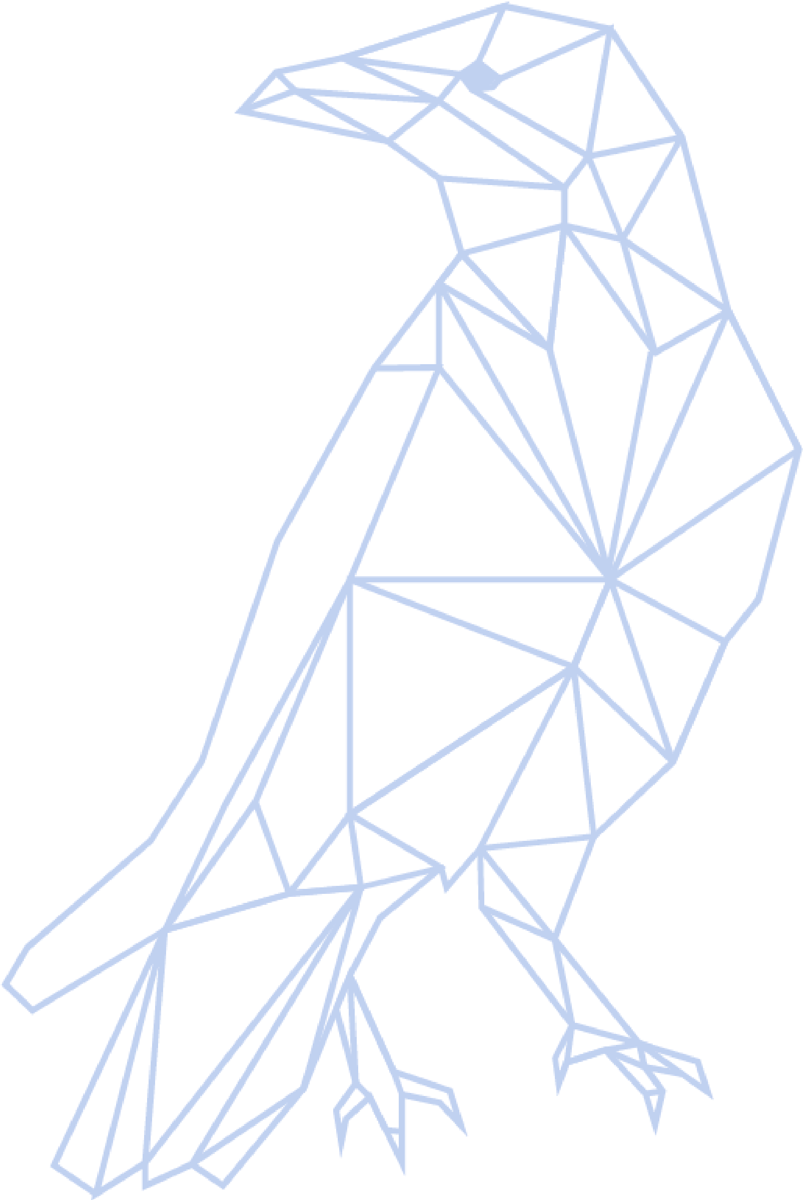
datametica
GIVING DATA WINGS

Raven User Guide



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1. Raven Overview

Raven is a web application, used for SQL script translator and it can be deployed on Google, The tool automates the process of translating the database translation from source to target. Using this tool, you can translate the database from translating Teradata SQL to Big Query SQL.

Raven user manual is designed to understand the functionality of the tool and use it with ease. This section introduced to the Raven, let you be aware of the prerequisite for the installation and implementing it.

1.1. Preface

The Raven user guide discusses translating your Teradata SQL script to BigQuery. It is written for the software developers, who are responsible for the translation process of 'Source Target Data Mapping. The user guide explains how to manage flat files or mainframe systems in your environment. This guide assumes that you are familiar with the interface requirements for translation.

1.2. Prerequisite

To use the tool, the following are the system requirements:

- Memory Requirement - 60 GB or more (Recommended)
- Free disk space - 60 GB or more (Recommended)
- Processor - quad-core or more (Recommended)

The database and files required to start the translation -

1. Jar files
2. JSON files

1.3. Creating Login Credentials

1.3.1. Who can create the login credentials?

- The first time login credentials are shared on the landing page of the Google Marketplace

- The Superuser has the authority to create new login credentials for the new users. Only the superuser can add new users, edit or delete an existing user.
- Note: The email field should be the user name i.e. work email address with the first and last name. The password must be alphanumeric and to initiate the password for the first time the user has to go through the SMTP configuration.
- You may know more details about adding new users. visit Administration

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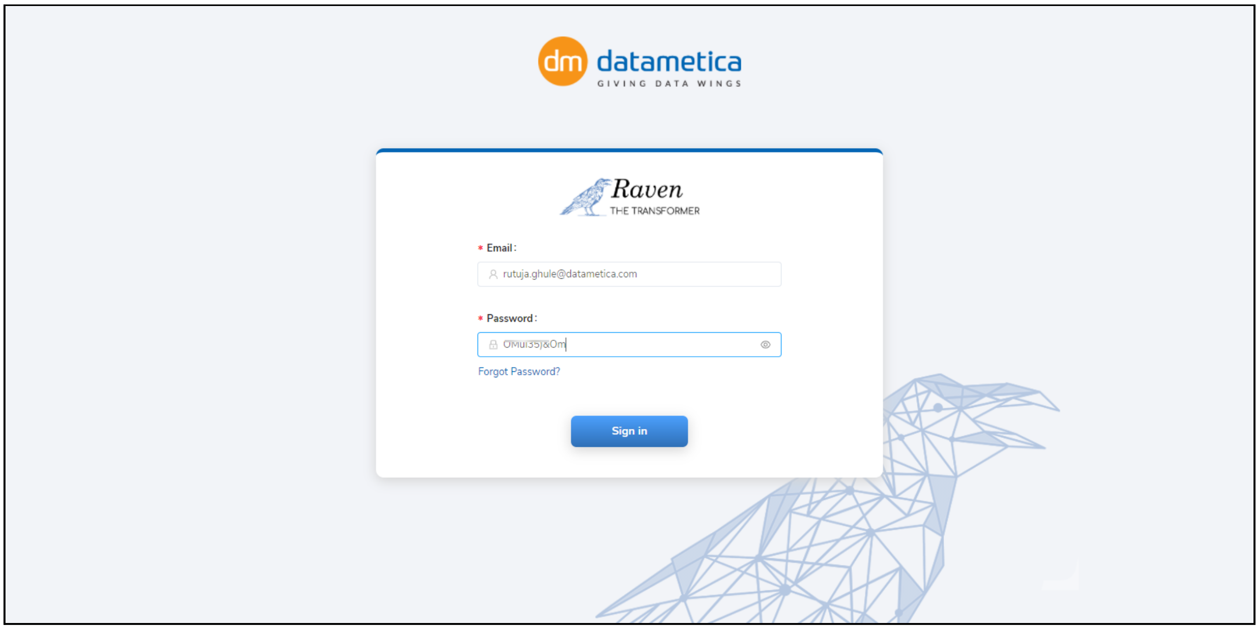
1.3.2. First-time login

First-time login - superuser

To initiate the account, you have to log in to the application with an email address superuser@datametica.com and the password "Admin$321!". On your first login, the system will ask you to reset the password.

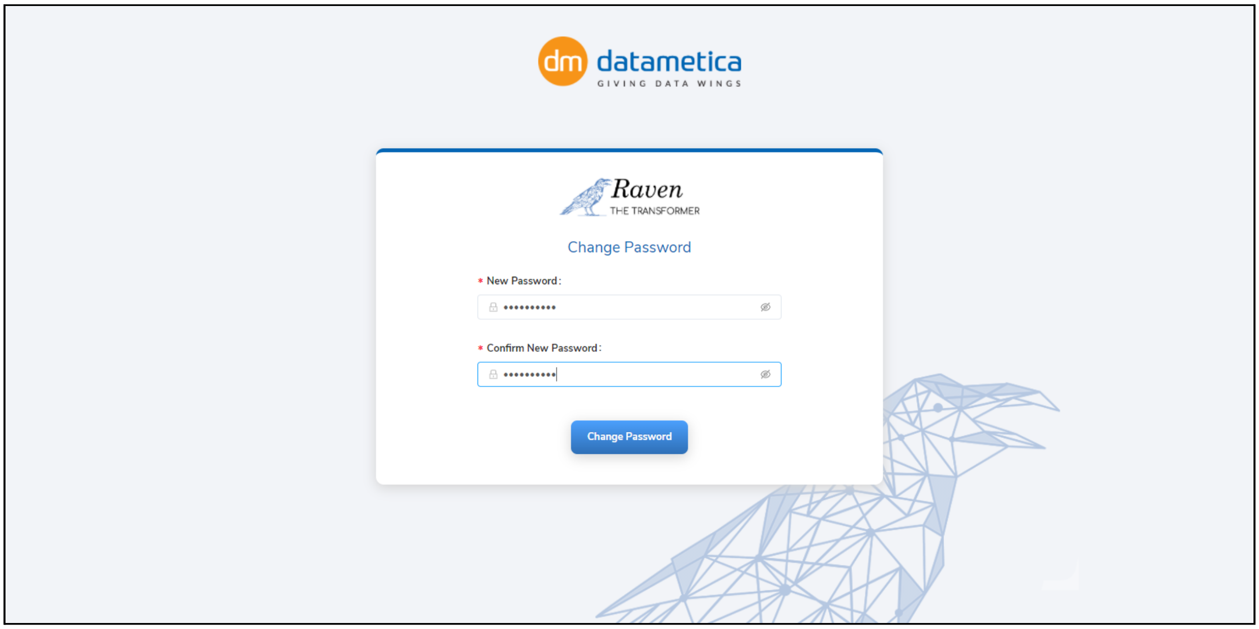
First-time login - Translator or Superuser generated superusers.

