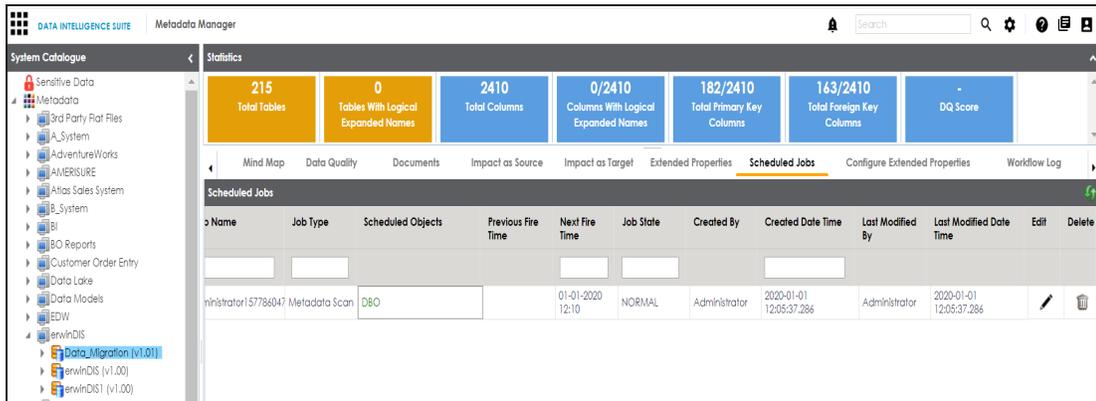
5. Enter appropriate values in the fields. Fields marked with a red asterisk are mandatory. Refer to the following table for field descriptions.

Field Name	Description
Job Name	Enter a name for the schedule metadata scan job.
Interval	Enter the frequency of the scan.
Schedule	Enter date and time of the scheduled scan.

Field Name	Description
Job On	
Local or Server	<p>Select the machine whose clock decides the time of the scheduled scan.</p> <ul style="list-style-type: none"> ▪ Local: Refers to your local machine. ▪ Server: Refers to the machine where erwinDIS has been deployed.
Import Metadata Options	<ul style="list-style-type: none"> ▪ 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	Toggle the switch 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 CC list with comma (,) separated values. The email notification will be sent to the CC list.

6. Click **Schedule**.

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



7. 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. Expand the desired system node.
3. Expand the desired environment node.
4. Click the table whose properties are to be updated.

The following page appears.

The screenshot shows the 'Columns' tab in the Metadata Manager. At the top, there are statistics for the selected table: 8 Total Columns, 0/8 Columns With Logical Expanded Names, 0/8 Total Primary Key Columns, 0/8 Total Foreign Key Columns, and a DQ Score of -. Below this is a 'Data Dictionary' table with the following columns: #, Column Name, Column Alias, Column Class, Logical Column Name, Column Datatype, Column Storage Type, Length, Column Definition, Column Comments, Nullable Flag, Primary Key Flag, SDI Flag, Created By, and Cre Dat. The table lists 8 columns for the 'Data_Migration (v1.00)' table, including 'NEW_NAME', 'CHANGE_USE...', 'OLD_NAME', 'CREATED_BY', 'CREATED_DATE', 'MODIFIED_BY', 'MODIFIED_DATE', and 'FOLDER_HIERA...'. The 'NEW_NAME' and 'CHANGE_USE...' columns have a length of 4000, while 'CREATED_BY' and 'MODIFIED_BY' have a length of 100. 'CREATED_DATE' and 'MODIFIED_DATE' have a length of 8. All columns are of type 'varchar' or 'datefi...'. The 'MODIFIED_DATE' column is nullable (Y) and has a primary key flag (N). The 'FOLDER_HIERA...' column is nullable (Y) and has a primary key flag (N).

5. Click the **Table Properties** tab.

The table properties page appears.

The screenshot shows the 'Table Properties' tab in the Metadata Manager. The page is divided into several sections: 'Technical Properties', 'Business Properties', and 'User Defined Fields'. The 'Technical Properties' section includes fields for Table Name (abo.RDM_CHANGE_HISTORY), Environment Name (Data_Migration), System Name (erwinDIS), No of Rows, File type, and Workflow Status (Draft). The 'Business Properties' section includes fields for Data Steward (jdoe), Logical Table Name, Expanded Logical Name, Table Comments, Used In Gap Analysis (checked), Table Class, and Table Alias. The 'User Defined Fields' section contains two empty text areas labeled 'User Defined-1' and 'User Defined-6'. A pencil icon in the top right corner of the table properties area indicates that the table can be edited.

6. Click .

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

Field Name	Sub-Field	Description
Technical Properties	Table Name	Type the table name.
	System Name	Describes the system under which the table exists. It cannot be edited.
	Synonym Reference	Describes the synonyms used to describe the database objects. It gets its value while scanning the metadata.
	Environment Name	Describes the environment under which the table exists. It cannot be edited.
	No of Rows	Type the number of rows in the table.
	Workflow Status	It cannot be edited. For more information on workflow status, refer to the Assigning Workflows to the Tables in Metadata Manager topic.
Business Properties	Data Steward	Select a data steward who will be responsible for the data.
	Table Definition	Type a small definition of the table.
	Table Comments	Type relevant comments about the table.
	Table Class	Select appropriate table class. For more information about the table class, refer to Configuring Table and Column Class topic.
	DQ Score	Select the data quality score. For more information about the DQ score refer to Configuring Data Profiling and DQ Scores topic.
	Logical Table Name	Type the logical table name.

Field Name	Sub-Field	Description
	Expanded Logical Name	Type the expanded logical name. You can also configure expanded logical name of tables in bulk at system and environment level.
	Used in Gap Analysis	Select the check box if the table is used in gap analysis.
	Table Alias	Type table alias if there are any.

8. Click .

The table properties are updated.

For more information on using user defined fields, refer to the [Configuring Language Settings](#) topic.

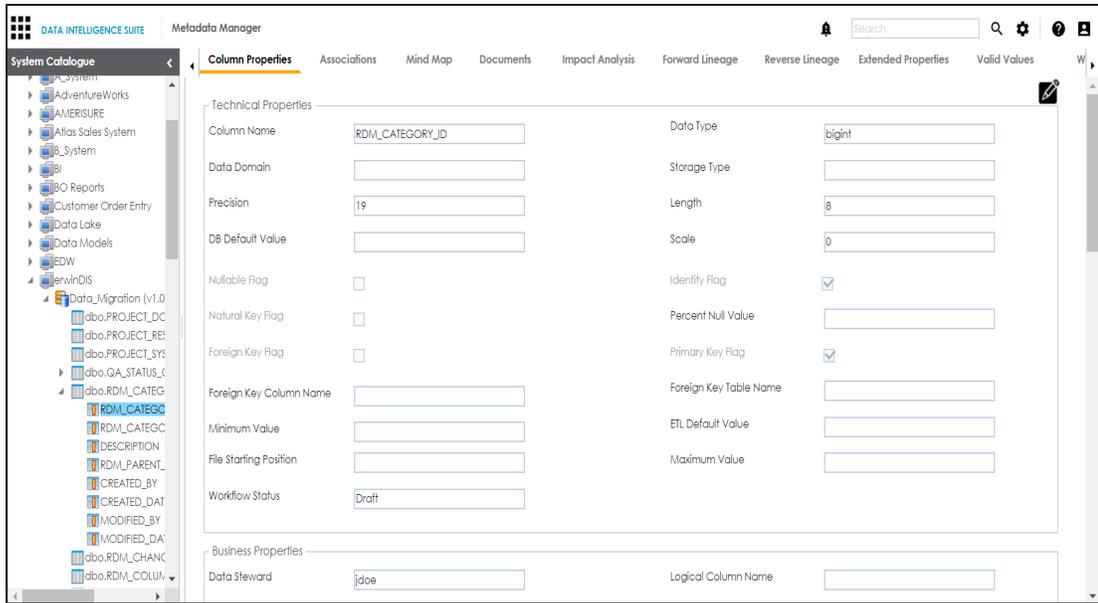
Updating Column Properties

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:

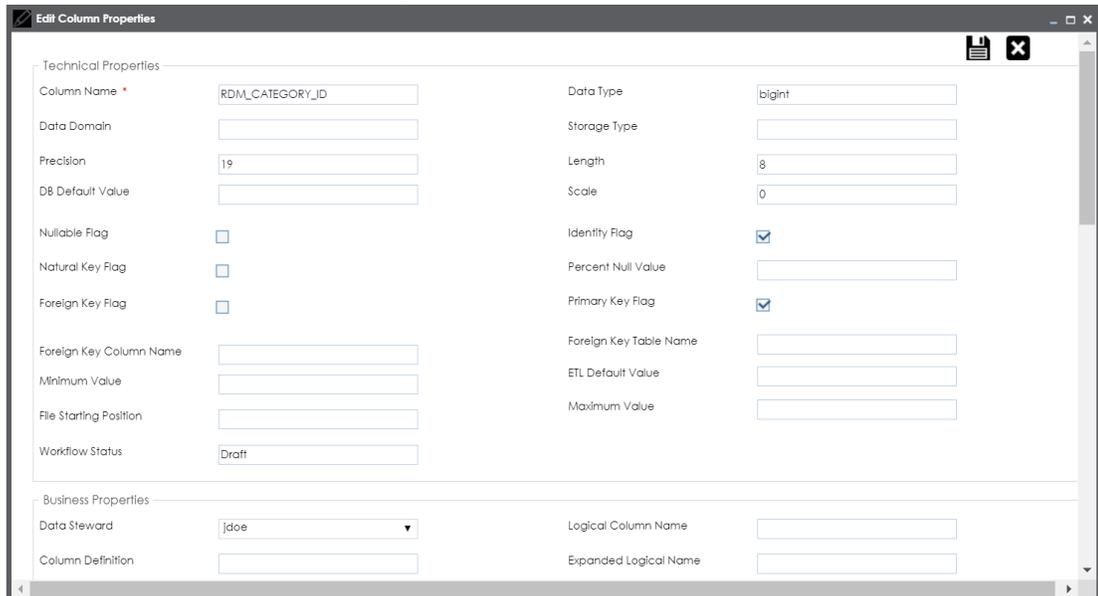
1. Go to **Application Menu > Data Catalog > Metadata Manager**.
2. Expand the desired system node.
3. Expand the desired environment node.
4. Expand the desired table node.
5. Click the column to be updated.

The Column Properties page appears.



6. Click .

The Edit Column Properties page appears.



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

Field Name	Sub-Field	Description
Technical Properties	Column Name	Type the column name.
	Data Domain	Type the data domain. The data domain refers to all the values which a data element may contain.
	Precision	Type the precision of the data. For an instance, Precision is the number of digits in a number.
	DB Default Value	Type the DB default value. The default value is the preset value defined for a column type.
	Nullable Flag	Select the check box to allow null values in the column.
	Natural Key Flag	Select the check box to define the column as the natural key.
	Foreign Key Flag	Select the check box to define the column as foreign key.
	Foreign Key Column Name	Type the foreign key column name.
	Minimum Value	Type the minimum value in the column.
	File Starting Position	Type the file starting position.
	Workflow Status	Describes the workflow status of the column. For more information on the workflow status, refer to the Assigning Workflows to the Columns in Metadata Manager topic.
	Data Type	Type the data type of the column.
	Storage Type	Type the storage type depending on the data type of the column.
	Length	Type the length of the data in the column.
Scale	Type the scale of the column. Scale is the number of digits to the right of the decimal point in a number.	
Identity Flag	Select the check box to set the column as an identity	

Field Name	Sub-Field	Description
		column.
	Percent Null Value	Type the percent null values of the column. It describes the percentage of null values in a column.
	Primary Key Flag	Select the check box to define the column as the primary key.
	Foreign Key Table Name	Type the foreign key table name.
	ETL Default Value	Type the ETL default value of the column.
	Maximum Value	Type the maximum value in the column.

Field Name	Sub-Field	Description
Business Properties	Data Steward	Select a data steward who will be responsible for the data.
	Column Definition	Type a small column definition.
	Column Comments	Type relevant comments about the column.
	Sensitive Data Indicator (SDI) Flag	Select the check box to categorize the data in the column as sensitive.
	Sensitive Data Indicator (SDI) Classification	Select the appropriate SDI classification like confidential, internal only, public or restricted. You can add SDI classification in Metadata Manger settings .
	Column Class	Select a column class. For more information on column class, refer to the Configuring Table and Column Class topic.
	DQ Score	Select the data quality score. For more information on data quality score, refer to the Configuring Data Profiling and DQ Scores section.
	Logical Column Name	Type the logical column name.
	Expanded Logical Name	Type the expanded logical name. You can also configure expanded logical name of columns in bulk at system and environment level.
	Used in Gap Analysis	Select the check box if the column is used in the gap analysis.
	Sensitive Data Indicator (SDI) Description	Type the description of the sensitive data.
	Column Alias	Type the column alias if there are any.
	Business Key Flag	Select the check box to make the column as the business key.

8. Click .

The column properties are updated.

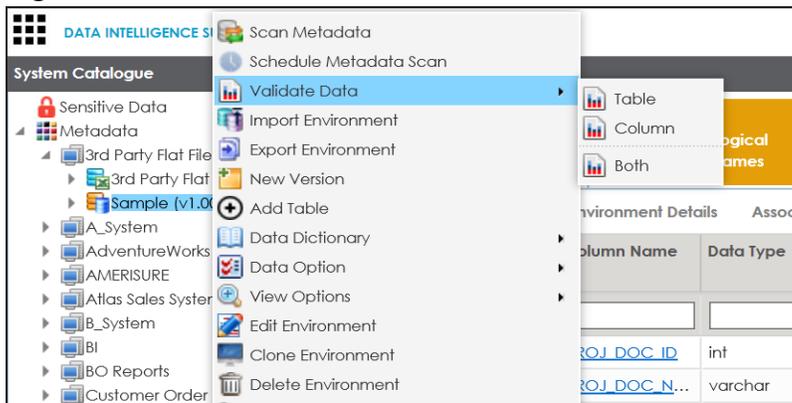
For more information on user defined fields, refer to the [Configuring Language Settings](#) topic.

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, expand the desired system node.
3. Right-click the desired environment.



