Solix Enterprise Data Management Suite (Standard Edition) 2.2

Product User Manual

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Empowering Data Management

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1 Introduction to Solix EDMS Standard Edition (SE)

Solix Enterprise Data Management Suite Standard Edition (SE) provides a set of diversified data management functionalities that helps to assess the archive eligible data and analysis the data for forecasting database growth for upcoming years, archive the data across homogeneous databases, secure the confidential data resides in the databases by masking the data based on regulatory compliance, and enable to validate data across homogeneous databases.

Solix Enterprise Data Management Suite Standard Edition (SE) contains four main features:

1. Solix EDMS Data Assessment (ILM Assessment) Standard Edition (SE)
2. Solix EDMS Database Archiving Standard Edition (SE)
3. Solix EDMS Data Masking Standard Edition (SE)
4. Solix EDMS Data Validation Standard Edition (SE)

1.1 Solix EDMS Data Assessment (ILM Assessment) Standard Edition (SE)

Solix EDMS Database Assessment Standard Edition (SE) plays a significant role to assess the amount of archive eligible data in a given database based on business criteria and provide the snapshot of data distributed in schemas, database size and helps in identifying the Top N tables based on the table size. Solix EDMS Database Assessment Standard Edition (SE) provides the flexibility to perform object-wise and table-wise data assessment to identify the archive eligible data available in the database based on the business compliances and retention policies. There is also a provision to depict the number of rows and data size of archive eligible data in a graphical representation.

Solix EDMS Data Assessment (ILM Assessment) Standard Edition (SE) uses retention management to assess the archive eligible data based on the retention policy. Once retention policy is assigned to the data assessment, the data found within the given retention period before the specified retention date will be assessed for the archive eligibility.

Database Assessment also provides the flexibility to assess the data growth at both tables and database level based on the statistical analysis and forecast the prediction of future growth in both the tables size and database growth size in graphical representation. It also analysis data growth yearly and provides the statistics analysis of data growth through graphical representation in dashboard.

There are four types of data assessments, they are:

1. ***Database Size Snapshot***: Assess the data distributed in schemas, database size and size of Top N tables.
2. ***Archive Eligibility:*** Object-wise and table-wise data assessment to assess the archive eligible data.
    - ***Table Level Archive Eligibility***: Table - level data assessment to assess the archive eligible data in the tables based on the simple criteria or applying retention policies.
    - ***Object Level Archive Eligibility:*** Object - level data assessment to assess the archive eligible data by defining a set of related tables, relations, joins, complex business criteria and applying retention policies.

3. ***Data Growth Forecast***: Analysis the data growth at table level and database level that helps to forecast the future database growth. Data growth forecast is predicted based on the some statistical regression methods that help to forecast the future data growth analysis. Data growth analysis is categorized into two types, they are:

    - ***Table Level Forecast:*** To analysis the data growth based on selected tables and forecast the future growth of tables in size.

    - ***Database Level Forecast****:* To analysis the data growth of database based on top tables and forecast the future database growth. Database Level forecast is categorized into two types, they are:

        – ***Database Forecast:*** Database growth forecast based on the recent assessment for default data source. Make sure that atleast once the database size snapshot must be executed to forecast the database growth.

        – ***Database Growth Analysis on Top Tables:*** Database growth forecast analysis based on top N tables' growth.

4. ***Assessment Summary:*** Assessment Summary provides the consolidated summary of all the data assessments executed on the database. It shows the graphical representation and grid tables that provide the consolidated information of database snapshot, archive eligible data, and database growth analysis. It also provides the flexibility to select the retention policy (i.e., duration) data analyzing the database growth with archived and without archived.

- Current version of Solix EDMS Database Assessment Standard Edition (SE) supports Oracle Database (9i, 10g, and 11g) and SQL Server (2005 and 2008).
- We recommend data assessment to be executed on recent clones of production database or production database for better output and prediction of future database growth.
- In Data Growth Forecast, some statistical regression method is performed based on the current data in the database. Thereby, the database growth forecasted is an assumption so it may vary according to the business conditions.

1.1.1 Features of Solix EDMS Data Assessment (ILM Assessment) Standard Edition (SE)

- Identify the archive eligible data existing in the database (schema) based on the complex business rules.

- Identify the archive eligible data in the top tables by applying retention policies or simple criteria.

- Statistical analysis of data growth helps to forecast the data growth in both database size and tables size in future.
- Identify data distribution among the schemas in a database.
- Identify Top N tables based on the table size.
- Identify the archive eligible data based on business compliance.
- Identify the archive eligible data as per eligible rows and eligible data size.
  - *Eligible data* - Inactive data (historical data and eligible for archiving)
  - *Non-eligible data* - Active data (Live data not eligible for archiving)
- Depict the active and inactive data summary of recently executed data assessments in a dashboard
- Identifies and forecast the database growth on the selected top tables.
- Dashboard shows the statistics analysis of business data growth based on the database/application level.
- Provides the consolidated summary of data assessment on the database in the graphical representation that provides the snapshot of database size, archive eligible data in the database, database growth in size and records, and data growth based on the top tables based on the retention policies.
  - Based on the retention policy selected, the graphical representation shows the archived data growth and non-archived data growth in the database. It helps to understand the database growth with archived and without archived.

1.1.2 Benefits of Solix EDMS Data Assessment (ILM Assessment) Standard Edition (SE)

- Identify the eligible data to be archived in the database.
- Graphical representation of data assessment output helps to determine the number of archive eligible data in both database and tables.
- Analysis the yearly data growth in an enterprise.
- Understand and analyze the data growth of business at database level and table level both for next 5 years by graphical representation.
- Helps to execute data assessment based on the retention policy and simple criteria.
- Provide the detailed analytics by rows and size.

- Helps to understand the future data growth in database and table in size for the next 5 years and helps to understand the strategy to archive the data timely for improving the data storage management.
- Provide the flexibility to export the graphical representation of data assessment output into .pdf format.

1.2 Solix EDMS Database Archiving Standard Edition (SE)

Solix EDMS Database Archiving Standard Edition (SE) is a process of moving data that is no longer actively used to a separate data storage device for long-term retention. Data archives consist of historical data that is still important and necessary for future reference, as well as data that must be retained for regulatory compliance. Data archiving platforms like Solix EDMS Database Archiving Standard Edition (SE) provide data access so that data can be retrieved easily whenever needed.

1.2.1 Benefits of Solix EDMS Database Archiving Standard Edition (SE)

- Archiving optimizes storage and improves application performance.
- It mitigates risk by reducing the amount of data exposed to potential problems.
- It cuts the cost of storage by decreasing the amount of data on expensive Tier 1 disks significantly.
- It meets compliance requirements by preserving data in a read-only format while supporting data visualization through standard reporting tools.
- It improves business continuity by cutting the active data that requires backup and potential restoration, and decreasing backup windows significantly.

1.3 Solix EDMS Data Masking Standard Edition (SE)

Solix EDMS Data Masking Standard Edition (SE) ensures data security and compliance by masking sensitive data in test databases using several masking algorithms. At the same time, the referential integrity of the data is maintained to keep the application testing process seamless.

1.3.1 Benefits of Solix EDMS Data Masking Standard Edition (SE)

- Supports compliance with privacy legislation & policies.
- Increases protection against data theft.
- Access to data can be regulated based on user types. (For example, internal users and external users).
- Provides realistic data for testing, development, training, outsourcing, data mining/research, etc.
- Enables off-site and cross-border software development and data sharing.

- Provides ability to secure the confidential and sensitive data in organizations based on standard compliance.
- Enables to preview the sample of masked data before masking the original data existing in the database during execution.
- Provides feasibility to view the data in the table before and after the data masking process.

1.4 Solix EDMS Data Validation Standard Edition (SE)

Data warehouses are usually built on multi-tier architectures with multiple data extraction and insertion jobs between two data bases. The nature of data changes when they pass from one tier to another. Data Validation is a process of comparing records across different databases to ensure that the data is consistent

1.4.1 Purpose of Solix EDMS Data Validation Standard Edition (SE)

While extracting data from one database and loading it to another, the nature of data can change considerably. Also, some data may be lost during this transition. In such cases, the validation process helps to identify the loss or changes.

The major reason for data loss can be failures or errors that occur during loading the data. Errors can occur due to several reasons such as,

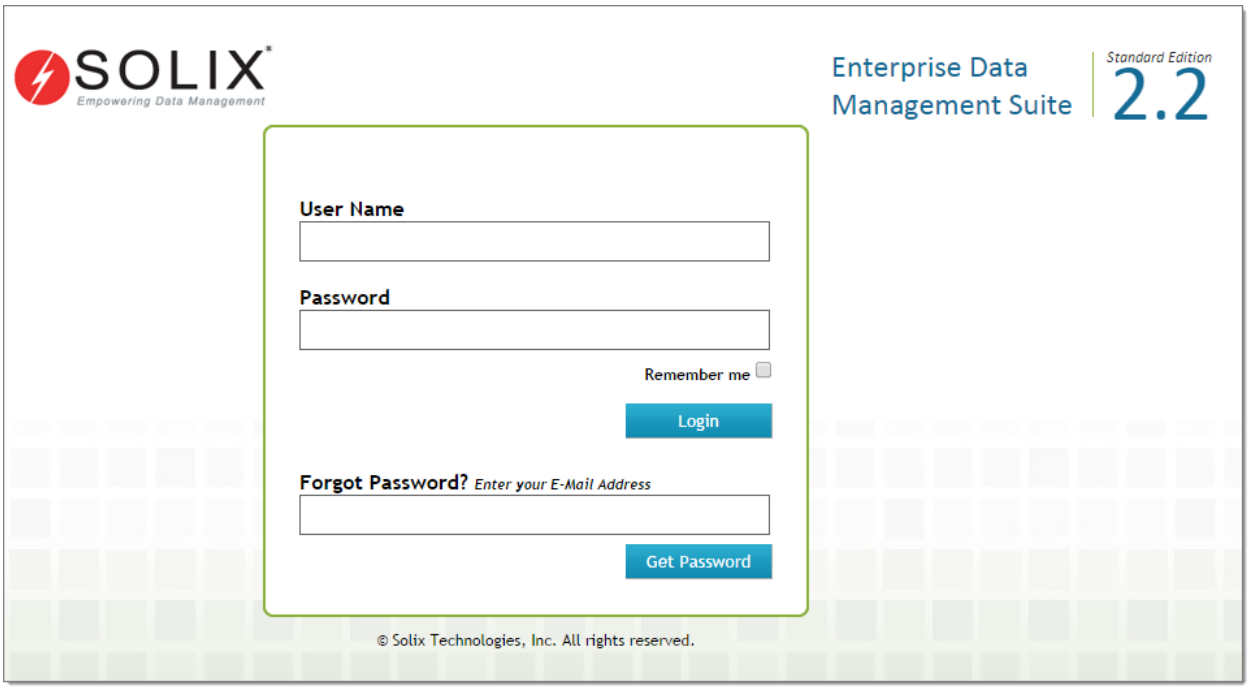
- Inconsistent data in the source
- Non-integrating data among different sources
- Unclean/ non-profiled data
- Technical failures like loss of connectivity, loss over network, space issue etc.

Any failure that occurs due to such issues can result in potential data loss and lead to unreliable data quality.

- Current version of Solix EDMS Standard Edition (SE) supports Oracle Database (9i, 10g, and 11g), SQL Server (2005 and 2008) and Sybase ASE (15.5).
- Solix EDMS Standard Edition (SE) does not support special data types such as "'BLOB','CLOB','LONG','LONG RAW', 'RAW', 'BFILE', 'XML', 'IMAGE', 'BINARY', 'VARBINARY', 'BIT', 'BINARY_FLOAT', 'BINARY_DOUBLE', 'NCLOB', 'TEXT', 'NTEXT', 'UNITEXT' etc.

2 Getting Started

In order to access Solix EDMS Standard Edition (SE), enter the respective URL = http://<ip address>:9090/edms/ in the address bar. The ***Login*** screen for initiating the authentication process will be displayed as shown in the figure below:



To login to the application, enter the authenticated user name and password provided by the Solix Delivery team.

For example,

User Name**:** ***ADMIN***

Password**:** ***ADMIN***

1. Click ***Login*** to access ***Solix EDMS(Standard Edition)***
2. On successful login, the Solix EDMS Standard Edition (SE) home screen appears as shown in the figure below.

- Username and password are case sensitive.
- Based on the privileges authenticated to the login user, authorized features will be populated in the home screen respectively.

2.1 Forgot Password

Forgot Password feature allows the user to receive a new password. To retrieve the password,

1. In login page, enter the user name in the ***User Name*** text field.
2. Enter E-mail address (i.e., the email-id provided while creating new user) in the ***Forgot password? Enter your E-mail Address and your User Name*** text box. Once the email address is entered, the system will validate both user name and email.
3. Click ***Get Password*** button**.** The "MAIL IS SENT WITH CHANGED PASSWORD" message will be prompted.
    - If the entry is valid, the system will generate a new password and it will be mailed to the specified email address.

2.2 Change Password

The default User ID and pass word provided by Solix Technologies logs the user in as an Admin user.

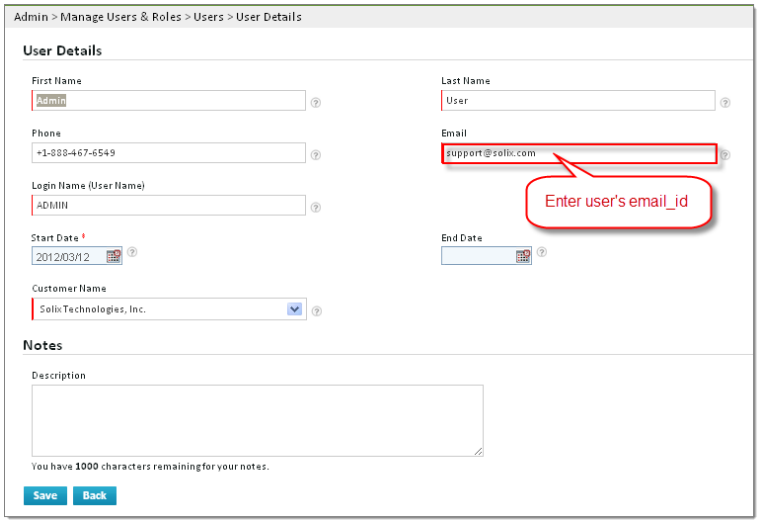
To change password:

1. Login to the Solix EDMS Standard Edition (SE) using the authenticated user name and password.

2. When user wants to change the password for the first time, it is mandatory to change the default email-id provided by Solix in order to send new password to the email-id specified by the user. To change user email-id,

    a. Navigate to the following path: ***Admin> Manage Users & Roles > Users***. The ***User*** screen will be displayed.

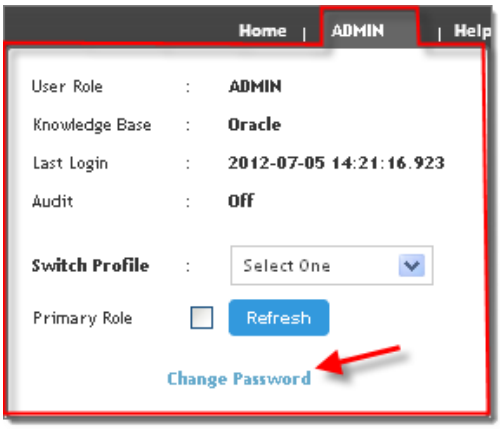
    b. Select radio button adjacent to Admin and click ***Edit*** button. The ***User Details*** screen with the information associated to admin user will be displayed as shown in the figure below.



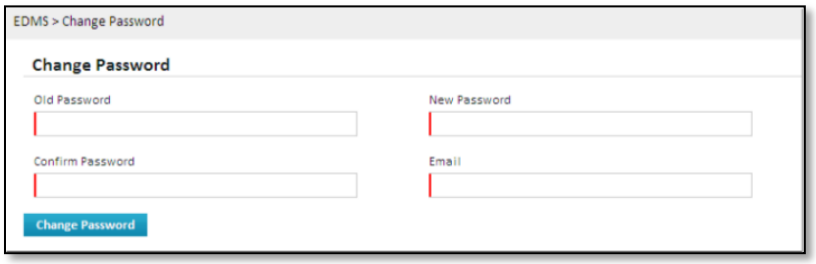
    c. Enter email-id of the user in the ***Email*** text box.

    d. Click ***Save*** button, to update the user information.

3. Once email_id of the user is changed, click on ***Role*** (by default-ADMIN) which appears at the top right corner of screen as shown in the figure below.



4. In ***Role Popup*** window, click ***Change Password*** hyperlink to change the password. The ***Change Password*** pop-up window will be displayed as shown in the figure below.



a. Enter current password in the ***Old Password*** text field.

b. Enter the new password in the ***New Password*** text field.

c. Re-enter the new password in the ***Confirm Password*** text field.

d. Enter the email-id of the user in the ***Email*** in the text field to send the confirmation mail.

e. Click ***Change Password*** button. A message stating that "***Password is changed successfully***" appears and the confirmation message would be sent to the email address specified by the user.

- The field marked as are mandatory fields.
- It is mandatory to enter the email address of the user in the ***User Details*** screen only when the password is changed for the first time.

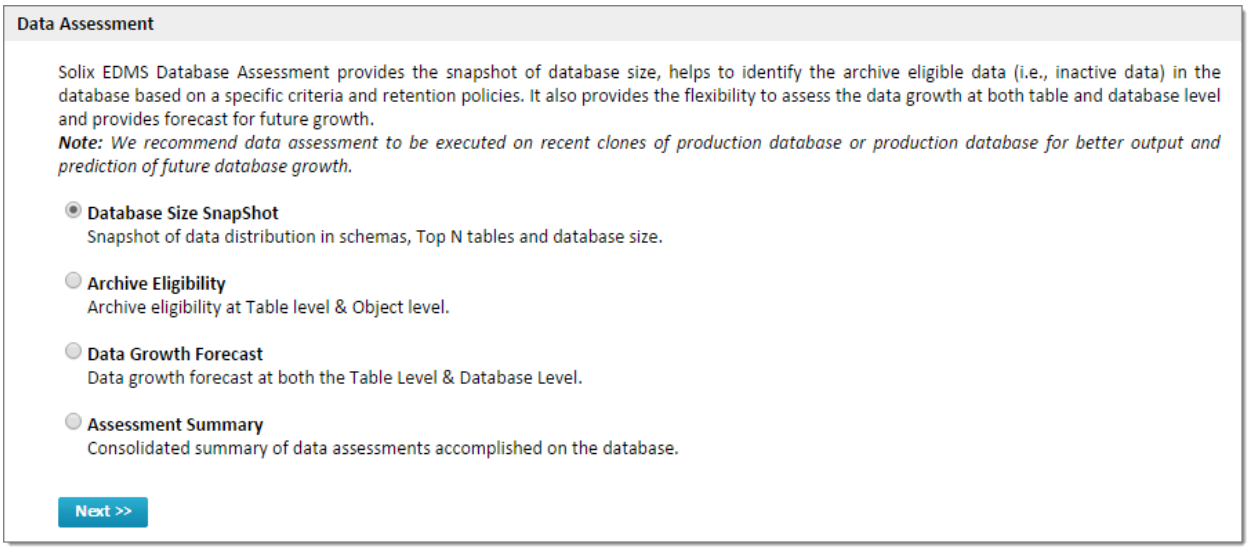
3 Data Assessment Process using Wizard

Solix EDMS Data Assessment Standard Edition (SE) Wizard is designed to provide an intuitive user friendly environment. The user is led through a step-by-step process to perform all the activities required to accomplish the data assessment efficiently.

This section outlines the procedure to perform four types of data assessment that differs at procedural level.

To initiate the data assessment,

- In Solix EDMS Standard Edition (SE) home page, click ***Launch Data Assessment Wizard*** button in the Data Assessment section or Navigate to the ***Data Assessment >> Launch Data Assessment Wizard.*** By default, the ***Data Assessment*** initial screen will be displayed which shows the four type of data assessment that can be carried out through wizard.



Data Assessment screen provides feasibility to opt for the required assessment type of data assessment to be carried out in the data assessment successfully.

The four assessment types shown in the wizard are given below.

- Database Size Snapshot
- Archive Eligibility
  - Table Level Archive Eligibility
  - Object Level Archive Eligibility
- Data Growth Forecast
  - Table Level Forecast
  - Data Growth Database Forecast
- Assessment Summary

- In Data Growth Forecast, some statistical regression method is performed based on the current data in the database. The database growth forecasted is an assumption so it may vary according to the business conditions.
- We recommend the data assessment to be executed on recent clones of production database or production database for better output and prediction of future database growth.

3.1 Database Size Snapshot

Database Size Snapshot shows a graphical presentation that enables to understand the current database size and space distribution among schemas in the database by providing the snapshot of database size. Database Size Snapshot helps to identify the data distributed among different schemas in the database, space occupied by the each schema, identify the top tables based on the table size that occupied more space in the database.

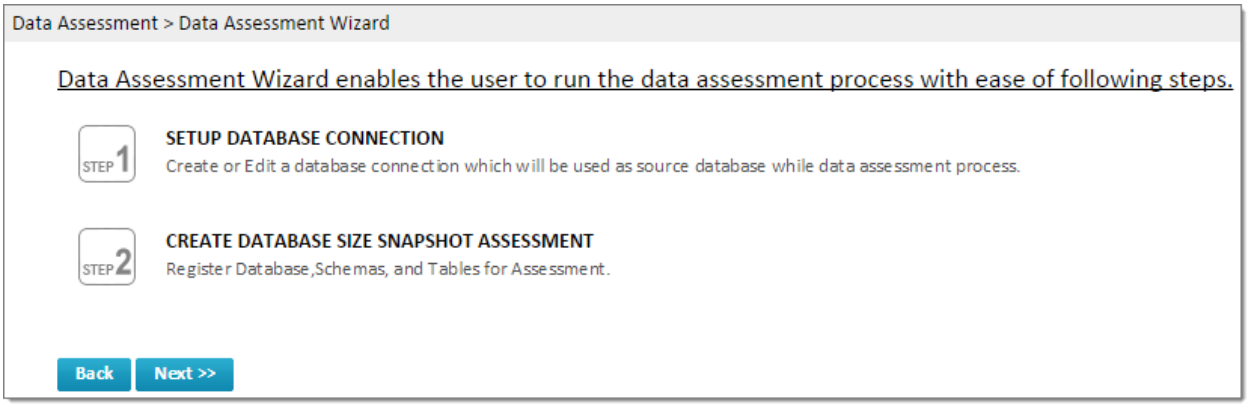
Benefits of Database Size Snapshot:

- Helps to identify the top N tables in the database.
- Ease to view the schema that contains major growth size in the database by identifying the schema which has occupied more space in the database.

Data Assessment for Database Size Snapshot

Once ***Database Size Snapshot*** is selected in the ***Data Assessment*** screen, by default, the ***Data Assessment Wizard*** initial screen will display that shows the summary of each step designed to accomplish the data assessment successfully.

This section outlines the procedure to setup a connection, and then create data assessment for the database size snapshots.



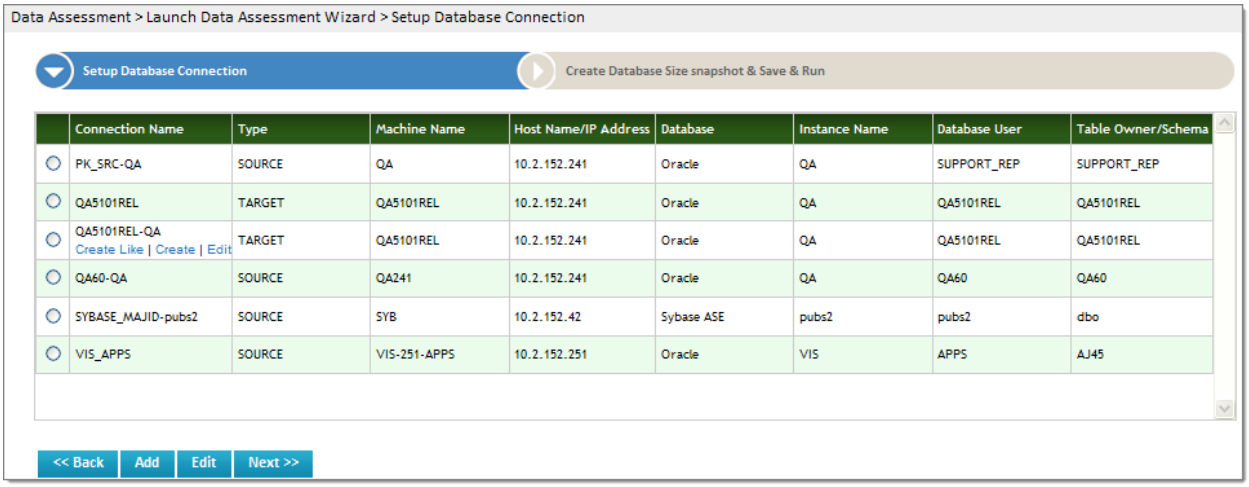
Solix EDMS Data Assessment Standard Edition (SE) Wizard provides feasibility to identify the eligible archive data according to the data distributed in the database with ease of two steps given below.

1. Setup Database Connection
2. Create Database Size Snapshot Assessment Module

To initiate the data assessment and navigate to the first step in the wizard, click ***Next*** button.

3.1.1 Setup Database Connection

The user needs to configure the database connection to establish the connectivity to the database in to perform the data assessment. This section describes the process to configure the connection details in order to connect to the database.

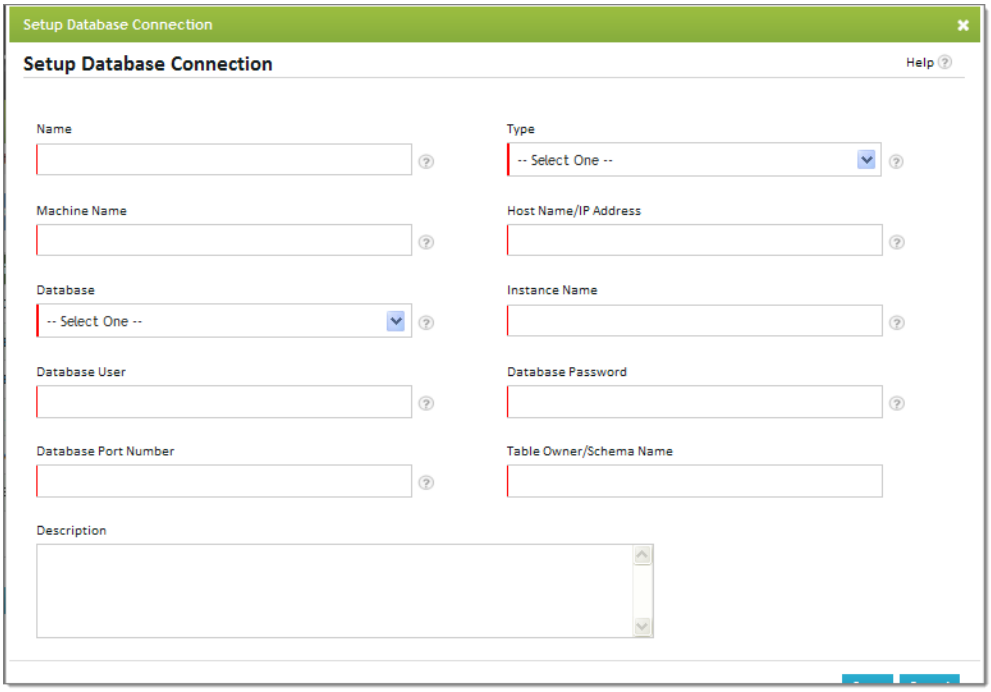


To setup the database connection for data assessment, do the following:

1. In ***Data Assessment Wizard*** initial screen, click ***Next*** button. By default, the ***Setup Database Connection*** screen with the list of existing database connections will display and enables to create or create a replica of connection or edit connections.
   - If the required database connection already exists, then the user can navigate to the next step by selecting the required database connection and click ***Next*** button.

2. To create a new database connection, do the following:
   a. Click ***Add*** button (or) Hover on any existing database connection, the three links (Create Like, New and Edit) will appear to create or edit the database connection.
      - ***Create Like*** – enables the user to create a replica of the selected database connection. The same connections details are maintained. It is recommended to define a new name for the database connection.
      - ***Create*** - enables the user to create a new database connection.
      - ***Edit*** **-** enables the user to edit the details of an existing database connection.

   b. The ***Setup Database Connection*** popup window is displayed. A new database connection can be created here as shown in the figure below.



i. Enter the name of the database connection in the ***Name*** text field.

ii. Select an appropriate datasource type from the ***Type*** drop down list and designate the database as a source or target.

iii. Enter the database server name associated to the data source in the ***Machine Name*** text field.

iv. Enter the host name/ IP address associated to the database server in the ***Host Name/ IP Address*** text field.

v. Select the database which is compatible to the data source from the ***Database*** (such as Oracle, Demo database) drop down list.

vi. Enter the instance name/service name of the database in the ***Instance Name*** text field.

vii. Enter the login user name of the database in ***Database User*** text field.

viii. Enter the password corresponding to the username of the database in ***Database Password*** text field.

ix. Enter the port number of the database in the ***Database Port Number*** field.

x. Enter the Table Owner or Schema Name database in the ***Table Owner / Schema Name*** field, to assess the data associated to the selected table owner or schema.

xi. Enter the comments in the ***Description*** text box**.**

xii. Click ***Save*** button. Once the database connection details are saved successfully, a confirmation message is prompted in the ***Setup Database Connection*** screen.

- The fields marked as | are mandatory fields.
- Ensure that the specified databases are accessible and running.
- To navigate to ***Setup Database Connection*** wizard screen from the ***Setup Database Connection*** popup window, click ***Cancel*** button.

To understand the functionality of each field in the ***Setup Database Connection*** popup window, refer to the table given below.

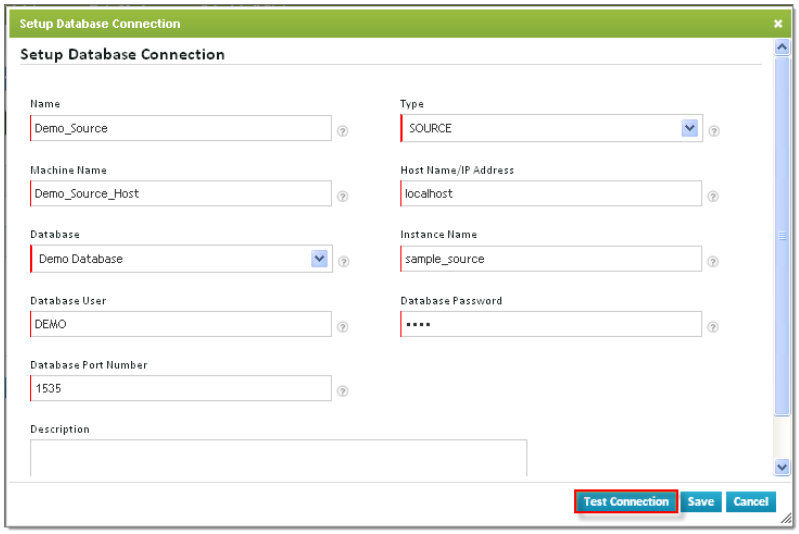
Fields	Functionality
Name	Define the name of the database connection.
Type	Drop down list to designate the datasource as Source / Target. For example, if "Source" is selected, then the datasource is considered as Source database.
Machine Name	Enter the name of the database server associated to the datasource. It is necessary to setup a database connection
Host Name/IP Address	Enter the Host Name/IP Address of the database server.
Database	Displays a list of supported databases and allows the user to select the database compatible to the datasource.
Instance name	Define the instance name of the database such as SID or Service Name.
Database User	Enter the user credentials (i.e., Username) required to connect to the database.
Database password	Enter the password corresponding to the Database User in order to connect to the database.
Database Port Number	Enter the Port number of the database server to establish the database connection.
Table Owner / Schema Name	Enter the table owner or scheme existing in the database, to assess the data associated to the selected table owner or schema.
Notes	It facilitates the user to enter the description associated with the database connection.
Test Connection	Used to verify whether the connection details provided are valid and whether the connection to the database can be established based on the specified details. • If the details provided are valid, the database connectivity will be established and saved. • If the given details are invalid, the database

	connectivity fails and alerts the user to verify the details.
Save	Used to save the database connection details.
Cancel	Used to navigate to the ***Setup Database Connection*** screen

3.1.1.1 Create Like, Editing or Testing the database connections

Test Connection feature is designed to provide feasibility to verify whether the connection details specified during database connection creation are valid. To test the database connection, do the following:

1. In ***Setup Database Connection*** screen, hover on the database connection the needs to be verified. The three links (Create Like, Create and Edit) will appears beneath the database connection.
2. Click ***Create Like or Edit*** button, to verify the connection details of the database connection. The ***Setup Database Connection*** popup window is prompted to edit /create a replica of the database connection as shown in the figure below.



3. Once the database connection details are saved successfully, in order to test the connection to the database based on the given details, click ***Test Connection*** button.
    - If the database is connected successfully, a message stating the successful connection to the database will be prompted.
    - If the database connection fails, an alert message to verify the given connection details will be prompted.

- The fields marked as | are mandatory fields.

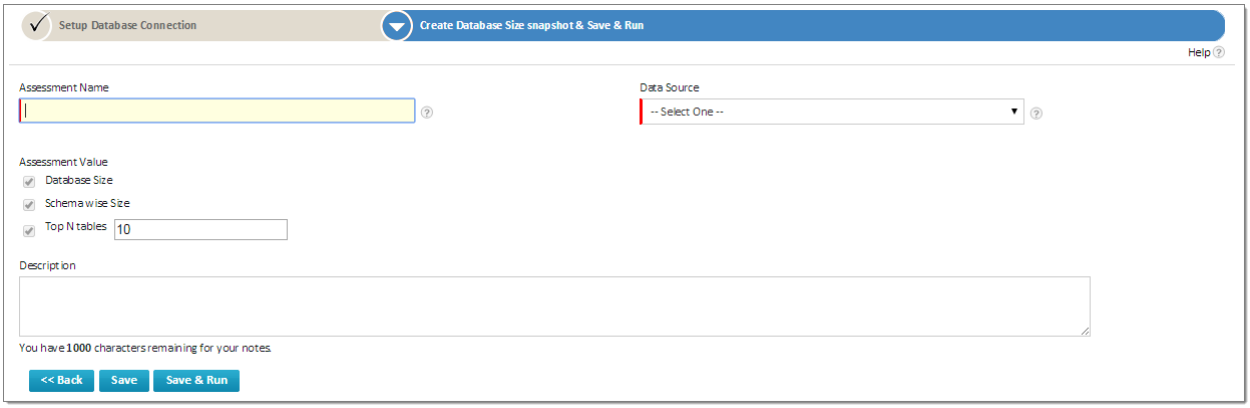
- To create a replica of database, click on ***Create Like*** link. In ***Setup Database Connection,*** modify the name of the database connection in the ***Name*** text field.

3.1.2 Create Database Size Snapshot Assessment

Once the database connection setup is completed successfully, the user needs to create a data assessment and execute it to perform data assessment effectively.

To create database size snapshot, do the following:

1. In ***Setup Database Connection*** screen, select the intended database connection and click ***Next*** button to navigate to the second step. The ***Create Database Size snapshot & Save & Run*** screen will be displayed as shown in the figure below.



2. Enter the name of the data assessment in the ***Assessment Name*** text field.
3. Select the appropriate database from the ***Data Source*** drop down list, to run the data assessment.
4. By default, ***Database Size snapshot*** will be prompted in the ***Assessment Type*** drop down list. It is a non-editable text field.
5. Select the required check box based on the requirement.
   - ***Database Size:*** this check box enables to assess the data for eligible archive data based on size of the selected database and displayed in the pictorial representation.
   - ***Schema Size***: this check box enables to assess the data for eligible archive data according to the data distributed in each schema existing in database selected and summarizes the eligible archive data in the pictorial representation
   - ***Top N Table:*** This check box enables to assess the data based on the size of the Top N tables. Here, "N" implies the number of tables.
6. Enter the value adjacent to the ***Top N tables*** check box, to pull up the data of given number of top tables in the databases for data assessment.
7. Click ***Save*** button, to save the data assessment.

8. Click ***Save & Run*** button, to save and execute the data assessment. A unique Run-ID will be generated and displayed in the ***Run Schedule*** screen. To monitor the status of the data assessment, click on Run ID to navigate to the ***Status Monitor*** screen. (***Status >Status Monitor***).

- The field marked as | are mandatory fields.
- Click ***Edit*** button, to modify the data assessment.

3.2 Archive Eligibility

Archive Eligibility enables to identify the archive eligible data at both table level and Objects level. This feature provides the feasibility to perform the assessment on tables based on the date column. Once retention policy is applied, the data found within the retention policy duration till the current date is considered as an active data (i.e., non-eligible archive data) and rest of the data is considered as an inactive data (i.e., eligible archive data).

For example,

- If Retention policy duration is "3 years" and current date is "01/01/2014", then the data found between "01/01/2011" is considered as "Active data". Whereas, the data beyond 01/01/2011 is considered as "Inactive data".

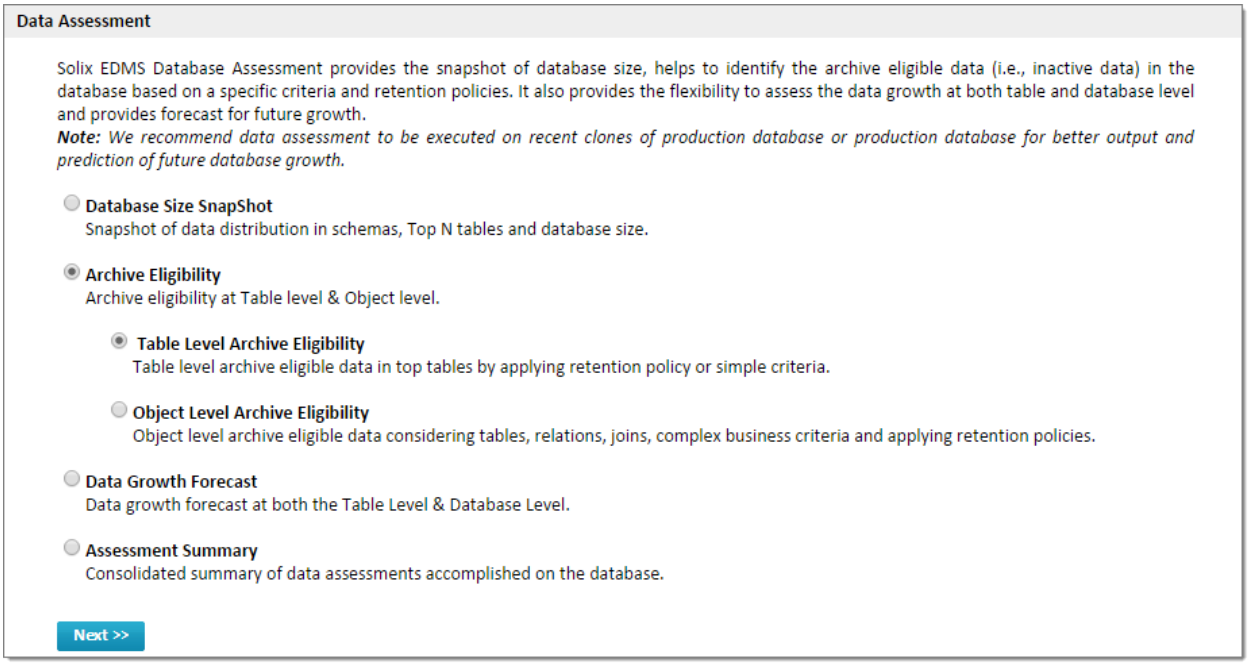
When a simple criterion is designed on the date column, it is applicable based on the dynamic date value provided by the user.

For example,

- Suppose, the dynamic date provided by the user is "18/7/2013", then the data found from "18/7/2013" till current date is considered as "Active data". Whereas, the data beyond "18/7/2013" is considered as "Inactive data".

Data Assessment for Archive Eligibility

Once ***Archive Eligibility*** option is selected in the ***Data Assessment*** screen, ***Table Level Archive Eligibility*** and ***Objects Level Archive Eligibility*** radio button will be populated as shown in the figure below.



Archive Eligibility contains two different methods ***Table Level Archive Eligibility*** and ***Objects Level Archive Eligibility,*** to provide the flexibility to the user to assess the data in the database and identify the active or inactive data available in the tables or tables in the Objects.

- Make sure that the Database Snapshot must executed atleast once.

3.2.1 Table Level Archive Eligibility

This option enables to identify the archive eligible data existing in the selected top tables based on the retention policy or simple criteria.

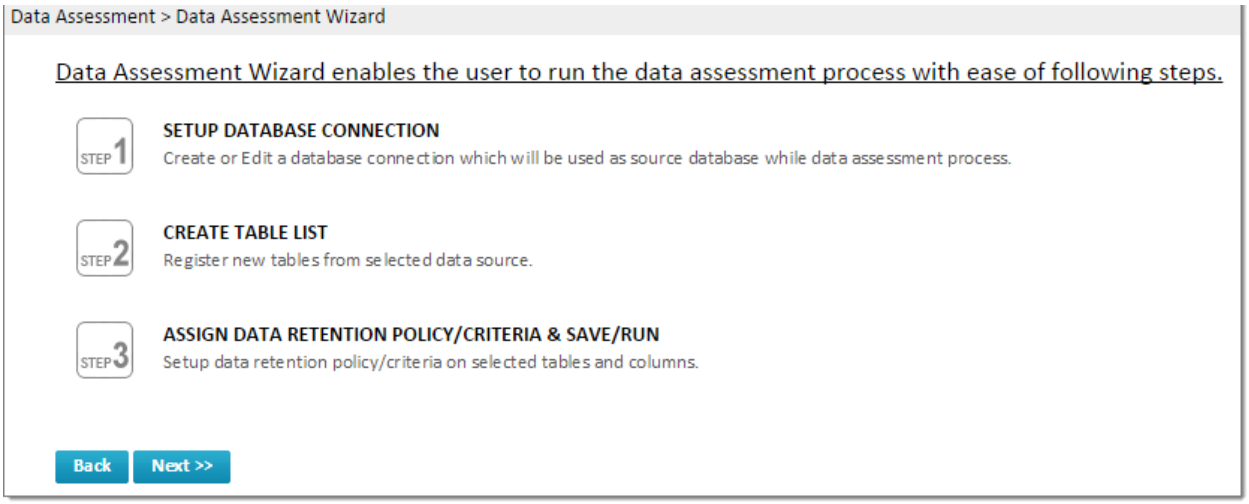
Benefits of Table level Archive Eligibility:

- Helps to identify the archive eligible data in the selected top tables based on the retention policy or simple criteria.
- Provides the user control to view the archive eligible data in the database.
- Provides the flexibility to create a retention policy during the data assessment process within the wizard.
- Helps to load the top tables from the database snap shot and identify the active or inactive data from those top tables as well.
- Ease to identify the inactive or active data existing in the top tables so that the inactive data can be archived and reduce the occupied space in the database that helps improves the performance.

Data Assessment for Table Level Archive Eligibility

Once ***Table Level Archive Eligibility*** option is selected in the ***Data Assessment*** screen, by default, the ***Data Assessment Wizard*** initial screen will be displayed which shows the summary of each step designed to accomplish the data assessment successfully.

This section outlines the procedure to setup a connection, select top tables (i.e., tables with more size), assign retention policy and then saves & run the data assessment to identify the archive eligible data in the selected top tables.



Solix EDMS Data Assessment Standard Edition (SE) Wizard provides feasibility to identify the eligible archive data in the top tables with ease of three steps given below.

1. Setup Database Connection
2. Create Table List
3. Assign Data Retention Policy /Criteria & Save /Run

3.2.1.1 Setup Database Connection

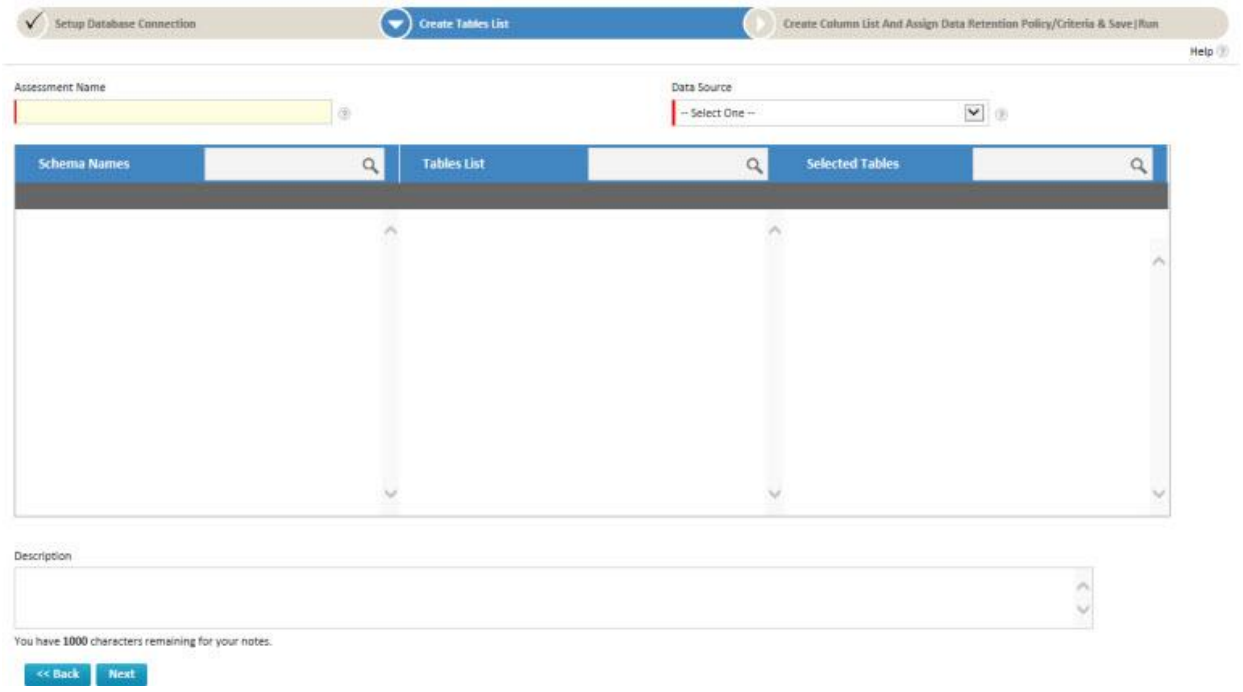
Refer to section 3.1.1, for Setup Database Connection

3.2.1.2 Create Tables List

Once the database connection setup is completed successfully, the user needs to select tables from the database to perform data assessment on the top tables effectively.

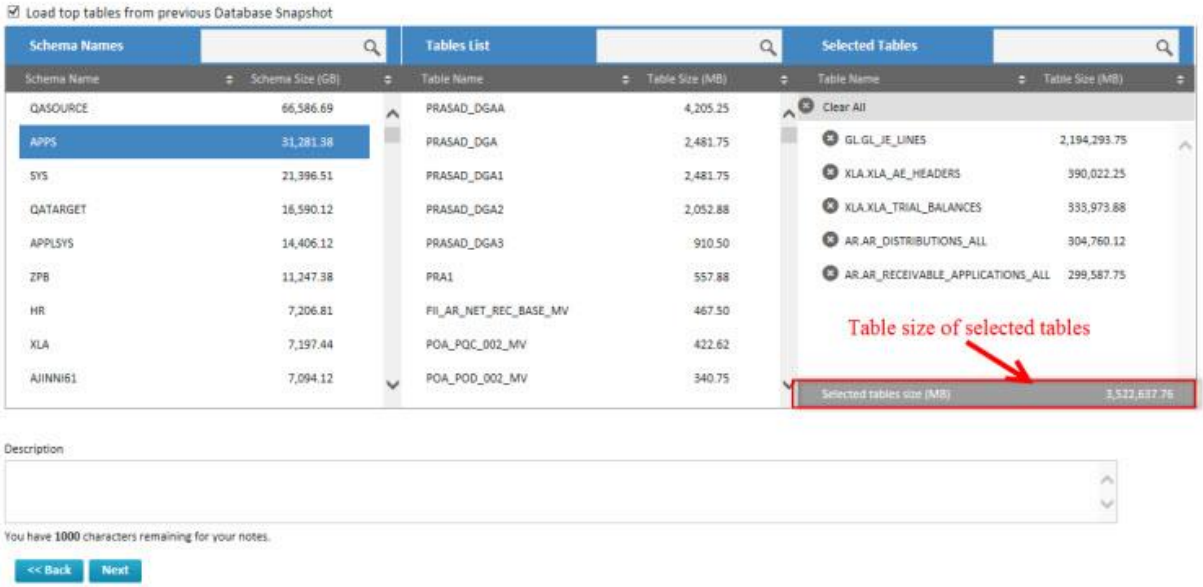
To create tables list, do the following:

1. In ***Setup Database Connection*** screen, select the intended database connection and click ***Next*** button to navigate to the second step. The ***Create Tables List*** screen will be displayed as shown in the figure below.



2. Enter the name of the data assessment in the ***Assessment Name*** text field.
3. Select the appropriate database from the ***Data Source*** drop down list, to run the database assessment.
   - If Database Snapshot assessment is already executed for the selected data source, then "***Load top tables from previous Database Snapshot***" checkbox will populate in the ***Create Tables screen***. It enables to load all the top tables from the previous Database Snapshot assessment.
4. By default, the schema(s) exist in the database will populate with the corresponding schema size in the ***Schema Names*** pane.

5. Select the required schema in the ***Schema Names*** pane. Once schema is selected, all the tables associated to the schema will populate with corresponding table size in the ***Tables List*** pane. (Note: tables are displayed in the descending order according to the table size).
6. Select the tables from the ***Tables list***, to run data assessment on the selected top tables and identify the archive eligible data from the selected top tables.
7. Once the tables are selected, it is appended automatically in the ***Selected Tables*** pane and also shows the total table size of the selected tables as shown in the figure below.



8. Select table name created and click ***Next*** button to proceed with further step.

- The field marked as | are mandatory fields.
-  Magnifying icon helps to search for required schema or tables from the corresponding list or filter.
- Click ***Back*** button, to go back to previous step.
- To remove table from the list, Click 'X' ***Remove*** button adjacent to the selected table.

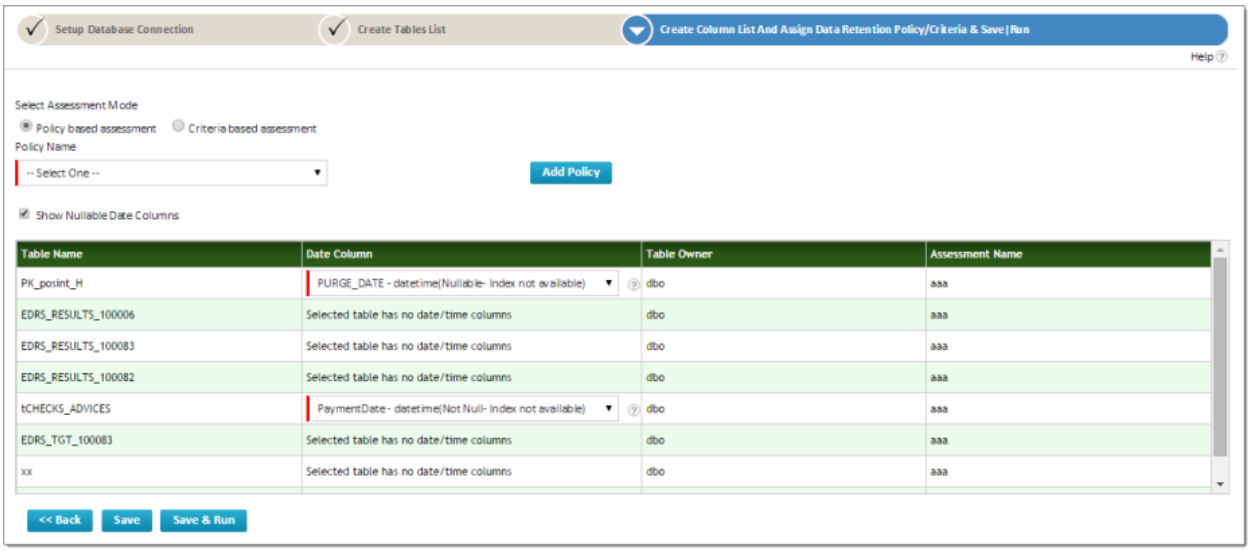
3.2.1.3 Assign Data Retention Policy /Criteria & Save /Run

Once the top tables are selected for the data assessment successfully, next step the user needs to assign data retention policy and run the data assessment.

To assign data retention policy and execute, do the following:

1. In the ***Create Tables List*** screen, select the tables and click ***Next*** button to navigate to the third step. The ***Create Column List And Assign Data***

Retention Policy/Criteria & Save Run screen will be displayed as shown in the figure below.



2. Select the required assessment option from the ***Select Assessment Mode***.

   - ***Policy based assessment***: this option enable to apply the retention policy on the selected tables and identify the archive eligible data existing in the tables are assessed for the duration specified in the retention policy. It also provides the flexibility to create the policy for the data assessment from this screen. This policy is applied on the "Date" columns selected from the ***Data Column*** drop down adjacent to the required tables. (Note: the ***Data Column*** drop down display the date columns existing in the corresponding table.)

     For example,

     – If Retention policy duration is "3 years" and current date is "01/01/2014", then the data found between "01/01/2011" is considered as "Active data". Whereas, the data beyond 01/01/2011 is considered as "Inactive data".

   - ***Criteria based assessment***: this option enable to run the assessment based on the criteria specified and identify the archive eligible data existing in the tables are assessed until the date specified in the ***Criteria value*** text field.

     For example,

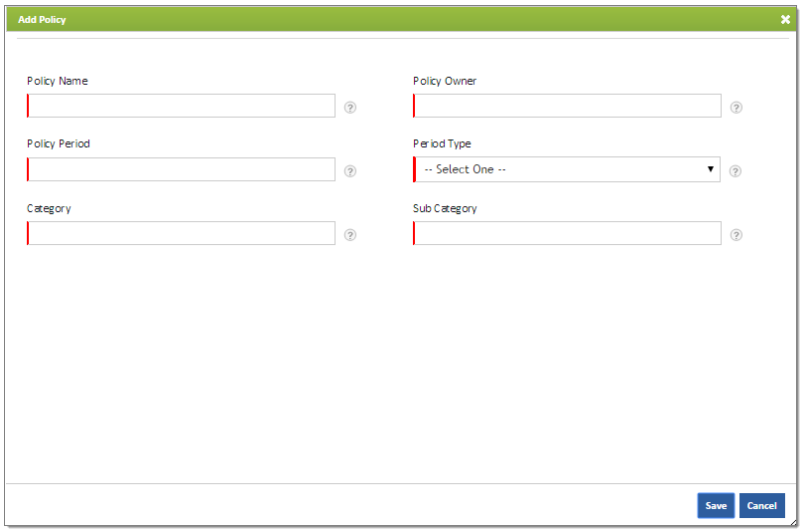
     – Suppose, the dynamic date provided by the user is "18/7/2013", then the data found from "18/7/2013" till current date is considered as "Active data". Whereas, the data beyond "18/7/2013" is considered as "Inactive data".

3. To apply retention policy on the data assessment,

a. Select the ***Policy based assessment*** from the ***Select Assessment Mode***.

b. Select the intended policy from the ***Policy Name*** drop down list, to apply selected assessment policy on the data assessment.

- To define a new policy, click ***Add Policy*** button. The Add Policy screen appears.



i. Enter the policy name in the ***Policy Name*** text field.

i. Enter the owner of the policy in the ***Policy Owner*** text field.

ii. Enter the duration of policy in the ***Policy Period*** text field.

iii. Select the appropriate type of duration from the ***Period Type*** drop down list. Based on the Policy Type selected, the Policy Period will be calculated in Years/Month/Days. For example, if Policy Period is "6" and Policy Type is "Months", then it is stated as duration of policy is 6 months.

- ***Years*** – This option indicates that the policy period is calculated in years.
- ***Months*** – This option indicates that the policy period is calculated in months.
- ***Weeks*** - This option indicates that the policy period is calculated in weeks.
- ***Days*** - This option indicates that the policy period is calculated in days.

iv. Select the required category from the ***Category*** drop down list. Based on the category selected, the corresponding sub categories will be displayed in the ***Sub Category*** drop down list.

v. Select the intended sub category from the ***Sub Category*** drop down list.

vi. Click ***Save*** button. Once the data assessment policy is saved successfully, the data assessment policy will automatically populate and appears at the top of the list in the ***Policy Name*** drop down.

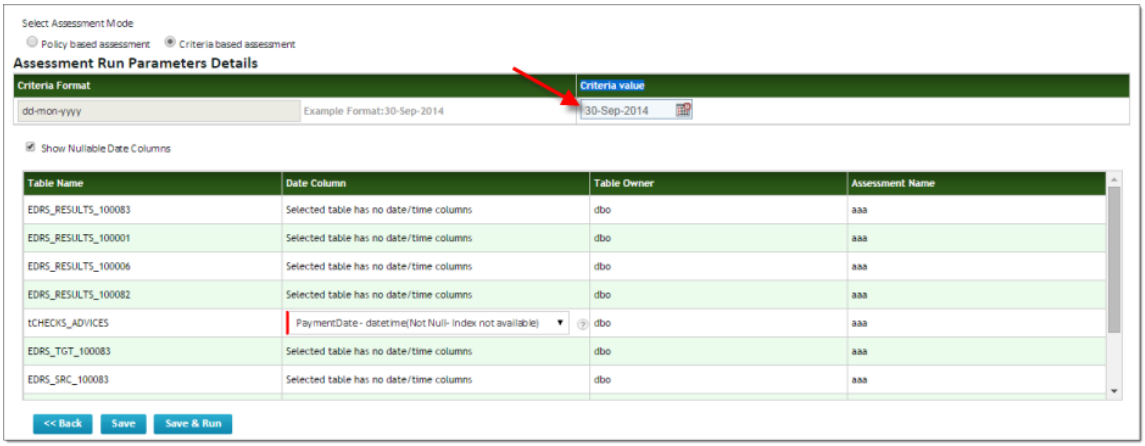
c. To populate the nullable date columns in the ***Data Column*** drop down, then select ***Show Nullable Date Columns*** check box.

d. Select the date column from the ***Data Column*** drop down adjacent to the required tables, to apply retention policy. (Note: the ***Data Column*** drop down will display the date columns existing in the corresponding table.)

4. To apply criteria on the data assessment,

a. Select ***Criteria based assessment*** from the ***Select Assessment Mode***.

b. Enter the required date in the ***Criteria Value*** text fields, to run the assessment on the tables until the specified date.



c. To populate the nullable date columns in the ***Data Column*** drop down, then select ***Show Nullable Date Columns*** check box.

d. Select the date column from the ***Data Column*** drop down adjacent to the required tables, to apply criteria on the selected column. (Note: the ***Data Column*** drop down will display the date columns existing in the corresponding table.)

5. Click ***Save*** button, to save the data assessment.

6. Click ***Save & Run*** button, to save and execute the data assessment. A unique Run-ID will be generated and displayed in the ***Run Schedule*** screen. To monitor the status of the data assessment, click on Run ID to navigate to the ***Status Monitor*** screen. (***Status >Status Monitor***).

Once the data assessment policy is assigned successfully, in case, the respective data assessment is set for execution the Solix EDMS Standard Edition (SE) will check whether any policies are applied on the data assessment or not. If policy is applied, then the execution of data assessment will be carried out according the policy criteria is defined.

- The field marked as are mandatory fields.
- Click ***Back*** button, to go back to previous step.

3.2.2 Object Level Archive Eligibility

This option enables to identify the archive eligible data by defining tables, joins, tables relation based on the complex business compliances and applying the retention policy.

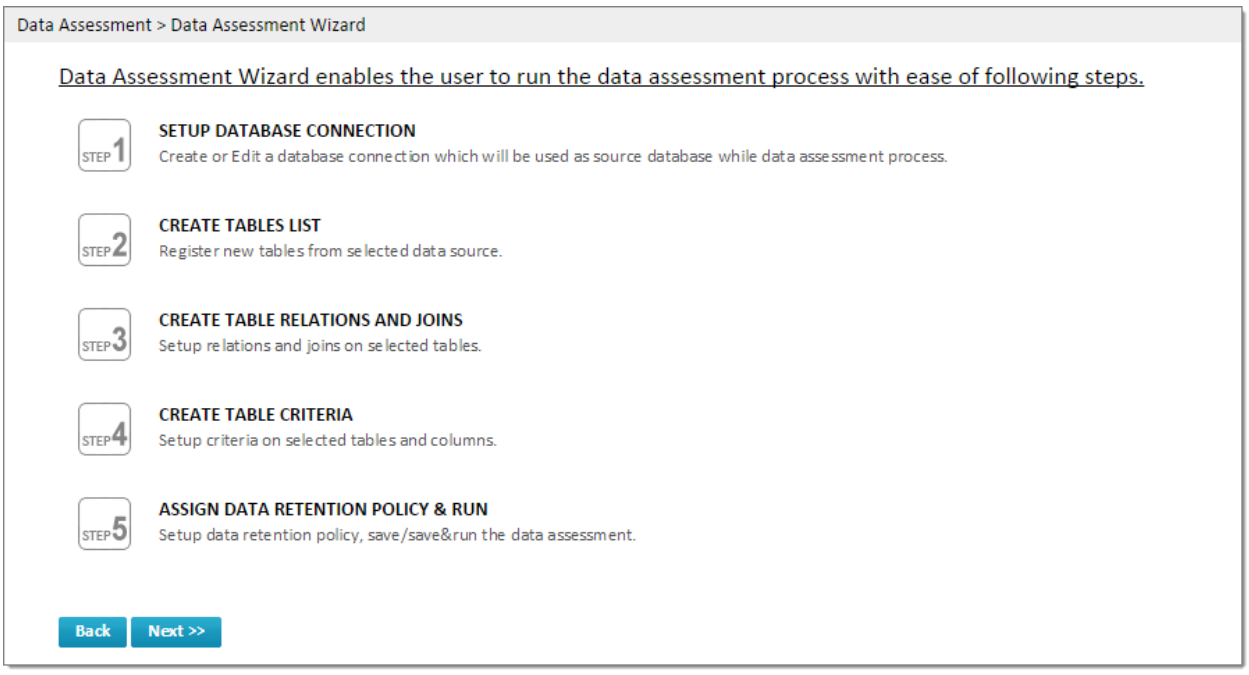
Benefits of Object level Archive Eligibility:

- Helps to identify the archive eligible data in the selected top tables of a Object based on the retention policy and complex business regulatory.
- Ease to identify the inactive or active data existing in the top tables of Object in the database so that the inactive data can be archived and reduce the occupied space in the database that helps improves the performance.

Data Assessment for Object Level Archive Eligibility

Once ***Object Level Archive Eligibility*** option is selected in the ***Data Assessment*** screen, by default, the ***Data Assessment Wizard*** initial screen will be displayed which shows the summary of each step designed to accomplish the data assessment successfully.

This section outlines the procedure to setup a connection, select top tables (i.e., tables with more size), create table relations and joins, create table criteria and assign retention policy and then saves & run the data assessment to identify the archive eligible data in the database.



Solix EDMS Data Assessment Standard Edition (SE) Wizard provides feasibility to identify the eligible archive data in the database with ease of five steps given below.

1. Setup Database Connection
2. Create Table List
3. Create Table Relations and Joins
4. Create Table Criteria
5. Assign Data Retention Policy & Run

3.2.2.1 Setup Database Connection

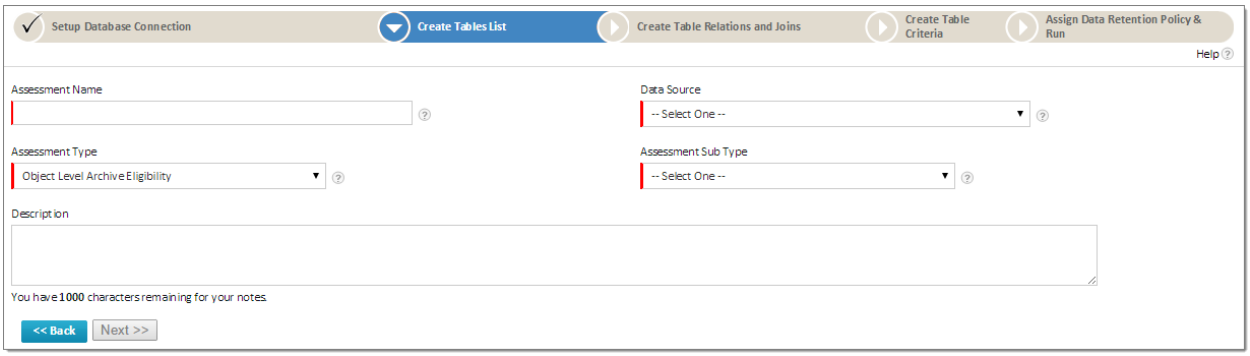
Refer to section 3.1.1, for Setup Database Connection

3.2.2.2 Create Tables List

Once the database connection setup is completed successfully, the user needs to select tables from the database to perform Object wise data assessment effectively.

To create tables list, do the following:

1. In ***Setup Database Connection*** screen, select the intended database connection and click ***Next*** button to navigate to the second step. The ***Create Tables List*** screen will be displayed as shown in the figure below.



2. Enter the name of the data assessment in the ***Assessment Name*** text field.
3. Select the appropriate database from the ***Data Source*** drop down list, to assess the eligible archived data object wise from the selected database.
4. By default, ***Object Level Archive Eligibility*** will be prompted in the ***Assessment Type*** drop down list. It is a non-editable text field.
5. Select ***New Object / Use Existing object*** from the ***Assessment Sub Type*** drop down list. Based on the option selected, the fields prompted will differs.
    - If ***New Object*** option is selected, enter the description and click ***Save*** button. Next,

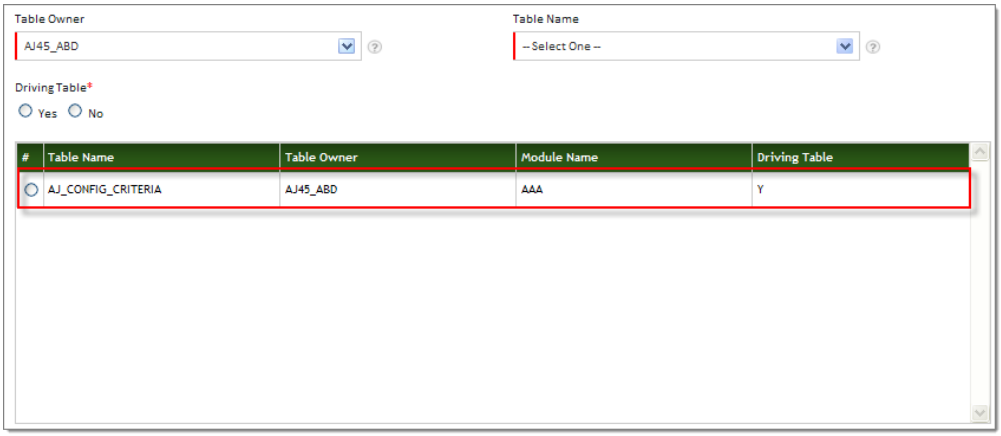
a. Based on the database selected, the corresponding schemas/table owners will be listed in the ***Table Owner*** drop down list.

b. Select a schema/table owner from the ***Table Owner*** drop down list. Based on the schema/table owner selected, the corresponding tables will be listed in the ***Table Name*** drop down list.

c. Select the intended table from the ***Table Name*** drop down list.

d. Select ***Yes/No*** option of ***Driving Table***, whether to define the selected table as Driving table or not. (***Note***: Make sure, atleast one table should be a driving table in data assessment table).

e. Click ***Add*** button, to save and append the selected table information to the list. Once the information is saved successfully, a message stating "***New Table Saved Successfully***" is prompted on the screen and the respective table information will be appended to the list.



- If ***Use Existing object*** option is selected, additionally, the ***Config Name*** drop down and ***Populate*** button will be prompted in the screen

  a. The configuration designed for data archiving will be pulled up and displayed in the ***Config Name*** drop down. Hence, select the required configuration from the drop down.

  b. Click ***Populate*** button, to populate the tables, columns, relations, joins, criteria, generated code existing in the selected configuration for the data assessment.

  c. A confirmation message stating "***Config details populated successfully***." will be prompted in the screen and the respective table information will be appended to the list.

6. Select table name created and click ***Next*** button to proceed with further step.

- The field marked as | are mandatory fields.

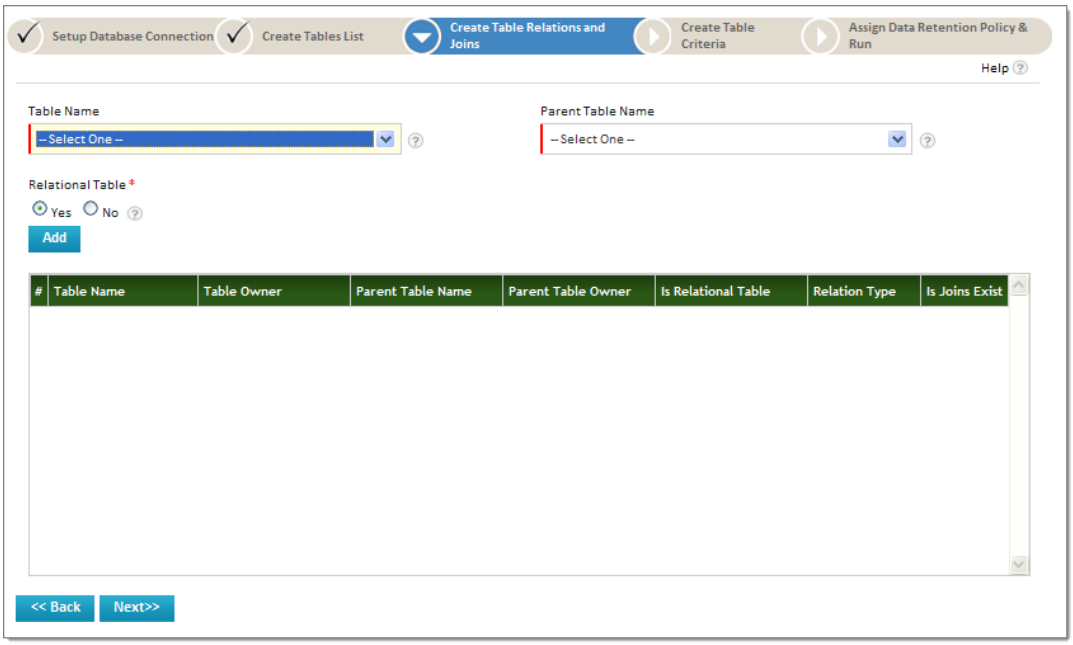
- Click ***Edit*** button, to modify the data assessment.
- To remove table from the list, Click ***Remove*** button.

3.2.2.3 Create Table Relations and Joins

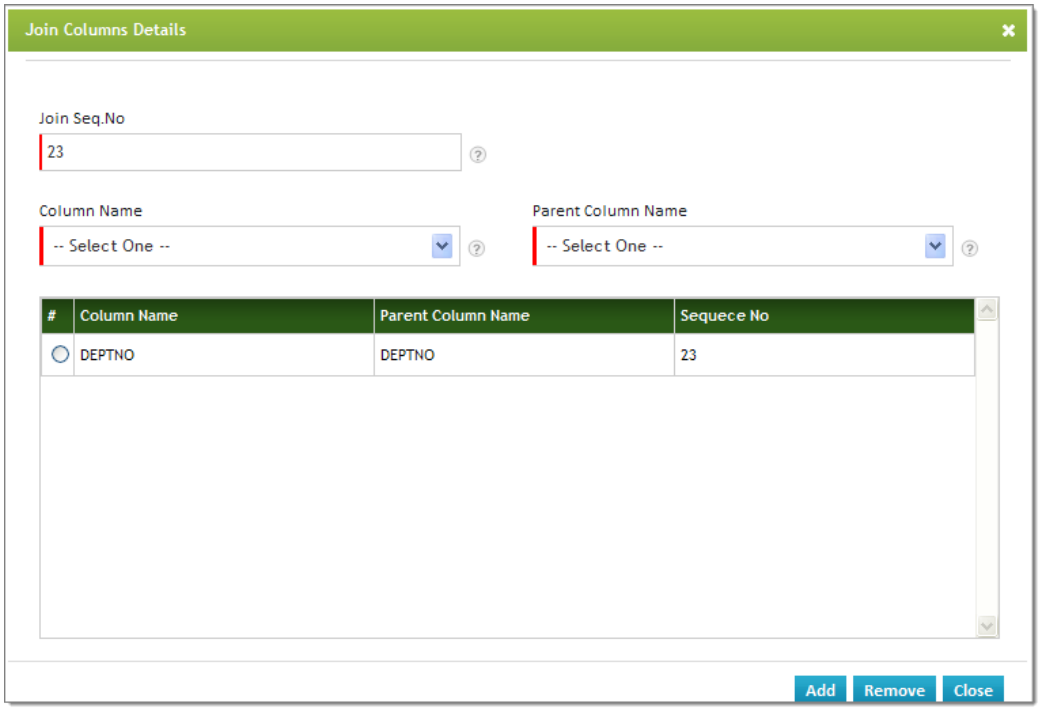
Once the tables are created for the data assessment successfully, next step the user needs to build the relation and joins among the between tables added in the data assessment, to fetch the data for data assessment effectively.

To build the relation, do the following:

1. In ***Create Tables List*** screen, select the intended database connection and click ***Next*** button to navigate to the third step. The ***Create Tables Relations and Joins*** screen will be displayed as shown in the figure below.



2. Select the table from the ***Table Name*** drop down.
3. Select the parent table (i.e., driving table) from the ***Parent Table Name*** drop down.
4. Select ***Yes/No*** option in the ***Relational Table***, whether to create a relation tables or not.
5. Click ***Add*** button. A confirmation message stating "Assessment Table Relation is Saved" will be prompted in the screen.
6. Once table relation is saved, then create joins in the relation. Hover on the table name appears in the list box.
7. Then, click on ***Joins*** hyperlink appears beneath the table name. The ***Join Columns Details*** popup screen will be prompted as shown in the figure below.



a. Enter the sequence number of the join in the ***Join Seq. No*** text box.

b. Select the primary key column from ***Column Name*** and ***Parent Column*** Name drop down.

c. Click ***Add*** button. Repeat the process to add join in the data assessment table.

d. Once the Data Assessment Table Join is saved, click ***Close*** button.

8. Select table relation created and click ***Next*** button to proceed with further step.

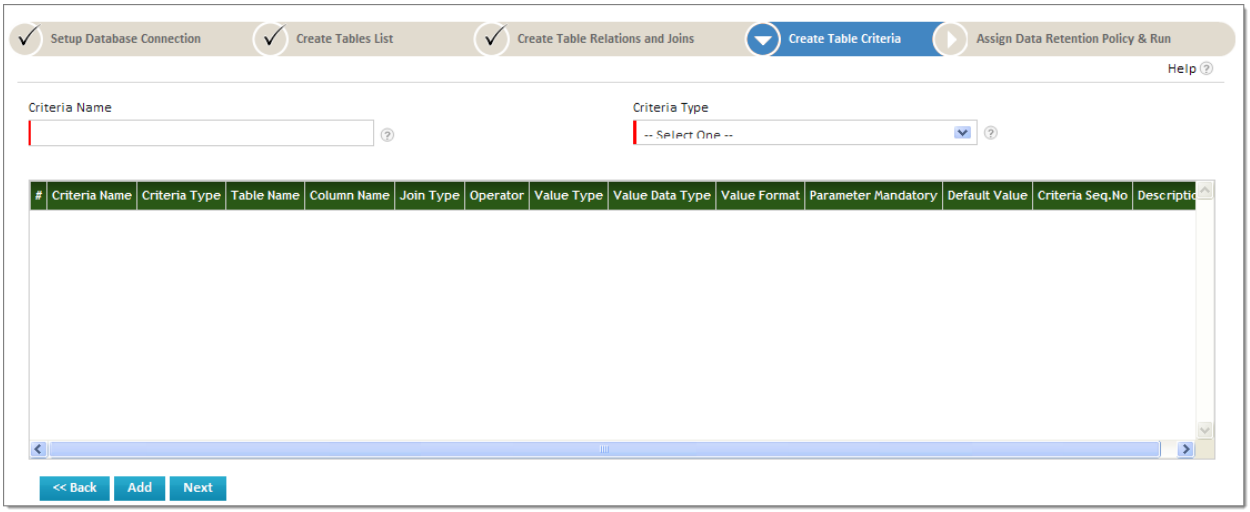
- Click ***Back*** button, to navigate to the previous screen.
- The field marked as | are mandatory fields.
- To remove table relations from the list, click ***Remove*** button.

3.2.2.4 Create Table Criteria

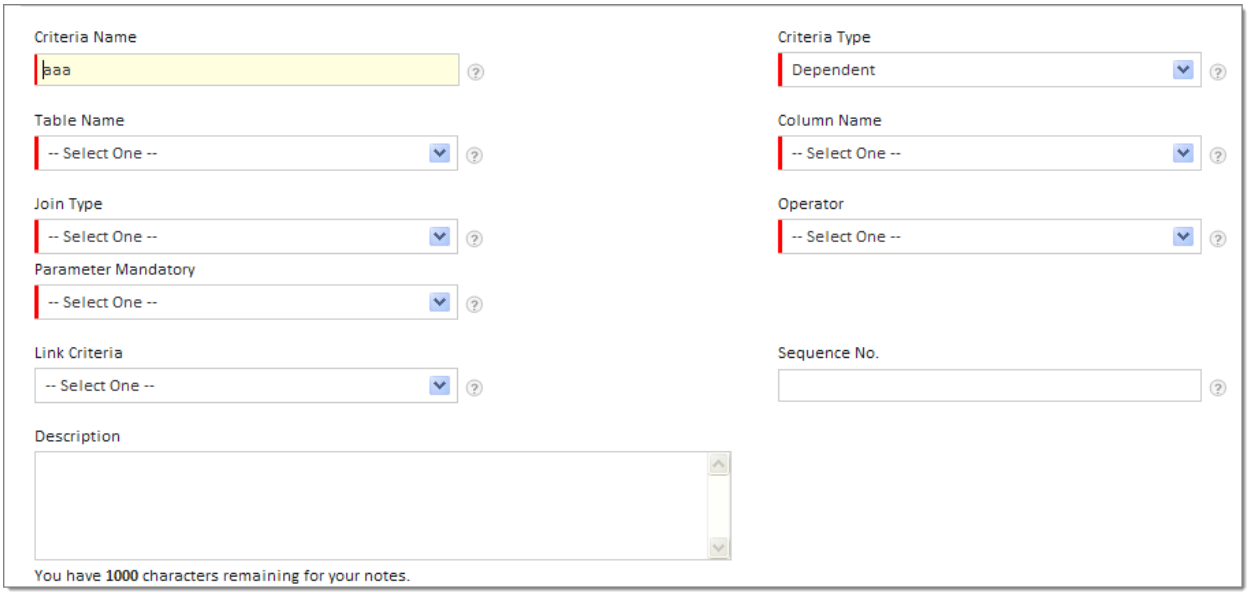
Once the table relations and joins are built among the tables in the data assessment successfully, next step the user needs to create table criteria.

To create table criteria, do the following:

1. In ***Create Tables Relations and Joins*** screen, select the intended database connection and click ***Next*** button to navigate to the forth step. The ***Create Table Criteria*** screen will be displayed as shown in the figure below.



2. Enter name of criteria in the ***Criteria Name*** text box.
3. Select an appropriate type of criteria from the ***Criteria Type*** drop down list. Based on the type of criteria selected, the fields prompted in the screen will vary as shown in the figure below.



4. Enter the criteria details in the corresponding fields
5. Click ***Save*** button to save the data assessment criteria. Once the criteria are saved successfully, a message will be prompted on the screen.
6. Select table created and click ***Next*** button to proceed with further step.

- The field marked as | are mandatory fields.
- Click ***Back*** button, go back to the previous screen.
- Click ***Edit*** button, to modify the given criteria details.
- To remove table criteria, click ***Remove*** button.

Below table illustrates the functionalities of fields in the ***Assessment Criteria Details*** screen.

Fields	Functionality
Criteria Name	Define a name for the criteria in Data assessment**.**
Criteria Type	This drop down enables the user to select an appropriate type of criteria. The criteria type can be Static, Dependent and Independent. • ***Static***: It implies that the Data assessment actions will be based on the value specified in Criteria. • ***Dependent***: It implies that the criteria designed are dependent on a particular column of the specific table. • ***Independent:*** It implies that the criteria are independent of tables and columns associated to specific Data assessment.
Table Name	This drop down enables the user to select an appropriate table that holds the attribute value.
Column Name	Based on the table selected, the corresponding columns will be listed in this drop down. It enables the user to select the column on which the respective criteria will be applicable.
Join Type	This drop down enables the user to select an appropriate operand required for the criteria. (i.e., AND or OR).
Operator	This drop down enables the user to select an appropriate conditional operator required to design criteria. (i.e., =,>, <, <= and so on).

Value Type	This drop down enables the user to define the type of parameter value (i.e., Value or Dependent SQL) • ***Value:*** It implies that the data is fetched based on the value provided in the ***Value*** text box. • ***Dependent SQL:*** It implies that the SQL statement will be generated based on dependent variable(s) which may be derived from the earlier parameter(s). For example, "SELECT ORGANIZATION_ID, ORGANIZATION_NAME FROM ORG_ORGANIZATION_DEFINITIONS" where organization name will be displayed at run time parameters for end user ease and organization id will be used in criteria. • ***SQL:*** During the runtime, the SQL statement will be executed and the archiving will be executed based on the value obtained from running the SQL script specified in ***Value***. For example, SELECT ORGANIZATION_ID FROM ORG_ORGANIZATION_DEFINITIONS
Data Type	This drop down facilitates to select an appropriate data type of the parameter. (i.e., Number, String, Date). Note: For the "***Dependent SQL"*** and "***SQL***" value type, "String" should be selected by default.
Format	If the Data type is "Date", this text box enables the user to provide the format of date. For example, MM/DD/YYYY.
Parameter Mandatory	This drop down enables the user to define the parameter as mandatory or not (i.e., Yes or No). • Yes- it implies that the parameter is a mandatory, the value must be entered • No–it implies that the parameter is not mandatory.
Sequence No	This text box enables the user to enter the Sequence of Criteria while execution.
Link	Exclusively when "OR" operator is selected in Join, this drop down list enables the user to link the current criteria to this existing criteria and place it in parenthesis during Data Assessment.
Value	This text enables the user to enter the appropriate value of the parameter according to the ***Value Type*** selected.

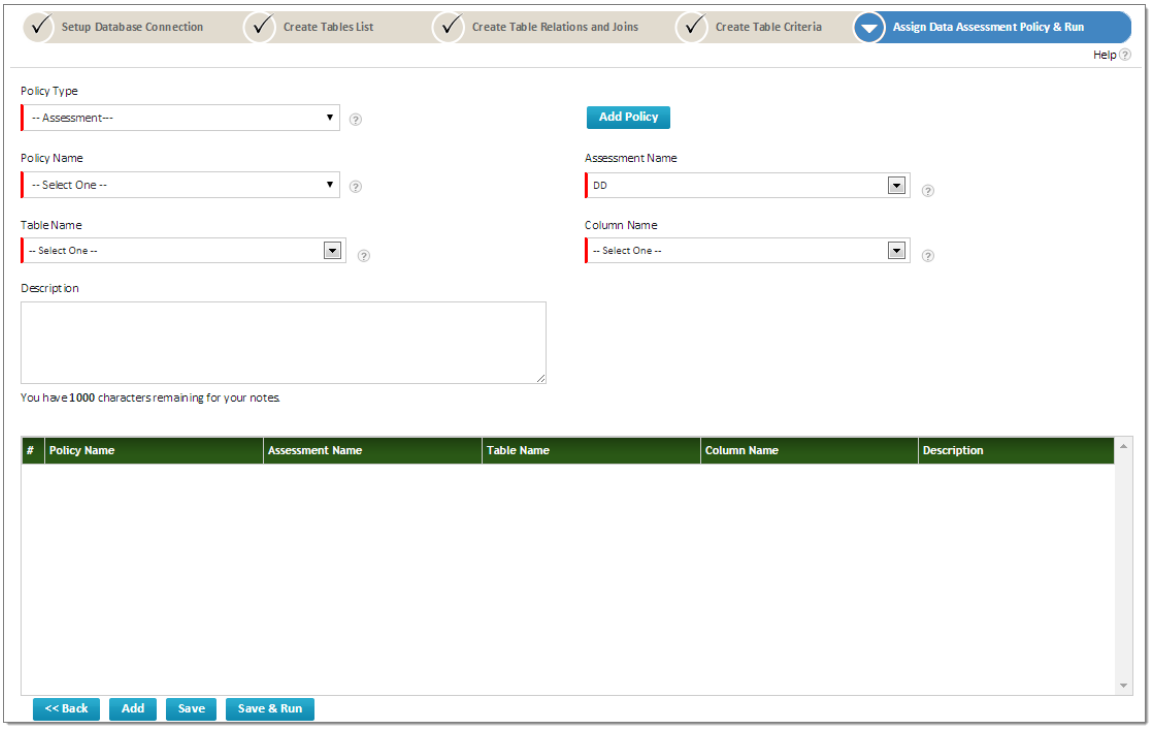
Default Value	This text enables the user to enter the default value of the parameter.
Description	This text box enables the user to enter the description pertaining to the criteria.
Save	This button is employed to save the criteria details.