1. You will receive a system-generated **Raven Password** over your registered email.
2. Navigate to the login page.
3. Enter the **email address** and **system-generated Raven password**
4. Click on **Sign In**



* Email: rutuja.ghule@datametica.com

* Password: OMui35j&Om



* New Password:

* Confirm New Password:

5. To **reset the password**, enter a new password in New Password and Confirm New Password fields respectively.

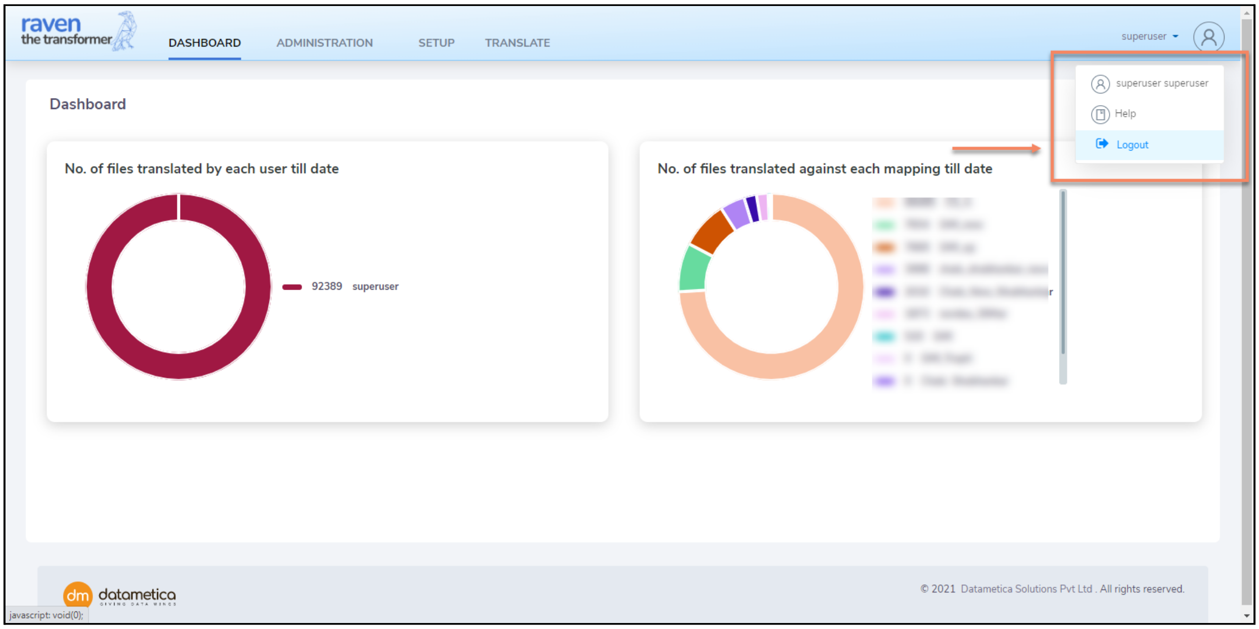
6. Click on **Change Password**., the system will display a success notification for login this process,

7. Now, login with a new password.

1.3.3. Log out

Logout

- On the right top corner, there is name of the user is displayed.
- Right-click on Icon and select Logout.


raven
the transformer
DASHBOARD
ADMINISTRATION
SETUP
TRANSLATE
superuser
superuser superuser
Help
Logout
Dashboard
No. of files translated by each user till date
92389 superuser
No. of files translated against each mapping till date
datametica
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javascript: void(0);

1.3.4. Forgot Password

Forgot Password for existing users -

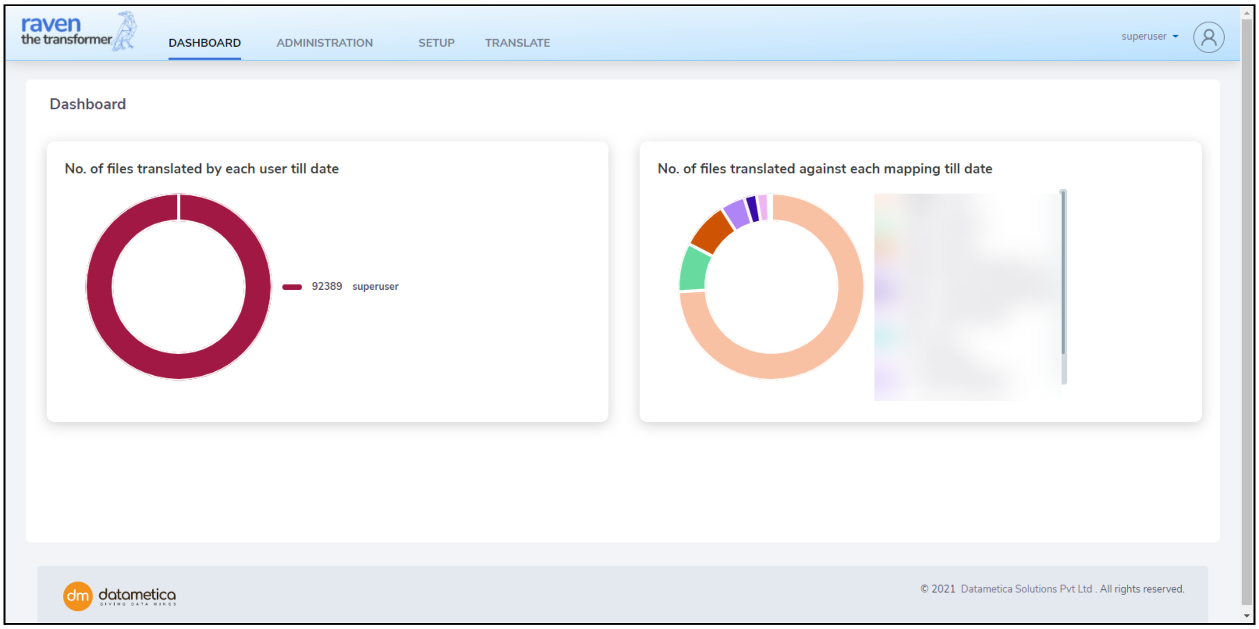
On the login page, enter your work Email address and Password and then click on Sign In. If you forget the password, click on the forget password and follow the asked steps.

2. Dashboard

The Dashboard displays detailed information about the operations performed to date. You can see the Dashboard menu once you login into Raven.

Dashboard let you know two KPI's-

- Number of files translated by each user till date
- Number of files translated against each mapping till date,


raven
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DASHBOARD
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superuser
Dashboard
No. of files translated by each user till date
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No. of files translated against each mapping till date
datametica

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3. Administration

The administration menu allows you to manage -

- Email server setup
- User management
- Bucket Configuration

3.1. Email Server Setup

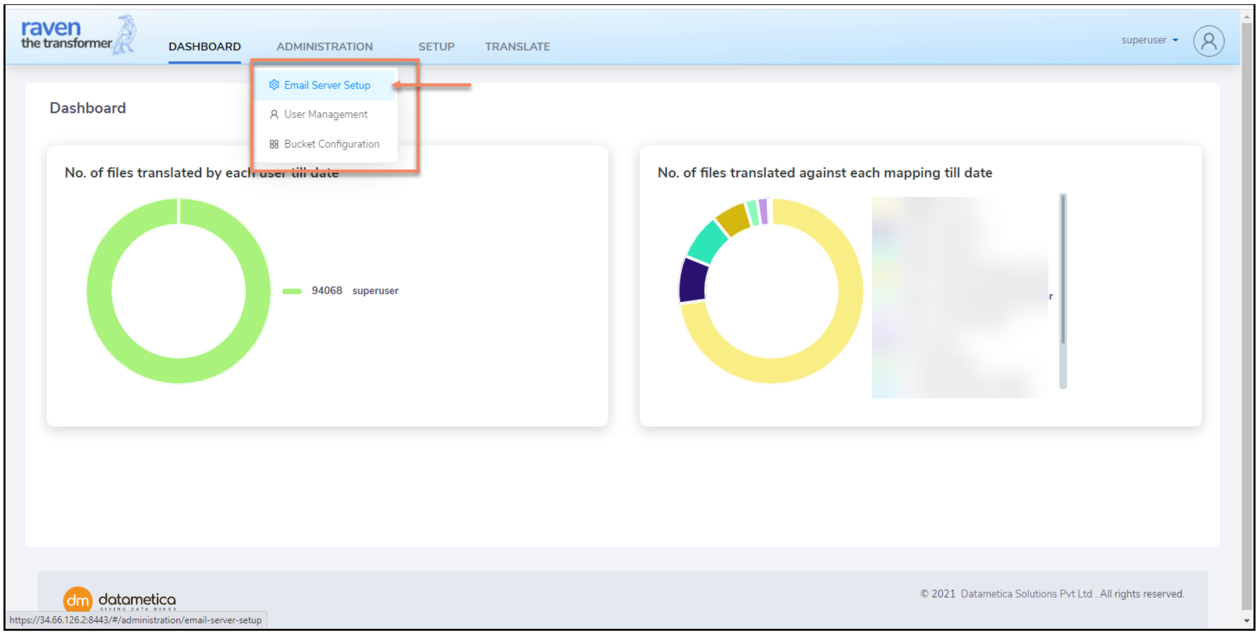
In the Administration menu, Email Server Setup is given for Simple Mail Transfer Protocol (SMTP) configuration. This is required for the SMTP configuration, in which the system sends a Password email to the end-user. It verifies the details and set a new password

This allows the system to auto send a system-generated new password email to the new or first time user. If you have entered incorrect details, a pop-up notification is displayed on the screen, otherwise correct validations make a successful attempt by sending an email with a system-generated password.