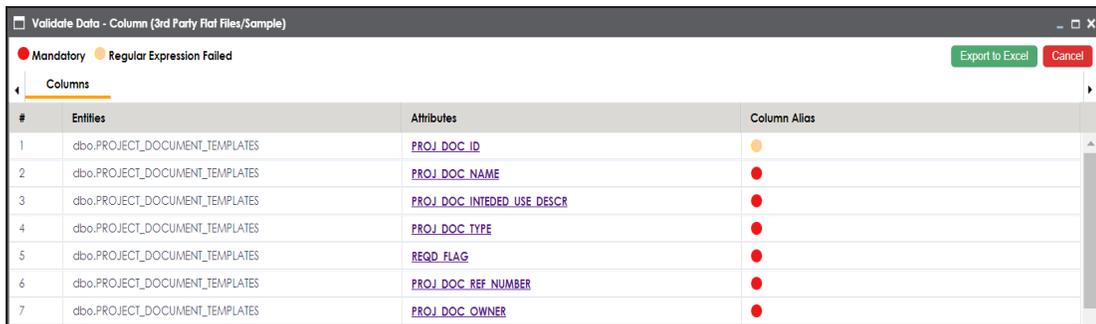
4. Hover over **Validate Data**.
5. To validate tables in the environment, click **Table**.
6. To validate columns in the environment, click **Column**.
7. To validate tables and columns both, click **Both**.

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.



#	Entities	Attributes	Column Alias
1	dbo.PROJECT_DOCUMENT_TEMPLATES	PROJ_DOC_ID	
2	dbo.PROJECT_DOCUMENT_TEMPLATES	PROJ_DOC_NAME	
3	dbo.PROJECT_DOCUMENT_TEMPLATES	PROJ_DOC_INTENDED_USE_DESCR	
4	dbo.PROJECT_DOCUMENT_TEMPLATES	PROJ_DOC_TYPE	
5	dbo.PROJECT_DOCUMENT_TEMPLATES	REQD_FLAG	
6	dbo.PROJECT_DOCUMENT_TEMPLATES	PROJ_DOC_REF_NUMBER	
7	dbo.PROJECT_DOCUMENT_TEMPLATES	PROJ_DOC_OWNER	

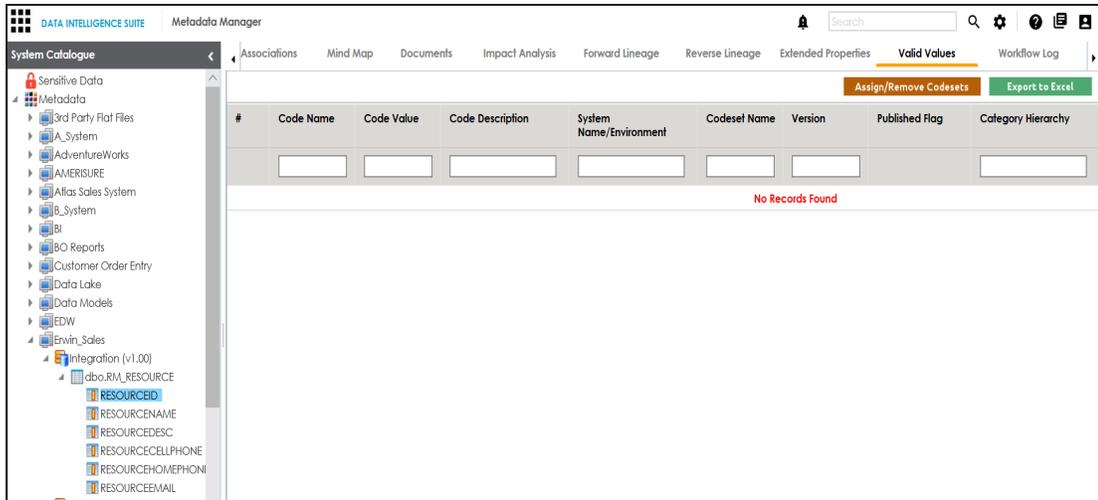
8. To export the validations, click **Export to Excel**.

Assigning Codesets to Columns

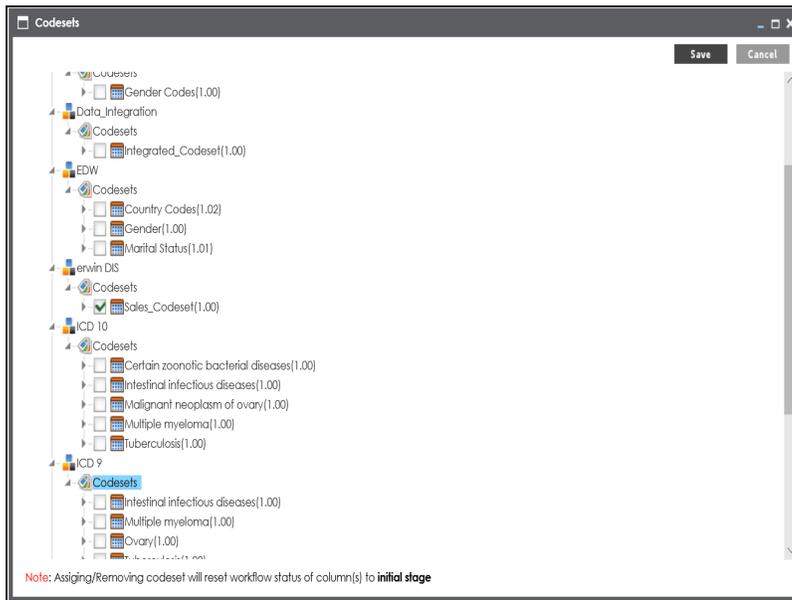
You can create codesets in the Codeset Manager and assign them to a source or target column as valid values. You can also export the valid values in MS Excel format.

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**.

Valid Values								
#	Code Name	Code Value	Code Description	System Name/Environment	Codeset Name	Version	Published Flag	Category Hierarchy
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text"/>
1	Admin	1		Project_System	Sales_Codeset	1.00	N	erwin DIS
2	Joe Villers	4		Project_System	Sales_Codeset	1.00	N	erwin DIS
3	Kartik Sridhar	2		Project_System	Sales_Codeset	1.00	N	erwin DIS
4	Resource_Name	3		Project_System	Sales_Codeset	1.00	N	erwin DIS

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 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. Expand the desired system.

- Expand the desired environment.
- Click the desired table whose workflow is to be monitored.

The following page appears.

The screenshot shows the 'Metadata Manager' interface for a table named 'dbo.ADS_ASSOCIATIONS'. The 'Statistics' section displays the following data:

Statistic	Value
Total Columns	6
Columns With Logical Expanded Names	0/6
Total Primary Key Columns	1/6
Total Foreign Key Columns	0/6

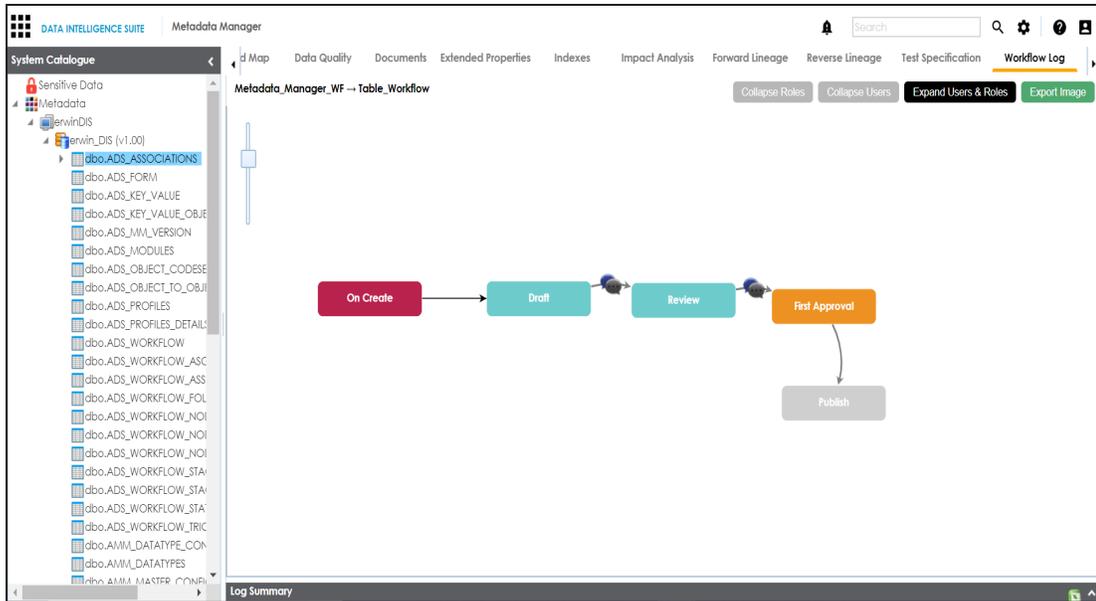
The 'Data Dictionary' section shows the following table structure:

#	Column Name	Column Alias	Column Class	Logical Column Name	Column Datatype	Column Storage Type	Length	Column Definition	Column Comments	Nullable Flag	Primary Key Flag	SDI Flag
1	ID				bigint		8			N	Y	N
2	SOURCE_OBJE...				bigint		8			N	N	N
3	SOURCE_OBJE...				bigint		8			N	N	N
4	TARGET_OBJE...				bigint		8			N	N	N
5	TARGET_OBJE...				bigint		8			N	N	N
6	RELATIONSHIP...				bigint		8			N	N	N

- Click **Workflow Log**.

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

Note: The current workflow stage blinks in the diagram.



6. To view the user and the comments entered by the user while moving it to the next stage, hover over .
7. To view users and roles assigned to all the stages, click **Expand Users and Roles**.
8. 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

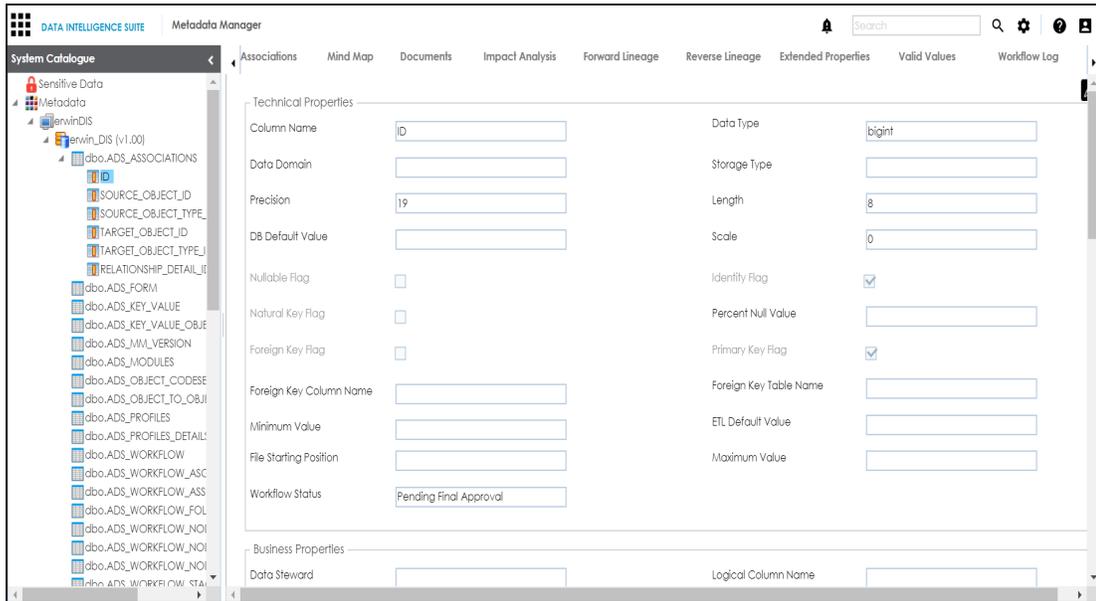
You can also export the workflow log image.

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

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

3. Expand the desired environment.
4. Double-click the table containing the desired column.
5. Click the desired column.

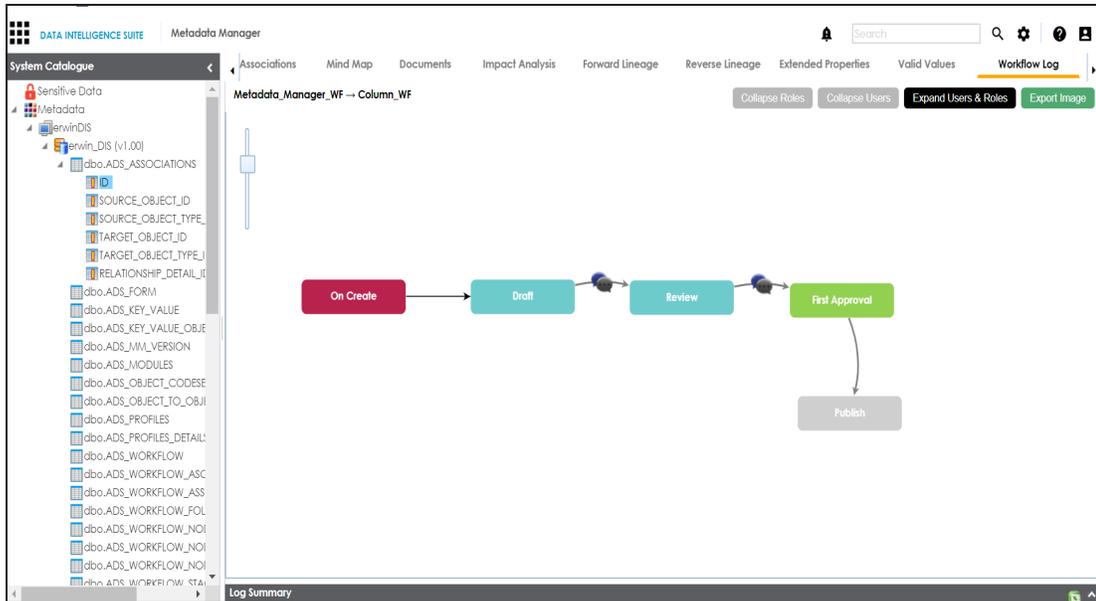
The following page appears.



6. Click **Workflow Log**.

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

Note: The current workflow stage blinks in the diagram.