3.2.2.5 Assign Data Retention Policy & Run

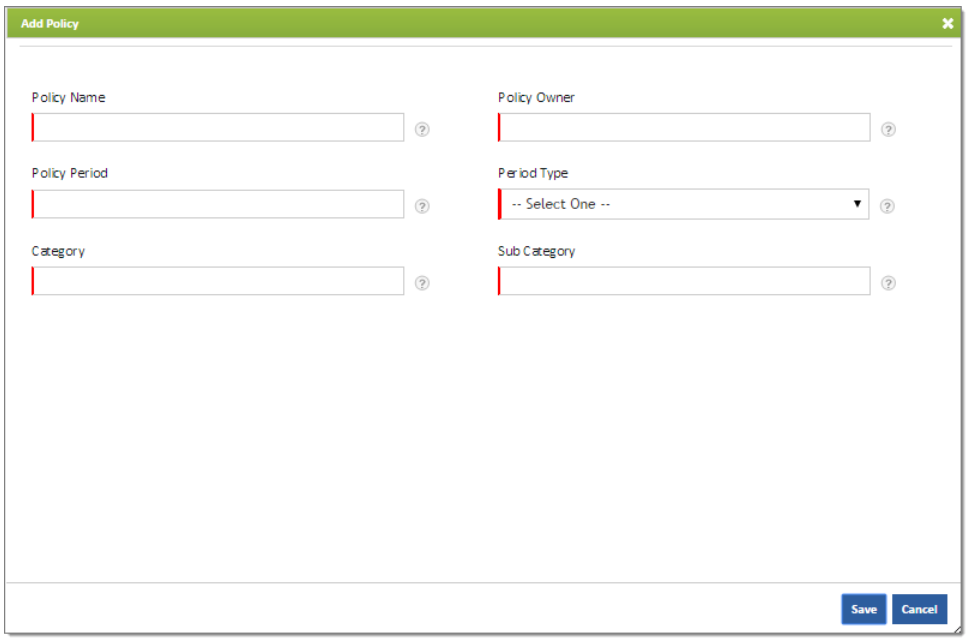
Once the table criteria are defined for the data assessment successfully, next step the user needs to assign data retention policy and run the data assessment. To assign a data retention policy, the user must have created atleast one policy for data assessment.

To assign data retention policy and execute, do the following:

1. In ***Create Table Criteria*** screen, select the table criteria created and click ***Next*** button to navigate to the fifth step. The ***Assign Data Retention Policy & Run*** screen will be displayed as shown in the figure below.



2. Select Assessment from the ***Policy Type*** drop down list.
3. Select the intended policy from the ***Policy Name*** drop down list, to apply selected assessment policy on the data assessment.
    - To define a new policy, click ***Add Policy*** button. The ***Add Policy*** screen appears.



i. Enter the policy name in the ***Policy Name*** text field.
ii. Enter the owner of the policy in the ***Policy Owner*** text field.
iii. Enter the duration of policy in the ***Policy Period*** text field.
iv. Select the appropriate type of duration from the ***Period Type*** drop down list. Based on the Policy Type selected, the Policy Period will be calculated in Years/Month/Days. For example, if Policy Period is "6" and Policy Type is "Months", then it is stated as duration of policy is 6 months.

- ***Years*** – This option indicates that the policy period is calculated in years.
- ***Months*** – This option indicates that the policy period is calculated in months.
- ***Weeks*** - This option indicates that the policy period is calculated in weeks.
- ***Days*** - This option indicates that the policy period is calculated in days.

v. Select the required category from the ***Category*** drop down list. Based on the category selected, the corresponding sub categories will be displayed in the ***Sub Category*** drop down list.
vi. Select the intended sub category from the ***Sub Category*** drop down list.
vii. Click ***Save*** button. Once the data assessment policy is saved successfully, the data assessment policy will automatically populate and appears at the top of the list in the ***Policy Name*** drop down.

4. Select the data assessment from the ***Assessment Name*** drop down list, to assign the data assessment policy**.** Once the data assessment is selected, the corresponding tables will be displayed in the Table Name text field.
5. Select the required table from the ***Table Name*** drop down list.
6. Select the column intended for data assessment from the ***Column Name*** drop down list**.**
7. Enter the comments in the ***Notes***.
8. Click ***Add*** button, to save and append the assign retention policy information in the list. On assignment is saved successfully, a confirmation message will be prompted in the screen and assigned retention policy details will be appended to the list.
9. Click ***Save*** button, to save the data assessment.
10. Click ***Save & Run*** button, to save and execute the data assessment. A unique Run-ID will be generated and displayed in the ***Run Schedule*** screen. To monitor the status of the data assessment, click on Run ID to navigate to the ***Status Monitor*** screen. (***Status >Status Monitor***).

Once the data assessment policy is assigned successfully, in case, the respective data assessment is set for execution the Solix EDMS Standard Edition (SE) will check whether any policies are applied on the data assessment or not. If policy is applied, then the execution of data assessment will be carried out according the policy criteria is defined.

- The field marked as | are mandatory fields.
- Click ***Edit*** button, to modify the data assessment.
- To remove data assessment policy assignment, click ***Remove*** button.

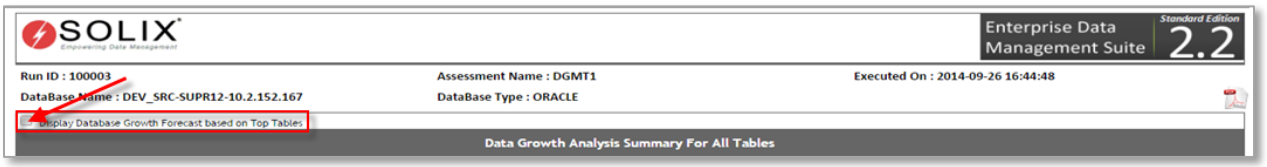
3.3 Data Growth Forecast

Data Growth Forecast perform the statistical analysis on the current data in the selected top table or top N tables and provide the forecast of future table size growth based on table or multiple tables for next 5 years. It also enables to analysis the data growth of business in the database and forecast the future database growth for next 5 years based on recent run or selected top N tables.

- Make sure that the Database Snapshot must executed atleast once.
- The data growth forecast is shown from the date when data assessment is executed to the next 5 years.

Benefits of Data Growth Forecast:

- Helps to understand the top tables' growth in size for the next 5 years.
- Helps to understand the database growth based on the top tables' growth for the next 5 years.
- Provides the flexibility to load the top table from the recent run of database size snapshot and helps to predict the table size growth of those top tables for the next 5 years.
- Helps to understand the strategy to archive the data timely for improving the data storage management.
- Support parallel servers for faster execution of EDMS queries against the source database (only, Oracle database) that helps in consume less time for data retrieval. Solix supports '8' parallel server by default. In case, if user wants to increase the number of parallel servers, then based on the number of parallel servers supported by database the user can increase the parallel server upto 16, 24, 32 and so on.
- Parallel Servers are supported for both Table level forecast and Database level forecast
- For Database level forecast, the database data is segregated into master data and transactional data percentage that help to predict the future database growth in both archived and non-archived.
- For Table Level Forecast, the master data and transactional data percentage is applicable only when the future database growth is predicted based on the top tables' growth as shown in the figure below. (i.e., Display Database Growth Forecast based on Top Tables check box is selected in the graph).



Data Growth Forecast Parameters

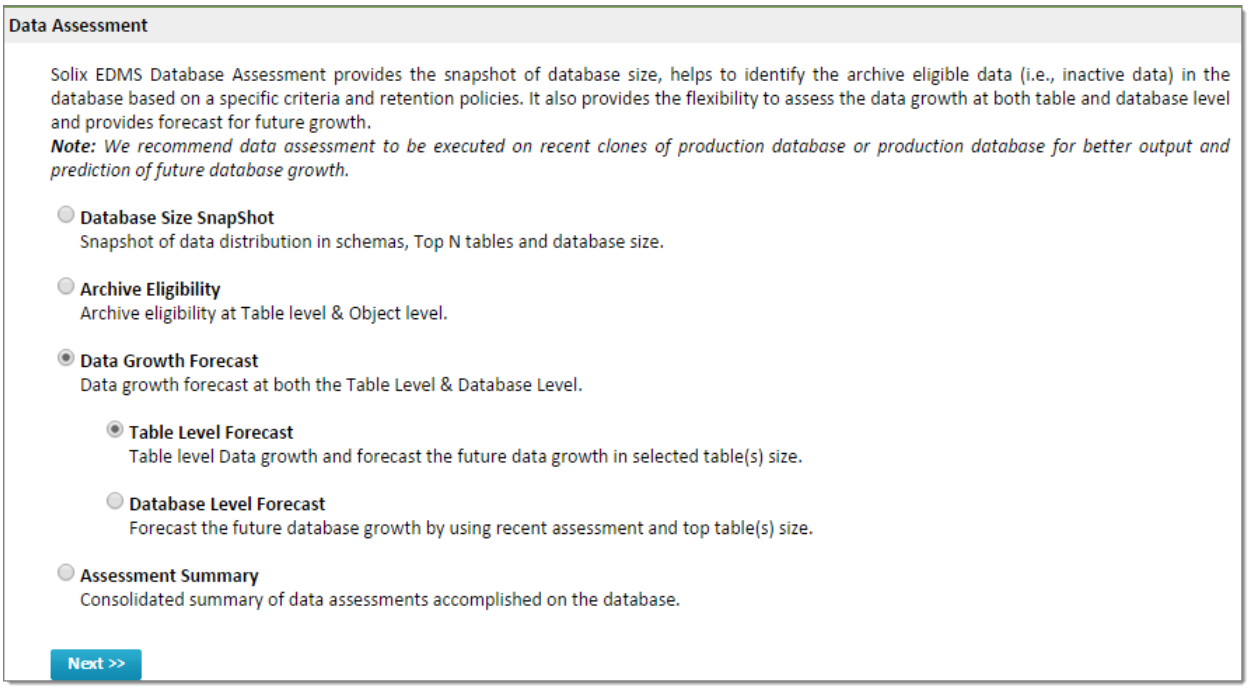
While forecasting the data growth, the user is provided the flexibility to modify the seed data provided by Solix according to the requirement. The Parameter screen (*Admin* > *Manage Source/Target Dictionary*> *Parameter*) enables to modify the parameter value of parameter. Once the parameter value is modified, it reflects the data growth forecast accordingly.

The parameters related to Data Growth Forecast Assessment are provided below.

Parameters	Description
MASTER_DATA_INCREMENT_PERCENTAGE	Percentage of Master Data Incremental during Data Growth Forecast Assessment
TRANSACTIONAL_DATA_PERCENTAGE	Transactional Data Percentage considered during Data Growth Forecast Assessment
PARALLEL_COUNT	Number of parallel servers for faster execution of EDMS queries against the source database during Data Growth Forecast Assessment.
ASSESSMENT_DAYS_DIFFERENCE	Minimum number of assessment days difference between two Database Size Snapshot runs for Data Growth analysis.
ASSESSMENT_PERCENTAGE_INCREASE	Default Assessment Percentage increase for Data Growth analysis when Database Size Snapshot assessment details does not exist.
ASSESSMENT_PROJECTION_YEARS	Number of Assessment Projected years for Data Growth analysis. For example, if parameter value is 10 years, then the data growth is forecasted for next 10 years.
ASSESSMENT_FILTERED_VALUE	Provide flexibility to avoid unwanted values in the database for data growth forecast. • Y – Consider only the filtered values (i.e., eliminate unwanted values) in the database for data growth forecast. • N – By default, consider all the values in the database for data growth forecast..

Data Assessment for Data Growth Forecast

Once ***Data Growth Forecast*** option is selected in the ***Data Assessment*** screen, the ***Table Level Forecast*** and ***Database Level Forecast*** radio button will be populated as shown in the figure below.

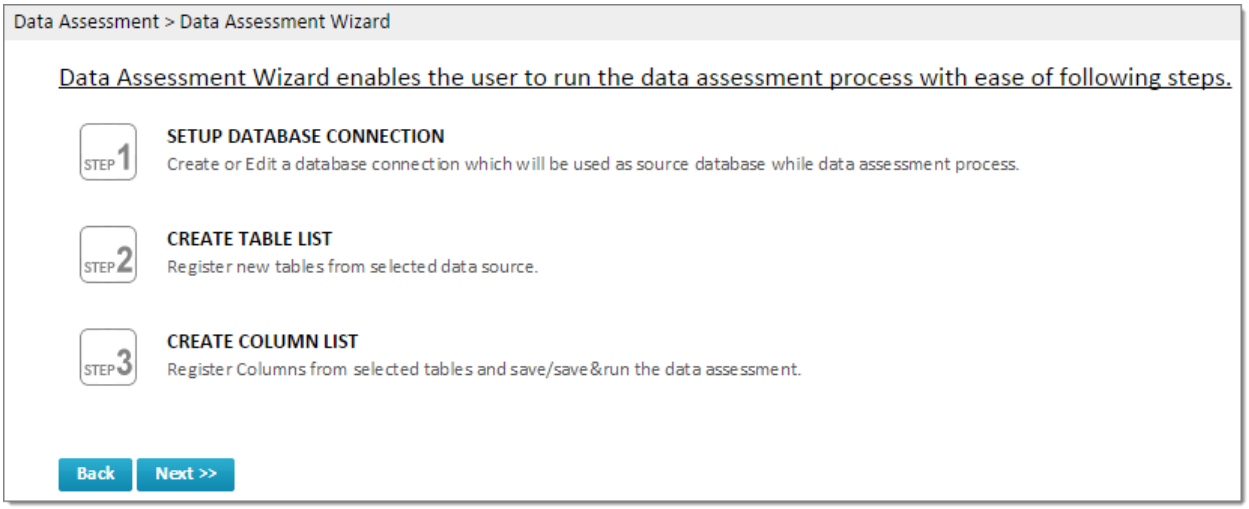


3.3.1 Table Level Forecast

Table Level Forecast enable to analysis the data growth based on the multiple top tables data and forecast the future data growth in the business for next 5 years.

Once ***Table Level Forecast*** option is screen, by default, the ***Data Assessment Wizard*** initial screen will be displayed which shows the summary of each step designed to accomplish the data assessment successfully.

This section outlines the procedure to setup a database connection, register top tables (i.e., tables with more size) for data growth table level forecasting, register columns (only the date columns of corresponding table will display in the drop down) and then saves & run the data assessment to forecast the database growth based on multiple tables data growth.



Solix EDMS Data Assessment Standard Edition (SE) Wizard provides feasibility to analysis the data growth of database at table level with ease of three steps given below.

1. Setup Database Connection
2. Create Table List
3. Create Column List

To initiate the data assessment and navigate to the first step in the wizard, click ***Next*** button.

3.3.1.1 Setup Database Connection

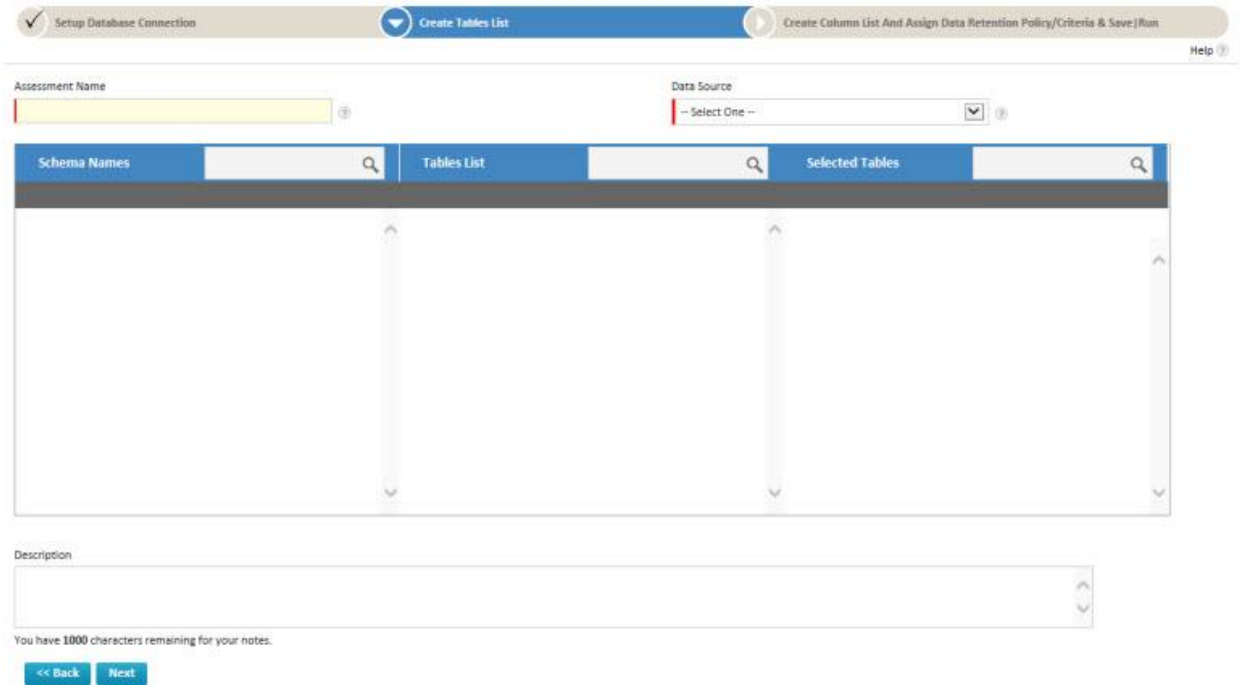
Refer to section 3.1.1, for Setup Database Connection

3.3.1.2 Create Tables List

Once the database connection setup is completed successfully, the user needs to select tables from the database to analysis the database growth on top tables selected effectively.

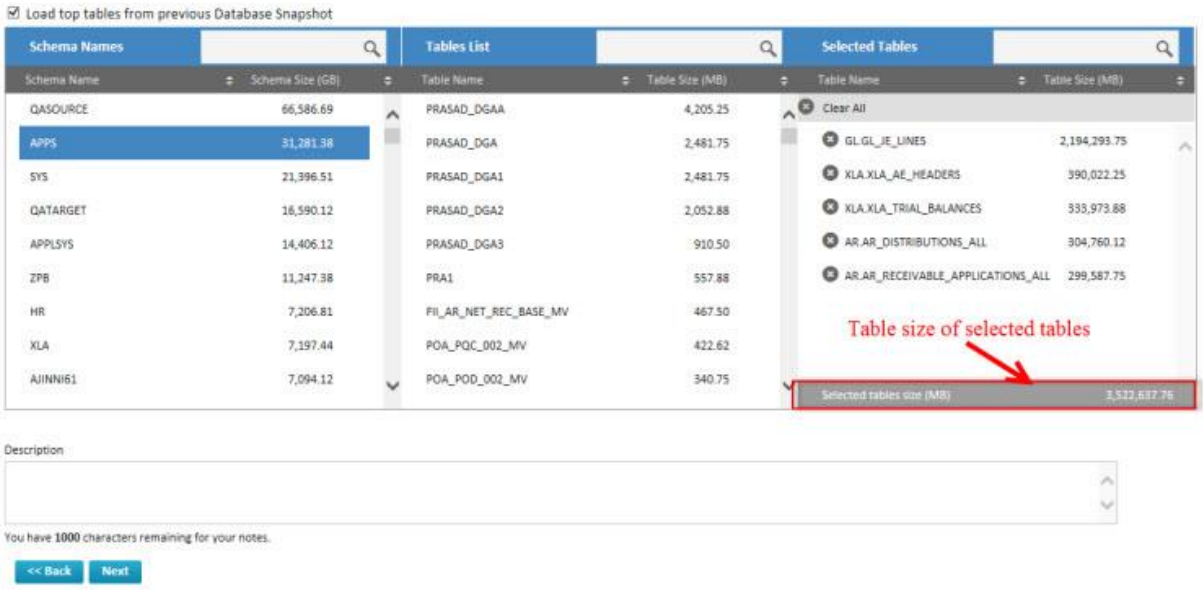
To create tables list, do the following:

1. In ***Setup Database Connection*** screen, select the intended database connection and click ***Next*** button to navigate to the second step. The ***Create Data Growth Multiple Tables ForeCast*** screen will be displayed as shown in the figure below.



2. Enter the name of the data assessment in the ***Assessment Name*** text field.
3. Select the appropriate database from the ***Data Source*** drop down list, to run the database assessment.
   - If Database Snapshot assessment is already executed for the selected data source, then "***Load top tables from previous Database Snapshot***" checkbox will populate in the ***Create Tables screen***. It enables to load all the top tables from the previous Database Snapshot assessment.

4. By default, the schema(s) exist in the database will populate with the corresponding schema size in the ***Schema Names*** pane.
5. Select the required schema in the ***Schema Names*** pane. Once schema is selected, all the tables associated to the schema will populate with corresponding table size in the ***Tables List*** pane. (***Note***: tables are displayed in the descending order according to the table size).
6. Select the tables from the ***Tables list*** pane, to run data assessment and forecast the future database growth based on the multiple tables.
7. Once the tables are selected, it is appended automatically in the ***Selected Tables*** pane and also shows the total table size of the selected tables as shown in the figure below.



8. Select table name created and click ***Next*** button to proceed with further step.

- The field marked as | are mandatory fields.
- Magnifying icon helps to search for required schema or tables from the corresponding list or filter.
- Click ***Back*** button, to go back to previous step.
- To remove table from the list, Click 'X' ***Remove*** button adjacent to the selected table.

3.3.1.3 Create Column List

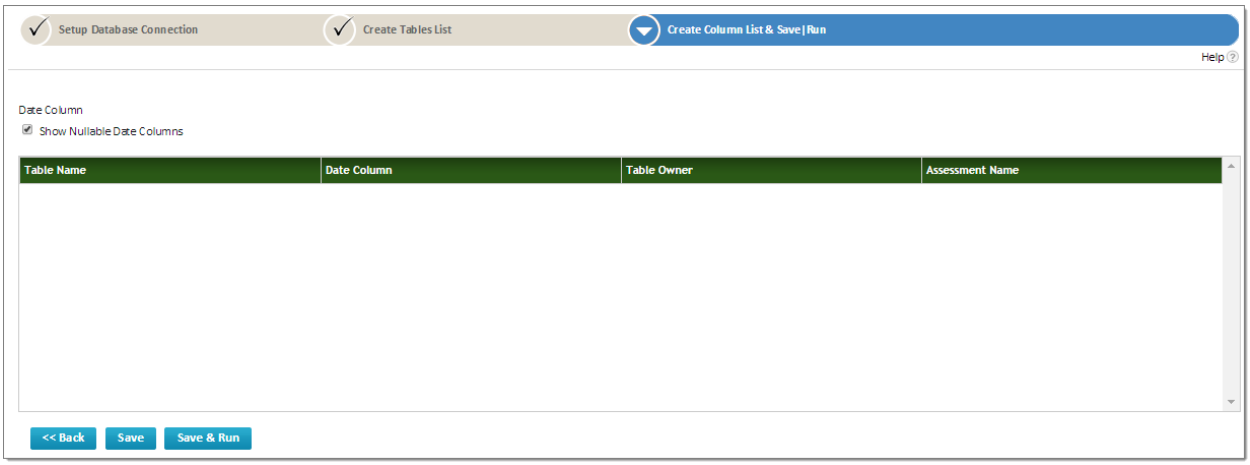
Once the top tables are selected for the data assessment successfully, next step the user needs to select the date column from the Column list to run the data assessment.

Only, the top tables that contains date columns shows the column enabled in the ***Date Column*** and remaining will remain static. Therefore, the drop down will populate all the date columns

existing in the corresponding top table and enables to select the required date column to run the data assessment accordingly on the top tables.

To register date columns and execute, do the following:

1. In the ***Create Tables List*** screen, select the tables and click ***Next*** button to navigate to the third step. The ***Create Column List & Save/Run*** screen will be displayed as shown in the figure below.



2. To populate the nullable date columns in the ***Data Column*** drop down, then select ***Show Nullable Date Columns*** check box in ***Data column***.
3. Select the required date column from the ***Data Column*** drop down to run the data assessment based on the selected column in the table and forecast the future database growth. (Note: the ***Data Column*** drop down will display the date columns existing in the corresponding table.)
4. Click ***Save*** button, to save the data assessment.
5. Click ***Save & Run*** button, to save and run the data assessment to forecast the data growth based on the data column selected in the corresponding top tables. A unique Run-ID will be generated and displayed in the ***Run Schedule*** screen. To monitor the status of the data assessment, click on Run ID to navigate to the ***Status Monitor*** screen. (***Status >Status Monitor***).

- The field marked as | are mandatory fields.
- Click ***Back*** button, to go back to previous step.

3.3.2 Database Level Forecast

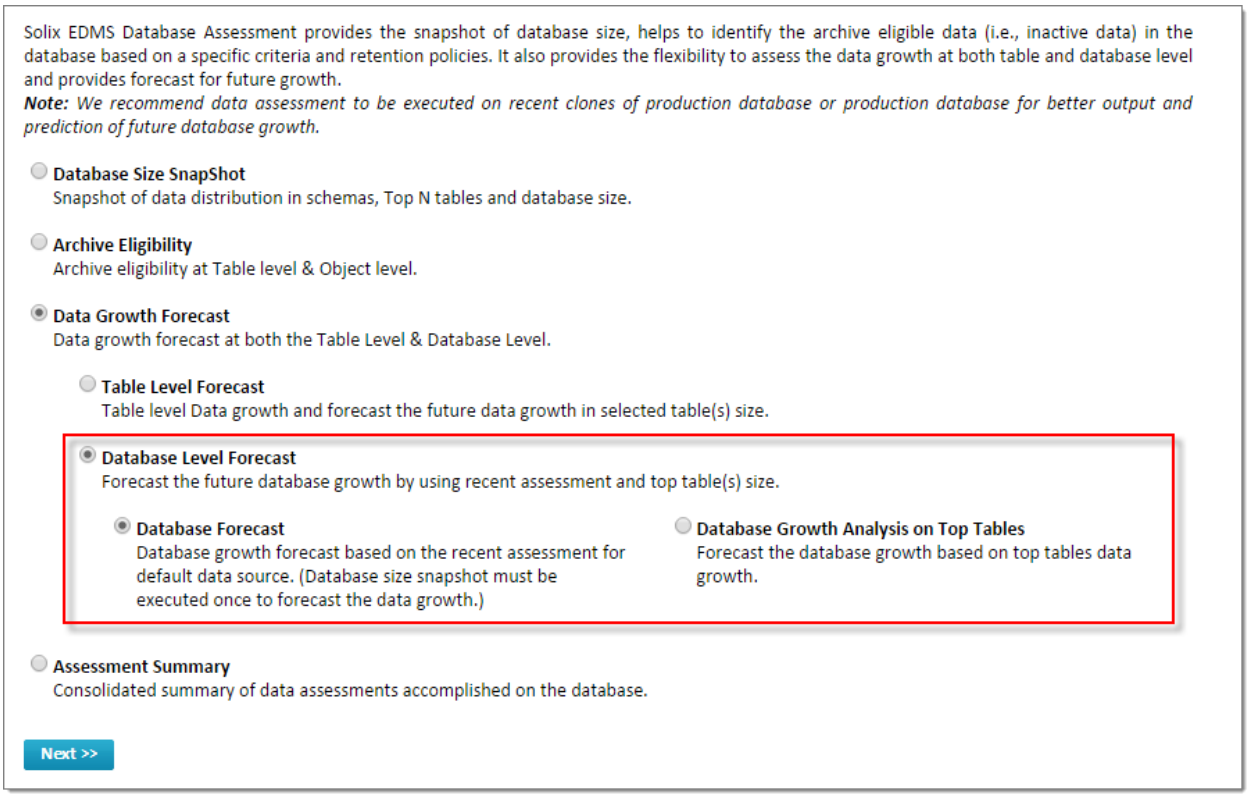
Database Level Forecast is designed to analysis the data growth of database based on top tables and forecast the future database growth based on top tables data growth in the graphical presentation. It helps to understand the strategy to archive the data timely for improving the data storage management. (Make sure that the atleast once the database size snapshot must be executed to forecast the data growth.)

- For data growth database level forecast, the difference between two executions should be minimum “30” days.
- For one execution of data assessment, by default the data growth percentile is given as 15%.
- Forecasting the data growth of number of years is depended on the value specified for “ASSESSMENT_PROJECTION_YEARS' parameter (i.e., 'Assessment Projected years for Data Growth analysis'). For example, if the value is given as 5 years, the data growth forecast is shown from the date when data assessment is executed to the next 5 years.

Benefits of Database Level Forecast:

- Provides the flexibility to load top N tables in the database or top tables used in the previous Database Size Snapshot.
- Helps to understand the database growth in the business based on the data growth and top N tables growth.
- Helps to understand the strategy to archive the data timely for improving the data storage management.

Once ***Database level Forecast*** option is selected in the ***Data Assessment*** screen, the ***Database Forecast*** and ***Database Growth Analysis on Top Tables*** radio button will be populated as shown in the figure below.



3.3.2.1 Database Forecast

Database Forecast shows the database growth forecast for next 5 years based on the recent run of data assessment in the default sources.

Once ***Database Forecast*** option is selected in the ***Data Assessment Select Options*** screen, by default, the ***Data Growth Analysis*** depicting the graphical representation and grid table representation of the data growth based on the database size is shown as given below.

- *Graphical representation*: Display the growth of data in business every year with a percentage in a graph which is calculated based on the data growth encountered in the previous years.
- *Grid table*: Display the growth of data in business every year with a percentage and accurate size of data been increased in the database.

3.3.2.2 Database Growth Analysis on Top Tables

This feature enables to assess the selected top N tables and predict the database growth for next 5 years based on the growth of top N table size.

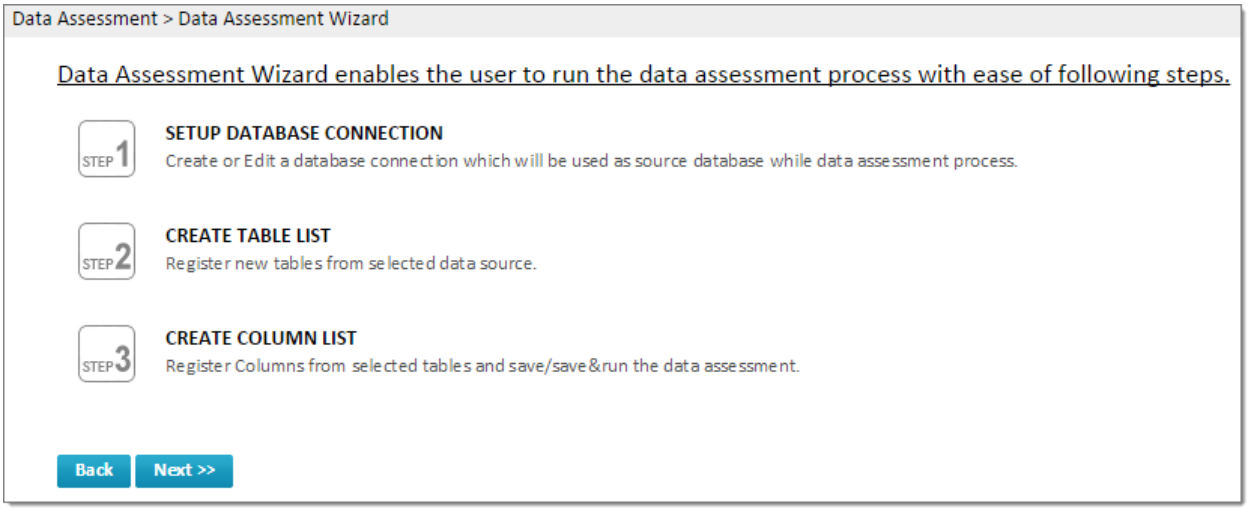
Benefits of Database Growth Analysis on Top Tables:

- Provides the flexibility to load top N tables in the database or top tables used in the previous Database Size Snapshot.
- Helps to understand the database growth in the business based on the top tables and helps to understand the strategy to archive the data timely for improving the data storage management.

Data Assessment for Database Growth Analysis on Top Tables

Once ***Database Growth Analysis on Top Tables*** is selected in the ***Data Assessment*** screen, by default, the ***Data Assessment Wizard*** initial screen will be displayed which shows the summary of each step designed to accomplish the data assessment successfully.

This section outlines the procedure to setup a connection, register top tables (i.e., tables with more size) for database growth analysis, register columns (only date columns of corresponding table will display in the drop down) and then saves & run the data assessment to forecast the database growth based on top tables data growth.



Solix EDMS Data Assessment Standard Edition (SE) Wizard provides feasibility to forecast the database growth based on top tables data growth with ease of three steps given below.

1. Setup Database Connection
2. Create Table List
3. Create Column List

3.3.2.3 Setup Database Connection

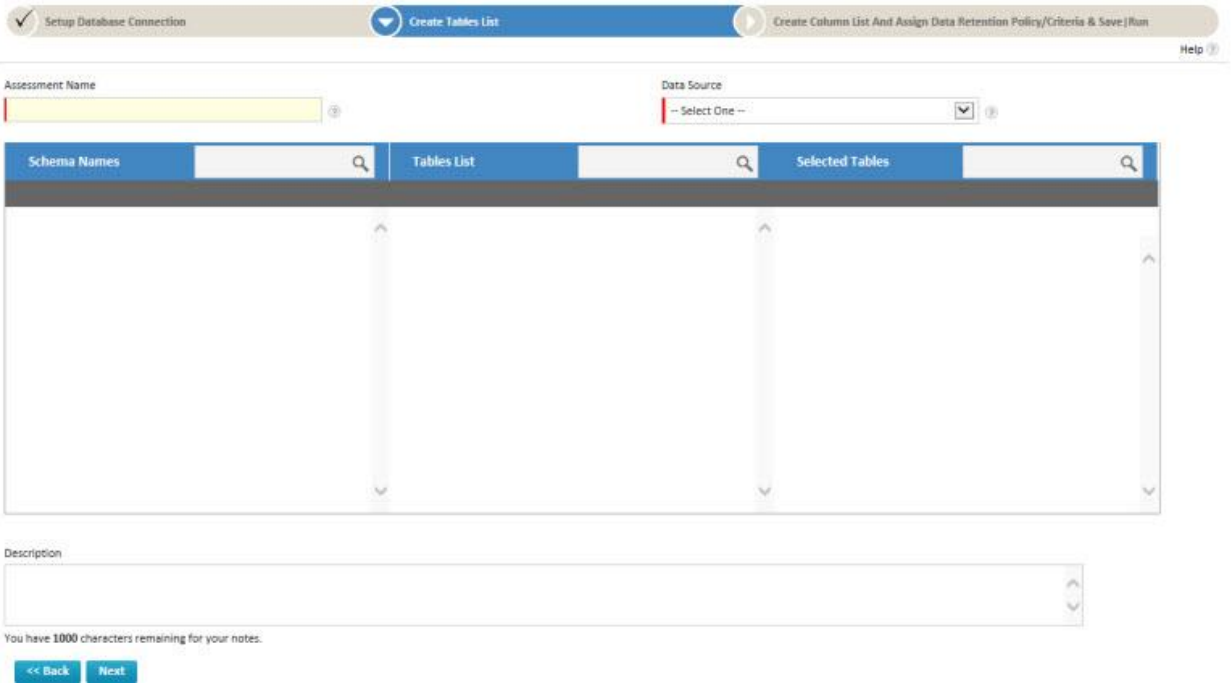
Refer to section 3.1.1, for Setup Database Connection

3.3.2.4 Create Tables List

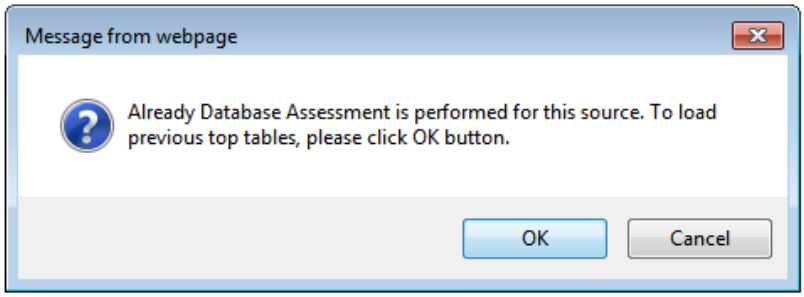
Once the database connection setup is completed successfully, the user needs to select tables from the database to analysis the database growth on top tables selected effectively.

To create tables list, do the following:

1. In ***Setup Database Connection*** screen, select the intended database connection and click ***Next*** button to navigate to the second step. The ***Create Tables List*** screen will be displayed as shown in the figure below.

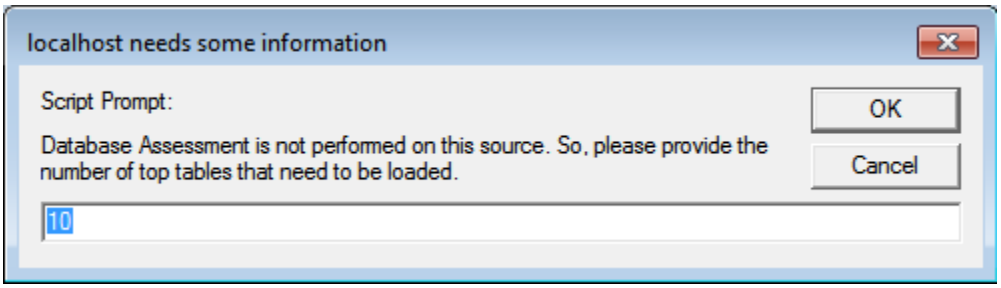


2. Enter the name of the data assessment in the ***Assessment Name*** text field.
3. Select the appropriate database from the ***Data Source*** drop down list, to analysis the selected top tables and forecast the future database growth based on the top tables for next 5 years. By default, the schema(s) exist in the database will populates in the ***Schema Names*** pane.
   - If Database Snapshot assessment is already executed on the selected data source, then an alert message pops up as shown in the figure below.



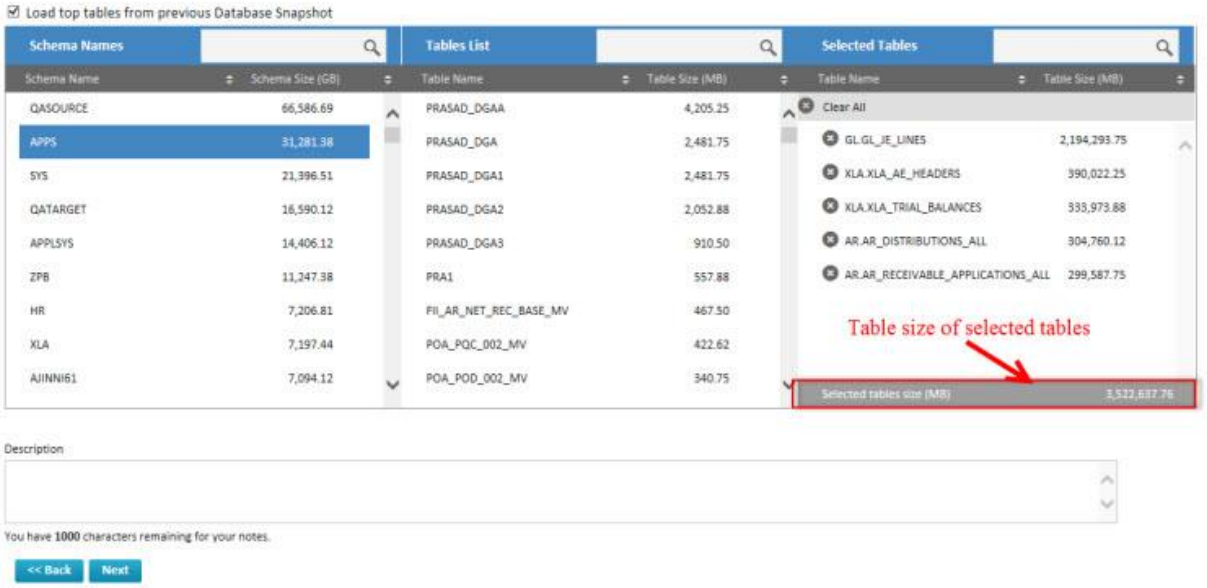
     – Click OK button, to load the all the top tables from previous Database Snapshot Assessment.

   - If database assessment is not performed on the selected data source, then an alert message pops up as shown in the figure below.



– Enter the number of top tables that need to be loaded and click ***OK*** button. Based on the number specified by the user, the top tables in the database will load in the ***Selected Tables list*** pane accordingly.

4. To select the additional top tables apart from the loaded top tables, select the required schema in the ***Schema Names*** pane. The top tables associated to the schema will load in the Tables list pane. (Note: tables are displayed in the descending order according to the table size).
5. Select the tables from the ***Tables*** list, to run data assessment based on the selected top tables and forecast the future database growth.
6. Once the tables are selected, it is appended automatically in the ***Selected Tables*** pane and also shows the total table size of the selected tables as shown in the figure below.



7. Select table name created and click ***Next*** button to proceed with further step.

- The field marked as are mandatory fields.
- Magnifying icon helps to search for required schema or tables from the corresponding list or filter.
- Click ***Back*** button, to go back to previous step.
- To remove table from the list, Click 'X' ***Remove*** button adjacent to the selected table.

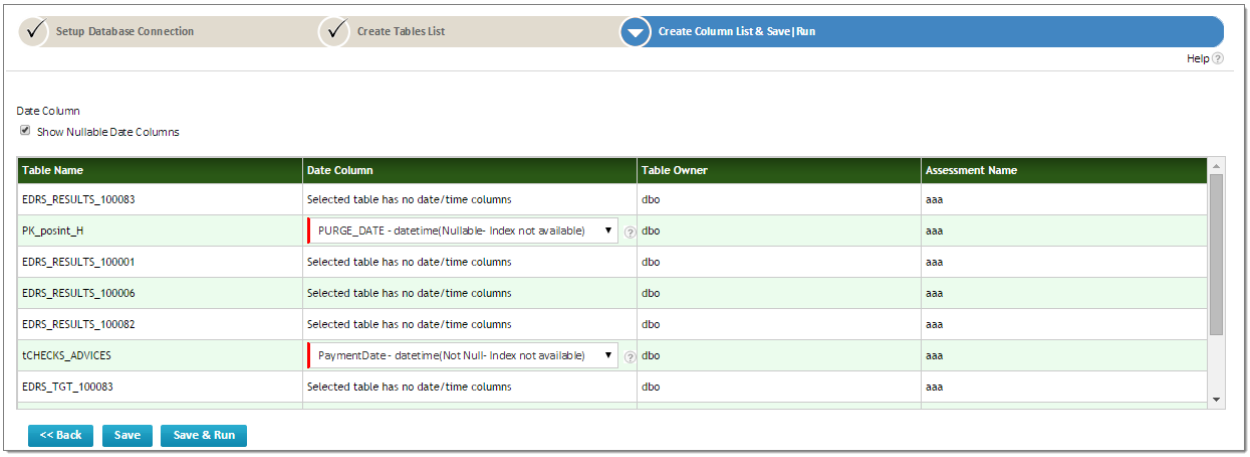
3.3.2.5 Create Column List

Once the top tables are selected for the data assessment successfully, next step the user needs to select the date column from the Column list to run the data assessment.

Only, the top tables that contains date columns shows the column enabled in the ***Date Column*** and remaining will remain static. Therefore, the drop down will populate all the date columns existing in the corresponding top table and enables to select the required date column to run the data assessment accordingly on the top tables.

To register date columns and execute, do the following:

1. In the ***Create Tables List*** screen, select the tables and click ***Next*** button to navigate to the third step. The ***Create Column List & Save/Run*** screen will be displayed as shown in the figure below.



2. To populate the nullable date columns in the ***Data Column*** drop down, then select ***Show Nullable Date Columns*** check box in ***Data column***.
3. Select the required date column from the ***Data Column*** drop down to run the data assessment based on the selected column in the table and forecast the future database growth. (Note: the ***Data Column*** drop down will display the date columns existing in the corresponding top table.)
4. Click ***Save*** button, to save the data assessment.
5. Click ***Save & Run*** button, to save and run the data assessment to forecast the data growth based on the data column selected in the corresponding top tables. A unique Run-ID will be generated and displayed in the ***Run Schedule*** screen. To monitor the status of the data assessment, click on Run ID to navigate to the ***Status Monitor*** screen. (***Status >Status Monitor***).

- The field marked as | are mandatory fields.
- Click ***Back*** button, to go back to previous step.

3.4 Assessment Summary

Assessment Summary provides the consolidated summary of all the data assessments executed on the database. It shows the graphical representation and grid tables that provide the consolidated information of database snapshot, archive eligible data, and database growth analysis. It also provides the flexibility to select the retention policy (i.e., duration) data analyzing the database growth with archived and without archived.

The user must execute the data assessment for all the data assessment types, to view the consolidated summary of all the data assessment types such as Database Size Snapshot, Archive Eligibility, and Data Growth Forecast for both Table Level Forecast and Forecast the future database growth by using recent assessment and top tables size.

Based on the data assessments executed on the database, the Assessment Summary screen will display the graphical representations accordingly

For example,

- In case, if "Database Size Snapshot and Archive Eligibility" is executed, then ***Assessment Summary*** screen displays the consolidated summary and graphical representation of only those data assessments.

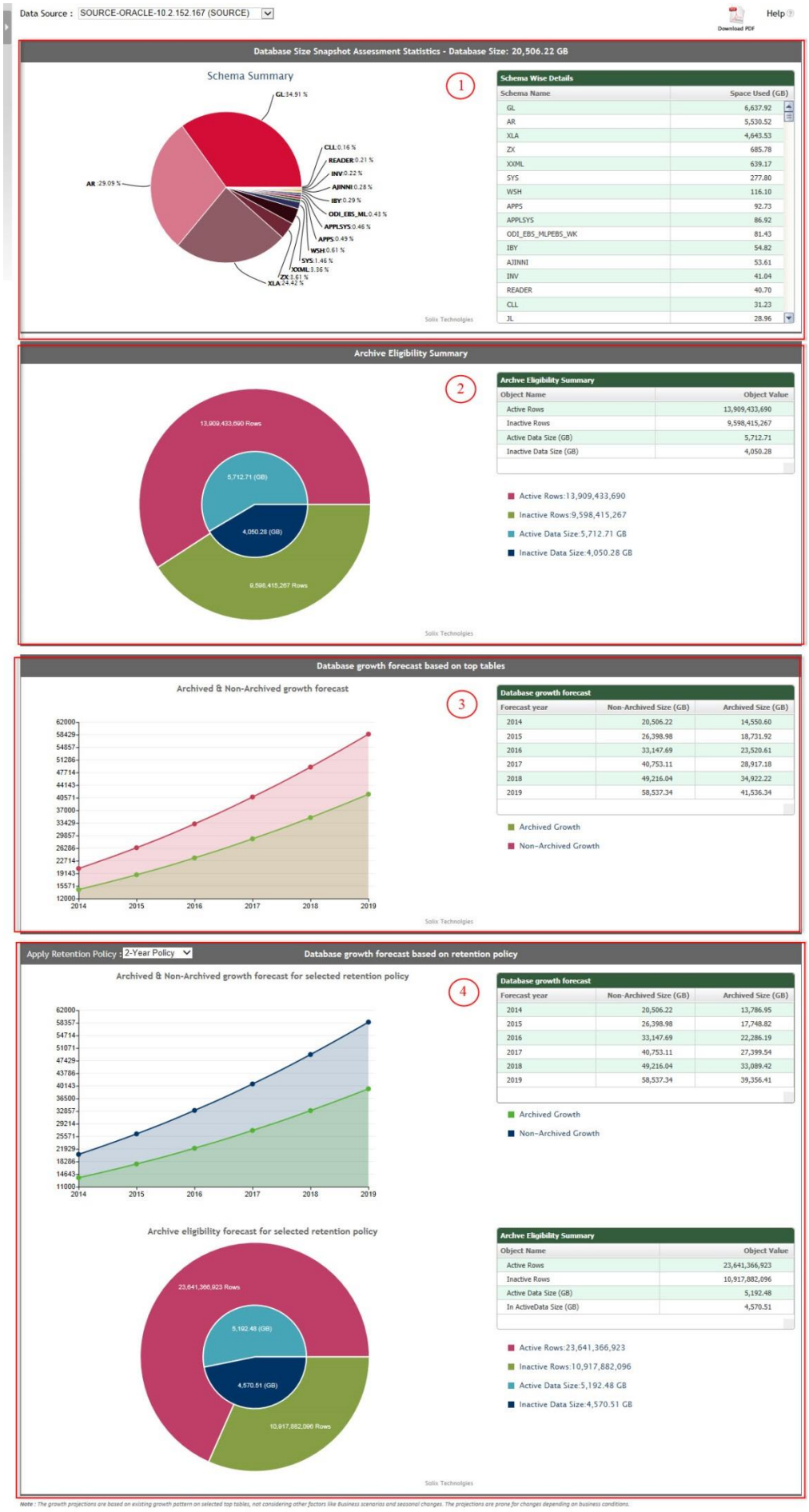
- Make sure that the database snapshot is executed atleast once on the database selected in the ***Assessment Summary*** screen.

Benefits of Assessment Summary:

- Helps to predict the database growth with archived and without archived for the next 5 years.
- Enable to view the complete database assessment ouput and database growth in a single screen.

Data Assessment for Assessment Summary

Once ***Assessment Summary*** is selected in the ***Data Assessment*** screen, the ***Assessment Summary*** screen is displayed and select the data base from the Data Source drop to shown the data assessment run on that database as shown in the figure below.


Data Source : SOURCE-ORACLE-10.2.152.167 (SOURCE)
Download PDF
Help
Database Size Snapshot Assessment Statistics - Database Size: 20,506.22 GB
Schema Summary
GL:34.91 %
AR :29.09 %
CLL:0.16 %
READER:0.21 %
INV:0.22 %
AJINNI:0.28 %
IBY:0.29 %
ODI_EBS_ML:0.43 %
APPLSYS:0.46 %
APPS:0.49 %
WSH:0.61 %
SYS:1.46 %
XXML:3.36 %
ZX:5.61 %
XLA:24.42 %
1
Schema Wise Details
Schema Name | Space Used (GB)
GL | 6,637.92
AR | 5,530.52
XLA | 4,643.53
ZX | 685.78
XXML | 639.17
SYS | 277.80
WSH | 116.10
APPS | 92.73
APPLSYS | 86.92
ODI_EBS_MLPEBS_WK | 81.43
IBY | 54.82
AJINNI | 53.61
INV | 41.04
READER | 40.70
CLL | 31.23
JL | 28.96
Archive Eligibility Summary
13,909,433,690 Rows
5,712.71 (GB)
4,050.28 (GB)
9,598,415,267 Rows
2
Archive Eligibility Summary
Object Name | Object Value
Active Rows | 13,909,433,690
Inactive Rows | 9,598,415,267
Active Data Size (GB) | 5,712.71
Inactive Data Size (GB) | 4,050.28
Active Rows:13,909,433,690
Inactive Rows:9,598,415,267
Active Data Size:5,712.71 GB
Inactive Data Size:4,050.28 GB
Database growth forecast based on top tables
Archived & Non-Archived growth forecast
62000
58429
54857
51286
47714
44143
40571
37000
33429
29857
26286
22714
19143
15571
12000
2014
2015
2016
2017
2018
2019
3
Database growth forecast
Forecast year | Non-Archived Size (GB) | Archived Size (GB)
2014 | 20,506.22 | 14,550.60
2015 | 26,398.98 | 18,731.92
2016 | 33,147.69 | 23,520.61
2017 | 40,753.11 | 28,917.18
2018 | 49,216.04 | 34,922.22
2019 | 58,537.34 | 41,536.34
Archived Growth
Non-Archived Growth
Apply Retention Policy : 2-Year Policy
Database growth forecast based on retention policy
Archived & Non-Archived growth forecast for selected retention policy
62000
58357
54714
51071
47429
43786
40143
36500
32857
29214
25571
21929
18286
14643
11000
2014
2015
2016
2017
2018
2019
4
Database growth forecast
Forecast year | Non-Archived Size (GB) | Archived Size (GB)
2014 | 20,506.22 | 13,786.95
2015 | 26,398.98 | 17,748.82
2016 | 33,147.69 | 22,286.19
2017 | 40,753.11 | 27,399.54
2018 | 49,216.04 | 33,089.42
2019 | 58,537.34 | 39,356.41
Archived Growth
Non-Archived Growth
Archive eligibility forecast for selected retention policy
23,641,366,923 Rows
5,192.48 (GB)
4,570.51 (GB)
10,917,882,096 Rows
Archive Eligibility Summary
Object Name | Object Value
Active Rows | 23,641,366,923
Inactive Rows | 10,917,882,096
Active Data Size (GB) | 5,192.48
In ActiveData Size (GB) | 4,570.51
Active Rows:23,641,366,923
Inactive Rows:10,917,882,096
Active Data Size:5,192.48 GB
Inactive Data Size:4,570.51 GB
Solix Technologies
Note : The growth projections are based on existing growth pattern on selected top tables, not considering other factors like business scenarios and seasonal changes. The projections are prone for changes depending on business conditions.

The Assessment Summary screen is divided into four divisions and shows the graphical representation of various data assessments such as,

1. Database Size Snapshot Assessment Statistics
    - *Graphical representation*: Display the size of database and schema, data distributed among different schemas existing in the database.
    - *Grid table*: Provides the consolidated details and elaborated information about the database size occupied by each schema in the database.
2. Archive Eligibility Summary
    - *Graphical representation*: Shows the Active rows/data size and In-active rows/data size according to the recent run of Object level or top tables level data assessment.
    - *Grid table*: Provides the consolidated information associated to the Active rows/data size and In-active rows/data size according to the recent run of object level or top tables level data assessment.
3. Database growth forecast based on the top n tables for growth assessment.
    - *Graphical representation*: Analysis the database growth in business for next 5 years based on top 'N' tables and forecast the database growth with both archived data growth and non-archived data growth. It helps to predict the database growth in future.
    - *Grid table*: Provides the total size of archived data and non-archived data in the corresponding forecasted year.
4. Database growth forecast based on the retention policy.
    a. Archived and Non archived growth forecast for selected retention policy:
        - *Graphical representation*: Analysis the database growth in business based on the retention policy (i.e., number of years) applied and forecast the database growth with both archived data growth and non-archived data growth. It helps to predict the database growth in future. The graph varies based on the policy year(s) selected in the ***Apply Retention Policy*** drop down.
        - As retention policy year increases the archived database size increases and vice-versa.
        - As retention policy year increases, the graph shows an increase in the Active data and decrease in the inactive data.
        - As retention policy year decreases, the graph shows the decrease in the Active data and increase in the inactive data.
        - *Grid table*: Provides the total size of archived data and non-archived data in the corresponding forecasted year.

b. Archive eligibility forecast for selected retention policy:

- *Graphical representation*: Shows the Active rows/data size and In-active rows/data size growth in the database based on the retention policy.
- *Grid table*: Provides the consolidated information associated to the Active rows/data size and In-active rows/data size growth in the database based on the retention policy.

- Provides flexibility to export the graphical representation of data assessment output into .pdf format.

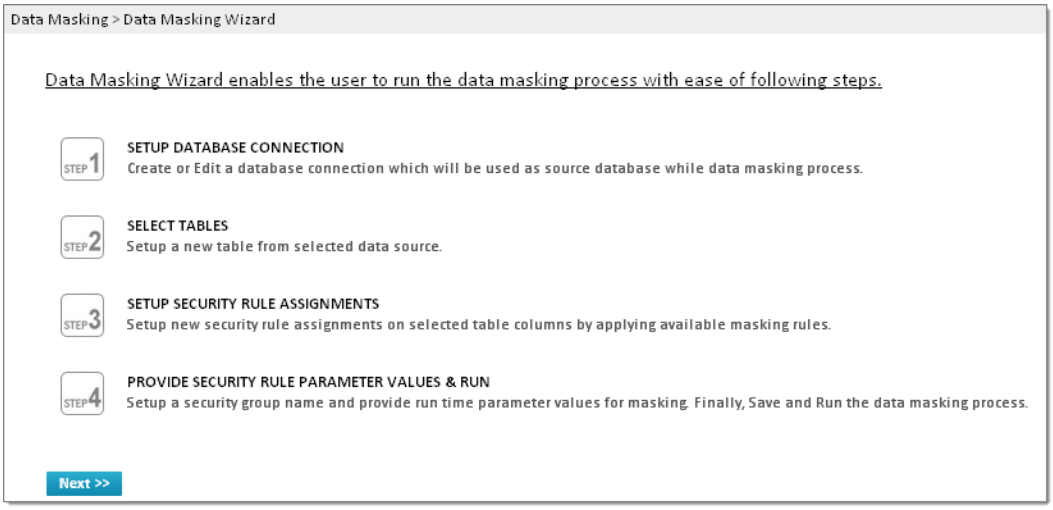
4 Data Masking Process using Wizard

Solix EDMS Data Masking Standard Edition (SE) Wizard has been designed to provide an intuitive user friendly environment. The user is led through a step-by-step process to perform all the activities required to accomplish the data masking process efficiently.

This section outlines the procedure to setup a connection, setup tables to extract the required data for masking, setup security rule assignments to apply on the selected tables, setup run-time parameter and run the data masking process to mask the data effectively.

To initiate the data masking process,

- In Solix EDMS Standard Edition (SE) home page, click ***Launch Data Masking Wizard*** button adjacent to the Data Masking**.** By default, the ***Data Masking Wizard*** initial screen will be displayed which shows the summary of each step designed to accomplish the data masking process successfully.



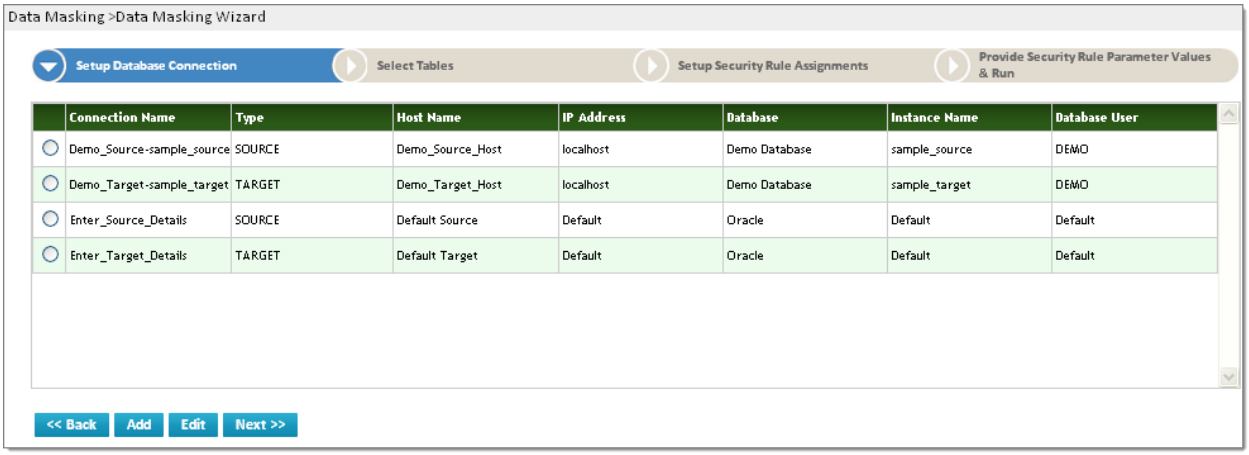
Solix EDMS Data Masking Standard Edition (SE) Wizard provides feasibility to run the data masking process and mask the data in the database with ease of four steps given below.

1. Setup Database Connection
2. Select Tables
3. Setup Security Rule Assignments
4. Provide Security Rule Parameter Values & Run

To initiate the data assessment and navigate to the first step in the wizard, click ***Next*** button.

4.1 Setup Database Connection

The user needs to configure the database connection to provide the accessibility to the database. This section describes the process to configure the connection details in order to connect to the database.

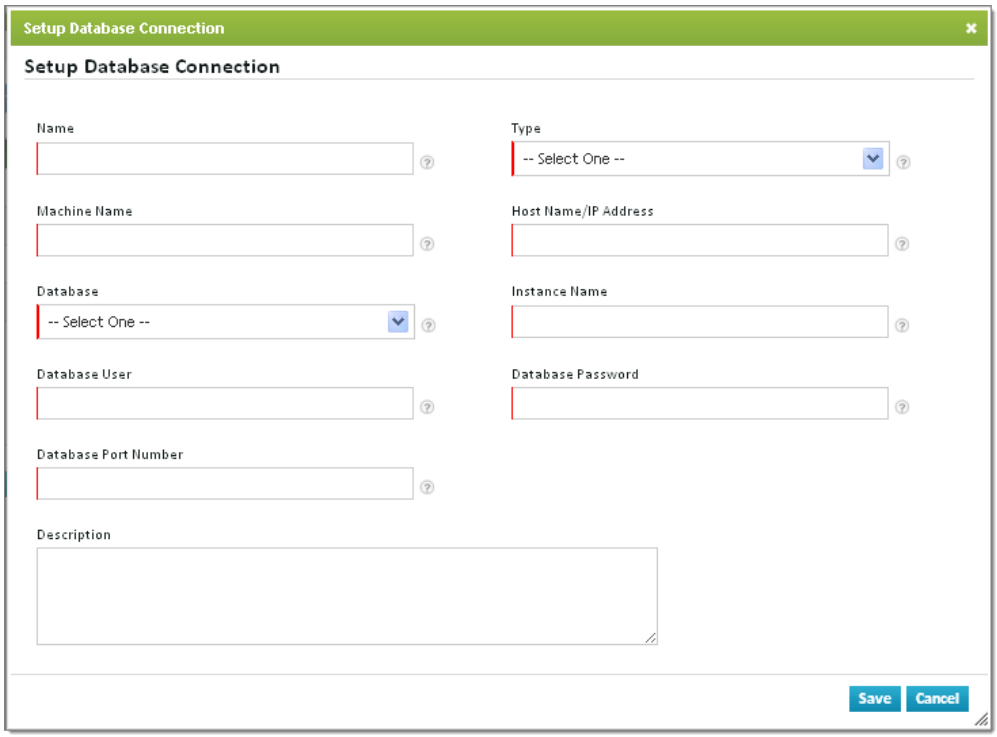


To setup the database connection for data masking, do the following:

1. In ***Data Masking Wizard*** initial screen, click ***Next*** button to initiate the data masking process and navigate to the first step in the wizard. The ***Setup Database Connection*** screen with the list of existing database connections will be displayed and provides the ability to create/edit connections.
   - If the required database connection already exists, then the user can navigate to the second step by clicking ***Next*** button.
2. To create a new database connection, do the following:
   a. Click ***Add*** button (or) Hover on any existing database connection, the three links (Create Like, New and Edit) will appear to create or edit the database connection.
      - ***Create Like*** – enables the user to create a replica of the selected database connection. The same connections details are maintained. It is recommended to define a new name for the replica.
      - ***Create*** - enables the user to create a new database connection.

- ***Edit*** **-** enables the user to edit the details of an existing database connection.

b. The ***Setup Database Connection*** popup window is displayed. A new database connection can be created here as shown in the figure below.



i. Enter the name of the database connection in the ***Name*** text field.

ii. Select an appropriate datasource type from the ***Type*** drop down list and designate the database as a source or target.

iii. Enter the database server name associated to the data source in the ***Machine Name*** text field.

iv. Enter the host name/ IP address associated to the database server in the ***Host Name/ IP Address*** text field.

v. Select the database which is compatible to the data source from the ***Database*** (such as Oracle, Demo database) drop down list.

vi. Enter the instance name/service name of the database in the ***Instance Name*** text field.

vii. Enter the login user name of the database in ***Database User*** text field.

viii. Enter the password corresponding to the username of the database in ***Database Password*** text field.

ix. Enter the port number of the database in the ***Database Port Number*** field.

x. Enter the comments in the ***Description*** text box**.**

xi. Click ***Save*** button. Once the database connection details are saved successfully, a confirmation message is prompted in the ***Setup Database Connection*** screen.

3. Once database connection setup is completed successfully, click ***Next*** button. The ***Select Tables*** screen to select the tables for data masking will be displayed.

- The fields marked as * are mandatory fields.
- Ensure that the specified databases are accessible and running.
- To navigate to ***Setup Database Connection*** wizard screen from the ***Setup Database Connection*** popup window, click ***Cancel*** button.

To understand the functionality of each field in the ***Setup Database Connection*** popup window, refer to the table given below.

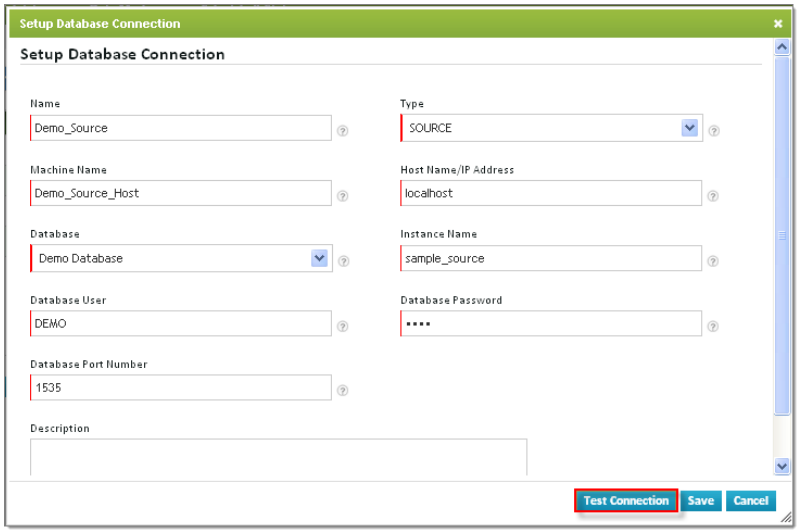
Fields	Functionality
Name	Define the name of the database connection.
Type	Drop down list to designate the datasource as Source / Target. For example, if "Source" is selected, then the datasource is considered as Source database.
Machine Name	Enter the name of the database server associated to the datasource. It is necessary to setup a database connection
Host Name/IP Address	Enter the Host Name/IP Address of the database server.
Database	Displays a list of supported databases and allows the user to select the database compatible to the datasource.
Instance name	Define the instance name of the database such as SID or Service Name.
Database User	Enter the user credentials (i.e., Username) required to connect to the database.
Database password	Enter the password corresponding to the Database User in order to connect to the database.
Database Port Number	Enter the Port number of the database server to establish the database connection.
Notes	It facilitates the user to enter the description associated with the database connection.
Test Connection	Used to verify whether the connection details provided are valid and whether the connection to the database can be established based on the specified details.

	• If the details provided are valid, the database connectivity will be established and saved. • If the given details are invalid, the database connectivity fails and alerts the user to verify the details.
Save	Used to save the database connection details.
Cancel	Used to navigate to the ***Setup Database Connection*** screen

4.1.1 Create Like, Editing or Testing the database connections

Test Connection feature is designed to provide feasibility to verify whether the connection details specified during database connection creation are valid. To test the database connection, do the following:

1. In ***Setup Database Connection*** screen, hover on the database connection the needs to be verified. The three links (Create Like, Create and Edit) will appears beneath the database connection.
2. Click ***Create Like or Edit*** button, to verify the connection details of the database connection. The ***Setup Database Connection*** popup window is prompted to edit /create a replica of the database connection as shown in the figure below.

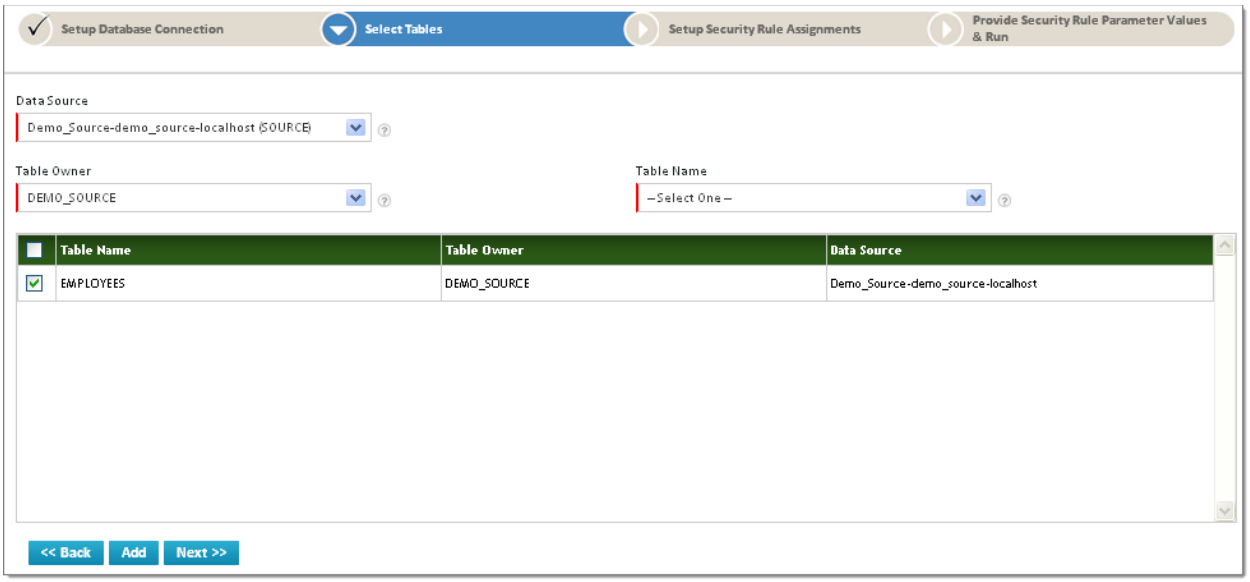


3. Once the database connection details are saved successfully, in order to test the connection to the database based on the given details, click ***Test Connection*** button.
    - If the database is connected successfully, a message stating the successful connection to the database will be prompted.
    - If the database connection fails, an alert message to verify the given connection details will be prompted.

- The fields marked as are mandatory fields.
- To create a replica of database, click on ***Create Like*** link. In ***Setup Database Connection*** enter the name of the replica in the ***Name*** text field.

4.2 Select Tables

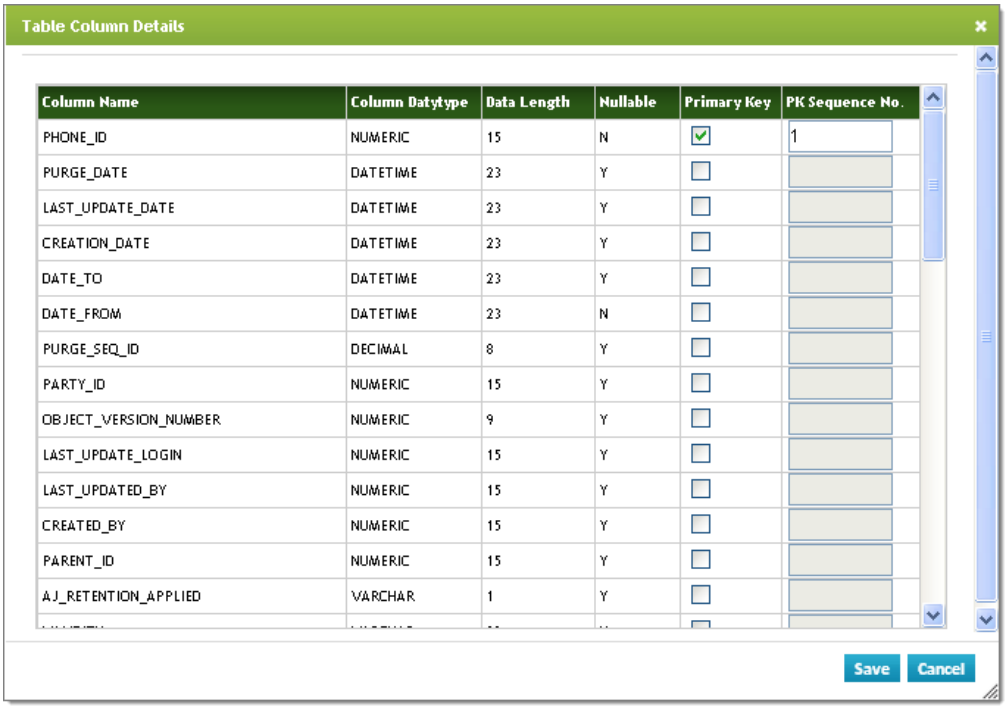
Once the database connection setup is completed successfully, the user needs to select tables from the database to perform data masking process effectively.



To select the intended table, do the following:

1. In ***Select Tables*** screen, select the database from the ***Data Source*** drop down list. Based on the database selected, the corresponding schemas/table owners will be listed in the ***Table Owner*** drop down list.
2. Select a schema/table owner from the ***Table Owner*** drop down list. Based on the schema/table owner selected, the corresponding tables will be listed in the Table Name drop down list.
3. Select the intended table from the ***Table Name*** drop down list.
4. Click ***Add*** button, to save and append the selected table information to the list. Once the information is saved successfully, a message stating "***New Table Saved Successfully"*** is prompted on the screen and the respective table information will be appended to the list.
    - To view the columns that exist in the table, do the following:
        a. Hover on the table name in the list and click ***Column*** link. The ***Table Column Details*** popup window shows the columns and

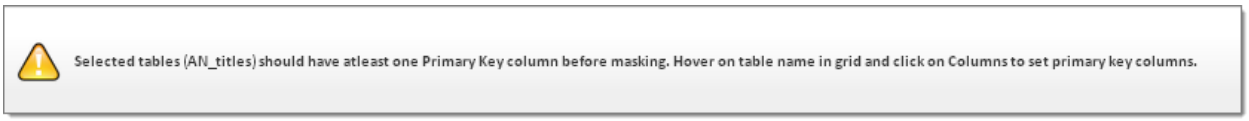
comprehensive information of the column such as data type, data length as shown in the figure below.



b. Click ***Cancel*** button, to exit the popup window.

5. Click ***Next*** button, to navigate to the next step. The ***Setup Security Rule Assignments*** screen appears to configure an appropriate security rule on the column of the selected table to perform data masking process accordingly.

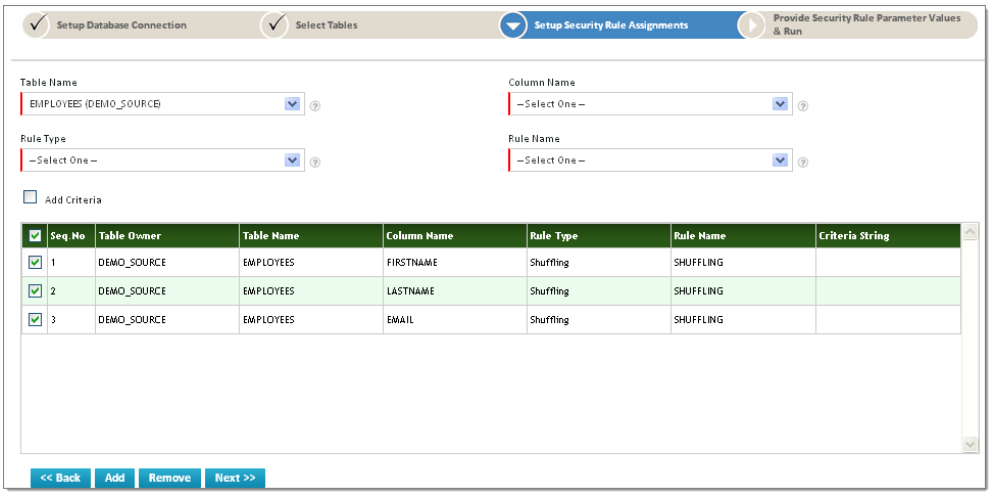
- The fields marked as are mandatory fields.
- While performing data masking in other Oracle database (such as SQL Server, Sybase ASE and Demo database), it is mandatory that tables selected must have alteast one Primary key column in a table. In case, if the tables selected does not have primary key column then the user will be restricted to proceed further and a warning message will be prompted as shown in the figure below.



4.3 Setup Security Rule Assignments

This step enables the user to assign an appropriate security rule on the required column of the selected table and mask the data existing in the column based on the security rule applied.

- While masking a huge data, it is recommended to assign or setup the security rule assignment in the Security Rule Assignment screen (***Settings > Data Masking > Security Rule Assignment***). Therefore, define the commit frequency and parallel thread to perform data masking process on the huge data efficiently. In such cases, the tables been registered in the Solix EDMS Data Masking Standard Edition (SE) Wizard will be populated automatically in the Security Rule Assignment screen to carry out the data masking process.



To setup security rule assignment, do the following:

1. Select a table from the ***Table Name*** drop down list to extract the columns of the selected table.
2. Select a column from the ***Column Name*** drop down list, to apply the security rule on the selected column while masking**.**
3. Select an appropriate masking method from the ***Rule Type*** drop down list.
4. Based on the column data type and rule type selected, the corresponding security rules will be displayed in the ***Rule Name*** drop down list. Select an appropriate security rule from the list, to perform masking based on the algorithm defined in the security rule**.**

   For example,

   - If table column of ***Numeric*** type and rule type as ***Masking Data*** is selected, then the security rule associated to Masking and numeric data type will be displayed. (For example, Random Number (Numeric)).
5. To customize a criterion for the respective security rule assignment, select check box adjacent to the ***Add Criteria*** check box. Automatically, the ***Criteria*** text box will appear on the screen.

   - Enter the custom SQL statement in the ***Criteria*** text box to assign security rule on the data extracted based on the criteria exclusively.

6. Click ***Add*** button to save and append the configured security rule assignment in the list. Once the security rule is assigned successfully, a message stating "***Security Rule Assignment Saved Successfully"*** is prompted on the screen.

7. Click ***Next*** button, to navigate to the next step to accomplish the data masking process. The security group name will be automatically generated for the respective security rule assignment in the ***Provide Security Rule Parameter Values & Run*** screen.

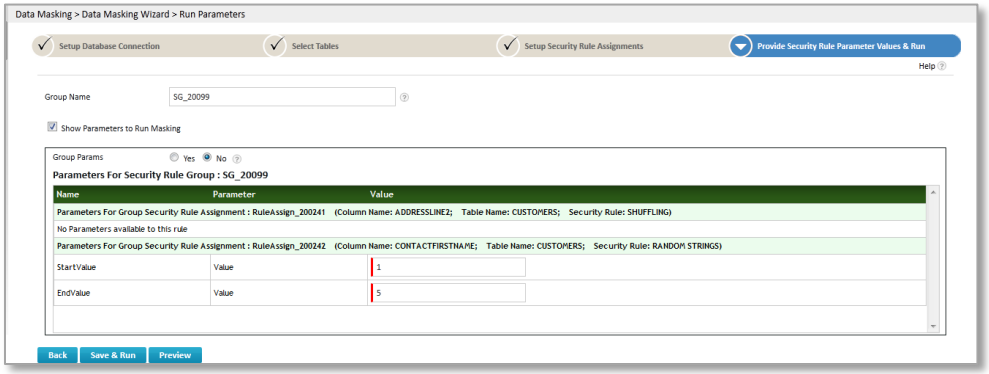
- The fields marked as | are mandatory fields.
- For each application/database, the total number of masking columns is restricted to only '***10***' in Solix EDMS Data Masking Standard Edition (SE).
- Exclusively, for table columns of ***Character*** type, the security rules of all the data types(i.e., Character, Numeric and Date) and corresponding rule type will be displayed irrespectively.

4.4 Provide Security Rule Parameter Values & Run

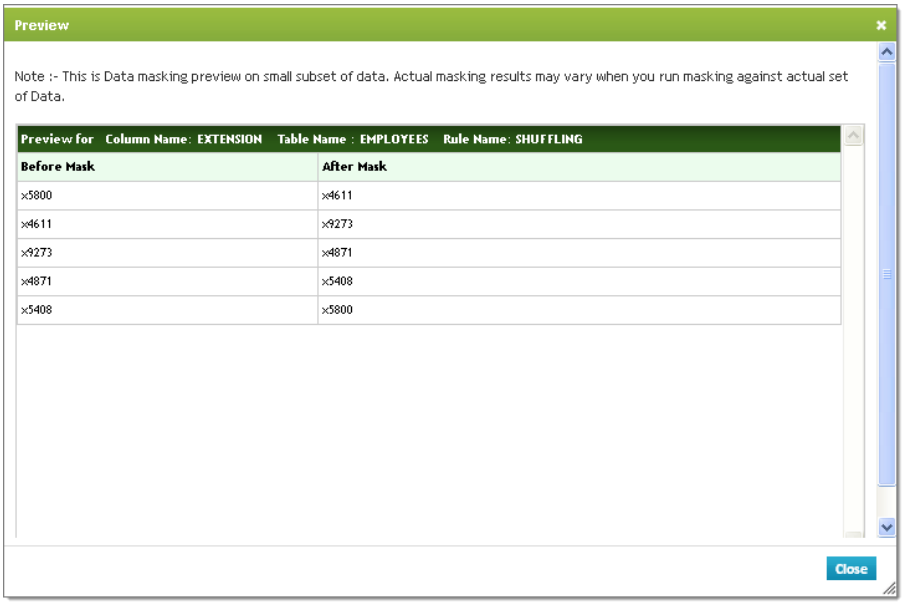
Once the security rule assignment is configured successfully, the security group name will be automatically generated for the respective security rule assignment in the ***Provide Security Rule Parameter Values & Run*** screen. This enables the user to provide the parameter value and preview the sample of masked data before executing the data masking process effectively.

To save and execute the data masking process, do the following:

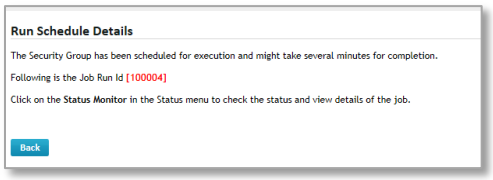
1. Select check box adjacent to the ***Show Parameters to Run Masking*** to enter the value of the parameter. Based on the security rule assignment, the run-time parameters will be prompted on the screen as shown in the figure below.



2. To enter the single value for a group of parameters at a time, select ***Yes*** option adjacent to the ***Group Params***. (Or) select ***No*** option, to enter the value of the parameters individually.
3. Enter the value of the parameters in the corresponding fields.
   - To view the sample of masked data before masking the original data, do the following:
     a. Click ***Preview*** button. The ***Preview*** popup window will be prompted which shows the data of all the tables before and after masking as shown in the figure below.



     b. Click ***Close*** button, to navigate to the ***Run Parameters*** screen.
4. Click ***Save & Run*** button to save and execute the security group accordingly. Once the security group is executed successfully, automatically a Run ID is generated for the respective job in ***Run Schedule Details*** screen.



5. To monitor the status and view the details of the job, click Run ID or navigate to the ***Status Monitor*** screen (***Schedule & Status>Status Monitor***).

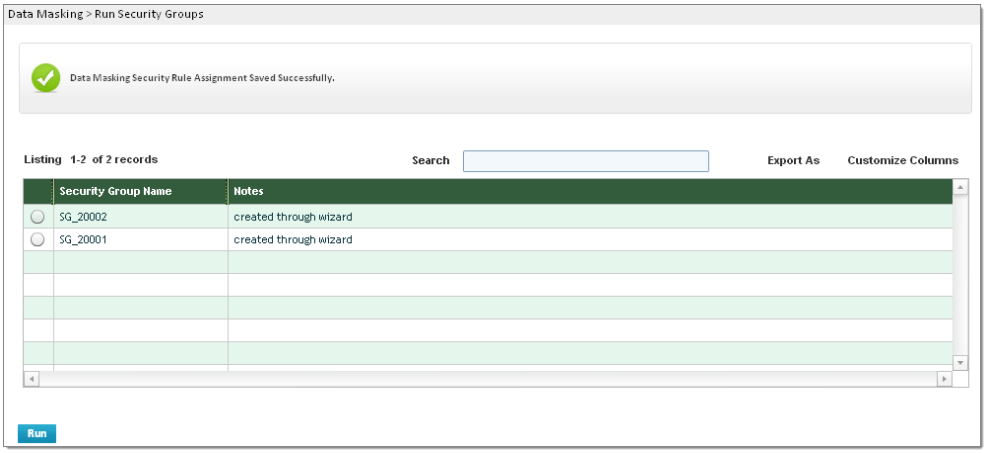
- The fields marked as | are mandatory fields.
- Based on the rule type and rule of the security rule assignment, the parameter will be initialized in the security group.

- To limit the rows in the preview results, set the value of mask preview rows count in ***MASK_PREVIEW_ROWS*** parameter in the ***Parameter*** screen (*Admin> Manage Source/Target Dictionary>Parameter)*. For example, to limit the rows to 10 then set the default value of mask preview rows count in ***MASK_PREVIEW_ROWS*** parameter to "10". Henceforth, the Preview results screen will display 10 mask preview records exclusively.

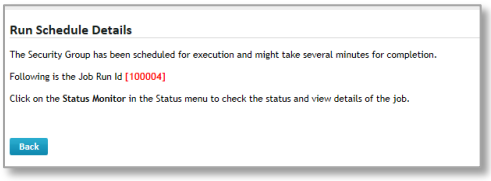
4.4.1 To Save Security group and execute it later

To save the security group and execute it later, do the following

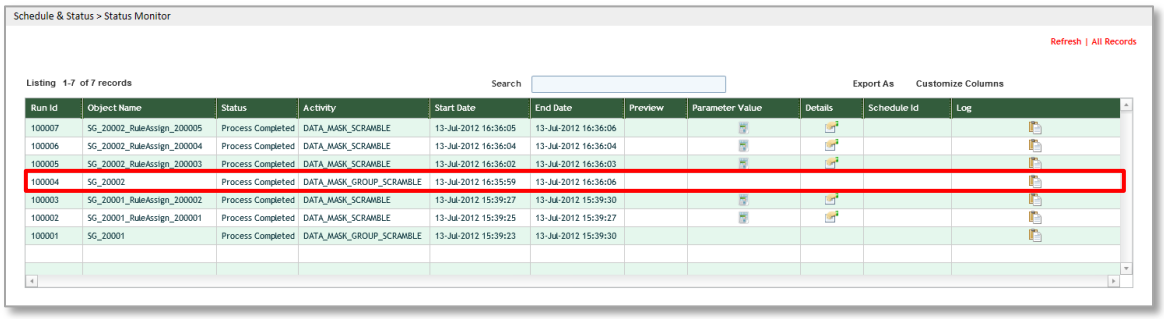
1. In ***Provide Security Rule Parameter Values & Run*** screen, click ***Save*** button, to save the security group and append it in the ***Security Groups*** screen. The tool automatically navigates to the ***Run Security Groups (Data Masking > Run Security Groups)*** screen and a message stating "***Data Masking Security Rule Assignment Saved Successfully***" is prompted on the screen as shown in the figure below.