To get the system generated password, see the inbox of the registered email Id.

Steps -

1. Follow **login steps**, Getting Started
2. Navigate to the **Administration tab** and select **Email Server Setup**.
3. Enter the details in the form, **User name, Password, Host, and Port** (all fields are mandatory)


raven
the transformer
DASHBOARD
ADMINISTRATION
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superuser
Email Server Setup
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Bucket Configuration
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No. of files translated by each user till date
94068 superuser
No. of files translated against each mapping till date
datametica
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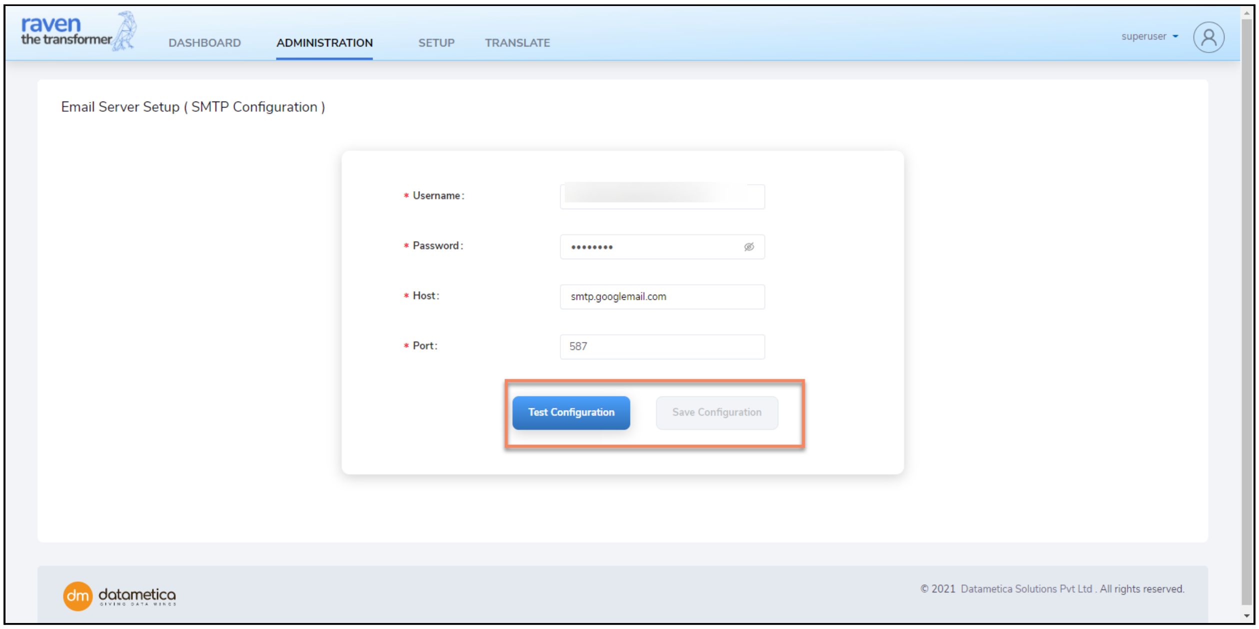
https://34.66.126.2:8443/#/administration/email-server-setup



Email Server Setup (SMTP Configuration)

* Username:

* Password: ••••••••

* Host: smtp.googlemail.com

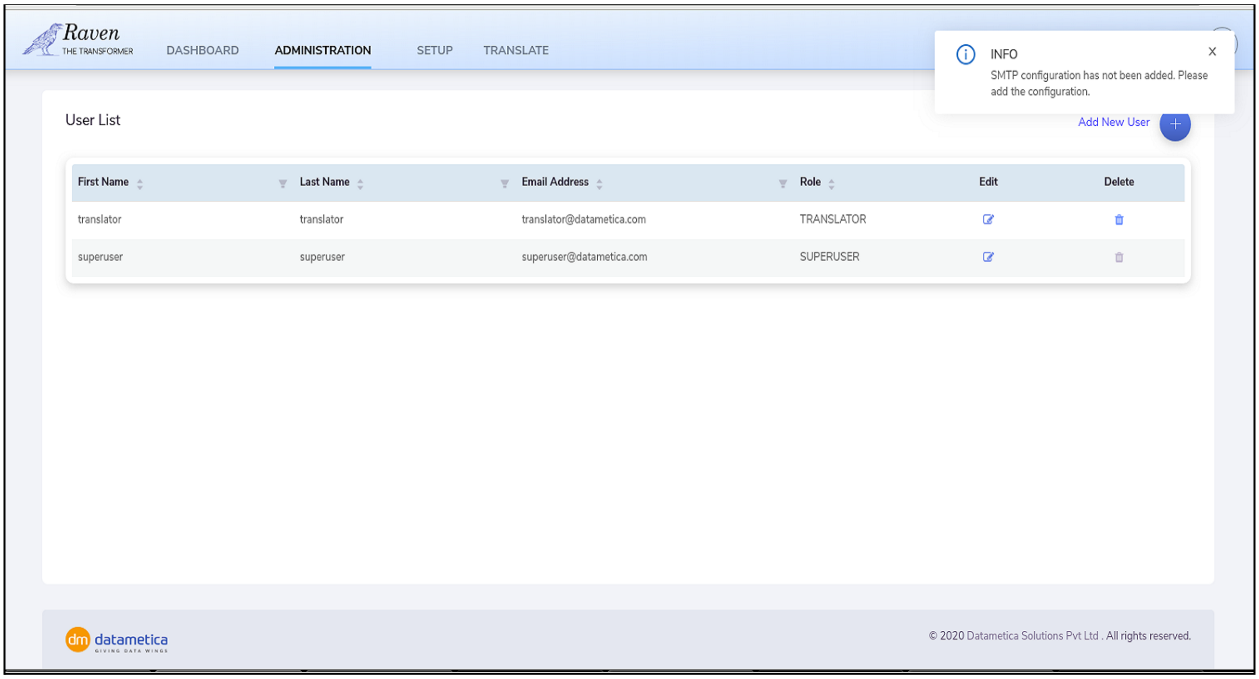
* Port: 587

4. Click on **Test Configuration** to validate the entered details

An error message is displayed if the SMTP Configuration is invalid.

OR

A successful message is displayed when the SMTP Configuration is valid.



INFO

SMTP configuration has not been added. Please add the configuration.

User List

First Name	Last Name	Email Address	Role	Edit	Delete
translator	translator	translator@datametica.com	TRANSLATOR	✎	🗑
superuser	superuser	superuser@datametica.com	SUPERUSER	✎	🗑

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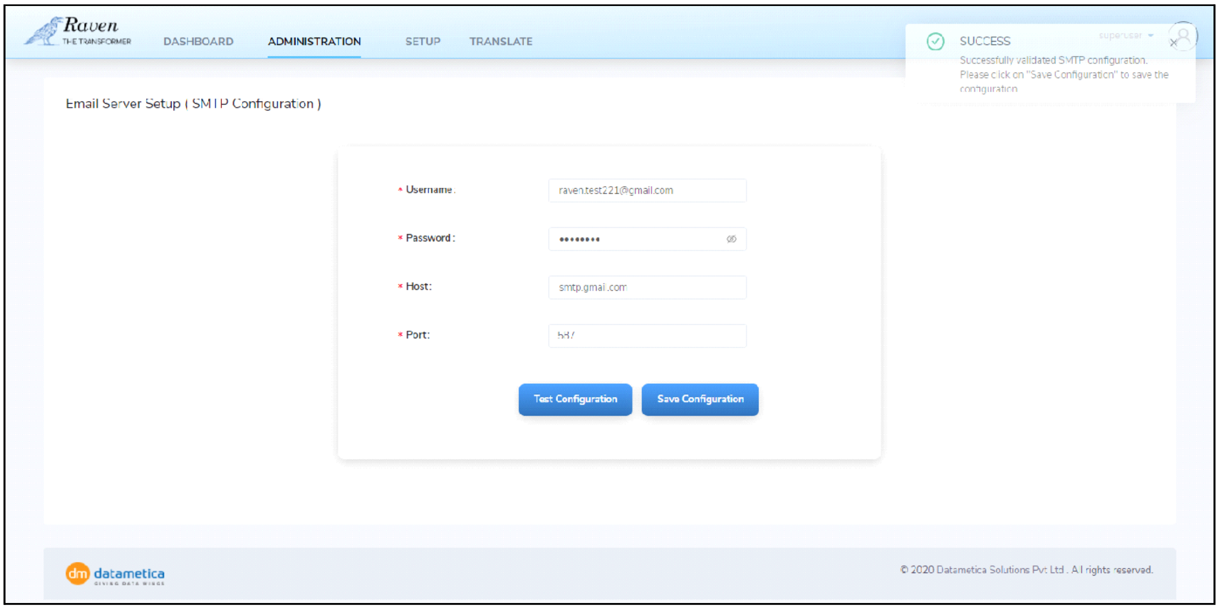

SUCCESS

Successfully validated SMTP configuration. Please click on "Save Configuration" to save the configuration.