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

Associating Tables

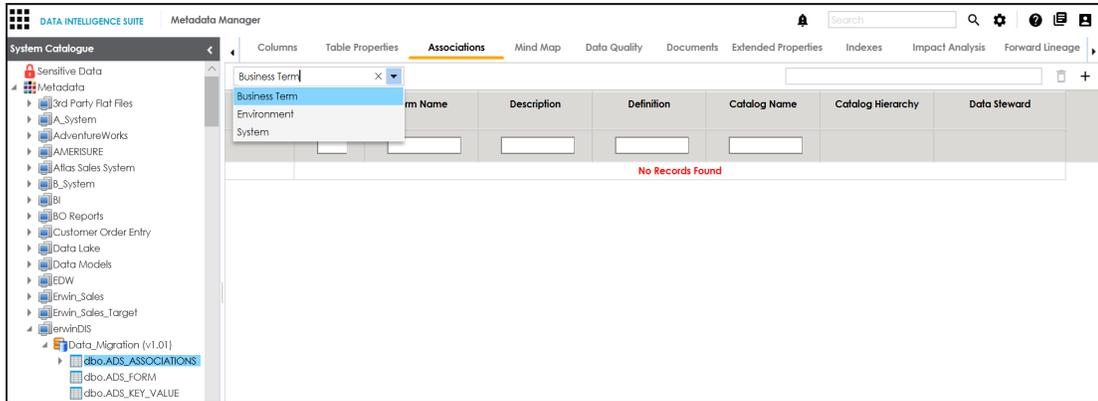
You can associate tables with business assets, systems, environments, tables, and columns. You can also view mind map and association statistics.

You need to ensure that:

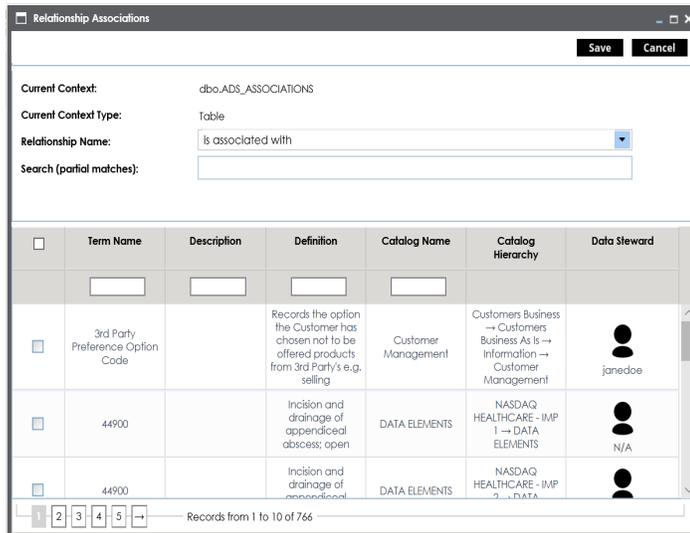
- Business assets are enabled. You can add new business assets and enable them in the Business Glossary Manager Settings.
- Relationship between table and the asset type is defined. You can define associations and relationships in the Business Glossary Manager Settings.

To associate table with asset types, follow these steps:

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

Actions	Relationship Name	Term Name	Description	Definition	Catalog Name	Catalog Hierarchy	Data Steward
 	is associated with	3rd Party Preference Option Code		Records the option the Customer has chosen not to be offered products from 3rd Party's e.g. selling	Customer Management	Customers Business → Customers Business As Is → Information → Customer Management	janedoe

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

Edit Association ()

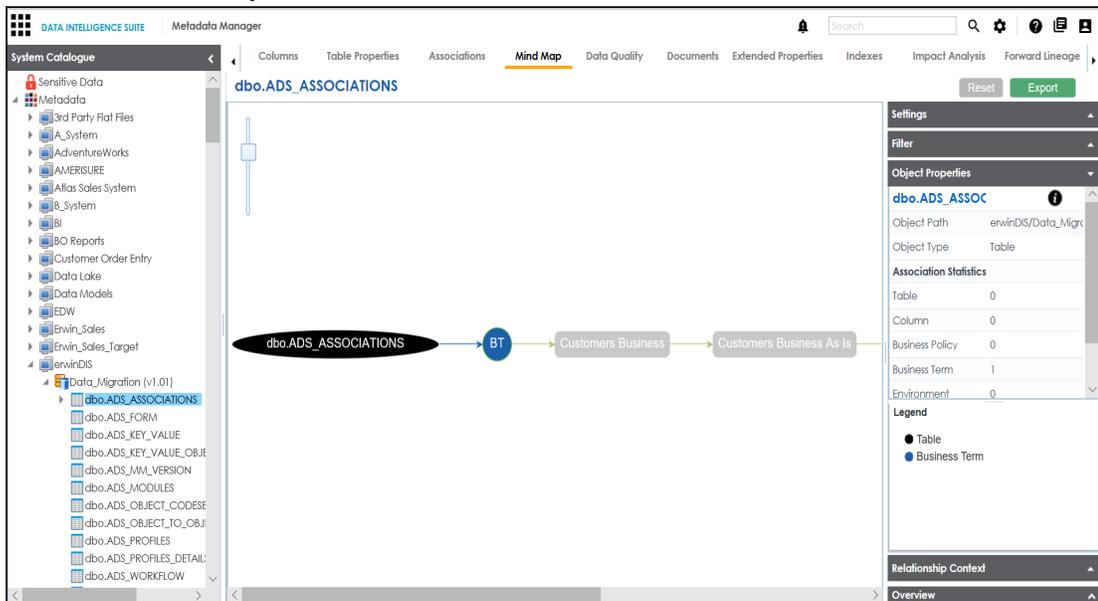
Use this option to edit the association.

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.

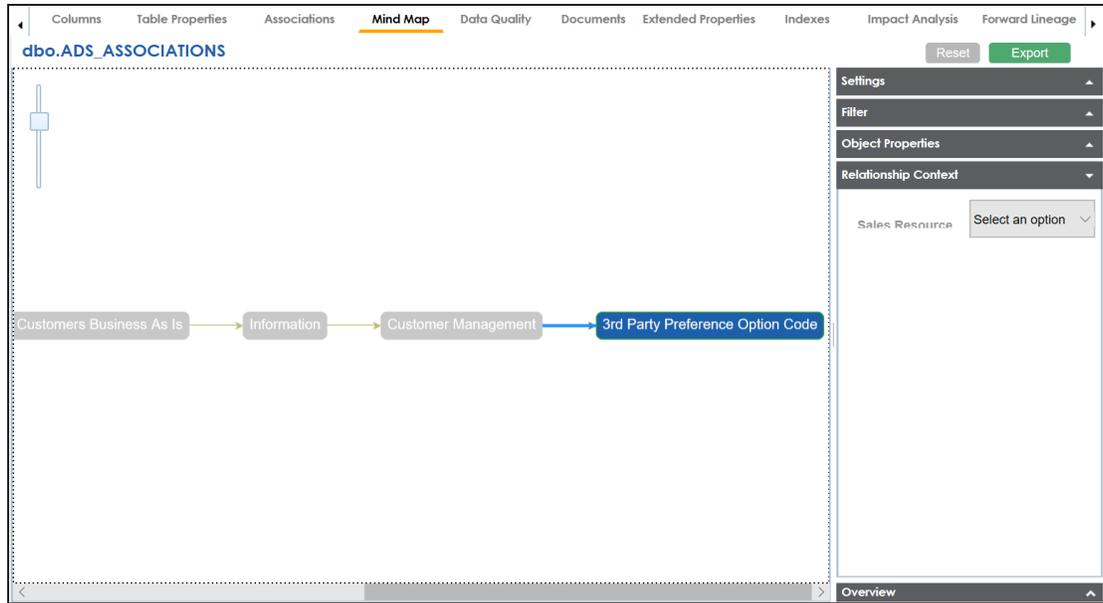
Object Properties

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

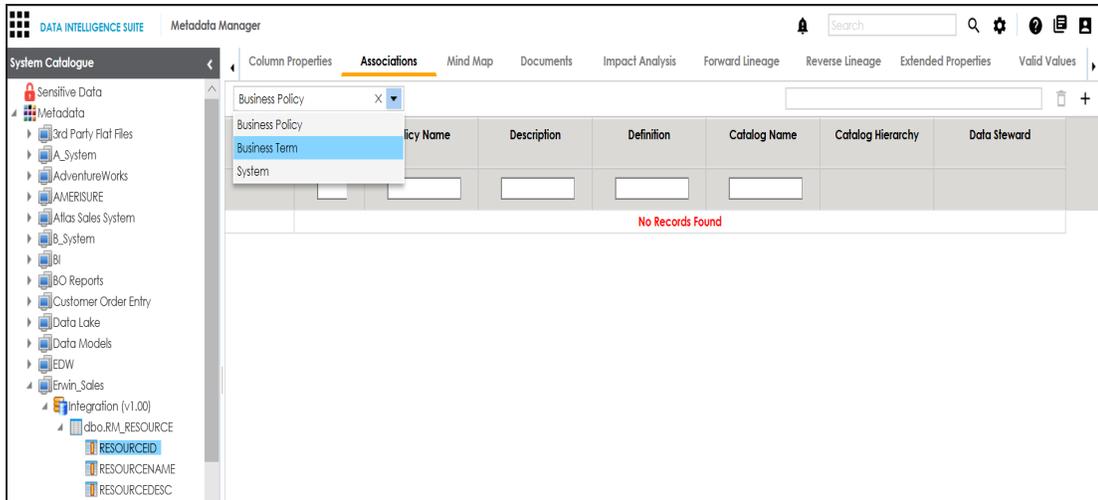
You can associate columns with business assets, systems, environments, tables, and columns. You can also view mind map and association statistics.

You need to ensure that:

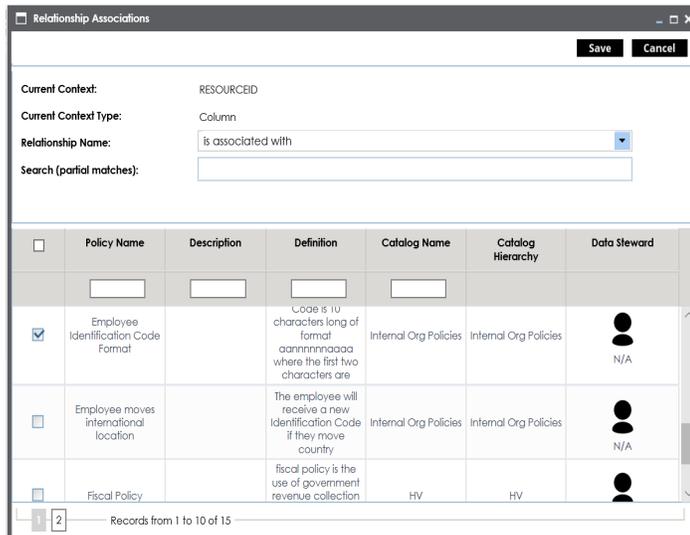
- Business assets are enabled. You can add new business assets and enable them in the Business Glossary Manager Settings.
- Relationship between column and the asset type is defined. You can define associations and relationships in the Business Glossary Manager Settings.

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 the Relationship Name, and the asset type.

5. Click **Save**.

The asset is added to the column.

Actions	Relationship Name	Policy Name	Description	Definition	Catalog Name	Catalog Hierarchy	Data Steward
<input type="checkbox"/>	is associated with	Employee Identification Code Format	The Employee ID Code is 10 characters long of format aa999999aa99 where the first two characters are		Internal Org Policies	Internal Org Policies	N/A

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

Edit Association (✎)

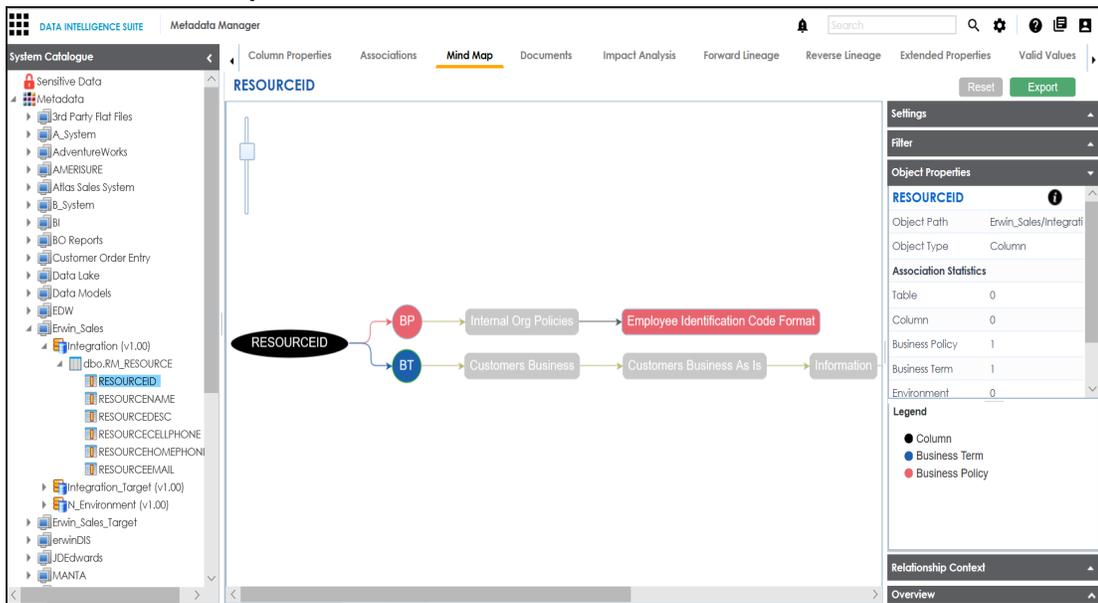
Use this option to edit the association.

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.