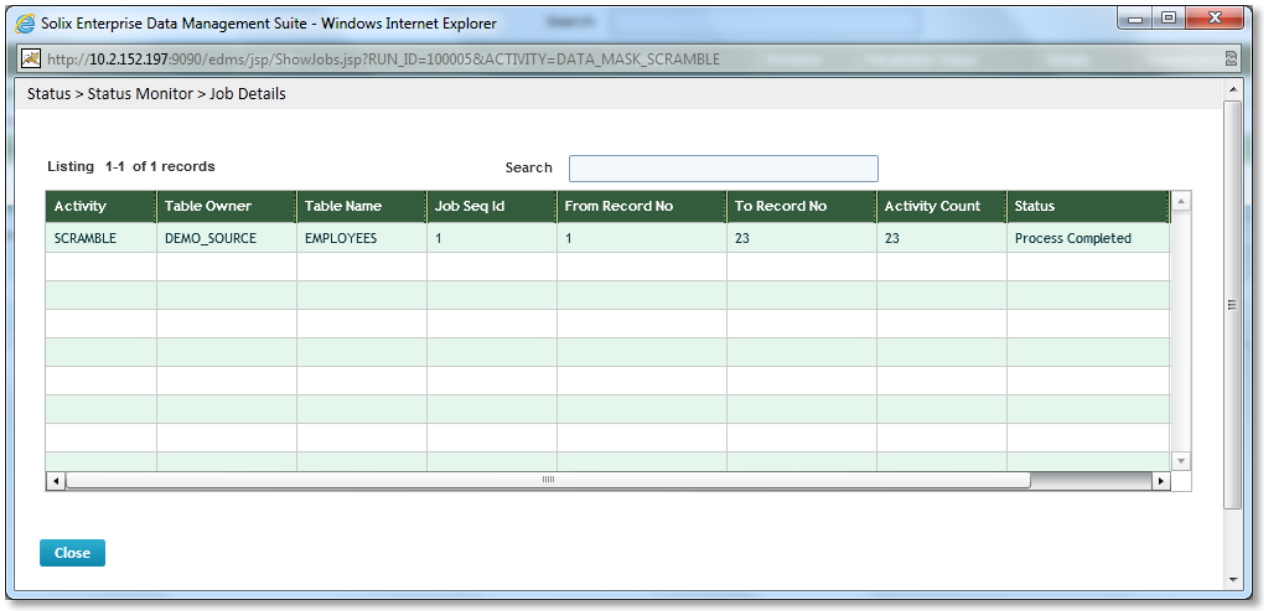
2. Select the intended security group and click ***Run*** button to execute the security group for data masking process. Once the security group is executed successfully, a Run ID is generated for the respective job in ***Run Schedule Details*** screen.



3. To monitor the status and view the details of the job, click Run ID or navigate to the ***Status Monitor*** screen (***Schedule & Status > Status Monitor***).



4. To view the job details, click Details icon adjacent to the Run ID. The Job Details screen will be displayed as shown in the figure below.

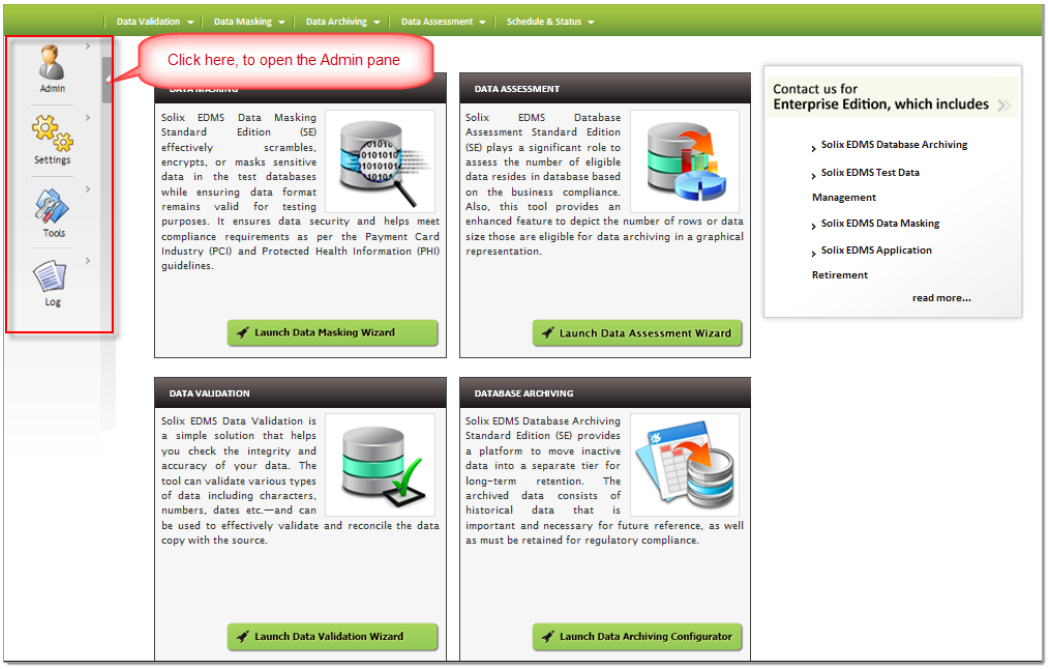


- The fields marked as | are mandatory fields.

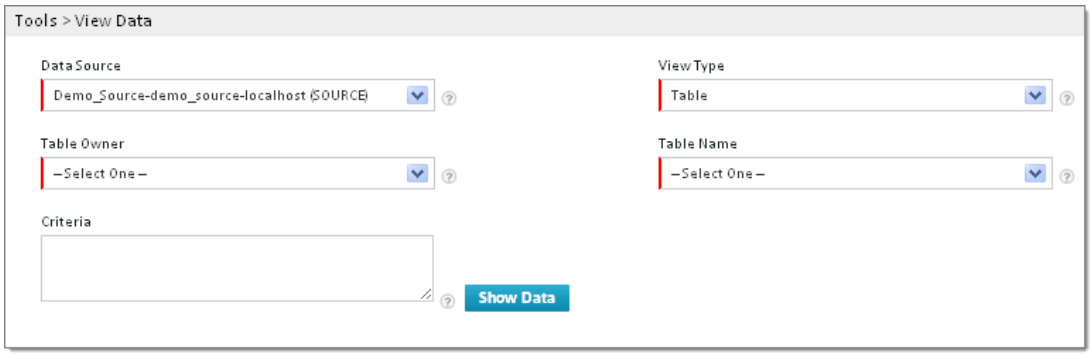
4.4.2 View Data

View Data feature provides an option to view the data existing in the table or extracted using custom SQL. Also, it provides flexibility to view the data before and after the data masking process to verify whether the data has been masked appropriately or not.

To access view data, click  bar appears on the left hand side of the screen. Once the bar is clicked, the administrative menus will be opened in the screen as shown in the screen below.

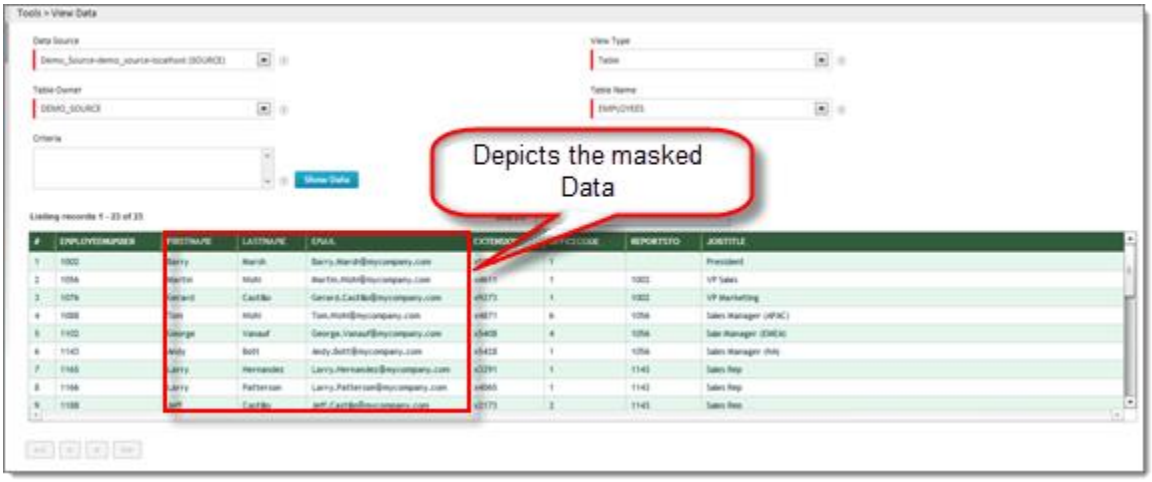


1. Navigate to the following path: ***Tool*** > ***View Data***. The ***View Data*** screen will be displayed and it enables the user to view the data in the table.

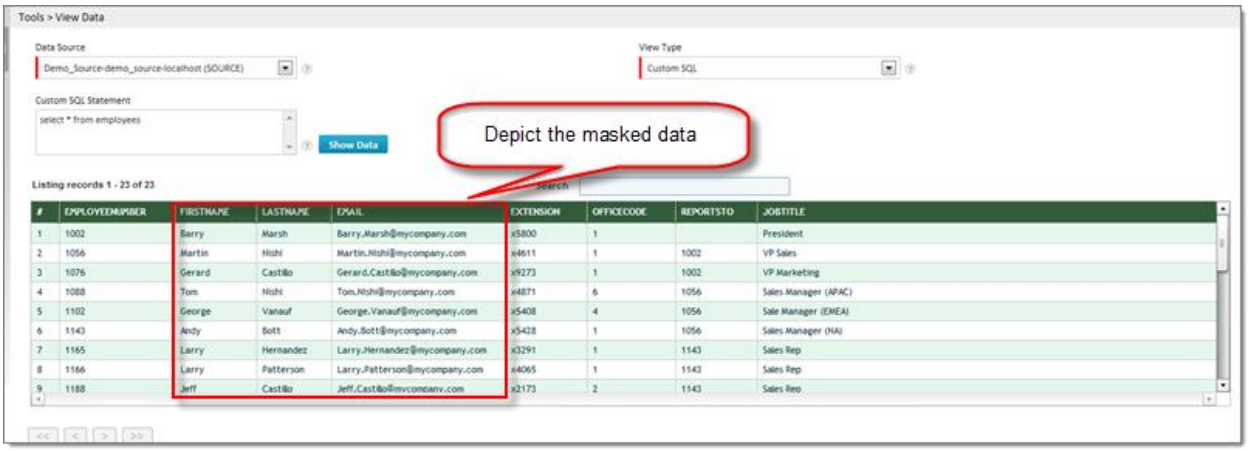


2. Select database from the ***DataSource*** drop down list.
3. Select an appropriate option (i.e., Table or Custom SQL) from the ***View Type*** drop down list.
    - ***Table*** – enables the user to show all the data exist in the table.
    - ***Custom SQL*** – enables the user to customize SQL statement to extract the data from the table and show the data extracted based on the specified SQL statement.

4. If ***Table*** option is selected, select appropriate information associated to the intended table in the corresponding fields (such as table owner and table name) and click ***Show Data*** button. The data (including masked data) in the table will be displayed beneath the fields as shown in the figure below.



5. If ***Custom SQL*** option is selected, the ***Custom SQL Statement*** text box appears on the screen. Enter the SQL Statement in the ***Custom SQL Statement*** text box and click ***Show Data*** button to show the data extracted based on the specified criteria as shown in the figure below.



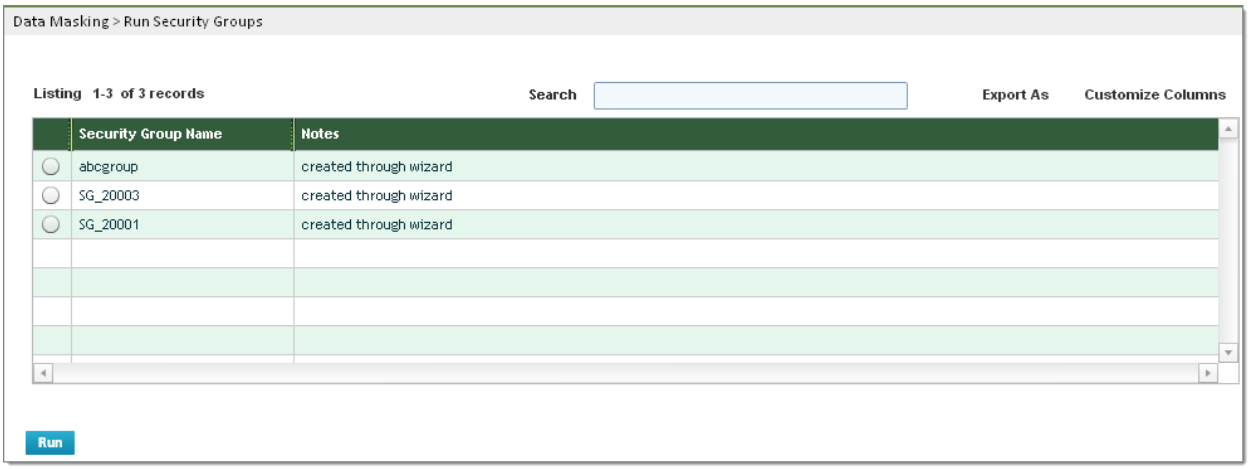
- The fields marked as * are mandatory fields.
- When the status of data masking turns to 'Process Completed' the user would be able to view the masked data/encrypted data in the table.

5 Rerun the Data Masking

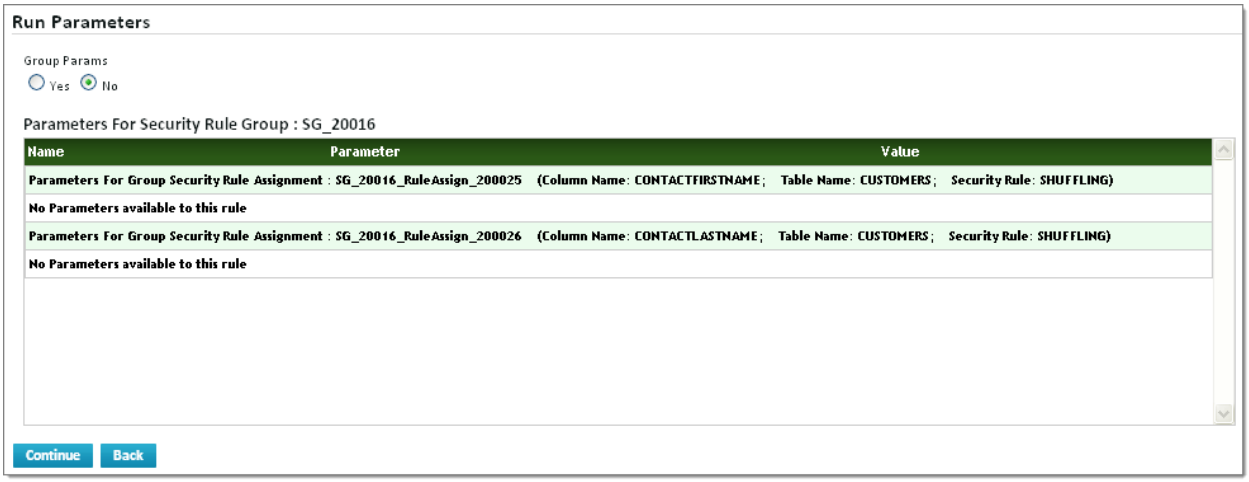
Once the data masking is created and executed successfully, it will be automatically appended to the list of Security Groups on the ***Run Security Groups*** screen (***Data Masking > Run Security Groups***). This feature allows the user to rerun the executed security group recursively.

To rerun the data masking process, do the following:

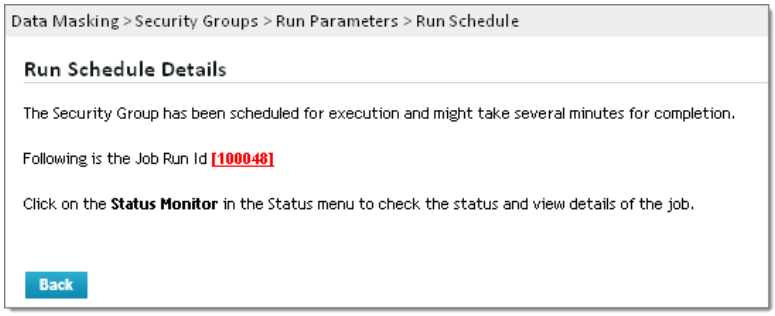
1. Navigate to the following path: ***Data Masking >Run Security Groups.*** The ***Run Security Groups*** screen with the list of security groups created will be displayed as shown in the figure below.



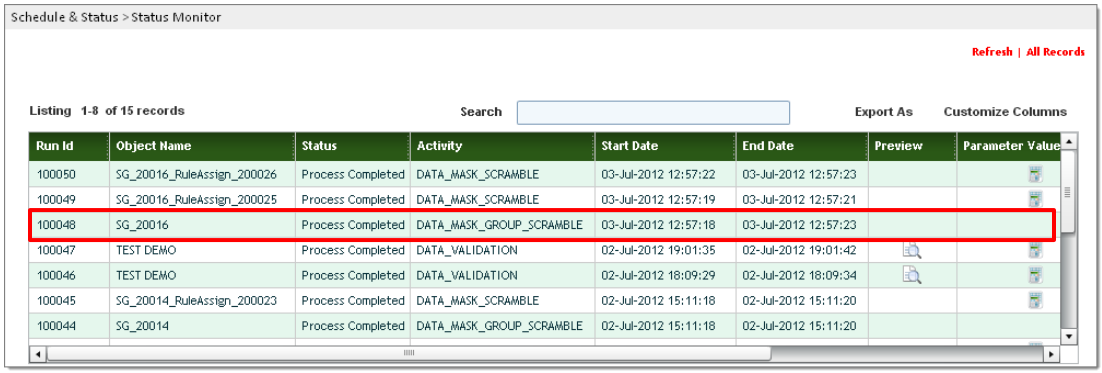
2. Select the intended security group and click ***Run*** button. The ***Run Parameters*** screen to enter the run-time parameters will be displayed as shown in the figure below.



3. Click ***Continue*** button to execute the security group for data masking process. Once the security group is executed successfully, automatically a Run ID is generated for the respective in ***Run Schedule Details*** screen.



4. To monitor the status and view the details of the job, click Run ID or navigate to the ***Status Monitor*** screen (***Schedule & Status>Status Monitor***).



5. Once the status of execution is '***Process Completed'*** the masked data can be viewed as follows:

   - Navigate to the following path: ***Tool > View Data***. The ***View Data*** screen displays the data in the table after data masking process.

- ***View Data*** screen provides feasibility to view the data in the table before data masking process and after data masking process to verify whether the data has been masked appropriately or not.

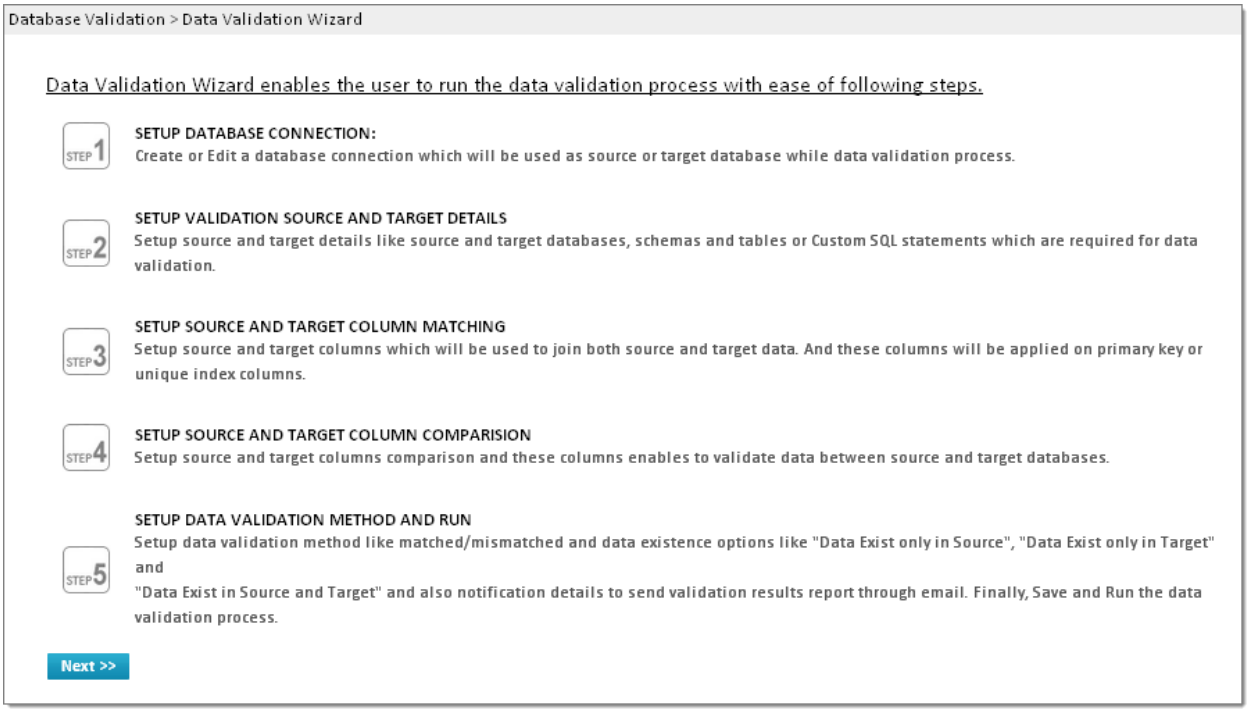
6 Data Validation Process using Wizard

Solix EDMS Validation Standard Edition (SE) Wizard has been thoughtfully designed to provide an intuitive user friendly environment. The user is led through a step-by-step process to perform all the activities required to complete the data validation process efficiently.

This section outlines the activities involved in the data validation process - setup a connection, setup source and target databases for data validation, setup column matching to join both the source and target databases, setup validation mapping criteria to validate the data in both the databases, and setup an appropriate execution method to run the data validation process effectively.

To initiate the data validation process,

- In Solix EDMS Standard Edition (SE) home page, click ***Launch Data Masking Wizard*** button adjacent to the Data Validation**.** By default, the ***Data Validation Wizard*** initial screen will be displayed which shows the summary of all the steps necessary to accomplish the data validation process successfully.

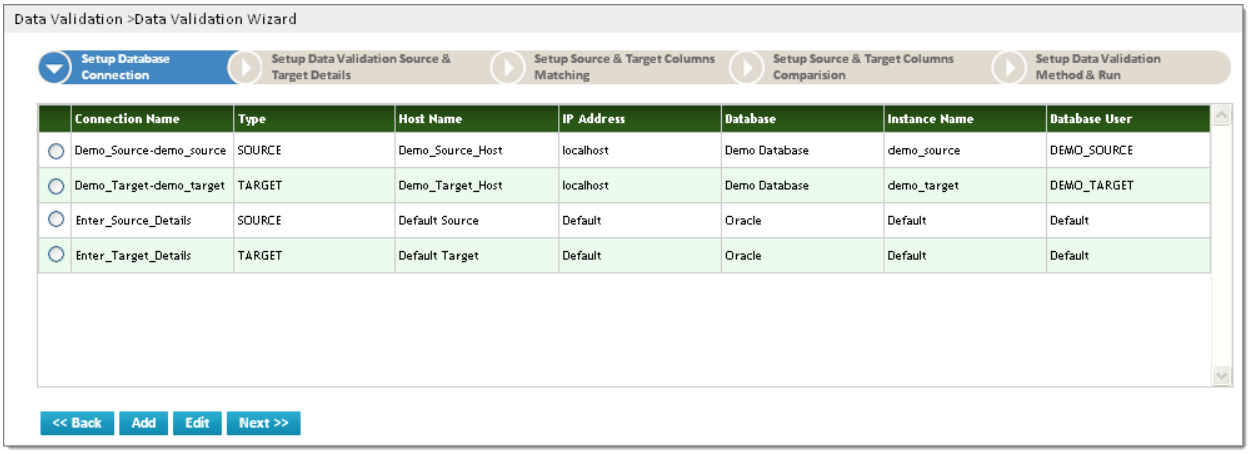


Solix EDMS Validation Standard Edition (SE) Wizard provides the feasibility to run the data validation process in an easy five steps given below.

1. Setup Database Connection
2. Setup Data Validation Source & Target Details
3. Setup Source & Target Column Matching
4. Setup Source & Target Column Comparison
5. Setup Data Validation Method & Run

6.1 Setup Database Connection

In step 1, the user needs to configure the database connection to provide the tool accessibility to the database. This section describes the process to configure the connection details in order to connect to the database.

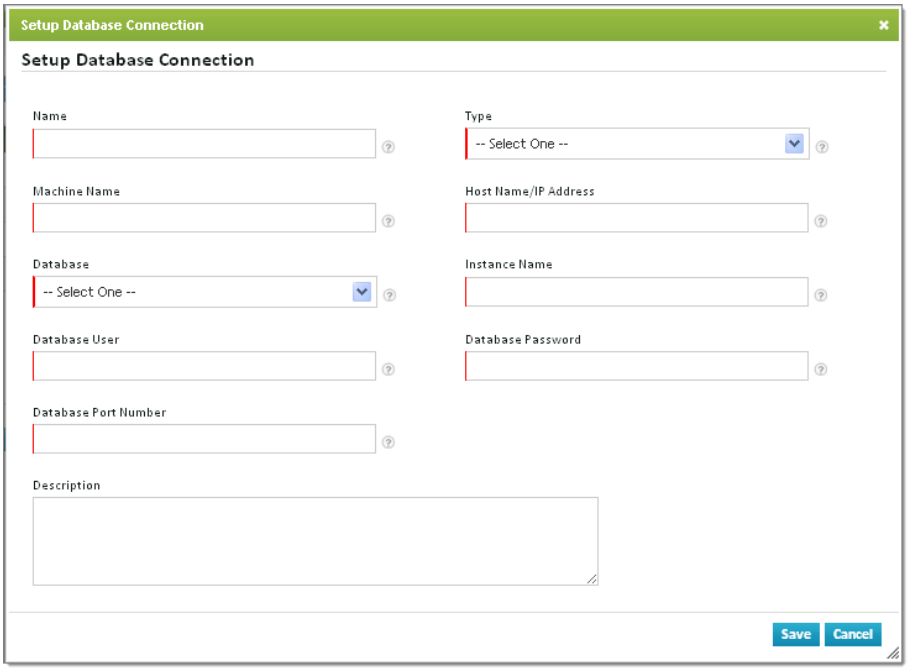


To setup the database connection for data validation:

1. In ***Data Validation Wizard*** initial screen, click ***Next*** button to initiate the data validation process and navigate to the first step in the wizard. The ***Setup Database Connection*** screen with the list of existing database connections will be displayed and provides the ability to create/edit connections.
   - If the required database connection already exists, then the user can navigate to the second step by clicking ***Next*** button.

2. To create a new database connection, do the following:
   a. Click ***Add*** button (or) Hover on any existing database connection, the three links (Create Like, New and Edit) will appear to create or edit the database connection.
      - ***Create Like*** –enables the user to create a replica of the selected database connection. The same connections details are maintained. It is recommended to define a new name for the replica.
      - ***Create*** enables the user to create a new database connection.
      - ***Edit -*** enables to edit the details of an existing database connection.

   b. The ***Setup Database Connection*** popup window is displayed. A new database connection can be created here as shown in the figure below.



i. Enter the name of the database connection in the ***Name*** text field.

ii. Select an appropriate data source type from the ***Type*** drop down list and designate the database as a source or target.

iii. Enter the database server name associated to the data source in the ***Machine Name*** text field.

iv. Enter the host name/ IP address associated to the database server in the ***Host Name/ IP Address*** text field.

v. Select the database which is compatible to the data source from the ***Database*** (such as Oracle, Demo database) drop down list.

vi. Enter the instance name/service name of the database in the ***Instance Name*** text field.

vii. Enter the login user name of the database in ***Database User*** text field.

viii. Enter the password corresponding to the username of the database in ***Database Password*** text field.

ix. Enter the port number of the database in the ***Database Port Number*** field.

x. Enter the comments in the ***Description*** text box**.**

xi. Click ***Save*** button. Once the database connection details are saved successfully, a confirmation message is prompted in the ***Setup Database Connection*** screen.

3. Once database connection setup is completed successfully, click ***Next*** button. The ***Setup Data Validation Source & Target Details*** screen will be displayed.

- The fields marked as * are mandatory fields.
- Ensure that the specified database is accessible and running.
- To navigate to ***Setup Database Connection*** wizard screen from the ***Setup Database Connection*** popup window, click ***Cancel*** button.

To understand the functionality of each field in the ***Setup Database Connection*** popup window, refer to the table given below.

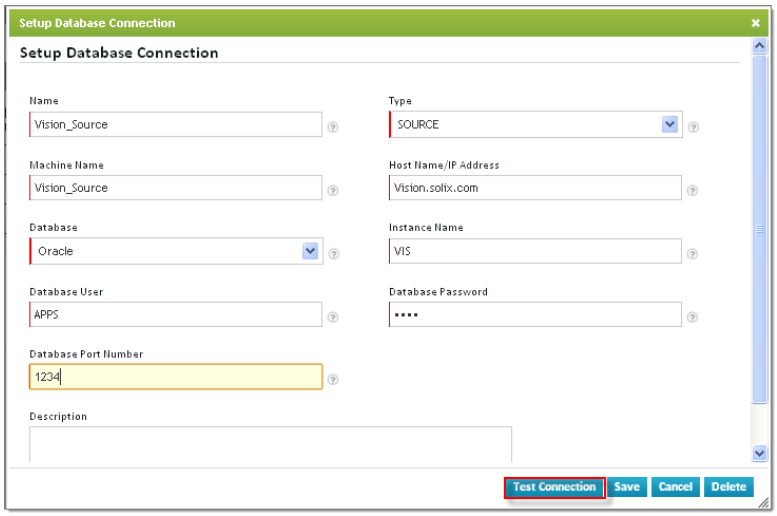
Fields	Functionality
Name	Define the name of the database connection.
Type	Drop down list to designate the datasource as Source / Target. For example, if "Source" is selected, then the datasource is considered as Source database.
Machine Name	Enter the name of the database server associated to the datasource. It is necessary to setup a database connection
Host Name/IP Address	Enter the Host Name/IP Address of the database server.
Database	Displays a list of supported databases and allows the user to select the database compatible to the datasource.
Instance name	Define the instance name of the database such as SID or Service Name.
Database User	Enter the user credentials (i.e., Username) required to connect to the database.
Database password	Enter the password corresponding to the Database User in order to connect to the database.
Database Port Number	Enter the Port number of the database server to establish the database connection.
Notes	Facilitates the user to enter any other details associated to the database connection.
Test Connection	Used to verify whether the connection details provided are valid and whether the connection to the database can be established based on the specified details. • If the details provided are valid, the database connectivity will be established and saved. • If the given details are invalid, the database connectivity fails and alerts the user to verify the details.

Save	Used to save the database connection details.
Cancel	Used to navigate to the ***Setup Database Connection*** screen

6.1.1 Create Like, Editing or Testing the database connections

Test Connection feature is designed to provide feasibility to verify whether the connection details specified during database connection creation are valid. To test the database connection, do the following:

1. In ***Setup Database Connection*** screen, hover on the database connection the needs to be verified. The three links (Create Like, New and Edit) will appears beneath the database connection.
2. Click ***Create Like or Edit*** button, to verify the connection details of the database connection. The ***Setup Database Connection*** popup window is prompted to edit /create a replica of the database connection as shown in the figure below.

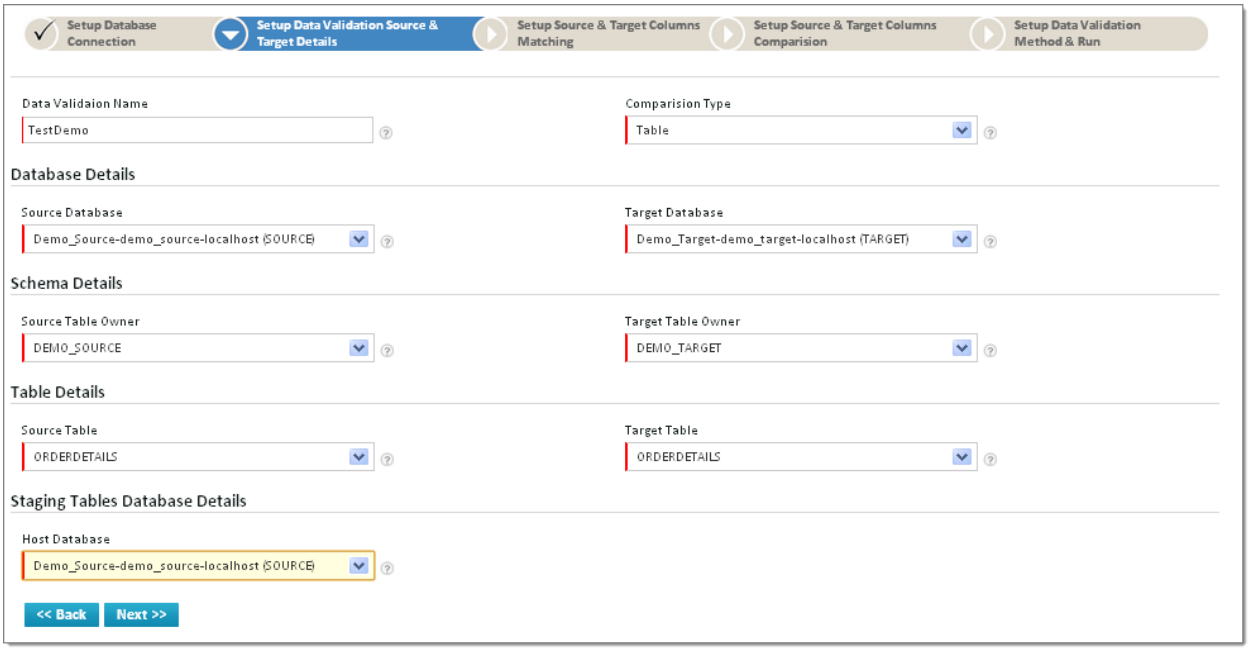


3. Once the database connection details are saved successfully, in order to test the connection to the database based on the given details, click ***Test Connection*** button.
    - If the database is connected successfully, a message stating the successful connection to the database will be prompted.
    - If the database connection fails, an alert message to verify the given connection details will be prompted.

- The fields marked as * are mandatory fields.
- To create a replica of database, click on ***Create Like*** link. In ***Setup Database Connection*** enter the name of the replica in the ***Name*** text field.

6.2 Setup Data Validation Source & Target Details

Once the database connection setup is completed, the user needs to configure the source and target details such as database details, schema details.



To configure the source and target details for data validation, do the following.

1. In ***Setup Data Validation Source & Target Details*** screen, define the name of the validation in the ***Data Validation Name*** text field.
2. Select an appropriate type of comparison from the ***Comparison Type*** drop down. Based on the type of comparison selected, the corresponding fields will be displayed on the screen.

   For example,

   - If ***Table*** is selected, then the data in the source table and target table will be validated (i.e., validation takes place between tables in the source and target database).
3. Select a database from the ***Source Database*** drop down list to define the source database for the data validation.
4. Select a database from the ***Target Database*** drop down list to define the target database for the data validation.
5. If ***Comparison Type*** is selected as "***Table***", then do the following:

   c. Select the intended schema/user from the ***Source Table Owner*** drop down list.

   d. Select the intended schema/user from the ***Target Table Owner*** drop down list.

e. Select the table from the ***Source Table*** drop down list, to extract the source data from the selected table for data validation process.

f. Select the table from the ***Target Table*** drop down list, to extract the target data from the selected table for data validation process.

6. If ***Comparison Type*** is selected as "***Custom SQL***", then do the following:

   a. Enter the SQL statement in the ***Source SQL Statement*** text box to extract the data from the source database based on the specified SQL statement. The extracted source data will be validated in the data validation process.

   b. Enter the SQL statement in the ***Target SQL Statement*** text box to extract the data from the target database based on the specified SQL statement. The extracted target data will be validated in the data validation process.

7. If ***Comparison Type*** is selected as "***Registered SQL***", then do the following:

   a. Select an appropriate registered custom SQL statement from the ***Source SQL Statement Names*** drop down list. Once the custom SQL Statement is selected, the corresponding SQL statement will be populated in the ***Source SQL Statement*** text box. Based on the custom SQL statement, the data will be extracted from the source database and facilitated for data validation process.

   b. Select an appropriate registered custom SQL statement from the ***Target SQL Statement Names*** drop down list. Once the custom SQL Statement is selected, the corresponding SQL statement will be populated in the ***Target SQL Statement*** text box. Based on the custom SQL statement, the data will be extracted from the target database and facilitated for data validation process.

8. Select the Host/Staging database for validation process from the ***Host Database*** drop down list.

9. Click ***Next*** button. Once the button is clicked, the data validation Source & Target details are saved. Then navigate to the next step (i.e., ***Setup Source & Target Column Matching*** screen) to configure the source and target columns for column matching.

- The fields marked as * are mandatory fields.
- Source or target database can also be a host database.
- When the ***Comparison Type*** is "***Registered SQL",*** the ***SQL Source SQL Statement*** text box and ***Target SQL Statement*** text box will be non-editable text fields.

- Both source database and target database must be homogenous. For example, Oracle to Oracle.

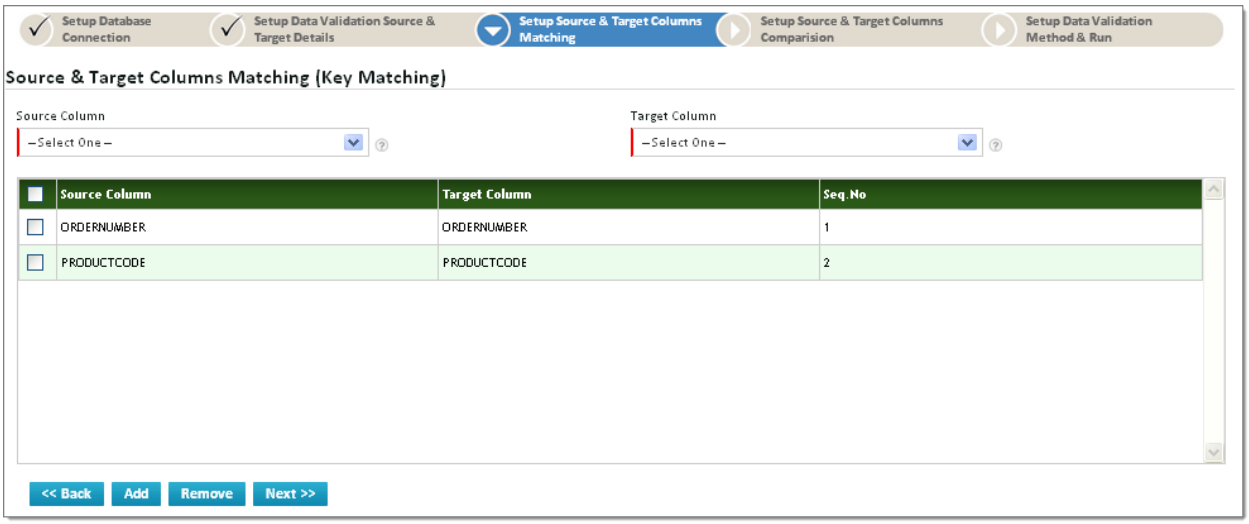
To understand the functionality of each field on the ***Setup Data Validation Source & Target Details*** screen, refer to the table given below.

Field Name	Description
Data Validation Name	Used to define a unique name for the data validation process.
Comparison Type	Comparison Type enables the user to compare the data in the validation process based on the comparison criterion such as Table, Custom SQL, and Registered Custom SQL. Based on the type of comparison selected, the corresponding fields will be displayed on the screen.
Source Database	Enables the user to enter the list of registered databases and define the source database for data validation process. Based on the comparison type selected, it provides feasibility to fetch the data from the source table or execute the custom query provided by the user.
Target Database	Enables the user to enter the list of registered databases and define the target database for data validation process. Based on the comparison type selected, it provides feasibility to fetch the data from the target table or execute the custom query provided by the user.
Source Table Owner	Used to display the list of table owners that exist in the source database and enable the user to select the intended schema/user from the Source Database.
Target Table Owner	Used to display the list of table owners that exist in the target database and enable the user to select the intended schema/user from the Target database.
Source Table	Displays the list of tables that exist in the selected Source Table Owner and enables the user to select a table from the source database for data validation process.
Target Table	Displays the list of tables that exist in the selected Target Table Owner and enables the user to select a table from the target database for data validation process.
Source SQL Statement	Provides feasibility to customize the SQL statement required to accomplish the data validation process. Based on the customized SQL statement, the data will be extracted from the selected source database for data validation process.
Target SQL Statement	Provides feasibility to customize the SQL statement required to accomplish the data validation process. Based on the customized SQL statement, the data will be extracted from the selected target database for data validation process.

Source SQL Statement Names	Displays the list of registered custom SQL statements which are already created in Solix EDMS Standard Edition (SE) and can be reused to perform data validation process. It enables the user to select the custom SQL statement in order to extract the data from the source database.
Target SQL Statement Names	Displays the list of registered Custom SQL Statements which are already created in Solix EDMS Standard Edition (SE) and can be reused to perform data validation process. It enables the user to select the custom SQL Statement in order to extract the data from the target database.
Host Database	Display the list of databases and enables the user to select the Host/Staging database for validation process. The host database stores both the source and target data which are copied from the respective databases for validation process. Also, the validation results are stored in host database. Note: Source or target database can also be a host database.

6.3 Setup Source & Target Column Matching

Once the source and target details are defined for the data validation process, the user needs to configure the source and target columns. This is done by selecting the primary key or unique index column from the source and target table required to register for column matching.



To setup source and target column matching, do the following:

1. In ***Setup Source & Target Column Matching*** screen, select the intended column from the ***Source Column*** drop down list. This list is extracted from the source table/SQL. The primary key or unique index column is selected to register for matching the column.
2. Select the intended column from the ***Target Column*** drop down list which are extracted from the target table/SQL. The primary key or unique index column is selected to register for matching the column.
3. Click ***Add*** button, to save the source and target column matching information. Once the information is saved successfully, a message stating "***Source & Target Column Matching Saved Successfully"*** is prompted on the screen and the respective column matching setup will be appended in the list.
4. Click ***Next*** button, to navigate to the next step. The ***Setup Source & Target Column Comparison*** screen will be displayed to setup an appropriate source and target column for comparison based on the specified criteria.

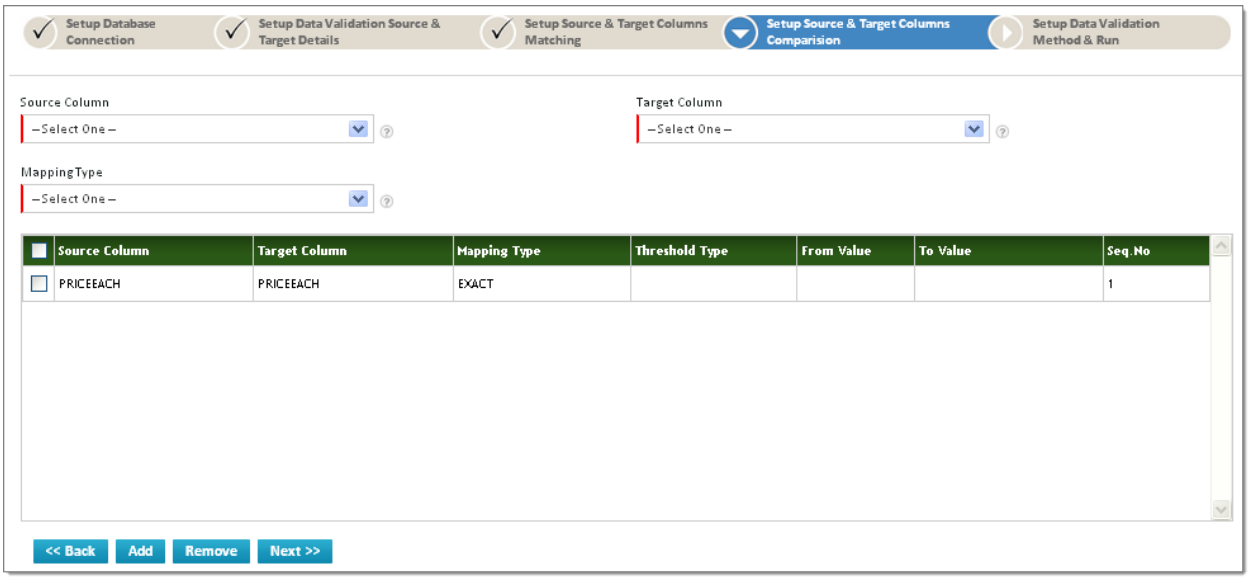
- The fields marked as * are mandatory fields.
- The source and target column matching information configured in the ***Setup Source & Target Column Matching*** screen are appended sequentially in the list.
- When multiple column matchings are configured, ***Add More*** button will appear in place of ***Add*** button.

To understand the functionality each field on the ***Setup Source & Target Column Matching*** screen, refer to the table given below.

Field Name	Description
Source Column	Display the list of columns that exist in the source table/SQL. It enables the user to select the primary key or unique index column in order to register for column matching.
Target Column	Display the list of columns that exist in the source table/SQL. It enables the user to select the primary key or unique index column in order to register for column matching.
Add	This button enables the user to add the information associated to the source & target columns configured for column matching in the list.

6.4 Setup Source & Target Column Comparison

The ***Setup Source & Target Column Comparison*** screen enables the user to configure the source and target column for comparison in the validation process based on the given validation mapping criteria.



To setup the source and target column for validation mapping, do the following:

1. To validate the data of a column in the data validation process, select that column of the source table/SQL from the ***Source Column*** drop down list.
2. Select a column of the target table/SQL that needs to be validated from the ***Target Column*** drop down list.
3. Based on the data type of Source and Target Column, the corresponding option will be prompted in the ***Mapping Type*** drop down list, to perform validation effectively based on the criteria selected.
    - For ***Character*** columns, ***Exact Match*** option will be prompted in the ***Mapping Type***. This option enables to validate the data of Source and Target Column exactly.
    - For ***Numeric or Date*** columns, ***Define Threshold*** option will be prompted in the ***Mapping Type.*** This option enables to validate the data based on Threshold Type (i.e., Range Difference, Percentage Difference or Fixed Value) selected.
4. If Threshold option is selected, the ***Threshold Type*** drop down and ***Threshold Value*** text field appears on the screen.

a. Select an appropriate type of threshold required for validation mapping from the ***Threshold Type*** drop down. (i.e., Range Difference, Percentage Difference or Fixed Value).

b. Based on the threshold type selected, enter the relevant valve in the ***Threshold Value*** text field.

5. Click ***Add*** button, to save the selected source and target column information to validate the data between source and target database accordingly. Once the information is saved successfully, a message stating "***Source & Target Column Comparison Saved Successfully"*** is prompted on the screen and the respective column comparison setup will be appended in the list.

6. Click ***Next*** button, to navigate to the next step. The ***Setup Data Validation Method & Run*** screen will be displayed to setup an appropriate method for data validation process and execute it effectively.

- The fields marked as are mandatory fields.
- In ***Source Column*** and ***Target Column*** drop down, "***All Columns***" option provides feasibility to register all the columns in source and target tables for comparison (i.e., validation). Exclusively, it is applicable when both the source and target tables contains same column name. In such cases, the Mapping Type should be "Exact Match".
- When multiple column comparison is configured, ***Add More*** button will appears in place of ***Add*** button.
- For ***Date*** columns, only ***Range Difference*** and ***Fixed Value*** options are prompted in the ***Threshold Type*** drop down and enables to validate the data based on the selected threshold type.

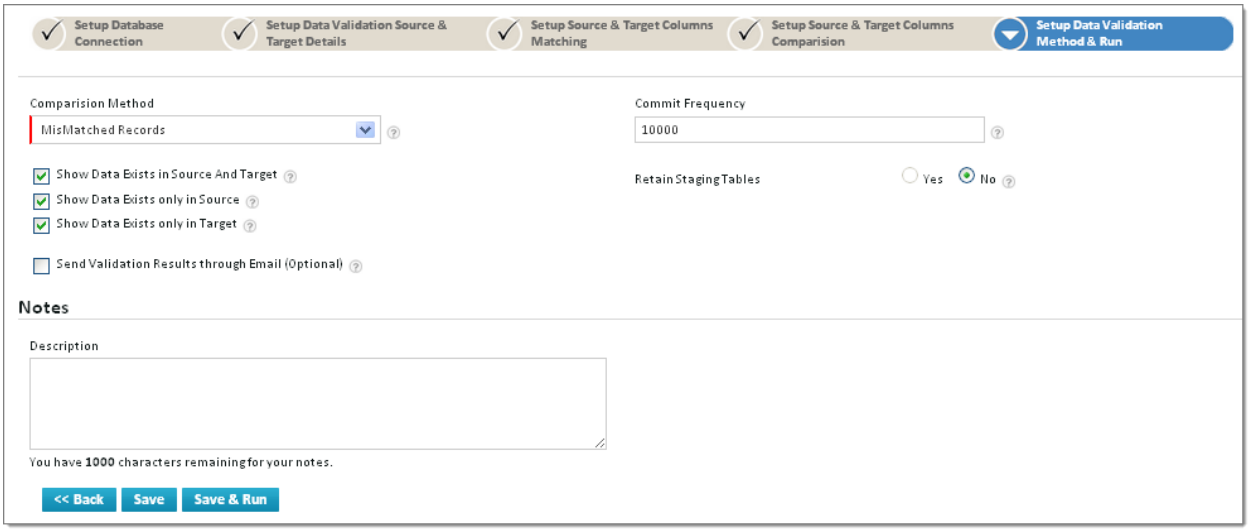
To know more about the functionality of each field on the ***Setup Source & Target Column Comparison*** screen, refer to the table given below.

Field	Description
Source Column	Displays the list of columns from source table/SQL. This column enables to validate the data between source and target databases.
Target Column	Displays the list of columns from target table/SQL. This column enables the user to validate the data between source and target databases.
Mapping Type	This drop down list provides the flexibility to select the criteria to perform the mapping in the validation process effectively. • ***Exact Match*** – It enables the user to

	validate the data only if it matches exactly. • ***Define Threshold*** - It enables the user to validate the data based on Threshold Type.
Threshold Type	Threshold Type enables the user to select an appropriate type of threshold required for Validation mapping (i.e., Range Difference or Percentage Difference or Fixed Value). • ***Range Difference*** compares the difference values of source and target columns in the given range of ***Threshold From Value*** and ***Threshold To Value***. • ***Percentage Difference*** compares source and target columns percentage difference value which should be less than or equal to given Threshold value. • ***Fixed Value*** compares the difference value of source and target columns which should be less than or equal to the given Threshold value.
Threshold Value	Threshold value field appears on the screen, only when Threshold Type is selected as Percentage Difference or Fixed Value. It enables the user to enter the percentage value / fixed value for threshold. For example, when Threshold Type = "Fixed Value" and Threshold value = "10", it is considered as 0-10.
Threshold from Value	Threshold From value field appears on the screen, only when Threshold Type is selected as Range Difference. It enables the user to initialize the "From" value of threshold which implies that the value for threshold starts from the specified value.
Threshold To Value	Threshold To value field appears on the screen, only when Threshold Type is selected as Range Difference. It enables the user to initialize the "To" value of threshold, which implies that the value for threshold is considered till the specified value.

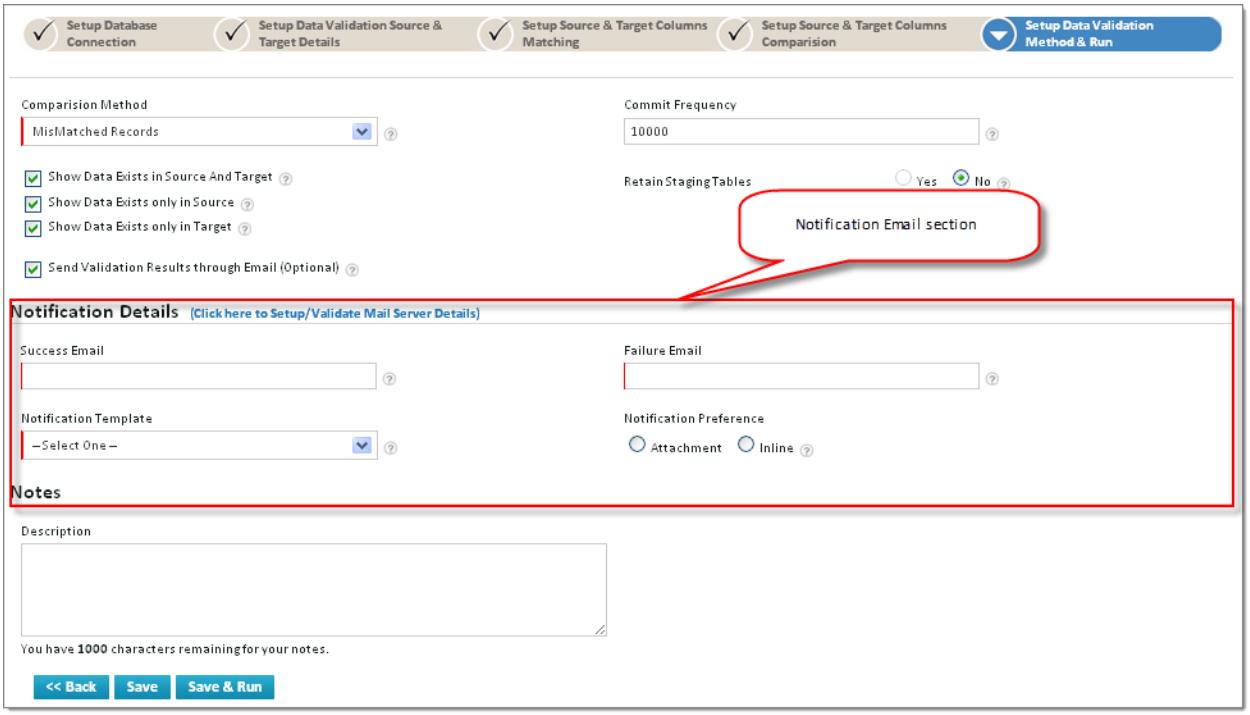
6.5 Setup Data Validation Method & Run

The ***Setup Data Validation Method & Run*** screen enables the user to configure the method for data validation process and execute the data validation process effectively.



To setup a method for data validation process and execute it, do the following:

1. Select an appropriate method for comparison of data from the ***Comparison Method*** drop down list. (i.e., Matched Records or MisMatched Records).
    - If "***Matched Records***" option is selected, the tool identifies the data which are matched in both source and target databases. The ***Show Data Exists in Source And Target*** check box will be visible on the screen.
    - If "***Mismatched Records"*** option is selection, the tool identifies data which are not matched in both source and target databases. The ***Show Data Exists in Source and Show Data Exists in Target*** check box will also appear on the screen.
2. Enter the frequency value in the ***Commit Frequency*** text field, to commit data after specified number of rows from both source and Target Databases.
3. Select ***Yes/No*** option in the ***Retain Staging Tables***, to retain the staging tables or not.
    - By default "***No***" option is selected, because this version of the tool - Solix EDMS Standard Edition (SE) does not support retaining staging tables. The validation staging tables will be dropped automatically.
4. To send the notification email to the user, select the ***Send Validation Results through Email (Optional)*** check box to provide email information. Once the check box is selected, automatically the notification email section will be populated on the screen as shown in the figure below.



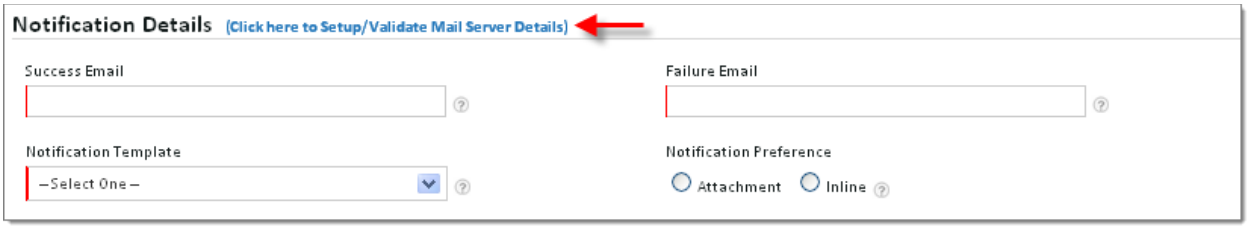
5. In ***Notification Email*** section, enter the email address in the ***Success Email*** text field, to whom the notification emails should be sent when the source and target matches exactly, or within the defined threshold percent or range. It is recommended to use comma/semicolon to enter multiple users email address list.

6. Enter the email address in the ***Failure Email*** text field, to which the notification emails should be sent when the source and target don't match exactly, or their differences exceeds the defined threshold percent or range. It is recommended to use comma/semicolon, to enter multiple users email address list.

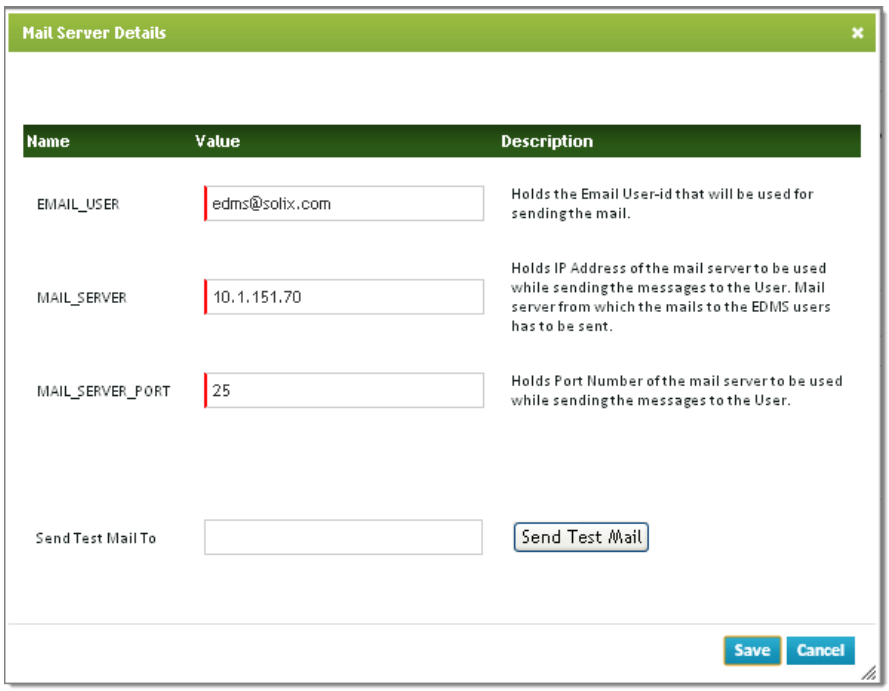
7. Select the template for the notification from the ***Notification Template*** drop down list, for sending (i.e., emailing) the validation results.

8. Select the required preference from the ***Notification Preference*** drop down list (i.e., Attachment or Inline). Based on selected value, results would be sent as an attachment or an inline text of a mail.

    a. To setup the mail server details for the respective execution, click (Click here to Setup/Validate Mail Server Details) link appears adjacent to the ***Notification Details*** as shown in the figure below.



    b. The ***Mail Server Details*** popup window will be prompted as shown in the figure below.



c. Enter the email-id of the user in the ***EMAIL_USER*** text field.

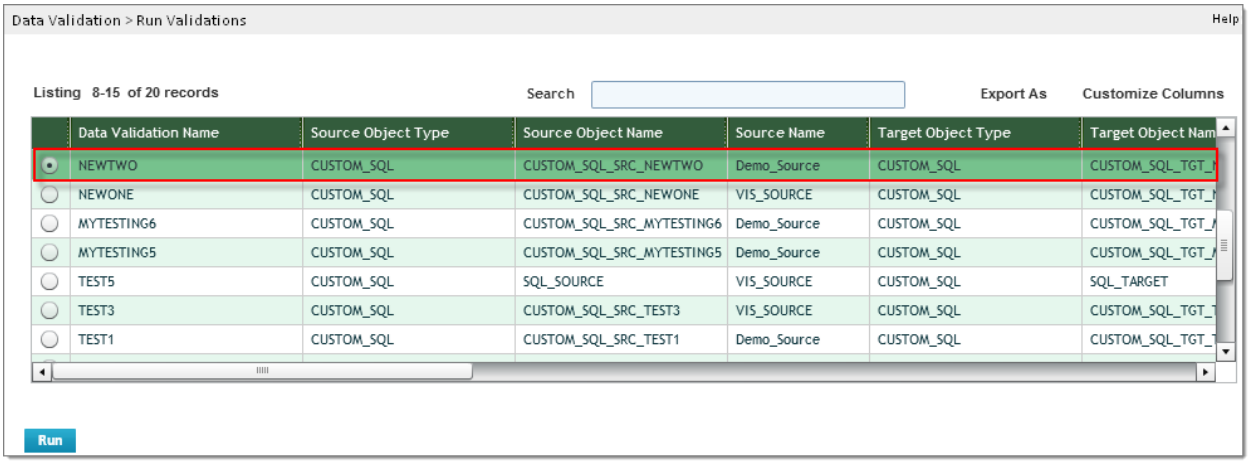
d. Enter the IP address of the email server in the ***MAIL_SERVER*** text field.

e. Enter the Port number of the email server in the ***MAIL_SERVER_PORT*** text field.

f. To send a test mail, enter the email-id of the user in the ***Send Test Mail To*** text field. Click ***Send Test Mail*** button, to send the test mail to the specified email-id.

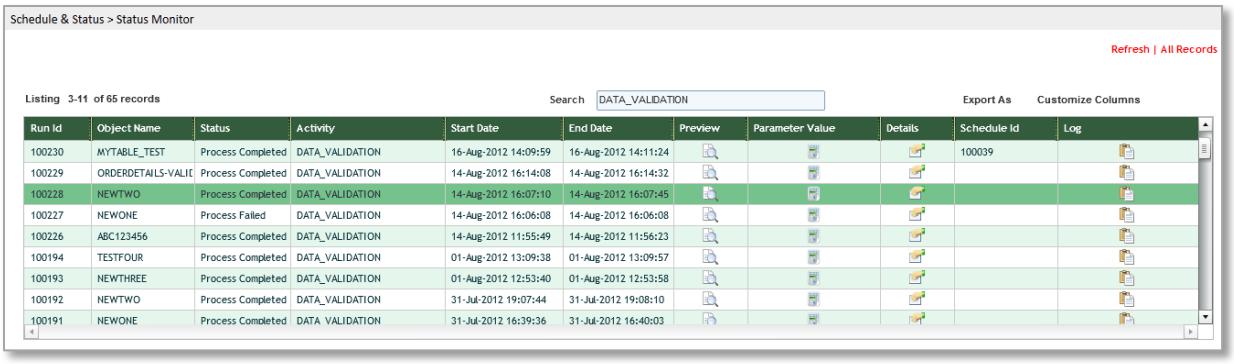
9. The data validation process can be executed to two ways,

- Click ***Save & Execute*** button, to save the method of data validation and execute the data validation process accordingly. The Run ID for the respective job will be depicted in the ***Run Schedule*** screen.
- Click ***Save*** button, to save the method of data validation successfully. The screen automatically navigates to the ***Run Validation*** (***Data Validation > Run Validation***) screen to execute the respective data validation process as shown in the figure below.

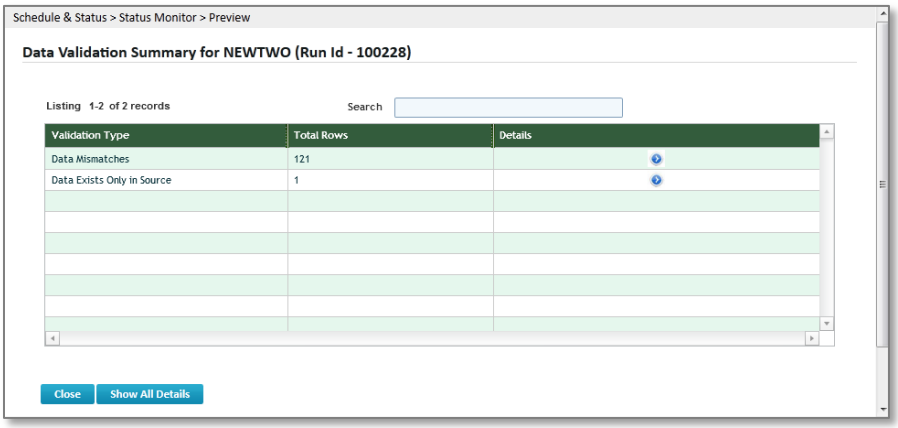


- Click ***Run*** button, to execute the process. The Run ID for the respective job will be generated in the ***Run Schedule*** screen.

10. To monitor the status and view the details of the job, click Run ID or navigate to the ***Status Monitor*** screen (***Schedule & Status>Status Monitor***).



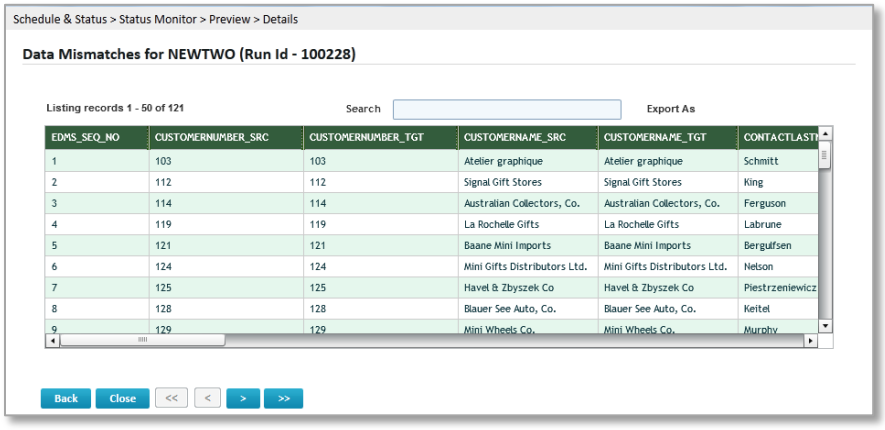
11. To view the validation result, click ***Preview*** icon of the corresponding Run ID. The ***Data Validation Summary*** screen will be displayed with consolidated results of validations executed based on the criteria selected (i.e., validation type) in the validation process as shown in the figure below.



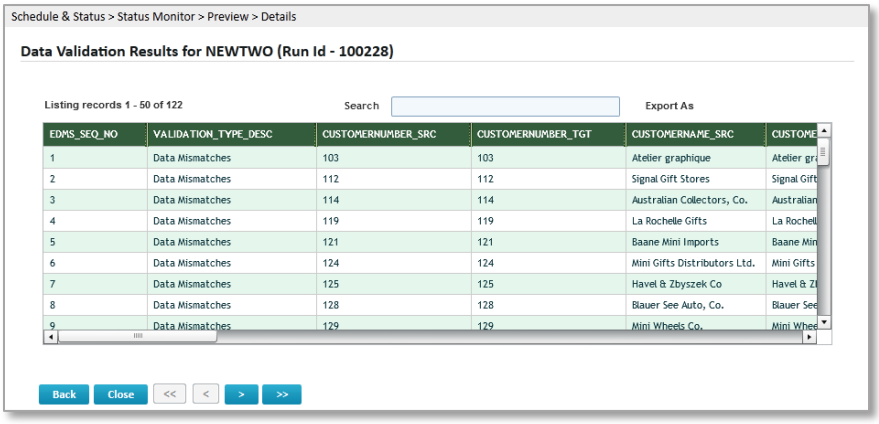
- To view the detailed results of validation according to the validation type, click button of the corresponding validation type.

For example,

To view the results of ***Data Mismatches***, click corresponding button. The ***Details*** screen will be displayed with the detailed information of ***Data Mismatches*** as shown in the figure below.



- To view the detailed results of all validations executed in the respective Run ID, click ***Show All Detail***s button in the ***Data Validation Summary*** screen. The ***Details*** screen will be displayed will the ***Data Validation Results*** as shown in the figure below.



- The fields marked as are mandatory fields.
- In ***Retain Staging Tables,*** "***Yes***" option is disabled because Solix EDMS Standard Edition (SE) application does not support Retain Staging Tables feature.
- To limit the rows in the notification results, set the value of ***RECON_RESULTS_MAIL_LIMIT*** parameter in the ***Parameter*** screen (Admin> Manage Source/Target Dictionary>Parameter). For example, to limit the rows to 500 then set the default value of ***RECON_RESULTS_MAIL_LIMIT*** to "500". Henceforth, the notification result will display 500 rows exclusively.

To understand the functionality of the fields on the ***Setup Data Validation Method & Run*** screen, refer to the table given below.

Field	Description
Comparison method	Comparison method enables the user to identify the characteristic of data in Validation process (i.e., Matched Records or Mismatched Records). • Matched Records identifies the data in the Validation process which are matched in both source and target databases. The Show Data Exists in Source And Target check box will be visible on the screen. • Mismatched Records identifies the data in the Validation process which are not matched in both source and target databases.
Commit Frequency	Commit Frequency configures the tool to commit data once certain number of rows processed from both source and Target Databases. Basically, this option optimizes the resources on database when handling huge volumes of data. Optimum value should be 10000 but user can also use higher number based on resources availability on databases used in validation process.
Show Data Exists in Source and Target	This option is deployed to reconcile the data which exist in both source and target (Matched or Mismatched data) and extract the data based on Comparison method selected. Suppose, if Mismatched Records is selected, the data which are mismatched in both source and target will be extracted.
Show Data Exists in Source	Once the data in source and target is compared, this option is deployed to extract the data that only exist in source but does not exist in target. Note: This option will be visible only when the Comparison method is selected as Mismatched Records
Show Data Exists in Target	Once the data in source and target is compared, this option is deployed to extract the data that only exist in target but does not exist in source. Note: This option will be visible only when the Comparison method is selected as Mismatched Records.
Retain Staging Tables	This feature facilitates the user to select whether to retain the staging tables or not. • "Yes"- To fetch the validation results

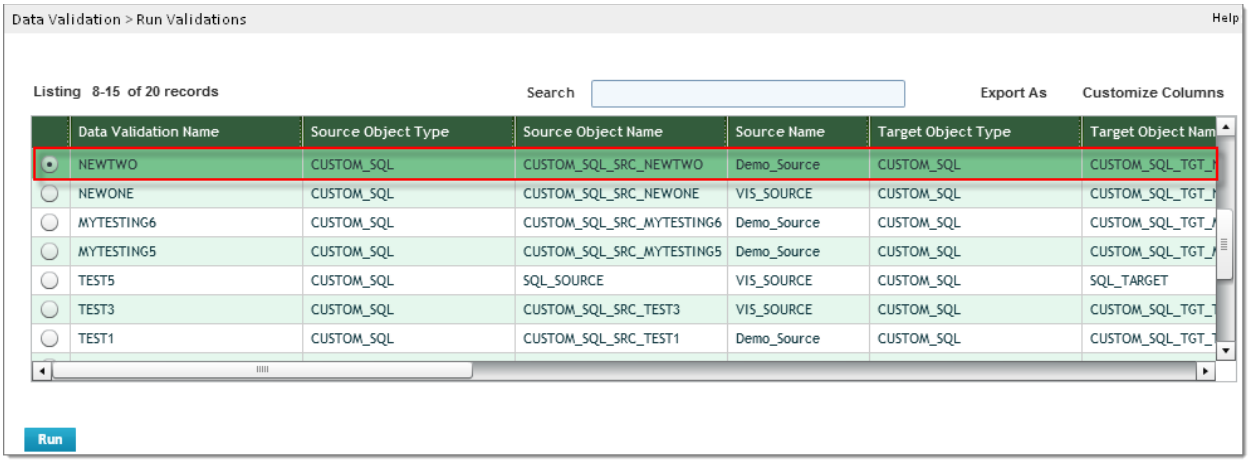
	from the staging tables and display in the Preview screen. Whenever the tables are not required for verification or review process, the staging tables can be deleted manually. • "No" – To delete the validation staging tables automatically. The validation results will not be displayed in the Preview screen. ***Note:*** In ***Retain Staging Tables,*** "***Yes***" option is disabled because Solix EDMS Standard Edition (SE) application does not supports Retain Staging Tables feature.
Success Email	Enter the email address of users to whom the notification emails should be sent when the source and target matches exactly, or within the defined threshold percent or range. It is recommended to use comma/semicolon while entering multiple users in the email address list.
Failure Email	Enter the email address of users to whom the notification emails should be sent when the Validation process fails. It is recommended to use comma/semicolon to enter multiple users email address list.
Notification template	Display the list of templates designed to send the notification of validation results. Once the Notification template is selected, the validation results will be incorporated into the selected notification template for sending (i.e., emailing) the notification email to the user.
Notification Preference	Notification Preference provides flexibility to send the validation result in the mail as an Attachment or Inline to the mail. Based on selected value results, the mail will be sent as an attachment or an inline text.
MAIL_SERVER	IP address of the email server to which the emails will be send.
MAIL_SERVER_PORT	Port number of the email server which is used to sent the emails.
EMAIL_USER	Email address of the user to which the notification emails will be sent.
Send Test Mail To	This field enables the user to enter the email address of the user to send the test mail.
Send Test Mail	This button is deployed to send the test mail to the specified email-id.

7 Rerun the Data Validation

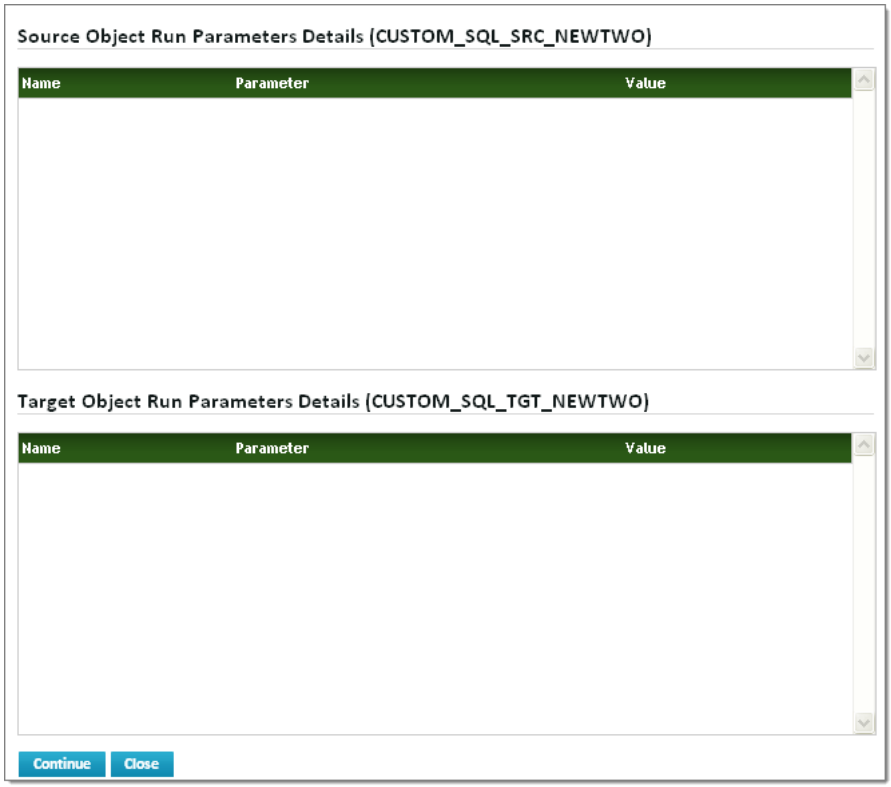
Once the data validation is created and executed successfully, it will be automatically appended to the ***Run Validation*** Screen (***Data Validation >Run Validation***). Furthermore, if the user wants to rerun the data validation, the Solix EDMS Standard Edition (SE) provides feasibility to rerun the executed data validation recursively.

To rerun the data validation, do the following:

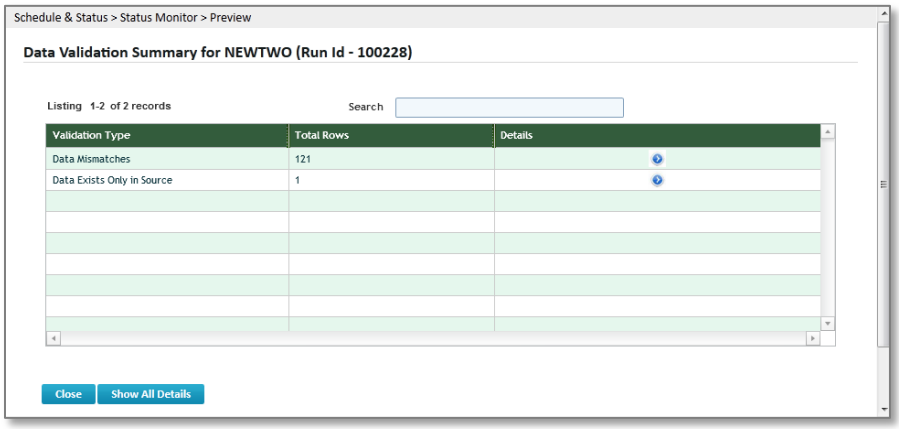
1. Navigate to the following path: ***Data Validation >Run Validation.*** The ***Run Validation*** screen will be displayed as shown in the figure below.



2. Select the radio button adjacent to the intended data validation and click ***Run*** button. The ***Run Parameter*** screen appears to enter the parameter value at run time as shown in the figure below.



3. Click ***Continue*** button, to execute the data validation process. A Run ID will be generated and displayed in the ***Run Schedule*** screen.
4. To monitor the status and view the details of the job, click Run ID or navigate to the ***Status Monitor*** screen (***Schedule & Status>Status Monitor***).
5. To view the validation result, click ***Preview*** icon of the corresponding Run ID. The ***Statistics*** screen which shows the validation results is displayed as shown in the figure below.



8 User Management

User management handles the comprehensive information of the user and knowledgebase in the Solix EDMS Standard Edition (SE) application, which enable the user to create instant custom configurations efficiently. To setup a configuration and perform validation process, firstly the user must be registered in the application and be, assigned a user role. The user must define a knowledgebase to access the metadata in the database (both source and target database). Also, the user should have thorough knowledge of the relationships among the selected tables while creating the configurations. Inappropriate configurations may result in nullified data relationships in the tables or loss of referential integrity.

This chapter outlines the procedure to setup users, define source & target database, define a knowledgebase and assign user to the knowledgebase. Also, it navigates through the process to create a knowledgebase (KB) in the Solix EDMS Standard Edition (SE) application successfully. The topics included are listed below:

- User Creation
- User Role Creation.
- KB Source & Target Definitions
- KB Definition
- KB Assignments

To perform administration activities, click  bar appears on the left hand side of the screen. Once the bar is clicked, the administrative menus will be opened on the screen as shown below.

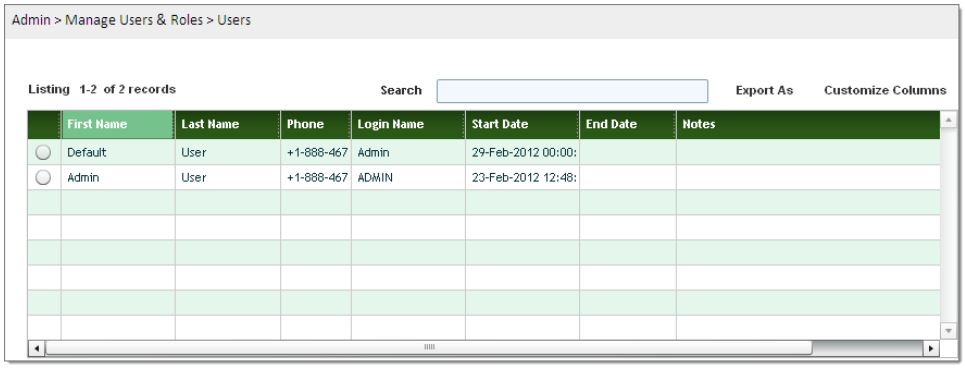
8.1 User Creation

User should be registered in the Solix EDMS Standard Edition (SE) application to access / perform validation process. This feature enables the user to add/edit the user information in the Solix EDMS Standard Edition (SE). This section illustrates the process to create and manage the user information.

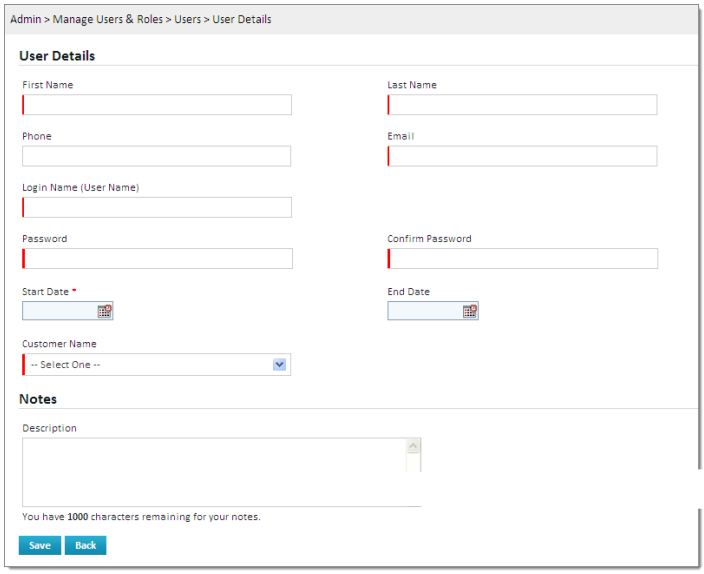
8.1.1 Creating User

To create a new user, do the Following:

1. Place cursor at ***Admin*** tab in the main menu. The list of submenus incorporated in in the Admin menu is displayed.
2. Select ***Manage Users & Roles*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***Users*** option from the drop down. The ***Users*** screen with the list of existing users will be displayed as shown in the figure below.



4. To create a new user, click ***Add*** button. The ***User Details*** page will appear where the information corresponding to the user can be entered as shown in the figure below.



5. In the ***User Details*** screen, do the following:

a. Enter first name and last name of the user in the corresponding text fields.

b. Enter contact number of the user in the ***Phone*** text field.

c. Enter email-id of the user in the ***Email*** text field. Enter user name or login name of the user in the ***Login Name (User Name)*** text field.

d. Enter the password of the corresponding username in the ***Password*** text field.

e. Re-enter the password in the ***Confirm Password*** text field.

- In both ***Username*** and ***Password***,
  - Minimum of three characters must be entered.
  - Both upper and lower cases are allowed.
  - Spaces are not allowed in between the characters in Username.
- Special characters are not allowed in the Username. Only alphabets, underscores "_" and numeric characters are allowed. The first character must be alphabet.
- Alpha-numeric characters and special characters are allowed in passwords.

f. Enter ***Start Date*** in the corresponding field by selecting a date from the ***Calendar***.

g. Enter ***End Date*** in the corresponding field by selecting a date from the ***Calendar***. End Date should not be less than Start Date.

h. Select a ***Customer Name*** (i.e., name of the Client Organization) from the corresponding drop-down list.

i. Click ***Save*** button. Once the information is saved successfully, the message "***User is saved. Please go to KB Assignments and assign a KB to the User.***" will be prompted on the screen.

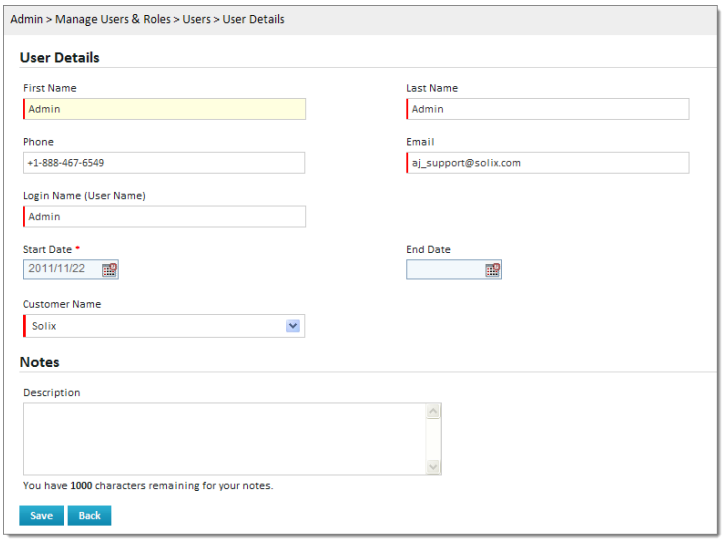
- If the details provided are invalid, a warning message will be prompted.
- If the login user name already exists, then the user will not be created and a message "***User Name Already exists. Please try giving some other name*** "will be displayed.

- The field marked as " "are mandatory fields.
- To select date from the ***Calendar***, click the adjoining icon .
- If the user is already created but the user role is not assigned to the respective user, then the Solix EDMS Standard Edition (SE) will restrict the user to login to the application even though the user id is valid.
- The user is not allowed to access the Solix EDMS Standard Edition (SE) application before the specified start data and after the specified end date.

8.1.2 Editing an Existing User

This section explains the process to edit the information of the existing user which is defined during user registration in the application. To edit an existing user, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu. The list of submenus is displayed.
2. Select ***Manage Users & Roles*** option from the submenu. A list of options is displayed in the drop down.
3. Click ***Users*** option from the drop down. The ***Users*** screen with the list of existing users will be displayed.
4. From the users list, select the radio button adjacent to the desired user.
5. Click ***Edit*** button. The ***User Details*** page with the information corresponding to the selected user will be displayed as shown in the figure below.



6. In the ***Edit User Details*** screen, do the following:
    a. Make the necessary changes in the required fields.

b. Click ***Save*** button, to save the modified information. A message stating "**User is Updated**" will be prompted on the screen.

- The fields marked as and * are mandatory fields.
- To select date from the ***Calendar*,** click the adjoining icon  .
- To return to the ***Users*** list screen from ***Add / Edit Details*** screen, click ***Back*** button.