Email Server Setup (SMTP Configuration)

* Username:	raven.test221@gmail.com
* Password:	••••••••
* Host:	smtp.gmail.com
* Port:	587

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5. Click on **Save Configuration**.

3.2. User Management

User Management allows superusers to manage all the user activities. In this application to carry out the translation process, two roles are defined.

Superuser -

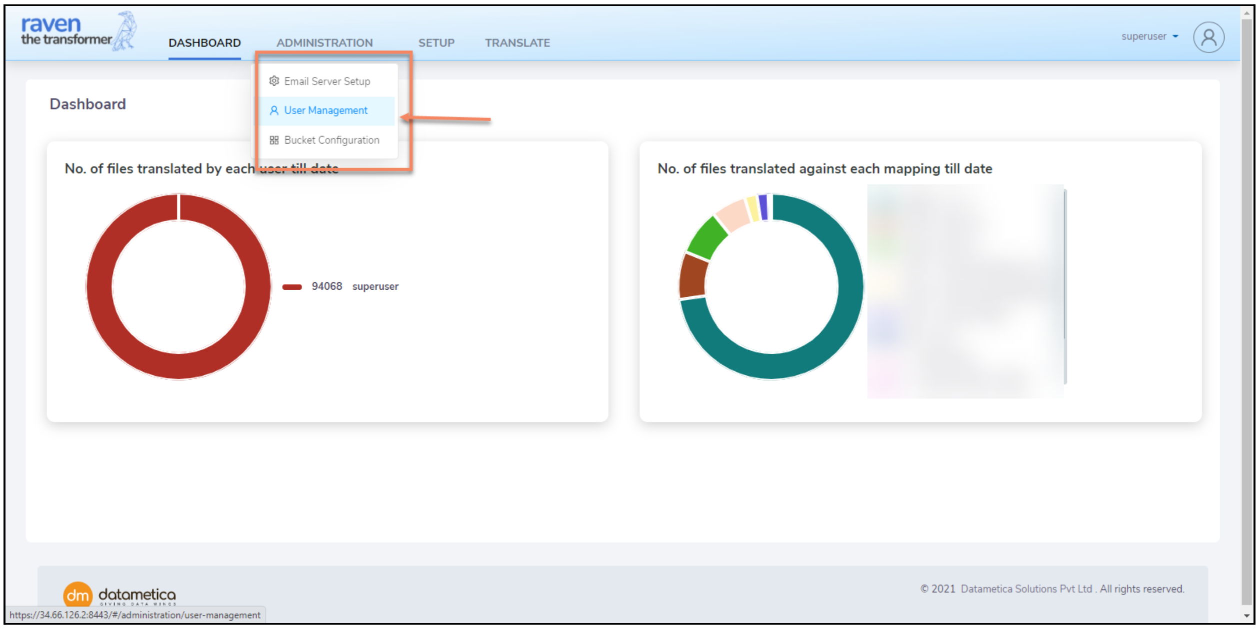
1. Superuser is the one who Logins first time to the system.
2. Superuse has the authority to add new users and can assign them a role as a superuser or translator.
3. Superusers are responsible for creating directory and manage users (add, delete, reset passwords)

Translator -

1. Translators have limited access to the system and they are only permitted to do a translation of the scripts.

Administration Screen -

Administration -> User Management -> User list



Dashboard

No. of files translated by each user till date

No. of files translated against each mapping till date

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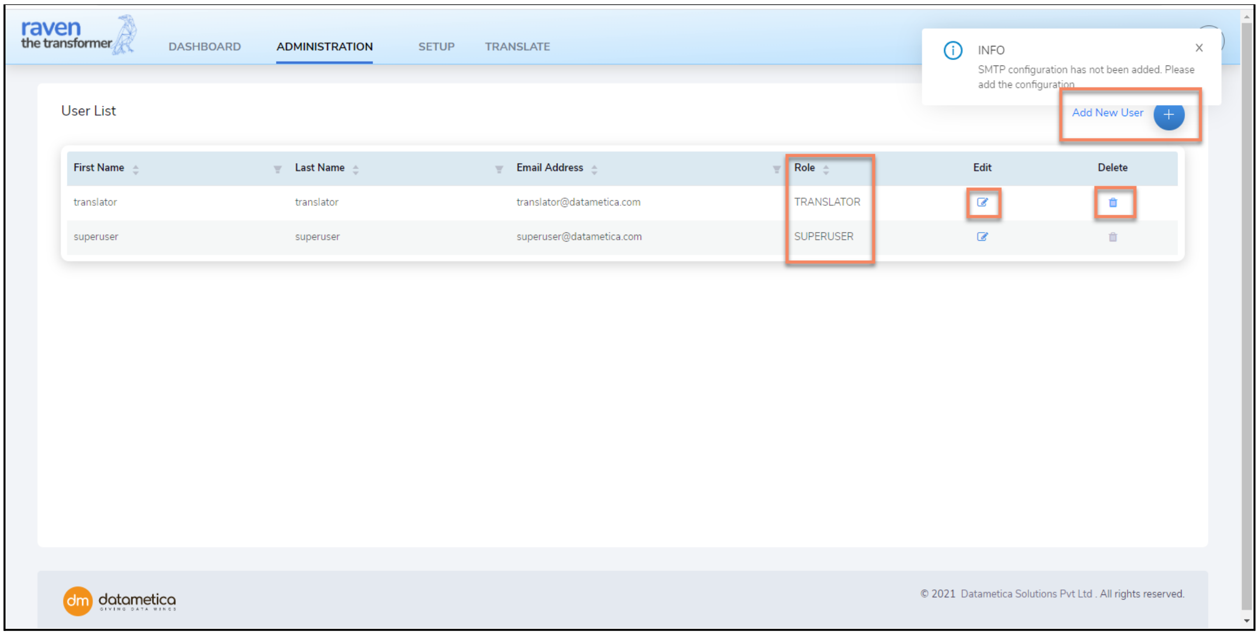
https://34.66.126.2:8443/#/administration/user-management



INFO
SMTP configuration has not been added. Please add the configuration

User List

First Name	Last Name	Email Address	Role	Edit	Delete
translator	translator	translator@datametica.com	TRANSLATOR		
superuser	superuser	superuser@datametica.com	SUPERUSER		

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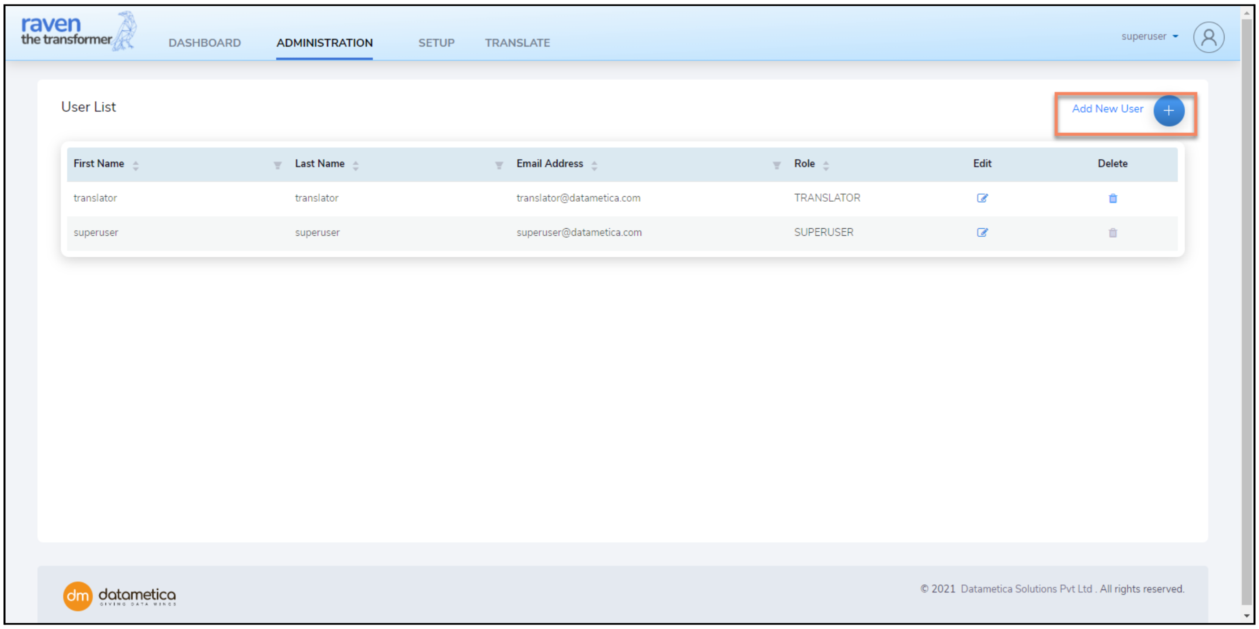
3.2.1. Add user

To add new user -

- Administration -> User Management -> Add new user (right top corner)



User List

First Name	Last Name	Email Address	Role	Edit	Delete
translator	translator	translator@datametica.com	TRANSLATOR		
superuser	superuser	superuser@datametica.com	SUPERUSER		