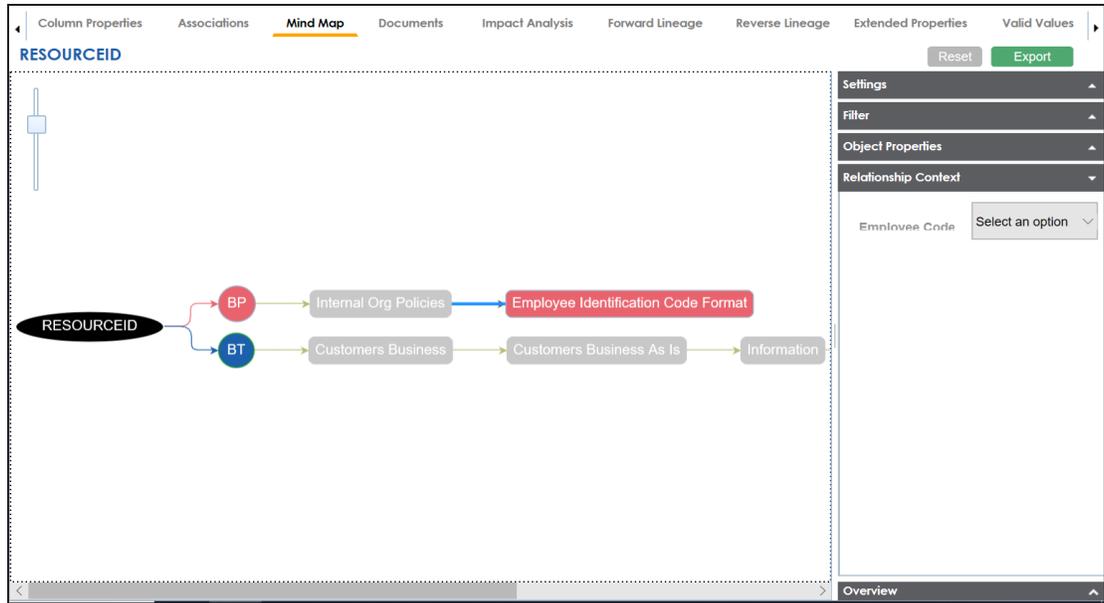
Object Properties

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

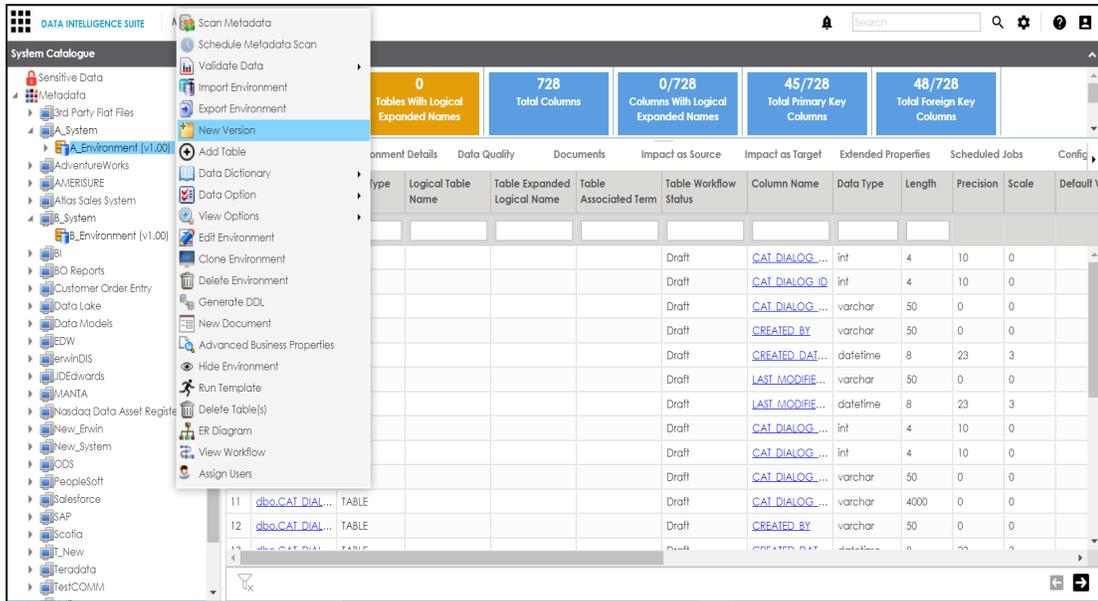
Use this option to view the overview diagram of the mind map.

Versioning Environments

Metadata versioning is necessary to update metadata. It enables you to create versions and track changes by comparing the two versions of the environment.

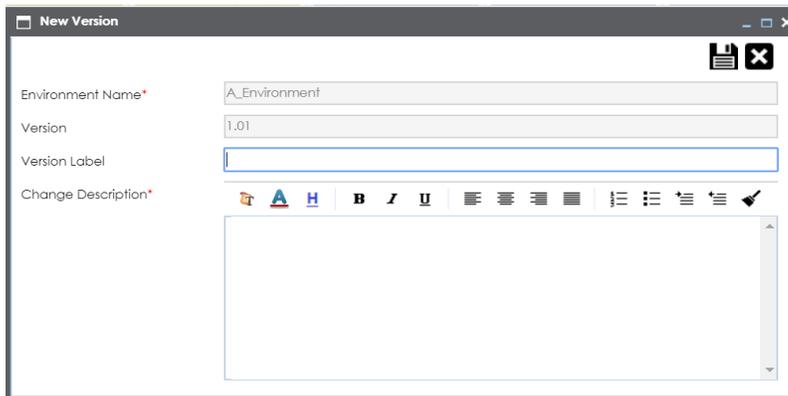
To create new versions of environments, follow these steps:

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



4. Click **New Version**.

The New Version page appears.



5. Enter the Version Label.

6. Enter the change description.

7. 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](#).

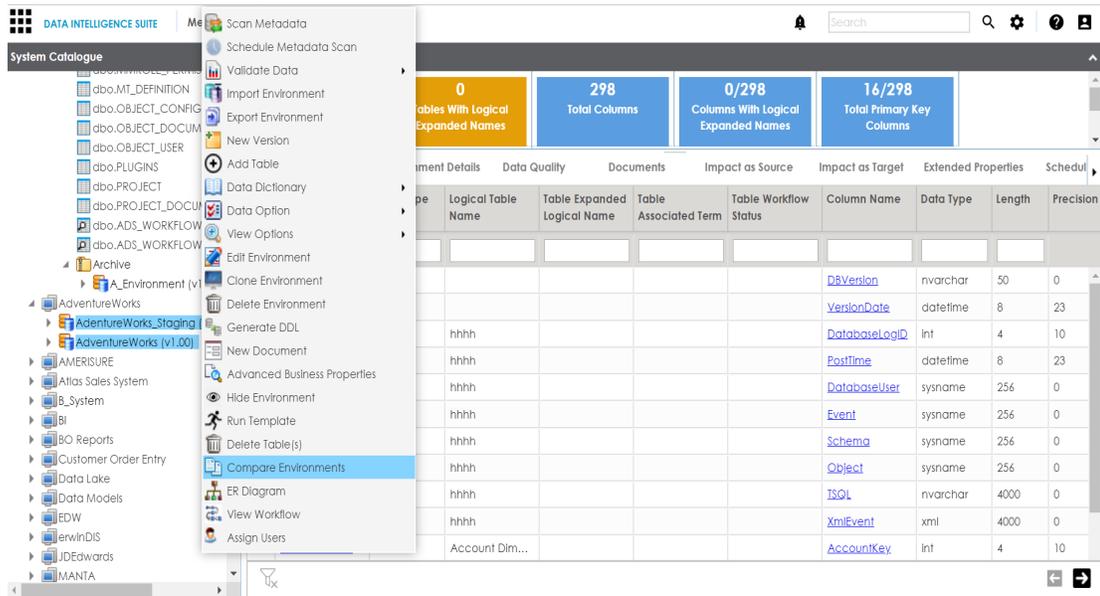
Comparing Environments

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.

The screenshot shows a window titled 'Compare Environments' with a tab for 'Table Level Changes'. The window displays a table with the following data:

#	Change Description	System Name	Environment	Table	Definition	Logical Name	Expanded Logical Name	Associated Business Term	Comments
1	Table Logical Name , Table Comments	AdventureWorks	AdventureWorks_Stc	dbo.DatabaseLog					
2	Table Logical Name , Table Comments	AdventureWorks	AdventureWorks	dbo.DatabaseLog		hhhh			
3	Table Logical Name	AdventureWorks	AdventureWorks_Stc	dbo.DimAccount					
4	Table Logical Name	AdventureWorks	AdventureWorks	dbo.DimAccount		Account Dimension			

5. Click **Column Level Changes**.

Column level changes are displayed.

6. Click  to download the comparison report.

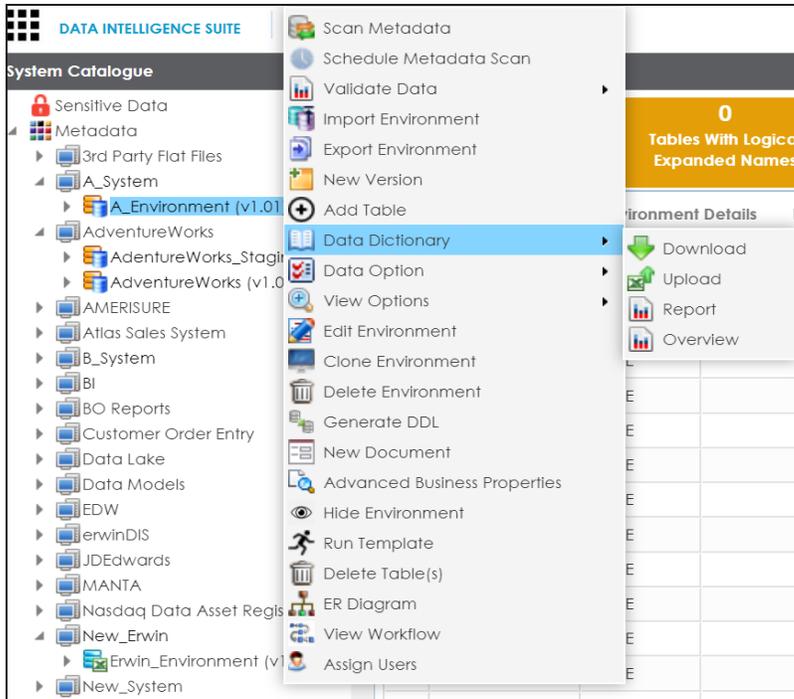
Downloading Data Dictionaries

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.

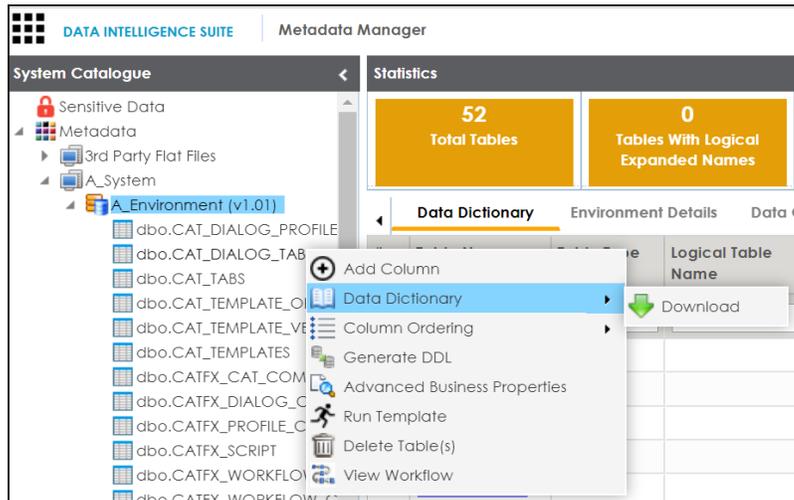
7. Click .

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.

Updating Data Dictionary

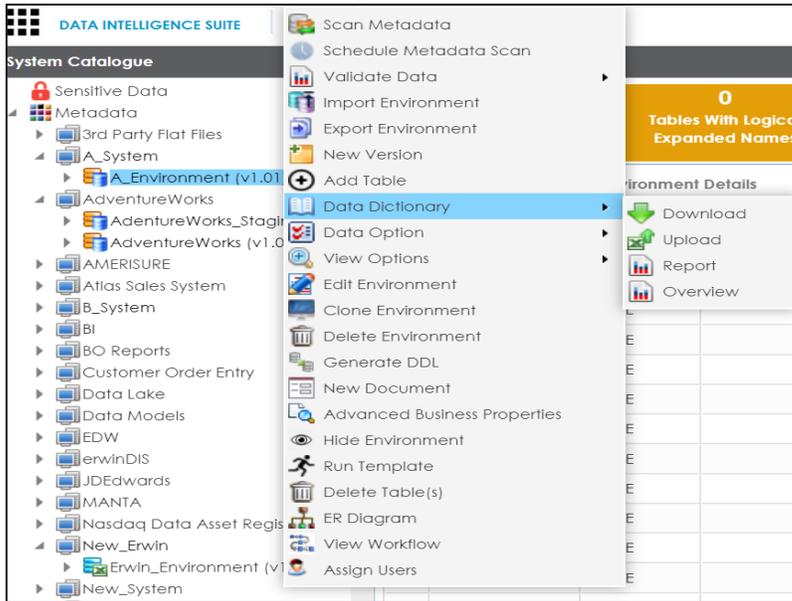
Updating data dictionary at environment level involves:

1. Downloading the data dictionary in .xlsx format
2. Updating the 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, expand the desired system node.
3. Right-click the environment where data dictionary is to be updated.

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 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.

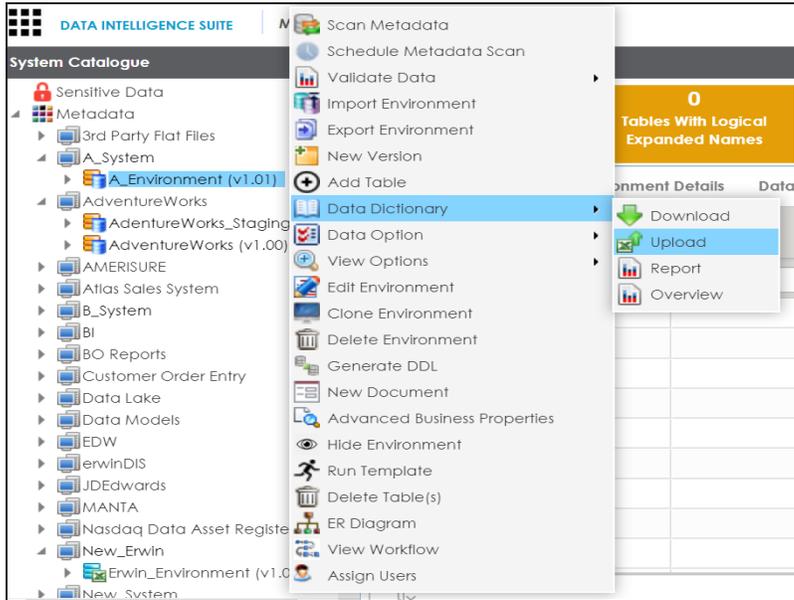
7. Click .