8.2 User Role Creation

Once the user is created in the application, the user is restricted to access the Solix EDMS Standard Edition (SE) application until a role is assigned to the user, even though the user is a valid user. This feature enables the user to define a role which can be assigned to new/existing user. This section explains the process to add and manage the user role information.

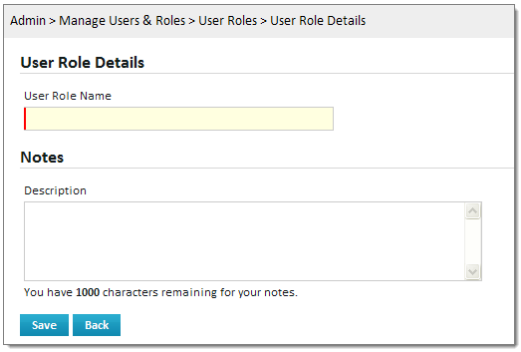
8.2.1 Navigation

To access ***User Roles*** link, login to Solix EDMS Standard Edition (SE) and follow the path*:* ***Admin > Manage Users & Roles > User Roles.***

8.2.2 Add a User Role

To add a new user role, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu. The list of submenus is displayed.
2. Select ***Manage Users & Roles*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***User Roles*** option from the drop down. The ***User Roles*** screen with the list of existing user roles is displayed as shown in the figure below.
4. Click ***Add*** button. The ***User Role Details*** screen appears which allows the user to enter the information corresponding to the user role.



5. In ***User Role Details*** screen, do the following:
    a. Enter the name of the user role in the ***User Role Name*** text field.
    b. Enter comments associated to user role in the ***Notes*** text field.
    c. Click ***Save*** button. Once the information is saved successfully, a confirmation message will be prompted on the screen.

- The fields marked as and * are mandatory fields.
- If the details provided are invalid, a warning message dialog box will be prompted.
- If the user role name already exists, a warning message about duplicate name will be prompted in the dialog box.

8.2.3 Editing an Existing User Role

To edit an existing user role, do the following:

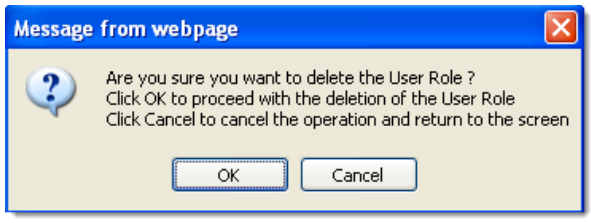
1. From the user roles list screen, select the radio button adjacent to desired user role.
2. Click ***Edit*** button. The ***User Role Details*** screen with the information corresponding to the selected user role will be displayed.
3. In ***Edit User Role Details*** screen, do the following:
    a. Make the necessary changes in the required fields.
    b. Click ***Save*** button, to save the modified information. Once the modified information is updated successfully, a confirmation message will be prompted.

- The fields marked as and * are mandatory fields.
- If the details provided are invalid, a warning message dialog box will be prompted
- To return to the ***User Role list*** screen from ***Add / Edit Details*** screen, click ***Back*** button.

8.2.4 Deleting User Role

To delete the user role, do the following:

1. In the ***User Roles*** page, select the radio button adjacent to the desired user role in the list.
2. Click ***Edit*** button. The ***User Role Details*** screen with the information corresponding to the selected user role will be displayed.
3. To delete the user role, click ***Delete*** button. A message stating that ***"Are you sure you want to delete the User Role?"*** will be prompted as shown in the figure below.



– Click ***Ok*** button, to delete the ***User Role***.

– Click ***Cancel*** button, to deny the deletion.

- User roles which have already been assigned to the user cannot be deleted.

8.3 KB Source Target Definition

For the validation/data archiving process, it is mandatory to ensure the connectivity details associated with the source and target databases. This feature is designed to register the source or target database machine details in order to build the connectivity between both the databases while performing any activity in the Solix EDMS Standard Edition (SE) such as data validation, data masking, column comparison, and so on.

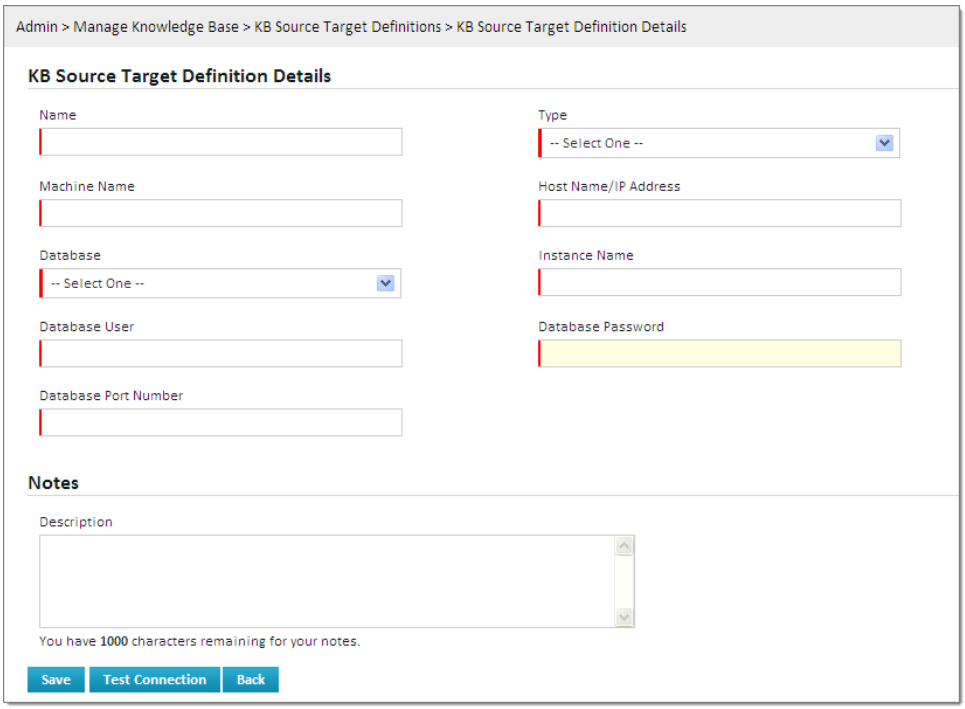
8.3.1 Navigation

To access ***KB Source Target Definitions*** link, login to Solix EDMS Standard Edition (SE) and follow the path: ***Admin > Manage Knowledgebase (KB) > KB Source target Definitions.***

8.3.2 Add New KB Source Target Definitions

To add a new KB source target definition, do the following:

1. Place cursor at ***Admin*** tab in the main menu. The list of submenus will be displayed.
2. Select ***Manage Knowledgebase (KB)*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***KB Source Target Definitions*** option from the drop down. The ***KB Source Target Definitions*** screen with the list of existing KB source target definitions will be displayed.
4. Click ***Add*** button, to add new source or target in the knowledgebase. The ***KB Source Target Definition Details*** screen appears where the information corresponding to the KB source target definition can be entered.



5. In ***KB Source Target Definition Details*** screen, do the following:

a. Enter the ***Name*** in the corresponding field.

b. Select the ***Type (Source or Target)*** from the corresponding drop down list.

c. Enter the ***Machine Name*** in the corresponding field.

d. Enter the ***Host Name/IP Address*** in the corresponding field. Here, the user can provide either hostname or IP Address.

e. Select ***Database*** (i.e., Oracle) from the corresponding drop-down list.

f. Enter ***Instance Name*** in the corresponding field.

g. Enter ***Database User*** in the corresponding field.

h. Enter ***Database Password*** in the corresponding field.

i. Enter ***Database Port Number*** in the corresponding field.

j. Enter the comments in the ***Notes***.

k. Click ***Save*** button. Once the KB source or target is saved successfully, a confirmation message will be prompted on the screen.

l. Once the KB source or target is saved successfully, in order to verify the database connection click ***Test Connection*** button.

- Based on the KB source or target details provided, if the database is connected successfully, then a message indicating the successful connection to the database will be prompted on the screen.
- Based on the KB source or target details provided, if the connection to the specified database fails, an alert message will be prompted on the screen.

- The field marked as " " are mandatory fields.

Fields	Functionality
Name	Define a unique name of the KB source or KB target database.
Type	It enables the user to define whether the knowledge is associated to the source or target database.
Machine Name	This text box enables the user to define the machine name of server associated to ***Type*** selected (i.e., source or target).
Host Name / IP Address	This text box enables the user to define the host name of server associated to ***Type*** selected or IP address associated to the source or target database. Here, the user is provided an option to enter either hostname or IP Address.

Fields	Functionality
Database	This drop down enables the user to select the type of database (i.e., Oracle).
Instance Name	It allows the user to provide the instance name/service name of the source or target database.
Database User	It enables the user to enter the database user name of the source or target database.
Database Password	It enables the user to enter the database password corresponding to the given username of the source or target database.
Database Port Number	It enables the user to specify the port number of the source or target database.
Notes	It facilitates the user to enter the description associated to the KB source or KB target database.
Save	This button is deployed to verify the source or target database connectivity. If the given details are valid, the connectivity will be established and saved.
Test Connections	This button is deployed to verify the connectivity to the specified database. • If the given details are valid, the database connectivity will be established and saved. • If the given details are not valid, the database connectivity fails and alerts the user to verify the details.
Back	This button is employed to navigate to the previous screen from current screen.

8.4 KB Definitions

Once the source or targets database information is registered in Solix EDMS Standard Edition (SE), the user should define a knowledgebase associated with the connectivity of source and target database to perform the archiving/ validation process effectively. This feature enables the user to create a knowledgebase and define the source and target for the respective KB. Solix EDMS Standard Edition (SE) is capable of populating metadata information of custom tables available in databases (i.e., source and target) into the respective knowledgebase automatically. Also, it maintains tables, columns, table relations and joins created in application which are used to build configuration to perform data archiving and data validation process.

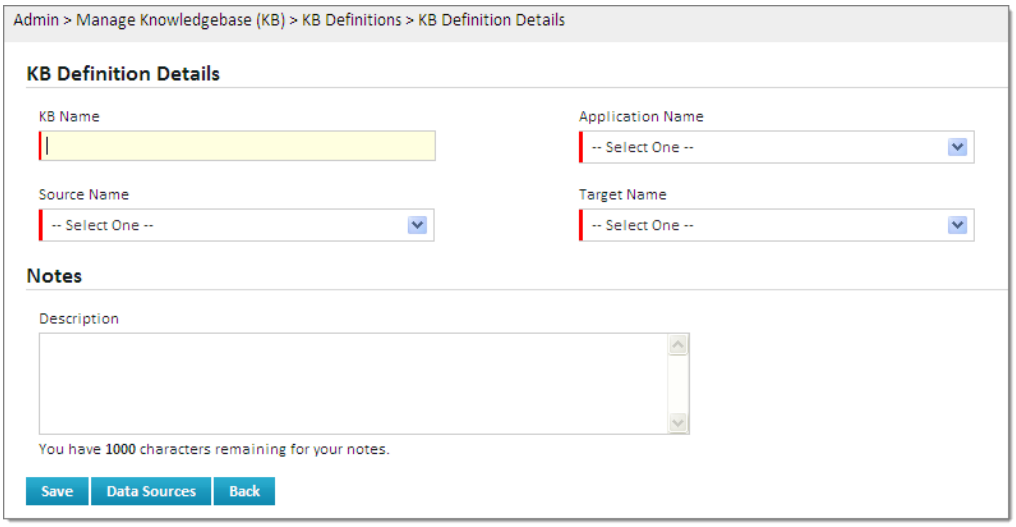
8.4.1 Navigation

To access ***KB Definitions*** link, login to Solix EDMS Standard Edition (SE) and follow the path: ***Admin > Manage Knowledgebase (KB) > KB Definitions.***

8.4.2 Define a new KB Definitions

To add a new KB definition, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu. The list of submenus is displayed.
2. Select ***Manage Knowledgebase (KB)*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***KB Definitions*** option from the drop down. The ***KB Definitions*** screen with the list of existing KB definitions will be displayed.
4. Click ***Add*** button. The ***KB Definition Details*** screen appears to define the source and target databases to the knowledgebase.



5. In the ***KB Definition Details*** screen, do the following:
    a. Enter the name of the knowledgebase in ***KB Name*** text field to register the knowledgebase with the specified name in the Solix EDMS Standard Edition (SE).

b. Select an ***Application Name*** from the corresponding drop down list.

c. Select an appropriate source for the KB from the ***Source Name*** drop down list.

d. Select an appropriate target for the KB from the ***Target Name*** drop down list.

e. Enter the comments in the ***Notes.***

f. Click ***Save*** button. Once the KB definition is saved successfully, the respective KB definition will be registered in the application and a confirmation message will be displayed.

- The field marked as " "are mandatory fields.

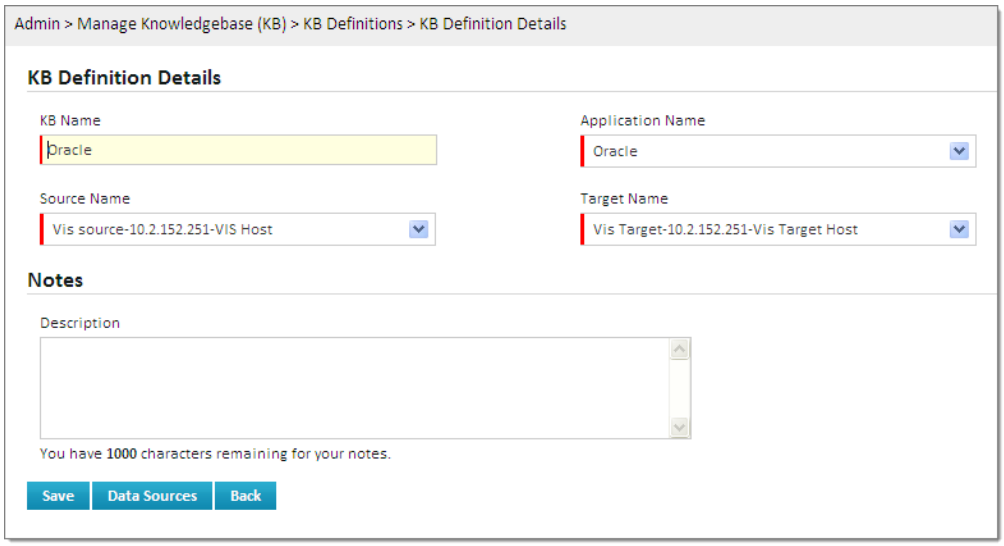
Fields	Functionality
KB Name	It enables the user to define the name of the knowledge base.
Application Name	This drop down list displays the list of applications registered in the Solix EDMS Standard Edition (SE). It enables to define application associated to the knowledgebase.
Source Name	Displays the list of source databases registered in the ***KB Source Target Definitions*** and enables the user to define the source to the knowledge base.
Target Name	Displays the list of KB target databases registered in the ***KB Source Target Definitions*** and enables the user to define the target to the knowledge base.
Notes	It allows the user to enter the description associated to the KB definition
Save	This button is deployed to save the KB definition.
Data Sources	This button is deployed to assign multiple data sources (i.e., source or target) to a single KB. It facilitates to extract and validate the data of various tables from the different source or target databases.
Back	This button is employed to navigate to the previous screen from current screen.

8.4.3 Assigning Data Source

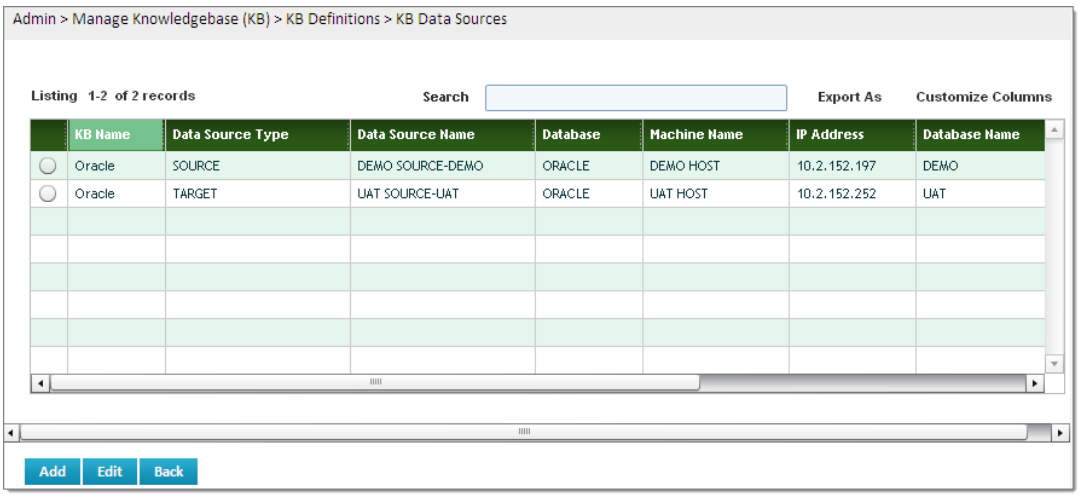
Data Source enables the user to assign the multiple data sources/targets to a single knowledgebase. Also, it manages to extract and validate the data of various tables from different source/target databases during archiving/validation process. (Note: Data source can be employed only for the saved KB definitions).

To assign an additional data source (i.e., source or target) to the KB, do the following:

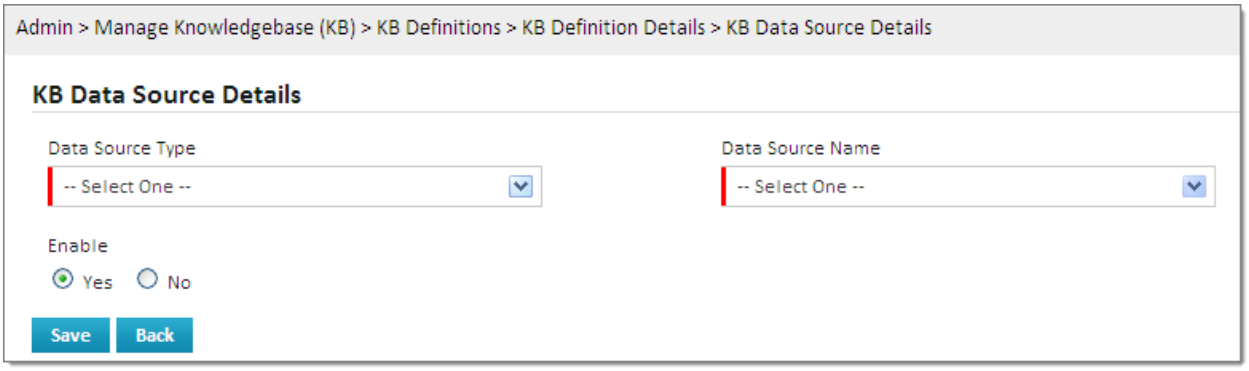
1. In ***KB Definitions*** screen, select the KB for which a multiple data source/target have to be assigned.
2. Click ***Edit*** button. The ***KB Definition Details*** screen appears with the source and target defined for the respective KB as shown in the figure below.



3. Click ***Data Source*** button**,** to assign another data source/target to the KB. The ***KB Data Source*** screen will be displayed with the list of sources/targets assigned to the KB as shown in the figure below.



4. Click ***Add*** button to add the source/target datasource details to the KB. The ***KB Data Source Details*** screen will be displayed as shown in the figure below.



5. Select the type of data source (i.e., target or source) from the ***Data Source Type*** drop down list. For example, if ***Source*** option is selected, the list of source details will be extracted and displayed in the ***Data Source Name*** drop down list
6. Select an appropriate data source from the ***Data Source Name*** drop down list, to assign the selected data source to the respective KB.
7. Select ***Yes/No*** option in the ***Enable,*** based on the option selected the data source will be enabled/disabled for the respective KB during archiving/validation process.
8. Click ***Save*** button, to assign the selected data source to the KB. Once the data sources is assigned successfully, the selected data source details will be appended to the existing data sources in ***KB Data Sources*** list screen.

- The field marked as " "are mandatory fields.

8.5 KB Assignments

Once the knowledgebase is defined in the Solix EDMS Standard Edition (SE), it should be assigned to a user in order to enable the user to access the metadata pertaining to the knowledgebase. This feature is designed to assign the knowledgebase to the user who is already created in the application and empowered with the relevant user role.

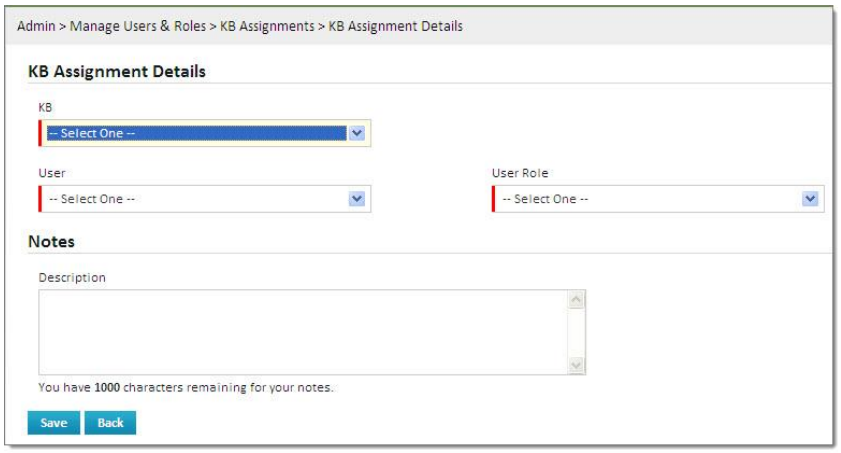
8.5.1 Navigation

To access ***KB Assignment*** link, login to Solix EDMS Standard Edition (SE) and follow the path: ***Admin > Manage Users & Roles > KB Assignment.***

8.5.2 Add New KB Assignment

To assign a KB, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu. The list of submenus is displayed.
2. Select ***Manage Users & Roles*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***KB Assignments*** option from the drop down. The ***KB Assignments*** screen with the list of existing KB Assignments will be displayed.
4. Click ***Add*** button. The ***KB Assignments Details*** screen appears where the information corresponding to the KB assignment can be entered.



5. In the ***KB Assignments Details*** page, do the following:
    a. Select the knowledgebase to which the user and user role should be assigned from the ***KB*** drop down list.
    b. Select the user from the ***User*** drop down list, to assign to the knowledgebase selected.
    c. Select the user role from the ***User Role*** drop down list, to empower the selected user with the privileges defined in the corresponding user role.

d. Enter comments in the ***Notes*** text field.

e. Click ***Save*** button. Once the information is saved successfully, a confirmation message will be prompted on the screen.

Once the KB Assignment is saved successfully, the selected user will be assigned to the specified knowledgebase with the selected user role. To proceed with archiving/validation process it is important that the SQL statements required to perform archiving/validation efficiently are designed or generated correctly.

- The fields marked as and * are mandatory fields.
- If the details provided are invalid, a warning message about the invalid details will be displayed on the screen.

9 Manage Source/Target Dictionary

Manage Source / Target Dictionary is designed to manage and maintain the seed data associated to the source and target.

9.1 Database Queries

Solix EDMS Standard Edition (SE) provides the seed data for various activities performed during data masking/data validation. The seed data are database specific. Database Queries provides flexibility to modify the seed data as per the enterprise environment, if needed.

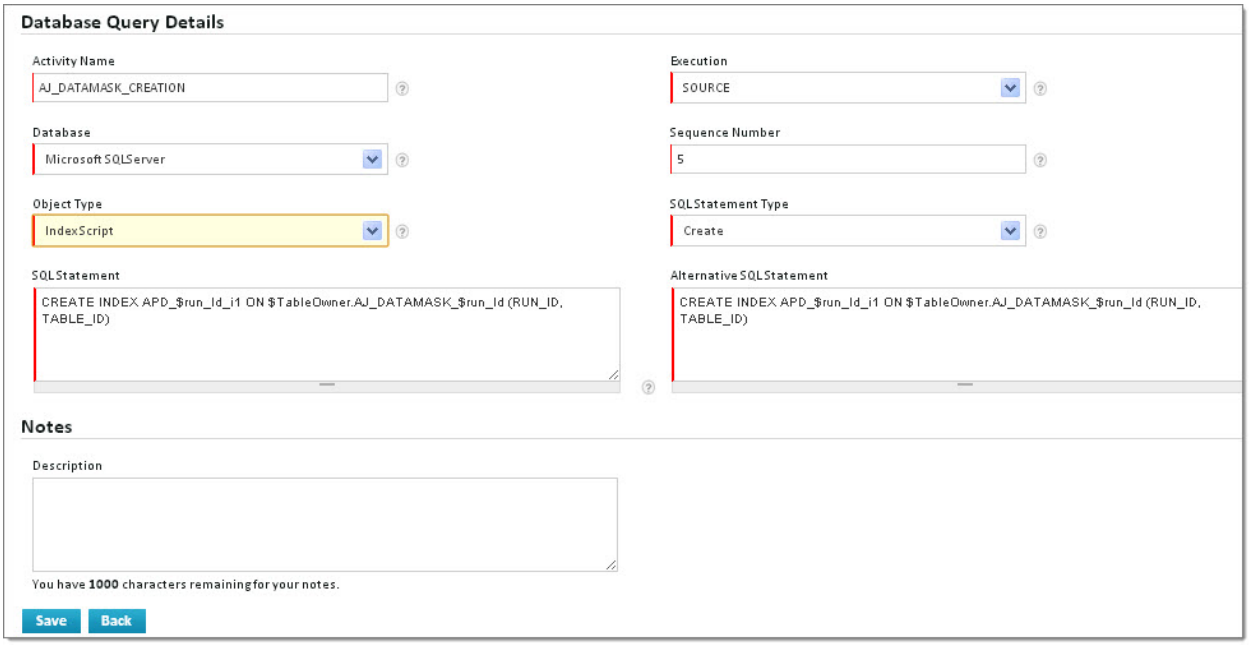
9.1.1 Navigation

To access ***Database Queries*** link, follow the path: ***Admin > Manage Source / Target Dictionary > Database Queries.***

9.1.2 Edit the existing Database Query

To modify the database query, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu. Select ***Manage Source/Target Dictionary*** option from the submenu options is displayed in the drop down.
2. Click ***Database Queries*** option from the drop down. The ***Database Queries*** screen with the list of existing database queries will be displayed.
3. Select the intended activity and click ***Edit*** button. The ***Database Queries*** screen will be displayed with the information associated to the corresponding database queries.



4. In the ***Database Queries Details*** screen, do the following:

a. The ***Activity Name*** is a non-editable text field.

b. Make the necessary changes in the corresponding fields.

c. Click ***Save*** button, to save the modified information. . Once the modified information is updated successfully, a message will be prompted on the screen.

- If the details provided are invalid, a warning message dialog box is prompted.
- If the database query name already exists, a warning message about duplicate name is prompted in the dialog box.

- The field marked as "|" are mandatory fields
- Current version of Solix EDMS Standard Edition (SE) supports Oracle Database (9i, 10g, and 11g), SQL Server (2005 and 2008) and Sybase ASE(15.5)..

9.2 Lookup Values

Lookup Values provide the flexibility to modify the seed data provided as a part of installation.

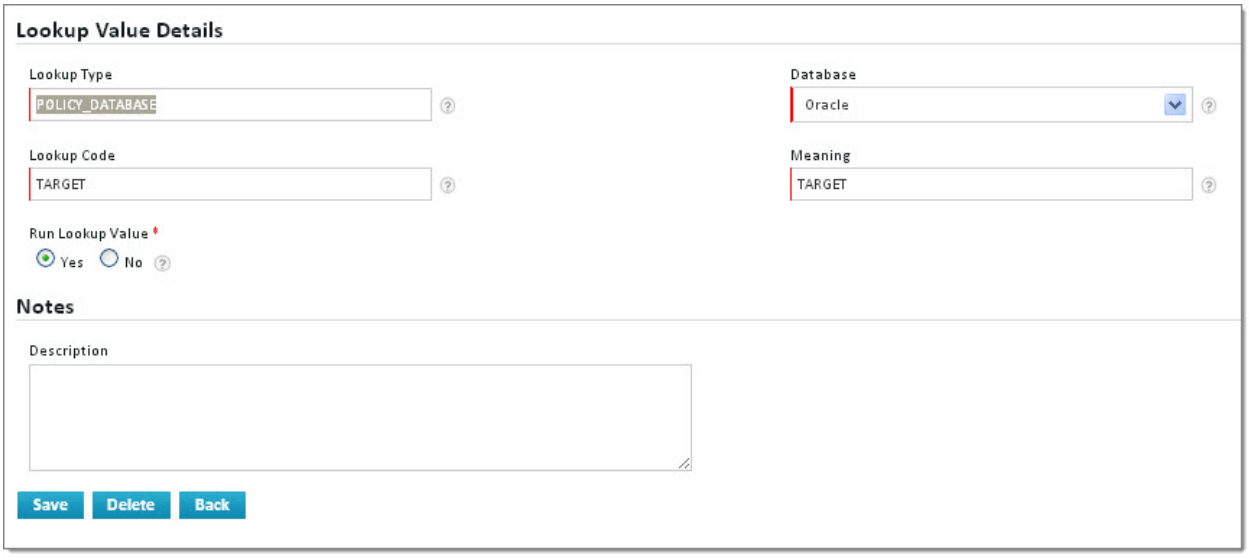
9.2.1 Navigation

To access ***Lookup Values*** link, follow the path: ***Admin > Manage Source/Target Dictionary > Lookup Values.***

9.2.2 Edit Lookup Values

To add a new Lookup Values, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu and select ***Manage Source/Target Dictionary*** option from the submenu. The list of options is displayed in the drop down.
2. Click ***Lookup Values*** option from the drop down. The ***Lookup Values*** screen with the list of existing lookup values will be displayed.
3. Click ***Edit*** button to edit the lookup value details. The ***Lookup Values Details*** page appears to enter the information corresponding to the lookup values.



4. In the ***Lookup Values Details*** screen, do the following:
    a. Enter type of lookup value in the ***Lookup Type***.
    b. Select the database associated to the lookup value from the ***Database*** drop down list.
    c. Enter the lookup value in the ***Lookup Code*** text field.
    d. Enter the description of the corresponding look up value in the ***Meaning*** text field.
    e. Check ***Yes/No*** option in the ***Run Lookup Value,*** based on the option selected the lookup value will be enabled/disabled.
    f. Enter the comments in the ***Notes***.

g. Click ***Save*** button. Once the lookup value is saved, automatically the look up will be appended or provisioned in the respective screens.

h. Once the information is saved successfully, a confirmation message dialog box is prompted.

- If the details provided are invalid, a warning message dialog box is prompted.
- If the lookup value already exists, a warning message about duplicate name is prompted in the dialog box.

- The field marked as are mandatory fields.
- If the details provided are invalid, a warning message dialog box is prompted
- To delete the Lookup Value, click ***Delete*** button appears in the ***Lookup Values Details*** screen.

9.3 Data Type Mapping

Data Type Mapping provides the flexibility to map the data types across heterogeneous databases. Solix EDMS Standard Edition (SE) provides data types for various databases and enables to modify the seed data provided.

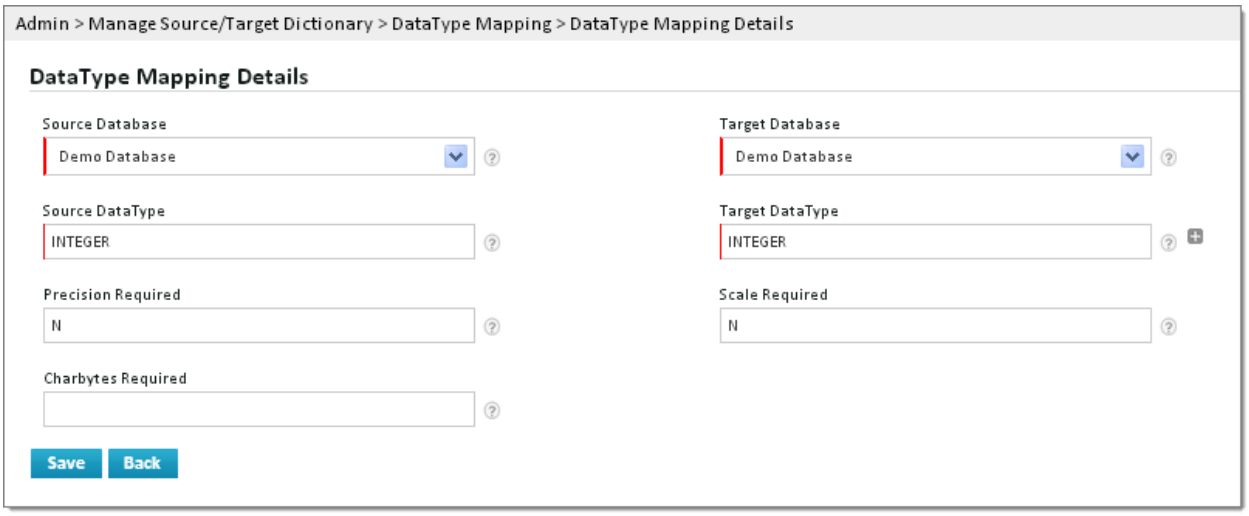
9.3.1 Navigation

To access ***Data Type Mapping*** link, follow the path: ***Admin>Manage Source/Target Dictionary > Data Type Mapping.***

9.3.2 Edit Data Type Mapping

To edit the data type mapping details, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS main menu and select ***Manage Source/Target Dictionary*** option from the submenu. The list of options is displayed in the drop down.
2. Click ***Data Type Mapping*** option from the drop down. The ***Data Type Mapping*** screen with the list of existing data type mapping will be displayed.
3. Select the intended data type mapping and click ***Add*** button. The ***Data Type Mapping*** screen appears to enter the information corresponding to the data type mapping.



4. In the ***Data Type Mapping Details*** page, do the following:
    a. ***Source Database*** and ***Target Database*** are non-editable text fields.
    b. Modify the data type to be mapped from the source in the ***Source Data Type*** text field, if needed.
    c. Modify the data type to which the source data type will be mapped in the target database in the ***Target Data Type*** text field, if needed.
    d. Enter ***Y/N*** in the ***Precision Required*** text field, to allow or deny the digits after decimal point in the data during data type mapping.
        - If "***Y***" is entered, then digits after decimal point in the data will be displayed.

- If "***N***" is entered, then digits after decimal point in the data will not be displayed.

e. Enter the number of digits to be depicted after decimal point in the ***Scale Required*** text field. (For example, if Scale Required is specified as "2", then the data will depict two digits after decimal point. (for example, 10.24)

f. Enter ***Y/N*** in the ***CharByte Required*** text field, to measure the character data in terms of character length or a byte during data type mapping.

- If "***Y***" is entered, then the character data will be measured in terms of character length.
- If "***N***" is entered, then the character data will be measured in terms of byte.

g. Click ***Save*** button, to save the modified information. Once the information is saved successfully, a confirmation message dialog box is prompted.

- If the details provided are invalid, a warning message dialog box is prompted.
- If the data type mapping already exists, a warning message about duplicate name is prompted in the dialog box.

- The field marked as "|" are mandatory fields.
- Solix EDMS Standard Edition (SE) does not support special data types such as 'BLOB', 'CLOB', 'LONG', 'LONG RAW', 'RAW', 'BFILE', 'XML', 'IMAGE', 'BINARY', 'VARBINARY', 'BIT', 'BINARY_FLOAT', 'BINARY_DOUBLE', 'NCLOB', 'TEXT', 'NTEXT', 'UNITEXT' etc.

9.4 Parameters

Parameters provide the flexibility to modify the seed data provided as a part of an installation when the user intended to change the default settings provided by Solix EDMS Standard Edition (SE).

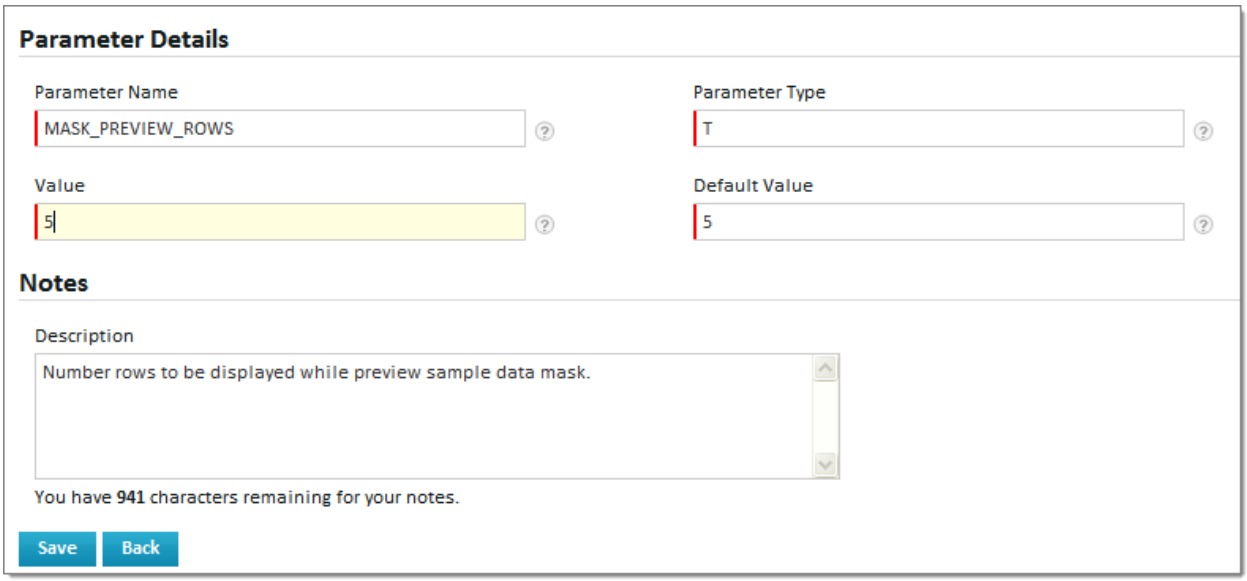
9.4.1 Navigation

To access ***Parameters*** link, follow the path: ***Admin > Manage Source / Target Dictionary > Parameters.***

9.4.2 Add New Parameters

To add a new parameter, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu and select ***Manage Source/Target Dictionary*** option from the submenu. The list of options is displayed in the drop down.
2. Click ***Parameters*** option from the drop down. The ***Parameters*** screen with the list of existing parameter will be displayed.
3. Select the intended parameter and click ***Edit*** button. The ***Parameters Details*** screen will be displayed with the information corresponding to the parameter.



4. In the ***Parameters Details*** screen, do the following:
    a. ***Parameter Name*** and ***Parameter Type*** are non-editable text fields.
    b. Modify the value for parameter in the ***Parameter Value,*** if needed.
    c. Modify the default value for parameter in the ***Parameter Default Value,*** if needed.
    d. Enter the comments in the ***Notes.***

e. Click ***Save*** button. Once the information is saved successfully, a confirmation message dialog box is prompted.

- If the details provided are invalid, a warning message dialog box will be prompted.

Once the parameter is saved successfully, the parameter created is provisioned wherever it is used in the application. For example, if the value of ***MASK_PREVIEW_ROWS*** parameter is provided as "10", then the Preview results screen will display 10 mask preview records exclusively.

- The field marked as " ' are mandatory fields.

10 Data Assessment

Solix EDMS Database Assessment Standard Edition (SE) plays a significant role to assess the amount of archive eligible data in a given database based on business criteria and provide the snapshot of data distributed in schemas, database size and helps in identifying the Top N tables based on the table size. Solix EDMS Database Assessment Standard Edition (SE) provides the flexibility to perform object-wise and table-wise data assessment to identify the archive eligible data available in the database based on the business compliances and retention policies. There is also a provision to depict the number of rows and data size of archive eligible data in a graphical representation.

Solix EDMS Data Assessment (ILM Assessment) Standard Edition (SE) uses retention management to assess the archive eligible data based on the retention policy. Once retention policy is assigned to the data assessment, the data found within the given retention period before the specified retention date will be assessed for the archive eligibility.

Database Assessment also provides the flexibility to assess the data growth at both tables and database level based on the statistical analysis and forecast the prediction of future growth in both the tables size and database growth size in graphical representation. It also analysis data growth yearly and provides the statistics analysis of data growth through graphical representation in dashboard.

- In Data Growth Forecast, the statistical analysis is performed based on the current data in the database. The database growth forecasted is an assumption so it may vary according to the business conditions.
- We recommend data assessment to be executed on recent clones of production database or production database for better output and prediction of future database growth.

This chapter walks through the process to create Data Assessment, customizing the data assessment policies, assign the data assessment policy to the data assessment defined and execute the data assessment configured to assess the data in database based on the given criteria.

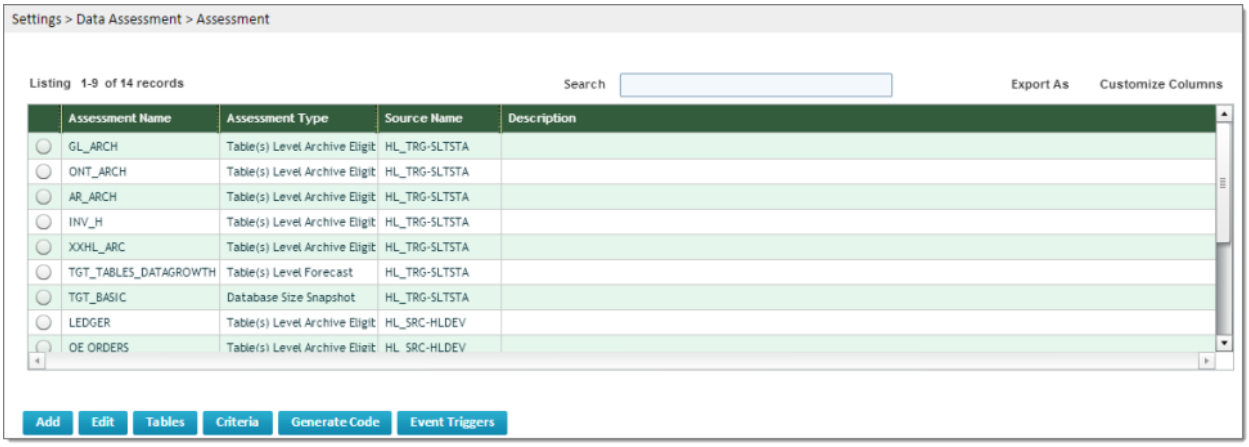
10.1 Creation of Data assessment

To initiate the data assessment, firstly the user need to create a new data assessment or use existing data assessment to assess the amount of archive eligible data in a specified database based on the criteria defined.

Navigation

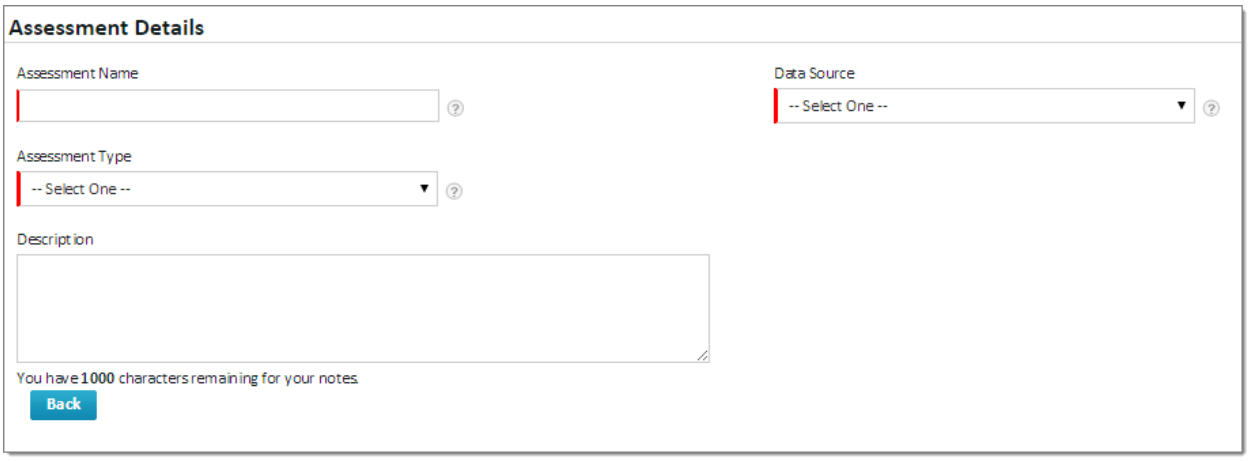
To access ***Data Assessment*** link,

- Click bar appears on the left hand side of the screen. Once the bar is clicked, the administrative menus will be opened on the screen, then follow the path: ***Setting > Data Assessment > Assessment.*** The ***Assessment*** screen will be displayed as shown in the figure below.



To create a new data assessment,

1. In the ***Assessment*** screen, click ***Add*** button. The ***Assessment Details*** screen is displayed as shown in the figure below.



2. Enter the name of data assessment in the ***Assessment Name*** text field.
3. Select the appropriate database from the ***Data Source*** drop down list, to assess the eligible archived data from the selected database.
4. Select the type of assessment need to be accomplished from the ***Assessment Type*** drop down list. Herein, the creation of data assessment differs based on the

type of data assessment need to be carried out (i.e., database size, or object wise or data growth forecast).

- The field marked as are mandatory fields.
- Click ***Back*** button, to go back to previous screen.
- Click ***Edit*** button, to modify the data assessment.

10.1.1 Creation of Database Size Snapshot Data assessment

This process enables to assess the data according to the data distributed in the schemas, size of database and size of the Top N tables. To create data assessment for Database Size Snapshot, do the following:

1. In ***Assessment Details*** screen, select ***Database Size Snapshot*** option from the ***Assessment Type*** drop down list. Additionally, the check boxes will be prompted in the screen
   - ***Database Size:*** this check box enables to assess the data for eligible archive data based on size of the selected database and displayed in the pictorial representation.
   - ***Schema Size***: this check box enables to assess the data for eligible archive data according to the data distributed in each schema existing in database selected and summarizes the eligible archive data in the pictorial representation
   - ***Top N Table:*** This check box enables to assess the data based on the size of the Top N tables. Here, "N" implies the number of tables.
2. Select the required check box based on the requirement.
3. Enter the value adjacent to the ***Top N tables*** check box, to pull up the data of given number of top tables in the databases for data assessment.
4. Enter the description in the ***Description*** text box.
5. Click ***Save*** button, to save the data assessment.

Once created and saved successfully, a confirmation message will be prompted on the screen. Thereafter, the user can execute the data assessment created in the ***Data Assessment > Run Assessment***.

- The field marked as are mandatory fields.

10.1.2 Creation of Object Level Archive Eligibility Data assessment

This process enables to assess the data object wise to identify the archive eligible data. This process carries out the Object Specific data assessment. To create data assessment for Object Level Archive Eligibility, do the following:

1. In ***Assessment Details*** screen, select ***Object Level Archive Eligibility*** option from the ***Assessment Type*** drop down list. Additionally, the ***Assessment Sub Type*** drop down will be prompted in the screen.
2. Select ***New Object / Use Existing object*** from the ***Assessment Sub Type*** drop down list.
   - If ***New Object*** option is selected, enter the description and click ***Save*** button. Next,
     a. The user need to add the tables to the object, populate the columns in the table, and build relations and joins. To understand the process, refer to adding tables section.
     b. Define Criteria. To understand the process, refer to Defining Criteria section.
     c. Generate a Code for data assessment based on the criteria defined. To understand the process, refer to Generating Code section.
     d. Then, execute the data assessment.
   - If ***Use Existing object*** option is selected, additionally, the ***Config Name*** drop down and ***Populate*** button will be prompted in the screen
     a. The configuration designed for data archiving will be pulled up and displayed in the ***Config Name*** drop down. Hence, select the required configuration from the drop down.
     b. Click ***Populate*** button, to populate the tables, columns, relations, joins, criteria, generated code existing in the selected configuration for the data assessment.
     c. A confirmation message stating "***Config details populated successfully***." will be prompted in the screen.
     d. Then, execute the data assessment.

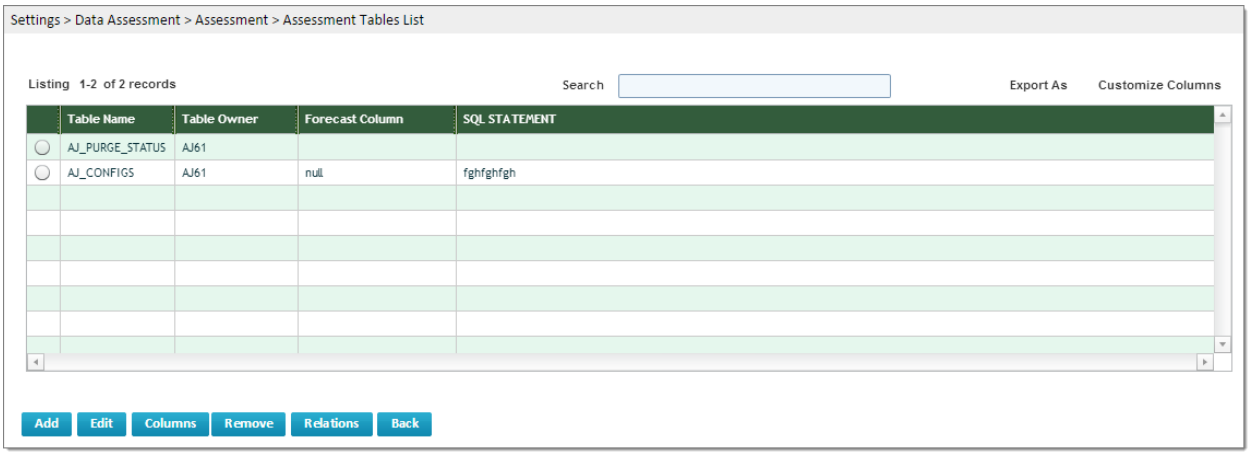
Thereafter, the user can execute the data assessment created in the ***Data Assessment > Run Assessment***.

- The field marked as are mandatory fields.

10.1.2.1 Adding Table to Data assessment

To create a new object for Object Level Archive Eligibility data assessment type, the user needs to add the tables in the data assessment.

1. In the ***Assessment*** screen, select the data assessment created and click ***Table*** button. The ***Assessment Tables*** screen will be displayed as shown in the figure below.



2. Firstly, add the table to the assessment. To add the table, do the following:

   a. In the ***Assessment Tables*** screen, click ***Add*** button. The ***Assessment Tables Details*** screen will be displayed as shown in the figure below.

   b. Select an appropriate table owner from the ***Table Owner*** drop down. Once table owner is selected, the table associated to the selected table owner will be pulled up and displayed in the ***Table Name*** drop down.

   c. Select the required table name from the Table Name drop down.

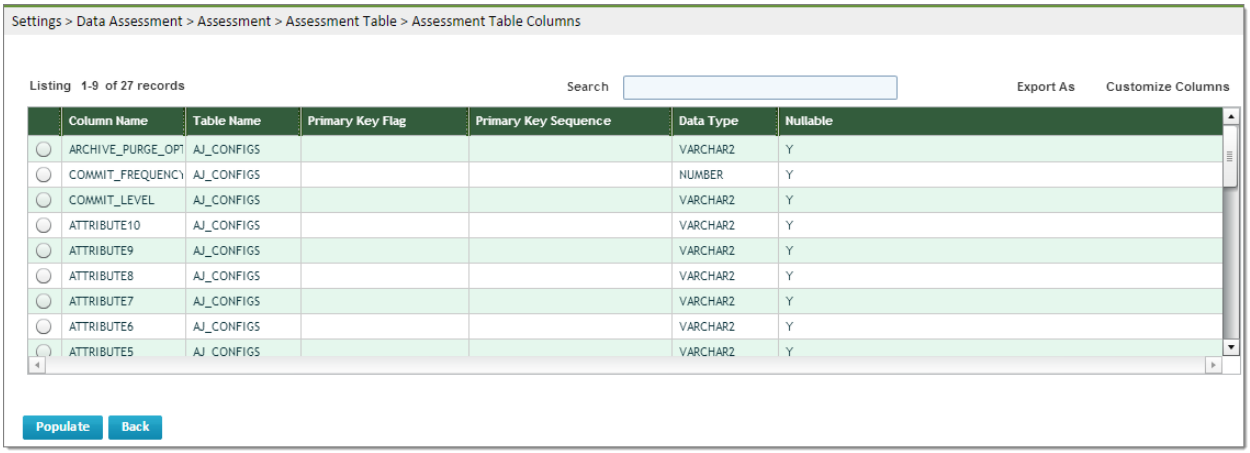
   d. Select ***Yes/No*** option of ***Driving Table***, whether to define the selected table as Driving table or not. (***Note***: Make sure, atleast one table should be a driving table in data assessment table).

   e. Click ***Save*** button, to save the table for the data assessment.

   f. Repeat the process to add tables further.

3. Once the table is added, then populate the columns in the table selected. To populate columns, do the following:

a. In the ***Assessment Tables*** screen, select the table and click ***Column*** button. The ***Assessment Table Columns*** screen will be displayed as shown in the figure below.

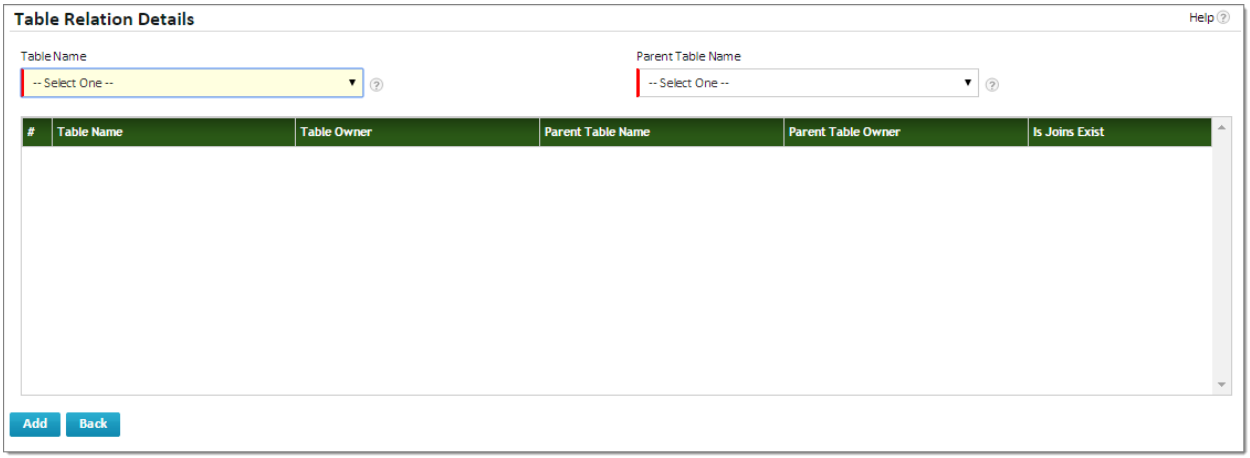


b. Click ***Populate*** button, to populate the columns existing the table for data assessment. (***Note***: Make sure that columns need to populate whenever any modification take place in the table column(s), to refresh with update table column details).

c. Click ***Back*** button, to navigate to the ***Assessment Tables*** screen.

4. Next, build the relations and joins to establish relation between tables added in the. To build the relation, do the following:

a. In the ***Assessment Tables*** screen, select the table and click ***Relations*** button. The ***Table Relations Details*** screen will be displayed as shown in the figure below.



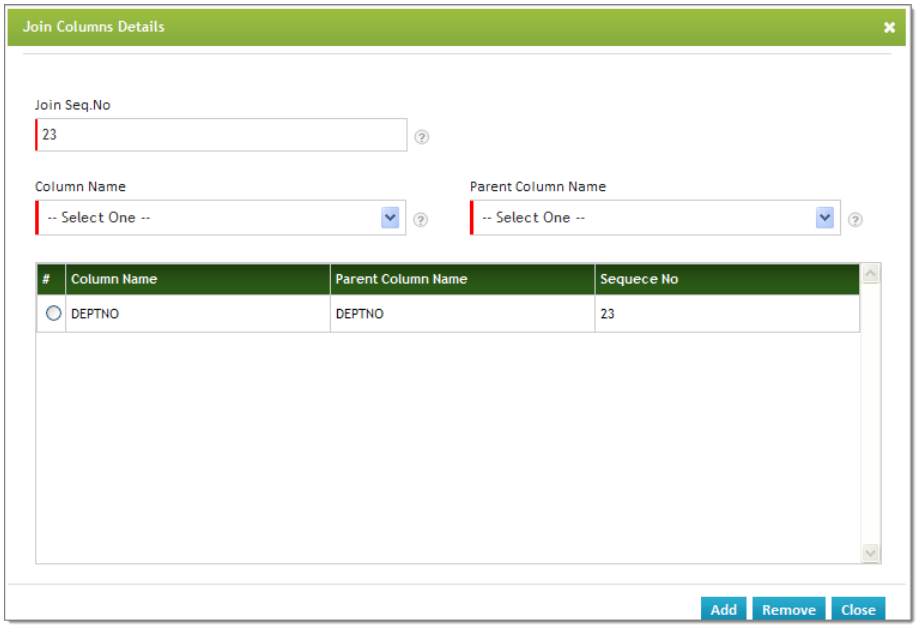
b. Select the table from the ***Table Name*** drop down.

c. Select the parent table (i.e., driving table) from the ***Parent Table Name*** drop down.

d. Click ***Add*** button. A confirmation message stating "Assessment Table Relation is Saved" will be prompted in the screen.

e. Once relation is saved, then create joins in the relation. Hover on the table name appears in the list box.

f. Click on ***Joins*** hyperlink appears beneath the table name. The ***Join Columns Details*** popup screen will be prompted as shown in the figure below.



i. Enter the sequence number of the join in the Join Seq. No text box.

ii. Select the primary key column from Column Name and Parent Column Name drop down.

iii. Click ***Add*** button. Repeat the process to add join in the data assessment table.

iv. Once the Data Assessment Table Join is saved, click ***Close*** button.

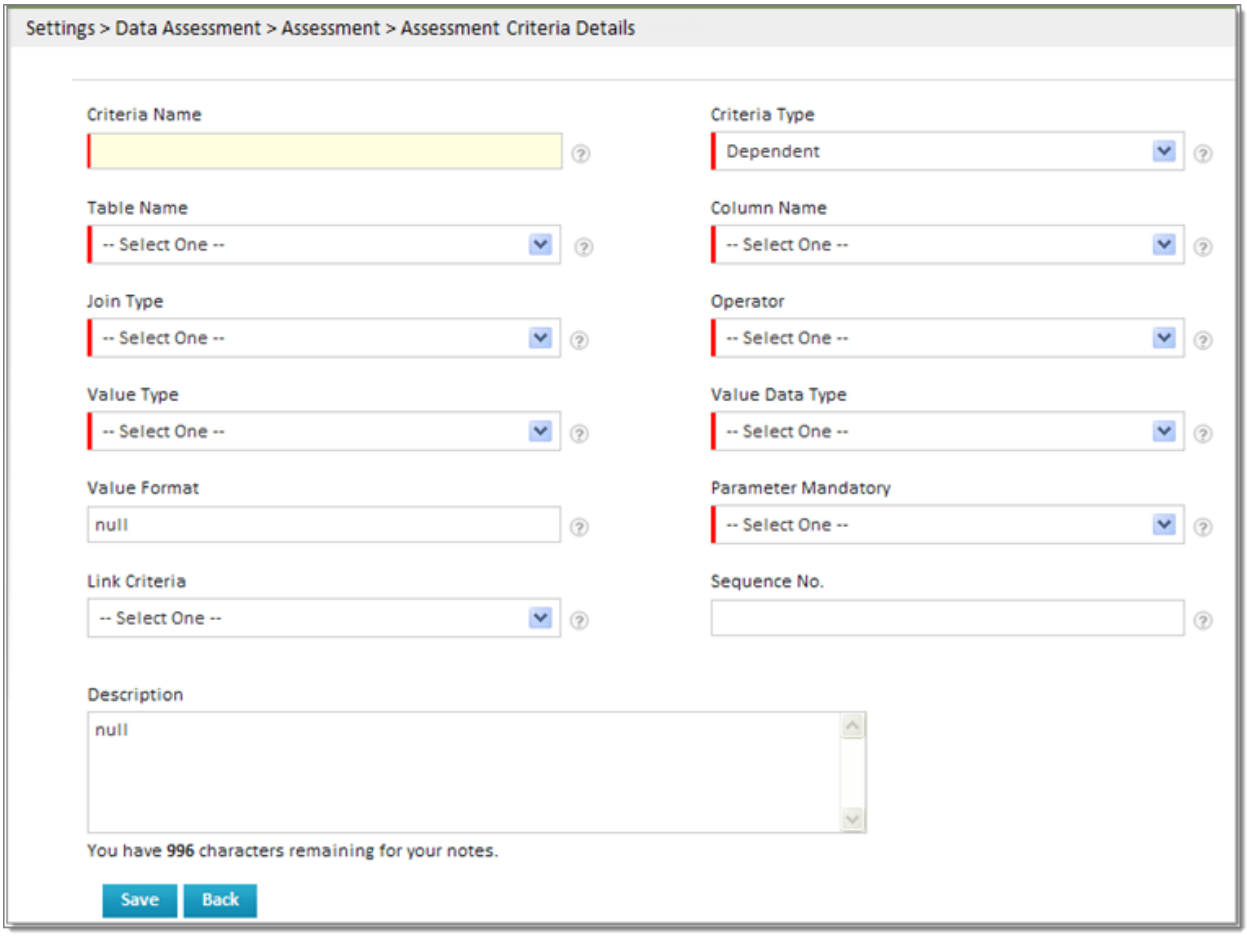
- Click ***Back*** button, to navigate to the previous screen.
- The field marked as are mandatory fields.
- Click ***Remove*** button, to delete the table relations or joins.
- In the ***Assessment Tables*** screen, user can delete the table from the list by clicking ***Remove*** button.

10.1.2.2 Defining Criteria for the Data assessment

Once Data assessment is created successfully, the next step would be to set criteria to run the data assessment. If not, entire data in all the selected tables will be lost.

To define criteria, do the following:

1. In the ***Assessment*** screen, select the required data assessment created and click ***Criteria*** button. The ***Assessment Criteria List*** screen will be displayed.
2. Click ***Add*** button, to define a new criteria. The ***Assessment Criteria Details*** screen will be displayed.
3. Enter name of criteria in the ***Criteria Name*** text box.
4. Select an appropriate type of criteria from the ***Criteria Type*** drop down list. Based on the type of criteria selected, the fields prompted in the screen will vary as shown in the figure below.



5. Enter the criteria details in the corresponding fields
6. Click ***Save*** button to save the data assessment criteria. Once the criteria are saved successfully, a message will be prompted on the screen.

- The field marked as are mandatory fields.
- Click ***Back*** button, go back to ***Assessment Module Criteria List*** screen.
- Click ***Edit*** button, to modify the given criteria details.

Below table illustrates the functionalities of fields in the ***Assessment Module Criteria Details*** screen.

Fields	Functionality
Criteria Name	Define a name for the criteria in Data assessment**.**
Criteria Type	This drop down enables the user to select an appropriate type of criteria. The criteria type can be Static, Dependent and Independent. • ***Static***: It implies that the data assessment actions will be based on the value specified in Criteria. • ***Dependent***: It implies that the criteria designed are dependent on a particular column of the specific table. • ***Independent:*** It implies that the criteria are independent of tables and columns associated to specific Data assessment.
Table Name	This drop down enables the user to select an appropriate table that holds the attribute value.
Column Name	Based on the table selected, the corresponding columns will be listed in this drop down. It enables the user to select the column on which the respective criteria will be applicable.
Join Type	This drop down enables the user to select an appropriate operand required for the criteria. (i.e., AND or OR).
Operator	This drop down enables the user to select an appropriate conditional operator required to design criteria. (i.e., =,>, <, <= and so on).

Value Type	This drop down enables the user to define the type of parameter value (i.e., Value or Dependent SQL) • ***Value:*** It implies that the data is fetched based on the value provided in the ***Value*** text box. • ***Dependent SQL:*** It implies that the SQL statement will be generated based on dependent variable(s) which may be derived from the earlier parameter(s). For example, "SELECT ORGANIZATION_ID, ORGANIZATION_NAME FROM ORG_ORGANIZATION_DEFINITIONS" where organization name will be displayed at run time parameters for end user ease and organization id will be used in criteria. • ***SQL:*** During the runtime, the SQL statement will be executed and the archiving will be executed based on the value obtained from running the SQL script specified in ***Value***. For example, SELECT ORGANIZATION_ID FROM ORG_ORGANIZATION_DEFINITIONS
Data Type	This drop down facilitates to select an appropriate data type of the parameter. (i.e., Number, String, Date). Note: For the "***Dependent SQL"*** and "***SQL***" value type, "String" should be selected by default.
Format	If the Data type is "Date", this text box enables the user to provide the format of date. For example, MM/DD/YYYY.
Parameter Mandatory	This drop down enables the user to define the parameter as mandatory or not (i.e., Yes or No). • Yes- it implies that the parameter is a mandatory, the value must be entered • No–it implies that the parameter is not mandatory.
Sequence No	This text box enables the user to enter the Sequence of Criteria while execution.
Link	Exclusively when "OR" operator is selected in Join, this drop down list enables the user to link the current criteria to this existing criteria and place it in parenthesis during Data Assessment.
Value	This text enables the user to enter the appropriate value of the parameter according to the ***Value Type*** selected.
Default Value	This text enables the user to enter the default value of the parameter.

Description	This text box enables the user to enter the description pertaining to the criteria.
Save	This button is employed to save the criteria details.

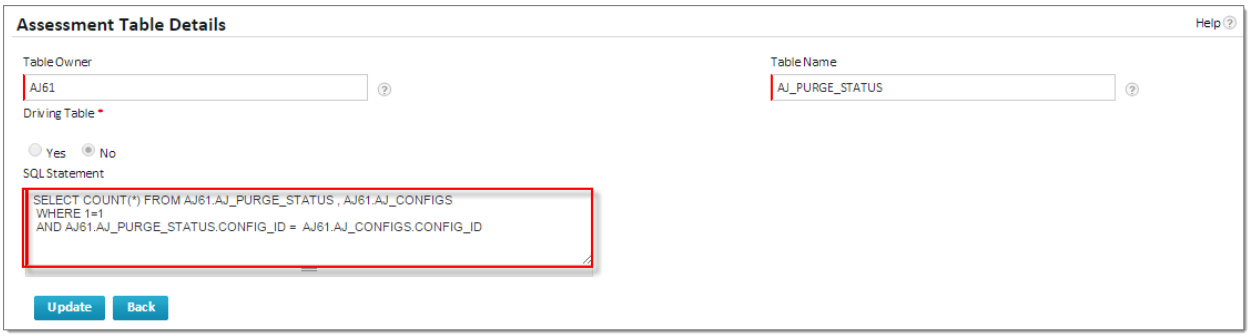
10.1.2.3 Generating ANSI SQL code for Data assessment

Once the criteria are defined, then user needs to generate dynamic ANSI SQL code for a selected data assessment. The generated ANSI SQL code will be stored in the central repository to run a particular data assessment anytime in the future. This ANSI SQL code can select and insert data from source to target database configured respectively.

To generate code for a data assessment, do the following:

1. In the ***Assessment*** screen, select the data assessment created and click ***Generate Code*** button. It might take several minutes for the code to generate. On completion, a confirmation message stating "***Selected Assessment code generation successful***" will be displayed in the screen.

2. The SQL Statements will be generated and stored in the associated tables of selected data assessment.



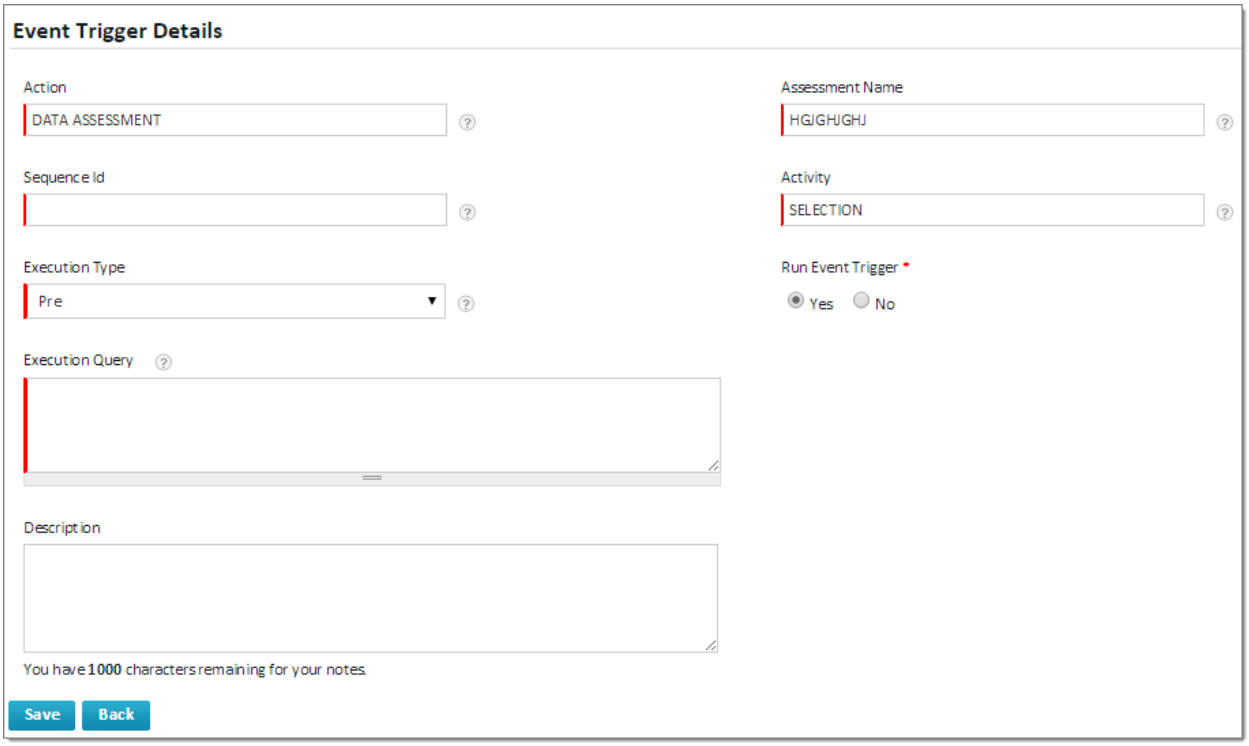
10.1.2.4 Creating Event Triggers for Data assessment

Solix EDMS Data Assessment Standard Edition (SE) also generates ANSI SQL statements to perform assessment. In case, there is a requirement to perform other database operations post/pre to the activities, this feature provides the flexibility to execute block of SQL statements (for example, PL/SQL statements for Oracle database) for post/pre the activities. Also, enables the user to create anonymous blocks which can be executed.

To ANSI SQL statements for a data assessment, do the following:

1. In the ***Assessment*** screen, select the data assessment created and click ***Generate Code*** button. The ***Event Triggers screen will be displayed with the list of existing event triggers.***

2. Click ***Add*** button. The ***Event Triggers Details*** screen appears to enter the information corresponding to the event trigger.



3. In the ***Event Triggers Details*** screen, do the following:
    a. ***Action*** and ***Assessment Name*** fields remain static and non-editable.
    b. Enter the sequence number in the ***Sequence ID*** text field.
    c. Enter ***Activity*** from the drop down.
    d. Select ***Pre/Post*** from the ***Execution Type*** drop down list.
    e. Select an appropriate instance where the pre/post execution is needed from the ***Execution Instance*** drop down list.
    f. Check '***Yes'/'No'*** option in the ***Run Event Trigger***. Based on option selected, the event trigger will be executed.
    g. Enter PL/SQL statements or block of SQL statements to be executed in the ***Execution Query*** text box.
    h. Enter the comments in the ***Notes.***
    i. Click ***Save*** button. Once the information is saved successfully, a confirmation message dialog box is prompted.
        - If the details provided are invalid, a warning message dialog box is prompted.
        - If the parameter name already exists, a warning message about duplicate name is prompted in the dialog box.

- The field marked as | are mandatory fields.

- Click ***Edit*** button, to modify the existing event trigger.

10.1.3 Creation of Table - Level Archive Eligibility Data assessment

This process enables to assess the table data to identify the archive eligible data in the tables based on the simple criteria or applying retention policies. This process carries out the Table - wise data assessment. To create data assessment for Table Level Archive Eligibility, do the following:

1. In ***Assessment Details*** screen, select ***Table Level Archive Eligibility*** option from the ***Assessment Type*** drop down list. Additionally, the ***Assessment Sub Type*** drop down will be prompted in the screen.
2. Click ***Save*** button, to save the data assessment. Once the data assessment is saved, then user need to add the tables to the data assessment, populate the columns in the table and define criteria.
    a. The user needs to add the tables to the data assessment, populate the columns in the table. To understand the process, refer to adding tables section.
    b. Define Criteria. To understand the process, refer to Defining Criteria section.
    c. Generate a Code for data assessment based on the criteria defined. To understand the process, refer to Generating Code section.

- The field marked as | are mandatory fields.
- Event trigger is not applicable for the Table Level Archive Eligibility.

10.1.3.1 Adding Table to Data assessment

To create a new object for Table - Level Archive Eligibility data assessment type, the user needs to add the tables in the data assessment.

1. In the ***Assessment*** screen, select the data assessment created and click ***Table*** button. The ***Assessment Tables*** screen will be displayed.
2. Firstly, add the table to the module. To add the table in the module, do the following:
    a. In the ***Assessment Tables*** screen, click ***Add*** button. The ***Assessment Module Tables Details*** screen will be displayed as shown in the figure below.

b. Select an appropriate table owner from the ***Table Owner*** drop down. Once table owner is selected, the table associated to the selected table owner will be pulled up and displayed in the ***Table Name*** drop down.

- To populate including nullable date columns in the ***Column Name*** drop down, select ***Show Nullable Date Columns*** check box.

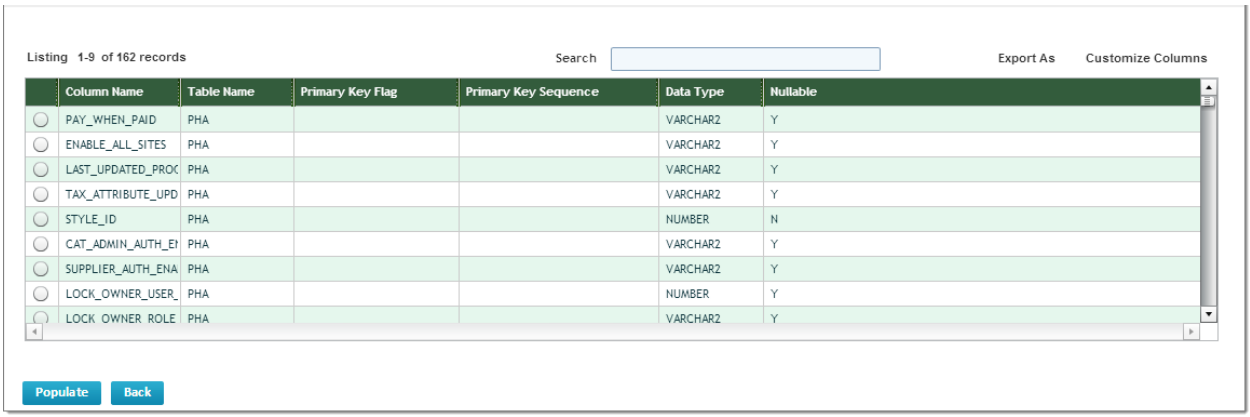
c. Select the required table name from the Table Name drop down. Once table name is selected, the date columns (not nullable) in the selected table will populates in the ***Column Name*** drop down.

d. Click ***Save*** button, to save the table for the module.

e. Repeat the process to add tables further.

3. Once the table is added, then populate the columns in the table selected. To populate columns, do the following:

a. In the ***Assessment Tables*** screen, select the table and click ***Column*** button. The ***Assessment Table Columns*** screen will be displayed with the columns in the table.



b. Click ***Populate*** button, to populate the columns existing the table for data assessment. (***Note***: Make sure that columns need to populate whenever any modification take place in the table column(s), to refresh with update table column details).

c. Click ***Back*** button, to navigate to the ***Assessment Tables*** screen.

Next, the user can create a criteria (refer to Defining Criteria) or apply retention policy on the data assessment. If Criteria defined for the data assessment, it is mandatory to generate a code (refer to Generating ANSI SQL Code).

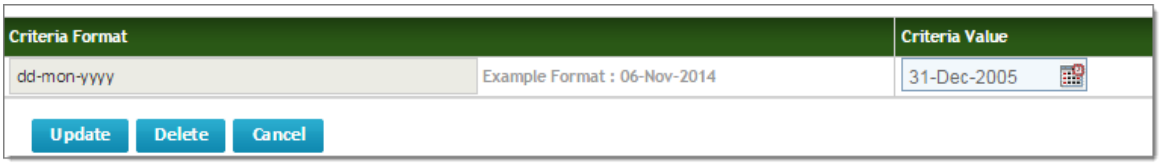
- The field marked as | are mandatory fields.

10.1.3.2 Defining Criteria for the Data assessment

Once Data assessment is created successfully, the next step would be to set criteria to run the data assessment. If not, entire data in all the selected tables will be lost.

To define criteria, do the following:

1. In the ***Assessment*** screen, select the required data assessment created and click ***Criteria*** button. The ***Assessment Date Criteria*** screen will be displayed.
   - Already, if Criteria is defined for the assessment, Then Criteria Format shows the criteria value defined for the assessment.



     - Click ***Update*** button, to save the modified criteria value.
     - Click ***Delete*** button, to delete the criteria defined for the assessment.

   - If Criteria is not defined, a message stating "No Criteria is defined for this Assessment. Please click Add to define criteria." is displayed in the screen.

     a. Click ***Add*** button, to define criteria for the selected assessment. The Criteria Format section will display in the screen as shown in the figure below.

     b. By default, the sys-date will be displayed in the Criteria Value.

     c. Select the required date using visual calendar in the Criteria Value, to run the data assessment based on that date and consider all the data until the specified date as archive eligible data.

     d. Click ***Add*** button, to update the new date. Once the criteria are saved successfully, a message will be prompted on the screen.

- The field marked as | are mandatory fields.
- Click ***Cancel*** button, to exit the criteria screen.

- In case, the user click Add button when Criteria value is Sys date then an error message stating ***"Provided Date Value is current System Date, do you want to run assessment with current System Date?"*** is prompted in the screen.

10.1.3.3 Generating ANSI SQL code for Data assessment

Once the criteria are defined, then user needs to generate dynamic ANSI SQL code for a selected data assessment. The generated ANSI SQL code will be stored in the central repository to run a particular data assessment anytime in the future. This ANSI SQL code can select and insert data from source to target database configured respectively.

To generate code for a data assessment, do the following:

1. In the ***Assessment*** screen, select the data assessment created and click ***Generate Code*** button. It might take several minutes for the code to generate. On completion, a confirmation message stating "***Selected Assessment code generation successful***" will be displayed in the screen.

2. The SQL Statements will be generated and stored in the associated tables of selected data assessment.

10.1.4 Creation of Data Growth Multiple Tables Forecast Data assessment

This process enables to analysis the data growth of business in the specified duration (i.e., yearly/monthly/day basis) based on the multiple table data. It forecast the future growth of business data in the graphical presentation that helps to understand the strategy to archive the data timely for improving the data storage management.

To create data assessment for Data Growth Multiple Tables Forecast, do the following:

1. In ***Assessment Module Details*** screen, select ***Data Growth Table Level Forecast*** option from the ***Assessment Type*** drop down list.

2. Click ***Save*** button, to save the data assessment. Once the data assessment is saved, then user needs to add the tables to the module, and populate the columns in the table. To understand the process, refer to adding tables section.

3. Generate a Code for data assessment based on the criteria defined. To understand the process, refer to Generating Code section

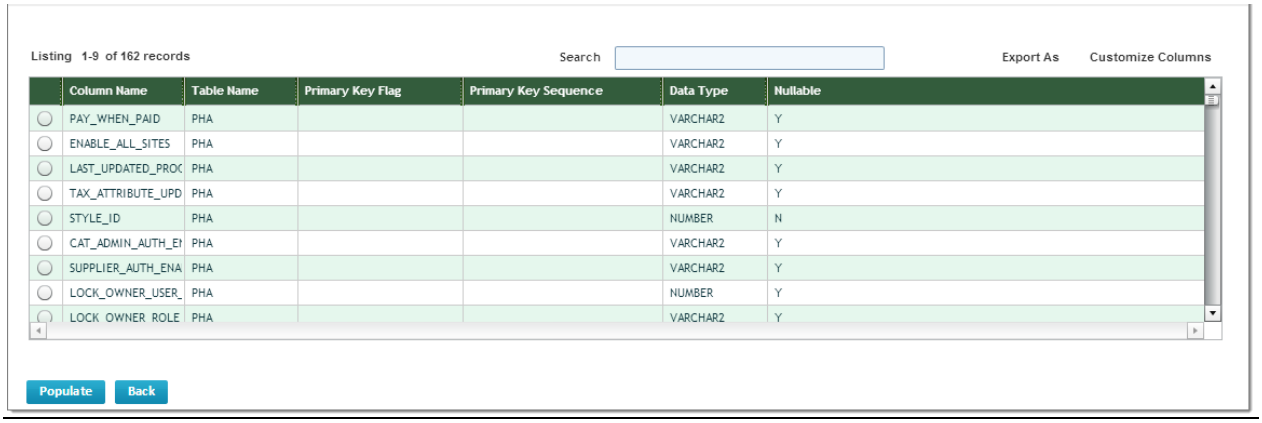
4. Thereafter, the user can execute the data assessment created in the ***Data Assessment > Run Assessment***.

10.1.4.1 Adding Table to Data assessment

To create a new object for Data Growth Multiple Tables Forecast Data assessment, the user needs to add the tables in the data assessment.

1. In the ***Assessment*** screen, select the data assessment created and click ***Table*** button. The ***Assessment Tables*** screen will be displayed.
2. Firstly, add the table to the module. To add the table in the module, do the following:
    a. In the ***Assessment Tables*** screen, click ***Add*** button. The ***Assessment Tables Details*** screen will be displayed as shown in the figure below.

    b. Select an appropriate table owner from the ***Table Owner*** drop down. Once table owner is selected, the table associated to the selected table owner will be pulled up and displayed in the ***Table Name*** drop down.
        - To populate including nullable date columns in the ***Column Name*** drop down, select ***Show Nullable Date Columns*** check box.
    c. Select the required table name from the Table Name drop down. Once table name is selected, the date columns (not nullable) in the selected table will populates in the ***Column Name*** drop down.
    d. Click ***Save*** button, to save the table for the module.
    e. Repeat the process to add tables further.
3. Once the table is added, then populate the columns in the table selected. To populate columns, do the following:
    a. In the ***Assessment Tables*** screen, select the table and click ***Column*** button. The ***Assessment Table Columns*** screen will be displayed with the columns in the table.



b. Click ***Populate*** button, to populate the columns existing the table for data assessment. (***Note***: Make sure that columns need to populate whenever any modification take place in the table column(s), to refresh with update table column details).

c. Click ***Back*** button, to navigate to the ***Assessment Tables*** screen.

Then, the user need to generate code for database assessment.

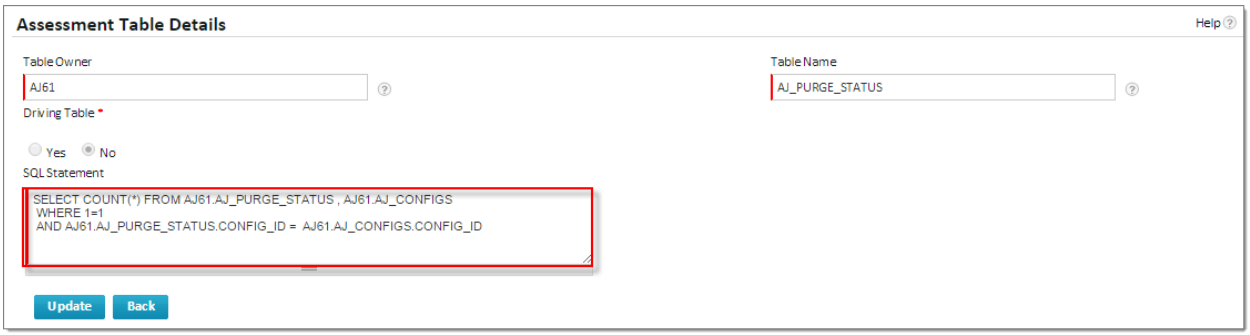
10.1.4.2 Generating ANSI SQL code for Data assessment

Once the criteria are defined, then user needs to generate dynamic ANSI SQL code for a selected data assessment. The generated ANSI SQL code will be stored in the central repository to run a particular data assessment anytime in the future. This ANSI SQL code can select and insert data from source to target database configured respectively.

To generate code for a data assessment, do the following:

1. In the ***Assessment*** screen, select the data assessment created and click ***Generate Code*** button. It might take several minutes for the code to generate. On completion, a confirmation message stating "***Selected Assessment code generation successful***" will be displayed in the screen.

2. The SQL Statements will be generated and stored in the associated tables of selected data assessment.



10.1.5 Creation of Forecast on Top Table Data assessment

This process enables to analysis the data growth of business in the specified duration (i.e., yearly/monthly/day basis) based on the top tables. It forecast the future growth of business data in the graphical presentation that helps to understand the strategy to archive the data timely for improving the data storage management.

To create data assessment for Data Growth Forecast on Top Table, do the following:

1. In ***Assessment Module Details*** screen, select ***Data Growth Table Level Forecast*** option from the ***Assessment Type*** drop down list.

2. Click ***Save*** button, to save the data assessment. Once the data assessment is saved, then user needs to add the tables to the module, and populate the columns in the table. To understand the process, refer to adding tables section.