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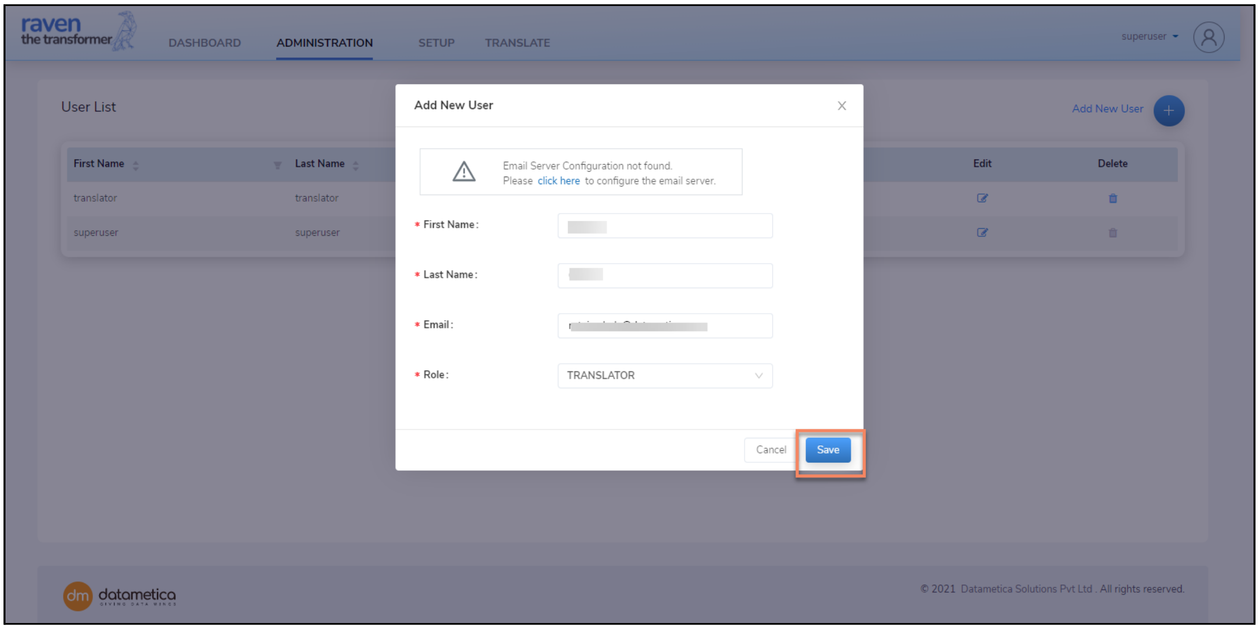


Add New User

Email Server Configuration not found.
Please click here to configure the email server.

- First Name: [redacted]
- Last Name: [redacted]
- Email: [redacted]
- Role: TRANSLATOR

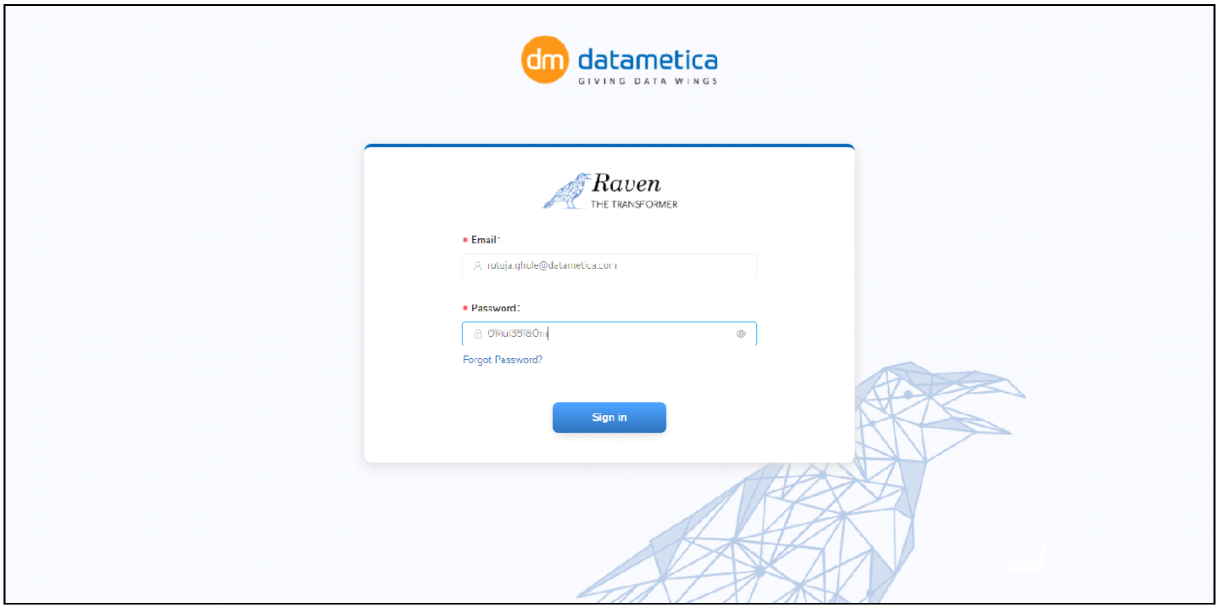
1. In Add New User form **enter First Name, Last Name, Email Id, and select Role.**
2. Click on **Save**.
3. To view a list of users click Administration -> User Management -> User List**,** You can see the updated list of users.

3.2.2. Change the password for new user

To reset the password for newly created users. Follow the given steps -

1. Open the **system generated Raven Password email**.

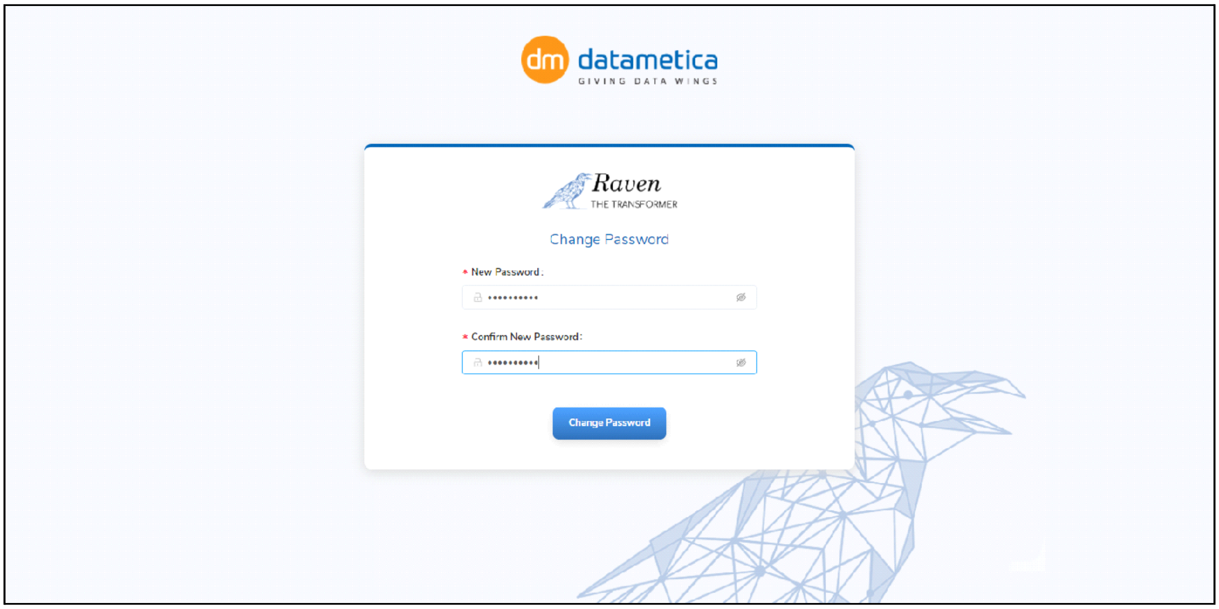
2. Go to Login screen
3. Select the password and enter the **same password on the login screen** along with the **email id**.



* Email: rutuja.ghule@datametica.com

* Password: 0M[redacted]&Om

4. Click on Sign in.
5. On the Change **Password screen**, enter New Password and Confirm New Password.



* New Password: ••••••••••

* Confirm New Password: ••••••••••

6. Click on **Change Password.**

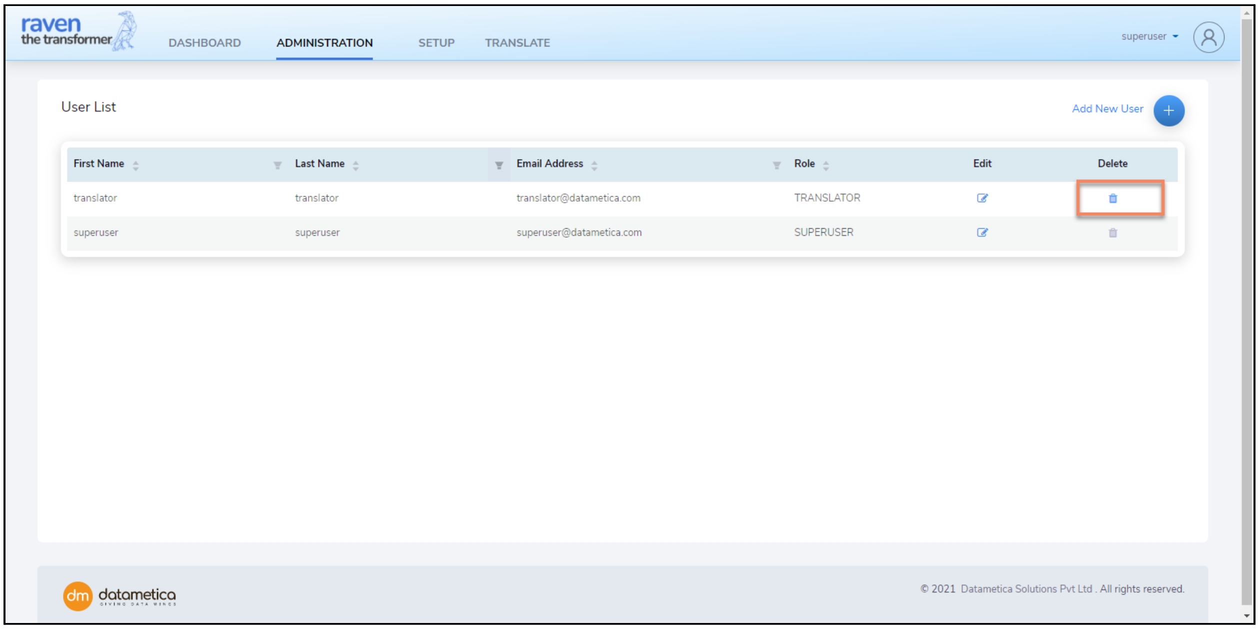
Your password is **successfully updated.**

3.2.3. Delete user

To delete user,

1. Administration -> User Management -> User list -> click on the delete icon displayed in front of the user
2. The new pop up window is displayed to verify the deletion of the user. Click on Yes.