Data dictionary is downloaded in .xlsx format.

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

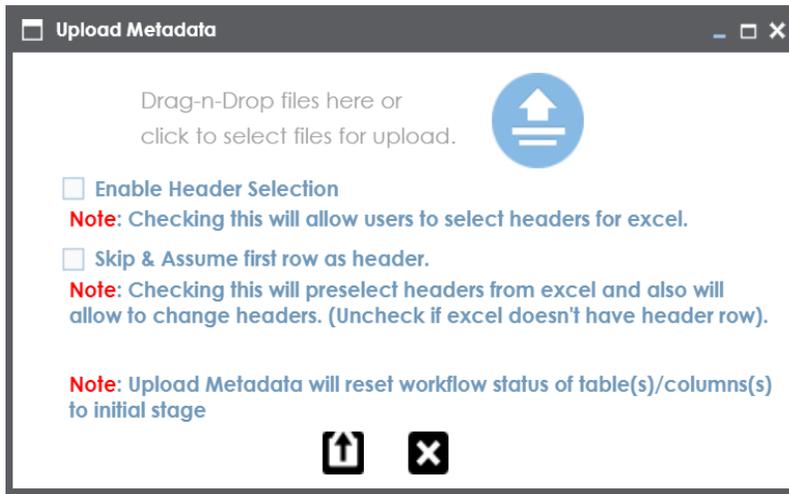
9. Right-click the environment where data dictionary is to be uploaded.

10. Hover over **Data Dictionary**.



11. Click **Upload**.

The Upload Metadata page appears.



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

13. Click .

The data dictionary is updated at the environment level.

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:

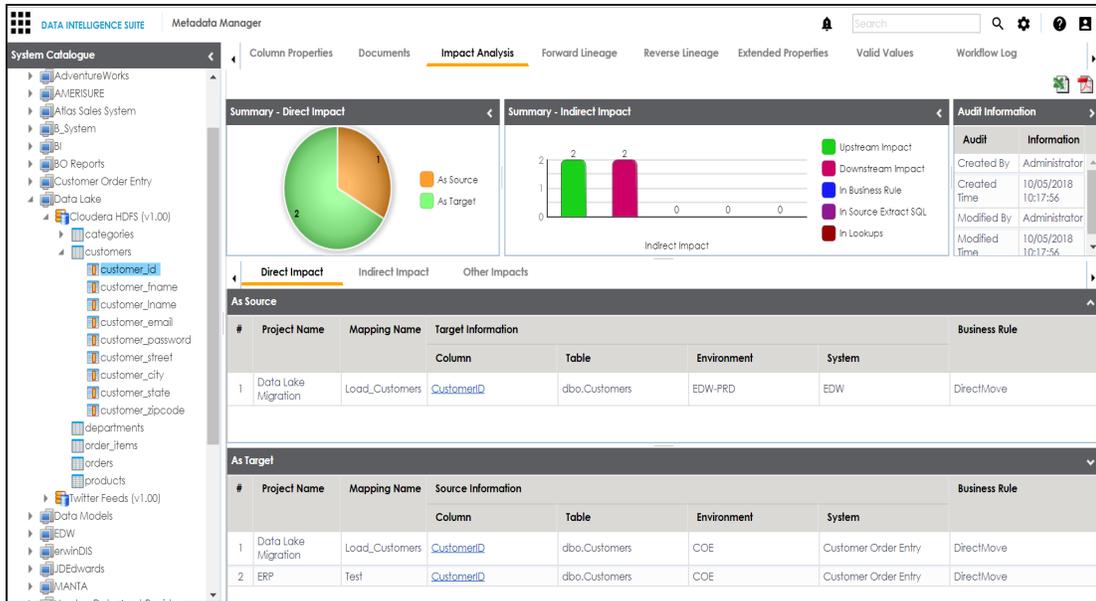
- [Lineage analysis at table level](#)
- [Lineage analysis at column level](#)

Impact Analysis at Column Level

To perform impact analysis at column 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. Expand the desired environment node.
4. Expand the desired table node.
5. Click the column to be analyzed.
6. Click the **Impact Analysis** tab.

The Impact Analysis page appears showing the Direct Impact.



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

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

9. To download the analysis, click  or .

The analysis is downloaded.

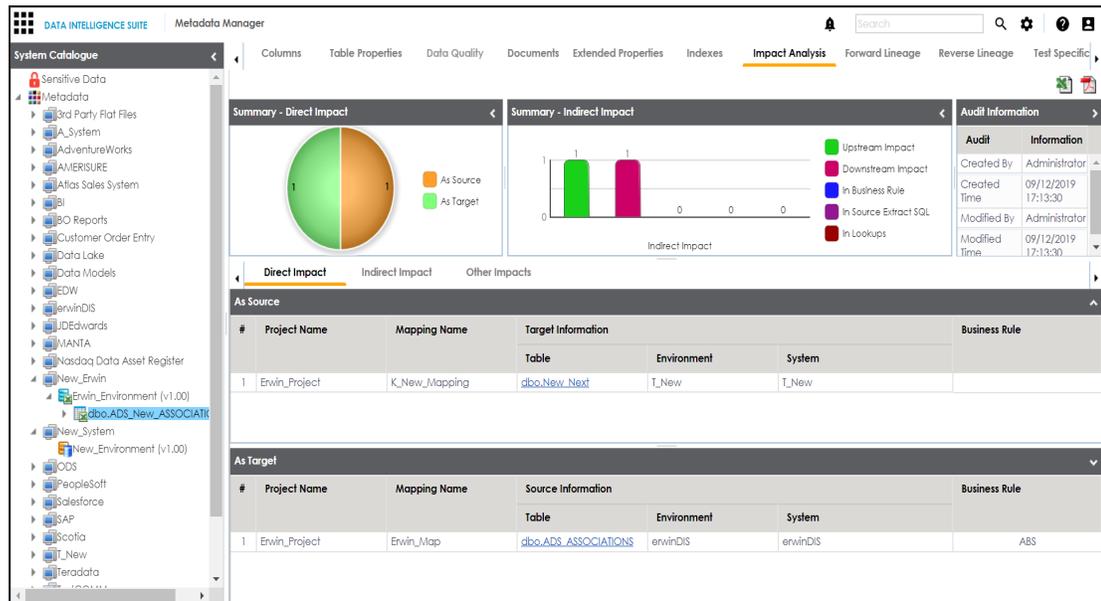
Impact Analysis at Table Level

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:

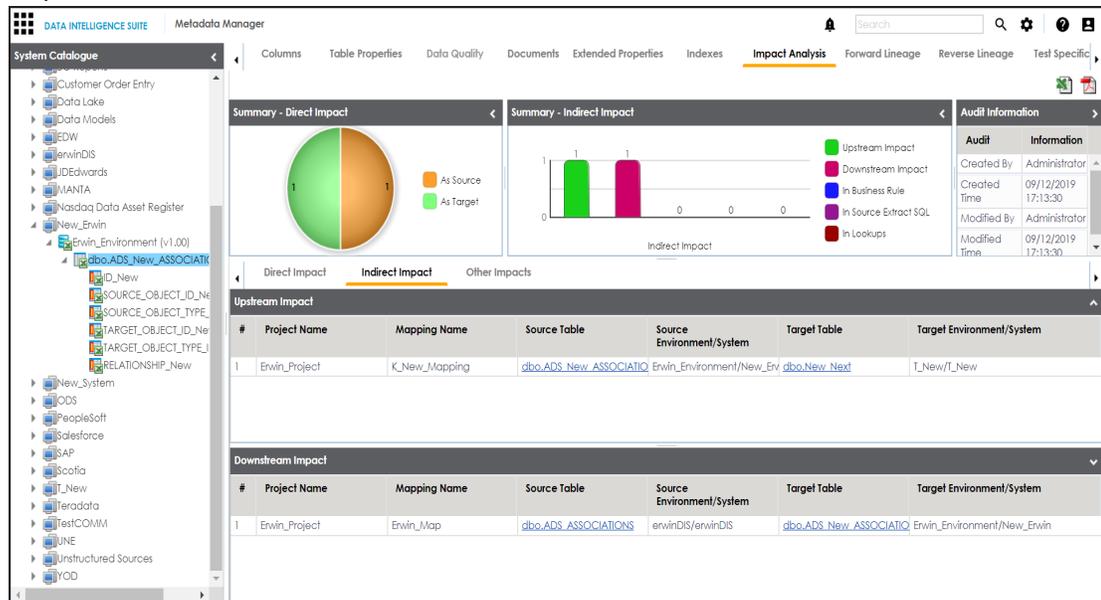
1. Go to **Application Menu > Data Catalog > Metadata Manager > System Catalogue**.
2. Under the **System Catalogue** pane, expand the concerned system node.
3. Expand the concerned environment node.
4. Click the table node on which you wished to run impact analysis.
5. To perform impact analysis on the table, click **Impact Analysis**.

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



6. To view Indirect Impact, click **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

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, expand the desired system node.
3. Click the environment to be analyzed.
4. 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.

The screenshot shows the Metadata Manager interface. On the left, the System Catalogue pane is expanded to show 'Cloudara HDFS (v1.00)'. The main area displays a table of project mappings under the 'Impact as Source' view. The table has columns for '#', 'Project Name', 'Mapping Name', and 'Target Details'. The 'Target Details' column is further broken down into 'Environment Name'.

#	Project Name	Mapping Name	Target Details
			Environment Name
1	AdventureWorks_Migration	DimProduct	AdventureWorks
2	Data Lake Migration	Load_Customers	EDW-PRD

5. 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.

#	Project Name	Mapping Name	Source Details
1	Data Lake Migration	Load_Customers	COE
2	ERP	Test	COE

6. Click  to download the analysis.

The analysis is downloaded.

You can also perform:

- [Impact analysis at table level](#)
- [Impact analysis at column level](#)

Performing Lineage Analysis at Table Level

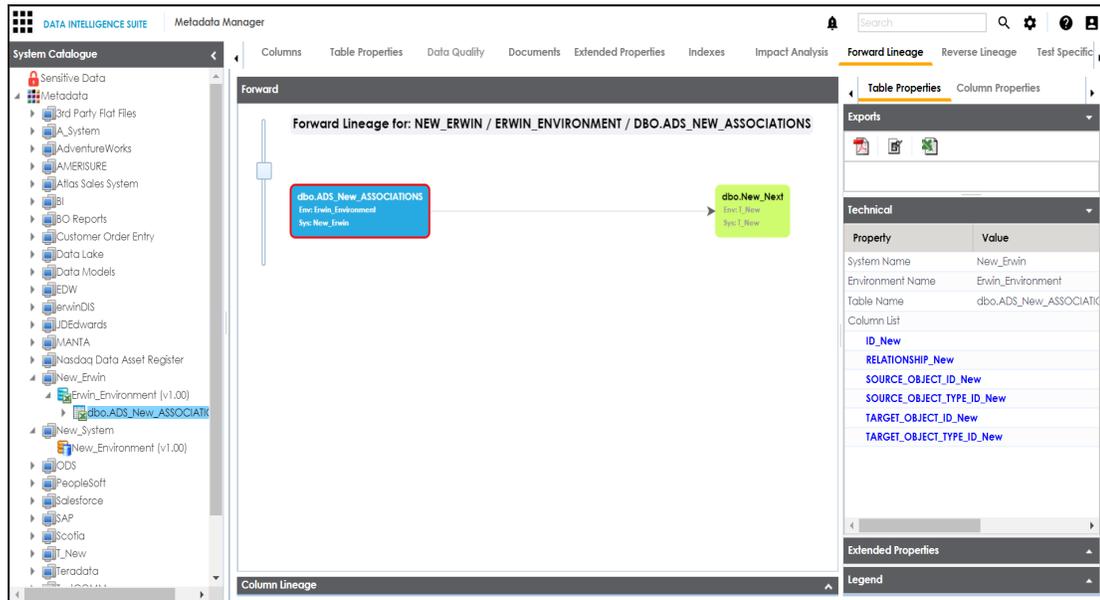
Once you are done with source to target mappings in the Mapping Manager, you can perform lineage analysis on a particular table/column. The Metadata Manager allows you to perform end to end forward and backward lineage analysis to determine the upstream and downstream dependencies.

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

1. Go to **Application Menu > Data Catalog > Metadata Manager > System Catalogue**.
2. Under the **System Catalogue** pane, expand the concerned system node.
3. Expand the concerned environment node.
4. Click the table node on which you wished to run lineage analysis.

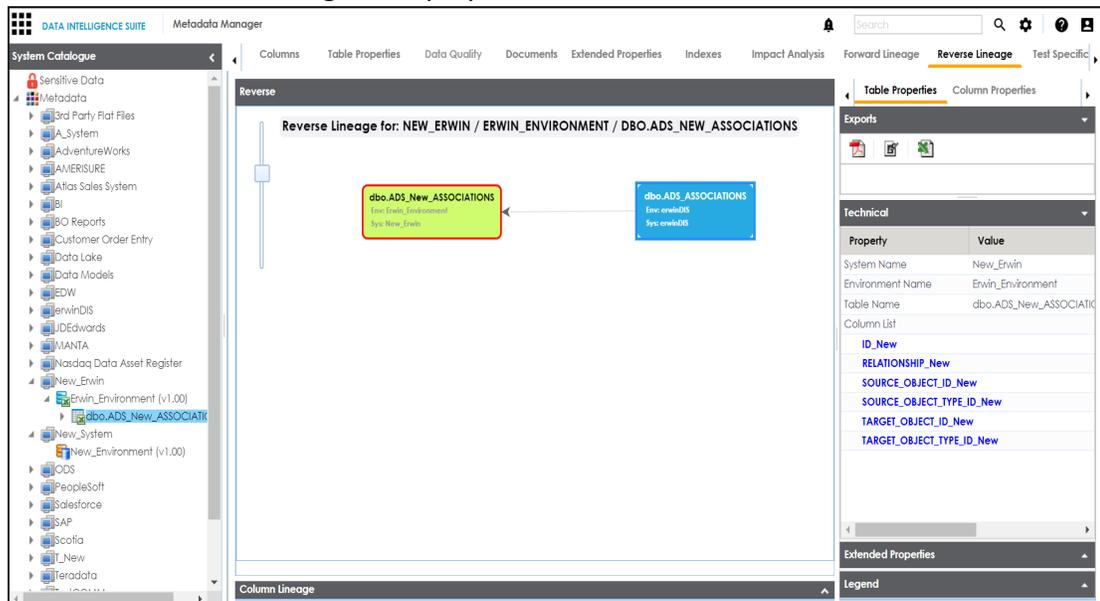
5. Click **Forward Lineage** to perform forward lineage analysis.