3. Generate a Code for data assessment based on the criteria defined. To understand the process, refer to Generating Code section

4. Thereafter, the user can execute the data assessment created in the ***Data Assessment > Run Assessment***.

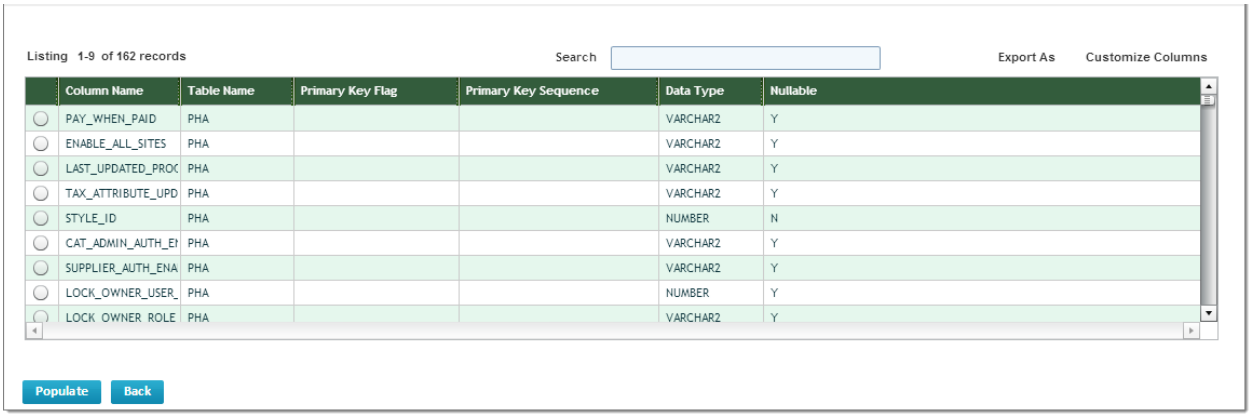
10.1.5.1 Adding Table to Data assessment

To create a new object for Data Growth Multiple Tables Forecast Data assessment, the user needs to add the tables in the data assessment.

1. In the ***Assessment*** screen, select the data assessment created and click ***Table*** button. The ***Assessment Tables*** screen will be displayed.
2. Firstly, add the table to the module. To add the table in the module, do the following:
    a. In the ***Assessment Tables*** screen, click ***Add*** button. The ***Assessment Tables Details*** screen will be displayed as shown in the figure below.

    b. Select an appropriate table owner from the ***Table Owner*** drop down. Once table owner is selected, the table associated to the selected table owner will be pulled up and displayed in the ***Table Name*** drop down.
        - To populate including nullable date columns in the ***Column Name*** drop down, select ***Show Nullable Date Columns*** check box.
    c. Select the required table name from the Table Name drop down. Once table name is selected, the date columns (not nullable) in the selected table will populates in the ***Column Name*** drop down.
    d. Click ***Save*** button, to save the table for the module.
    e. Repeat the process to add tables further.
3. Once the table is added, then populate the columns in the table selected. To populate columns, do the following:

a. In the ***Assessment Tables*** screen, select the table and click ***Column*** button. The ***Assessment Table Columns*** screen will be displayed with the columns in the table.



b. Click ***Populate*** button, to populate the columns existing the table for data assessment. (***Note***: Make sure that columns need to populate whenever any modification take place in the table column(s), to refresh with update table column details).

c. Click ***Back*** button, to navigate to the ***Assessment Tables*** screen.

Then, the user need to generate code for database assessment.

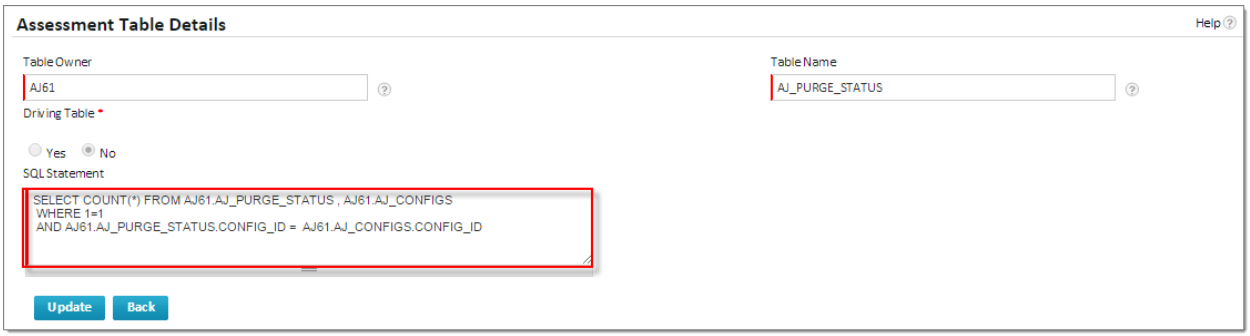
10.1.5.2 Generating ANSI SQL code for Data assessment

Once the criteria are defined, then user needs to generate dynamic ANSI SQL code for a selected data assessment. The generated ANSI SQL code will be stored in the central repository to run a particular data assessment anytime in the future. This ANSI SQL code can select and insert data from source to target database configured respectively.

To generate code for a data assessment, do the following:

1. In the ***Assessment*** screen, select the data assessment created and click ***Generate Code*** button. It might take several minutes for the code to generate. On completion, a confirmation message stating "***Selected Assessment code generation successful***" will be displayed in the screen.

2. The SQL Statements will be generated and stored in the associated tables of selected data assessment.

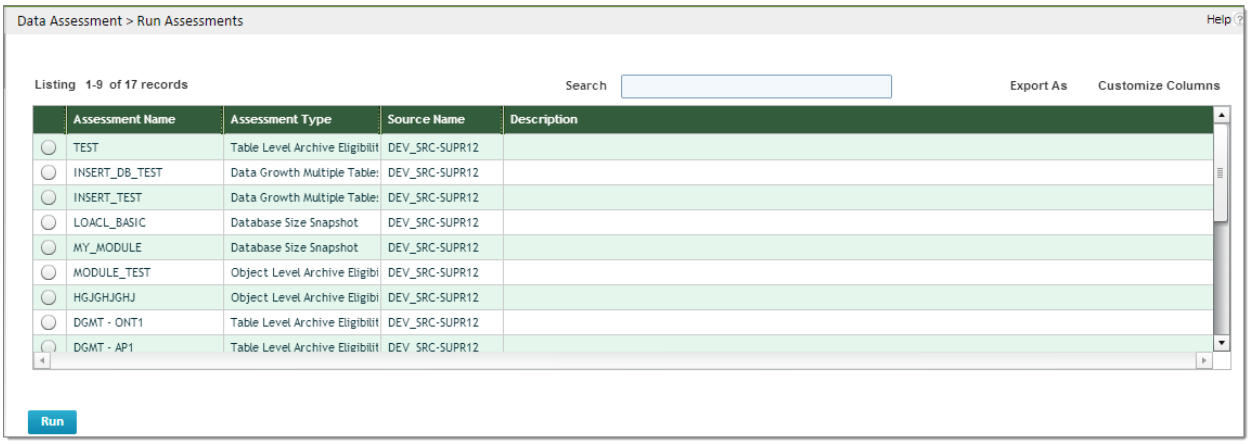


10.2 Execution of Data assessment

Once the data assessment is created successfully, the data assessment can be executed. Based on the data assessment setup, the data from the database will be assessed and the output will be represented in the pictorial presentation that elaborates the eligible data in the database accordingly.

To execute data assessment, do the following,

1. Navigate to the following path: ***Data Assessment > Run Assessment***.



2. Select the intended data assessment and click ***Run*** button, it will display ***Run Parameters Details*** screen. In case of any default value provided at data assessment setup time, those values will appear on the parameters screen. Users can override those parameter values if required and click ***Continue*** Button to carry out the execution process.

3. A unique Run-ID will be generated and displayed in the ***Run Schedule*** screen. To monitor the status of the data assessment, click on Run ID to navigate to the ***Status Monitor*** screen. (***Status >Status Monitor***).

10.3 Status Monitor

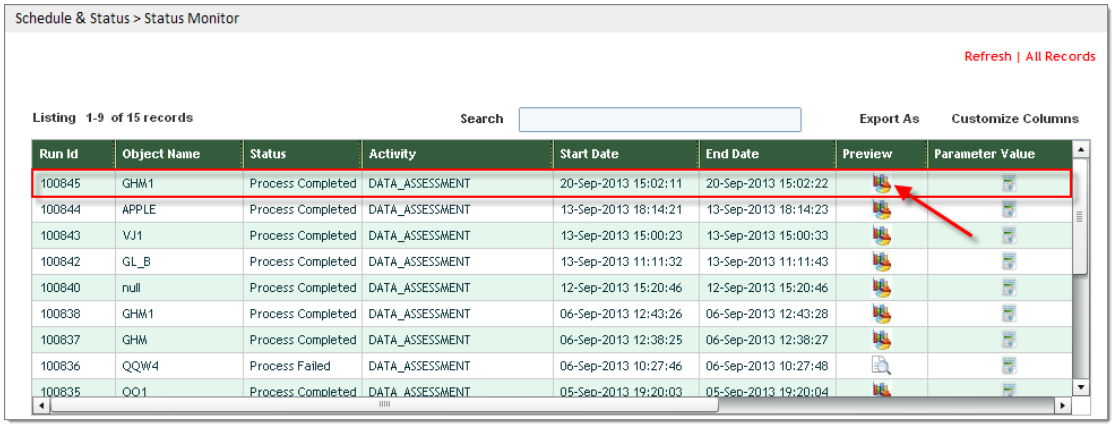
Status monitor serves as a dashboard to check the status of activities that have been executed. The function monitors the progress of jobs scheduled for run.

- It also gives a summary report of the jobs run.
- Status Monitor allows to monitor the progress of all the activities scheduled for executing in Solix EDMS Standard Edition (SE).
- Status Monitor also provides Previews, Job details, Log and so on.
- The Status Monitor displays the list of all the jobs run for execution along with details including status. In Status Monitor screen, refer to the Run IDs in the first column to locate a specific assessment job.

The status is shown as 'In Process' while the process is still in progress or has just initiated. On completion of data assessment, the status of the corresponding activity will turns into 'Process Completed'.

10.3.1 Navigation

To access status monitor link, follow the path: ***Schedule & Status > Status Monitor.***



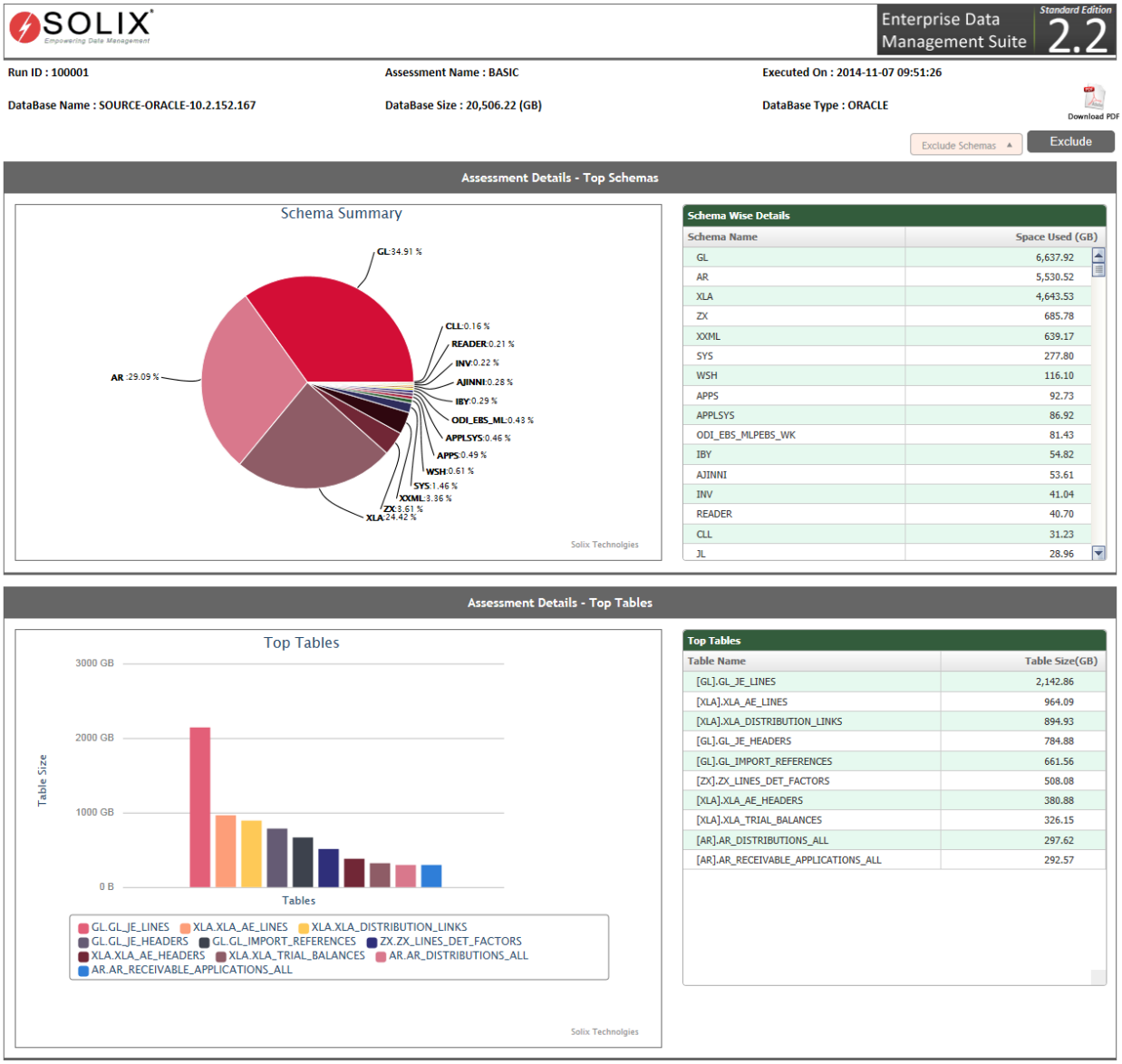
10.3.2 Preview

Once the status of data assessment turned into 'Process Completed', the user can be able to view the pictorial representation of the respective data assessment. To preview the data assessment output, do the following:

- In ***Status Monitor*** screen, click ***Preview*** icon of the corresponding Run ID. The pictorial presentation screen will be displayed with consolidated results of data assessment executed based on the criteria selected (i.e., data assessment type) in the data assessment.
- Based the data assessment type, the graph displayed in the Preview screen will varies accordingly, such as:

10.3.2.1 For Database Snapshot

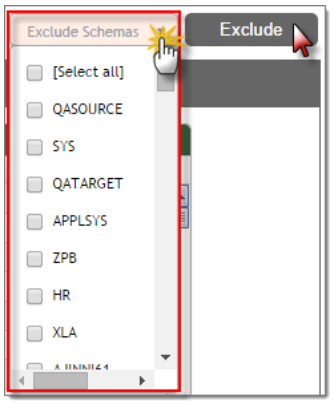
Data assessment is executed on the selected database and provides a snapshot of the database size, data distributed among the schema in the database.



- *Graphical representation*: Shows the size of database, data distributed among the different schemas in the database, and size of each table in the Top N tables. (N- Represent number of tables) in pictorial and graphical presentation.
- *Grid table*: Provides the consolidated details and elaborated information about the database size occupied by each schemas and Top N tables in the database.

To exclude the schema(s),

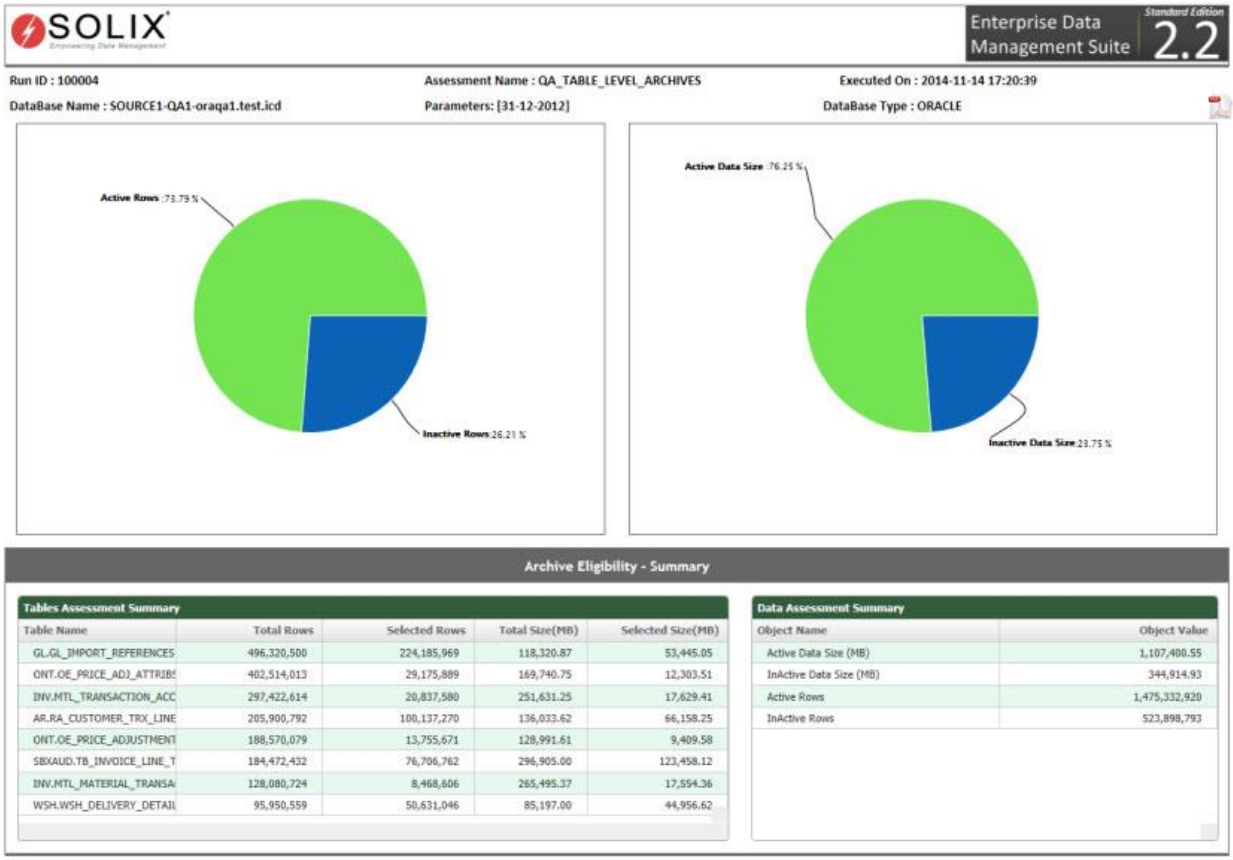
- Click ***Exclude Schemas*** drop down appears at the right-top corner of the dashboard, the drop down display the list of schemas available in the selected database. Select the checkbox of required schemas from the schemas available in the selected database and click ***Exclude*** button. The screen gets refresh and display the graphical representation and grid tab according to the data of schemas included in the data assessment.



  - Provides flexibility to export the graphical representation of data assessment output into .pdf format.

10.3.2.2 For Table Level Archive Eligibility (Criteria Based Assessment)

Data assessment is executed based on the criteria (i.e., Date) provided by the user and shows the percentage of active and inactive rows existing in the selected top tables.

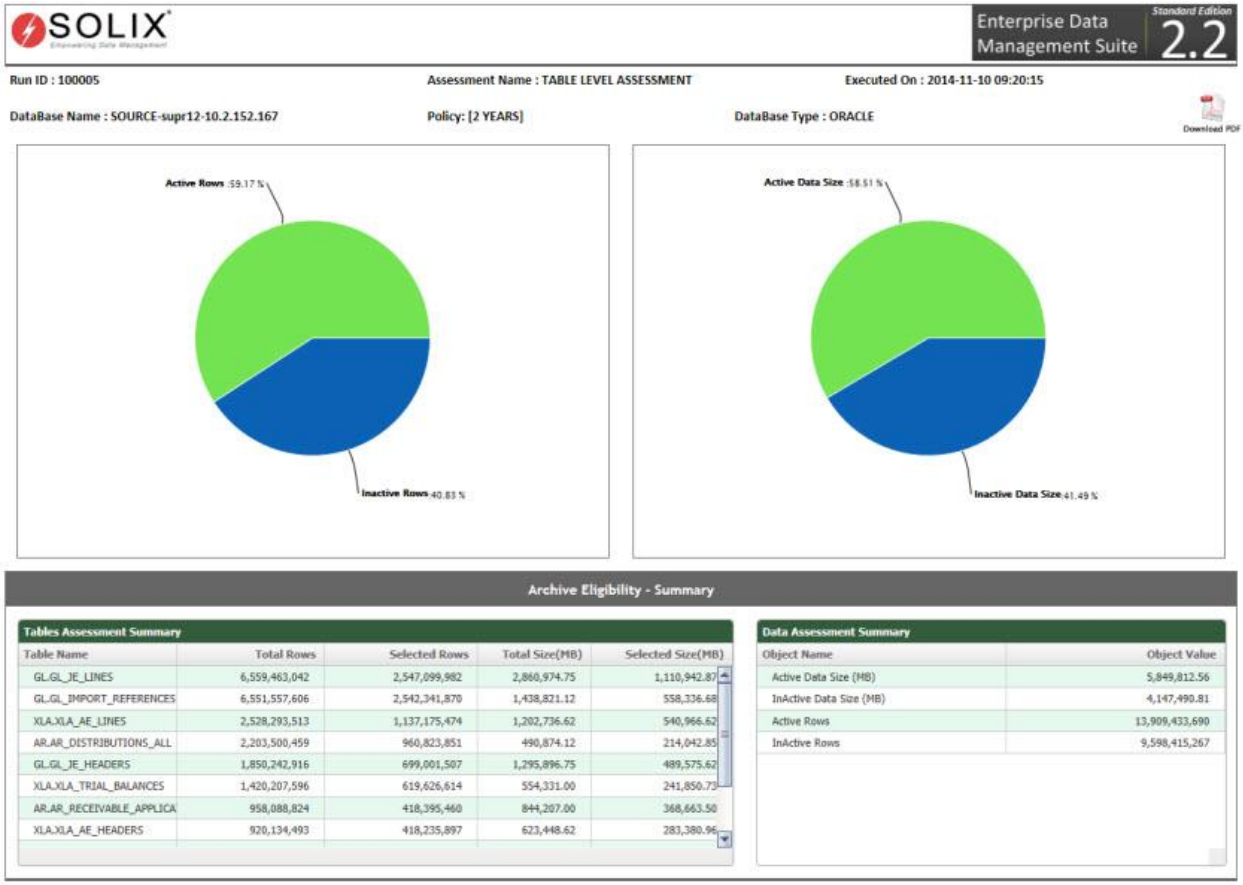


- Graphical representation shows the Active rows/data space and In-active rows/data space in the top tables.
- Grid tables provide the Table Assessment Summary and Data Assessment Summary.
  - *Table Assessment Summary*: Provides the detailed information associated to the Total rows, selected rows for eligibility, total space used and size of data space eligible within the Space Used in each top tables.
  - *Data Assessment Summary*: Provides the consolidated information associated to the Active rows/data space and In-active rows/data space of top tables.

- Provides flexibility to export the graphical representation of data assessment output into .pdf format.

10.3.2.3 For Table Level Archive Eligibility (Policy Based Assessment)

Data assessment is executed based on the retention policy applied on the selected top tables and shows the percentage of total active and inactive rows found during the retention in the selected top tables.



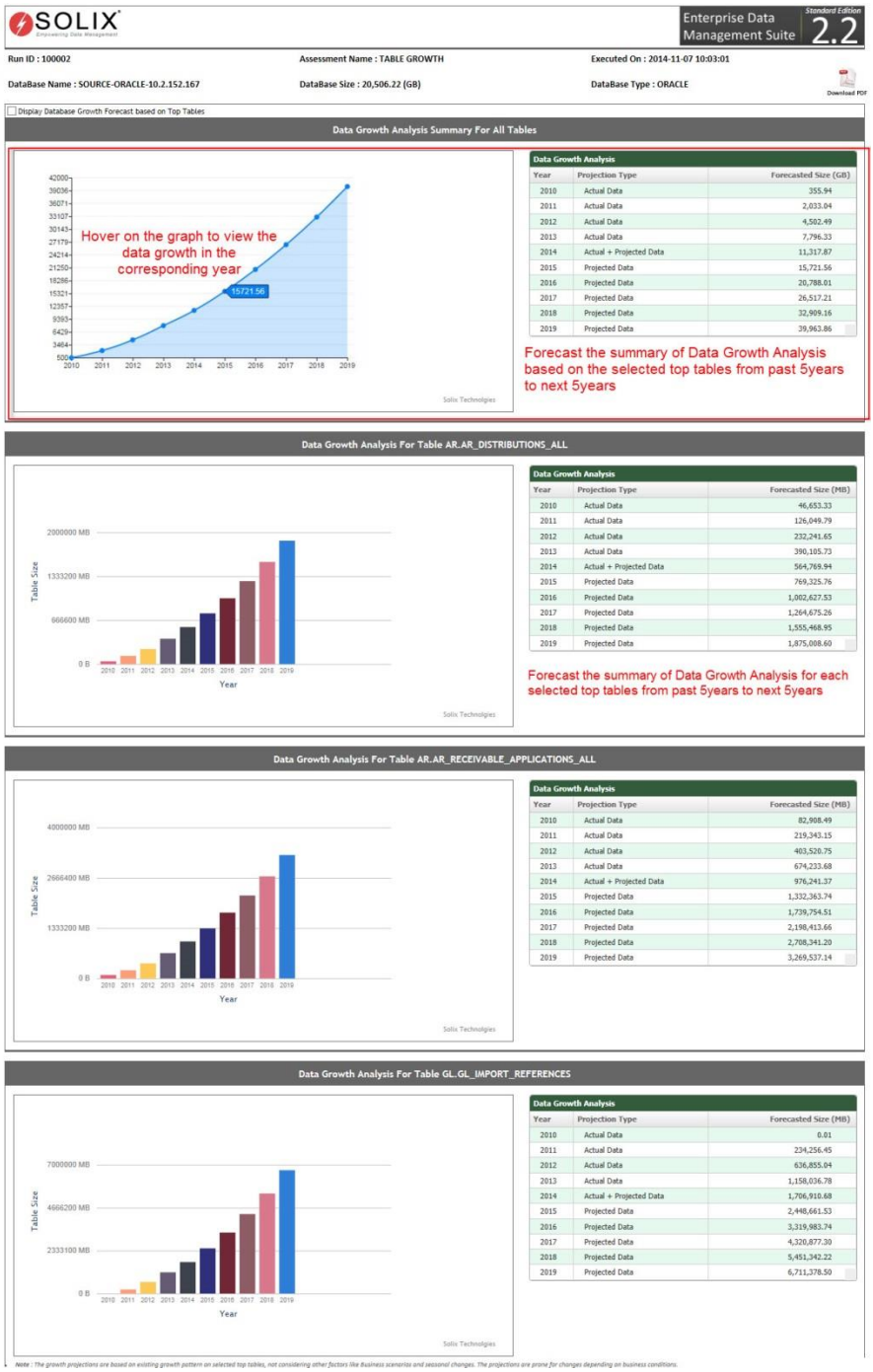
- Graphical representation shows the Active rows/data space and In-active rows/data space found in the top tables during the retention period.
- Grid tables provide the Table Assessment Summary and Data Assessment Summary.
  - *Table Assessment Summary*: Provides the detailed information associated to the Total rows, selected rows for eligibility, total space used and size of data space eligible within the Space Used in each top tables during the retention period.
  - *Data Assessment Summary*: Provides the consolidated information associated to the Active rows/data space and In-active rows/data space of top tables during the retention period.

- Provides flexibility to export the graphical representation of data assessment output into .pdf format.

10.3.2.4 Table Level Forecast

Data Assessment is executed on the selected tables and analysis the data growth of business based on the selected tables for past 5 years. Therefore predict the future data growth in those tables size for the next 5 years.

- It provides the consolidated summary of data growth for all the selected tables.
- Also provides the Data growth for each table in size.
- ***Display Database Growth Forecast based on Top Tables*** check box – enables to predict the future of database growth based on the top tables' growth. It check box is selected, an additional graph is shown in the figure.

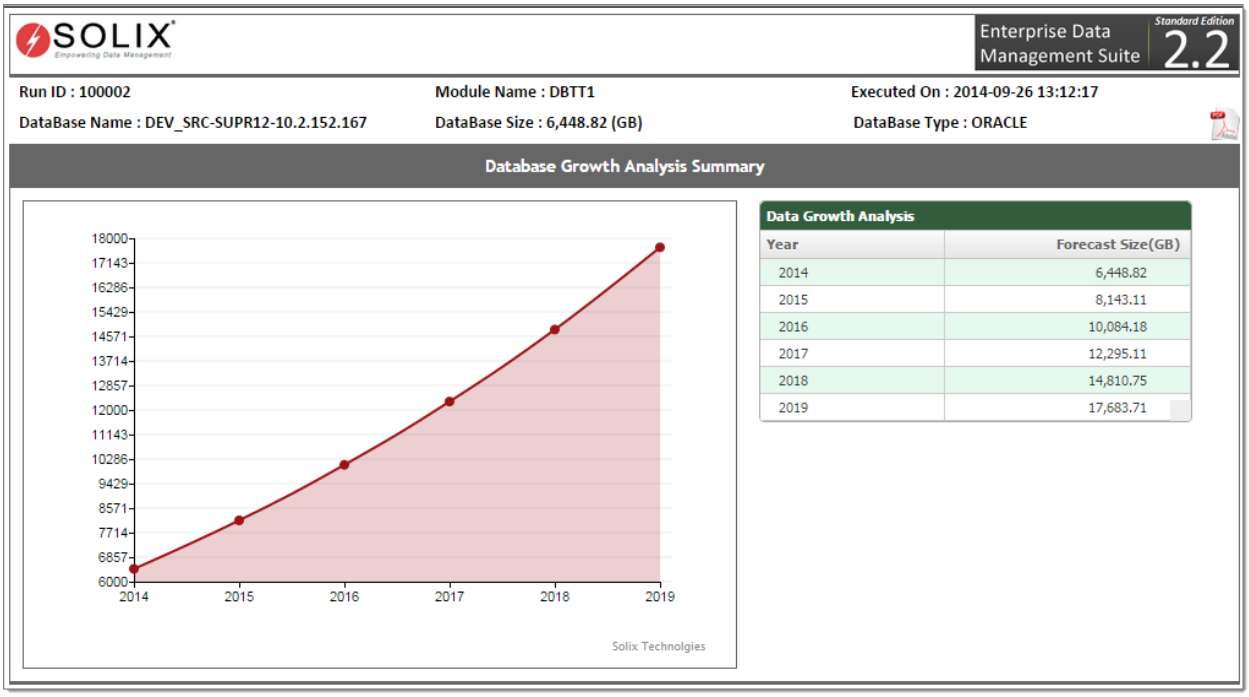


- *Graphical representation*: Analysis the data growth of the business based on the selected tables at table level / database level and shows the total data growth for all the tables and each table as well with a percentage in a graph from past 5 year to next 5 years. It is calculated based on the data growth encountered in the previous years.
- *Grid table*: Provide the total data growth for all the tables and each tables as well every year with a percentage and accurate size of data may increase in the database from past 5 year to next 5 years. The projection types differ based on the data in the database.
    - *Known*- implies that the data growth analysis is calculated based on the existing data of the tables in that year (i.e., past year) and forecasted the data growth.
    - *Partial Prediction* - implies that the data growth analysis is calculated based on the both existing data of tables (i.e., known data) and predicted data in that year and forecasted the data growth.
    - *Complete Prediction* - implies that the data growth analysis is calculated based on predicted data in future year(s) and forecasted the future data growth (i.e., next year)

- Provides the flexibility to export the graphical representation of data assessment output into .pdf format.

10.3.2.5 Database Growth Analysis on Top Tables

Data Assessment is executed on the top tables in the database and analysis the data growth of based on the top tables. Therefore predict the future database growth based on top tables data growth for the next 5 years.



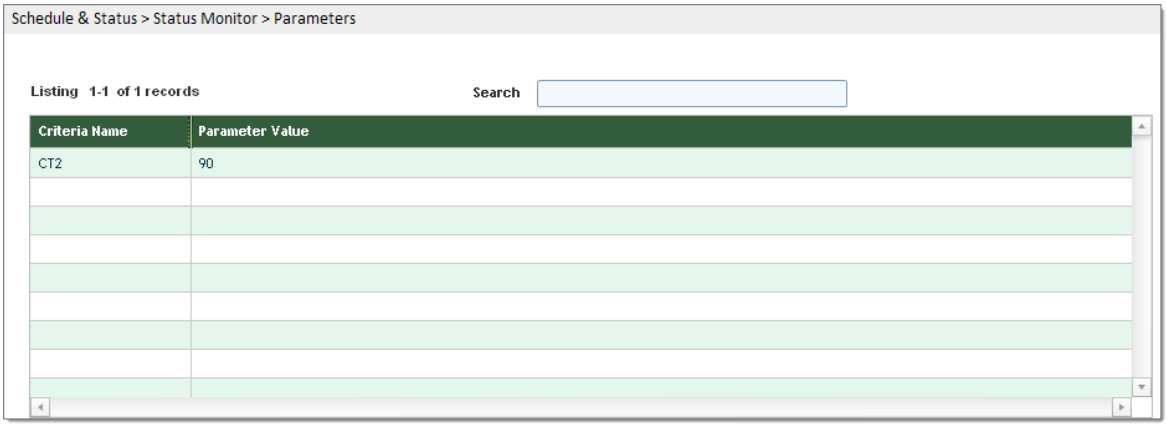
- *Graphical representation*: Analysis the data growth of the business based on the top tables in the database and shows the growth of data in business every year with a percentage in a graph for next 5 years. It is calculated based on the data growth encountered in the previous years.
- *Grid table*: Shows the growth of data in business every year with a percentage and accurate size of data may increase in the database for next 5 years.

- Provides flexibility to export the graphical representation of data assessment output into .pdf format.

10.3.3 Parameters

Once the status of data assessment turned into 'Process Completed', the user can be able to view the Parameter details of the respective data assessment. To view the parameter details, do the following:

1. In ***Status Monitor*** screen, click ***Parameter*** icon corresponding to the required Run ID, the ***Parameters*** window will be prompted as shown in the figure below.



2. The ***Parameters*** window shows the parameter information of the data assessment such as Criteria Value and Parameter Value.

10.3.4 Application Log

Application Log captures the details of activities performed by users in Solix EDMS Data Assessment Standard Edition (SE), which may be used in the event of audit trail system recovery.

To view the Log details, do the following:

1. In ***Status Monitor*** screen, click ***Log*** icon corresponding to the required Run ID, the ***Log Details*** window will be prompted.
2. The ***Log Details*** shows the log information associated to the data assessment.

10.4 Data Assessment Policies

Data Assessment Policies enables to create a policy with constraints required to assess the data identified from given period to less than current date, to identify eligible data for archiving. Exclusively, the data assessment policy is designed based on the "Date" criteria.

Benefits:

- Helps to identify archive eligible data in the database from the data found before the given retention period till less than current date. For example, if retention period is provided as '3', then the data found before 3 years from current date will be assessed for archive eligible data.
- Helps to identify the appropriate historical data that is eligible for data archiving with adherence of business retention rules.

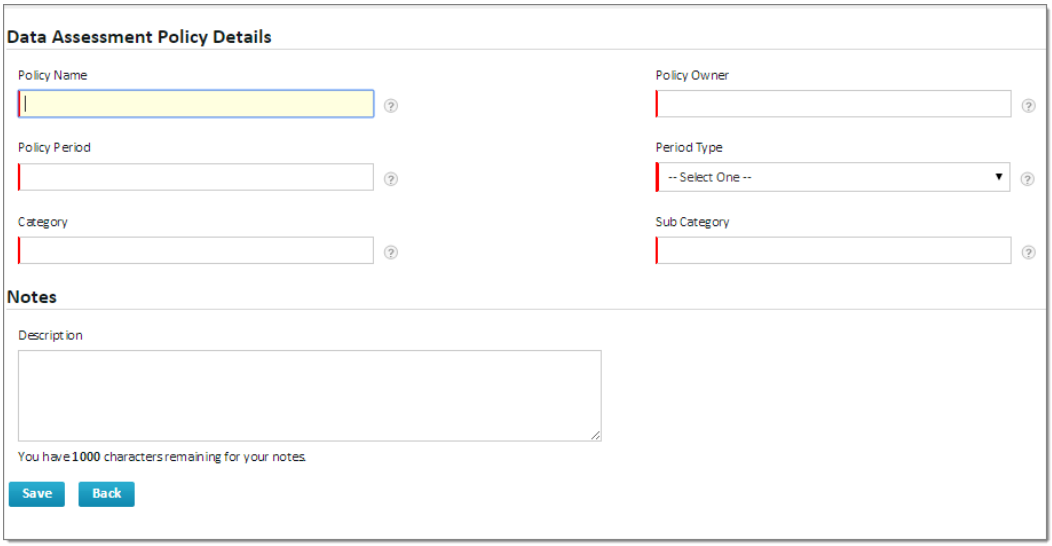
10.4.1 Navigation

To access Data Assessment Policies link, follow the path**: *Setting* > *Data Assessment* > *Data Assessment Policies*.**

10.4.2 Create a new Data Assessment Policy

To add new Data Assessment Policy, do the following:

1. Place cursor at ***Setting*** tab in the Solix EDMS main menu. The list of submenu is displayed.
2. Select ***Data Assessment*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***Data Assessment Policy*** option from the drop down. The ***Data Assessment Policies*** screen with the list of existing data assessment policies will be displayed.
4. Click ***Add*** button. The ***Data Assessment Policies*** page appears which enables to enter the information corresponding to the data assessment policy.



5. In the ***Data Assessment Policy Details*** page, do the following:

a. Enter the policy name in the ***Policy Name*** text field.
b. Enter the owner of the policy in the ***Policy Owner*** text field.
c. Enter the duration of policy in the ***Policy Period*** text field**.**
c. Select the appropriate type of duration from the ***Period Type*** drop down list. Based on the Policy Type selected, the Policy Period will be calculated in Years/Month/Days. For example, if Policy Period is "6" and Policy Type is "Months", then it is stated as duration of policy is 6 months.

- ***Years*** – This option indicates that the policy period is calculated in years.
- ***Months*** – This option indicates that the policy period is calculated in months.
- ***Weeks*** - This option indicates that the policy period is calculated in weeks.
- ***Days*** - This option indicates that the policy period is calculated in days.

d. Select the required category from the ***Category*** drop down list. Based on the category selected, the corresponding sub categories will be displayed in the ***Sub Category*** drop down list.
d. Select the intended sub category from the ***Sub Category*** drop down list.
e. Enter the comments in the ***Notes***.
f. Click ***Save*** button. Once the data assessment policy is saved successfully, a confirmation message is prompted on the screen.

Once the policy is created successfully, the user can assign the policy on the column of intended table existing in the data assessment.

- The field marked as "|" are mandatory fields.

10.4.3 Editing an Existing Data Assessment Policy

To edit data assessment policy, do the following:

1. From the data assessment policy list, select the radio button adjacent to the desired data assessment policy.
2. Click ***Edit*** button. The ***Data Assessment Policies Details*** screen will be displayed.

3. In the ***Edit Data Assessment Policy Details*** screen,
    a. Make the necessary changes in the required fields.
    b. Click ***Save*** button, to save the modified information. Once the modified information is updated successfully, a confirmation message is prompted.

- The field marked as "|" are mandatory fields
- If the details provided are invalid, a warning message dialog box is prompted
- To return to the list screen from **Add / Edit Details** screen, click ***Back*** button.

10.5 Assign Data Assessment Policies

This section illustrates the process to assign data assessment policy to the data assessment and enables to apply the policy on the intended column of table existing in the data assessment.

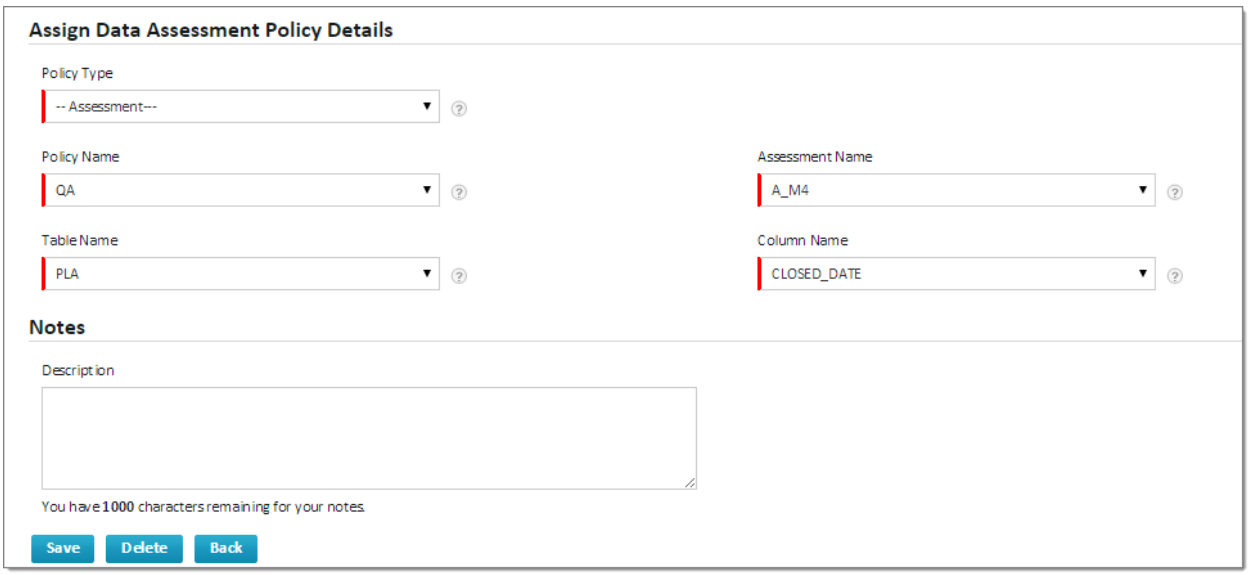
10.5.1 Navigation

To assign Data Assessment Policies, navigate to the following path**:** ***Setting > Data Assessment > Assign Data Assessment Policies.***

10.5.2 Add New Assign Data Assessment Policy

To add new Assign Data Assessment Policy, do the following:

1. The ***Assign Data Assessment Policies*** screen will be displayed with the list of existing assign data assessment policies.
2. Click ***Add*** button, to assign policy to the data assessment. The ***Assign Data Assessment Policy Details*** page appears which allows the user to enter the information corresponding to the assign data assessment policy.



3. In the ***Assign Data Assessment Policy Details*** page, do the following:
    a. Select Assessment from the ***Policy Type*** drop down list.
    b. Select the intended policy from the ***Policy Name*** drop down list, to apply selected assessment policy on the data assessment.
    c. Select the data assessment from the ***Assessment Name*** drop down list, to assign the data assessment policy**.** Once the data assessment is selected, the corresponding tables will be displayed in the Table Name text field. For Tables Level Archive Eligibility, Table Name and Column Name drop down list will not be populated in the screen.

d. Select the required table from the Table Name drop down list.
e. Select the column intended for data assessment from the Column Name drop down list.
f. Enter the comments in the ***Notes***.
g. Click ***Save*** button, to save the data assessment policy assignment. On assignment is saved successfully, a confirmation message will be prompted in the screen.

Once the data assessment policy is assigned successfully, in case, the respective data assessment is set for execution the Solix EDMS Standard Edition (SE)will check whether any policies are applied on the data assessment or not. If policy is applied, then the execution of data assessment will be carried out according the policy criteria is defined.

- The field marked as "|" are mandatory fields
- If the details provided are invalid, a warning message dialog box is prompted.
- If the assign data assessment policy name already exists, a warning message about duplicate name is prompted in the dialog box.
- For Tables Level Archive Eligibility, ***Table Name*** and ***Column Name*** drop down list will not be populated in the screen.

10.5.3 Editing an Existing Assign Data Assessment Policy

To edit an existing Assign Data Assessment Policy, do the following:

1. From the assign data assessment policies list, select the radio button adjacent to the desired assign data assessment policy.
2. Click ***Edit*** button. The ***Assign Data Assessment Policy*** page will be displayed.
3. In the Edit ***Assign Data Assessment Policy Details*** screen,
    a. Make the necessary changes in the required fields.
    b. Click ***Save*** button, to save the modified information. Once the modified information is updated successfully, a confirmation message is prompted.

- The field marked as "|" are mandatory fields.
- If the details provided are invalid, a warning message dialog box is prompted.
- To return to the list screen from **Add / Edit Details** screen, click ***Back*** button.

10.5.4 Deleting an Existing Assign Data Assessment Policy

To delete an existing Assign Data Assessment Policy, do the following:

1. In the ***Assign Data Assessment Policy*** page, select the radio button adjacent to the desired assign data assessment policy.
2. Click ***Edit*** button. ***Assign Data Assessment Policy Details*** page will be displayed.
3. Click ***Delete*** button**.** A window pops up with message ***Are you sure you want to delete the Assign Data Assessment Policy?.***
   - Click ***Ok*** button to delete the Assign Data Assessment Policy from the list, or else Click ***Cancel*** button**.**

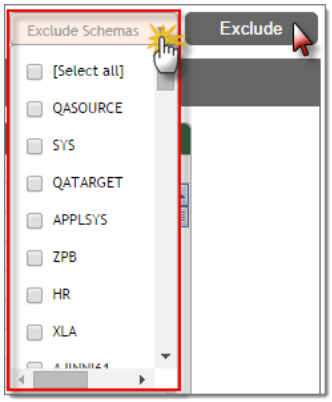
10.6 Data Assessment Dashboard

Data Assessment Dashboard is designed to depict the comprehensive information of the archive eligible data (i.e., Active data) encountered during data assessment in each object based on maximum 10 recent executions, data distributed in schemas existing in the database, analysis business data growth based on database size, and provides a detailed analytics statistics in the size of database can be increased yearly in future. Once the data assessment is executed in the data assessment, the respective information will be replicated in the Data Assessment Dashboard screen automatically.

Dashboard also provides the flexibility to exclude the schema(s) which are not required for the data assessment and only shows the graphical representation of required schemas in the database.

To exclude the schema(s),

- Click ***Exclude Schemas*** drop down appears at the right-top corner of the dashboard, the drop down display the list of schemas available in the selected database. Select the checkbox of required schemas from the schemas available in the selected database and click ***Exclude*** button. The Assessment Dashboard gets refresh and displays the graphical representation and grid tab according to the data of schemas included in the data assessemnt.



To view Assessment Dashboard, do the following***:***

1. Navigate to the following path: ***Data Assessment > Assessment Dashboard***. The ***Assessment Dashboard*** screen is displayed showing the graphical representation of data database size snapshot, data amount of eligible archive data in given database, data growth analysis, and object wise assessment in rows and size.
2. Select the required data assessment from the ***Data Sources*** drop down list. This drop down maintains the databases and data assessments associated the KB. (In case, multiple sources are defined & data assessments assigned to the current KB).
3. Once the data assessment, the ***Assessment Dashboard*** screen gets refreshed and display the graphical information associated to the selected data assessment as shown in the figure below.

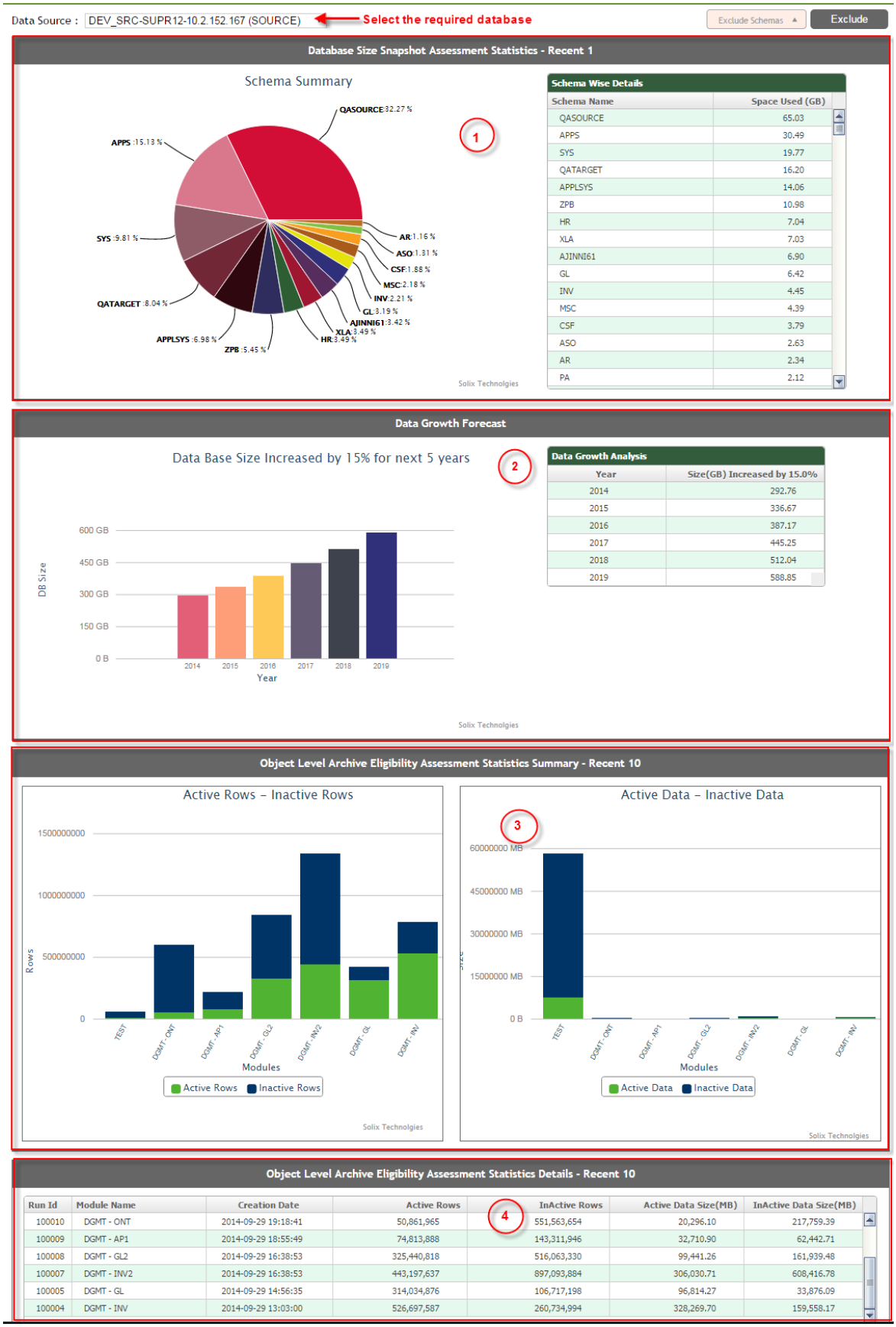


Figure 1: Assessment Dashboard

1. ***Pane 1:*** This pane provides the Database Size Snapshot Assessment statistics, and bifurcated into two sections: Pictorial presentation and Grid table. Graphical

presentation shows the data distributed in tables of each schema that been assessed in the database. Whereas, Grid table provides a detailed amount of space occupied in each schema in the database.

2. ***Pane 2***: This pane provides data growth forecast of the business per every year based on the analysis at database level (i.e., database size). This pane bifurcated into two sections: Graphical representation and Grid table. Graphical representation shows the growth of business data every year in percentage in a graph which is calculated based on the data growth encountered in the previous years. Grid table provides consolidated information of data growth in business every year with a percentage and accurate size of data that can be increased every year in the selected database.

- Make sure that the atleast once the database size snapshot must be executed to forecast the data growth.
- Make sure that the difference between two executions should be minimum "30".
- For one execution of data assessment, by default the data growth percentile is given as 15%.
- Forecasting of number of years of data growth is depended on the value specified for "ASSESSMENT_PROJECTION_YEARS' parameter (i.e., 'Assessment Projected years for Data Growth analysis'). For example, if it is 5 years, next coming 5 year data growth analysis will be shown.

3. ***Pane 3***: This pane shows the graphical presentation of archive eligible data (i.e., Active data) and non-eligible data (i.e., Inactive data) accordingly to rows and data size in each object. Based on the maximum "10" recent data assessment executions for Object Level Archive Eligibility, the eligible archive data and non-eligible data as per row and data space is designed and shown in the graph.

4. ***Pane 4***: This pane shows the grid table that provides the consolidated information related to amount of active rows, inactive rows, active data size and inactive data size found in each object based on the maximum "10" recent data assessment executions for Object Level Archive Eligibility.

11 Database Archiving

Solix EDMS Database Archiving Standard Edition (SE) is a process of moving data that is no longer actively used to a separate data storage device for long-term retention. Data archives consist of historical data that is still important and necessary for future reference, as well as data that must be retained for regulatory compliance. Data archiving platforms like Solix EDMS Database Archiving Standard Edition (SE) provide data access so that data can be retrieved easily whenever needed and provides data classification to identify scarcely accessed data that can be moved to an active archive.

This section illustrate the process to create KB tables, build relations & joins between the tables and design configuration for data archiving process to archive the data from source to target database.

- Both source database and target database must be homogenous. For example, Oracle to Oracle.

Functionalities

The functionalities provided by Solix EDMS Database Archiving Standard Edition (SE) to archive the data from source to target database are listed below.

- User Management
- Environment (Knowledge base) Management
- Source and target definition
- KB Assignment
- Define the tables and their structures for custom tables in Knowledge Base (KB) tables
- Define the table relations for custom tables in the Knowledge Base tables

Assumptions

- All the required KB tables and KB Rules are configured.
- Objects (Tables) to be archived have been identified.
- Users have the knowledge of the tables and their relations in the data to be archived.

Standard Procedure to Build and Run Configuration

1. Select related tables from the Knowledge Base. The selected tables will be populated in the design space.
2. Link up the selected tables to define the parent-child relationships among them.

3. Specify the driving table that will drive the archive & purge when the configuration is eventually run.
4. Specify the configuration details, specify archive/purge strategy and save the configuration.
5. Define the criteria. By default, the data in all the selected tables will be mapped for Archive & Purge. Defining the criteria allows the user to select specific rows from the tables for archive and purge.
6. Generate ANSI SQL code for the configuration.
7. Run the configuration. The application prompts the user to supply parameter values at run time for archive configuration. Specify values. The run will be scheduled.
8. The archive/purge configuration will be scheduled for run and the application assigns a Run Id to the archive/purge activity.
9. Go to Status Monitor and, using the Run Id, identify the archive/purge activity. Solix EDMS Standard Edition (SE) application is in process of performing a preview before the actual execution of archive/purge, once the preview completes, the status of the activity turns to preview completed.
10. View the Preview Report of the activity. On successful result, hence execute Archive & Purge.

11.1 Custom Configuration (Design)

Configurator is a powerful tool with a visual design editor to setup custom and standard archive configurations. It enables to generate re-usable ANSI SQL Code for the configurations to move data from one location to another. Configurator includes Auto-Config and partitioning capabilities.

Features of Configurator:

- Provides a powerful configuration tool that enables automatic design and setup of custom configurations.
- Helps in designing meta-data structure.
- Provides an editor that enables the user to use drag-drop components in order to paint the entity relations for customizations and bolt-on applications.
- Enables archiving and purging of data for customizations in the Oracle EBS, PeopleSoft, JDE and other custom-developed or third-party applications.
- Code Generator automatically generates ANSI SQL code, which will enable the user to archive the data across homogenous databases, viz., Oracle to Oracle. This code will be stored in Solix EDMS repository and can be called anytime for any future archive/purge runs.

Archiving Types

- Database to Database
- Database to CSV
- Database to XML

To design custom configuration, the user needs to create a metadata (i.e., KB tables, KB table relation, Join, and so on) and populate the columns in knowledgebase to build the configuration effectively. This chapter outlines the procedure to create a KB table, KB table Relation and build a configuration for archiving. The topics included are given below:

1. KB Table
2. KB Table Relation
3. Creating Configuration for Data Archiving

- It is recommended to created KB Table Relation only if the user is designing the configuration based on multiple KB tables.
- The user must have the knowledge of the parent - child relationship among the tables selected. Inappropriate selection of tables may results in data being orphaned partially or completely.

11.1.1 KB Tables

Tables are the basic unit of data storage in the knowledgebase. KB Table is defined with a table name and a set of columns to extract the data from the database and populate it in the knowledgebase for archiving process. Here, the user is provided feasibility to setup a table in the knowledgebase and add the required columns to the table including metadata of the column (Data type, Primary key flag, Primary Key Sequence, and so on).

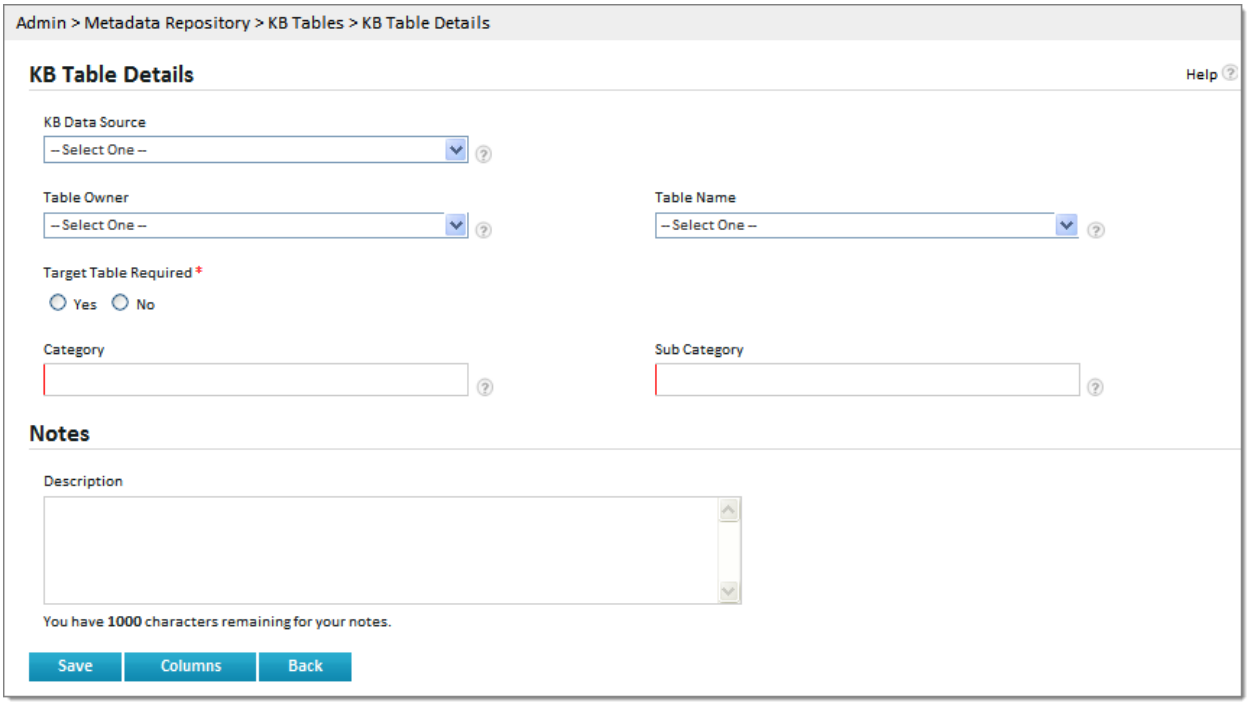
11.1.1.1 Navigation

To access ***KB Tables*** link, follow the path: ***Admin > Metadata Repository > KB Tables.***

11.1.1.2 Add New KB Tables

To add a new KB tables in the knowledge base, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu. The list of submenus is displayed.
2. Select ***Metadata Repository*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***KB Tables*** option in the drop down. The ***KB Tables*** screen with the list of KB tables existing in the knowledgebase will be displayed.
4. Click ***Add*** button, to create a new KB table. The ***KB Table Details*** screen appears to enter the KB table information as shown in the figure below.



5. In the ***KB Table Details*** page, do the following:

a. Select an appropriate data source form the ***KB Data Source Type*** drop down list. Once the data source is selected, the table owners associated to the selected datasource will be listed in the ***Table Owner*** drop down list. (Note: exclusively, the data sources assigned to the respective KB will be listed in the KB Data Source drop down list).

b. Select the ***Table Owner*** from the corresponding drop down list. Once the table owner is selected, the tables associated to the selected table owners will be listed in the ***Table Name*** drop down list.

c. Select the ***Table Name*** from the corresponding drop down list, to define the table in the knowledgebase.

d. Select "***Yes"*** option in the ***Target Table Required***, to create the target table in the target database. Once option is selected***, Auto Create Target Table, Target Table Name*** and ***Target Table Owner*** fields become visible in the screen.

e. Select "***Yes/No"*** option in ***Auto Create Target Table***, to create the target table in the target database automatically during the archiving process.

- If "***Yes"*** option is selected, additional two purge columns "PURGE_SEQ_ID and PURGE_DATE will be created in target table and also two columns will be added in the TARGET_TABLE_PURGE_COLUMNS parameter (Parameter screen).
- If "***No***" option is selected, the table structure of both source and target table will be same.

f. Enter ***Target Table Name*** and ***Target Table Owner*** fields in the corresponding fields, the data will be archived in the corresponding target table during archiving process.

g. Enter ***Category*** in the corresponding field.

h. Enter ***Sub Category*** in the corresponding field.

i. Enter the comments in the ***Notes.***

j. Click ***Save*** button. Once the KB table is created and saved successfully, a confirmation message will be prompted on the screen.

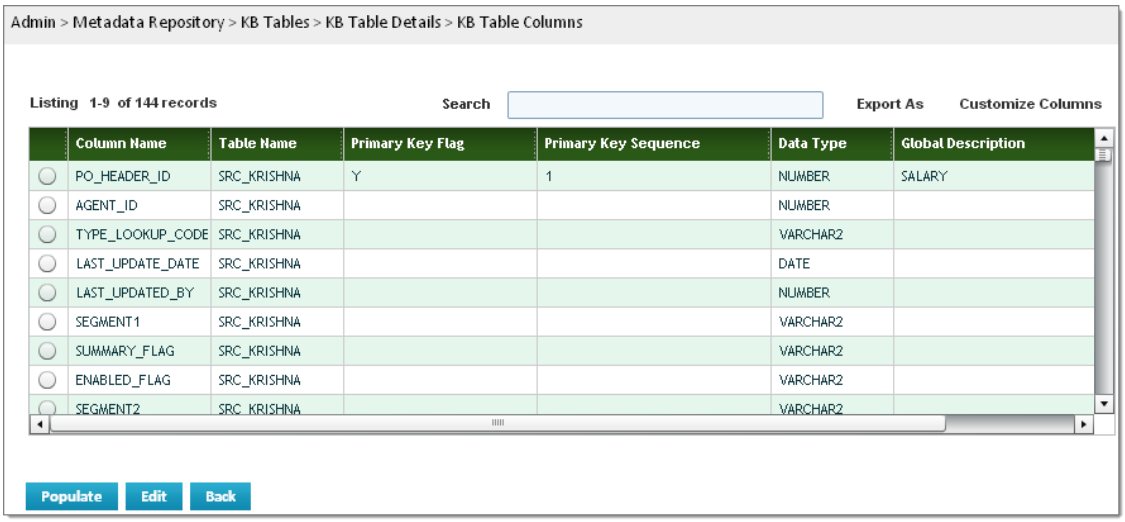
- If the details provided are invalid, a warning message will be prompted on the screen.
- If the KB Table Name already exists, a warning message about duplicate name will be prompted.

- The field marked as are mandatory fields.

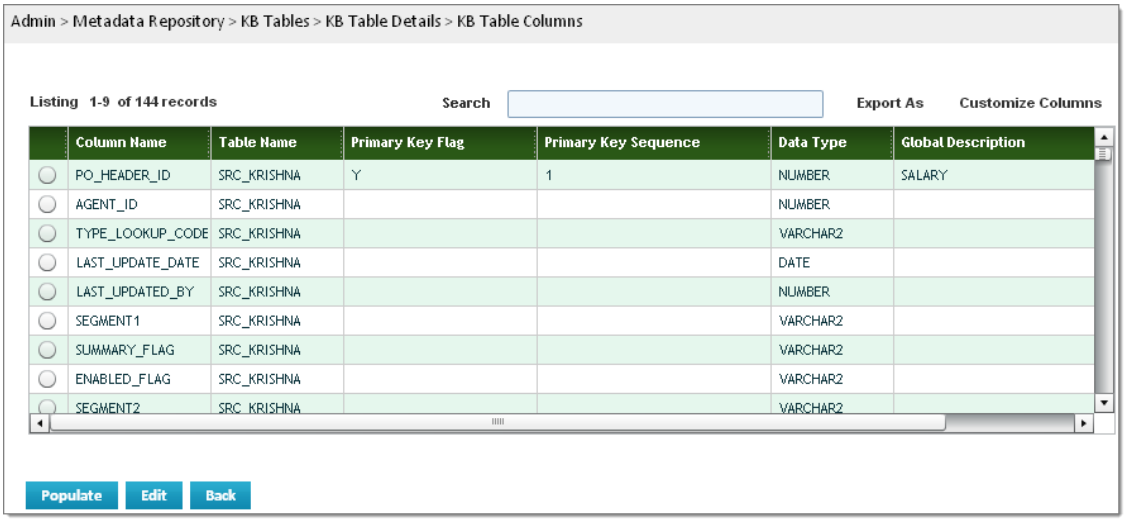
11.1.1.3 Populating Columns

Once the KB table is created, henceforth the user need to populate the columns in KB table from the specified KB Data source. To populate column in the KB table, do the following:

1. In the ***KB Table Details*** page, click ***Columns*** button to navigate to ***KB Table Columns*** screen. Solix EDMS Standard Edition (SE) invokes all the columns pertaining to the configured table from the enterprise application, which are listed in the ***KB Table Columns*** screen.



2. Click ***Populate*** button, to populate all the columns in Solix EDMS Standard Edition (SE). The ***KB Table Columns*** page will be displayed as shown in figure below.



11.1.1.4 Editing a Column

Sometimes changes may be made to the column(s) of a table in the application instance that has been configured in Solix EDMS Standard Edition (SE) Knowledge Base. In such cases, the same column changes should be made to the respective KB table in Solix EDMS Standard Edition (SE). The ***Edit*** function enables the users to make such changes to the columns.

To edit a table column, do the following:

1. In ***KB Table Columns*** screen, select the radio button adjacent to the desired column and click ***Edit*** button. The ***KB Table Column Details*** page will be displayed as shown in the figure below.

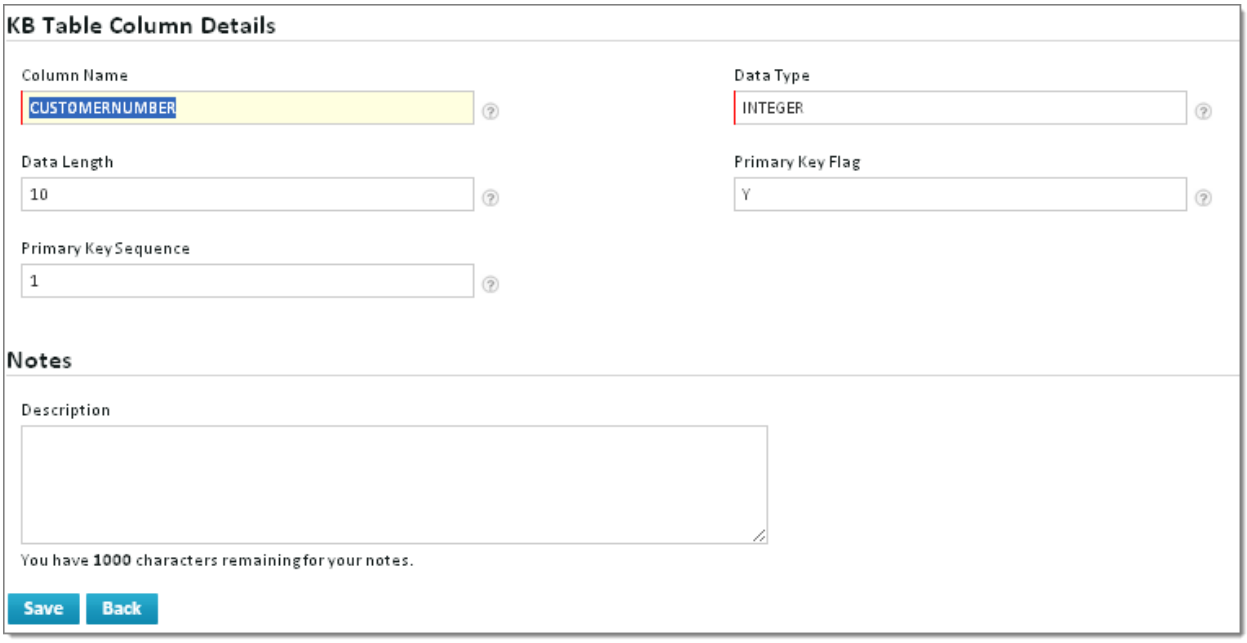


Figure 11-1: KB Table Column Details screen

2. In the ***Edit KB Table Column Details*** screen, do the following:
    a. The ***Column Name*** remains static and cannot be changed.
    b. Make the necessary changes in ***Data Type, Data Length*** fields.
    c. Specify "Y" in the ***Primary key Flag***, when the column is a primary key in the table
    d. Specify the sequence number of the primary key column in the ***Primary key Sequence***
        - Enter "1" value, when single primary key exists in table.
        - In case, when multiple primary keys exist in table, then enter the sequence number of primary key accordingly.

    A piece of data such as salary, etc. may be shared across different Enterprise Applications in an organization but the column names of such data may differ from one application to another. ***Global Description*** enables the user to identify the counterparts of such column in different Enterprise Applications by the column description and map those columns to the specific table column.

The ***Global Description*** values that are displayed in the list are created in ***Parameters*** functionality under ***Admin*** in Solix EDMS Standard Edition (SE). The administrative user, super user, or apps functional user can create the Global Description values for GLOBAL_MAPPING parameter. These values will be listed in the Global Description drop down list in the ***Edit KB Table Column Details*** page.

3. Click ***Save*** button. The selected column will be updated accordingly.
4. Click ***Back*** button to return to the previous page.

- The field marked as " "are mandatory fields.

11.1.2 KB Table Relations

Table relationship is an association between two or more tables. Relationships are expressed in the data values of the primary and foreign keys. Keys are fundamental to the concept of relational databases because they enable tables in the database to be related with each other. Navigation around a relational database depends on the ability of the primary key to unambiguously identify specific rows of a table.

Knowledge Base (KB) Relations function allows the users to setup the table relations and joins in Solix EDMS Standard Edition (SE). This function is used to configure a child table to inherit the properties of the parent table

- It is recommended to created KB Table Relation, only if the user is designing the configuration based on multiple KB tables.

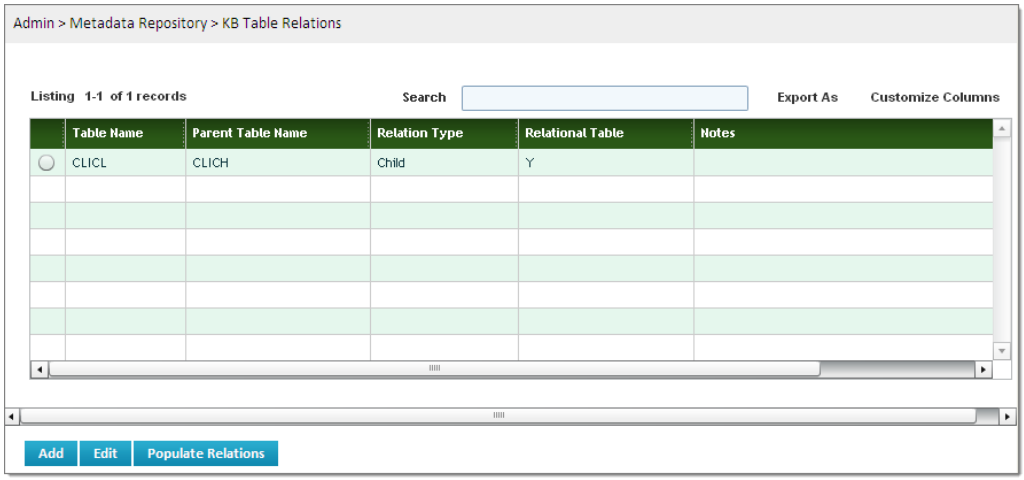
11.1.2.1 Navigation

To access ***KB Table Relations*** link, login to Solix EDMS Standard Edition (SE) and follow the path: ***Admin > Metadata Repository > KB Table Relations.***

11.1.2.2 Add New KB Table Relations

To add a new KB Table Relations, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu. The list of submenu is displayed.
2. Select ***Metadata Repository*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***KB Table Relations*** option from the drop down. The ***KB Table Relations*** screen with the list of existing KB Table Relations will be displayed as shown in the figure below.



4. Click ***Add*** button. The ***KB Table Relations Details*** screen appears to enter the information corresponding to the KB Table Relations.

5. In the ***KB Table Relations Details*** screen, do the following:

    a. Select child table from the ***Table Name*** drop down list.

    b. Select ***Parent Table Name*** from the corresponding drop down list.

    c. Select ***Yes/No*** option in the ***Relational Table***, to indicate whether both the parent table and child table is a relational table or not.

    - If "***Yes***" option is selected, the relations (i.e., Foreign Keys and Primary Keys) exist on the database level.
    - If "***No***" option is selected, the relations (i.e., Foreign Keys and Primary Keys) does not exist on the database level but it will be maintained at the business application level.

    d. Enter the comments in the ***Notes.***

    e. Click ***Save*** button. Once the information is saved successfully, a confirmation message dialog box will be prompted.

- If the details provided are invalid, a warning message dialog box is prompted.
- If the KB table relations name already exists, a warning message about duplicate name is prompted in the dialog box.

- The field marked as are mandatory fields.

11.1.2.3 Editing an Existing KB Table Relations

To edit ***KB Table Relations***, do the following:

1. From the ***KB Table Relations*** list, select the radio button adjacent to the desired KB Table Relations.
2. Click ***Edit*** button. The ***KB Table Relations Details*** screen will be displayed.
3. In the ***Edit KB Table Relations Details*** screen, do the following:
    a. Make the necessary changes in the required fields.
    b. Click ***Save*** button, to save the modified information. Once the modified information is updated, a confirmation message will be prompted.

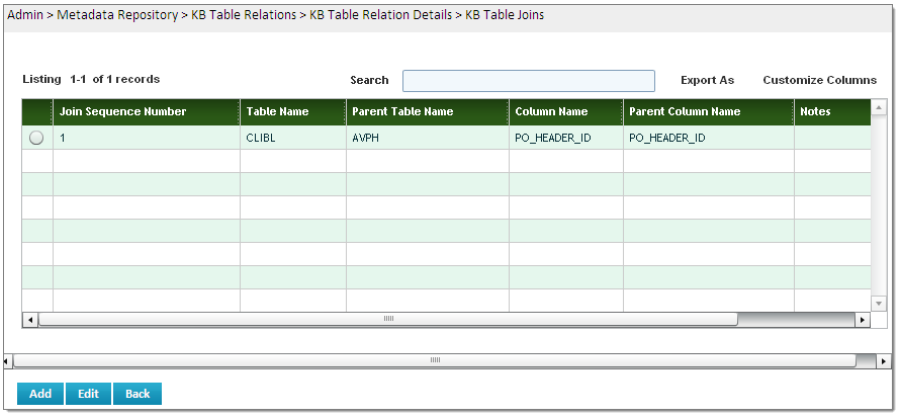
- The field marked as are mandatory fields.
- If the details provided are invalid, a warning message is prompted
- To return to the ***KB Table Relations List*** screen from ***Add / Edit Details*** screen, click ***Back*** button.

11.1.2.4 Configuring Table Joins

Joins preserve the lineage of the tables in the KB. This function keeps track of all the links that connects one table with the other tables in the KB.

Path: ***KB Table Relations Details*** screen (Refer to KB Table Relations Details)

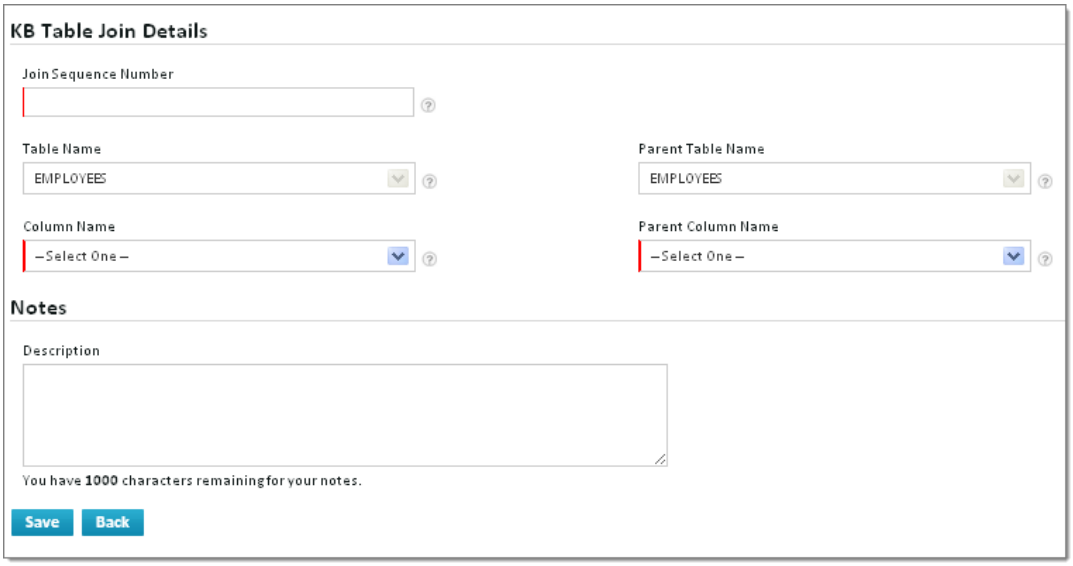
- In ***KB Table Relation Details*** screen, click ***Joins*** button. The ***KB Table Joins*** screen displays the existing table joins corresponding to the KB Table Relation as shown in the figure below.



11.1.2.5 Add New KB Table Join

To add new KB Table Join, do the following:

1. In the ***KB Table Joins*** screen, click ***Add*** button. The ***KB Table Joins Details*** screen will be displayed as shown in the figure below.



2. In the ***KB Table Joins Details*** screen,

   a. Enter the sequence number associated to the join associated to the KB relation in the ***Join Sequence Number*** text field. This allows the user to execute the joins based on the given sequence number during execution of KB table relation.

   b. ***Table Name*** and ***Parent Table Name*** specified in the ***KB Table Relation Details*** by the user will be displayed in the dialog. All the columns in the Table and the Parent Table will be listed in the drop down lists against Column Name and Parent Column Name respectively.

   c. Select the appropriate column name of the child table from the ***Column Name*** drop down list to which the linkage to parent table is established.

d. Select the appropriate column name of the parent table from the ***Parent Column Name*** drop down list to which the linkage to child table is established.

e. Enter the comments in the ***Notes.***

f. Click ***Save*** button, to develop the parent-child relation among the specified tables. Once the information is saved successfully, a confirmation message dialog box is prompted.

- If the details provided are invalid, a warning message dialog box is prompted.
- If the KB Table Join Name already exists, a warning message about duplicate name is prompted in the dialog box.

- The field marked as are mandatory fields.

11.1.2.6 Editing an Existing KB Table Join

To edit an existing KB Table Join, do the following:

1. From the ***KB Table Join*** list, select the radio button adjacent to the desired KB Table Join.
2. Click ***Edit*** button. The ***KB Table Join Details*** screen will be displayed.
3. In the **Edit KB Table Join Details** screen,
   a. Make the necessary changes in the required fields.
   b. Click ***Save*** button, to save the modified information. Once the modified information is updated successfully, a confirmation message is prompted.

- The field marked as are mandatory fields.
- If the details provided are invalid, a warning message will be prompted.
- To return to the list screen from ***Add / Edit Details*** screen, click ***Back*** button.

11.1.3 Creating Configuration for Data Archiving

Solix EDMS Standard Edition (SE) provides the feasibility to generate re-usable ANSI SQL Code automatically. The configurator is a powerful tool designed to setup the custom configurations to archive the data in the archiving process. The tool includes Auto-Config capabilities.

The KB tables and KB Relation (optional based on requirement) are requisite to build the configuration for data archiving and stores the configurations in the KB Explorer. Once the configuration is created and code is generated, the user can initiate the data archiving process in Solix EDMS Database Archiving Standard Edition (SE)**.** To create a new configuration, do the following:

11.1.3.1 Navigation

To access Configurator screen, there are two ways to navigate to the Configurator:

- In Solix EDMS Standard Edition (SE) home page, click ***Launch Data Archiving Configurator*** button adjacent to the Database Archiving as shown in the figure below**.**

- In Admin pane, navigate to the following path: ***Setting > Database Archiving > Configurator***.

The ***Configurator*** screen will be displayed as shown in the figure below.

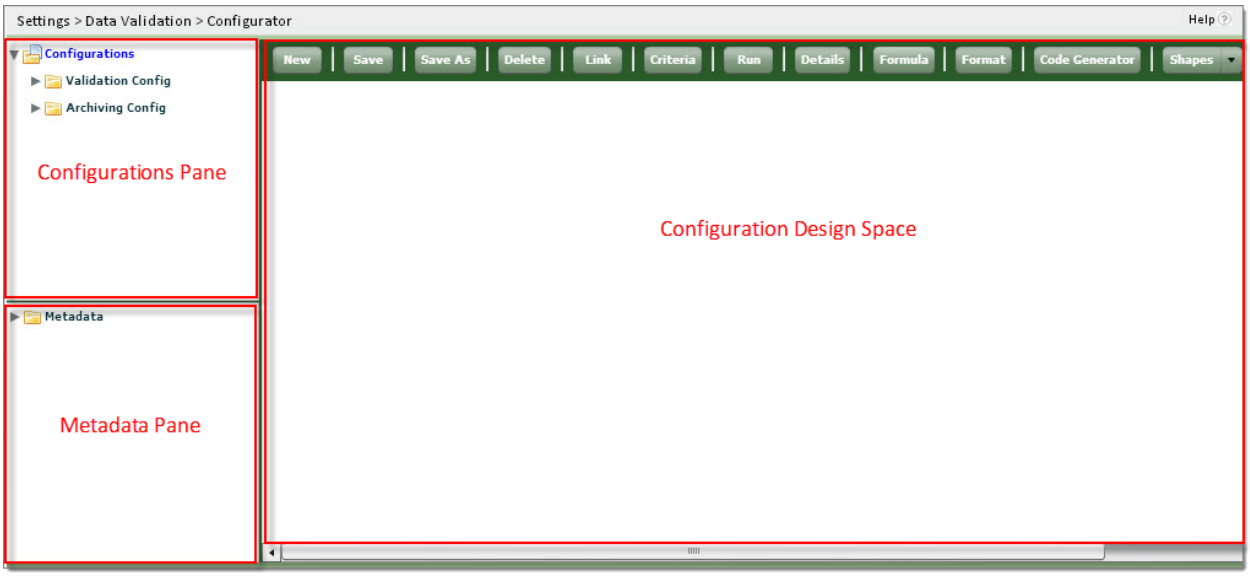
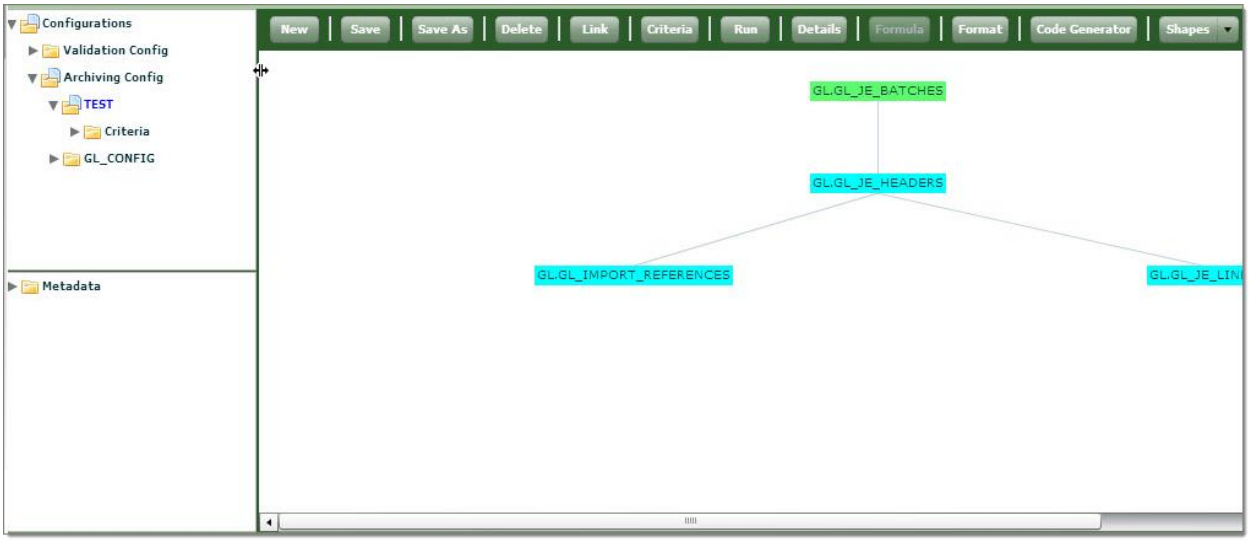


Table 1: Illustrate the dashboard of Configurator

Fields	Functionality
Configurations	Configuration pane is designed to store the configurations created and saved in the Configurator for Data Validation and Data Archiving.
Metadata	Metadata pane is designed to store the tables created in the respective knowledgebase. It maintains the tables and provides feasibility to design the configuration using tables in metadata.
Configurator Design Space	This pane provides flexibility to design the metadata structure of configuration such as tables, establishing link between related tables, configuring the driving tables and so on. It shows the tables selected for creating metadata structure in configuration and once populated in the Design Space, a table can be dragged and placed anywhere in the space according.
New	This button is employed to create a new configuration.