Note: Once you delete any user the batches created by that user will be deleted.



User List

First Name	Last Name	Email Address	Role	Edit	Delete
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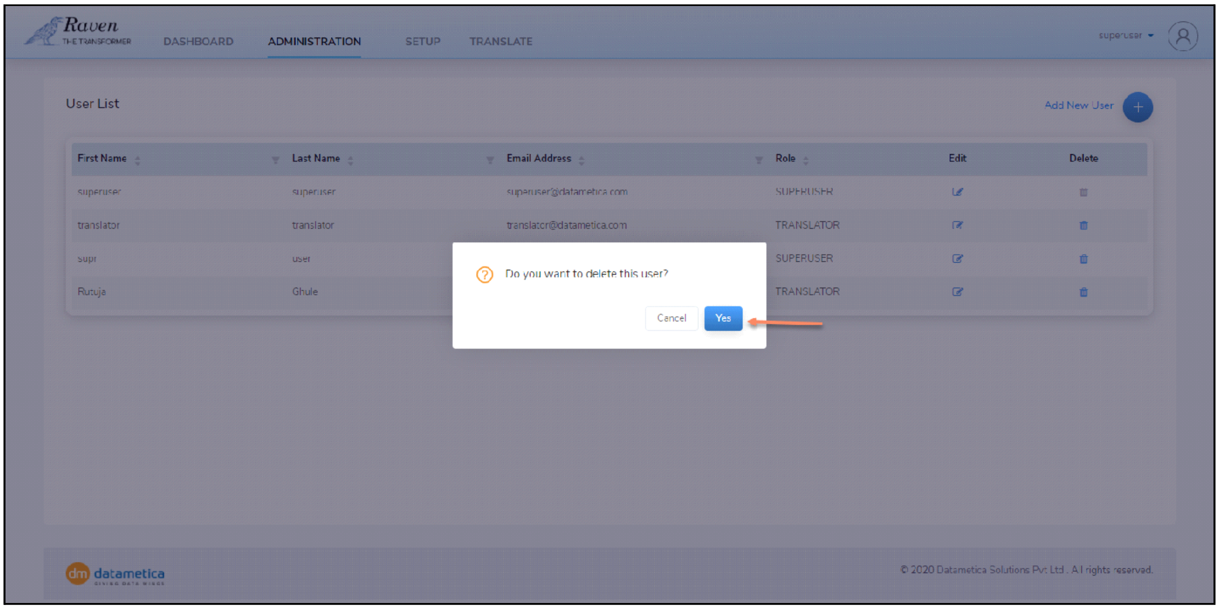
superuser	superuser	superuser@datametica.com	SUPERUSER	✎	🗑



User List

First Name	Last Name	Email Address	Role	Edit	Delete
superuser	superuser	superuser@datametica.com	SUPERUSER	✎	🗑
translator	translator	translator@datametica.com	TRANSLATOR	✎	🗑
supr	user		SUPERUSER	✎	🗑
Rutuja	Ghule		TRANSLATOR	✎	🗑

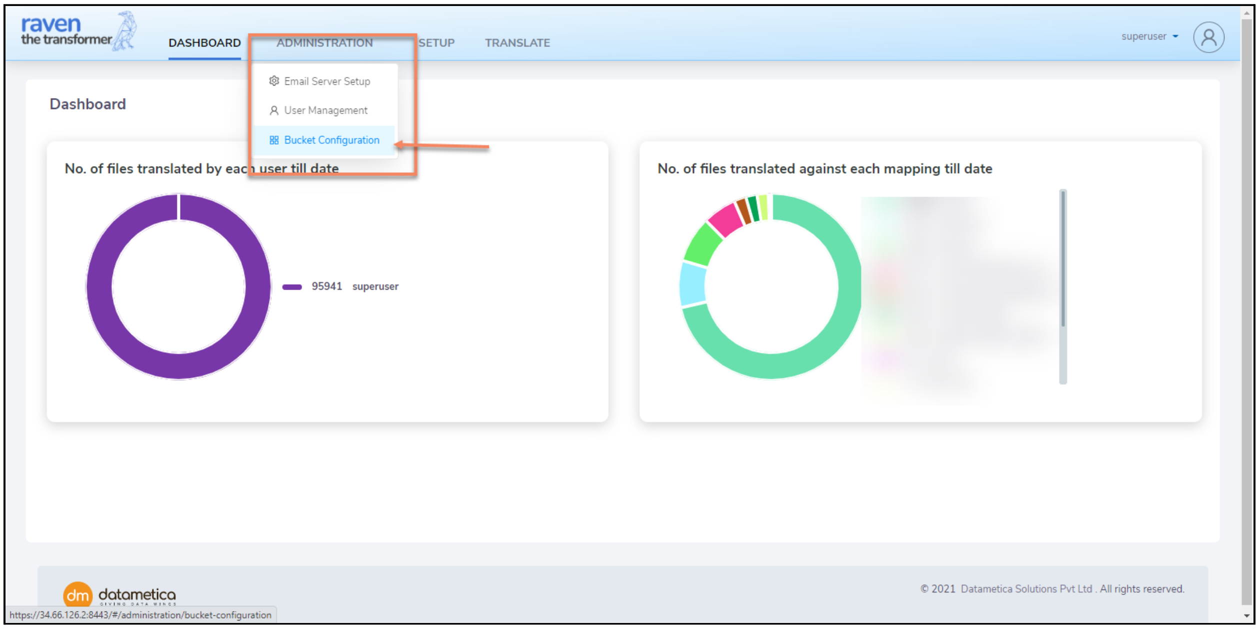
Do you want to delete this user?

3.3. Bucket Configuration

Why **Bucket configuration?**

Since Raven is a container-based application, it requires access to a bucket to persist dictionaries and translation batches across pods or to retain these files after server/pod restart. This is recommended but optional. If not done, then users will need to upload the dictionary every time after application restart.