End to end forward lineage is displayed.



6. 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, expand the concerned system node.
3. Expand the desired environment node.
4. Expand the table node.
5. Click the column to be analyzed.
6. Click **Forward Lineage** to perform forward lineage analysis on the selected column.

The Forward Lineage page appears.

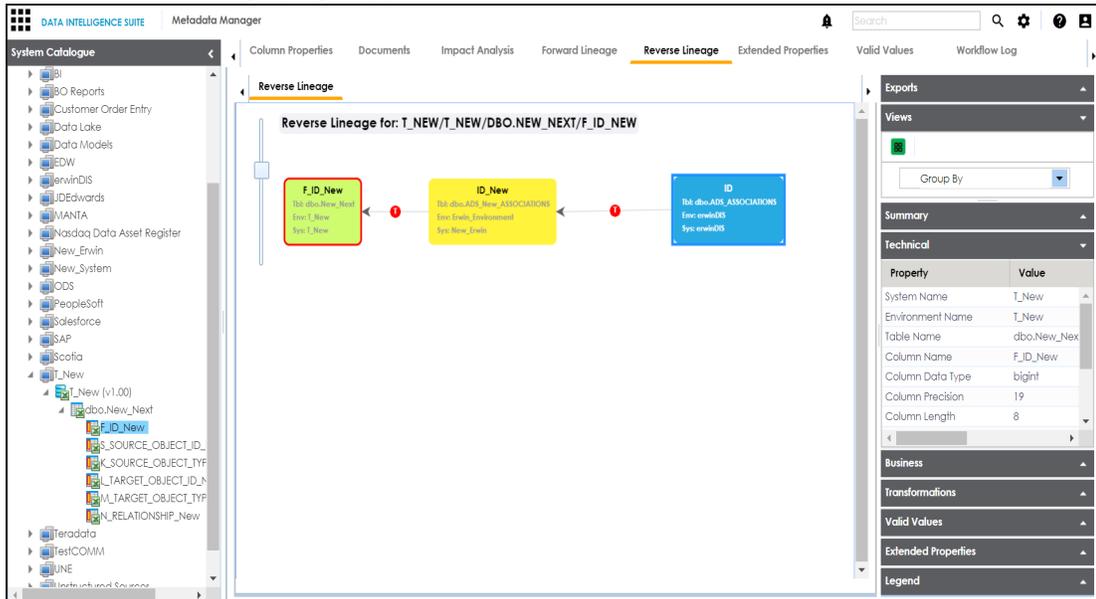
Forward Lineage for: ERWINDIS / ERWINDIS / DBO.ADS_ASSOCIATIONS / ID

```
graph LR; ID[dbo.ADS_ASSOCIATIONS / ID] --> ID_New[dbo.ADS_New_ASSOCIATIONS / ID_New]; ID_New --> F_ID_New[dbo.ADS_New_New / F_ID_New];
```

Property	Value
System Name	erwinDIS
Environment Name	erwinDIS
Table Name	dbo.ADS_ASSOC
Column Name	ID
Column Data Type	bigint
Column Precision	19
Column Length	8

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

The Reverse Lineage page appears.



8. To download the lineage analysis, expand the **Export** node on right pane and click the appropriate format of the report.

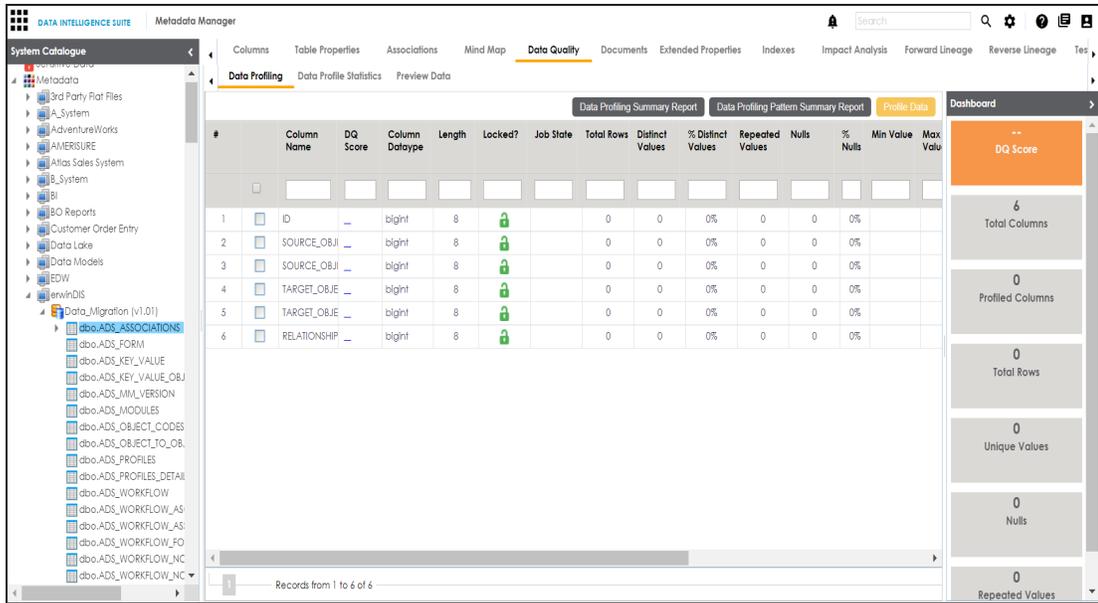
The lineage report is downloaded.

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.

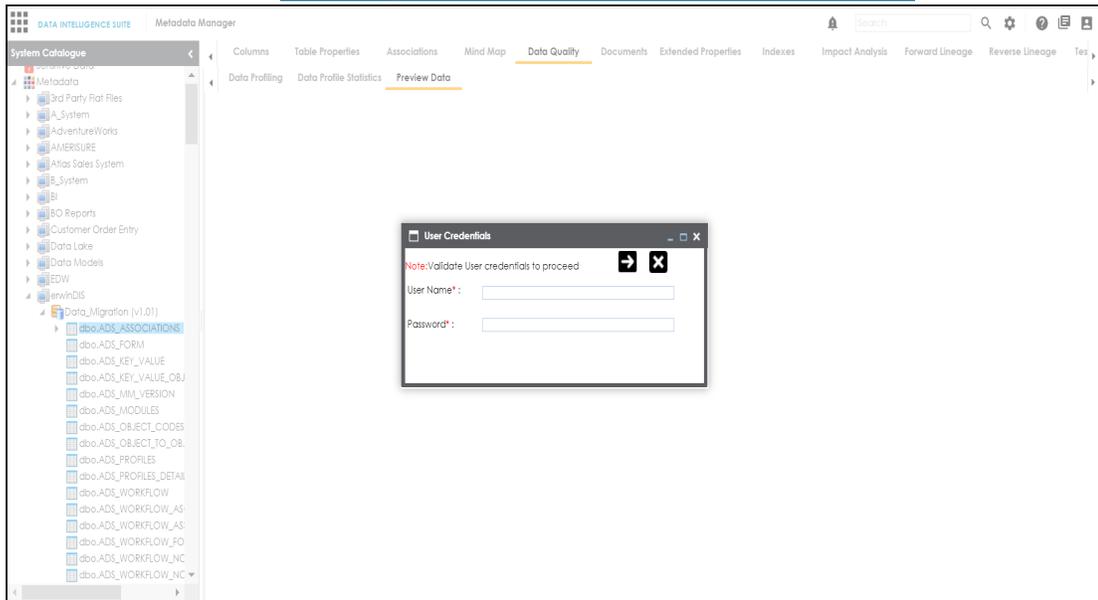
To view table data, follow these steps:

1. Go to **Application Menu > Data Catalog > Metadata Manager**.
2. Under the **System Catalogue** pane, expand the desired system node.
3. Expand the desired environment node.
4. Click the desired table.
5. Click the **Data Quality** tab.



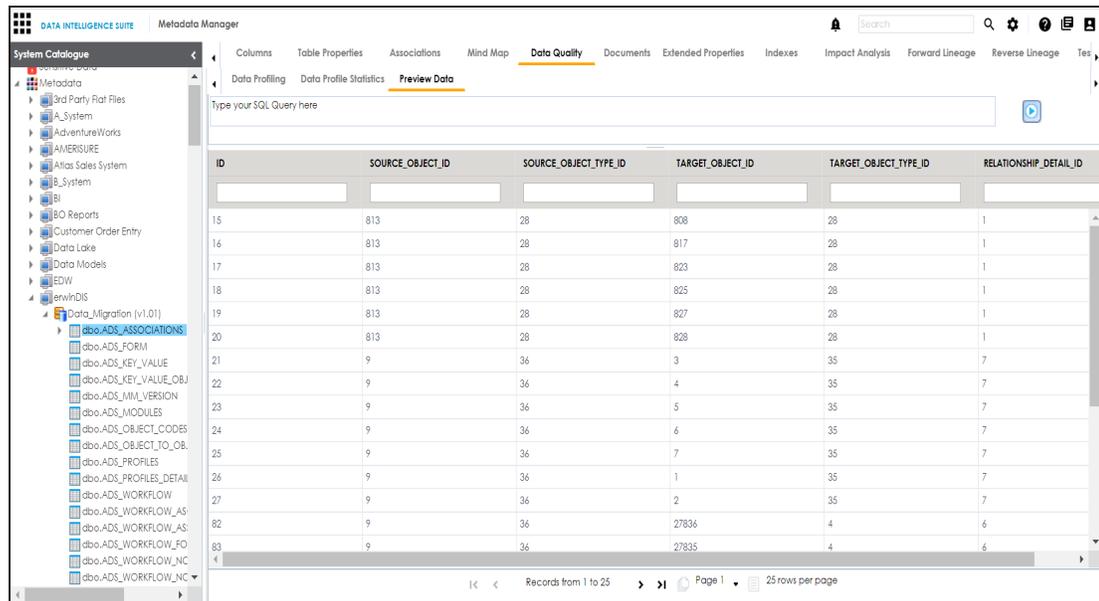
6. To preview the data, click the **Preview Data** tab.

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



7. Enter credentials to connect with the database.

Data at table level can be viewed.



Note: There is a SQL Editor which can be used to execute SQL query.

You can also [profile data at table level](#) and provide data quality score.

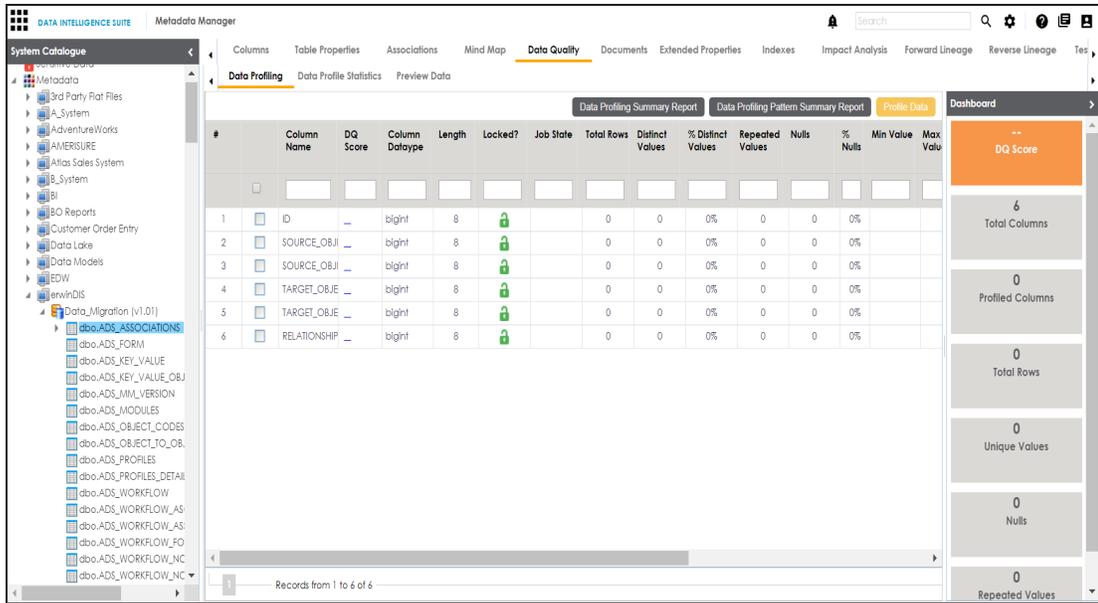
Profiling Data at Table Level

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, expand the concerned system node.
3. Expand the desired environment node.
4. Click the desired table.
5. Click **Data Quality**.

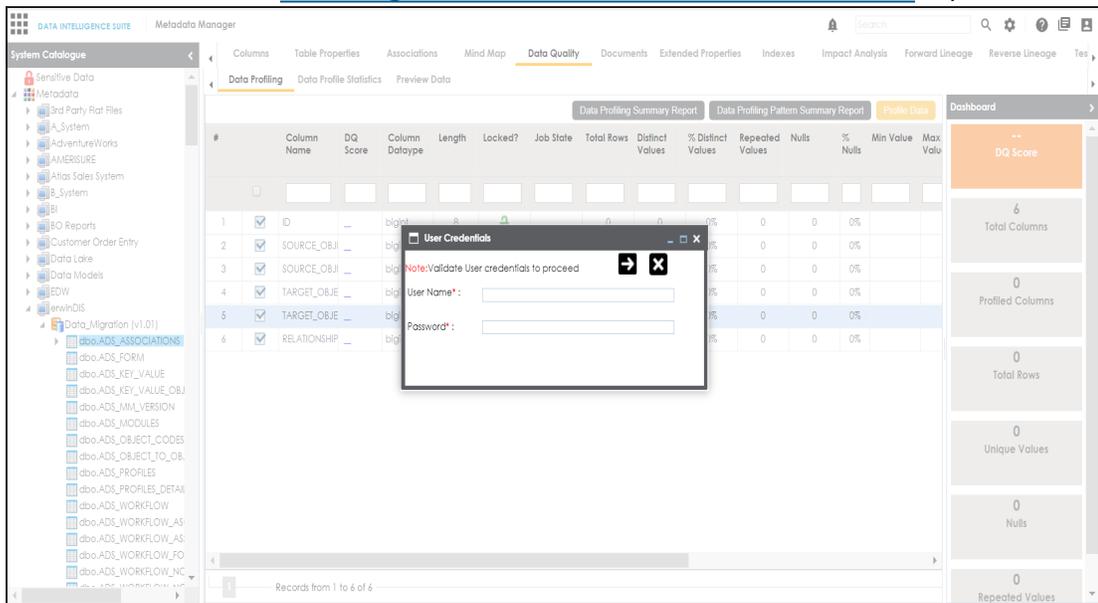
The Data Profiling page appears.