Save	Once the metadata structure is designed and appropriate criteria are setup for the configuration. This button is deployed to save the details of configuration created or update the information of configuration as per the modification. Automatically, the saved configuration will be accumulated in the Configuration pane and can be re-usable in future.
Save As	This button is employed for the duplication of existing configuration or to save the information of existing configuration with different configuration name.
Delete	This button is employed to delete the configuration.
Link	This button is employed to establish the parent-child relationships among the selected tables in Design Space. Note: only if the relation among the tables is defined/exist in the knowledgebase, the relationships among those tables can be established.
Criteria	This button is employed to define criteria in the configuration for validation process, in order to extract the data for the validation based on the given criteria. For example, • If the user needs to validate the specific data of the table or apply some condition to extract a specific data in the database. In such case, the user defines the condition in the Criteria Details screen. Note: Solix EDMS Standard Edition (SE) restricts to save a new configuration, if the criteria are not defined for the respective configuration.
Run	This button is employed to execute the data archiving configuration. By default, this button will be disabled for data validation configurations.
Details	This button is employed to view the details of selected configuration and criteria.
Format	This button is deployed to format the configuration as per the requirement. Only, the saved configurations can be formatted.
Generate Code	This button is employed to generate a re-usable ANSI SQL code based on the criteria defined in the respective configuration. The generated SQL code will be employed in the validation process to validate the data.
Shape	This button facilitates to utilize various kinds of shapes (such as square, rectangle, arrows, and so on) while designing the configuration.

1. Expand the ***Configurations*** > ***Archiving Config*** folder, to view the saved data archiving configurations.

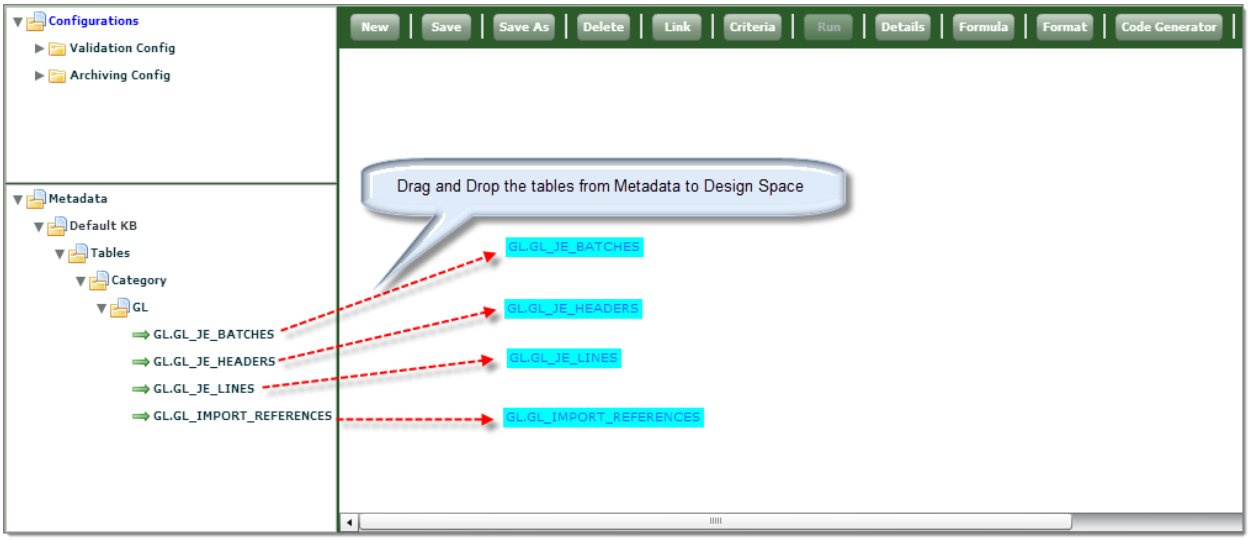


- Only, 10 configurations are restricted for a KB.

11.1.3.2 Initiate the creation of new configuration

1. Navigate to ***Metadata*** > ***OracleERP11i*** > ***Tables*** > ***Category***> [***Table Owner]*** folder in the Configurator, to list all the tables existing in the corresponding table owner as shown in the figure below.

2. Now, select the tables required to create a configuration from the Metadata pane. Drag and drop the tables in the configuration designer pane (i.e., Design Space) to build a new configuration as shown in the figure below.



Once the tables are selected from the metadata and dragged into the Configurator Design Space, the user needs to develop a link between the tables based on the parent-child relationship.

- The user must have the knowledge of the parent - child relationship among the tables selected. Inappropriate selection of tables may results in data being orphaned partially or completely.

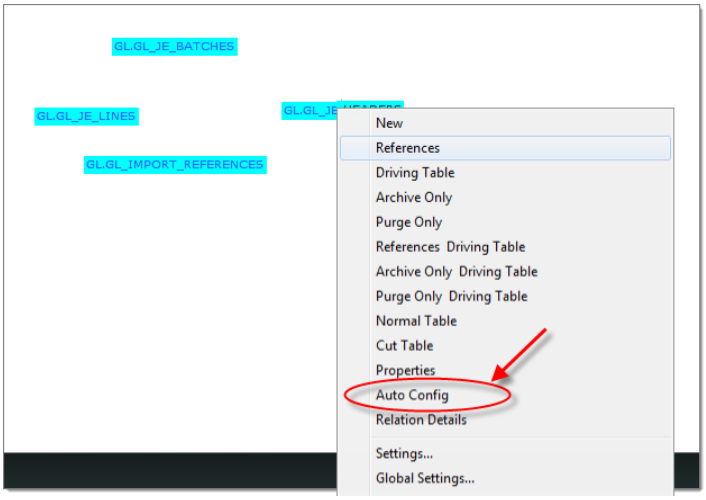
11.1.3.3 Create Table Links

To create links between tables, do the following:

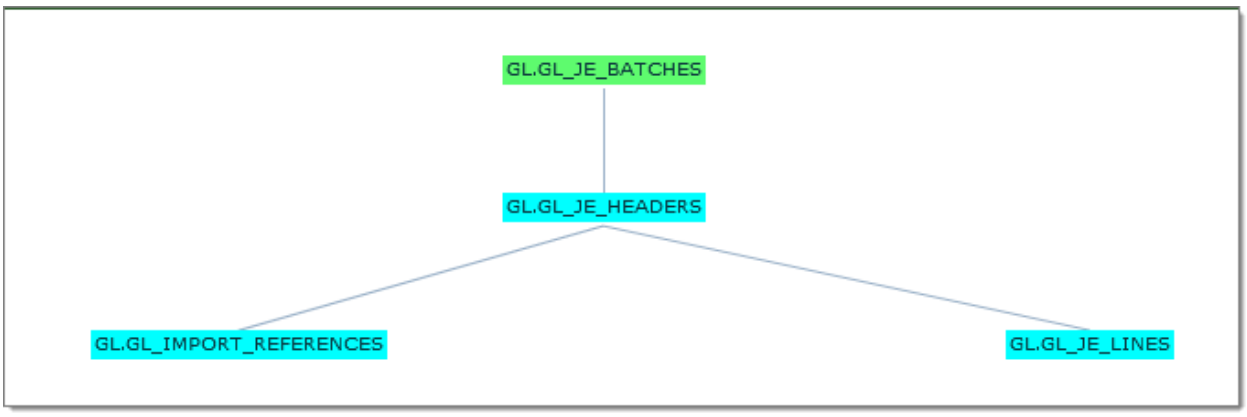
1. First ascertain which tables to connect and in what order. The user must consider the parent-child relationships among the selected tables.
2. Click Link button appears on the ***Configurator*** toolbar.
3. In the ***Configurator Design*** Space, click the first table (child table) and then click the second table (header table) depending on the parent child relationship between the tables.
4. Both the tables are linked.
5. Repeat the above procedures to connect all the selected tables according to the table relationships.

To populate related tables and establish links between them automatically, do the following:

1. Select the ***Table*** from the **Tables** folder in the KB Explorer. Drag and drop the selected table in the Design Space.
2. In the Design Space, right click on the selected table. A drop down menu appears on the screen and select ***Auto Config*** option from the menu as shown in the figure below.



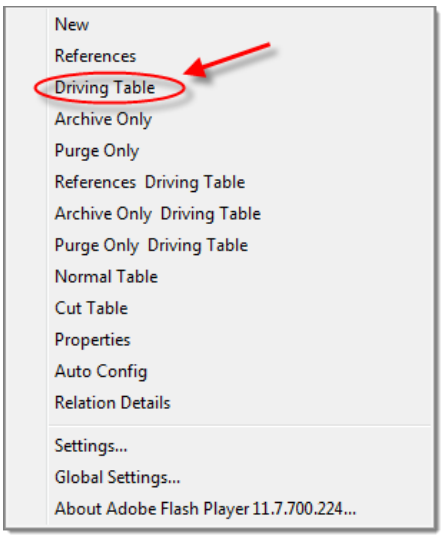
3. Once the option is clicked, the tool picks and populates all the tables related to the respective table in the design space; then it establishes relational links among those tables; and finally assigns an appropriate table from the selected ones as the driving table that drives the archiving process as shown in the figure below.



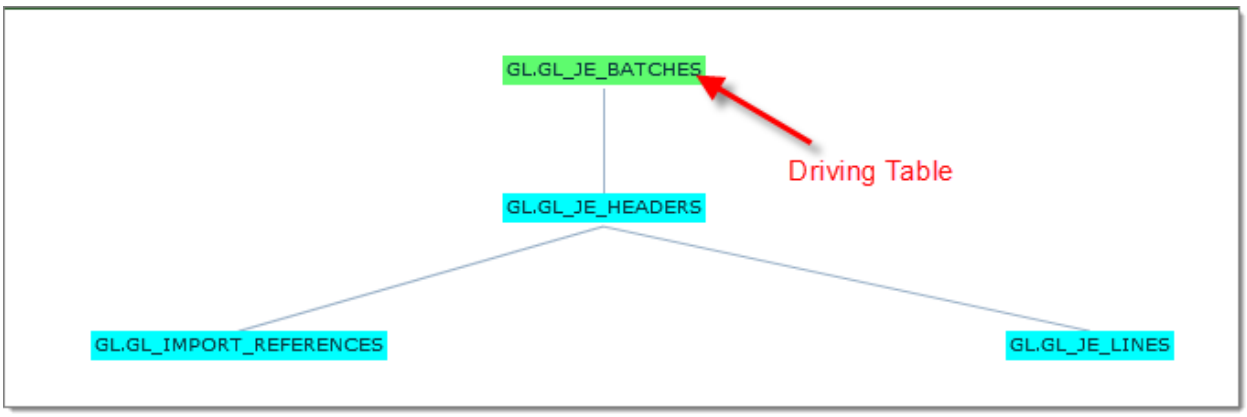
11.1.3.4 Configure Driving Table

To set the driving table, do the following:

1. Once the Parent-child relations is established, to set the driving table in the linked tables. Right-click the table that is intended to drive the configuration, a menu drop down list appears in the Design Space as shown in the figure below.



2. Once the Driving table option is clicked, the respective table turns green and represents as a driving table in the configuration as shown in the figure below.



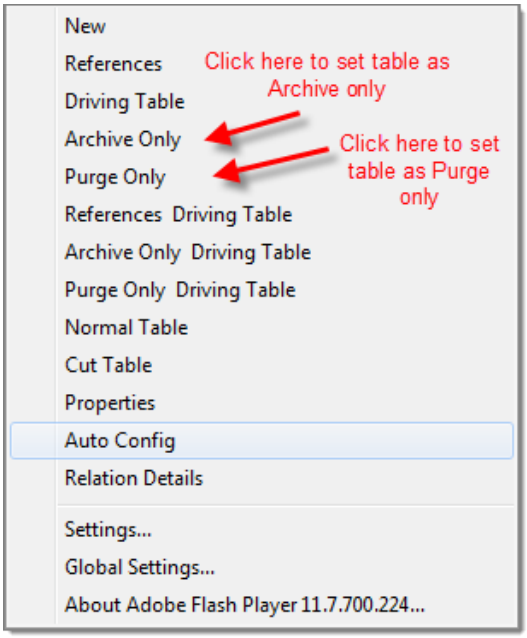
Once the tables are linked and the driving table is assigned, this accomplishes the process of designing a configuration.

11.1.3.5 Configure Archive or Purge Table

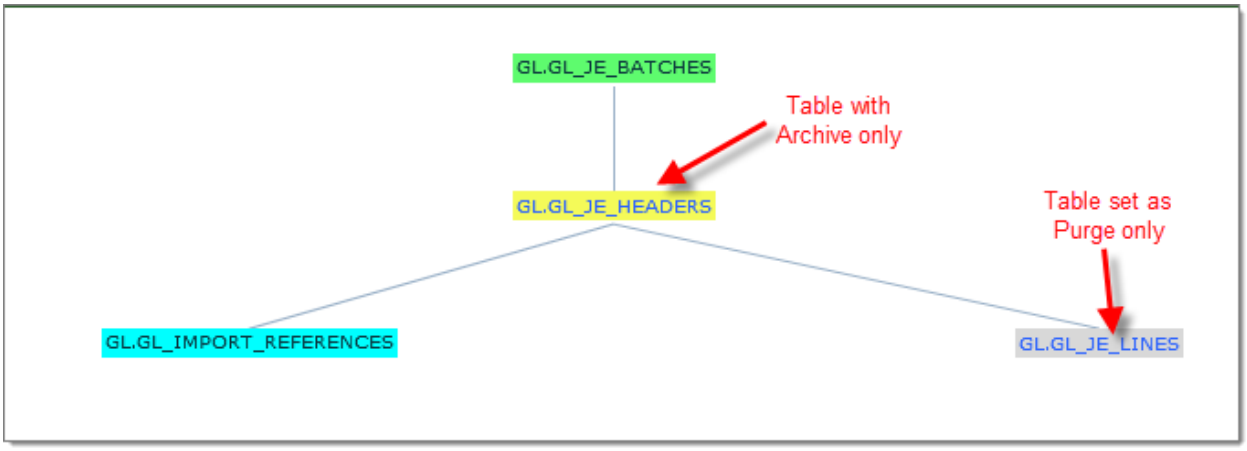
In case, when the configuration is designed for Archive & Purge, the user is provided an option to configure a table for only Archive or only Purge the data in the source.

To set archive or purge table in configuration, do the following:

1. Right-click the table that is intended to set as Archive or Purge in the configuration, a menu drop down list appears in the Design Space as shown in the figure below.



2. Once the archive only / purge only option is clicked,
   - For Archive Only, the respective table turns Yellow color and represents as Archive Only table in the configuration as shown in the figure below.
   - For Purge Only, the respective table turns Grey color and represents as Archive Only table in the configuration as shown in the figure below.



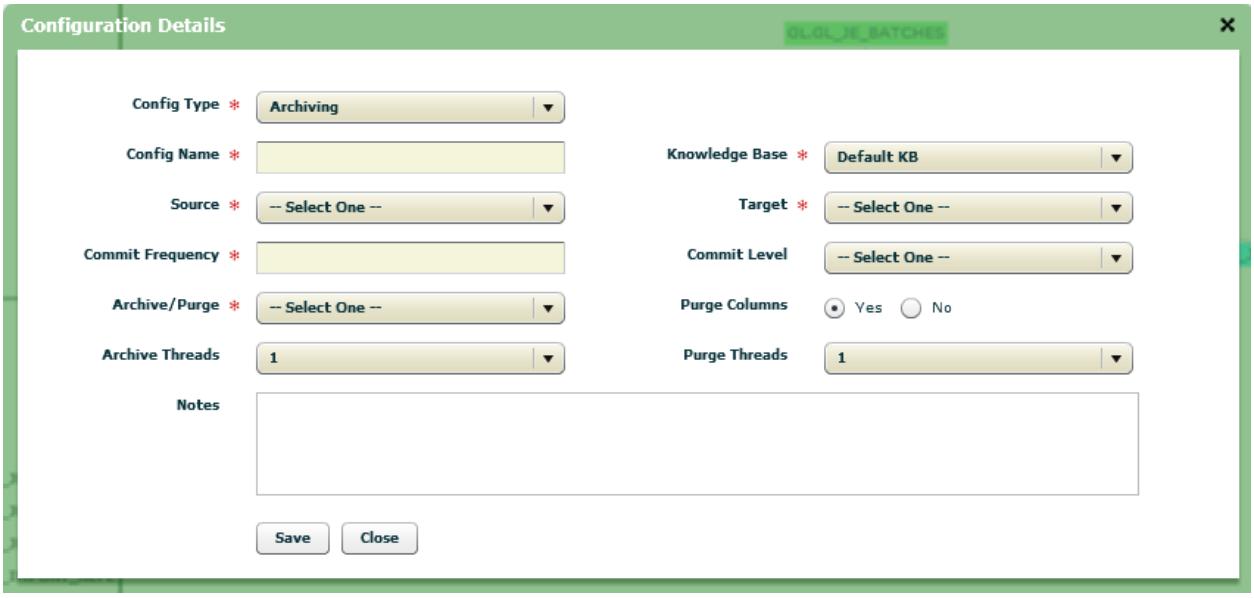
Herein, whenever the configuration is executed for Archive and purge activity in data archiving process remaining all tables will be Archived and purged, whereas the tables configured with Archive only or purge only in design space will be only archived or purged accordingly.

11.1.3.6 Setup Configuration Details:

Once the configuration is designed successfully, henceforth the configuration details must be setup to carry out the process. To setup configuration details,

1. Click Save button appears in the ***Configurator*** toolbar.

2. The Configuration Details window prompts on the screen, and enables the user to provide the ***Configuration Details*** screen as shown in the figure below.



3. In the ***Configuration Details*** popup window:

   a. Select ***Archiving*** option from the ***Config Type*** drop down list, to define the configuration is built for data archiving process.

   b. Enter ***Configuration Name*** in the corresponding field.

   c. Select the appropriate KB from the corresponding drop down list.

   d. Select the source and target from the corresponding drop downs, to archive the data from the selected source to target location.

   e. Specify ***Commit Frequency*** in the corresponding field.

   f. Set ***Commit Level*** by selecting an option from the corresponding drop down list. There are two commit levels the user can choose based on the requirement,

      - *Bulk:* This option enables to capture the Row ID or Primary Key information of archive eligible data in a temp table on source location for all the tables in the configuration. Make use of those temp tables to archive purge the data as per commit frequency.

      - *Bulk Skip Selection:* This option enables to archive /purge data Table-wise in the configuration. Here, no temp table is created and commit frequency is not considered for execution.

      - *Bulk-Parent Based:* This option enables to capture the header tables in a temp table on source location for all the tables in the configuration. Make use of those temp tables to archive purge the data as per commit frequency.

g. Specify ***Archive/Purge*** method. Select an option from the corresponding drop down list.

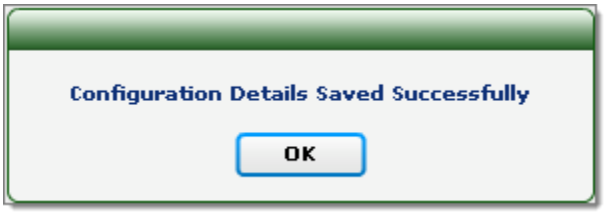
- *Archive and Purge*: Archive and Purge option enables to archive data from the source table into target tables (i.e., Oracle to Oracle). Simultaneously, the data in the source table will be deleted during this process.
- *Archive Only:* Archive only option enables to archive data from the source table into target tables but the data in the source table will not be deleted.
- *Purge Only*: Purge Only option deletes the data in the source table.

h. Select appropriate option in the Purge Columns options (i.e., Yes/No), to enable/disable purge columns in the target tables. If '***Yes***' is selected, the purge sequence id as well as the purge date in the corresponding history tables will be captured.

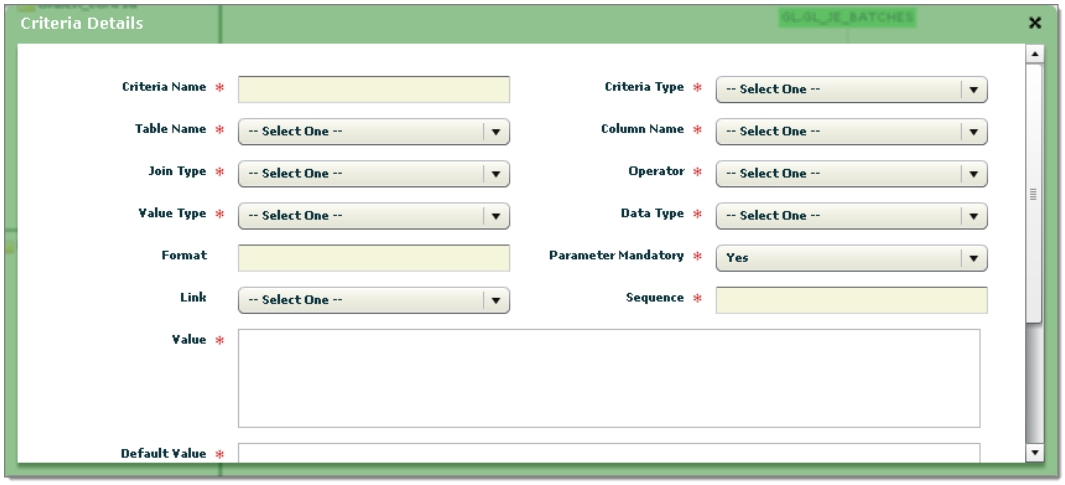
i. Select number of parallel ***Archive/Purge Threads*** from the corresponding dropdown. When the configuration is run, then the specified number of threads will be invoked and run in parallel to execute the process.

i. Enter the ***Description*** in the corresponding field.

4. Click ***Save*** button, to save the configuration details. Once the configuration details are saved successfully, the respective configuration is created and saved in the **Archiving Configs** folder under **Configurations** in the **Configurator**.



5. To add criteria in the configuration, click ***Criteria*** Button. The ***Criteria Details*** screen popup window prompts as shown in the figure below.



Below table illustrates the functionalities of fields in the Criteria Details screen.

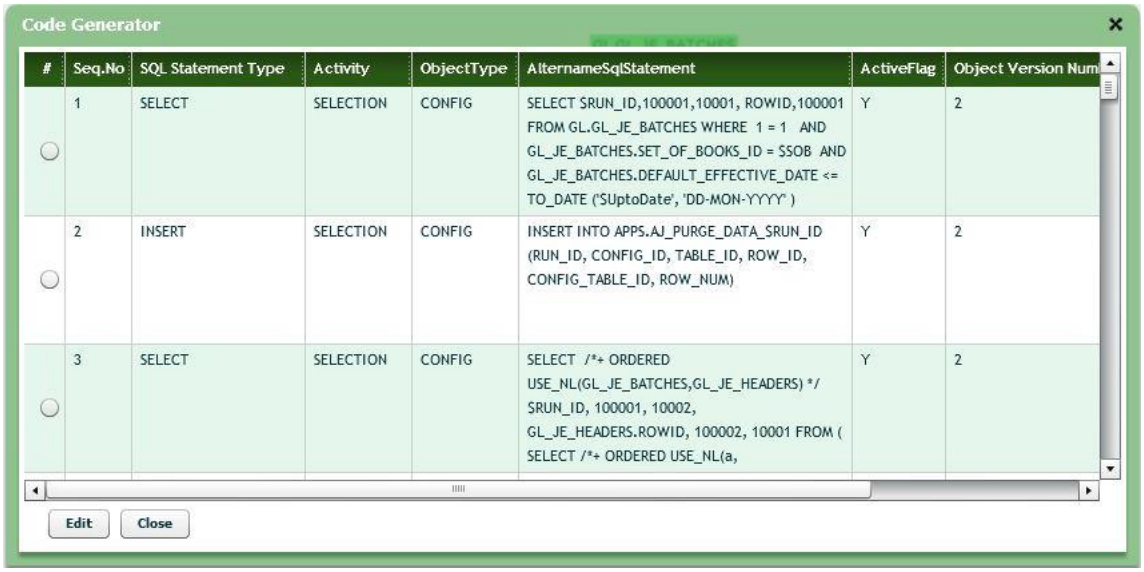
Fields	Functionality
Criteria Name	Define a name for the Criteria in configuration
Criteria Type	This drop down enables the user to select an appropriate type of criteria. The criteria type can be Static, Dependent and Independent. • Static: It implies that the configuration actions will be based on the value specified in Criteria. • Dependent: It implies that the criteria designed are dependent on a particular column of the specific table. • Independent: It implies that the criteria are independent of tables and columns associated to specific configuration.
Table Name	This drop down enables the user to select an appropriate table that holds the attribute value.
Column Name	Based on the table selected, the corresponding columns will be listed in this drop down. It enables the user to select the column on which the respective criteria will be applicable.
Join Type	This drop down enables the user to select an appropriate operand required for the criteria. (i.e., AND or OR).
Operator	This drop down enables the user to select an appropriate conditional operator required to design criteria. (i.e., =,>, <, <= and so on).

Value Type	This drop down enables the user to define the type of parameter value (i.e., Value or Dependent SQL) • ***Value:*** It implies that the data is fetched based on the value provided in the ***Value*** text box. • ***Dependent SQL:*** It implies that the SQL statement will be generated based on dependent variable(s) which may be derived from the earlier parameter(s). For example, "SELECT ORGANIZATION_ID, ORGANIZATION_NAME FROM ORG_ORGANIZATION_DEFINITIONS" where organization name will be displayed at run time parameters for end user ease and organization id will be used in criteria. • ***SQL:*** During the runtime, the SQL statement will be executed and the archiving will be executed based on the value obtained from running the SQL script specified in ***Value***. For example, SELECT ORGANIZATION_ID FROM ORG_ORGANIZATION_DEFINITIONS
Data Type	This drop down facilitates to select an appropriate data type of the parameter. (i.e., Number, String, Date). Note: For the "***Dependent SQL"*** and "***SQL***" value type, "String" should be selected by default.
Format	If the Data type is "Date", this text box enables the user to provide the format of date. For example, MM/DD/YYYY.
Parameter Mandatory	This drop down enables the user to define the parameter as mandatory or not (i.e., Yes or No). • Yes- it implies that the parameter is a mandatory, the value must be entered • No–it implies that the parameter is not mandatory.
Sequence No	This text box enables the user to enter the Sequence of Criteria while execution.
Link	Exclusively when "OR" operator is selected in Join, this drop down list enables the user to link the current criteria to this existing criteria and place it in parenthesis during validating the data.
Value	This text enables the user to enter the appropriate value of the parameter according to the ***Value Type*** selected.
Default Value	This text enables the user to enter the default value of the parameter.

Description	This text box enables the user to enter the description pertaining to the criteria.
Save	This button is employed to save the criteria details.

6. Enter the criteria details and click ***Save*** button. Once the criteria is saved successfully, the output of the archiving process will be generated based on the defined criteria. Henceforth, generate a code for the respective configuration.

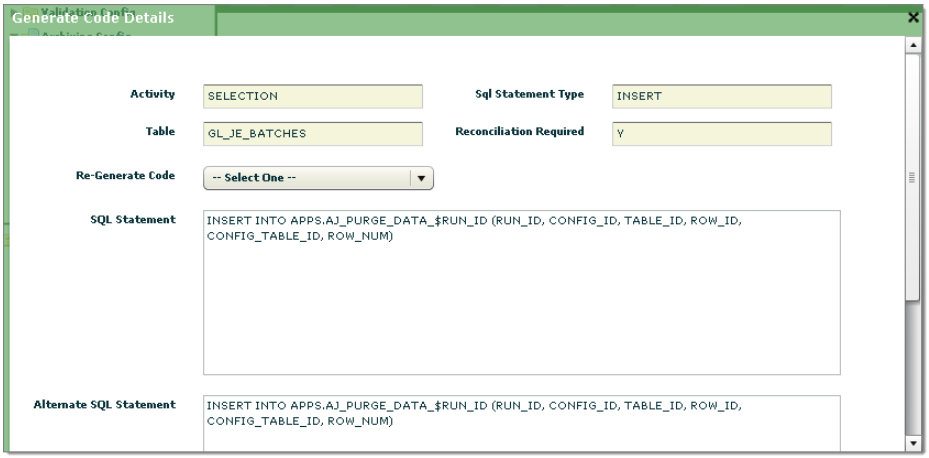
7. Click ***Generate Code*** button to generate the SQL Statement (i.e., Alternate SQL statement) for the corresponding config in the ***Code Generator*** window as shown in the figure below.



Now, the generated SQL statement will be used in archiving process to archive the data accurately.

Also, user is provided an option to edit the generated code. To edit generated code, do the following:

a. In ***Code Generator*** screen, select the appropriate SQL Statement and click ***Edit*** button. The ***Generate Code Details*** screen will be displayed as shown in the figure below.



b. Make the necessary changes in the SQL Statement /Alternate SQL Statement text box.

c. Click ***Save*** button, to update the modified SQL statement.

- The field marked as "*" are mandatory fields.
- Whenever any modifications take place in the configuration, it's mandatory to generate a code once again to revise the SQL statement accordingly.
- It is recommended to define criteria for a new configuration in order to fetch a small set of data as per the requirement and accomplish the archiving process effectively in a less time.

11.2 Custom Configuration (Execution)

Once the data archiving configuration is designed successfully the data archiving process can be executed. Based on the configuration setup and criteria defined, the data in the source will be archived to the target database and enable the user to view the status in the status monitor.

There are two ways to execute configuration:

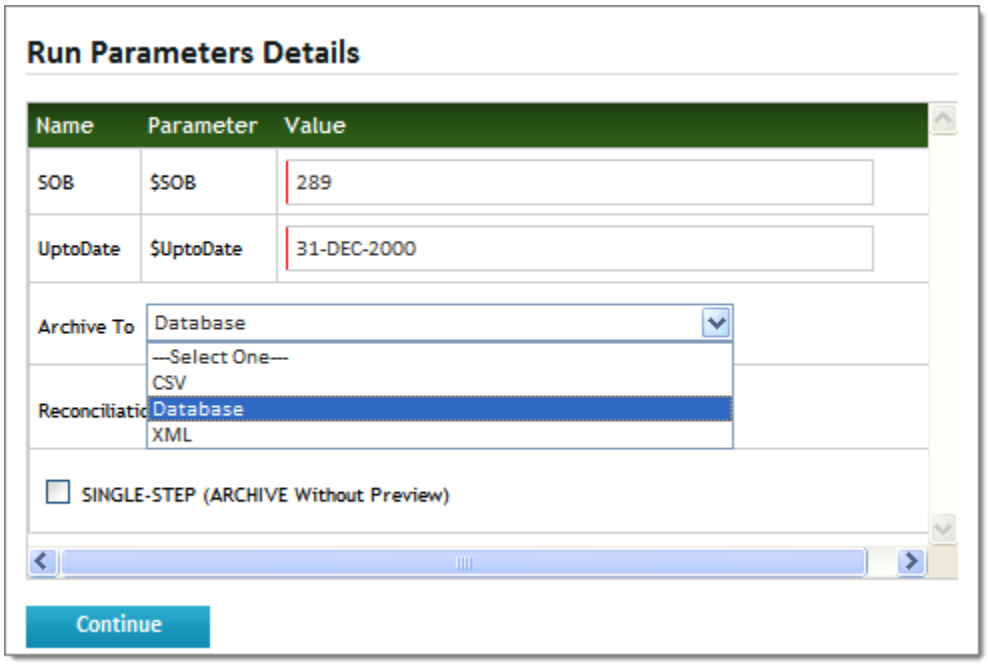
1. Executing configuration in the Configurator toolbar.
2. Executing configuration in the following path: ***Database Archiving > Configurations.***

11.2.1 Run configuration using Configurator

The Configurator not only allows the user to design and setup configurations, but also run those configurations. The Configurator first ascertains the need to enter any dynamic parameters. If so, the user is required to enter the values for all the dynamic parameters in the run-time parameters screen. Constant parameters (those with static values) are also displayed in the run parameters screen.

Users who do not have the privilege to create the configurations can run the pre-configured configurations from the Designer.

1. From the ***Configurations*** folder in the KB Explorer, select the ***Configuration*** to run.
2. Click ***RUN*** button in the ***Configurator*** toolbar. The parameters dialog pops up prompting the user to provide the value(s) against the parameters defined in the configuration.



a. Specify the values in the respective parameters**.**

b. Select ***CSV/ Database/ XML*** option from the ***ARCHIVE TO*** dropdown, to archive the data from respective source to target. For example, to archive the data from database to CSV.

- If the value provided in the criteria is a ***static*** value, then at run-time the archive/purge process is executed based on that value without seeking any value from the user.
- If the value defined in the criteria is a ***dynamic*** value, then at run-time the application seeks a value from the user and the archive/purge process will be executed based on this value. Also, on providing a dynamic value, the Configuration will automatically run for the dependent values, if any.
- If no criterion has been defined for a configuration, then the parameter against the configuration says 'No Parameters'.

c. Suppose, if the user wants to reconcile the data been archive. Enter the percent of data to be reconciled in the ***Reconciliation*** text box. While archiving, the data been archived for each thread will be reconciled for the specified percentage of commit frequency. (Exclusively, it is applicable when source and target are located in a single Repository and it is Oracle database).

d. Click ***CONTINUE*** button to run the configuration. By default, custom archiving is done in two-steps. Firstly, it previews and secondly it archives.

- If ***'SINGLE-STEP'*** option is not selected, the process will be terminated at 'Preview Completed'.

e. Once Preview process is completed,

- To perform only archiving, deselect the 'Continue Purge' option.
- To perform archiving & purge, select 'Continue Purge' option.

f. Click ***Run Configuration*** button, the custom archive run will be scheduled and a unique ***Run ID*** will be assigned to the job and displayed in the ***Run Parameters*** window. Note this ***Job Run ID.*** Using this ID, Users can view the status of this particular custom archive activity in the Status Monitor.

g. Click ***CLOSE*** button to close the pop-up window.

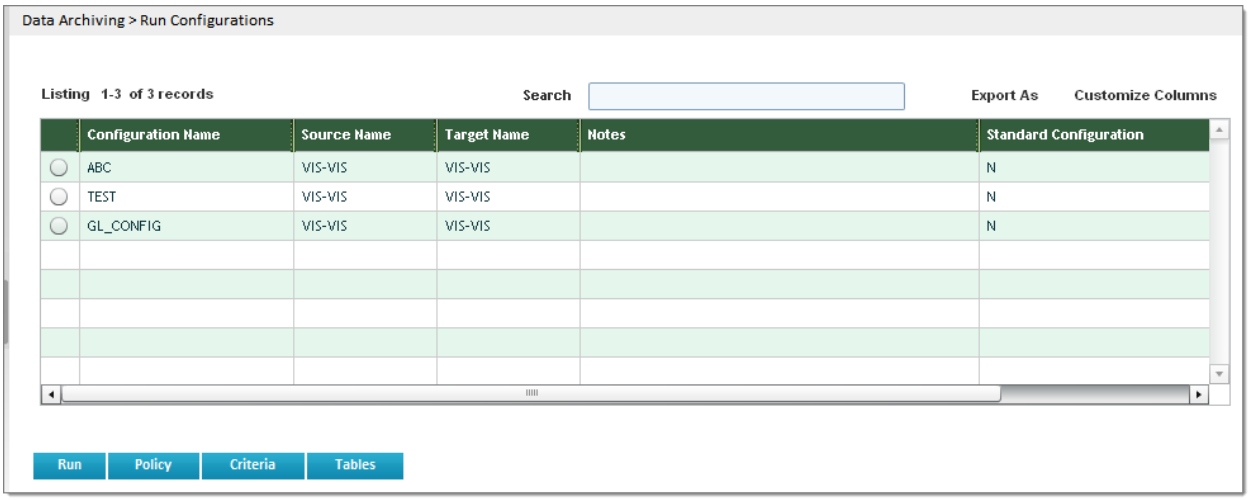
3. Go to ***Status Monitor*** screen ***(Status > Status Monitor)***.

- The number of and type of parameters will differ from one configuration to another while executing a configurations, since the user defines the different set of parameters for individual configurations.
- To bypass the preview and archive the records directly, then select '***SINGLE-STEP***' option before clicking ***CONTINUE*** button.
- The data that matches the criteria is only selected at this point. To continue with the Archive/Purge process, the user has to go to the Status Monitor where the scheduled process can be previewed and executed. However, process starts executing instantly and status will be displayed in the status monitor.

11.2.2 Run configuration in Generic Method

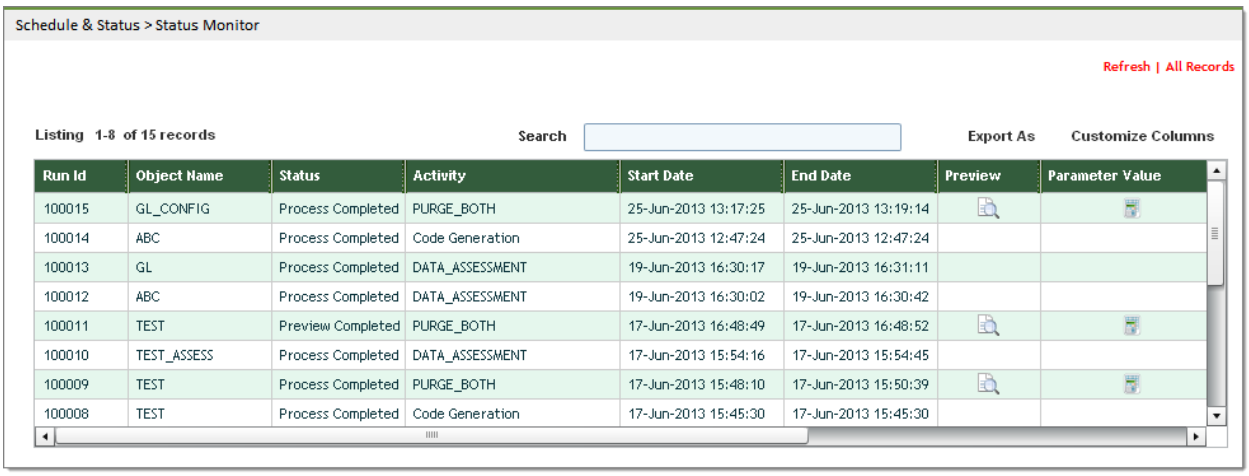
Once the configuration is created in the Configurator successfully, the user can execute it whenever it is required. Solix EDMS provides a user-friendly environment to execute the existing configuration based on the requirement.

- Navigate through the following path: ***Database Archiving > Configurations***. Select the intended configuration and click ***Run*** button.



11.2.3 Monitoring status of Data Archiving execution

Status Monitor screen displays the list of all the jobs run scheduled for execution along with details including status. In the ***Status Monitor*** screen, refer to the Run IDs in the first column to locate the Run ID of the required custom archive job.



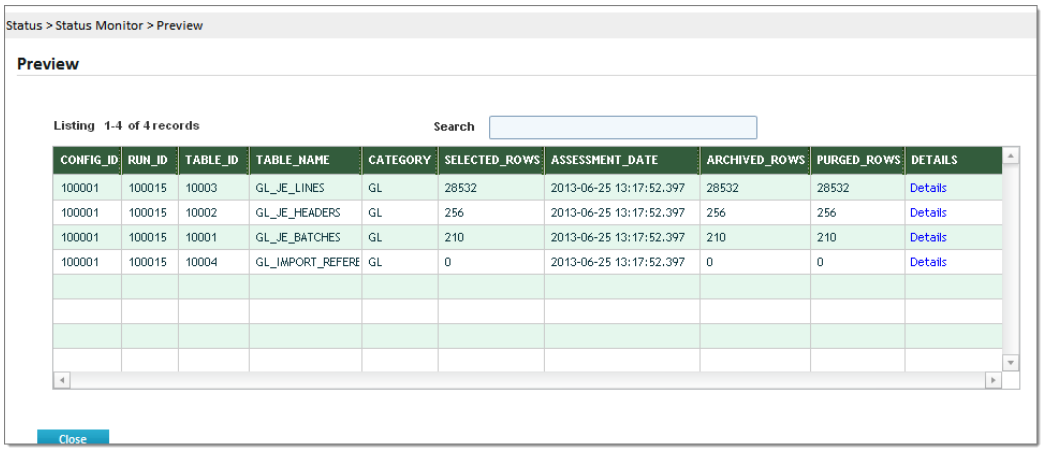
1. Locate the custom archive job.
2. The status is shown as ***'In Process'*** while the process is in progress or has just initiated. The blue font of '***In Process***' indicates the hyperlink to the archive/purge status of individual tables in the configuration. However, this facility is available only for ***Archive & Purge*** processes.
3. On completion of preview, the message in the corresponding status turns to 'Preview Completed' and the Status Monitor generates SQL queries and Preview Report for the tables in the Custom Configuration that has been executed.

To view the dynamic SQL queries for the tables in the custom configuration, do the following:

- Click the corresponding ***SQL*** button. A window pops up presenting in sequence the SQL Queries generated at run-time for all the tables in the custom archive configuration.

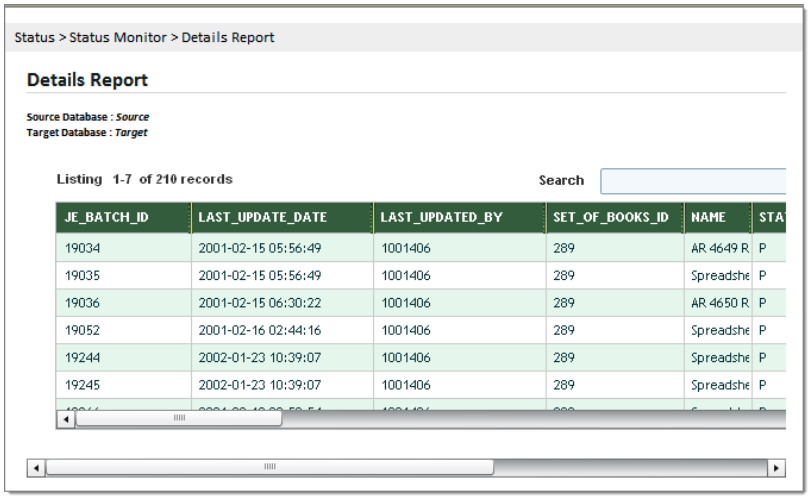
To get a Summary Report for the custom archive job, do the following:

Click on the corresponding ***PREVIEW*** button in the Status Monitor. A pop-up window displaying the ***Summary Report*** for the custom archive job that has been scheduled for run. The report gives a preview of space gained, selected rows and total row count in each of the configured tables along with the module name and the space used by each table.



- To view detailed report of each tables in Configuration, then click Details hyperlink adjacent to the intended table.

4. When status of configuration is “Preview Completed”, the ***Run Configuration*** button in the ***Summary Report*** window will be displayed. Once the statistics in the report are conformable, then click ***Run Configuration*** button to execute the scheduled custom archive job.
5. The execution of the configuration might take several minutes to complete. Get back to the Status Monitor to check the status after sometime.
6. On successful execution of the custom archive job, the status turns to ‘***Process Completed***’.
7. The last column in the report contains ‘Details’ appears for each table. To view detailed report of table, click Details hyperlink adjacent to the intended table. A Details Report popup window is displayed with information of the corresponding table.



Suppose if the archival process fails then the status will be shown as 'Archival Failed'. In such cases, click ***PREVIEW*** button and then click ***Rerun Configuration*** button in the ***Summary Report*** window, to re-execute the configurations.

- Use the horizontal scroll in the popup window, to view more details of the archive process for each table in the configuration.
- Use vertical scroll to view more tables in the configuration.

12 Data Masking

Solix EDMS Data Masking Standard Edition (SE) ensures data security and compliance is maintained by masking sensitive data in test databases using several masking algorithms and at the same time maintaining referential integrity of the data to keep the application testing process seamless.

Functionalities

The functionalities provided by Solix EDMS Standard Edition (SE) to mask the data in the database are listed below.

- Table selection for Data Masking.
- Provide feasibility to view data in table.
- Designing Security Rules and Security Groups.
- Applying Security rules on tables or table columns.
- Designed Wizards for ease navigation and performing the activities (data validation and data masking) swiftly.

12.1 Security Rules

This feature is deployed to customize the security rules which play a vital role in data masking process. It enables the user to design the criteria for masking and initialize the algorithms (i.e., Database based algorithms or Java based algorithms) to perform encryption and decryption.

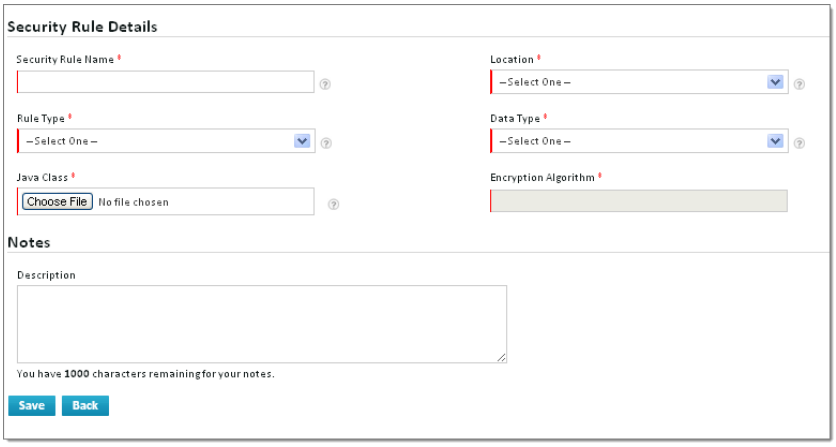
12.1.1 Navigation

To access ***Security Rules*** link, follow the path**: *Settings* > *Data Masking* > *Security Rules*.**

12.1.2 Add New Security Rule

To add new security rule, do the following:

1. Place cursor at ***Setting*** tab in the Solix EDMS main menu. The list of submenus is displayed.
2. Select ***Database Masking*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***Security Rule*** option from the drop down. The ***Security Rules*** screen with the list of existing security rules will be displayed.
4. Click ***Add*** button. The ***Security Rules Details*** page appears to enter the information corresponding to the security rules.



5. In the ***Security Rule Details*** page, do the following:

    a. Enter the name of the security rule in the ***Security Rule Name,*** to register in the Solix EDMS Standard Edition (SE).

    b. Select the type of algorithm from the ***Location*** drop down list, to employ in the security rule. Application means Java based algorithms.

    c. Select an appropriate masking method for security rule from the ***Rule Type*** drop down list.

    d. Select the data type associated to the rule type selected from the drop down list.

    e. Specify the source path of Java Class in the ***Java Class*** field, to locate and fetch the java based algorithms employed for masking.

    f. Click ***Browse*** button, to locate the path of the java based algorithms and select the intended Java Class from the source.

    g. Once the Java class is defined, automatically the algorithm associated to the encryption will be prompted in the ***Encryption Algorithm*** text field. It is non-editable text field.

    h. Enter the comments in the ***Notes***.

    i. Click ***Save*** button, to the security rule information. Once the information is saved successfully, a confirmation message will be prompted on the screen.

        - If the details provided are invalid, a warning message is prompted.
        - If the security rule name already exists, a warning message about duplicate name is prompted in the dialog box.

- The field marked as " "are mandatory fields.
- Solix EDMS Standard Edition (SE) supports only Java based algorithms.

12.1.3 Editing an Existing Security Rule

To edit an existing security rule, do the following:

1. From the security rules list, select the radio button adjacent to the desired security rule.
2. Click ***Edit*** button. The ***Security Rules*** page will be displayed.
3. In the ***Edit Security Rule Details*** screen, do the following:
    a. Make the necessary changes in the required fields.
    b. Click ***Save*** button, to save the modified information. Once the modified information is updated successfully, a confirmation message is prompted.

- The field marked as " "are mandatory fields.
- If the details provided are invalid, a warning message is prompted
- To return to the list screen from ***Add / Edit Details*** screen, click ***Back*** button.

12.1.4 Deleting the Selected Security Rule

1. Click ***DELETE*** button in the ***Edit Security Rule Details*** screen. A message pops up on the screen seeking confirmation to delete the selected security rule.
2. Click ***OK*** button to delete.

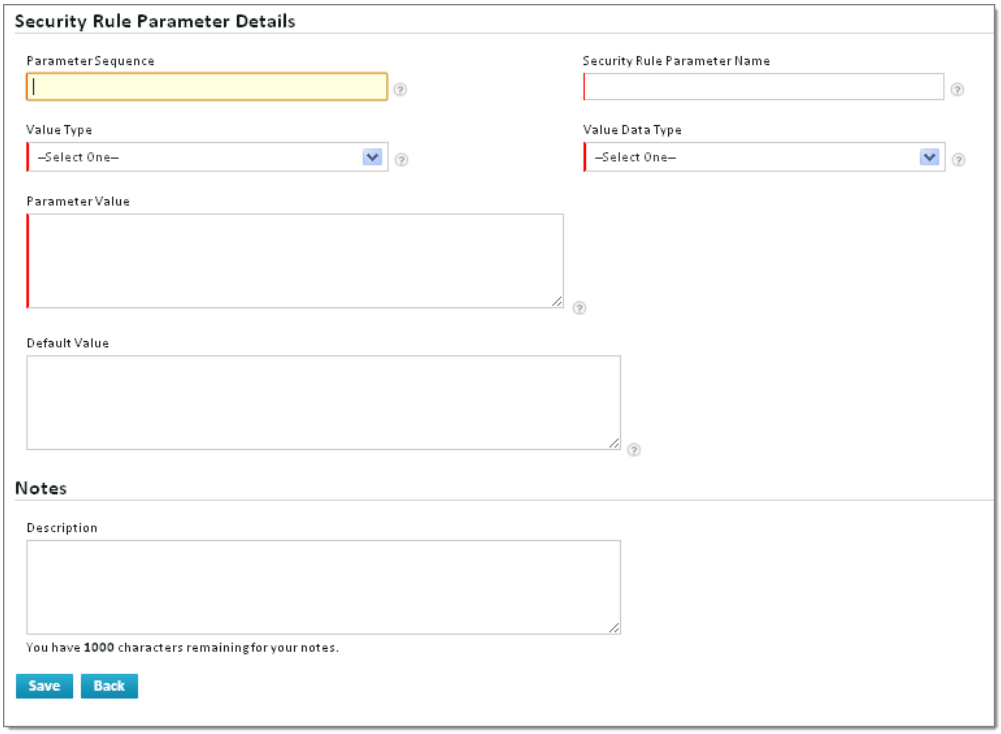
- Deletion of a security rule will also delete the corresponding security rule assignments.
- To return to the list screen from ***Add / Edit Details*** screen, click ***Back*** button.

12.1.5 Parameters

1. From the security rules list, select the radio button adjacent to the desired security rule.
2. Click ***Parameters*** Button. The ***Security Rule Parameters List*** screen will be displayed.

12.1.5.1 Add New Security Rule Parameter

1. Click ***Add*** button. The ***Security Rule Parameter details*** page will be displayed.



a. Enter the sequence number of the parameter in the ***Parameter Sequence.*** While executing multiple parameters in the security rule, the parameter will be executed based on the specified sequence number.

b. Enter the name of the parameter in the ***Security Rule Parameter Name*** text field.

c. Select the type of parameter value from the ***Value Type*** drop down list**.**

- Category: It implies that the data is fetched based on the categories defined for masking in the Category screen.
- Category Dependent SQL: It implies that the data will be fetched based on the SQL statement encoded using categories defined for masking in the Parameter Value text box.
- Value: It implies that the data is fetched based on the specific value provided for the parameter in the Value text box.
- Dependent SQL: It implies that the SQL statement will be generated based on dependent variable(s) which may be derived from the earlier parameter(s).

d. Based on the Value type selected, select the data type of the parameter from the ***Value Data Type*** drop down list. (i.e., Varchar2, String, Date).

e. Enter the value of the parameter in the ***Parameter Value*** text field.

f. Enter the default value of the parameter in the ***Default Value*** text field.

g. Enter the comments in the ***Notes***.

h. Click ***Save*** button. Once the information is saved successfully, a confirmation message is prompted on the screen.
   - If the details provided are invalid, a warning message is prompted.
   - If the parameter name already exists, a warning message about duplicate name is prompted.

- The field marked as " "are mandatory fields.

12.1.5.2 Editing an Existing Security Rule Parameter

Following is the procedure to edit an existing Security Rule Parameter:

1. From the security rule parameters list, select the radio button adjacent to the desired security rule.
2. Click ***Edit*** button. The ***Security Rule Parameter Detail*** page will be displayed.
3. In the ***Edit Security Rule Parameter Details*** screen, do the following
   a. Make the necessary changes in the required fields.
   b. Click ***Save*** button, to save the modified information. Once the modified information is updated successfully, a confirmation message is prompted.

- If the details provided are invalid, a warning message is prompted

12.1.5.3 Deleting the Selected Security Rule Parameter

1. Click ***DELETE*** button in ***Edit Security Rule Parameter Details*** screen. A message pops up on the screen seeking confirmation to delete the selected security rule parameter.
2. Click ***OK*** button to delete the security rule parameter. The Security Rule Parameter will be deleted.

- To return to the Security Rule Parameters list screen from ***Security Rule Parameter Details*** screen, click ***Back*** button.

12.2 Security Rule Assignments (Design)

This feature enables the user to assign the security rule on column of the table, to mask the data according to the criteria defined in the assigned security rule.

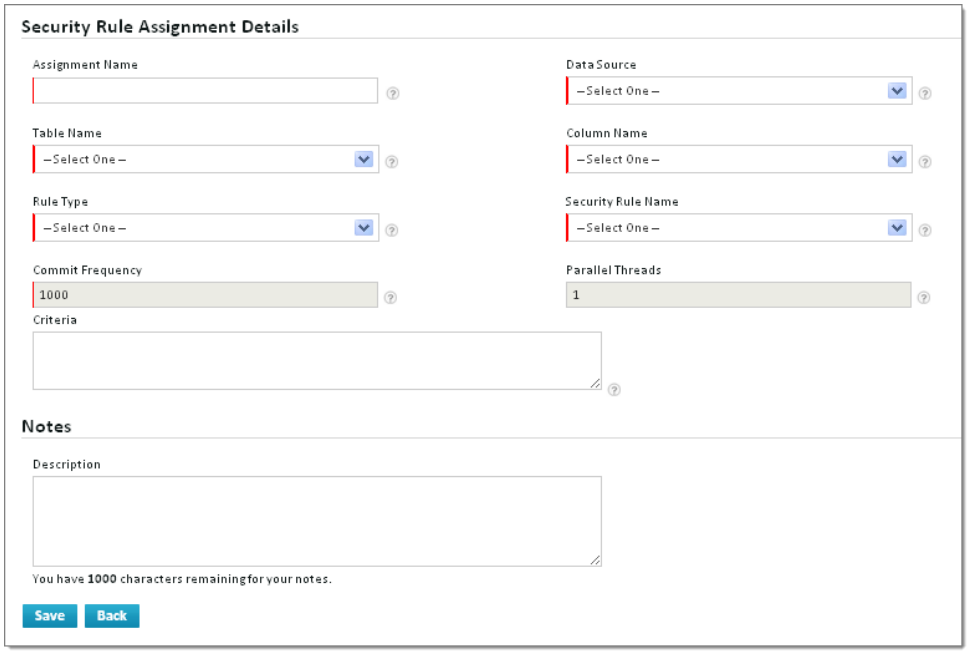
12.2.1 Navigation

To access Security Rule Assignments link, follow the path**: *Settings* > *Data Masking* > *Security Rule Assignments*.**

12.2.2 Add New Security Rule Assignments

To add new security rule assignment, do the following:

1. Place cursor at ***Setting*** tab in the Solix EDMS main menu. The list of submenu is displayed.
2. Select ***Database Masking*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***Security Rule Assignments*** option from the drop down. The **Security Rule Assignments** screen with the list of existing security rule assignments will be displayed.
4. Click ***Add*** button. The ***Security Rule Assignments Details*** page appears to enter the information corresponding to the security rule assignment.



5. In the ***Security Rule Assignments Details*** page, do the following:
    a. Enter the unique name of the security rule assignment in the ***Assignment Name.***
    b. Select database from the ***Data Source*** drop down list. Based on the database selected, the corresponding tables will be listed in the Table Name drop down list.

c. Select a table from the ***Table Name*** drop down list**,** to apply the security rule on the selected table**.** (Note: if the tables required for data masking process is not displayed in the drop down list, then the user need to register the respective tables in the KB Table (***Admin > Metadata Repository > KB Tables***) and populate the columns).

d. Select a column from the ***Column Name*** drop down list, to apply the security rule on the selected column while masking**.**

e. Select an appropriate masking method from the ***Rule Type*** drop down list.

f. Based on the column data type and rule type selected, the corresponding security rules will be displayed in the ***Security Rule Name*** drop down list. Select an appropriate security rule from the list, to perform masking based on the algorithm defined in the security rule**.**

For example,

- If table column of ***Numeric*** type and rule type as ***Masking Data*** is selected, then the security rule associated to Masking and numeric data type will be displayed. (For e.g., Random Number (Numeric)).

g. Enter the commit frequency in the ***Commit Frequency*** text field. (Exclusively for ***Demo*** databases, this field is a non-editable field).

h. Enter the number of parallel threads in the ***Parallel Threads*** text field, to execute the data masking process accordingly. (Exclusively for ***Demo*** databases, this field is a non-editable field).

i. Enter the criteria associated to the security rule assignment in the ***Criteria*** text box, to perform or apply the security rule on a specified column based on the criteria defined.

j. Enter the comments in the ***Notes***.

k. Click ***Save*** button, to save the security rule assignment. Once the information is saved successfully, a confirmation message dialog box is prompted.

- If the details provided are invalid, a warning message is prompted.
- If the security rule assignment already exists, a warning message about duplicate name is prompted.

- The field marked as " "are mandatory fields.
- For each application/database, the total number of masking columns is restricted to only '**10**' in Solix EDMS Data Masking Standard Edition (SE).

- Exclusively, for table columns of ***Character*** type, the security rules of all the data types(i.e., Character, Numeric and Date) and corresponding rule type will be displayed irrespectively.

12.2.3 Editing an Existing Security Rule Assignment

To edit an existing security rule assignment, do the following:

1. From the security rule assignments list, select the radio button adjacent to the desired security rule assignment.
2. Click ***Edit*** button. The ***Security Rule Assignment*** page will be displayed.
3. In the ***Edit Security Rule Assignment Details*** screen,
    a. Make the necessary changes in the required fields.
    b. Click ***Save*** button. Once the modified information is updated successfully, a confirmation message is prompted.

- The field marked as " "are mandatory fields.
- If the details provided are invalid, a warning message is prompted.

12.2.4 Deleting the Selected Security Rule Assignment

1. Click ***DELETE*** button in **Edit Security Rule Assignment Details** screen. A message pops up on the screen seeking confirmation to delete the selected security rule assignment.
2. Click ***OK*** button to delete. The security rule assignment will be deleted.

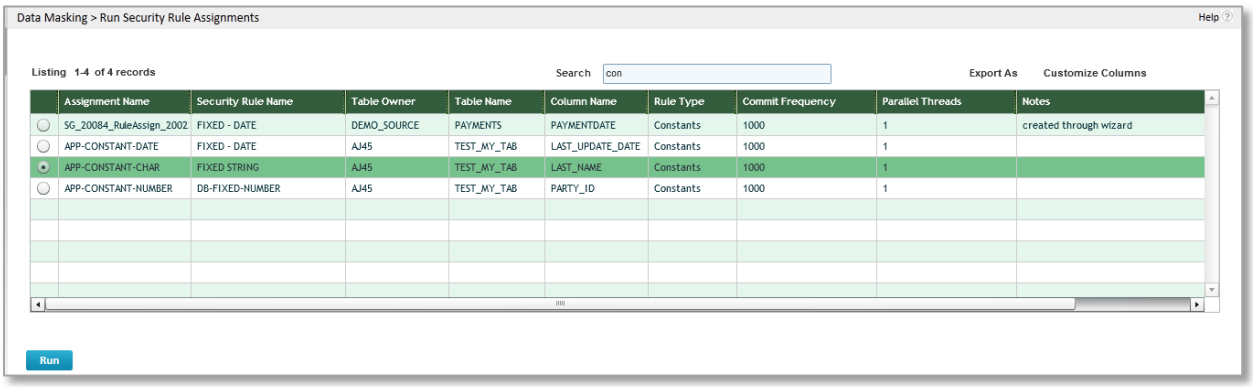
- To return to the Security Rule Assignment list screen from Security Rule Assignment Details Screen, click ***Back*** button.

12.3 Security Rule Assignments (Execution)

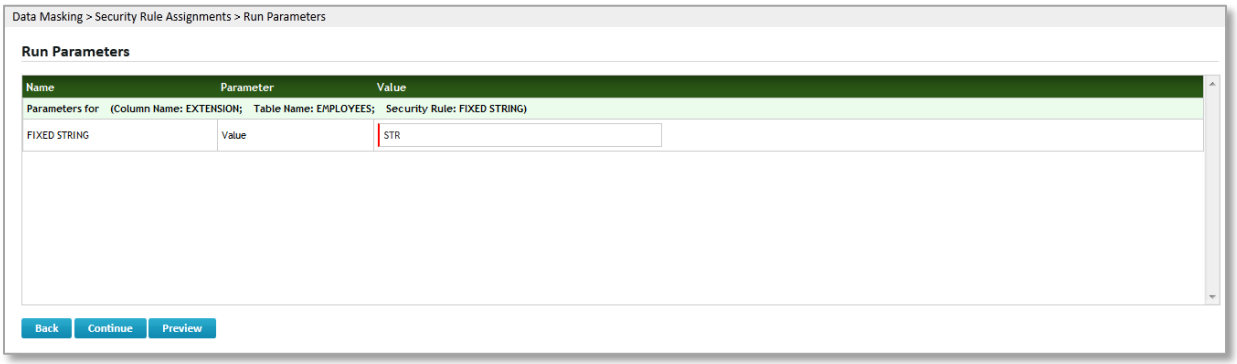
It allows the user to execute the Security Rule Assignment. Also, this feature provides an option to preview the sample of masked data before masking the original data during execution.

12.3.1 Navigation

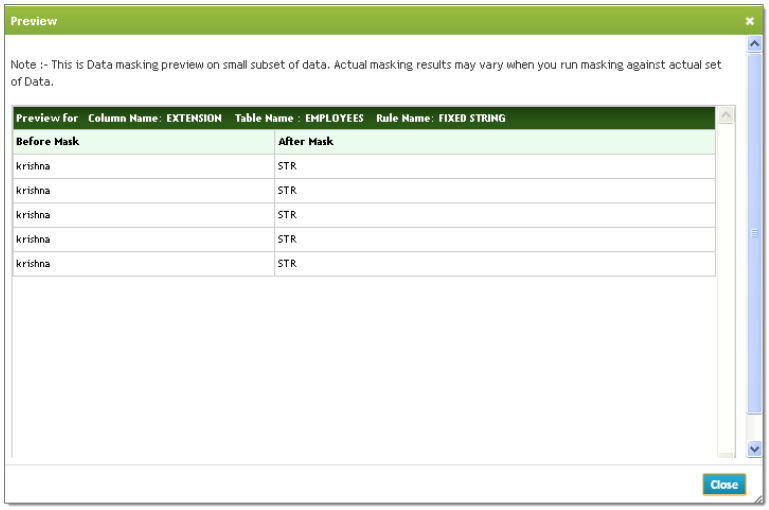
To execute the security rule assignments, login to Solix EDMS Standard Edition (SE) and follow the path**: *Data Masking > Run Security Rule Assignments*.**



1. Select the radio button adjacent to the Security Rule Assignment and click ***Run*** button. The ***Run Parameters*** screen will be displayed to enter the value of the parameter at run time as shown in the figure below.



2. Enter the parameter value in the ***Value*** text box.
   - To view the sample of masked data before masking the original data, do the following:
     a. Click ***Preview*** button. The ***Preview*** popup window will be prompted which shows data before masking and after masking as shown in the figure below.



b. Click ***Close*** button, to navigate to the ***Run Parameters*** screen.

3. Click ***Continue*** button, to initiate the execution process. On successful execution, a Run ID will be generated and displayed in the ***Run Schedule*** screen.
4. To monitor the status of security rule assignment, navigate to ***Status Monitor*** screen (***Schedule & Status > Status***).

- The field marked as " "are mandatory fields.
- To limit the rows in the preview results, set the value of mask preview rows count in ***MASK_PREVIEW_ROWS*** parameter in the ***Parameter*** screen. For example, to limit the rows to 10 then set the default value of mask preview rows count in ***MASK_PREVIEW_ROWS*** parameter to "10". Henceforth, the Preview results screen will display 10 mask preview records exclusively.

12.4 Security Groups (Design)

Security Groups enables the user to group 'n' number of security rule assignments and execute them parallelly or sequentially at a time in a single execution. It helps to reduce the time consumption while masking huge data.

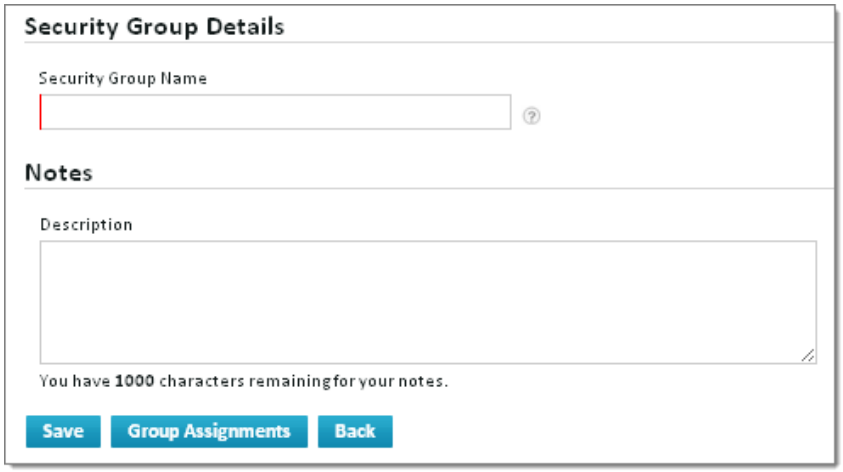
12.4.1 Navigation

To access Security Groups link, follow the path**: *Settings* > *Data Masking* > *Security Groups*.**

12.4.2 Add New Security Group

To add new security group, do the following:

1. Place cursor at ***Setting*** tab in the Solix EDMS main menu. The list of submenu is displayed.
2. Select ***Database Masking*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***Security Groups*** option from the drop down. The **Security Groups screen** with the list of existing security groups will be displayed.
4. Click ***Add*** button. The ***Security Group Details*** screen appears to enter the information corresponding to the security groups.



5. In the ***Security Group Details*** page,
    a. Enter ***Security Group Name***.
    b. Enter the comments in the ***Notes***.
    c. Click ***Save*** button. Once the information is saved successfully, a confirmation message is prompted.
        - If the details provided are invalid, a warning message is prompted.
        - If the security group already exists, a warning message about duplicate name is prompted.

- The field marked as " "are mandatory fields.

12.4.3 Editing an Existing Security Group

To edit an existing security group, do the following:

1. From the security groups list, select the radio button adjacent to the desired security group.
2. Click ***Edit*** button. The **Security Groups** page will be displayed.
3. In the ***Edit Security Group Details*** screen,
    a. Make the necessary changes in the required fields.
    b. Click ***Save*** button. Once the modified information is updated successfully, a confirmation message is prompted.

- The field marked as " "are mandatory fields.
- If the details provided are invalid, a warning message is prompted.

12.4.4 Deleting the Selected Security Group

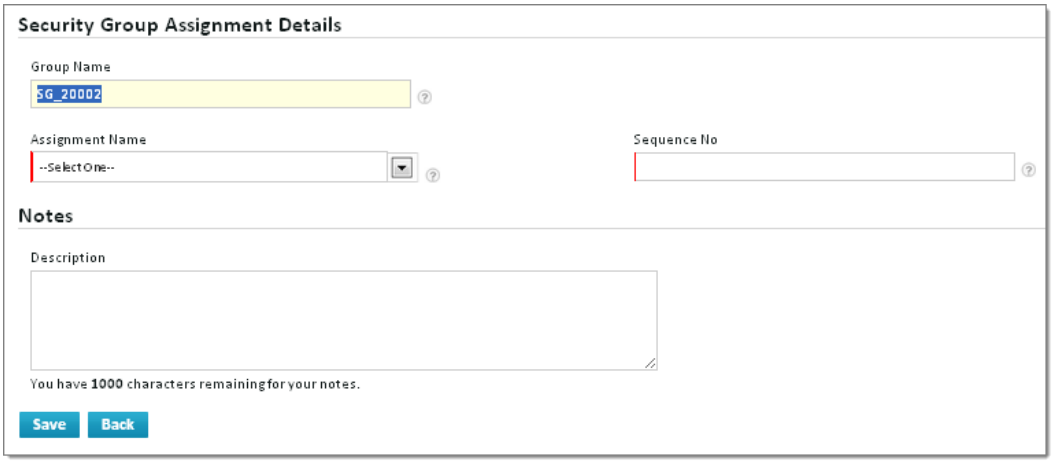
1. Click ***DELETE*** button in ***Edit Security Group Details*** screen, a message pops up on the screen seeking confirmation to delete the selected Security Group.
2. Click ***OK*** to delete. The Security Group will be deleted.

- To return to the Security Groups list screen from Security Group Details Screen, click ***Back*** button.

12.4.5 Create Group Assignments

To add new Group Assignment, do the following:

1. To add Group Assignment, follow the path**:** ***Settings*** **>** ***Data Masking*** **>** ***Security Groups***. The ***Security Group*** option with the list of security group created in Solix EDMS Data Masking Standard Edition (SE).
2. In ***Edit Security Group Details*** page, click ***Group Assignments*** button. In the **Security Group Assignments** screen with the list of existing Security Group Assignments will be displayed.
3. Click ***Add*** button. The ***Security Group Assignment Details*** page will be displayed.



a. The ***Group Name*** text field is disabled and it is non-editable.

b. Select an appropriate security rule assignment from the ***Assignment Name***.

c. Enter the sequence number of the group assignment in the ***Sequence No***, to execute the respective assignment in the specified sequence order while executing multiple assignments in the data masking process.

d. Enter ***Notes***

e. Click ***Save*** button. A confirmation message is prompted.

- If the details provided are invalid, a warning message is prompted.
- If the security group already exists, a warning message about duplicate name is prompted.

- The field marked as " "are mandatory fields.

12.4.6 Editing an Existing Security Group Assignment

To edit an existing Security Group Assignment, do the following:

1. From the security group assignments list, select the radio button adjacent to the desired security group assignment.
2. Click ***Edit*** button. The ***Security Group Assignment*** page will be displayed.
3. In the ***Edit Security Group Assignment Details*** screen,
   a. Make the necessary changes in the required fields.
   b. Click ***Save*** button. Once the modified information is updated successfully, a confirmation message is prompted.

- The field marked as " "are mandatory fields.
- If the details provided are invalid, a warning message dialog box is prompted.

12.4.7 Deleting the Selected Security Group Assignment

1. Click ***DELETE*** button in ***Edit Security Group Assignment Details*** screen, A message pops up on the screen seeking confirmation to delete the selected Security Group Assignment.
2. Click ***OK*** to delete. The Security Group Assignment will be deleted.

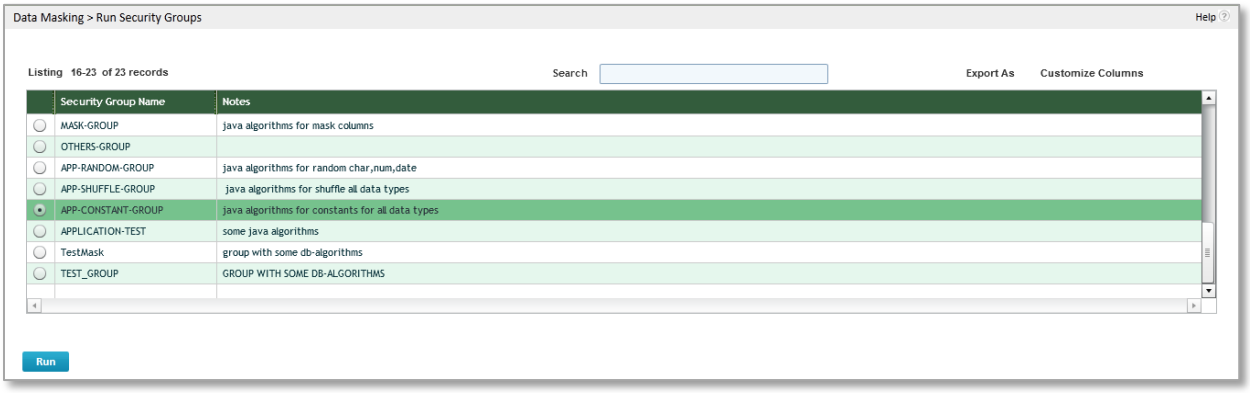
- To return to the Security Group Assignments list screen from Security Group Assignment Details Screen, click ***Back*** button.
- To return to the Security Group Details screen from Security Group Assignments List Screen, click ***Back*** button.

12.5 Security Groups (Execution)

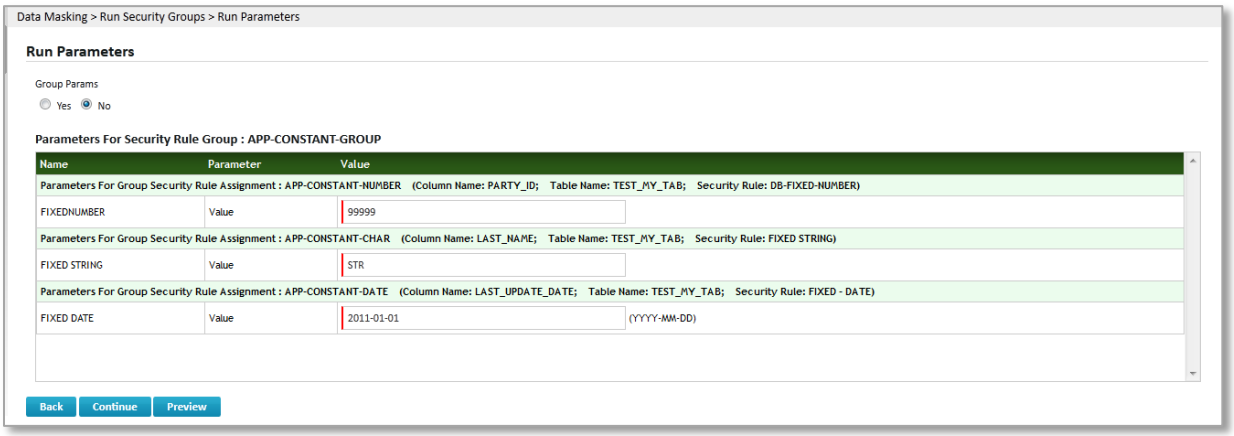
It allows the user to execute the selected Security Group. The security rule assignments assigned to the respective security group will be executed according to the sequence order specified. Also, this feature provides an option to preview the sample of masked data before masking the original data during execution.

12.5.1 Navigation

To execute the security groups, and follow the path**: *Data Masking* > *Run Security Groups*.**

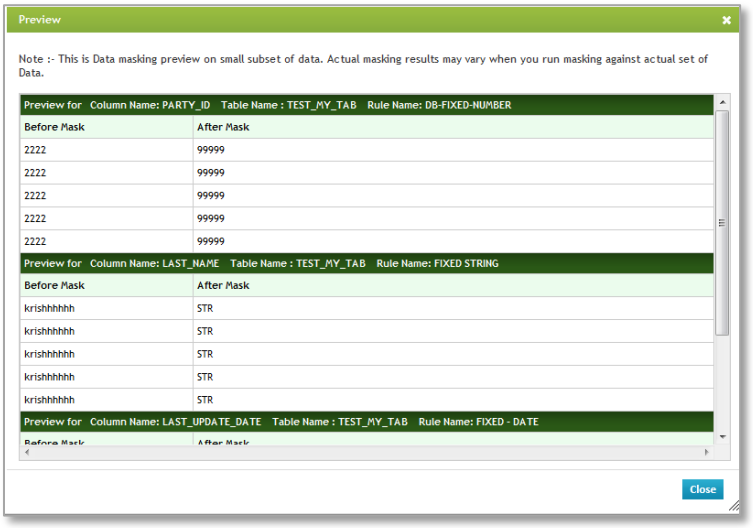


1. Select the radio button adjacent to a security group and click ***Run*** button. The ***Run Parameters*** screen will be displayed to enter the value for the parameter at run time as shown in the figure below.



2. To enter the single value for a group of parameters at a time, select ***Yes*** option adjacent to the Group Params. (Or) select ***No*** option, to enter the value of the parameters individually.
3. Enter the parameter values in the corresponding ***Value*** text box.
    - To view the sample of masked data before masking the original data, do the following:

b. Click ***Preview*** button. The ***Preview*** popup window will be prompted which shows data of all tables in the security group before masking and after masking as shown in the figure below.



c. Click ***Close*** button, to navigate to the ***Run Parameters*** screen.

4. Click ***Continue*** button, to initiate the execution process. On successful execution, a Run ID will be generated and displayed in the ***Run Schedule*** screen.

5. To monitor the status of security group, navigate to ***Status Monitor*** screen (***Schedule & Status > Status***).

- The field marked as " "are mandatory fields.
- To limit the rows in the preview results, set the value of mask preview rows count in ***MASK_PREVIEW_ROWS*** parameter in the ***Parameter*** screen. For example, to limit the rows to 10 then set the default value of mask preview rows count in ***MASK_PREVIEW_ROWS*** parameter to "10". Henceforth, the Preview results screen will display 10 mask preview records exclusively.

13 Data Validation

Data warehouses are usually built on multi-tier architectures with multiple data extraction and insertion jobs between two data bases. The nature of data changes when they pass from one tier to another. Data Validation is a process of comparing records across source and target databases to ensure that the data is consistent.

- Both source database and target database must be homogenous. For example, Oracle to Oracle.

Functionalities

The functionalities provided by Solix EDMS Validation Standard Edition (SE) to validate the data that resides in the database are listed below.

- User Management
- Environment (Knowledge base) Management
- Source and target definition
- Multiple Data Source (i.e., Source or Target) Assignments
- Designing Configuration with criteria
- Customizing the SQL Statement and defining criteria
- Column selection in Data Validation
- Aggregate functions
- Customizing the column
- Code generator
- Validation Process can be performed between two configurations or two Custom SQL Statements or a single Configuration and a single Custom SQL Statement
- Validation of data based on thresholds (Range or Percentage or Fixed Value)
- Designing Notification Template
- Capabilities to monitor the status of validation process in execution
- Notification email to the users and support teams
- Time based scheduling.

13.1 Custom SQL Statement

SQL Statements are a main criteria used to validate the data in validation process in Solix EDMS Validation Standard Edition (SE). SQL statements help to extract the requisite data from the database and perform validation on the extracted data.

This feature provides the flexibility to customize the SQL statement based on the requirement especially if the user has thorough knowledge of tables and table relations in the database. Also, the user can employ the existing SQL statement for Validation of data to avoid the redundancy and reduce the time-consumption. Initially, the customized SQL statement should be registered and saved, then Solix EDMS Data Validation Standard Edition (SE) validates the SQL statement and populates the metadata of columns pertaining to the specified SQL statement in the given KB data source. Henceforth, the populated columns will be registered to carry out the validation process effectively.

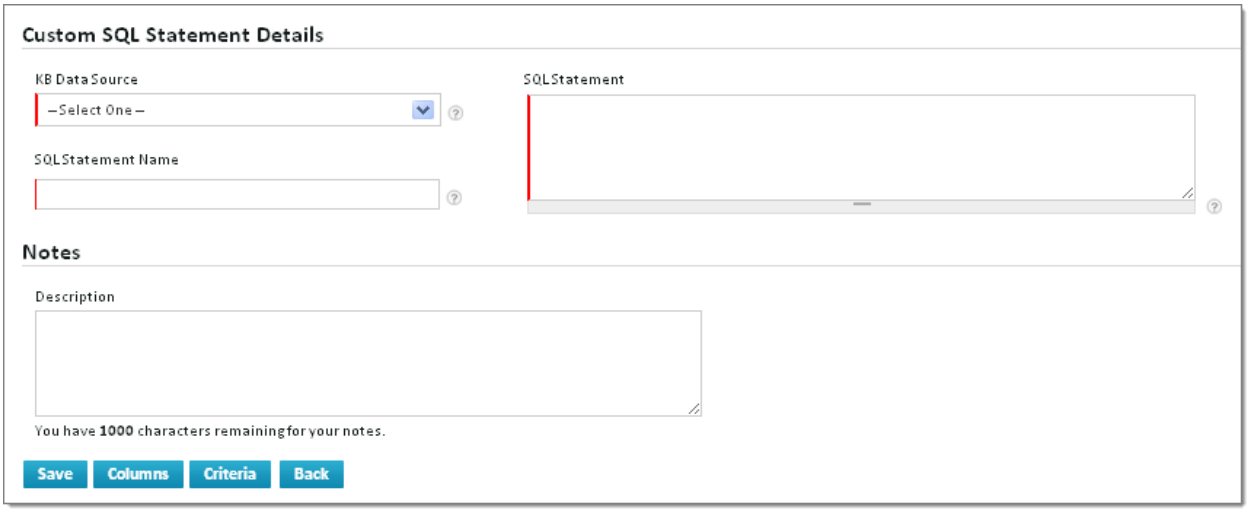
13.1.1 Navigation

To customize the SQL Statement, follow the path: ***Settings*** > ***Database Validation***> ***Custom SQL Statement.***

13.1.2 Creation of Custom SQL Statement

To create a custom SQL Statement, do the following:

1. In ***Custom SQL Statements*** screen, click ***Add*** button. The ***Custom SQL Statement Details*** screen will be displayed to enter the SQL statement as shown in the figure below.



2. Select the required data source from the ***KB Data Source*** drop down list. (Note: exclusively, the data sources assigned to the respective KB will be listed in the ***KB Data Source*** drop down list).
3. Define the name of the ***SQL Statement*** in the corresponding field.
4. Enter the customized SQL statement for validation process in the ***SQL Statement*** text box. Based on the SQL statement specified, the data will be extracted from the selected DB data sources for validation process.

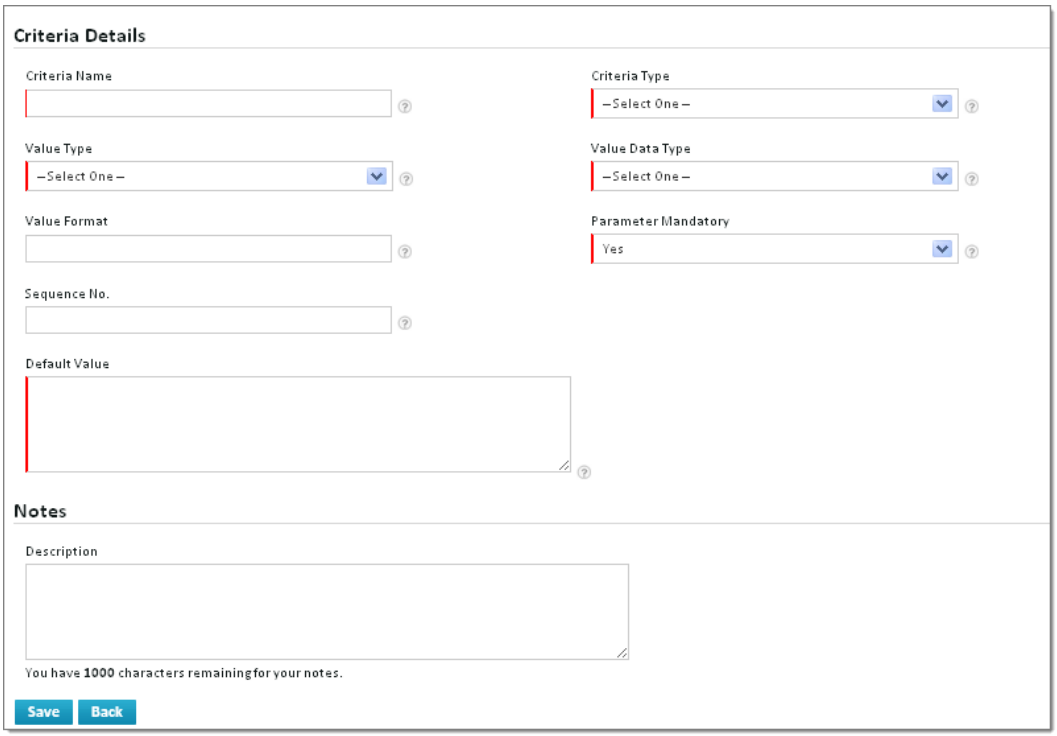
5. Click ***Save*** button, to save the specified SQL Statement. Once the Custom SQL Statement is saved successfully, a message will be prompted on the screen.

- The field marked as are mandatory fields.

13.1.3 Define Criteria

This feature provides the feasibility to customize a criteria to extract the specific data exist in the column or to provide a run-time value ($value) for a specific column in the custom SQL statement. To define criteria, do the following:

1. In ***Custom SQL Statement Details*** screen, click ***Criteria*** button to define the criteria. The ***Criteria*** screen with the existing criteria will be displayed.
2. Click ***Add*** button, to define a new criteria. The ***Criteria Details*** screen will be displayed as shown in the figure below.



3. Enter the criteria details in the corresponding fields
4. Click ***Save*** button to save the SQL Statement Criteria. Once the criteria are saved successfully, a message will be prompted on the screen.
5. In ***Custom SQL Statement Details*** screen, click ***Columns*** button to validate the metadata of the columns according to the specified SQL Statement.

- The field marked as are mandatory fields.

Fields	Functionality
Criteria Name	Define a name for the Criteria
Criteria Type	This drop down enables the user to select an appropriate type of criteria. By default, the criteria type is "Independent", because the criteria are associated to the Custom SQL Statement.
Value Type	This drop down enables the user to define the type of parameter value (i.e., Value or Dependent SQL) • ***Value:*** It implies that the data is fetched based on the specific value provided for the parameter in the ***Value*** text box. • ***Dependent SQL:*** It implies that the SQL statement will be generated based on dependent variable(s) which may be derived from the earlier parameter(s). For example, In "SELECT ORGANIZATION_ID, ORGANIZATION_NAME FROM ORG_ORGANIZATION_DEFINITIONS", where organization name is displayed at run time for end user ease and organization id is used in criteria.
Value Data Type	This drop down allows the user to select an appropriate data type of the parameter. (i.e., Number, String, Date). Note: For the "***Dependent SQL"*** value type, "String" should be selected by default.
Value Format	This field is deployed to enter the format of the value data type selected, if any. For example, if the Value Data type is "Date", this text box enables the user to provide the format of date (i.e., DD/MM/YYYY).
Parameter Mandatory	This drop down enables the user to define the parameter as mandatory or not (i.e., Yes or No). • Yes- it implies that the parameter is a mandatory and it is mandatory to enter the value for the parameter. • No – it implies that the parameter is not mandatory.
Sequence No	This field enables the user to enter the sequence number of the criteria while executing multiple criteria's in the custom SQL statement.
Default Value	This field enables the user to enter the default value of the parameter.