1. Go to **Administration -> Bucket configuration**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95941 superuser
No. of files translated against each mapping till date
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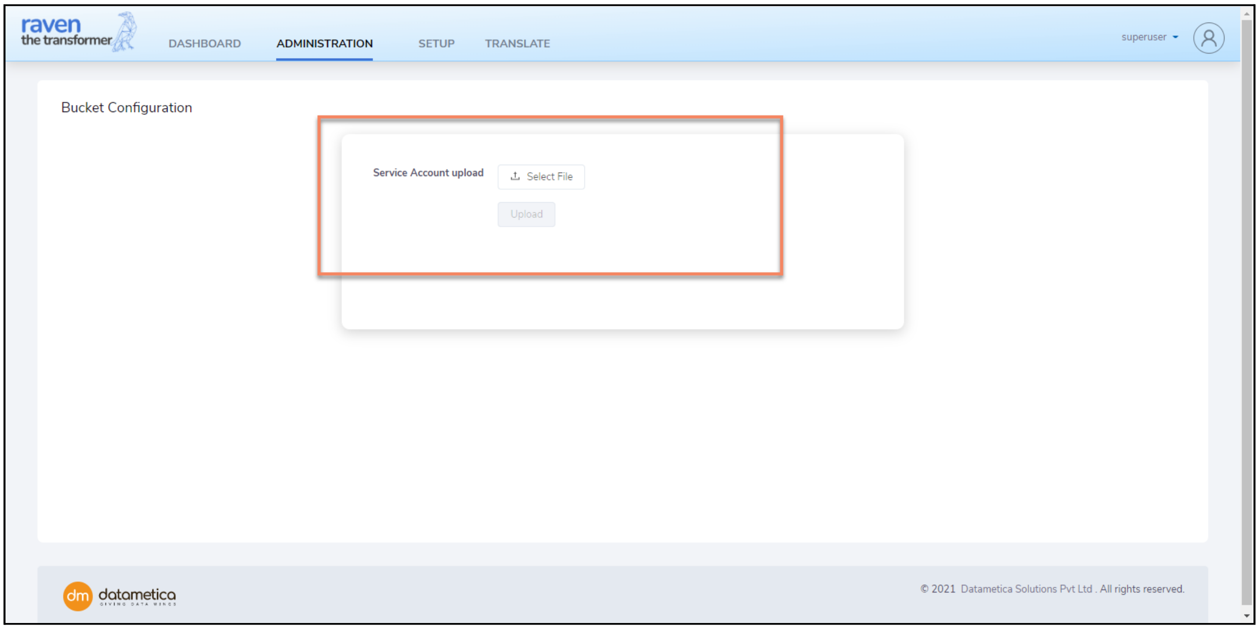
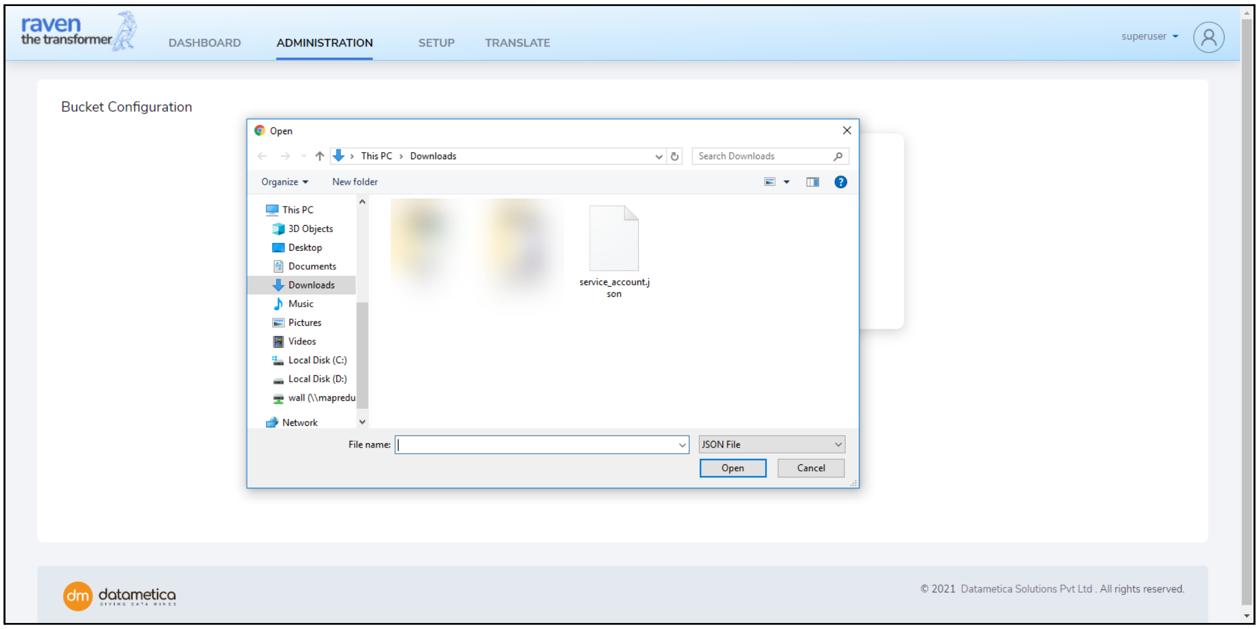
https://34.66.126.2:8443/#/administration/bucket-configuration

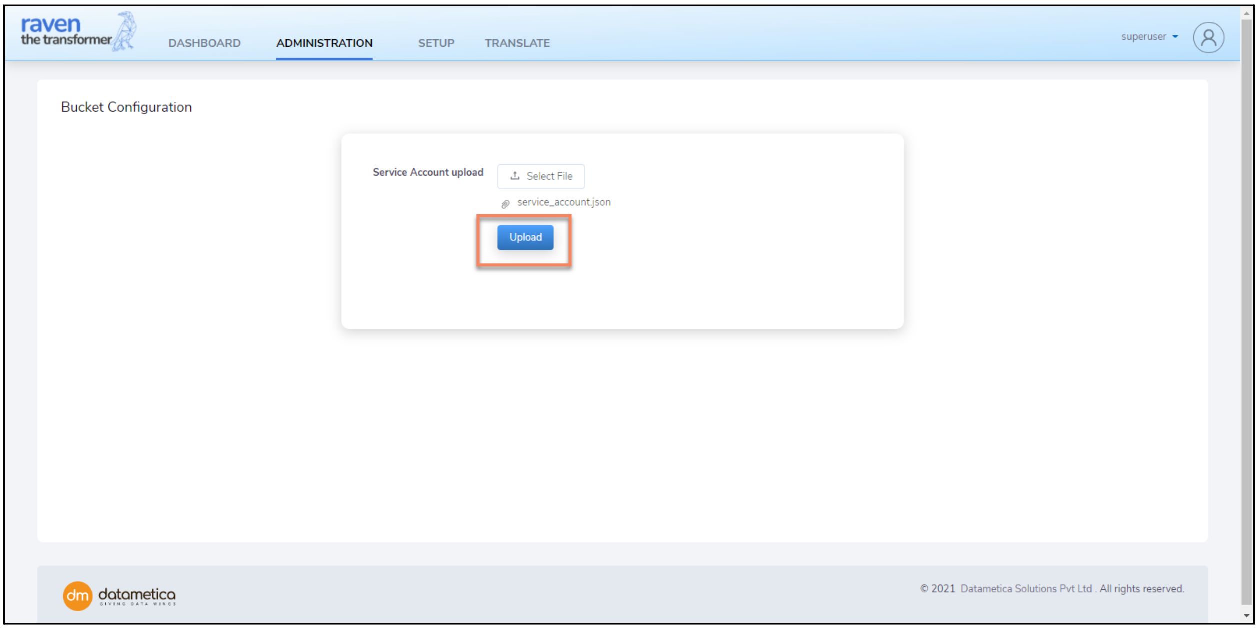
The services account JSON file has, write access to the bucket mentioned while launching the application. Hence, upload the services account JSON file.



2. Upload service.JASO file.



3. Click on the Upload button.



Bucket Configuration

Service Account upload

service_account.json

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4. Equivalence File User Guide

This section let you know details about the equivalence file.

- Pre-translation, users can change the database name, schema name, table name, and column name of the target product.
- Source product system tables can be supported by mapping them with target product system tables.
- The naming scheme of the target system can change due to which table/view/column name changed. To handle such scenarios we use an equivalence file.
- As per Teradata to BQ Migration guidelines, a database in Teradata is equivalent to a dataset in BigQuery.
- If any customer requires a variation in it, then an equivalence file can be used for this purpose.

4.1. DB Sheet

This sheet is used to map the source SQL product to the target SQL product.

SourceDB - type of the source data warehouse. For e.g. Teradata,

TargetDB - name of the target data warehouse. For e.g BigQuery.

TERADATA

SourceDB	TargetDB
teradata	big_query

4.2. Entity Equivalence Sheet

This sheet is used to map the source product entity(table, view, etc...) name with the target product entity name.

- **Product** - name of the source/target SQL language.For e.g.teradata,bigquery
- **Database** - name of the source/target Database. For e.g. DEFAULTDATABASE
- **Schema** - name of the source/target Schema.For e.g. FOODMART
- **Name** - name of the source/target Entity. For e.g. employee

Let us consider an example user who wants to translate Teradata sql to bigquery sql. Details are given as below for teradata and bigquery .

TERADATA

- Product : teradata
- Schema : foodmart
- Database : DEFAULTDATABASE
- Name : trimmed_employee (name of the table or view in teradata)

BIGQUERY

- Product : big_query
- Schema : foodmart
- Database : dm-eagle(Bq_Project_Id)
- Name : trimmed_employee(name of the table or view you want in bigquery)

So Entity sheet will look like

TERADATA

product	database	schema	name		product	database	schema	name
teradata	DEFAULTDATABASE	foodmart	trimmed_employee		big_query	dm-eagle	foodmart	trimmed_empoyee

4.3. Schema Override Sheet

This sheet is used to map the source product schema name with the target product schema name.

- **Product** - name of the source/target SQL language.
- **Database** - name of the source/target Database.
- **Schema** - name of the source/target Schema.

Let us consider an example user who wants to translate teradata to bigquery sql. Details are given as below for teradata and bigquery .

TERADATA

- Product : teradata
- Schema : foodmart
- Database : defaultdatabase

BIGQUERY

- Product : big_query
- Schema :

  Product(Teradata)

  Schema = foodmart (schema)
- Database : dm-eagle (Bq_Project_Id)abase)

Database : dm-eagle (Bq_Project_Id)

So, schema override sheet will look like this for -

TERADATA

product	database	schema			product	database	schema
teradata	defaultdatabase	foodmart			big_query	dm-eagle	foodmart

4.4. Database Override Sheet

This sheet is used to map the source product database name with the target product database name.

- Product - name of the source/target SQL language.
- Database - name of the source/target Database.

Let us consider an example user who wants to translate teradata sql to bigquery sql. Details are given as below for teradata, and bigquery .

TERADATA

- Product : teradata
- Database : defaultdatabase

BIGQUERY

- Product : big_query
- Database : dm-eagle (Bq_Project_Id)

So database Override sheet will look like this for

TERADATA

product	database				product	database
teradata	defaultdatabase				big_query	dm-eagle

4.5. Column Override Sheet

This sheet is used to map the source product column name with the target product column name.

- **Product -** name of the source/target SQL language.
- **Database -** name of the source/target Database.
- **Schema -** name of the source/target Schema.
- **Name -** name of the source/target Entity(table, view, etc.).
- **Column -** name of the source/target column.

Let us consider an example user who wants to translate teradata or netezza sql to bigquery sql. Details are given as below for teradata and bigquery .