6. Select columns to be profiled.

7. 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.



8. Enter credentials to connect with the database.

Job Scheduler page appears.

9. 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	Enter a job name.
Interval	Set the frequency of the job.
Scheduled Job On	Set the date and time of the job using  .
Local or Server	Select the machine whose clock decides the time of the scheduled scan. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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 dis-

Option	Description
	<p>tinct values in the selected columns.</p> <ul style="list-style-type: none"> ▪ 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 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	Set the toggle switch to ON to receive email notification. For more information on this, refer to the Configuring Notification on Profiling Data topic.
Notification	This field is autopopulated with your email ID. Email notifications are

Option	Description
Email	sent from Admin Email ID about the scheduled job. For more information on configuring Admin Email ID, refer to the Configuring Email Settings topic.
CC list	Enter a CC list with comma (,) separated values. The email notifications about the scheduled job will be sent to the CC list.

10. Click **Schedule**.

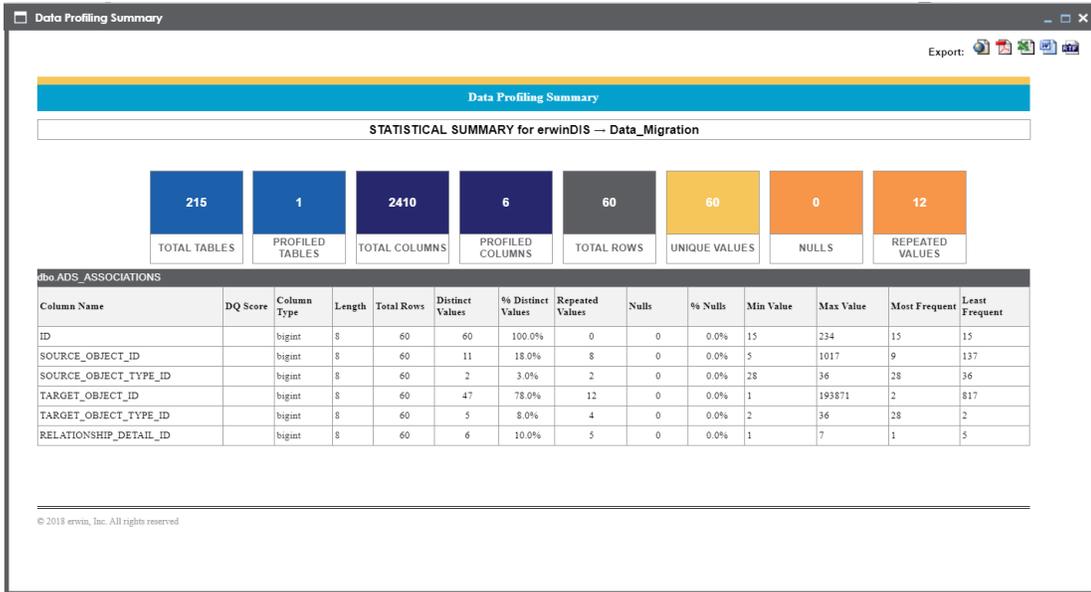
The data profiling job is scheduled.

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

#	Column Name	DQ Score	Column Datatype	Length	Locked?	Job State	Total Rows	Distinct Values	% Distinct Values	Repeated Values	Nulls	% Nulls	Min Value	Max Value
1	ID	---	bigint	8	🔒	COMPLETED	60	60	100%	0	0	0%	15	2
2	SOURCE_OBJ1	---	bigint	8	🔒	COMPLETED	60	11	18%	8	0	0%	5	1
3	SOURCE_OBJ2	---	bigint	8	🔒	COMPLETED	60	2	3%	2	0	0%	28	1
4	TARGET_OBJ1	---	bigint	8	🔒	COMPLETED	60	47	78%	12	0	0%	1	19
5	TARGET_OBJ2	---	bigint	8	🔒	COMPLETED	60	5	8%	4	0	0%	2	1
6	RELATIONSHIP	---	bigint	8	🔒	COMPLETED	60	6	10%	5	0	0%	1	1

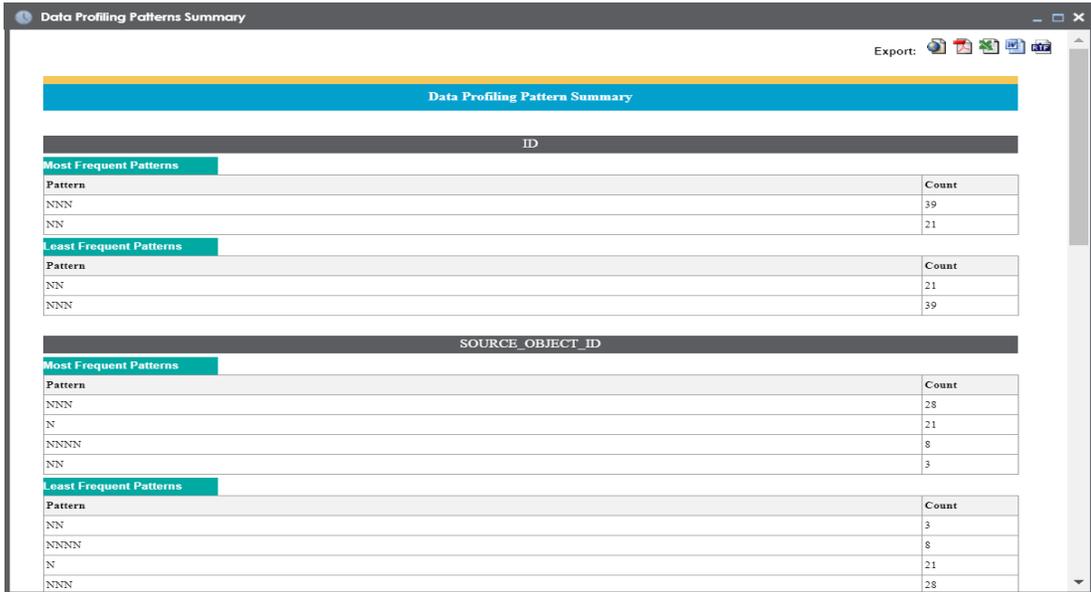
11. To view data profiling summary, click **Data Profiling Summary Report**.

Data Profiling Summary page appears.



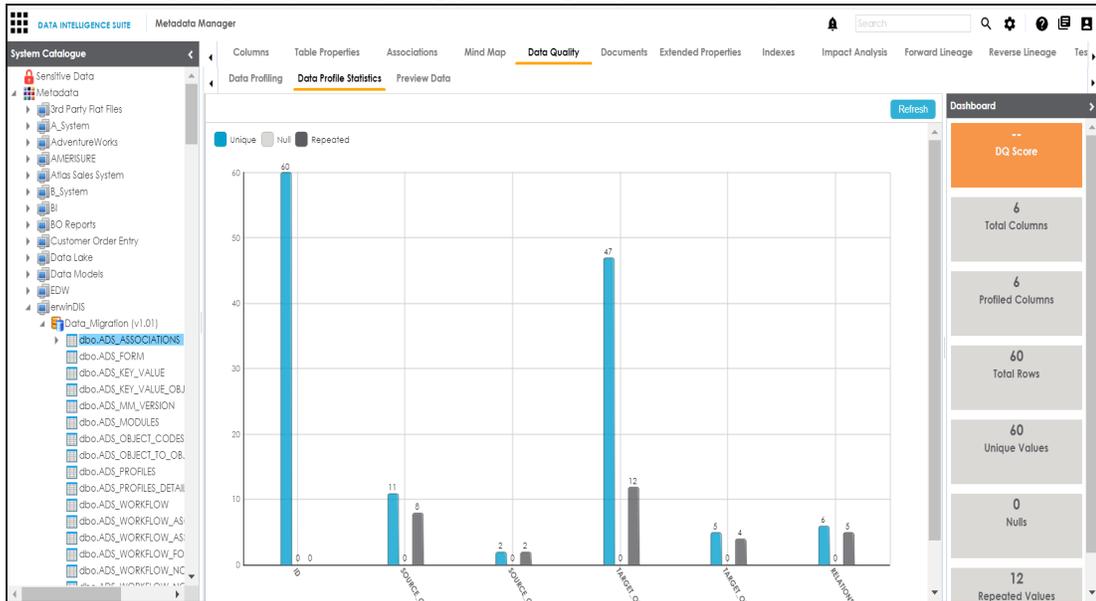
- To view data profiling pattern summary report, click Data Profiling Pattern Summary Report.

The Data Profiling Pattern Summary page appears.



- Close the Data Profiling Pattern Summary page.
- To view data profile statistics, click **Data Profile Statistics**.

The following page appears giving you the glimpse of data profile statistics.



15. To update data quality score, click **DQ Score**.

Update DQ Score page appears.

The 'Update DQ Score' dialog box is shown with a 'Save' button and a 'Cancel' button. Below the buttons is a label 'DQ Score' followed by a dropdown menu with the text 'Select DQ Score'.

16. Select **DQ Score**.

17. Click **Save**.

DQ Score is updated.

For information on configuring email notifications on scheduling data profile job, refer to the [Configuring Notifications on Profiling Data](#) topic.

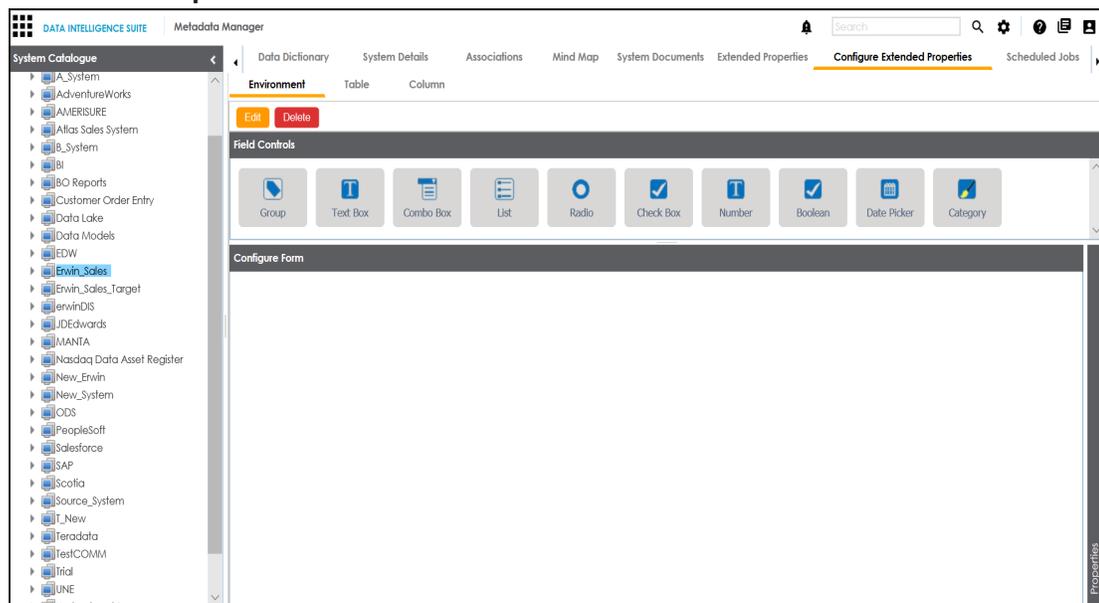
Configuring Extended Properties

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.

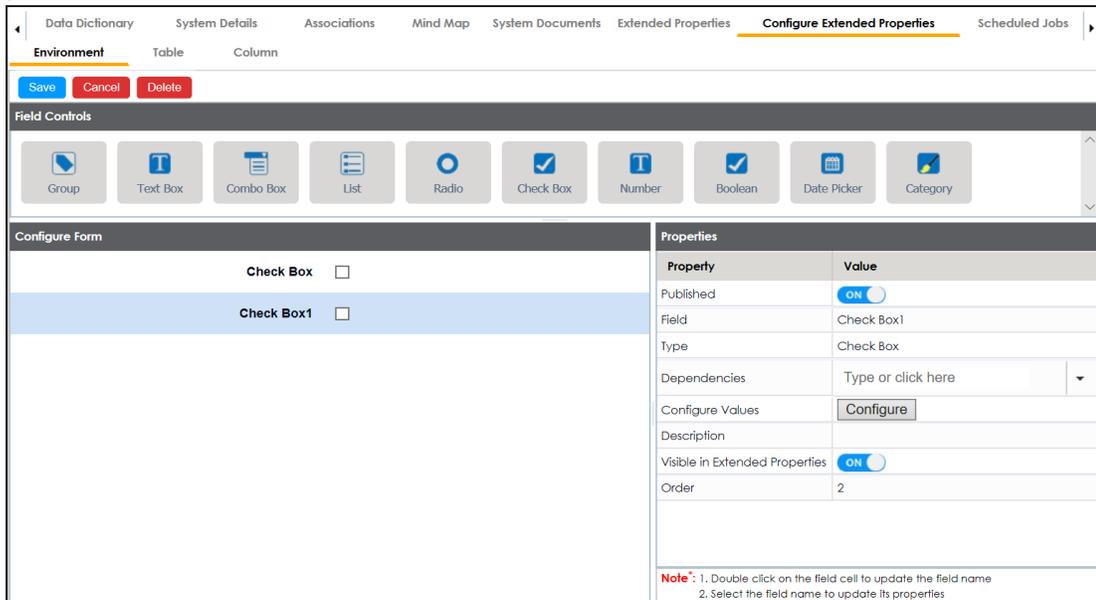
Table

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.

Property	Description
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: <ul style="list-style-type: none"> ▪ 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**.