Dependent SQL Statement	When ***Value Data Type*** is selected as '***Dependent SQL Statement'***, this field will be prompted on the screen and enables the user to enter the SQL Statement associated to the parameter.
Description	This text box enables the user to enter the description pertaining to the criteria.
Save	This button is employed to save the criteria details.
Back	This button is employed to navigate to the previous screen from the current screen.

13.2 Custom Configuration

Configurator provides a powerful tool with a configuration design editor to setup a custom configuration for validation. It enables the user to generate re-usable ANSI SQL Code for the configurations to validate the data in the database.

Features of Configurator:

- Provides a powerful configuration tool that enables automatic design and setup of custom configurations.
- Helps in designing meta-data structure.
- Provides an editor that enables the user to use drag-drop components in order to paint the entity relations for customizations and bolt-on applications.
- Code Generator automatically generates ANSI SQL code, which will enable the user to validate the data in the database, viz., Oracle.

To build the custom configuration, the user needs to create a metadata (i.e., KB tables, KB table relation, Join, and so on) and populate the columns in knowledgebase to build the configuration effectively. This chapter outlines the procedure to create a KB table, KB table Relation and build a configuration for validation. The topics included are given below:

1. KB Table
2. KB Table Relation
3. Creating a Configuration

- It is recommended to created KB Table Relation only if the user is designing the configuration based on multiple KB tables.

13.2.1 KB Tables

Tables are the basic unit of data storage in the knowledgebase. KB Table is defined with a table name and a set of columns to extract the data from the database and populate it in the knowledgebase for validation process. Here, the user is provided feasibility to setup a table in the knowledgebase and add the required columns to the table including metadata of the column (Data type, Primary key flag, Primary Key Sequence, and so on).

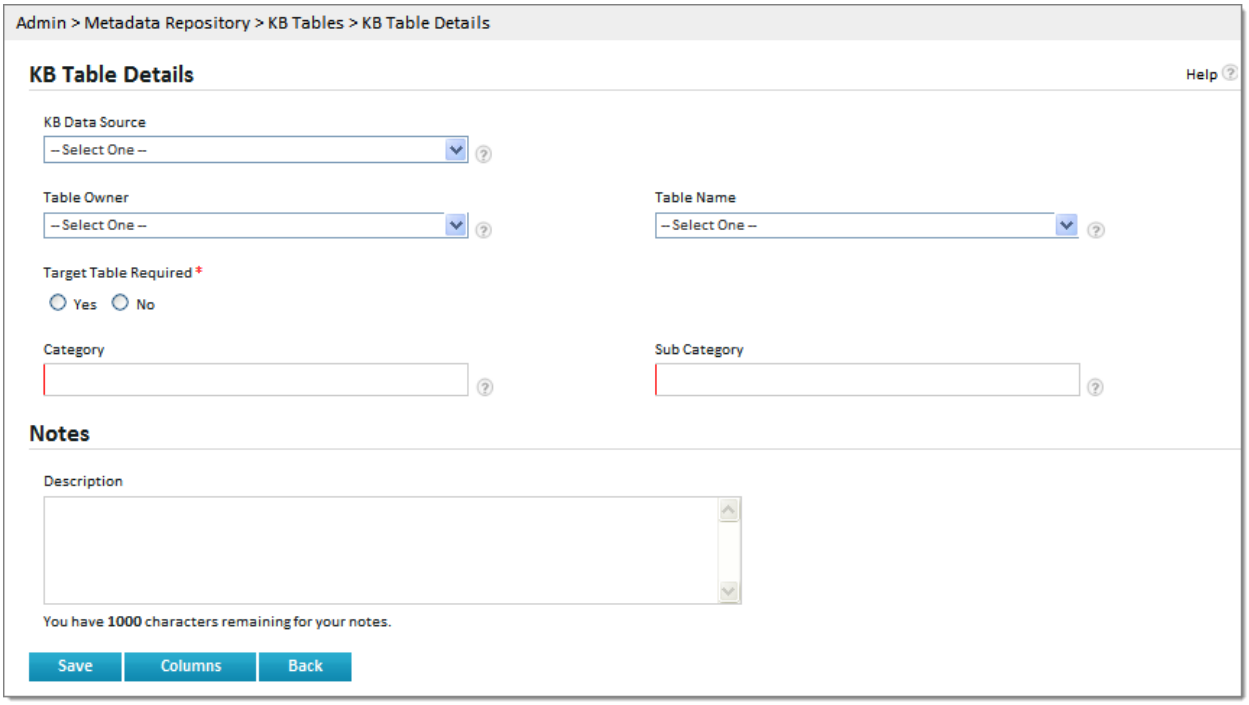
13.2.1.1 Navigation

To access ***KB Tables*** link, follow the path: ***Admin > Metadata Repository > KB Tables.***

13.2.1.2 Add New KB Tables

To add a new KB tables in the knowledge base, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu. The list of submenus is displayed.
2. Select ***Metadata Repository*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***KB Tables*** option in the drop down. The ***KB Tables*** screen with the list of KB tables existing in the knowledgebase will be displayed.
4. Click ***Add*** button, to create a new KB table. The ***KB Table Details*** screen appears to enter the KB table information as shown in the figure below.



5. In the ***KB Table Details*** page, do the following:

a. Select an appropriate data source form the ***KB Data Source*** drop down list. Once the data source is selected, the table owners associated to the selected datasource will be listed in the ***Table Owner*** drop down list. (Note: exclusively, the data sources assigned to the respective KB will be listed in the KB Data Source drop down list).

b. Select the ***Table Owner*** from the corresponding drop down list. Once the table owner is selected, the tables associated to the selected table owners will be listed in the ***Table Name*** drop down list.

c. Select the ***Table Name*** from the corresponding drop down list, to define the table in the knowledgebase.

d. Select "***No***" option in ***Target Table Required***, as target table is not required for validation process.

- If "***Yes***" is selected, Auto Create Target Table, Target Table Name and Target Table Owner fields become visible to create the target table in target database.

e. Enter ***Category*** in the corresponding field.

f. Enter ***Sub Category*** in the corresponding field.

g. Enter the comments in the ***Notes.***

h. Click ***Save*** button. Once the KB table is created and saved successfully, a confirmation message will be prompted on the screen.

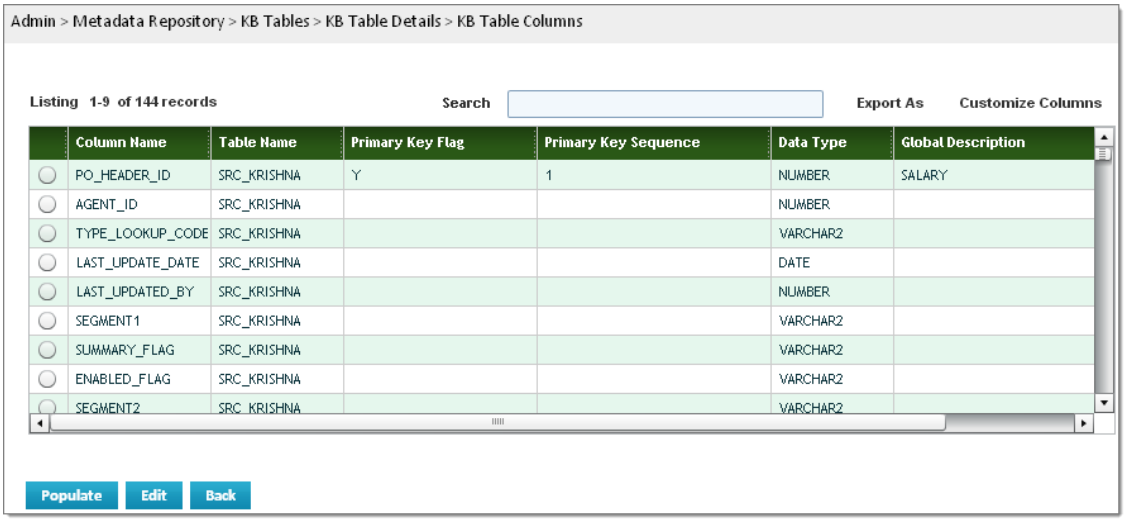
- If the details provided are invalid, a warning message will be prompted on the screen.
- If the KB Table Name already exists, a warning message about duplicate name will be prompted.

- The field marked as are mandatory fields.

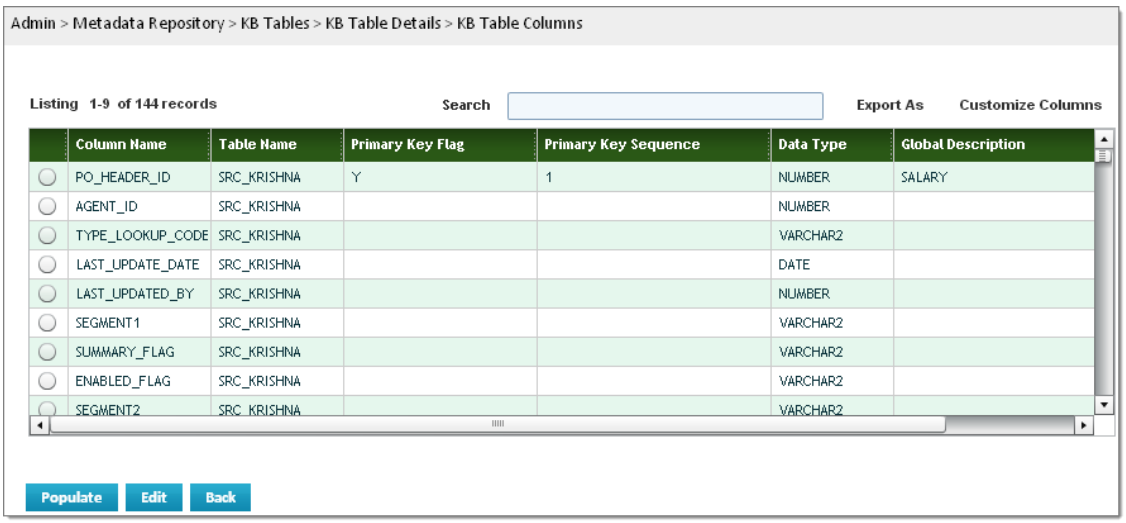
13.2.1.3 Populating Columns

Once the KB table is created, henceforth the user need to populate the columns in KB table from the specified KB Data source. To populate column in the KB table, do the following:

1. In the ***KB Table Details*** page, click ***Columns*** button to navigate to ***KB Table Columns*** screen. Solix EDMS Standard Edition (SE) invokes all the columns pertaining to the configured table from the enterprise application, which are listed in the ***KB Table Columns*** screen.



2. Click ***Populate*** button to populate all the columns in Solix EDMS Standard Edition (SE). The ***KB Table Columns*** page will be displayed as shown in figure below.



13.2.1.4 Editing a Column

Sometimes changes may be made to the column(s) of a table in the application instance that has been configured in Solix EDMS Standard Edition (SE) Knowledge Base. In such cases, the same column changes should be made to the respective KB table in Solix EDMS Standard Edition (SE). The ***Edit*** function enables the users to make such changes to the columns.

To edit a table column, do the following:

1. In ***KB Table Columns*** screen, select the radio button adjacent to the desired column and click ***Edit*** button. The ***KB Table Column Details*** page will be displayed as shown in the figure below.

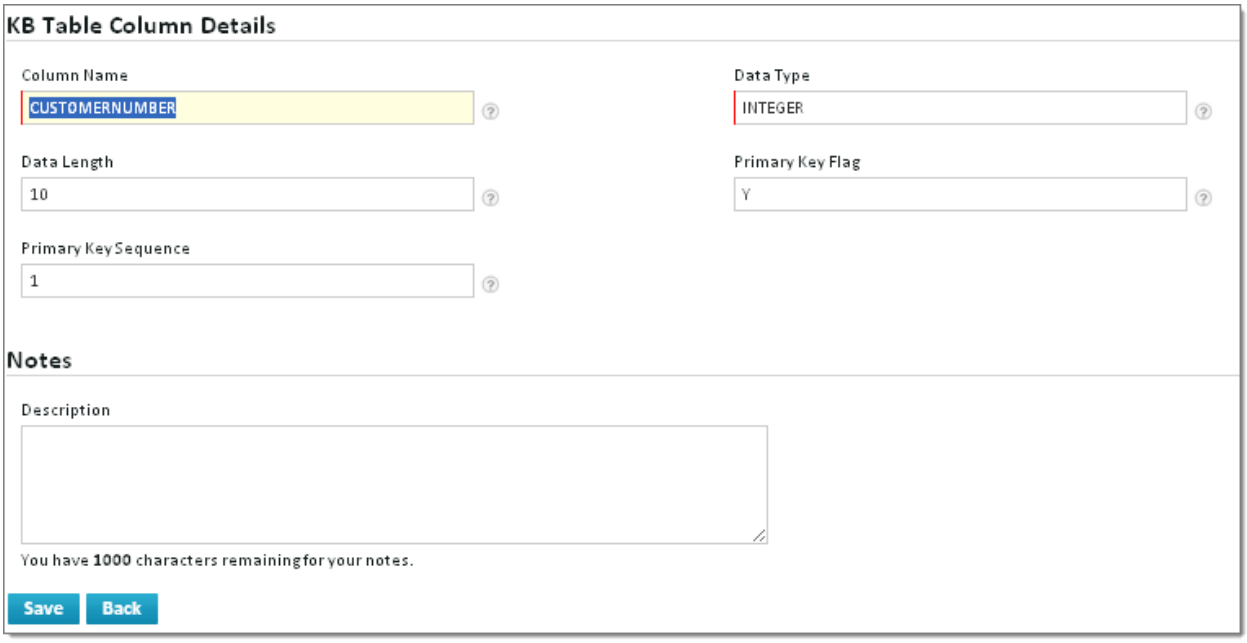


Figure 13-1: KB Table Column Details screen

2. In the ***Edit KB Table Column Details*** screen, do the following:

    a. The ***Column Name*** remains static and cannot be changed.

    b. Make the necessary changes in ***Data Type***, ***Data Length***, ***Primary key Flag***, and ***Primary key Sequence*** value.

- The field marked as " "are mandatory fields.

A piece of data such as salary, etc. may be shared across different Enterprise Applications in an organization but the column names of such data may differ from one application to another. **Global Description** enables the user to identify the counterparts of such column in different Enterprise Applications by the column description and map those columns to the specific table column.

The **Global Description** values that are displayed in the list are created in **Parameters** functionality under **Admin Module** in Solix EDMS Standard Edition (SE). The administrative user, super user, or apps functional user can create the Global Description values for GLOBAL_MAPPING parameter. These values will be listed in the Global Description drop down list in the **Edit KB Table Column Details** page.

3. Click ***Save*** button. The selected column will be updated accordingly.

4. Click ***Back*** button to return to the previous page.

13.2.2 KB Table Relations

Table relationship is an association between two or more tables. Relationships are expressed in the data values of the primary and foreign keys. Keys are fundamental to the concept of relational databases because they enable tables in the database to be related with each other. Navigation around a relational database depends on the ability of the primary key to unambiguously identify specific rows of a table.

Knowledge Base (KB) Relations function allows the users to setup the table relations and joins in Solix EDMS Standard Edition (SE). This function is used to configure a child table to inherit the properties of the parent table

- It is recommended to created KB Table Relation, only if the user is designing the configuration based on multiple KB tables.

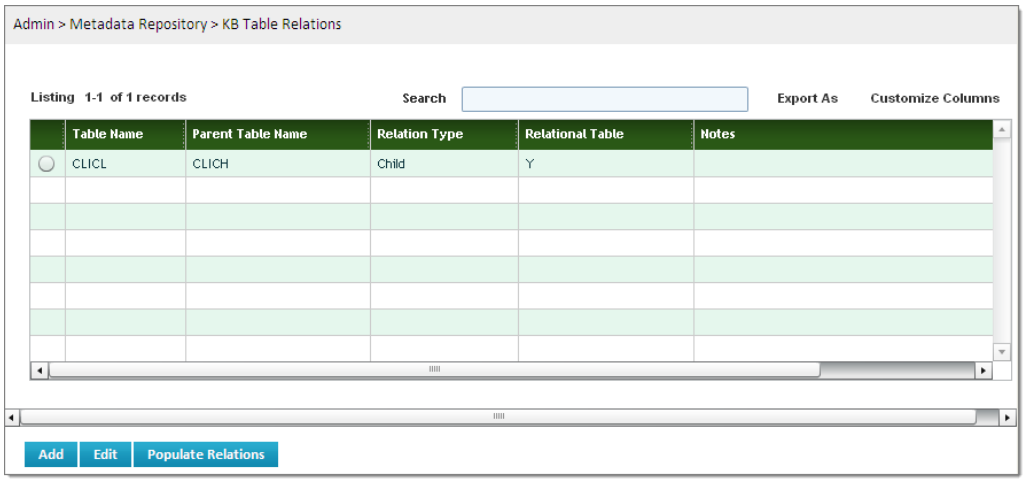
13.2.2.1 Navigation

To access ***KB Table Relations*** link, login to Solix EDMS Standard Edition (SE) and follow the path: ***Admin > Metadata Repository > KB Table Relations.***

13.2.2.2 Add New KB Table Relations

To add a new KB Table Relations, do the following:

1. Place cursor at ***Admin*** tab in the Solix EDMS Standard Edition (SE) main menu. The list of submenu is displayed.
2. Select ***Metadata Repository*** option from the submenu. The list of options is displayed in the drop down.
3. Click ***KB Table Relations*** option from the drop down. The ***KB Table Relations*** screen with the list of existing KB Table Relations will be displayed as shown in the figure below.



4. Click ***Add*** button. The ***KB Table Relations Details*** screen appears to enter the information corresponding to the KB Table Relations.

5. In the ***KB Table Relations Details*** screen, do the following:

    a. Select child table from the ***Table Name*** drop down list.

    b. Select ***Parent Table Name*** from the corresponding drop down list.

    c. Select Yes/No option in the ***Relational Table***, to indicate whether both the parent table and child table is a relational table or not.

    - If "***Yes***" option is selected, the relations (i.e., Foreign Keys and Primary Keys) exist on the database level.
    - If "***No***" option is selected, the relations (i.e., Foreign Keys and Primary Keys) does not exist on the database level but it will be maintained at the business application level.

    d. Enter the comments in the ***Notes.***

    e. Click ***Save*** button. Once the information is saved successfully, a confirmation message dialog box will be prompted.

    - If the details provided are invalid, a warning message dialog box is prompted.
    - If the KB table relations name already exists, a warning message about duplicate name is prompted in the dialog box.

- The field marked as * are mandatory fields.

13.2.2.3 Editing an Existing KB Table Relations

To edit ***KB Table Relations***, do the following:

1. From the ***KB Table Relations*** list, select the radio button adjacent to the desired KB Table Relations.

2. Click ***Edit*** button. The ***KB Table Relations Details*** screen will be displayed.
3. In the ***Edit KB Table Relations Details*** screen, do the following:
    a. Make the necessary changes in the required fields.
    b. Click ***Save*** button, to save the modified information. Once the modified information is updated, a confirmation message will be prompted.

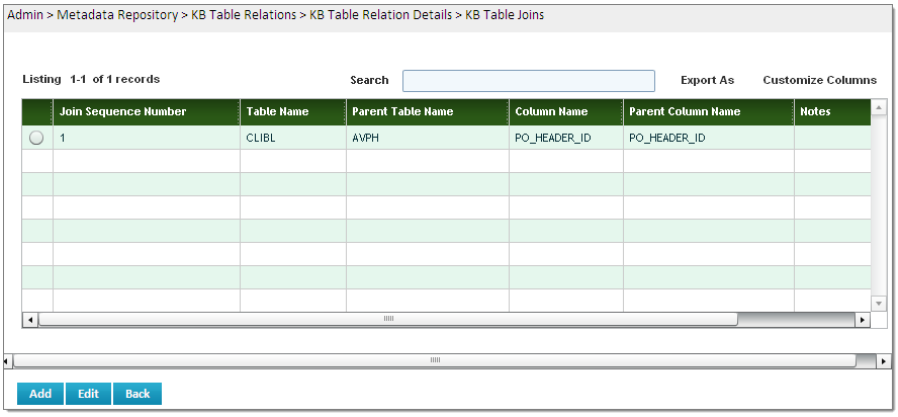
- The field marked as * are mandatory fields.
- If the details provided are invalid, a warning message is prompted
- To return to the ***KB Table Relations List*** screen from ***Add / Edit Details*** screen, click ***Back*** button.

13.2.2.4 Configuring Table Joins

Joins preserve the lineage of the tables in the KB. This function keeps track of all the links that connects one table with the other tables in the KB.

Path: ***KB Table Relations Details*** screen (Refer to KB Table Relations Details)

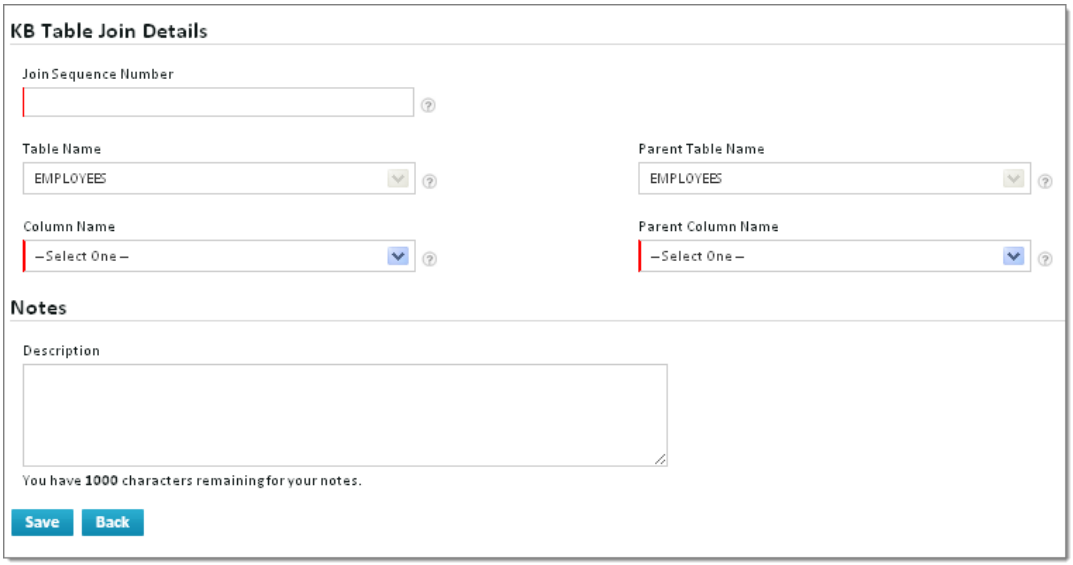
- In ***KB Table Relation Details*** screen, click ***Joins*** button. The ***KB Table Joins*** screen displays the existing table joins corresponding to the KB Table Relation as shown in the figure below.



13.2.2.5 Add New KB Table Join

To add new KB Table Join, do the following:

1. In the ***KB Table Joins*** screen, click ***Add*** button. The ***KB Table Joins Details*** screen will be displayed as shown in the figure below.



2. In the ***KB Table Joins Details*** screen,

    a. Enter the sequence number associated to the join associated to the KB relation in the ***Join Sequence Number*** text field. This allows the user to execute the joins based on the given sequence number during execution of KB table relation.

    b. ***Table Name*** and ***Parent Table Name*** specified in the ***KB Table Relation Details*** by the user will be displayed in the dialog. All the columns in the Table and the Parent Table will be listed in the drop down lists against Column Name and Parent Column Name respectively.

    c. Select the appropriate column name of the child table from the ***Column Name*** drop down list to which the linkage to parent table is established.

    d. Select the appropriate column name of the parent table from the ***Parent Column Name*** drop down list to which the linkage to child table is established.

    e. Enter the comments in the ***Notes.***

    f. Click ***Save*** button, to develop the parent-child relation among the specified tables. Once the information is saved successfully, a confirmation message dialog box is prompted.

        - If the details provided are invalid, a warning message dialog box is prompted.
        - If the KB Table Join Name already exists, a warning message about duplicate name is prompted in the dialog box.

- The field marked as are mandatory fields.

13.2.2.6 Editing an Existing KB Table Join

To edit an existing KB Table Join, do the following:

1. From the ***KB Table Join*** list, select the radio button adjacent to the desired KB Table Join.
2. Click ***Edit*** button. The ***KB Table Join Details*** screen will be displayed.
3. In the **Edit KB Table Join Details** screen,
    a. Make the necessary changes in the required fields.
    b. Click ***Save*** button, to save the modified information. Once the modified information is updated successfully, a confirmation message is prompted.

- The field marked as * are mandatory fields.
- If the details provided are invalid, a warning message will be prompted.
- To return to the list screen from ***Add / Edit Details*** screen, click ***Back*** button.

13.2.3 Creating a Configuration

Solix EDMS Standard Edition (SE) provides the feasibility to generate re-usable ANSI SQL Code automatically. The configurator is a powerful tool designed to setup the custom configurations to validate the data in the validation process. The tool includes Auto-Config capabilities.

The KB tables and KB Relation (optional based on requirement) are requisite to build the configuration for validation and stores the configurations in the KB Explorer. Once the configuration is created and code is generated, the user can initiate the validation process in Solix EDMS Validation Standard Edition (SE)**.** To create a new configuration, do the following:

13.2.3.1 Navigation

1. Navigate to the following path: ***Setting*** **>** ***Database Validation*****>** ***Configurator***. The ***Configurator*** screen will be displayed as shown in the figure below.

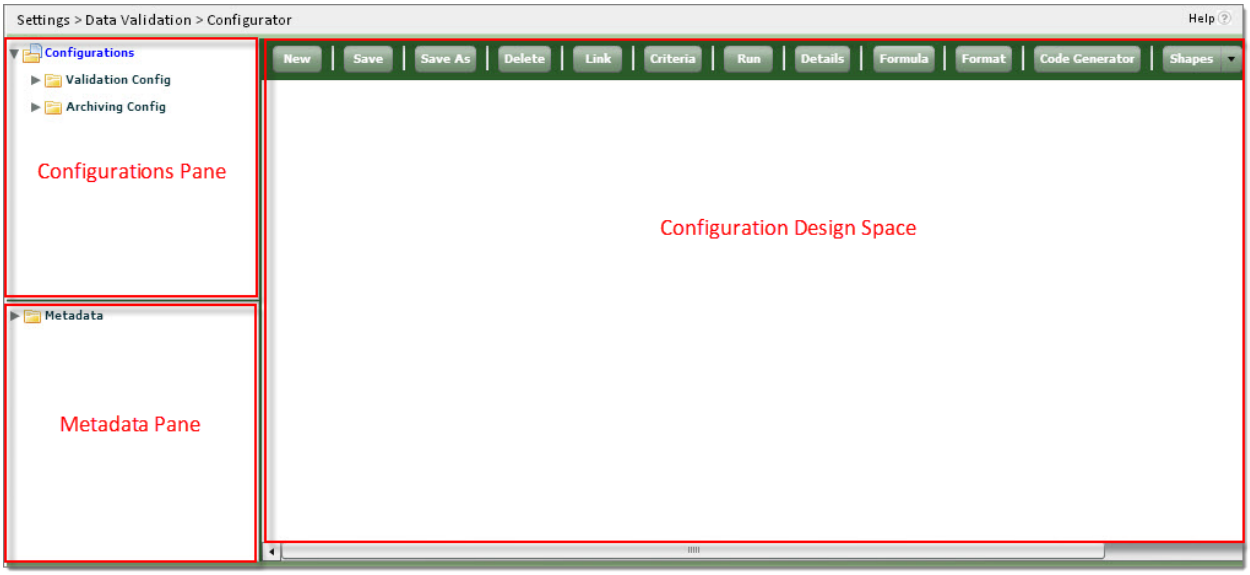


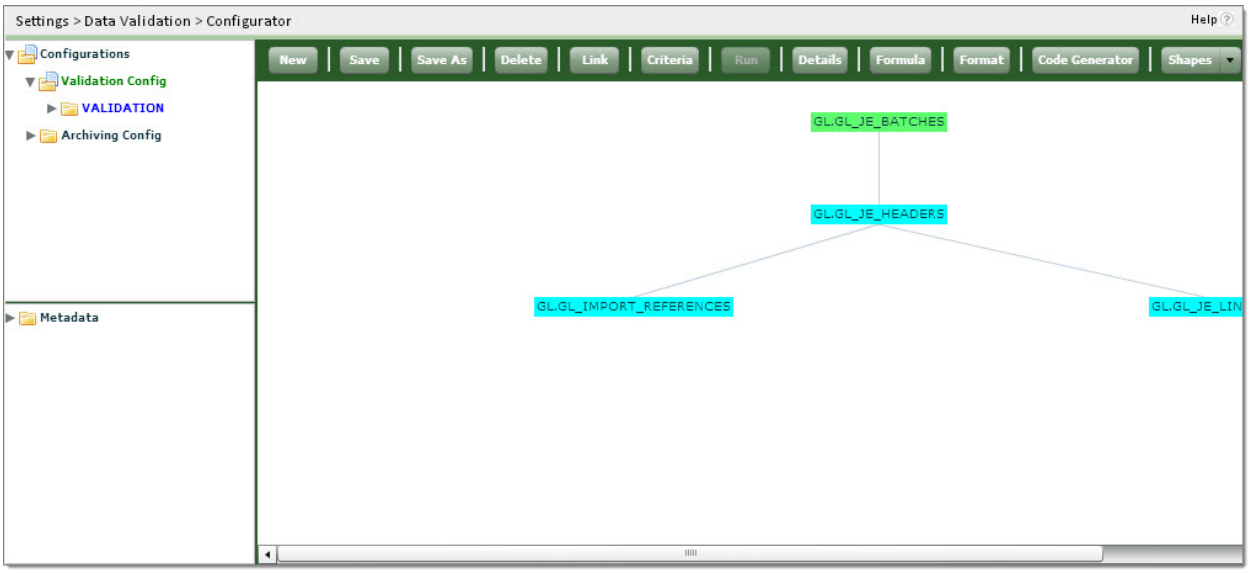
Table 2: Illustrate the dashboard of Configurator

Fields	Functionality
Configurations	Configuration pane is designed to store the configurations created and saved in the Configurator for Data Validation and Data Archiving.
Metadata	Metadata pane is designed to store the tables created in the respective knowledgebase. It maintains the tables and provides feasibility to design the configuration using tables in metadata.
Configurator Design Space	This pane provides flexibility to design the metadata structure of configuration such as tables, establishing link between related tables, configuring the driving tables and so on. It shows the tables selected for creating metadata structure in configuration and once populated in the Design Space, a table can be dragged and placed anywhere in the space according.
New	This button is employed to create a new configuration.

Save	Once the metadata structure is designed and appropriate criteria are setup for the configuration. This button is deployed to save the details of configuration created or update the information of configuration as per the modification. Automatically, the saved configuration will be accumulated in the Configuration pane and can be re-usable in future.
Save As	This button is employed for the duplication of existing configuration or to save the information of existing configuration with different configuration name.
Delete	This button is employed to delete the configuration.
Link	This button is employed to establish the parent-child relationships among the selected tables in Design Space. Note: only if the relation among the tables is defined/exist in the knowledgebase, the relationships among those tables can be established.
Criteria	This button is employed to define criteria in the configuration for validation process, in order to extract the data for the validation based on the given criteria. For example, • If the user needs to validate the specific data of the table or apply some condition to extract a specific data in the database. In such case, the user defines the condition in the Criteria Details screen. Note: Solix EDMS Standard Edition (SE) restricts to save a new configuration, if the criteria are not defined for the respective configuration.
Run	This button is employed to execute the data archiving configuration. By default, this button will be disabled for data validation configurations.
Details	This button is employed to view the details of selected configuration and criteria.
Formula	This button is deployed to define the formula on a predefined column in the configuration. By default, this button will be disabled for data archiving configurations.
Format	This button is deployed to format the configuration as per the requirement. Only, the saved configurations can be formatted.
Generate Code	This button is employed to generate a re-usable ANSI SQL code based on the criteria defined in the respective configuration. The generated SQL code will be employed in the validation process to validate the data.

Shape	This button facilitates to utilize various kinds of shapes (such as square, rectangle, arrows, and so on) while designing the configuration.

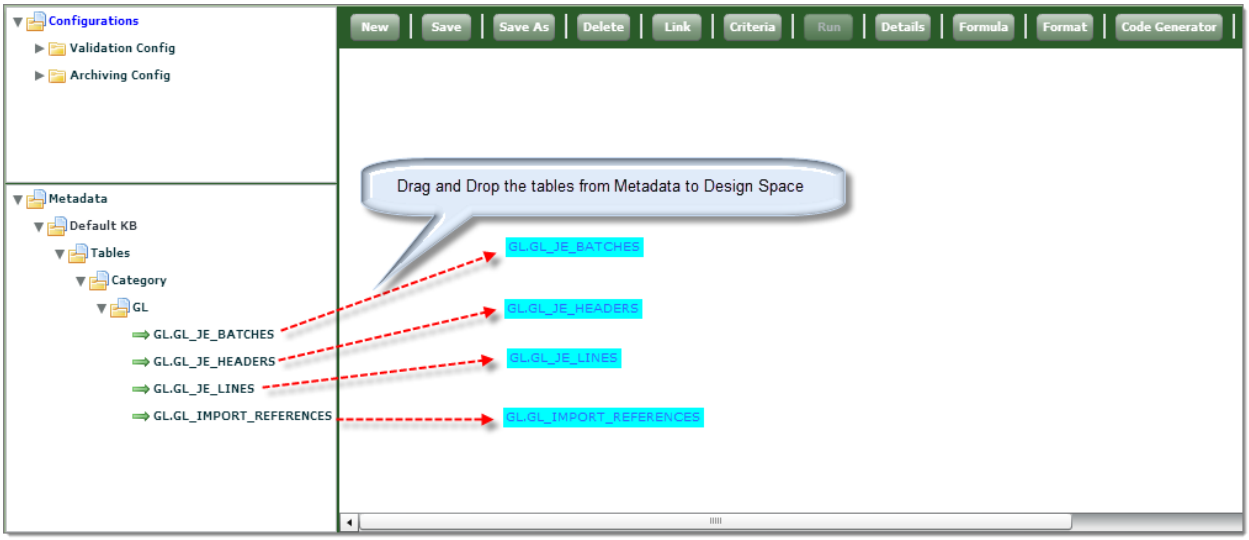
2. Expand the ***Configurations >Validation Config*** folder, to view the saved data validation configurations.



13.2.3.2 Initiate the creation of new configuration

1. Navigate to ***Metadata > OracleERP11i > Tables > Category***> [***Table Owner]*** folder in the Configurator, to list all the tables existing in the corresponding table owner as shown in the figure below.

2. Now, select the tables required to create a configuration from the Metadata pane. Drag and drop the tables in the configuration designer pane (i.e., Design Space) to build a new configuration as shown in the figure below.



Once the tables are selected from the metadata and dragged into the Configurator Design Space, the user needs to develop a link between the tables based on the parent-child relationship.

- The user must have the knowledge of the parent - child relationship among the tables selected. Inappropriate selection of tables may results in data being orphaned partially or completely.

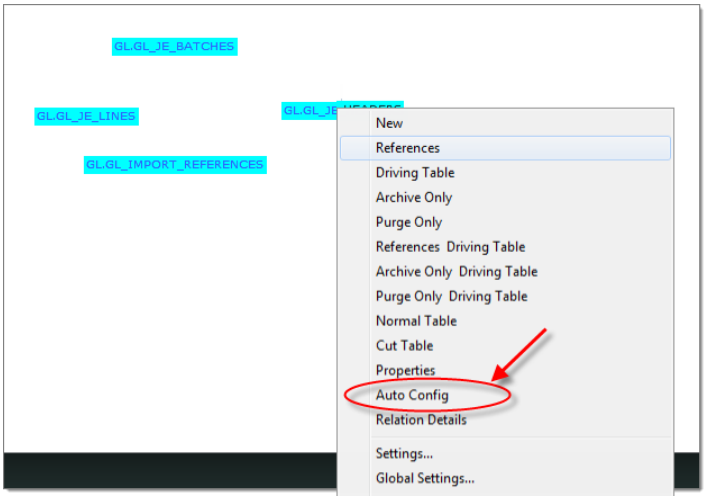
13.2.3.3 Create Table Links

To create links between tables, do the following:

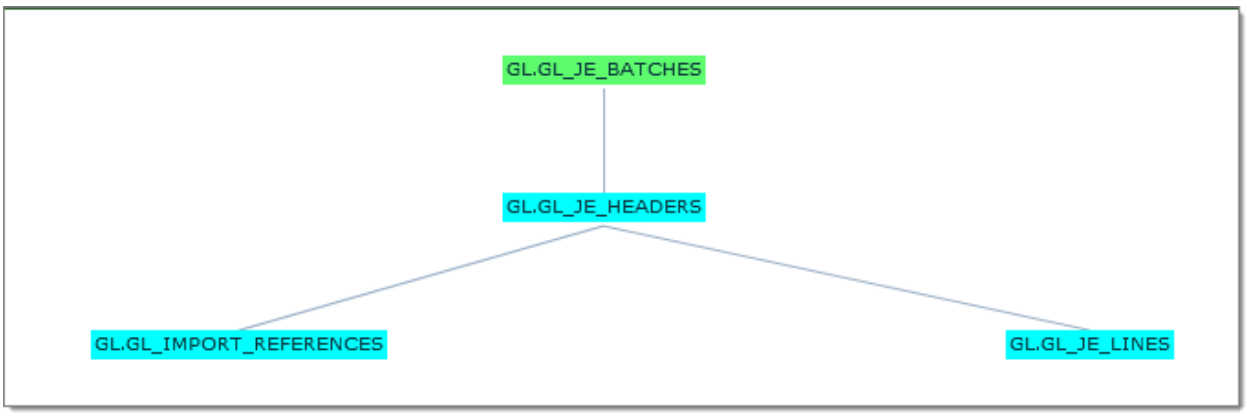
1. First ascertain which tables to connect and in what order. The user must consider the parent-child relationships among the selected tables.
2. Click Link button appears on the ***Configurator*** toolbar.
3. In the ***Configurator Design*** Space, click the first table (child table) and then click the second table (header table) depending on the parent child relationship between the tables.
4. Both the tables are linked.
5. Repeat the above procedures to connect all the selected tables according to the table relationships.

To populate related tables and establish links between them automatically, do the following:

6. Select the ***Table*** from the **Tables** folder in the KB Explorer. Drag and drop the selected table in the Design Space.
7. In the Design Space, right click on the selected table. A drop down menu appears on the screen and select ***Auto Config*** option from the menu as shown in the figure below.



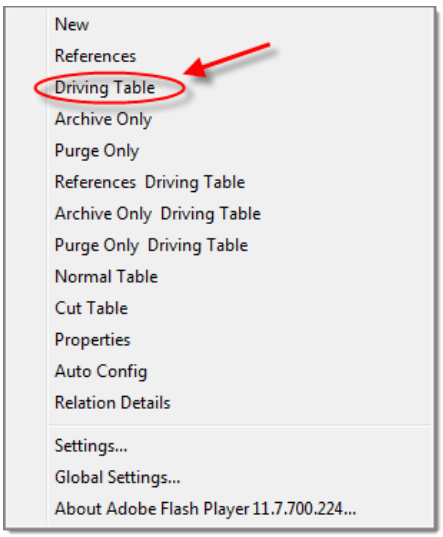
8. Once the option is clicked, the tool picks and populates all the tables related to the respective table in the design space; then it establishes relational links among those tables; and finally assigns an appropriate table from the selected ones as the driving table that drives the archiving process as shown in the figure below.



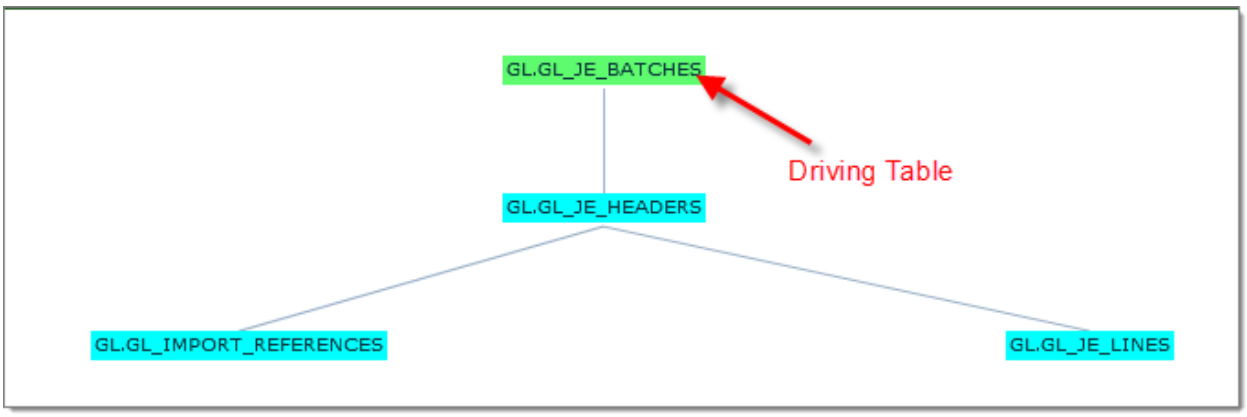
13.2.3.4 Configure Driving Table

To set the driving table, do the following:

1. Once the Parent-child relations is established, to set the driving table in the linked tables. Right-click the table that is intended to drive the configuration, a menu drop down list appears in the Design Space as shown in the figure below.



2. Once the Driving table option is clicked, the respective table turns green and represents as a driving table in the configuration as shown in the figure below.



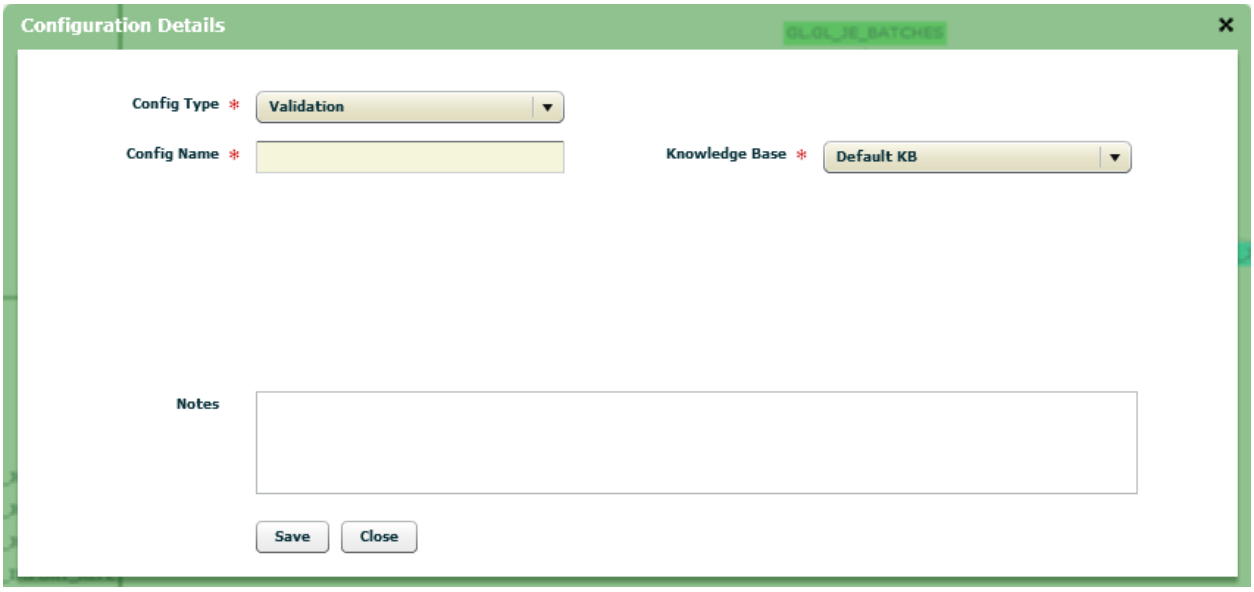
Once the tables are linked and the driving table is assigned, this accomplishes the process of designing a configuration.

13.2.3.5 Setup Configuration Details:

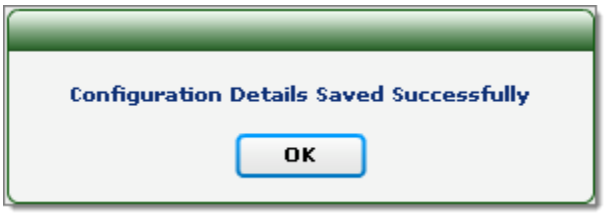
The user needs to setup the configuration details as per the requirement. To setup the configuration, do the following:

1. Click 

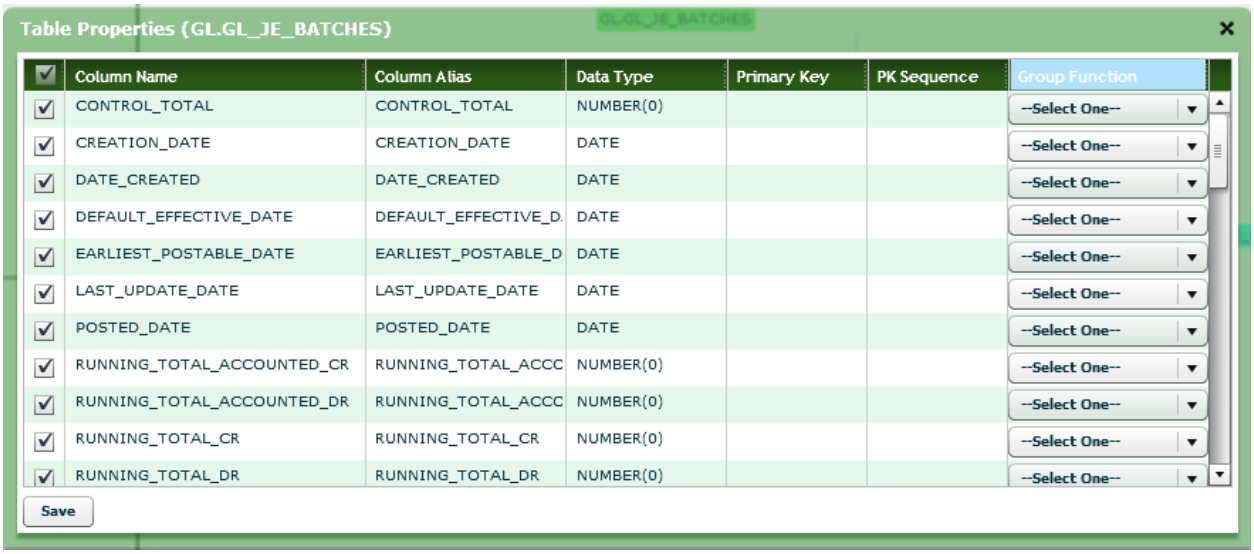
button appears in the ***Configurator*** toolbar.
2. The Configuration Details window prompts on the screen, and enables the user to provide the ***Configuration Details*** screen as shown in the figure below.



3. In the ***Configuration Details*** window:
    a. Select the ***Validation*** option from ***Config Type*** drop down, to define the configuration is built for data validation process.
    b. Enter ***Configuration Name*** in the corresponding field.
    c. Select the appropriate KB associated to the configuration from the corresponding drop down list.
    d. Enter the ***Description*** in the corresponding field.
4. Click ***Save*** button, to save the configuration details. Once the configuration details are saved successfully, the respective configuration is created and saved in the **Custom** folder under **Configurations** in the **KB Explorer**.



5. In Right-pane of Configurator, Right-Click on any table in the configuration (for example, GL.GL_JE_BATACHES). Click ***Properties*** option in the menu, the ***Table Properties*** window prompts the list of column available in the corresponding table (i.e., , GL.GL_JE_BATACHES) as shown in the figure below.



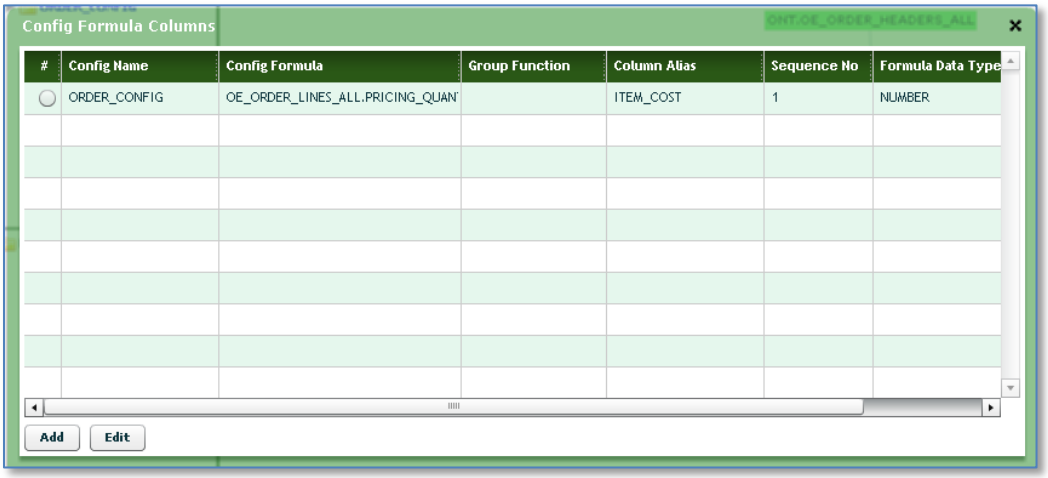
6. By default, the columns of table will be selected and considered for the validation process. Exclusively, the selected columns of the table will be carried out in Validation process for data validation. (Note: to exclude the columns in validation process, uncheck the respective columns manually).

   - Also, the user can provide an alias name for all the selected columns.
   - The user can select/perform the required ***Group Function*** on specific columns (such as Max, Min, etc…).

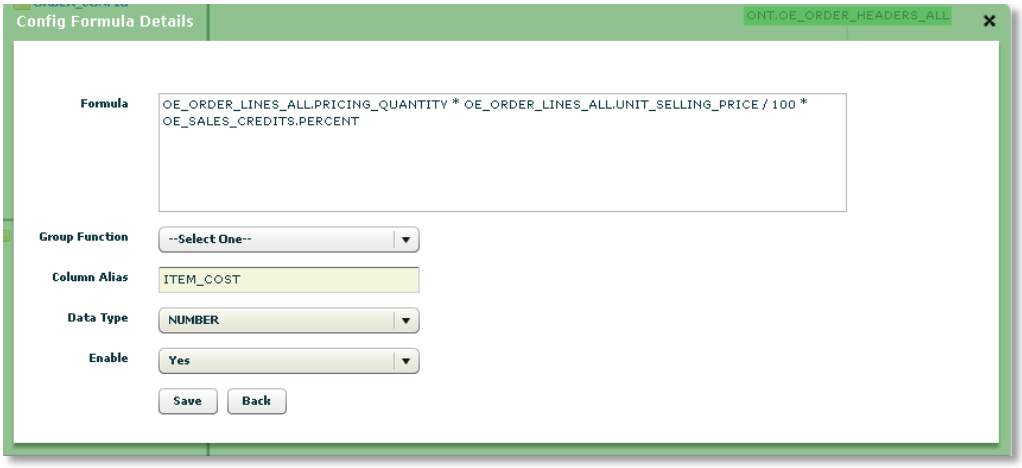
7. Click ***Save*** button, to save the selection in ***Table properties*** and apply the selected group function on the selected columns if any.

8. In case the user wants to define a formula for a column, the ***Custom Column*** (i.e., Formula) feature enables the user to define the formula on a predefined column in the configuration. To add the custom column, do the following steps:

   a. In Configurator design window, click ***Formula*** button which appears on the top of the window. The ***Config Formula Columns*** window will be prompted as shown in the figure below.



b. Click ***Add*** button, to add a new custom column in the configuration. The ***Config Formula Details*** window will be prompted as shown in the figure below.



b. Define the formula for the column in the ***Formula*** text box.

- It is recommended to make use of tablename.columnname (for example, "OE_ORDER_HEADERS_ALL.HEADER_ID") in formula columns to avoid run time issues.

c. Select the appropriate aggregate function from the ***Group Function*** drop down list if needed.

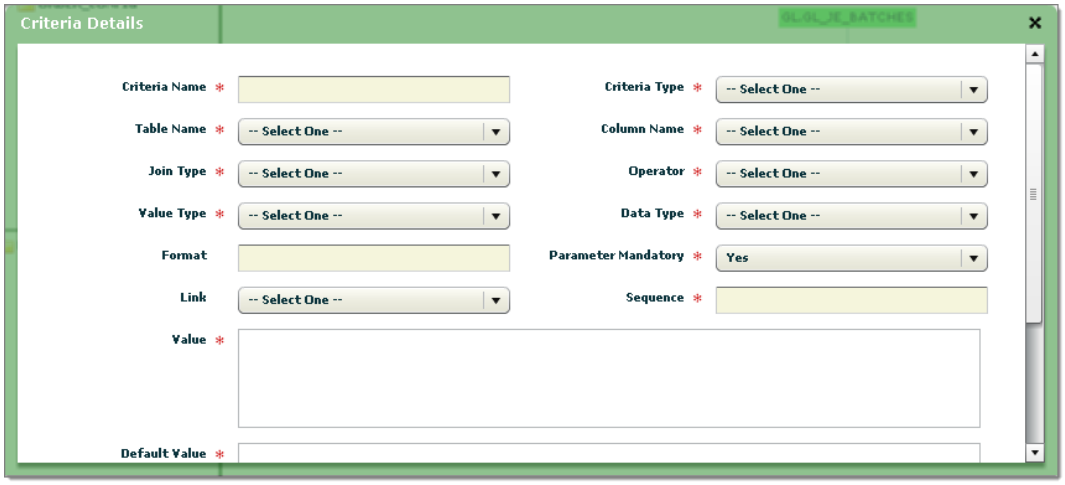
d. Enter the name of the column in the ***Column Alias*** text field.

e. Select an appropriate data type from the ***Data Type*** drop down list.

f. Select ***Yes/No*** option from the ***Enable*** drop down list, based on the option selected the custom column will be enabled/disabled during validation process.

g. Click ***Save*** button, to save the configuration formula details and apply the formula on the respective column in the configuration. Once the configuration formula is saved successfully, a message will be prompted in a popup window.

9. To add criteria in the configuration, click ***Criteria*** Button. The ***Criteria Details*** screen popup window prompts as shown in the figure below.



Below table illustrates the functionalities of fields in the Criteria Details screen.

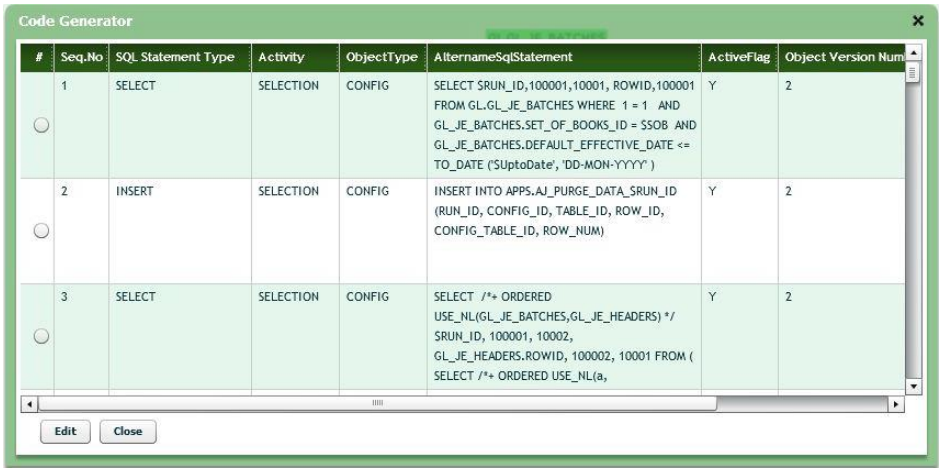
Fields	Functionality
Criteria Name	Define a name for the Criteria in configuration
Criteria Type	This drop down enables the user to select an appropriate type of criteria. The criteria type can be Static, Dependent and Independent. • Static: It implies that the configuration actions will be based on the value specified in Criteria. • Dependent: It implies that the criteria designed are dependent on a particular column of the specific table. • Independent: It implies that the criteria are independent of tables and columns associated to specific configuration.
Table Name	This drop down enables the user to select an appropriate table that holds the attribute value.
Column Name	Based on the table selected, the corresponding columns will be listed in this drop down. It enables the user to select the column on which the respective criteria will be applicable.
Join Type	This drop down enables the user to select an appropriate operand required for the criteria. (i.e., AND or OR).
Operator	This drop down enables the user to select an appropriate conditional operator required to design criteria. (i.e., =,>, <, <= and so on).

Value Type	This drop down enables the user to define the type of parameter value (i.e., Value or Dependent SQL) • ***Value:*** It implies that the data is fetched based on the value provided in the ***Value*** text box. • ***Dependent SQL:*** It implies that the SQL statement will be generated based on dependent variable(s) which may be derived from the earlier parameter(s). For example, "SELECT ORGANIZATION_ID, ORGANIZATION_NAME FROM ORG_ORGANIZATION_DEFINITIONS" where organization name will be displayed at run time parameters for end user ease and organization id will be used in criteria. • ***SQL:*** During the runtime, the SQL statement will be executed and the validation will be executed based on the value obtained from running the SQL script specified in ***Value***. For example, SELECT ORGANIZATION_ID FROM ORG_ORGANIZATION_DEFINITIONS
Data Type	This drop down facilitates to select an appropriate data type of the parameter. (i.e., Number, String, Date). Note: For the "***Dependent SQL"*** and "***SQL***" value type, "String" should be selected by default.
Format	If the Data type is "Date", this text box enables the user to provide the format of date. For example, MM/DD/YYYY.
Parameter Mandatory	This drop down enables the user to define the parameter as mandatory or not (i.e., Yes or No). • Yes- it implies that the parameter is a mandatory, the value must be entered • No–it implies that the parameter is not mandatory.
Sequence No	This text box enables the user to enter the Sequence of Criteria while execution.
Link	Exclusively when "OR" operator is selected in Join, this drop down list enables the user to link the current criteria to this existing criteria and place it in parenthesis during validating the data.
Value	This text enables the user to enter the appropriate value of the parameter according to the ***Value Type*** selected.
Default Value	This text enables the user to enter the default value of the parameter.

Description	This text box enables the user to enter the description pertaining to the criteria.
Save	This button is employed to save the criteria details.

10. Enter the criteria details and click ***Save*** button. Once the criteria is saved successfully, the output of the validation process will be generated based on the defined criteria. Henceforth, generate a code for the respective configuration.

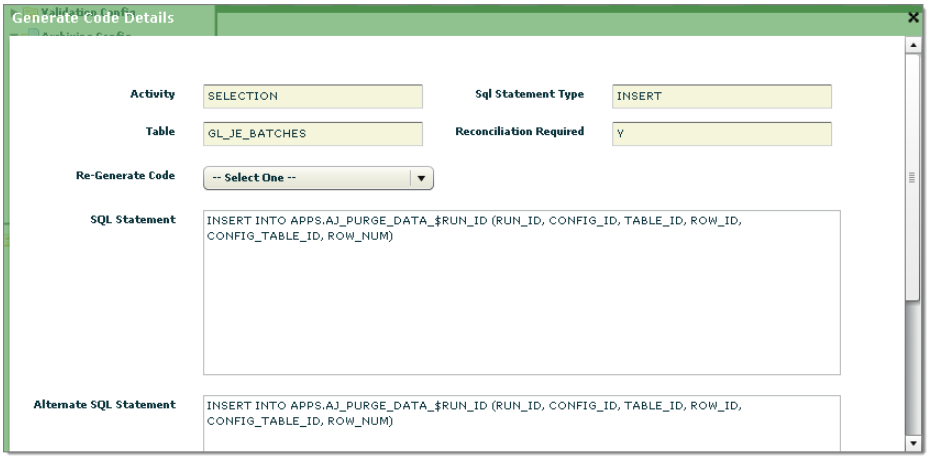
11. Click ***Generate Code*** button to generate the SQL Statement (i.e., Alternate SQL statement) for the corresponding config in the ***Code Generator*** window as shown in the figure below.



Now, the generated SQL statement will be used in validation process for validating the data accurately.

Also, user is provided an option to edit the generated code. To edit generated code, do the following:

a. In ***Code Generator*** screen, select the appropriate SQL Statement and click ***Edit*** button. The ***Generate Code Details*** screen will be displayed as shown in the figure below.



b. Make the necessary changes in the SQL Statement /Alternate SQL Statement text box.

c. Click ***Save*** button, to update the modified SQL statement.

- The field marked as "*" are mandatory fields.
- Whenever any modifications take place in the configuration, it's mandatory to generate a code once again to revise the SQL statement accordingly.
- It is recommended to define criteria for a new configuration in order to fetch a small set of data as per the requirement and accomplish the Validation process effectively in a less time.

13.3 Data Validation Process

Once the SQL Statement is generated automatically or customized manually, the data validation process can be initiated effectively. Based on the requirement and the data to be validated, this chapter illustrates the settings of validation (i.e., mapping, comparison and so on), designing a template for output generated for the email notification and the execution of the validation. This chapter outlines the procedure of data validation process and the topics included are:

- Data Validation Mapping
- Execution of Data Validation process
- Notification Template

13.3.1 Data Validation Mapping

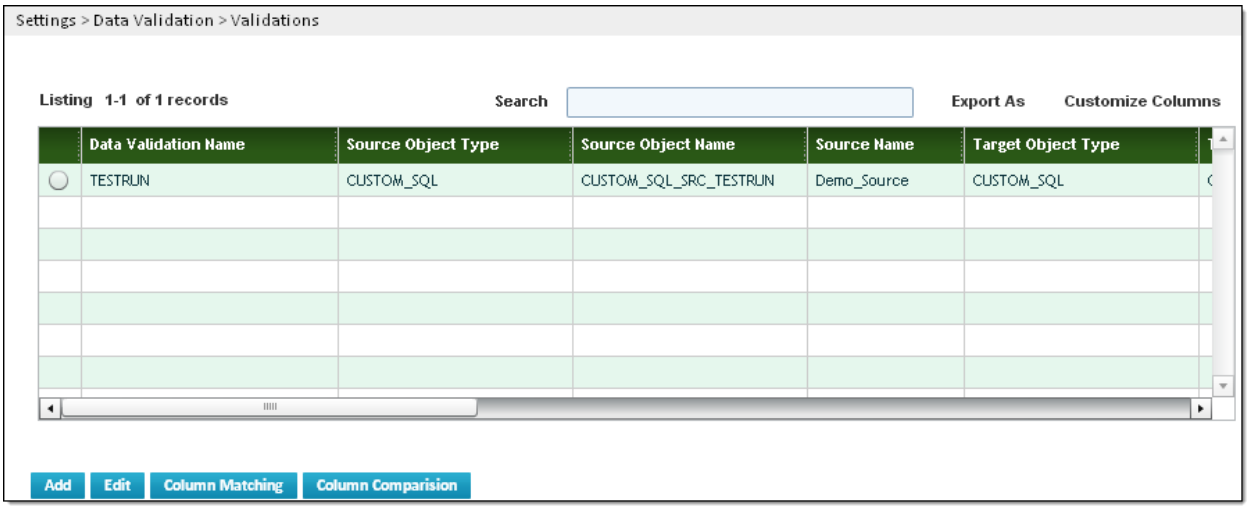
This feature is designed to map the intended source database to target database for data validation process. It enables the user to create validation mapping and provide the comprehensive information (such as source type, target type, source database, target database, comparison type, and so on) requisite to extract the data for data validation process.

13.3.2 Navigation

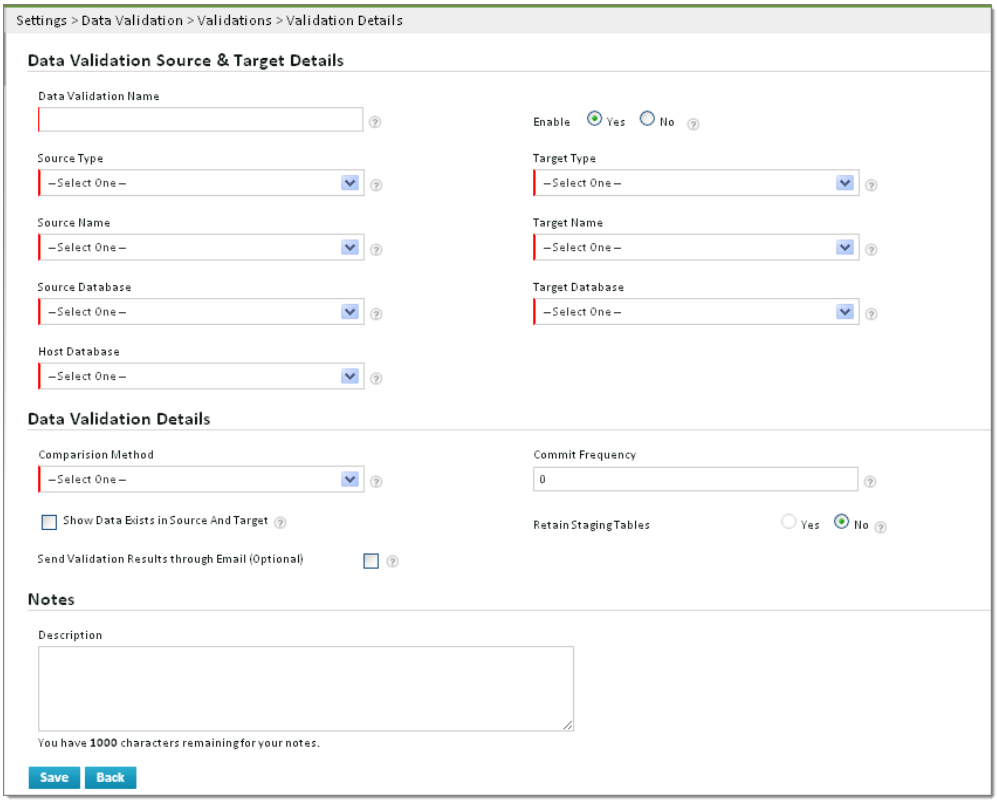
To create data validation mapping, follow the path: ***Settings > Database Validation> Validation.***

13.3.2.1 Creation of Data Validation Mapping

To create a Data Validation Mapping, do the following:



1. In the ***Validation*** screen, click ***Add*** button, to assign the source and target for the data validation. The ***Data Validation Source & Target Details*** screen will be displayed to enter the data validation details as shown in the figure below.



Sl. No	Field Name	Description
1	Data Validation Name	It enables the user to define a unique name for the data validation.
2	Enable	This feature facilitates to enable or disable the data validation during validation process. • "Yes" implies the Validation will be active. • "No" implies inactive.
3	Source Type	This drop down enables the user to select the appropriate Source Type. The two possible source types are Configuration and Custom SQL. • If Validation is being created from the tables defined in the Knowledge Base (KB) Repository (database), then select Configuration as the Source Type. • If Validation is being created from a custom SQL, then select Custom SQL as the Source Type.

4	Target Type	This drop down enables the user to select the Target Type. The two possible target types are Configuration and Custom SQL. • If the Validation is being created from the tables defined in the Knowledge Base (KB) Repository (database), then select Configuration as the Target Type. • If the Validation is being created from a custom SQL, then select Custom SQL as the Target Type.
5	Source Name	Based on the ***Validation Source Type*** selected, the list of Configuration /Custom SQL existing in the source. It enables the user to select the source name from the drop down list.
6	Target Name	It enables the user to select the target name from the drop down menu.
7	Source Database	It enables the user to select source database from the drop down menu.
8	Target Database	It enables the user to select target database from the drop down menu.
9	Host Database	This drop down enables the user to select the Host/Staging database. This is the database where the source and target data will be copied from their respective databases for Validation. The validation's results are stored in this database. A source or target database can also be a host database.
10	Comparison Method	The Comparison method can be Matched Records or Mismatched Records. • If ***Matched Records*** option is selected, the Validation process identifies the data which are matched in both source and target databases. The ***Show Data Exists in Source And Target*** check box will be visible on the screen • If ***Mismatched Records*** option is selected, the Validation process identifies

		the data which are not matched in both source and target databases.
11	Commit Frequency	Commit Frequency to commit data after certain number of rows from both source and Target Databases.
12	Notification Template	This drop down facilitates to select the Notification template for sending (i.e., emailing) the Validation results.
13	Notification Preference	Notification Preference would be Attachment or Inline. Based on selected value results would be sent as an attachment or an inline text of a mail.
14	Success Email	This text field enable to enter the email address of users to whom the notification emails should be sent when the source and target matches exactly, or within the defined threshold percent or range. It is recommended to use comma/semicolon, to enter multiple users email address list.
15	Failure Email	This text field enables the user to enter the email address of users to whom the notification emails should be sent when the source and target don't match exactly, or their differences exceeds the defined threshold percent or range. It is recommended to use comma/semicolon, to enter multiple users email address list.
16	Retain Staging Tables	This feature facilitates to retain the staging tables or not. • "Yes"- enables the user to fetch the validation results from the staging tables and display in the ***Preview*** screen. Whenever the tables are not required for verification or review process, the staging tables can be deleted manually. • "No" – enables the user to delete the validations staging tables automatically and the validation results will not be displayed in the ***Preview*** screen. Note: In ***Retain Staging Tables,*** "***Yes***" option is disabled because Solix EDMS Standard Edition (SE) application does not support Retain Staging

		Tables feature**.**
18	Show Data Exists in Source And Target	If the check box is selected, the data that exist in both source and target (Matched or Mismatched data) will be validated and sent as attachment/inline text in the Notification email. (As per EXACT/THRESHOLD functionality)
19	Show Data Exists in Source	If the check box is selected, the Notification Email contains only the data present in source but not in target (as an attachment or inline text). "No" implies this data will not be sent in the Notification Email. Note: This check box will be visible only when Comparison method is selected as ***Mismatched Records***.
20	Show Data Exists in Target	The check box is selected, the Notification Email contains only the data present in target but not in source (as an attachment or inline text). "No" implies this data will not be sent in the Notification Email. Note: This check box will be visible only when Comparison method is selected as ***Mismatched Records***.
21	Notes Description	It enables the user to add any notes related to the Validation process. This is only for DISPLAY PURPOSE.
22	Save	This button enables the user to save the information provided and once it is saved successfully, a new Validation will be created in the Knowledge Base Repository.
23	Back	This button enables the user to navigate to previously visited screen.

2. Define the name of the validation mapping in the ***Data Validation Name*** text field.
3. Select the source type for the validation from the ***Source Type*** drop down list.
4. Select the target type for the validation from the ***Target Type*** drop down list.
5. Select the source name from the ***Source Name*** drop down list.
6. Select the Target name from the ***Target Name*** drop down list.
7. To assign source to the validation, select an appropriate database from the ***Source Database*** drop down list. The selected database will be considered as Source while Validation.

8. To assign target to the validation, select an appropriate database from the ***Target Database*** drop down list. The selected database will be considered as Target while Validation.
9. Select the database from the ***Host Database*** drop down list, the database where the source and target data will be copied from their respective databases for Validation. The validation results are stored in this database. A source or target database can also be a host database.
10. Select an appropriate method for comparison of data from the ***Comparison Method*** drop down list. (i.e., Matched Records or MisMatched Records). If "***Matched Records***" option is selected, only ***Show Data Exists in Source and Target*** check box will be visible on the screen.
11. Enter the frequency value in the ***Commit Frequency*** text field, to commit data after specified number of rows from both source and Target Databases.
12. Select ***Yes/No*** option in the ***Retain Staging Tables***, to retain the staging tables or not.
    - By default "***No"*** option is selected, because this Solix EDMS Validation Standard Edition (SE) version does not support retaining staging tables. The validation staging tables will be dropped automatically.
13. In ***Notification Email*** section, enter the email address in the ***Success Email*** text field, to which the notification emails should be sent when the source and target matches exactly, or within the defined threshold percent or range. It is recommended to use comma/semicolon, to enter multiple users email address list.
14. Enter the email address in the ***Failure Email*** text field, to which the notification emails should be sent when the source and target don't match exactly, or their differences exceeds the defined threshold percent or range. It is recommended to use comma/semicolon, to enter multiple users email address list.
15. Select the template for the notification from the ***Notification Template*** drop down list, for sending (i.e., emailing) the Validation results.
16. Select the required preference from the ***Notification Preference*** drop down list (i.e., Attachment or Inline). Based on selected value results would be sent as an attachment or an inline text of a mail.
17. Enter the comments in the ***Notes*** text box.
18. Click ***Save*** button, to save the validation setup and a new validation will be created in the Knowledge Base.

- The field marked as * are mandatory fields.
- In ***Retain Staging Tables,*** "***Yes***" option is disabled because Solix EDMS Standard Edition (SE) application does not support Retain Staging Tables feature**.**

13.3.2.2 Column Matching

Matching columns enables the user to select the primary key or unique index column from the source and target table required to register for column matching. Based on matching columns, the data will be compared for columns selected in ***Column comparison*** screen.

For example,

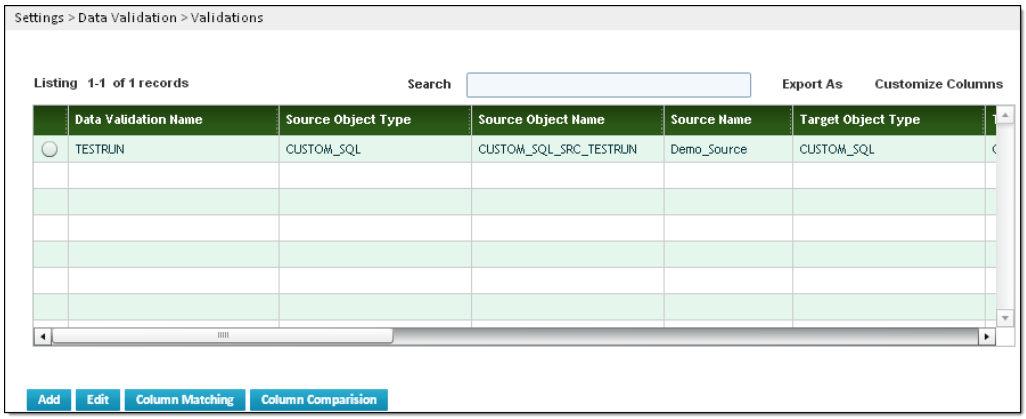
In the below query is used in data validation process.

```
SELECT   A.ORDER_NUMBER,
           SUM (B.PRICING_QUANTITY) PRICING_QUANTITY,
           SUM (B.SHIPPED_QUANTITY) SHIPPED_QUANTITY,
           SUM (B.ORDERED_QUANTITY) ORDERED_QUANTITY,
           SUM (B.SHIPPED_QUANTITY * B.UNIT_SELLING_PRICE)
TOTAL_COST FROM   OE_ORDER_HEADERS_ALL A, OE_ORDER_LINES_ALL B,
OE_SALES_CREDITS C
   WHERE       A.HEADER_ID = B.HEADER_ID
           AND A.HEADER_ID = C.HEADER_ID
           AND A.ORG_ID = 204
GROUP BY   A.ORDER_NUMBER
```

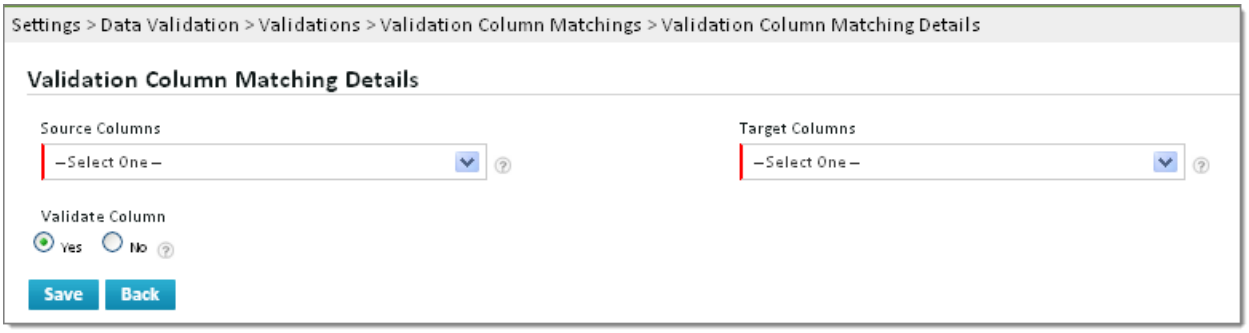
As per above query, ORDER_NUMBER is unique and hence this column will be used in Column matching to compare data against Order Number.

To perform Column Matching, do the following:

1. In ***Validation*** page, click ***Column Matching*** button.



2. The ***Validation Columns Matching*** screen will be displayed with available list of column matching. Users can add multiple column matchings' as per business functionality.
3. Click ***Add*** button, to add a new matching column.
4. In ***Matching Columns Matching Details*** screen will be displayed as shown in the figure below.



a. ***Source Columns*** drop down box will be showed all enabled columns from Source Object (Config/Custom SQL). Herein, the primary key or unique index column is selected to register for matching the column.

b. ***Target Colum***ns drop down box will be displayed all enabled columns from Target Object (Config/Custom SQL). Herein, the primary key or unique index column is selected to register for matching the column.

c. ***Validate Column*** will be enabled based on selected option Yes/No.

d. Click ***Save*** button to save the validation column matching details.

- The field marked as are mandatory fields.

13.3.2.3 Column Comparison

Comparison columns feature enables the user to validate the data between source and target databases based on the specified mapping criteria.

For example,

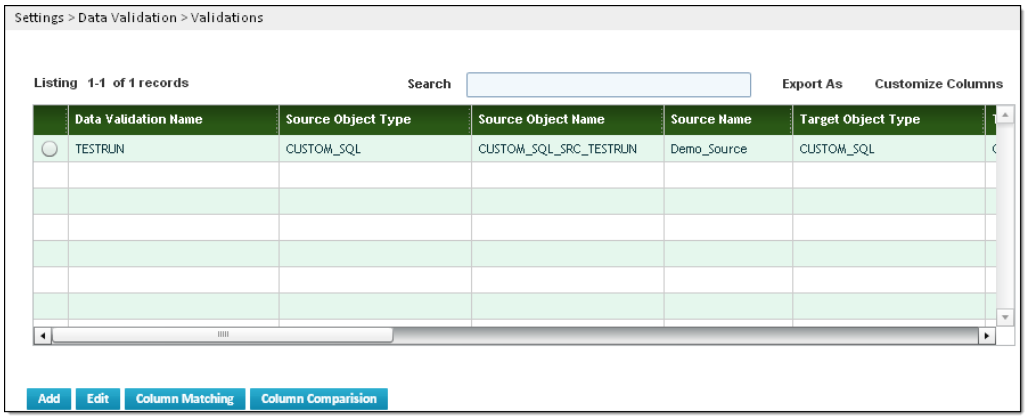
The following query is used in Validation process.

```
SELECT   A.ORDER_NUMBER,
           SUM (B.PRICING_QUANTITY) PRICING_QUANTITY,
           SUM (B.SHIPPED_QUANTITY) SHIPPED_QUANTITY,
           SUM (B.ORDERED_QUANTITY) ORDERED_QUANTITY,
           SUM (B.SHIPPED_QUANTITY * B.UNIT_SELLING_PRICE)
TOTAL_COST FROM   OE_ORDER_HEADERS_ALL A, OE_ORDER_LINES_ALL B,
OE_SALES_CREDITS C
   WHERE       A.HEADER_ID = B.HEADER_ID
           AND A.HEADER_ID = C.HEADER_ID
           AND A.ORG_ID = 204
GROUP BY   A.ORDER_NUMBER
```

In above query, apart from ORDER_NUMBER column remaining all columns can be used for the purpose of Column comparison. Based on business requirement, the comparison method varies accordingly.

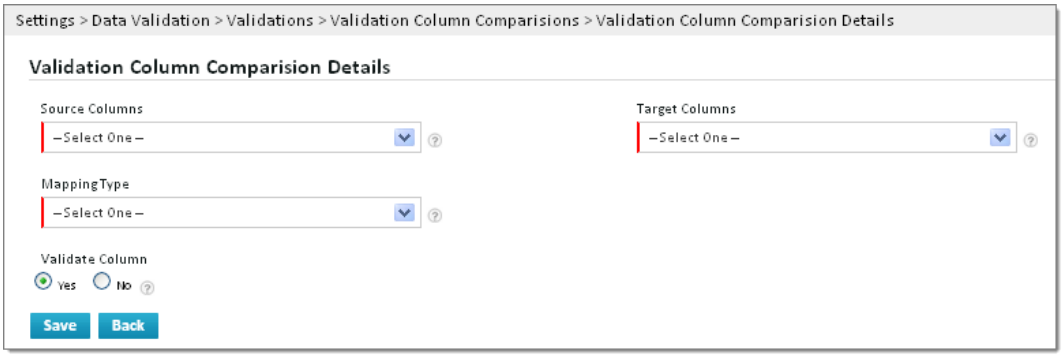
To perform Column Comparison, do the following:

1. In following ***Validations*** page, click ***Column Comparison*** button.



2. The ***Validation Column Comparison*** screen will be displayed with a list of existing column comparisons. The user can add multiple columns for comparison as per business functionality.

3. Click ***Add*** button to add a new comparison column. The ***Validation Source & Target Column Comparison Details*** screen appears as shown in the figure below.



4. In ***Validation Column Comparison Details*** screen, do the following:

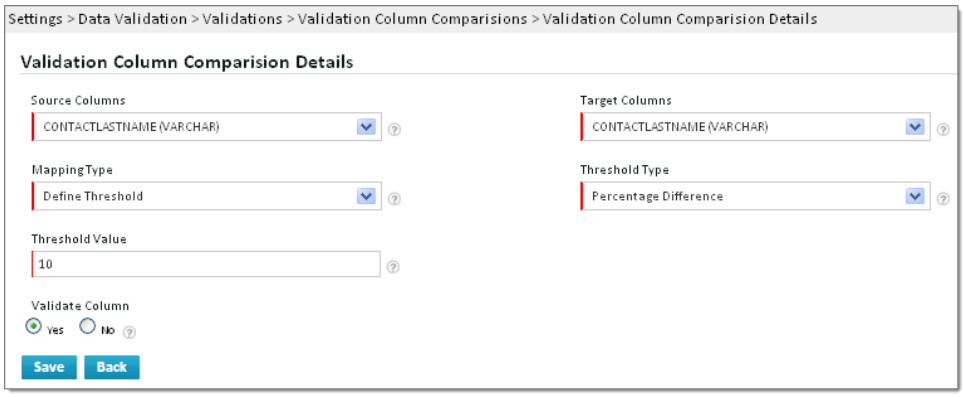
   a. ***Source Columns*** drop down display the columns enabled from Source Object (Config/Custom SQL) and allow the user to select the source column for data validation.

   b. ***Target Columns*** drop down display the columns enabled from Target Object (Config/Custom SQL) and facilitate to select the target column for data validation.

   c. Based on the data type of Source and Target Column, the corresponding option will be prompted in the ***Mapping Type*** drop down list, to perform validation effectively based on the criteria selected.

      - For ***Character*** columns, ***Exact Match*** option will be prompted in the ***Mapping Type***. This option enables to validate the data of Source and Target Column exactly.

- For ***Numeric or Date*** columns, ***Define Threshold*** option will be prompted in the ***Mapping Type.*** This option enables to validate the data based on Threshold Type (i.e., Range Difference, Percentage Difference or Fixed Value) selected. Additionally, The ***Threshold Type*** and ***Threshold Value*** will be prompted on the screen as shown in the figure below.



d. Select the appropriate type from the ***Threshold Type*** (i.e., Range Difference or Percentage Difference or Fixed Value).

- If ***Range Difference*** is selected, ***Threshold From value*** and ***Threshold To Value*** will be prompted on the screen. Enter the range for threshold in ***Threshold From value*** and ***Threshold To Value*** text fields.
- If ***Percentage Difference*** is selected, ***Threshold value*** field will be displayed. Enter the percentage value for threshold in the ***Threshold value*** text field.
- If ***Fixed Value*** is selected, ***Threshold value*** field will be displayed. Enter a fixed value for threshold in the ***Threshold value*** text field. For example, if ***Threshold value*** = 10, it is considered as 0-10.

d. The ***Validate Column*** will be enabled based on selected option ***Yes/No.*** It facilitates to enable/disable the respective column comparison during data validation process.

5. Click ***Save*** button, to save the validation column comparison details.

- The field marked as * are mandatory fields.
- For ***Date*** columns, only ***Range Difference*** and ***Fixed Value*** options are prompted ***Threshold Type*** drop down and enables to validate the data based on the selected threshold type.
- In ***Source Column*** and ***Target Column*** drop down, "***All Columns***" option provides feasibility to register all the columns in source and target tables for

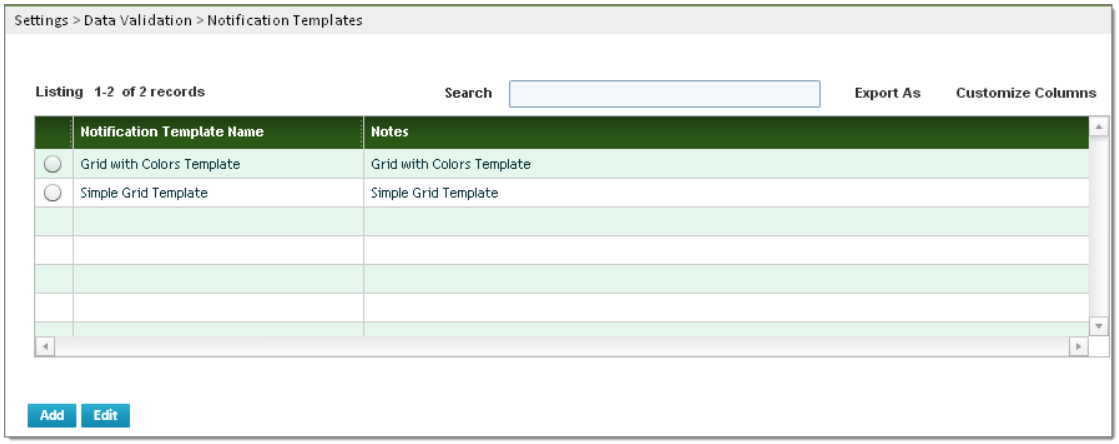
comparison (i.e., validation). Exclusively, it is applicable when both the source and target tables contains same column name. In such cases, the Mapping Type should be “Exact Match”.