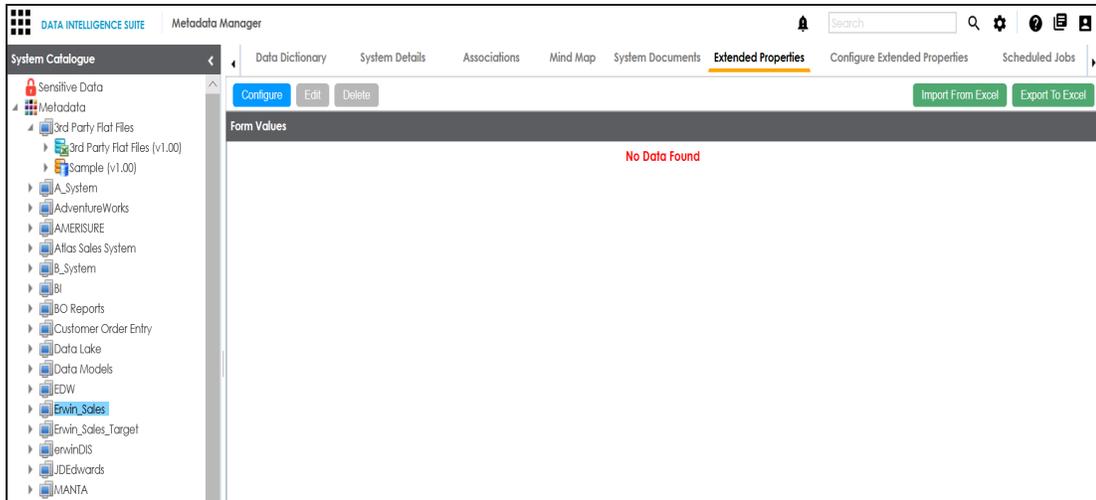
The form is saved and it is available under the Extended Properties tab of the selected object (Environment, Table, or Column).

Extending System Properties

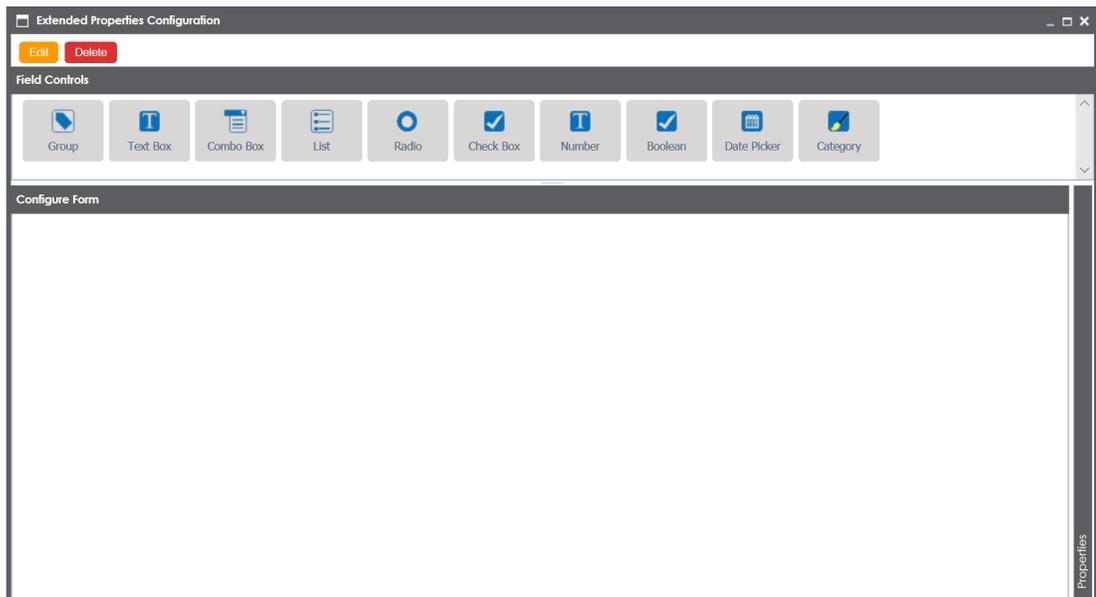
You can configure and use extended properties specific to a system.

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**.

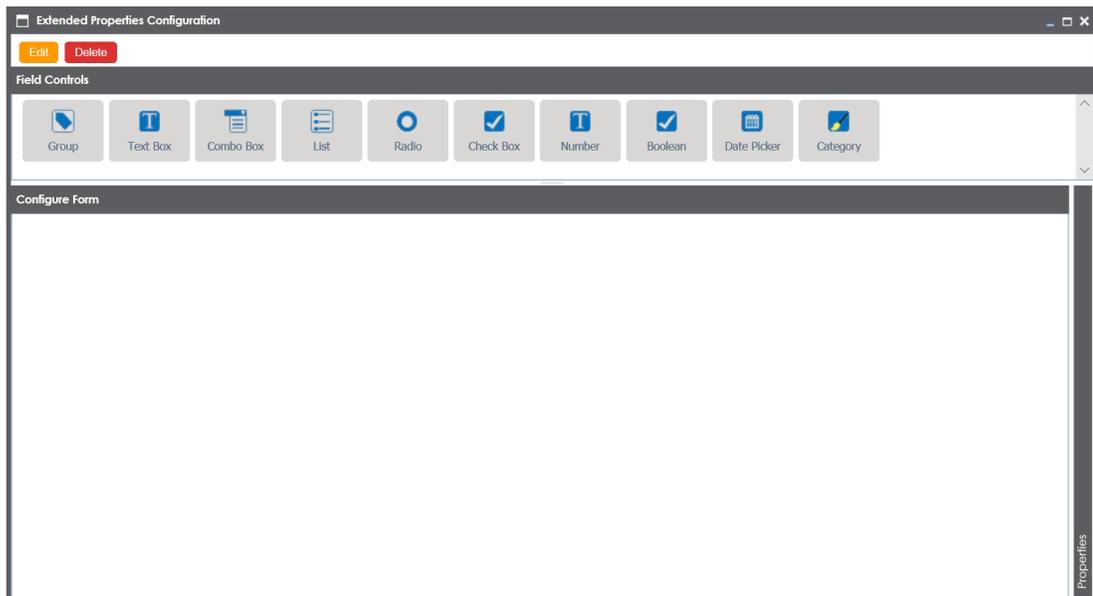
The form is saved under the **Extended Properties** tab.

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**.

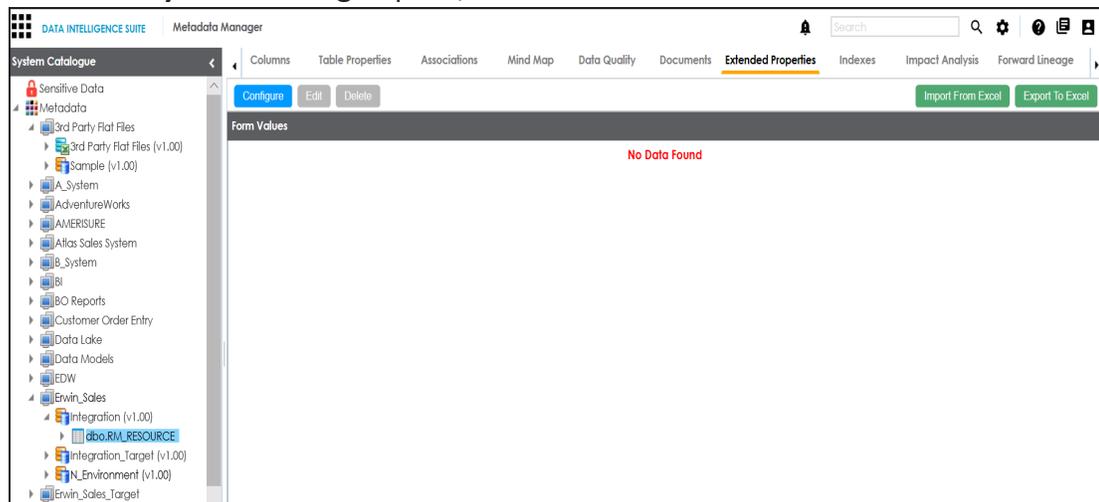
The form is saved under the **Extended Properties** tab.

Extending Table Properties

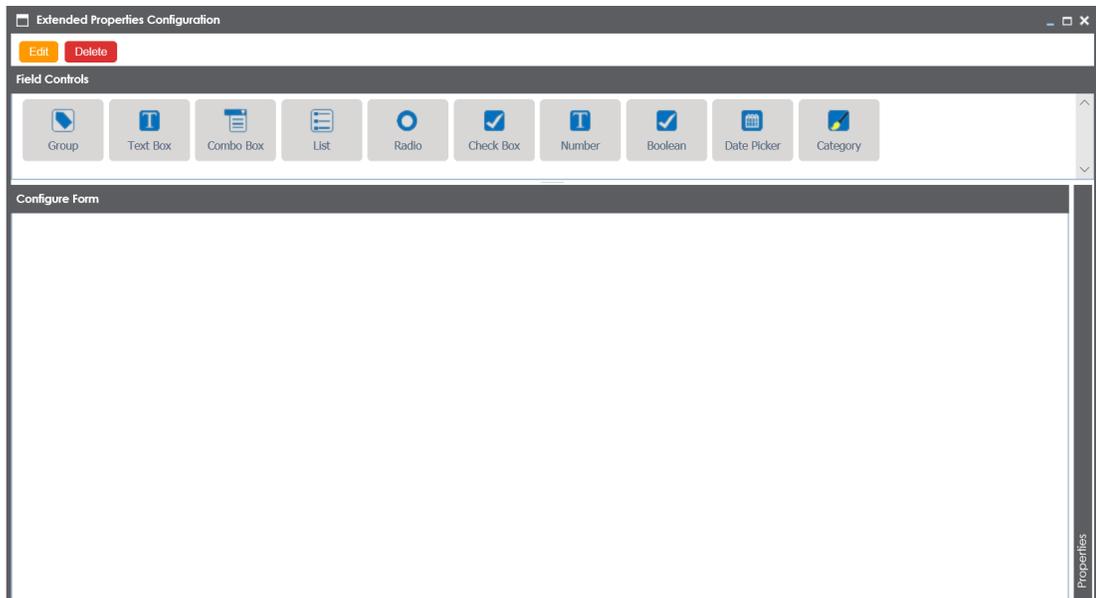
You can configure and use extended properties specific to a table.

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**.

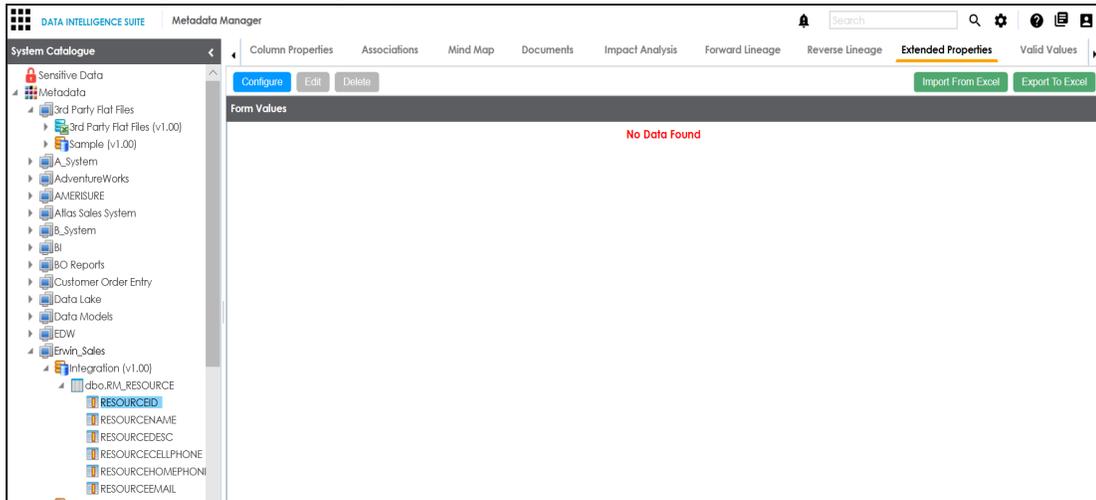
The form is saved under the **Extended Properties** tab.

Extending Column Properties

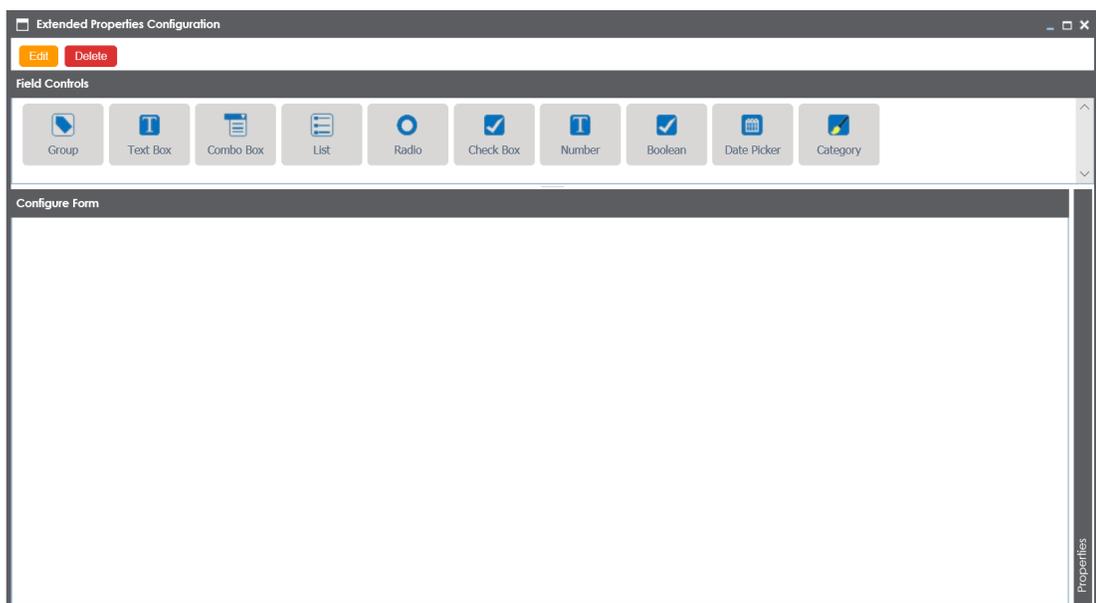
You can configure and use extended properties specific to a column.

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.