13.3.2.4 Notification Template

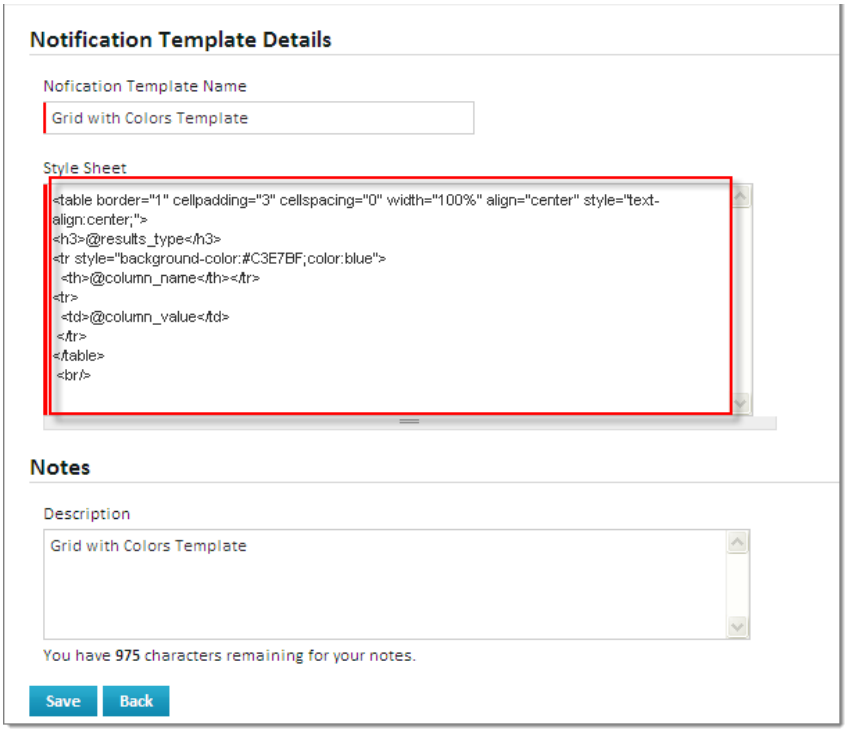
This feature enables the user to design a style sheet for notification in order to display the output of the Data Validation result in HTML file as per the user requirement. As the validation result is generated in HTML, the style sheet for the notification should be designed using HTML codes. Once the validation is executed successfully, the notification mail enclosed with HTML file will be sent to the specified user automatically.

To design a notification template, do the following:

1. Navigate to the following path: ***Setting >Data Validation > Notification Templates***. The ***Notification Templates*** screen appears as shown in the figure below.



2. Click ***Add*** button, to design a new template for notification. The ***Notification Template Details*** screen appears as shown in figure below.



a. Enter the name of template in the ***Notification Template*** text field.

b. Enter the style sheet data in the ***Style Sheet*** text box. The style sheet data should be encoded in html. While generating a notification, the result will be displayed according to the designed style sheet.

- @results_type: Based on the ***Comparison Method*** selected in the Validation Mapping, the results of Validation will be generated and type of result will be displayed @ results_type in HTML file. For example "***Mis-Matched***"
- @column_name: Display the column name of the data fetched based on the ***Comparison Method*** selected in the Validation Mapping.
- @column_value: Display the data (i.e., value) fetched according to the ***Comparison Method*** selected in the Validation Mapping.

c. Enter the comments in the ***Notes*** text box.

3. Click ***Save*** button, to save the notification template information.

Once the notification template is saved, the respective template will be populated automatically in the list of Notification Template drop down list in ***Validation Mapping Details*** screen.

- The field marked as * are mandatory fields.

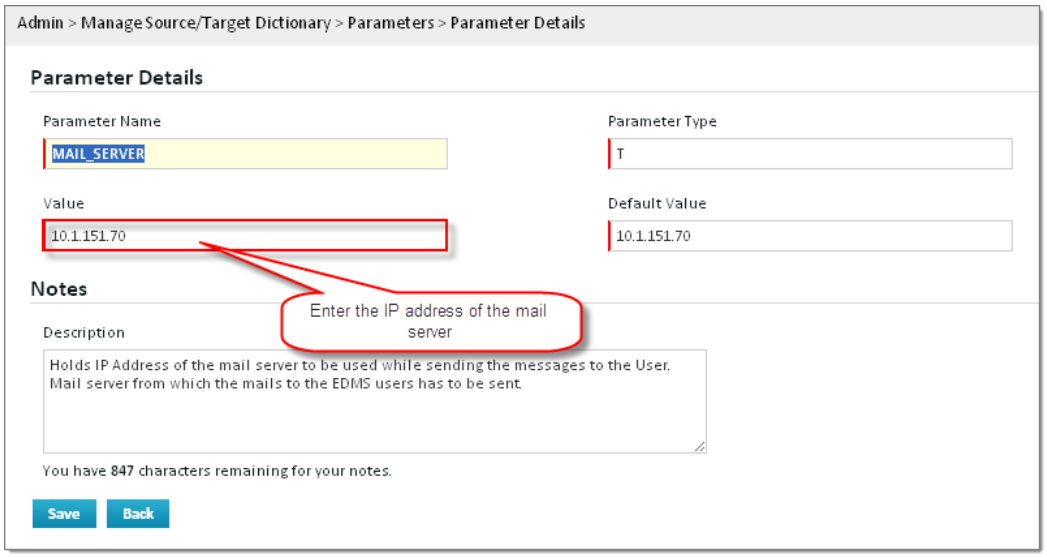
Email Server Settings for Notification

While preparing notification template, if the user wants to use any email server other than the Solix Mail server, the parameters associated to the mail server should to be updated. The following table provides the list of parameter which has to be updated.

Parameters	Description
MAIL_SERVER	IP address of the email server, to which the emails will be send
MAIL_SERVER_PORT	Port of the email server which is used to sent the emails
EMAIL_USER	Email address of the user, through which the notification emails will be sent

To edit Email Server setting, do the following:

1. Navigate through the following path***: Admin > Manage Source/Target Dictionary > Parameters.*** The ***Parameters*** screen will be displayed with parameters defined in the Solix EDMS Standard Edition (SE).
2. To edit the parameter information of the MAIL_SERVER, do the following
    a. In ***Parameter*** Screen, select ***MAIL_SERVER*** parameter and click ***Edit*** button. The Parameter Details screen with mail server information will be displayed as shown in the figure below.

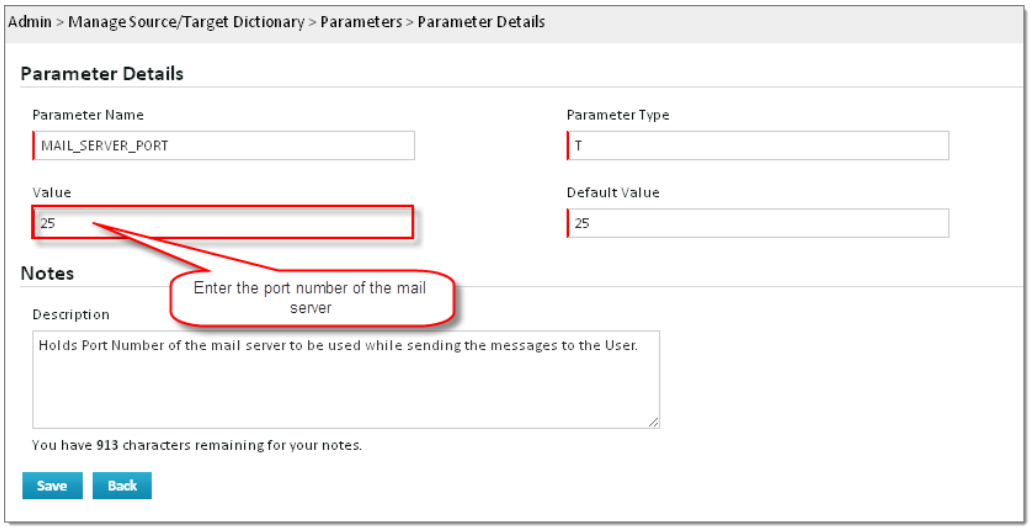


    b. Enter IP address of the user mail server in the ***Value*** and ***Default Value text*** field. For example, 10.1.152.70.

    b. Click ***Save*** button, to save the IP address of the mail server.

3. To edit the parameter information of the MAIL_SERVER_PORT, do the following

a. In ***Parameter*** Screen, select ***MAIL_SERVER_PORT*** parameter and click ***Edit*** button. The ***Parameter Details*** screen with mail server port information will be displayed as shown in the figure below.

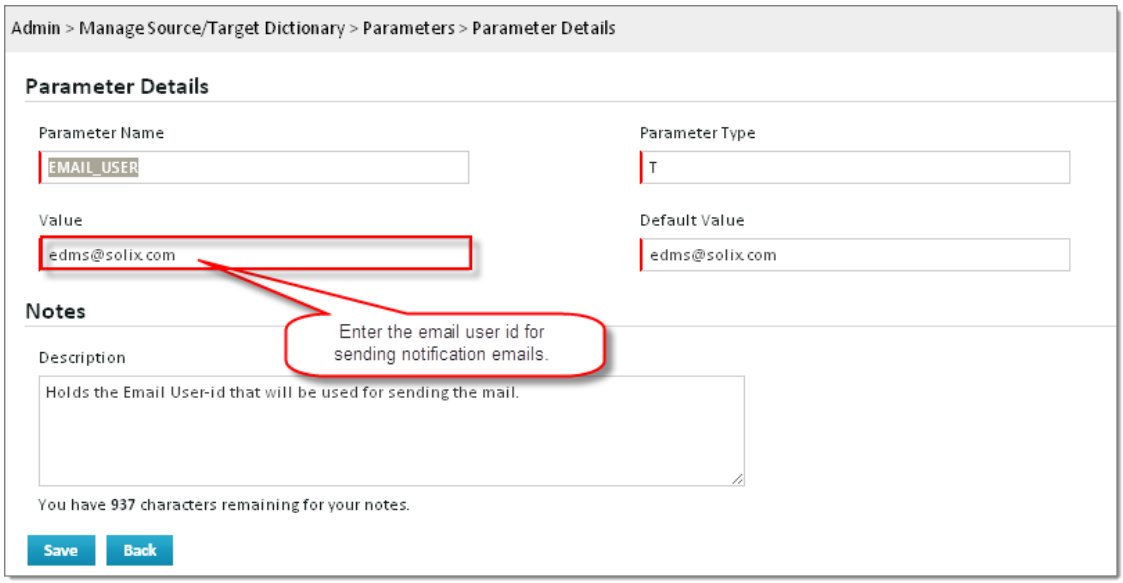


b. Enter port number of the user mail server in the ***Value*** and ***Default Value text*** field. For example, 25.

c. Click ***Save*** button, to save the port number of the mail server.

4. To edit the parameter information of the EMAIL_USER, do the following

a. In ***Parameter*** Screen, select ***EMAIL_USER parameter*** and click ***Edit*** button. The ***Parameter Details*** screen with email user information will be displayed as shown in the figure below.



d. Enter email address to which the notifications need to be sent in the ***Value*** and ***Default Value text*** field. For example, abc@xyz.com.

e. Click ***Save*** button, to save the email user information. Once the email address is saved notifications emails will be sent to the specified address.

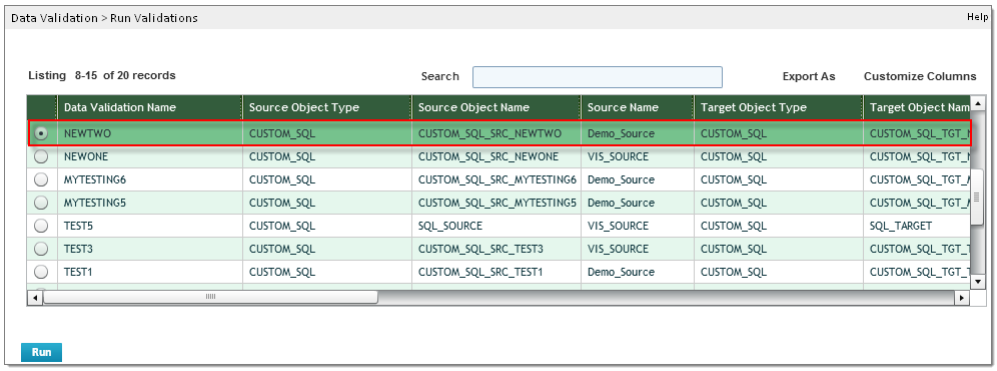
- The field marked as * are mandatory fields.
- To limit the rows in the notification results, set the value of ***RECON_RESULTS_MAIL_LIMIT*** parameter in the ***Parameter*** screen. For example, to limit the rows to 500, set the default value of ***RECON_RESULTS_MAIL_LIMIT*** to "500". Henceforth, the notification result will display 500 rows exclusively.

13.4 Data Validation Execution

Once the data validation is designed successfully the data validation process can be executed. Based on the validation mapping setup, the data in the source and target database will be validated and the output will be sent to the respective user(s) through the notification mail in the given template.

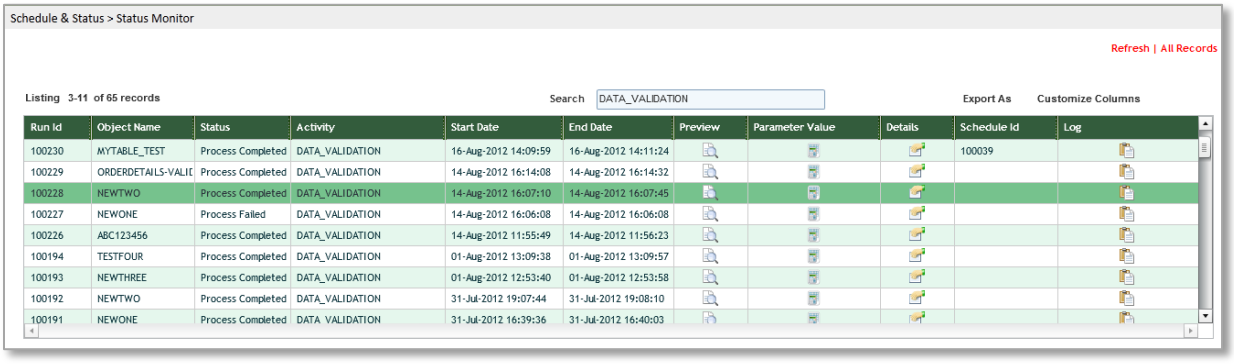
To execute Data Validation, do the following,

5. Navigate to the following path: ***Data Validation> Run Validation***.



6. Select the intended data validation and click ***Run*** button, it will display ***Run parameters*** screen. In case of any default value provided at design time, those values will appear on the parameters screen. Users can override those parameter values if required and click ***Continue*** Button to carry out the execution process.

7. A unique Run-ID will be generated and displayed in the ***Run Schedule*** screen. To monitor the status of the data validation process, navigate to the ***Status Monitor*** screen. (***Status >Status Monitor***).



13.5 Status Monitor

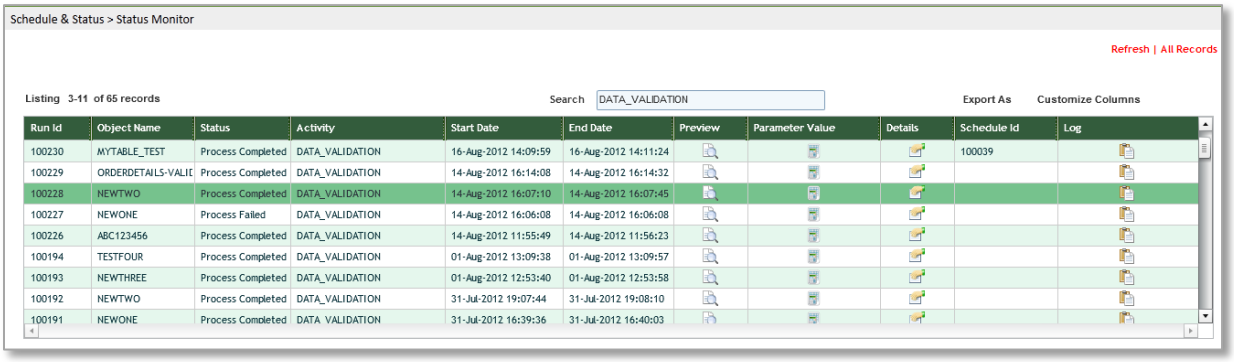
Status monitor serves as a dashboard to check the status of activities that have been executed. The function monitors the progress of jobs scheduled for run.

- It also gives a summary report of the jobs run.
- Status Monitor allows to monitor the progress of all the activities scheduled for executing in Solix EDMS Standard Edition (SE).
- Status Monitor also provides Previews, Job details, Log and so on.
- The Status Monitor displays the list of all the jobs run for execution along with details including status. In Status Monitor screen, refer to the Run IDs in the first column to locate a specific validation job.

The status is shown as 'In Process' while the process is still in progress or has just initiated. On completion of validation process, the status of the corresponding validation activity will turns into 'Process Completed'.

13.5.1 Navigation

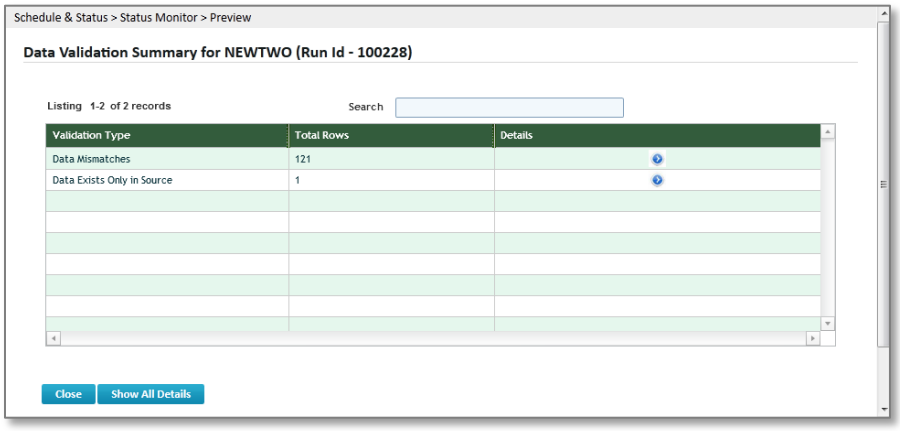
To access status monitor link, follow the path: ***Schedule & Status > Status Monitor.***



13.5.2 Preview

Once the status of validation process turned into 'Process Completed', the user can be able to view the preview details of the respective validation. To preview the validation details, do the following:

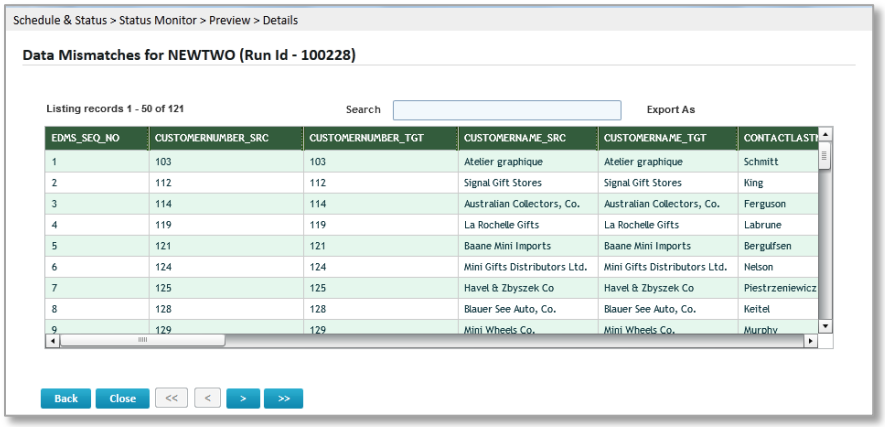
1. In ***Status Monitor*** screen, click ***Preview*** icon of the corresponding Run ID. The ***Data Validation Summary*** screen will be displayed with consolidated results of validations executed based on the criteria selected (i.e., validation type) in the validation process as shown in the figure below.



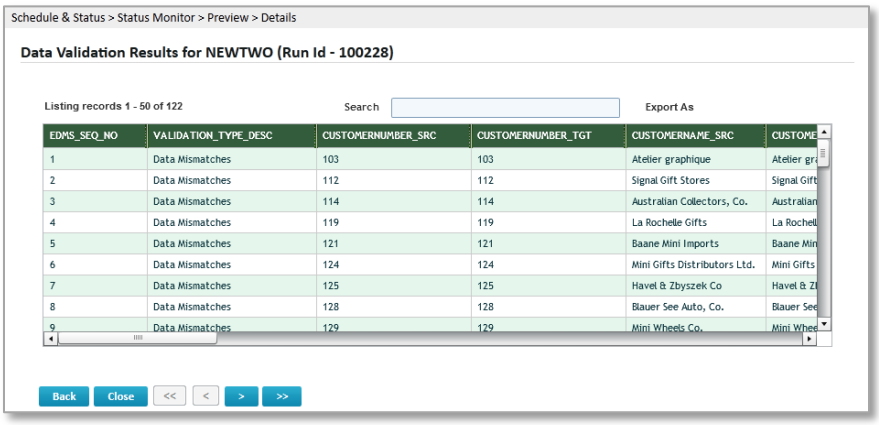
- To view the detailed results of validation according to the validation type, click button of the corresponding validation type.

  For example,

  To view the results of ***Data Mismatches***, click corresponding button. The ***Details*** screen will be displayed with the detailed information of ***Data Mismatches*** as shown in the figure below.



- To view the detailed results of all validations executed in the respective Run ID, click ***Show All Detail***s button in the ***Data Validation Summary*** screen. The ***Details*** screen will be displayed will the ***Data Validation Results*** as shown in the figure below.



- The validation information is displayed in the Preview screen, only if the ***Retain Staging Tables*** is "***Yes***" in ***Validation Mapping*** screen.

13.5.3 Parameters

Once the status of validation process turned into 'Process Completed', the user can be able to view the Parameter details of the respective validation. To view the parameter details, do the following:

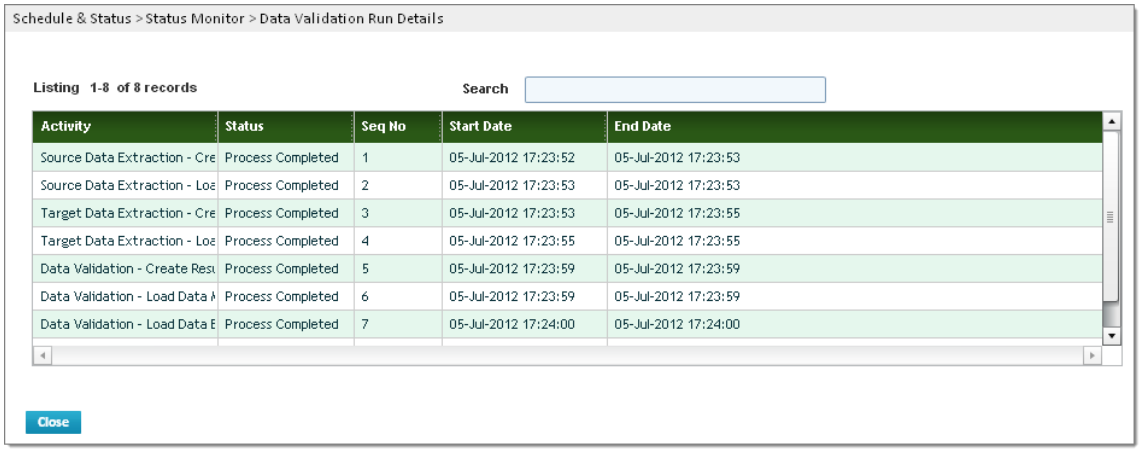
2. In ***Status Monitor*** screen, click ***Parameter*** icon corresponding to the required Run ID, the ***Parameters*** window will be prompted as shown in the figure below.

3. The ***Parameters*** window shows the parameter information of the validation process such as Object Name, Parameter Name and Parameter Value.

13.5.4 Validation Run Details

Once the status of the validation turned into 'Process Completed', the user can view the comprehensive information of validation job execution. To view the Validation job details, do the following:

1. In ***Schedule & Status > Status Monitor*** screen, click ***Details*** icon corresponding to the required Run ID, the ***Data Validation Run Details*** window will be prompted as shown in the figure below.



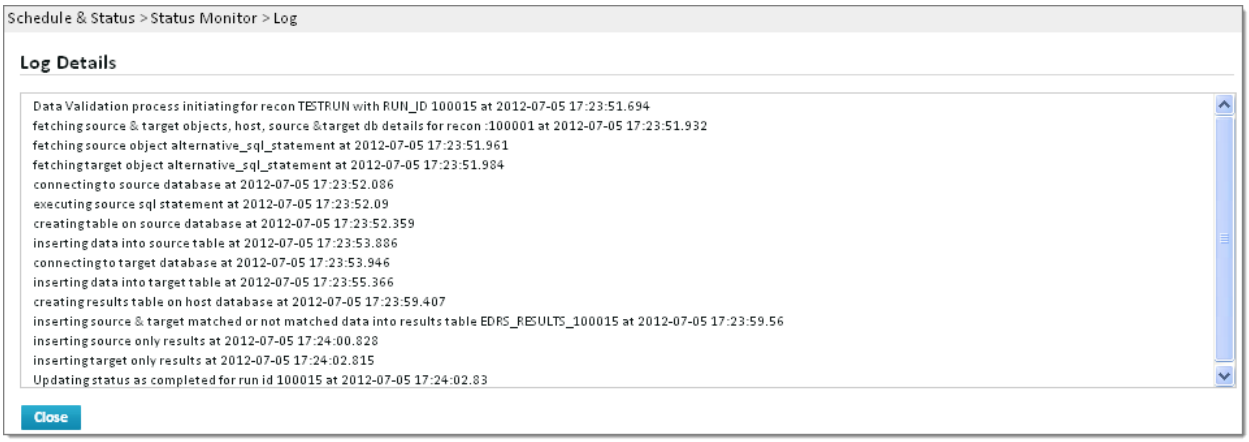
2. The ***Validation Run Details*** window shows the comprehensive information of the activities performed during the execution of data validation process such as Activity, Status, Sequence No and Start Date.

13.5.5 Log

Application Log captures the details of activities performed by users in Solix EDMS Validation Standard Edition (SE), which may be used in the event of audit trail system recovery.

To view the Log details, do the following:

3. In ***Status Monitor*** screen, click ***Log*** icon corresponding to the required Run ID, the ***Log*** window will be prompted as shown in the figure below.



4. The ***Log Details*** shows the log information associated to the Validation.

13.5.6 Email Notification

Once the Validation process is executed successfully, a notification mail will be sent to the specified user as shown in the figure below.

```
Dear User,

Data Validation of TESTDEMO initiated by Admin Admin at 05-Jul-
2012 17:37:47 has been sucessfully completed  at 05-Jul-2012
17:37:56.

Regards,
Enterprise Data Management Suite (Standard Edition)
-------------------------------------------------------------------
--------------
This is a system generated mail. Please do not reply back to this
email ID
If you have a query or need any clarification you may:
(1) Log in to Enterprise Data Management Suite (Standard Edition)
and verify the status monitor for Run_Id 100016.
```

Based on the ***Notification Preference*** selected, the validation result will be sent in HTML file to the user in the selected preference (i.e., attachment or online). The output will be displayed according the style sheet the user has designed for the notification (i.e., HTML code).

The Data Validation Result will be displayed in a HTML file as shown in the figure below.

Data Validation Results - TESTING1 for Run Id :100012

Data Mismatches First 500 Records of 31952 ← Stating that the first 500 records out of 31952 records is displayed

Sl.No	ORDERNUMBER_SRC	ORDERNUMBER_TGT	PRODUCTCODE_SRC	PRODUCTCODE_TGT	QUANTITYORDERED_SRC	QUANTITYORDERED_TGT	PRICEEACH_SRC	PRICEEACH_TGT	ORDERLINENUMBER_SRC	ORDERLINENUMBER_TGT
1	10100	10100	S24_3969	S18_4409	49	22	35.29	75.46	1	4
2	10100	10100	S24_3969	S18_2248	49	50	35.29	55.09	1	2
3	10100	10100	S24_3969	S18_1749	49	30	35.29	136.0	1	3
4	10100	10100	S18_4409	S24_3969	22	49	75.46	35.29	4	1
5	10100	10100	S18_4409	S18_2248	22	50	75.46	55.09	4	2
6	10100	10100	S18_4409	S18_1749	22	30	75.46	136.0	4	3
7	10100	10100	S18_2248	S24_3969	50	49	55.09	35.29	2	1
8	10100	10100	S18_2248	S18_4409	50	22	55.09	75.46	2	4
9	10100	10100	S18_2248	S18_1749	50	30	55.09	136.0	2	3
10	10100	10100	S18_1749	S24_3969	30	49	136.0	35.29	3	1
11	10100	10100	S18_1749	S18_4409	30	22	136.0	75.46	3	4
12	10100	10100	S18_1749	S18_2248	30	50	136.0	55.09	3	2
13	10101	10101	S24_2022	S24_1937	46	45	44.35	32.53	2	3
14	10101	10101	S24_2022	S18_2795	46	26	44.35	167.06	2	1
15	10101	10101	S24_2022	S18_2325	46	25	44.35	108.06	2	4
16	10101	10101	S24_1937	S24_2022	45	46	32.53	44.35	3	2
17	10101	10101	S24_1937	S18_2795	45	26	32.53	167.06	3	1
18	10101	10101	S24_1937	S18_2325	45	25	32.53	108.06	3	4
19	10101	10101	S18_2795	S24_2022	26	46	167.06	44.35	1	2
20	10101	10101	S18_2795	S24_1937	26	45	167.06	32.53	1	3
21	10101	10101	S18_2795	S18_2325	26	25	167.06	108.06	1	4
22	10101	10101	S18_2325	S24_2022	25	46	108.06	44.35	4	2
23	10101	10101	S18_2325	S24_1937	25	45	108.06	32.53	4	3
24	10101	10101	S18_2325	S18_2795	25	26	108.06	167.06	4	1
25	10102	10102	S18_1367	S18_1342	41	39	43.13	95.55	1	2
26	10102	10102	S18_1342	S18_1367	39	41	95.55	43.13	2	1
27	10103	10103	S700_2824	S32_3522	42	45	94.07	63.35	6	7
28	10103	10103	S700_2824	S32_1268	42	31	94.07	92.46	6	3
29	10103	10103	S700_2824	S24_4258	42	25	94.07	88.62	6	15
30	10103	10103	S700_2824	S24_2300	42	36	94.07	107.34	6	1
31	10103	10103	S700_2824	S18_4668	42	41	94.07	40.75	6	9
32	10103	10103	S700_2824	S18_4600	42	36	94.07	98.07	6	5
33	10103	10103	S700_2824	S18_3320	42	46	94.07	86.31	6	16
34	10103	10103	S700_2824	S18_3136	42	25	94.07	86.92	6	13
35	10103	10103	S700_2824	S18_2957	42	35	94.07	61.84	6	14
36	10103	10103	S700_2824	S18_2949	42	27	94.07	92.19	6	12
37	10103	10103	S700_2824	S18_2432	42	22	94.07	58.34	6	2

The above screen shows the output of the validation and displays comprehensive validation information of first 500 records out of 31952 records performed validation for ***Data Mismatches***.

Data Exists Only in Source (Total Records 48) ← Stating that the total number of records is displayed

Sl.No	ORDERNUMBER_SRC	PRODUCTCODE_SRC	QUANTITYORDERED_SRC	PRICEEACH_SRC	ORDERLINENUMBER_SRC
1	10138	S24_3969	29	32.82	4
2	10138	S24_3432	21	99.58	13
3	10138	S24_3191	49	77.05	11
4	10138	S24_2887	30	96.3	9
5	10138	S24_2766	28	73.6	10
6	10138	S24_2022	33	38.53	1
7	10138	S24_1937	22	33.19	2
8	10138	S24_1046	45	59.53	12
9	10138	S18_4933	23	64.86	8
10	10138	S18_4409	47	79.15	7
11	10138	S18_2325	38	114.42	3
12	10138	S18_2248	22	51.46	5
13	10138	S18_1749	33	149.6	6
14	10179	S700_3167	39	80.0	9
15	10179	S700_2834	25	98.48	2
16	10179	S700_1691	23	75.81	8
17	10179	S50_1341	34	43.2	7
18	10179	S32_4289	24	63.97	6
19	10179	S32_1374	45	86.9	1
20	10179	S24_4278	27	66.65	4
21	10179	S24_1785	47	105.04	5
22	10179	S18_2581	24	82.79	3
23	10360	S72_3212	31	54.05	11
24	10360	S700_3962	31	92.36	10
25	10360	S700_3505	35	83.14	9
26	10360	S700_2610	30	70.11	7
27	10360	S700_1938	26	86.61	6
28	10360	S700_1138	32	64.67	5
29	10360	S24_3816	22	78.83	4
30	10360	S24_3151	36	70.81	3
31	10360	S24_2841	49	55.49	16
32	10360	S24_2011	31	100.77	2
33	10360	S24_1785	22	106.14	17
34	10360	S18_4522	40	76.36	1
35	10360	S18_3856	40	101.64	15
36	10360	S18_3259	29	94.79	18
37	10360	S18_3140	29	122.93	8
38	10360	S18_3029	46	71.4	14
39	10360	S18_2581	41	68.43	13
40	10360	S18_1662	50	126.15	12
41	10399	S32_1374	32	97.89	1
42	10399	S24_2000	58	75.41	2
43	10399	S24_1578	57	104.81	3
44	10399	S18_2625	30	51.48	4
45	10399	S12_2823	29	123.51	5
46	10399	S10_4698	22	156.86	6
47	10399	S10_2016	51	99.91	7
48	10399	S10_1678	40	77.52	8

The above screen shows the output of the validation and displays comprehensive validation information of records performed validation for ***Data Exists only in Sources***.

- By default, the sections (such as Data Mismatches, and so on) generated in the notification mail results will be restricted to display upto 500 records in order to

limit the mail size. While generating results in notification mail, the user is provided flexibility to manage the rows/records to be displayed in results by providing the value for the parameter called "***RECON_RESULTS_MAIL_LIMIT***" in the ***Parameters*** screen.

- When validation result contains more than 500 records, the attachment will display the first 500 records of total validation results.
- When validation result contains less than 500 records, the attachment will display the total number of validation results.

13.6 Scheduler

Scheduler automates the activities such as Data Validation and Data Masking (i.e., Security Rule Assignments and Security Groups) to reduce the manual labor by scheduling and executing the activity on the specified time automatically. This chapter describes the Scheduler function in Solix EDMS Standard Edition (SE) and explains how the user can schedule and enable automatic execution of activity at the specified time and date based on the user-specified parameters.

Features of Scheduler

- Scheduler supports Time-based Scheduling, a user can schedule automatic run of activity (such as Data Validation and Data Masking) at the given date and time.
- Scheduler enables the user to schedule and automate activity (such as Data Validation and Data Masking) run.

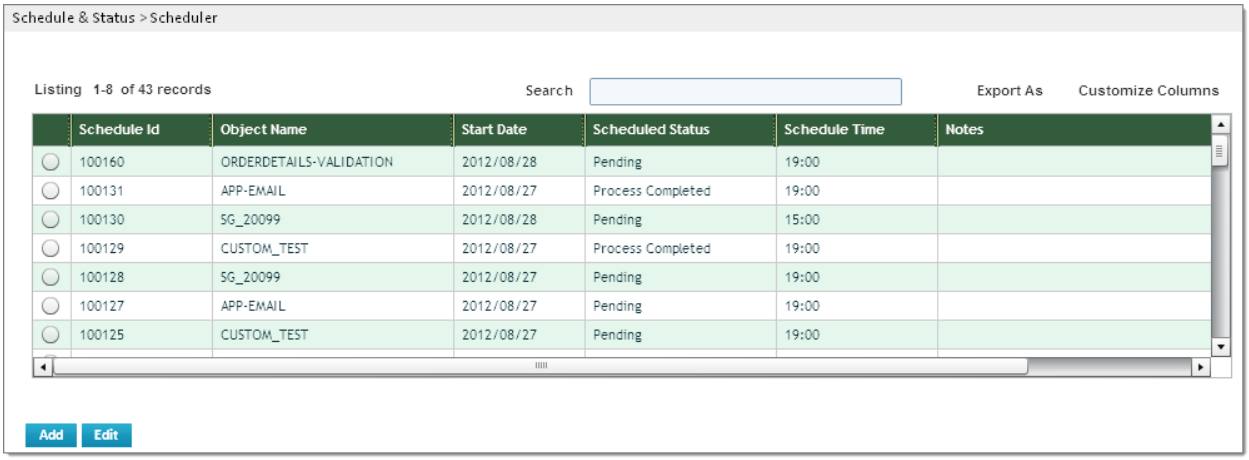
Navigation

To access ***Scheduler*** link, follow the path: ***Schedule & Status > Scheduler.***

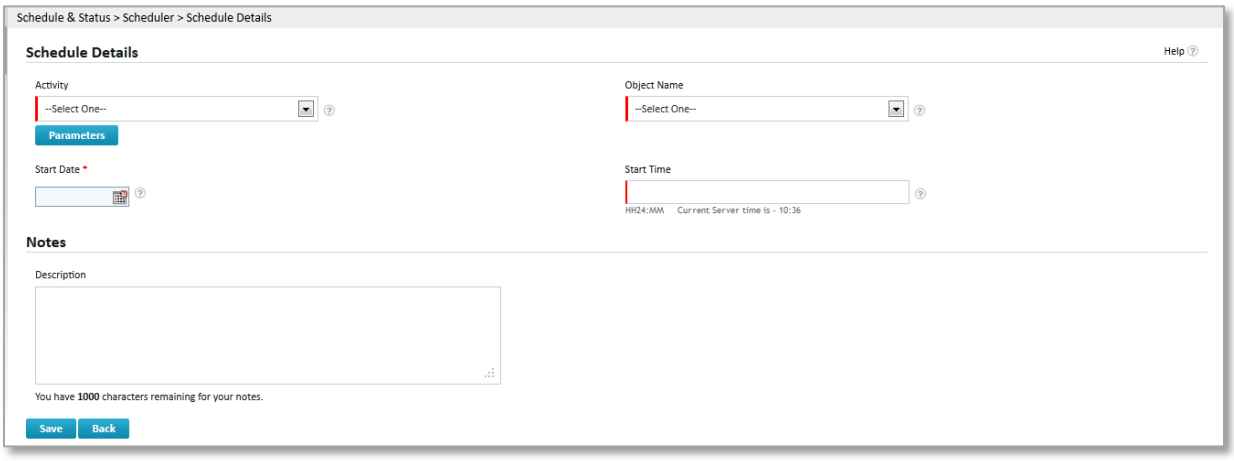
13.6.1 Scheduling Activities

To schedule the execution of various activities, do the following.

1. Navigate to the following path: ***Schedule & Status > Scheduler***. The ***Scheduler*** screen displays the list of existing schedules as shown in the figure below.



2. Click ***Add*** button, to create a new schedule for executing the intended activity (for example, data validation process) automatically. The ***Schedule Details*** screen will be displayed as shown in the figure below.



3. In the ***Schedule Details*** screen, do the following:

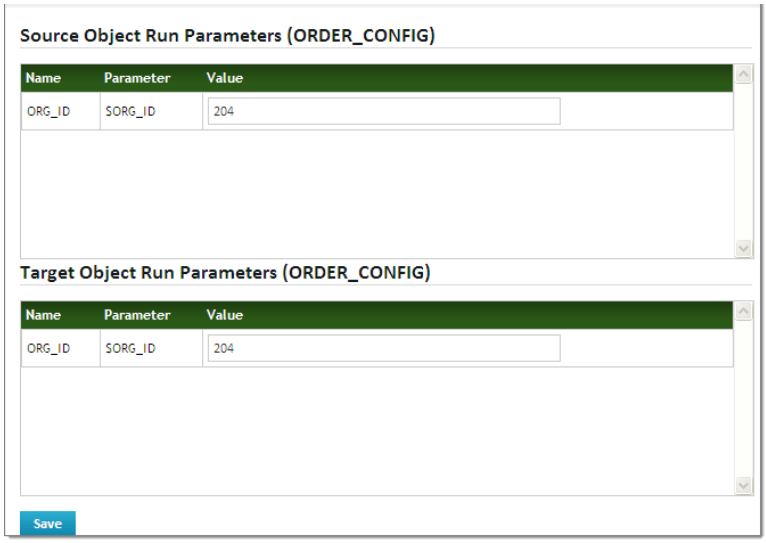
   a. Select an option from the ***Activity*** drop down list. Once the option is selected, the corresponding objects designed will be prompted in the ***Object Name*** drop down list.

   b. Select the intended object from the ***Object Name*** drop down list.

   c. Click ***Parameters*** button, to define the parameters for the execution of activity (for example, Validation)..

      - In case, any parameters have been defined as part of the criteria while setting up a configuration corresponding to the selected activity (for example, validation), the user needs to specify an appropriate expression for those parameters before scheduling the activity. This may not be necessary if dynamic parameters are not defined.

   d. The ***Parameters*** window prompts the parameters defined for the selected configuration as shown in the figure below.



e. The default value of the parameter will be displayed, the user can change the value of the parameter based on the requirement.

f. Click ***Save*** button, to save the parameter value of the respective schedule.

4. To specify the time and date for the respective Schedule, do the following:

   a. Enter ***Start Date*** in the corresponding text field or select a date using visual calendar**.** The execution of scheduled job starts on the given date.

   b. Enter ***Start Time*** in the corresponding text field. The execution of the scheduled job will starts on the given time for the specified date. The format of the timing is HH24: MM (for example, 17:26).

5. Enter comments in ***Notes*** field.

6. Click ***Save*** button to complete creation of the new schedule. The new schedule will be added to the schedules list and a unique Scheduler ID will be generated for the respective Scheduled job.

Once scheduled, the status of the activities in the schedules list is displayed as Pending until its kick-off time. On completion of the scheduled activity, the corresponding Run Status turns to 'Process Completed'.

- The fields marked as | are mandatory fields.
- Once the Scheduled job is saved, a unique Scheduler ID will be generated, whereas Run ID will be generated for the execution of job.

13.6.2 Edit an Existing Schedule

Exclusively, the scheduled activities can be edited before its kick-off time. A validation job scheduled by the user cannot be edited after kick-off.

To edit an existing Schedule, do the following:

1. In the ***Schedules*** page, select the radio button adjacent to the schedule which needs to be edited.
2. Click ***Edit*** button below the list.
3. In the ***Edit Schedule Details*** dialog, do the following:

   a. ***Activity*** and ***Object Name*** fields are non-editable text fields.

   b. Make the necessary changes in the ***Start Date*** and ***Start Time*** fields.

   c. Click ***Save*** button. The schedule will be updated accordingly.

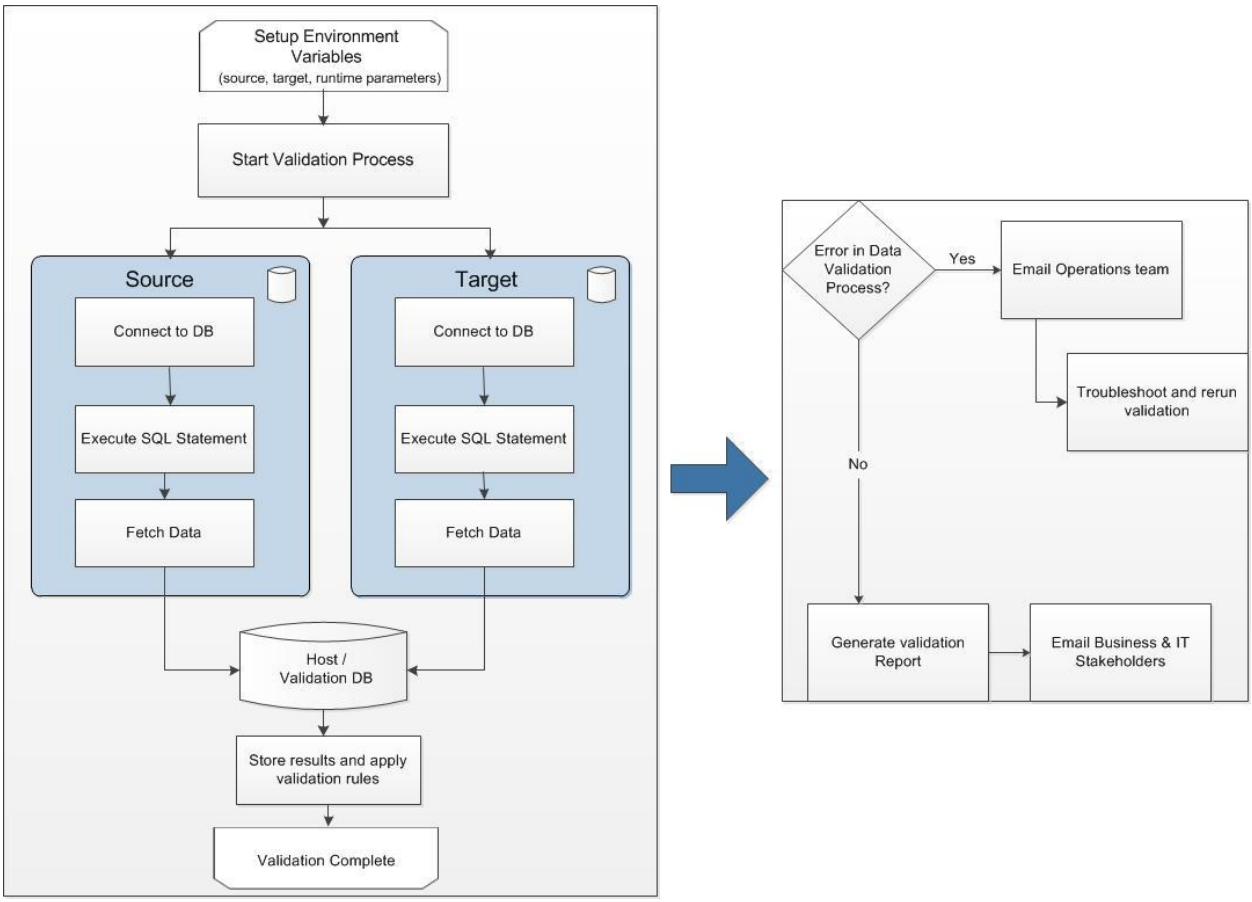
- The fields marked as | are mandatory fields.

13.6.3 Monitoring Scheduler Status

To monitor the status of Scheduled job,

1. Navigate to ***Schedule & Status > Status Monitor***
2. The ***Status Monitor*** screen displays a list of jobs run with respect to disparate activities in Solix EDMS Standard Edition (SE). Each job is assigned a unique Run ID. The first column contains the Run IDs of all the jobs. Use the vertical scroll bar on the right hand of the list to browse through the list to locate the required Run ID.

13.7 Data Validation Process Flow Diagram



Data Validation Process flow diagram

13.7.1 Validation Process

Validation screen is designed to execute the validation process. Data Validation Engine performs all the following activities as part of validation process.

13.7.1.1 Fetching Source Data

1. A Staging Table Creation for Source Data in Host Database.
    a. Based on the column data types enabled in the Source Object (Config/Custom SQL), a staging/temporary table will be created with EDRS_SRC_<RUNID> name in Host Database Definition provided in validation mapping. Enables the user to will be generated uniquely from Run screen. For every execution, the Run ID will be generated.
    b. When this process initiates the entry in AJ_PURGE_STATUS_DETAILS with 'SOURCE_TABLE_CREATION' activity, the status will be shown as 'PG' (in process) status.

c. After successful completion of this activity, the status becomes 'PS' (Process Completed).

2. Source Query Execution and Insert Data into Source Data Staging Table in Host Database

    a. Validation process connects to Source Database and executes Source Object Query and fetches data from Source Database. Fetched data will be inserted into above created temporary table **EDRS_SRC_<RUNID>**.

    b. When this process initiates the AJ_PURGE_STATUS_DETAILS with 'SOURCE_DATA_INSERTION' activity, the status will be shown as 'PG' (in process) status.

    c. After successful completion of this activity, the status becomes 'PS' (process completed).

13.7.1.2 Fetching Target Data

1. A Staging Table Creation for Target Data in Host Database

    a. Based on Target Object (Config/Custom SQL) enabled column data types, a staging/temporary table will be created with **EDRS_TGT_<RUNID>** name in Host Database Definition provided in Validation mapping. Enables the user to will be generated uniquely from Run screen. For every execution, a new Run ID will be generated.

    b. When this process initiates the AJ_PURGE_STATUS_DETAILS with 'TARGET_TABLE_CREATION' activity, the status will be shown as 'PG' (in process) status.

    c. After Successful completion of this activity Status becomes 'PS' (Process Completed).

2. Source Query Execution and Insert Data into Source temporary Table in Host Database

    a. Validation process connects to Target Database and executes Target Object Query and fetches data from Target Database. Fetched data will be inserted into above created temporary table **EDRS_TGT_<RUNID>**.

    b. When this process initiates an entry in AJ_PURGE_STATUS_DETAILS with an activity of 'TARGET_DATA_INSERTION' will be inserted with 'PG' (in process) Status.

    c. After successful completion of this activity, the status becomes 'PS' (process completed).

13.7.1.3 Validation

1. Results Staging Table Creation in Host Database

a. Validation process creates a staging/Temporary table with **EDRS_RESULTS_<RUNID>** name in Host Database with Columns defined in Column Matching and Column Comparison Screens.

b. All Source Columns are appended with "_SRC" string and all target Columns appended with "_TGT" string. With these extra strings user can easily identify data from source and target objects.

c. When this process initiates the AJ_PURGE_STATUS_DETAILS with 'RESULTS_TABLE_CREATION' activity, the status will be shown as 'PG' (in process) status.

d. After Successful completion of this activity Status becomes 'PS' (process completed).

2. Identify Data available in both Source and target Databases and insert Results into staging Table in Host Database

a. This Process depends on Comparison Method value defined in Validation mapping. If Comparison method is **"*Matched Records*"** then matched rows from both Source and target staging tables will be inserted into results staging table. If Comparison method is **"*MisMatched Records*"** then mismatched rows from both Source and target staging tables will be inserted into results staging table.

b. If Comparison method is **"*Matched Records*"** then validation process uses 'AND' operand while comparing columns. If Comparison method is **"MisMatched Records"** then validation process uses 'OR' operand while comparing columns.

c. Validation process uses columns defined in Column Matching screen to build equi join condition to identify related data from both Source and target data.

d. Validation Process uses two Mapping types. They are "EXACT MATCH" or "DEFINE THRESHOLD" mapping types. If mapping type is EXACT Match then Columns can be compared with = operator and exact data verification will be processed. If mapping type is DEFINE THRESHOLD then Columns can be compared with 'BETWEEN' or 'NOT BETWEEN' or '>' or '<=' operator and data verification will be processed.

e. If mapping type is DEFINE THRESHOLD, again three different threshold types are using in Validation Process - "RANGE DIFFERENCE", "PERCENTAGE DIFFERENCE" or "FIXED VALUE". These two threshold types can be uses against numeric data.

i. ***RANGE DIFFERENCE*** threshold type expects From and To Value. It uses following two formulas based on Comparison method.

- If Comparison method is "Matched Records"

ABS (SOURCE_COLUMN - TARGET_COLUMN) BETWEEN THRESHOLD_FROM_VALUE AND THRESHOLD_TO_VALUE

- If Comparison method is "MisMatched Records"

  ABS (SOURCE_COLUMN - TARGET_COLUMN) NOT BETWEEN THRESHOLD_FROM_VALUE AND THRESHOLD_TO_VALUE

ii. ***PERCENTAGE DIFFERENCE*** threshold type expects a percentage variance value. It uses following two formulas based on Comparison method.

- If Comparison method is "Matched Records"

  (ABS (SOURCE_COLUMN - TARGET_COLUMN) / ABS (SOURCE_COLUMN + TARGET_COLUMN) / 2)*100 <= PERCENTAGE VALUE

- If Comparison method is "MisMatched Records"

  (ABS (SOURCE_COLUMN - TARGET_COLUMN) / ABS (SOURCE_COLUMN + TARGET_COLUMN) / 2)*100 > PERCENTAGE VALUE

iii. ***FIXED VALUE*** threshold type expects a Fixed Value Difference value. It uses following two formulas based on Comparison method.

- If Comparison method is "Matched Records"

  ABS (SOURCE_COLUMN - TARGET_COLUMN) <= THRESHOLD_TO_VALUE

- If Comparison method is "MisMatched Records"

  ABS (SOURCE_COLUMN - TARGET_COLUMN) > THRESHOLD_TO_VALUE

f. When this process initiates the AJ_PURGE_STATUS_DETAILS with 'RESULTS_SOURCE_TARGET_TABLE' activity, the status will be shown as 'PG' (in process) status.

g. After successful completion of this activity status becomes 'PS' (process completed).

3. Identify Data available only in Source and which does not exist in Target Databases and insert into Results Staging Table in Host Database

a. This Process identifies the data available only Source Staging Table and Not in target staging table based columns defined in Column matching Screen. It uses NOT EXISTS operator to identify data available only in source.

b. This Process executes when Comparison method is “MisMatched Records”.

c. When this process initiates the AJ_PURGE_STATUS_DETAILS with ‘RESULTS_SOURCE_TABLE’ activity, the status will be shown as ‘PG’ (in process) Status.

d. After successful completion of this activity, the status becomes ‘PS’ (process completed).

4. Identify Data available only in Target and not exists in Source Databases insert into Results Staging Table in Host Database

   a. This Process identifies the data available only Target Staging Table and Not exists in source staging table based columns defined in Column matching Screen. It uses NOT EXISTS operator to identify data available only in target.

   b. This Process executes when Comparison method is “MisMatched Records”.

   c. When this process initiates an entry in AJ_PURGE_STATUS_DETAILS with an activity of ‘RESULTS_SOURCE_TABLE’ will be inserted with ‘PG’ (in process) Status.

   d. After Successful completion of this activity Status becomes ‘PS’ (process completed).

5. Notification process: This process creates a HTML file that contains the result (i.e., identified data) of validation process and sends the same to the user email id specified in the validation mapping.

14 Metadata Import/Export

Metadata Import/Export feature enables the user to import/export the metadata of the activities (such as data validation, security rule assignment, and security group) from one knowledgebase/repository to other knowledgebase repository. Also, it migrate all the attributes like tables, joins, relations, criteria associated to the respective activity (such as knowledgebase, data validation and so on) while import/export process.

Benefits of Metadata Import/Export:

- Provide an ease to migrate metadata from one knowledgebase/repository to other.
- Avoid the recreation of similar metadata in different knowledgebase.
- Reduce the time consumption to export/import metadata in knowledgebase/repository.
- Reusability of metadata in different knowledgebase.

Types of process in Metadata Import/Export

To accomplish the migration of metadata from one database to other, the user need to carried out the two processes in the given sequential manner:

1. Export Process: This process enables to export all the attributes like tables, joins, and relations associated to the activity and creates an exported file (.xml) in the default location (i.e., /usr/tmp/). Herein, .xml file will be created with prefixed as "ExportData_" and suffixed with generated Export Run ID.

   For example, "ExportData _102049.xml", where 102049 represent the Run ID generated for export process.

2. Import Process: This process enables to import the metadata existing in the exported file to the target knowledgebase/repository.

- It is assumed that knowledgebase availed during import/export process has been already created and authenticated to the respective user.
- Exclusively, the admin user has privileges to export metadata from any knowledgebase irrespectively. Whereas, the remaining users has only privileges to export metadata existing in the knowledgebase authenticated to that user.
- While importing/exporting the knowledgebase, by default all the activities (such as data validation, security rule assignment, and security group) existing in that knowledgebase will also be imported / exported.

14.1 Export Process

This section navigates through the process to move all the attributes associates to the activity to the export file in the given path (i.e., /usr/tmp). It extracts the activities and metadata of activity in the knowledgebase from the sources repository and places it in the export file generated in the given path.

To perform export process, do the following:

1. Navigate to the following path: ***Tools > Metadata Import/Export***. The ***Metadata Import/Export*** screen will be displayed.
2. Select ***Export*** option from the ***Type*** drop down list. Once the option is selected, the remaining fields will be prompted in the screen.

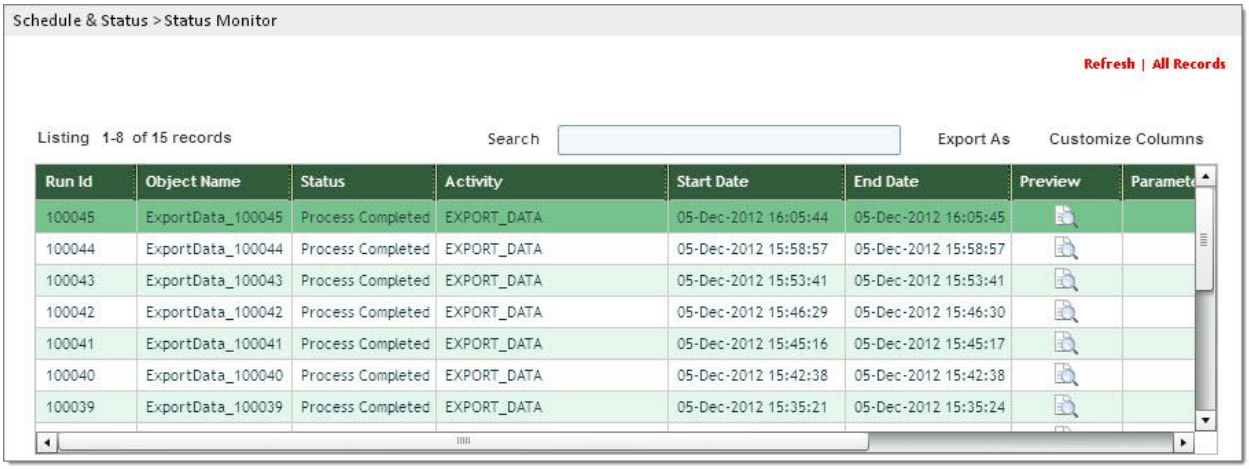
3. Select the intended knowledgebase from the ***Knowledgebase*** drop down list, to pull the activities existing in the knowledgebase selected. Once the knowledgebase is selected, the activities associated to the knowledgebase will be displayed in the corresponding fields.
4. Select the type of activity to be exported from the ***Activity Type*** drop down list. Based on the activity type selected, the corresponding activities existing in the knowledgebase will be displayed in the ***Activity Name*** drop down list.
5. Select the intended activity from the ***Activity Name*** drop down list. In case, if the activity is not selected, then all the corresponding activities in that knowledgebase will be exported, by default.
    - For example,

      If activity type is selected as “Data Validation” and the activity name is not specified, then all the data validations existing in that knowledgebase will be exported by default).
6. Click ***Export*** button, to export the metadata details of the activity selected into export file (.xml). Once the export process is scheduled, a Run ID will be generated and the export file is created at the default location (i.e., /usr/tmp/) with prefixed as “ExportData_” and suffixed with generated Export Run ID.

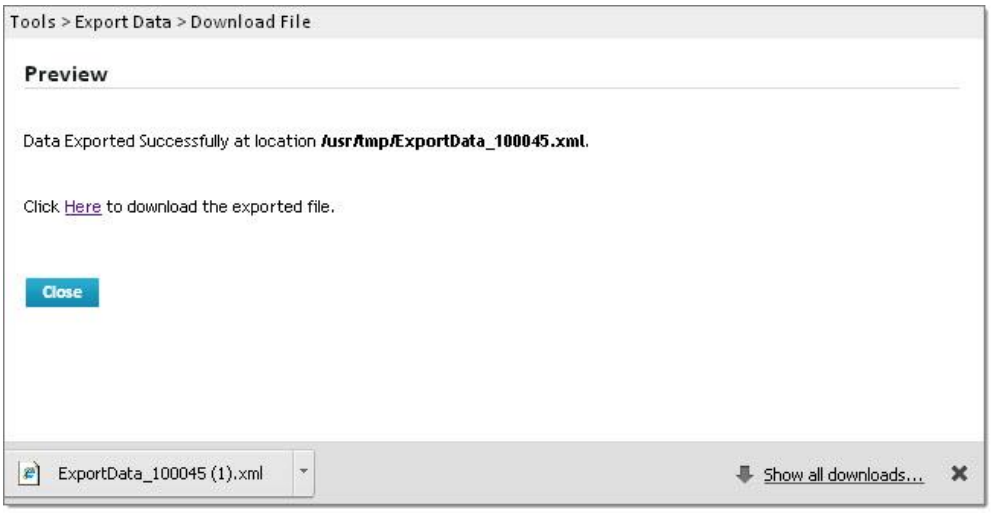
For example,

ExportData _102049.xml”, where 102049 represent the Run ID generated for export process.

7. To monitor the status of the export process, navigate to status monitor (***Schedule & Status > Status Monitor).*** The ***Status Monitor*** screen is displayed as shown in the figure below.

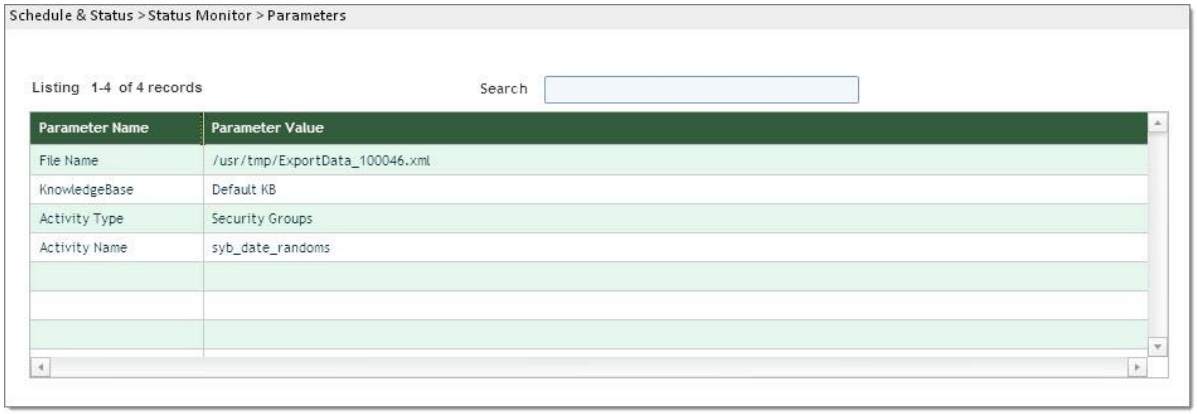


8. Verify the status of the export process using Run ID generated. Once the process is completed successfully, click ***Preview*** icon to view the path of exported file and/or download the exported file. The ***Preview*** screen will be displayed with the default location of the exported file created and provides an option to download the exported file.



- Whenever the application server is located on local desktop, the user can directly import the exported file from the default location (i.e., /usr/temp/ExportData_100045.xml).
- Whenever the application server is located remotely, in such cases, the user is provided an option to download the file on to the local desktop and then import the exported file.
  - Click ***Here*** hyperlink, to download the exported file (.xml). Once the download is completed successfully, thereafter the user can import the metadata from the exported file to the target knowledgebase/repository.

9. To view the parameter values provided while export process, click ***Parameter*** icon adjacent to the intended Run ID. The ***Parameter*** screen will be displayed as shown in the figure below.



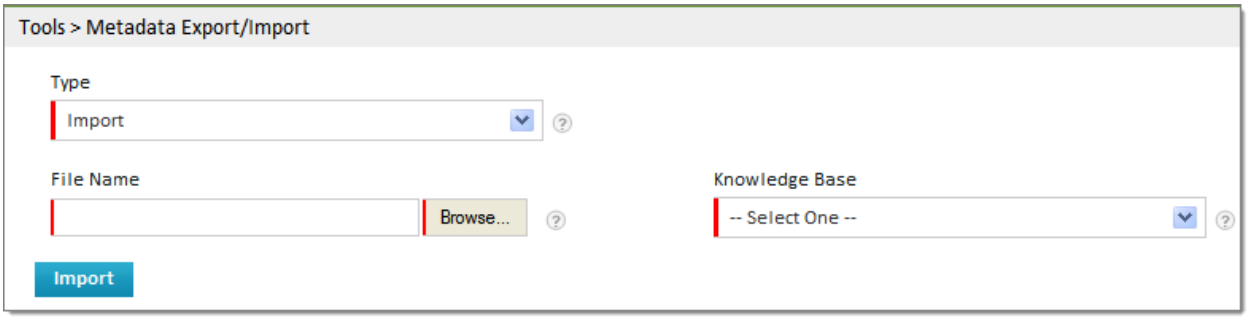
- The field marked as " "are mandatory fields.
- If ***Activity Type*** is selected as "Knowledgebase", then ***Activity Name*** drop down will not be prompted on the screen.

14.2 Import Process

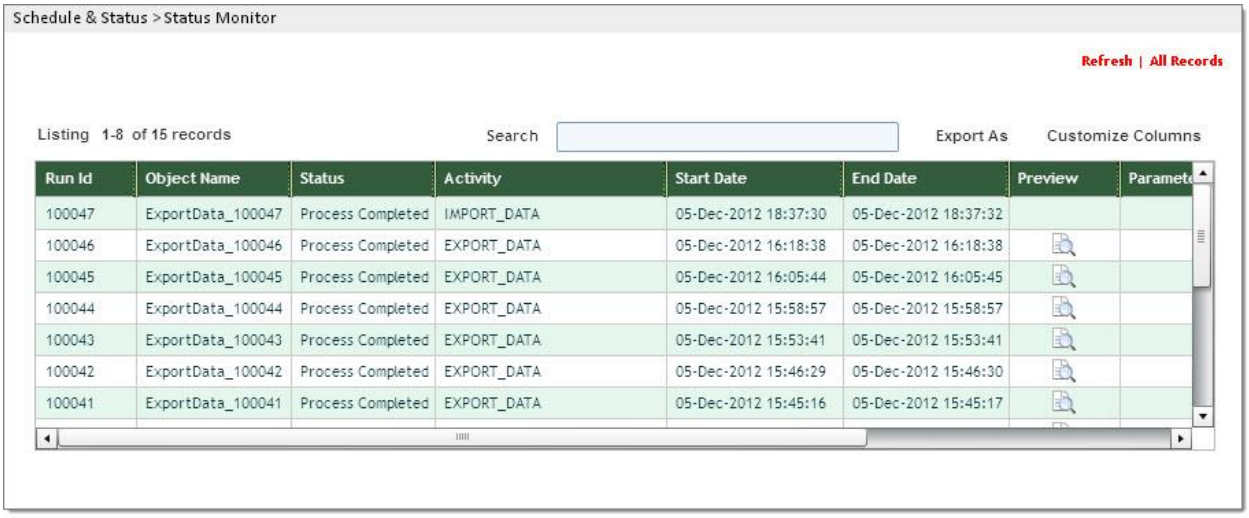
Once the export process is completed, the user needs to perform import process which enables to move the metadata existing in the exported file to the target knowledgebase.

To import the exported file, do the following:

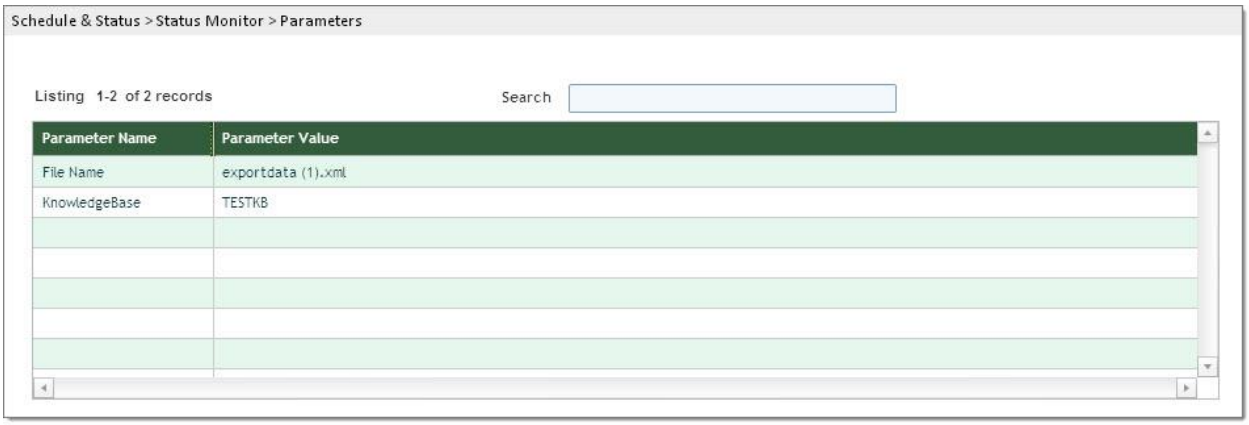
1. Navigate to the following path: ***Tools*** **>** ***Metadata Import/Export***. The ***Metadata Import/Export*** screen will be displayed.
2. Select ***Import*** option from the ***Type*** drop down list. Once the option is selected, the remaining fields will be prompted in the screen.



3. Browse for the exported file location in the ***File Name*** text field. To locate the exported file, click ***Browse*** button and do the following:
    a. Click ***Browse*** button. The ***Choose File to Upload*** popup screen will be prompted.
    b. Locate the file in the popup screen and click ***Open*** button. The path of the exported file will be displayed in the ***File Name*** text field.
4. Select the intended knowledgebase from to ***Knowledge Base*** drop down list, to import the metadata into the selected knowledgebase.
5. Click ***Import*** button, to import the metadata from the exported file (.xml) to the selected knowledgebase. The Run ID will be generated for the respective import process.
6. To monitor the status of the import process, navigate to status monitor (***Schedule & Status > Status Monitor).*** The ***Status Monitor*** screen is displayed as shown in the figure below. Verify the status of the import process using Run ID generated (for example, 101947).



7. To view the parameter values provided during import process, click ***Parameter*** icon adjacent to the intended Run ID. The ***Parameter*** screen will be displayed as shown in the figure below.



- The fields marked as "|" are mandatory.

15 Log

This section explains the process to monitor the status of all the activities in execution (Run ID details) and to trace out the log details for each activity.

Navigation

To access status link, login to Solix EDMS Standard Edition (SE):

- Place cursor at ***Log*** tab in the main menu.

15.1 Audit

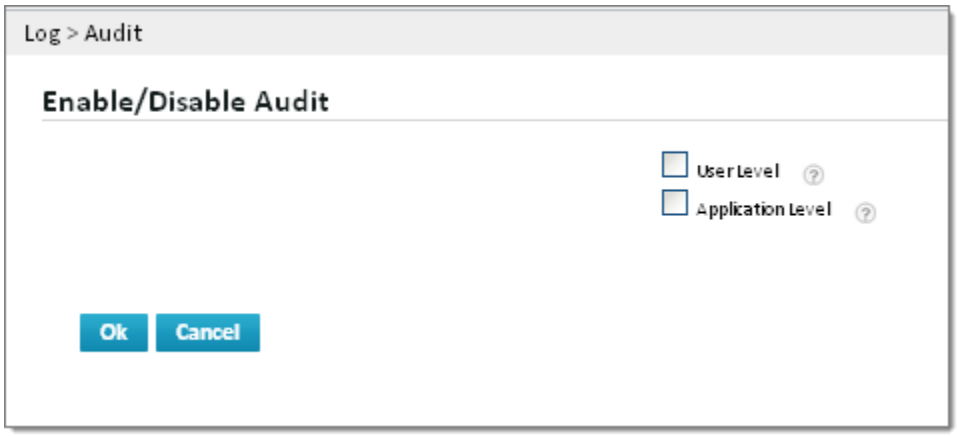
Audit Trace enables to trace out the log details for each activity performed in Solix EDMS Standard Edition (SE) at various levels and generate a log file which shows the detailed report on the access logs of application objects. This feature avails to monitor the access of application objects through Audit. It maintains a track record of all application objects accessed by various users (i.e., irrespective of user).

Application Audit is used to get the report on the unauthorized access on Application Objects. This functionality helps to apply Audit on application objects on which the user wants to have a track record on unauthorized access by any other user.

15.1.1 Navigation

To access Audit link, follow the path: ***Log>Audit.***

1. The ***Audit Details*** pop up will be displayed.



2. Check the options and Click ***OK*** button, to trace out the details of activities based on the selected level.

15.1.2 User Level

This option enables to trace and maintain the access details of a specific user (i.e., login and logout). The log file associated to the user will be generated in the format-<username><Date Time stamp>.txt and located in the path specified by the user in ***Parameter*** screen (i.e., ***LOG_FILE_PATH*** parameter). (***Admin> Manage Source/Target Dictionary > Parameters***)

To trace the user access details,

1. Check the ***User*** check box and Click ***OK*** button, to trace out the details of user access.
2. The log file with the <username><Date Time stamp>.txt will be generated in the path specified by the user in **LOG_FILE_PATH** parameter (For example, /***usr/tmp/***).

- For every login and logout, a separate log file will be generated with the <username><Date Time stamp>.txt and maintain the details information of the login and login time of the user.

15.1.3 Application Level

Application Level enables to trace out the information of the application access right from the **AUDIT ON** and generates the information associated to the activities executing in the application (i.e., application server) irrespective of the user.

To trace the application access details,

1. Check the ***Trace*** check box in the ***Audit Details*** screen.
   - ***Level One***: Basic log details like the start and the end of process are captured.
   - ***Level Two*:** Advanced log details like the start, the status, description of process been taken place in the corresponding step of execution and end of the process are captured. It includes Level One information as well.
   - ***Level Three***: Comprehensive details or full log of all the processes are captured which shows the query been executed in the step of corresponding activity. It includes Level One and Level Two information as well.
2. Select the required level option and Click ***OK*** button, to trace out the details of activities based on the selected level will generate a log file naming as ***EDMSTrace*** file with present time stamp in the path specified by the user.

- EDMS Logs are maintained in the Log files created in the user specified path ***"/usr/tmp"***. A default log will be maintained with access details of each user.
- To view the limited number of messages in a Log file, alter the default value of the ***NO_OF_LOG_MESSAGES*** parameter in the ***Parameter*** screen. (***Admin> Manage Source/Target Dictionary > Parameters).*** Default value of parameter is 100.

15.2 Application Log

This feature provides flexibility to view the log details from Solix EDMS Standard Edition (SE) application instead of viewing from OS level (i.e., ***/usr/tmp/*).** The details of activities performed by users in Solix EDMS Standard Edition (SE) are captured, which may be used in the event of audit trail system recovery.

15.2.1 Navigation

To access application log link, follow the path: ***Log > Application Log*.**

- Displays the logs if the user selects an option from Audit.
- Enabling of Audit will generate a log file on the machine where the application server is deployed (file format-<username><Date Time>.txt and <EDMSTrace><Date Time>).

16 Appendix

16.1 Appendix-A: Java based Algorithms

Location: Application

Java algorithms which support data masking in Solix EDMS Standard Edition (SE) are listed in the table given below.

SECURITY RULE NAME	Data Type	DESCRIPTION
EMAIL	Character	Mask Email column value with first name, last name and domain name values in FIRST_NAME.LAST_NAME@Domainname format. Both FIRST_NAME and LAST_NAME columns should be available in same table. For example, Carl.Douglas@mycompany.com
FULL NAME	Character	Mask Full Name Value with first name and last name. Both FIRST_NAME and LAST_NAME columns should be available in same table. For example, Carl Douglas
SALARY PERCENT	Numeric	Mask Numeric value with a percentage variation of given range. For example, provide 10 percent at run time means + or -10 percent variation can be seen after masking.
SHUFFLE CHARS NUMERIC	Numeric	Mask Numeric Data by Shuffling the digits of a column value. For example, if original value is 123456789 then mask value could be 579314628.
SHUFFLE CHARS	Character	Mask Character Data by Shuffling the characters of a column value. For example, If original value is ABCDEFGH then mask value could be EGACBHFD.
NUMERIC DATA ENCRYPT	Numeric	Encrypts Numeric Column Data.
CHAR DATA ENCRYPT	Character	Encrypts Character Column Data.
TRUNCATE DATA	Character, Numeric and Date	Truncates Table Data.
MASK_CREDIT_CARD_WITH_FMT	Character	Mask Character Data with Randomly generated Credit Card Numbers (LUHN validated) based on selected Card Type with format character. For example, 4872-2670-0856-2847
MASK_CREDIT_CARD	Character	Mask Character Data with Randomly generated Credit Card Numbers (LUHN validated) based on selected Card Type. For example, 4338818716421722

MASK_PHONE_NUMBER_WITH_FMT	Character	Mask Character Data with Randomly generated US Phone Numbers with valid area codes along with format character. For example, 443-801-1719
MASK_PHONE_NUMBER	Character	Mask Character Data with randomly generated US Phone Numbers with valid area codes. For example, 4346565661
MASK_UK_SSN	Character	Mask Character Data with randomly generated UK National Identifier. For example, KR671426W
MASK_US_SSN_WITH_FMT	Character	Mask Character Data with randomly generated US Social Security Numbers along with format character. For example, 471-56-6525
MASK_US_SSN	Character	Mask Character Data with randomly generated US Social Security Numbers. For example, 934525467
NULLING OUT	Character	Mask Character column value with null values.
RANDOM DIGITS NUMERIC	Numeric	Masking Numeric data value with randomly generated digits in the given range.
RANDOM DIGITS CHAR COL	Character	Masking character data value having numeric data with randomly generated digits in the given range.
RANDOM DATES	Date	Masking Date values with randomly generated dates in the given date range. For example, 01-JAN-2001.
RANDOM NUMBERS	Numeric	Masking Numeric Data with randomly generated numeric values in the given range. For example, 9999.
RANDOM STRINGS	Character	Masking Character Data with randomly generated character string. For example, ABCDEFGH
NUMERIC ARRAYLIST VALUES	Numeric	Masking Numeric Data with the given list of numeric values separated by comma.
STR ARRAYLIST VALUES	Character	Masking Character Data with the given list of character values separated by comma.
FIXED NUMBER	Numeric	Masking Numeric data with the given fixed numeric value. For example, 9999 (fixed value)
FIXED STRING	Character	Masking character data with the given fixed string value. For example, ABCDEFGH (constant value)
FIXED DATE	Date	Masking character data with the given fixed date value. For example, 01-01-2013
SUBSTRING	Character	Masking data with Substring of the each column value. For example, If original value ABCDEFGH then mask value could be ABCD.

SHUFFLING NUMERIC	Numeric	Shuffling Numeric Column Values from one row to another. For example, Row one numeric value shuffles with row “n” value.
SHUFFLING STRING	Character	Shuffling Character Column Values from one row to another. For example, Row one character value shuffles with row “n” value.
SHUFFLING STRING	Date	Shuffling Date Column Values from one row to another. For example, Row one character value shuffles with row “n” value.

16.2 Appendix-B: Database Algorithms

Location: Database (Exclusively, Oracle)

- To make use of DB algorithms to mask the data, it is mandatory to compile the following script in Oracle database where masking process is performing:

  "***edms_database_security_algorithm.sql***" under ***EDMS_Home*** > ***scripts*** folder.

DB algorithms which support data masking in Solix EDMS Standard Edition (SE) are listed in the table given below.

Security Rule Name	Data Type	Description
DB-DATE	Date	This security rule generates the value of day and month randomly in date column, whereas the value of Year remains the same (i.e., Original value)
DB-EMAIL	Character	This security rule masks the email column values based on the given First Name Column, Last Name Column and Domain name value.
DB-FULLNAME	Character	This security rule masks the Full Name based on the column values provided in the FIRST_NAME and LAST_NAME parameters. Pre-requisite: Both the parameters (for example, FIRST_NAME and LAST_NAME) provided for the Full Name should be in Source table.
DB-SALARY	Numeric	This security rule increments or decrements the column values based on the given percentage of value. For example if the user provides 10, then the column value will be incremented or decremented randomly within the range of +10 to -10. [Source Value : 1500, Masked Value : 1545]
DB-SHUFFLE	Character	This security rule shuffles the characters within a string. For example, "SOLIX" is a string and after shuffling it is masked as "XOSLI"
DB-CREDIT-CARD-ALL-MASKX	Character	This security rule masks all the Numeric Characters with X. For example, if the value is equal to 123-234, then the value after masking is XXX-XXX
DB-CREDIT-CARD-PARTIAL-MASK	Character	Mask All Numeric Characters with X apart from first 4 Characters, like 1234-5678 masks with 1234-XXXX

DB-SHUFFLE-COLUMN-CHARS	Character	Masking the table on which this security rule is assigned based on the source column value (provided during runtime). This algorithm enables the user to mask the source column value randomly by leaving the first N number of characters.
DB-RANGE-MASK-ALONG-CHILD-TABLE	Numeric	This security rule mask the column of the parent table and replicate the masked value on the child table column data.
DB-FIXED-STRING	Character	This security rule masks the column value with the given fixed string value. [Parameter Value : Blake, Source Value : Miller, Masked Value : Blake]
DB-RANDOM-CCARD-GEN	Character	This security rule generates the Credit Card Valid Number randomly as per LUHN based on Card Type selected. [Parameter Value : Visa, Source Value : 4503 8803 9903 2326, Masked Value : 4322678416974018]
DB-RANDOM-US-SSN-GEN	Character	This security rule generates the US Social Security Number randomly. [Source Value : 554-98-2445, Masked Value : 315531544]
DB-RANDOM-US-SSN-GEN-FMT	Character	This security rule generates the US Social Security Number randomly along with format character (i.e, character used as separator). [Parameter Value : - , Source Value : 554-98-2445, Masked Value : 315-53-1544]
DB-RANDOM-NUMBERS-GEN-CHAR	Character	This security rule generates random numbers within a specified range for Character datatype columns. [Parameter Values : 10000,99999 , Source Value : 34782, Masked Value : 64669]
DB-RANDOM-NUMBERS-GEN-NUM	Numeric	This security rule generates random numbers within a specified range for NUMBER datatype columns. [Parameter Values : 10000,99999 , Source Value : 34782, Masked Value : 64669]
DB-SUBSTRING	Character	This security rule generates SUBSTRING of Original Value based on provided from character value to No of characters. [Parameter Values : 1,5 , Source Value : Debbie, Masked Value : Debbi]
DB-RANDOM-VALUE-FROM-LIST-CHAR	Character	This security rule generates a random STRING value from provided comma separated strings like abc, def, ghi. [Parameter Value : Debbie, Blake, Smith,Tunner , Source Value : Miller, Masked Value : Smith]
DB-RANDOM-DATES-GEN	Date	This security rule generates random dates within a specified DATE range. [Parameter Values : 2001-06-20,2012-06-20 , Source Value : 05/16/2012, Masked Value : 12/21/2007]

DB-RANDOM-DIGITS-CHAR	Character	This security rule generates a numeric number between given minimum and maximum digits for CHARACTER data type columns. [Parameter Values : 2,6 , Source Value : 9785, Masked Value : 835840]
DB-US-PHONE-NUM-GEN	Character	This security rule generates random US Phone Numbers with valid area codes. [Source Value : 4085671234, Masked Value : 6498628963]
DB-US-PHONE-NUM-GEN-FMT	Character	This security rule generates random US Phone Numbers with valid area codes along with provided format character. [Parameter Value : - , Source Value : (408)5671234, Masked Value : 302-809-4281]
DB-VALUE-SHUFFLE	Character	This security rule is used to randomly generate the characters of First N Chars or Last N Chars or All Characters. For example if the Parameter values are provided as FIRST-N, 5. Then, Miller John will be masked as Ehyzfr, John
DB-FIXED-NUMBER	Numeric	This security rule masks the column value with the given fixed numeric value. [Parameter Value : 15000, Source Value : 1255, Masked Value : 15000]
DB-RANDOM-CCARD-GEN-FMT	Character	This security rule generates the Credit Card Valid Number randomly as per LUHN along with the format character (i.e., character used as separator) based on Card Type. [Parameter Values : Visa And - , Source Value : 4503 8803 9903 2326, Masked Value : 4322-6784-1697-4018]
DB-RANDOM-UK-SSN-GEN	Character	This security rule generates the UK Social Security Number randomly. [Source Value : JR567078H, Masked Value : LS648045P]
DB-RANDOM-STRINGS-GEN	Character	This security rule generates RANDOM STRING within given minimum and maximum length characters. [Parameter Values : 5,15 , Source Value : Blake, Masked Value : VxGNiUqHP]
DB-RANDOM-VALUE-FROM-LIST-NUM	Numeric	This security rule generates a random NUMERIC value from provided comma separated string like 26781, 99999, 355667, 13234. [Parameter Value : 26781,99999,355667,13234 , Source Value : 8778, Masked Value : 355667]
DB-RANDOM-DIGITS-NUM	Numeric	This security rule generates a Numeric number between given minimum and maximum digits for NUMBER data type columns. [Parameter Values : 2,6 , Source Value : 9785, Masked Value : 835840]

17 About Solix Technologies

Solix Technologies, Inc. is a leading provider of Enterprise Data Management solutions for public and private clouds. Solix data growth solutions help businesses improve application performance, reduce storage costs and meet compliance and data privacy requirements by achieving Information Lifecycle Management (ILM) goals. The Solix Cloud provides a pay-as-you-go model for database archiving and application retirement. The Solix Enterprise Data Management Suite (EDMS) software enables organizations to implement Database Archiving, Test Data Management (Data Subsetting), Data Masking and Application Retirement across all enterprise data. Solix Technologies is headquartered in Santa Clara, California and operates worldwide through an established network of value added resellers (VARs) and systems integrators.

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