TERADATA

- Product : teradata
- Schema : foodmart
- Database : DEFAULTDATABASE
- Name : employee (name of the table or view in teradata)
- Column : first_name

BIGQUERY

- Product : big_query
- Schema : foodmart
- Database : dm-eagle (Bq_Project_Id)
- Name :migrated_employee (name of the table or view you want in bigquery)
- Column : migrated_fname (teradata)

So Entity Equivalence sheet will look like

Note:- Here table name is employee,Employee in teradata and we want to map it to migrated_employee on big_query .

So column Override entry will look like this for

TERADATA

product	database	schema	name	Column	product	database	schema	name	column
teradata	defaultdatabase	foodmart	employee	fisrt_name	big_query	dm-eagle	foodmart	migrated_employee	migrated_fname

4.6. Netezza Metadata Extraction

4.6.1. OBJECTIVE

In order to perform the Raven translation, metadata will be collected from the system. The Utility to extract the metadata from Netezza system will be made available through a link to accessible location which will be shared separately. The location contains 'Extraction Utility (Release Folder).zip'

Download the Zip file to obtain this runbook and folder 'Netezza(V3)_28072020' that contains following files:

- metadata_extraction.jar [Executable]
- Metadata_Prop [Metadata Properties folder]
- Query_Prop [Query Properties Folder]
- schema-files [Schema files for tables to be extracted]

The extracted files 'Netezza_tables.properties' which are in the folders 'Metadata_Prop' and 'Query_Prop' will need to be updated with environment details for extraction. The other file, which is executable, needs to be run on a Linux/Windows system. Please refer to section 3 for step by step instructions on performing above activities, section 2 contains the extraction pre-requisites

4.6.2. PREREQUISITE

4.6.2.1. Version and configuration

As a prerequisite for providing the extraction utility Datametica would need to know the Netezza version and configurations for capturing the activity log. Queries to get these information have been provided below:

- Identifying the version of Netezza
  'SELECT SYSTEM_SOTWARE_VERSION FROM _V_SYSTEM_INFO'
- Identifying the logging configurations
  'SHOW HISTORY CONFIGURATION'
  The query yields following outputs that need to be shared with Datametica over email
  1. HISTTYPE(history type): *query/audit (whether this is query or audit)*
  2. VERSION(version of histdb and configuration): 1,2 or 3 (which version is configured for history configuration and history database)
  3. COLLECT: plan, column or table or query (type of collection plan which is used)
- Identifying the Case configurations
  nzsql -c "select identifier_case"

The extraction utility would be provided based on the versions identified from the above two queries. In this version of the extraction runbook, the information in the Data Prerequisites section has been provided for history database version 3 which is latest. If the version is lower a revised document would be provided along with the extraction utility JAR.

4.6.2.2. Technical prerequisites

- Linux/Windows server with connectivity to Netezza having good bandwidth
- Java 8 Installation
- Sufficient storage for the extracted data. (approximately 1-3 GB)
- Mechanism to upload the data to Cloud e.g. Google Cloud Storage
- Netezza access details, e.g. host/port/username/password

4.6.2.3. Data Prerequisites

- Metadata and log for all the tables and columns should be made available for all EDW layers (stage, transform, semantic, reporting, etc.)

- Access to the following metadata tables for data extraction needs to be provided:
    - _v_database
    - _v_table
    - _v_view
    - _v_relation_column
    - _v_procedure
    - _v_synonym
    - _v_extobject_xdb
    - _v_jdbc_indexinfo1
    - _v_obj_relation_xdb
    - _v_sys_columns
    - $v_hist_queries
    - $hist_query_prolog_$version
    - $hist_query_overflow_$version
    - $hist_session_prolog_$version
    - $v_hist_table_access_stats
    - $v_hist_column_access_stats
    - $hist_plan_prolog_$version

1. 4.6.3. EXECUTION STEPS

1) Unzip the file “Netezza_Extraction_Utility” and copy it to the location where meta-data is to be extracted (Referred as “extraction_home” moving ahead)

2) Extracted folder will have:
    a) metadata_extraction.jar
    b) Two folders for property file, both of these folders will have one property file each. These folders and corresponding file are:
        i) Metadata_Prop
            - Netezza_tables.properties (for 10 metadata tables)
        ii) Query_Prop
            - Netezza_tables.properties (for 7 log data tables)
    c) Schema-files

PROPERTY FILE CONFIGURATION - 3(a) & 3(b) are for property file configurations

3) Update these Netezza_tables.properties as mentioned below:
   a) Metadata_Prop > Netezza_tables.properties (for 9 metadata tables)
      i) URL= *<Connection URL for Netezza>*
      ii) DATABASE_USERNAME=*<Credential for connection>*
      iii) DATABASE_PASSWORD=*<Credential for connection>*
      iv) AVRO_FILE_OUTPUT_DIR=MetadataOutputDir
      v) LIST_OF_DATABASES=*<TEST1, TEST2, TEST3>**

      ** These are comma separated database names that are a part of assessment scope*

   b) Query_Prop > Netezza_tables.properties (for 7 log tables)
      i) URL= *<Connection URL for Netezza>/<histdb_name>*
      ii) DATABASE_USERNAME=*<Credential for connection>*
      iii) DATABASE_PASSWORD=*<Credential for connection>*
      iv) AVRO_FILE_OUTPUT_DIR=HistOutputDir
      v) LIST_OF_DATABASES=*<histdb>***

*** This configuration is by default commented and only used when there are more than one history databases. To use this, at line (i) use connection url without <histdb_name>, uncomment line (v) and add comma separated history storage database names that capture activity logs* *vi)* The property file has options to filter four tables and fetch data from them for a defined number of days. By default utility is set to extracts data for 33 days, these conditions can be reset as per the requirements

- v_hist_queries

condition1=CAST(SUBMITTIME AS DATE) BETWEEN CURRENT_DATE - 33 AND CURRENT_DATE

- hist_query_prolog_$n

condition2=CAST(SUBMITTIME AS DATE) BETWEEN CURRENT_DATE - 33 AND CURRENT_DATE

- hist_session_prolog_$n

condition4=CAST(CONNECTTIME AS DATE) BETWEEN CURRENT_DATE - 33 AND CURRENT_DATE

- hist_plan_prolog_$n

condition7=CAST(SUBMITTIME AS DATE) BETWEEN CURRENT_DATE - 33 AND CURRENT_DATE

4) Once the property configurations are done, open a command prompt and navigate to the <extraction_home> (folder where the extracted folder is placed)
5) Copy the Netezza_tables.properties file which was updated in step 3(a) from Metadata_Prop folder and place it on <extraction_home>
6) Execute the below command: java -jar metadata_extraction.jar Netezza
7) When the extraction is done, extraction_home directory will have a new file and new folder with files in it:
   a) New File: Extraction_logs
   b) New Folder: MetadataOutputDir (with 10 Avro files in it)

Note: In case of any errors, please share the extraction logs with Datametica
On successful extraction, 'MetadataOutputDir' folders are to be zipped and shared with Datametica.

4.7. Teradata Metadata Extraction

4.7.1. OBJECTIVE

In order to perform Raven extraction, metadata will be collected from the system.

TheUtilitytoextract the metadata from Teradata system will be available on the cloud and location shared on email. On downloading Zip file named “Teradata_Extraction.zip”, please extract it to obtain the following files:

- metadata_extraction.jar [Executable]
- Teradata_tables.properties [Properties]

Once the extracted folder is available, Teradata_tables.properties needs to be updated with environment details. The executable needs to run on a Linux/Windows system. For step by step instructions on how to perform the above mentioned execution, please refer to section 2.

4.7.2. PREREQUISITE

4.7.2.1. Technical prerequisites

● Linux/Windows server with connectivity to Teradata having good
bandwidth● Java 8 Installation

● Sufficient storage for the extracted data. (100 to 500 GB)

● Mechanism to upload the data to Cloud e.g. Google Cloud Storage ●
Teradata access details, e.g. host/port/username/password

4.7.2.2. Data Prerequisites

● Metadata and log for all the tables and columns should be made available for all EDWlayers (stage, transform, semantic, reporting, etc.)

● Access to the following metadata tables for data extraction needs to be provided:

🌕 TablesV

- ColumnsV
- TableSizeV
- TVM
- TextTbl
- dbase
- IndicesV
- All_RI_ChildrenV
- PartitioningConstraintsV
- Table_LevelConstraintsV

4.7.3. EXECUTION STEPS

- Unzip the file Teradata_Extraction and copy it to the location where meta-dataistobeextracted (Referred as “extraction_home” moving ahead)
- Extracted folder will have:
    - metadata_extraction.jar
    - Teradata_tables.properties **(Please don’t make any table name changesinproperty file.)**
- Update Teradata_tables.properties as mentioned below:
    - URL= Connection URL for Teradata
        - DATABASE_USERNAME=credential for connection
        - DATABASE_PASSWORD=credential for connection
    - AVRO_FILE_OUTPUT_DIR= Extracted_Data

- Open a command prompt and navigate to the <extraction_home> (folder wheretheextracted folder is placed)
- Execute the below command:
  - java -jar metadata_extraction.jar Teradata
- Once the extraction is done, extraction_home directory will have the following new file & folder:
  - File: Extraction_logs
  - Folder: Extracted_Data
    - ■ (value of key: AVRO_FILE_OUTPUT_DIR from step 3) ■ Following folder will have all the extracted table avros:
      - (10 avros must be present)

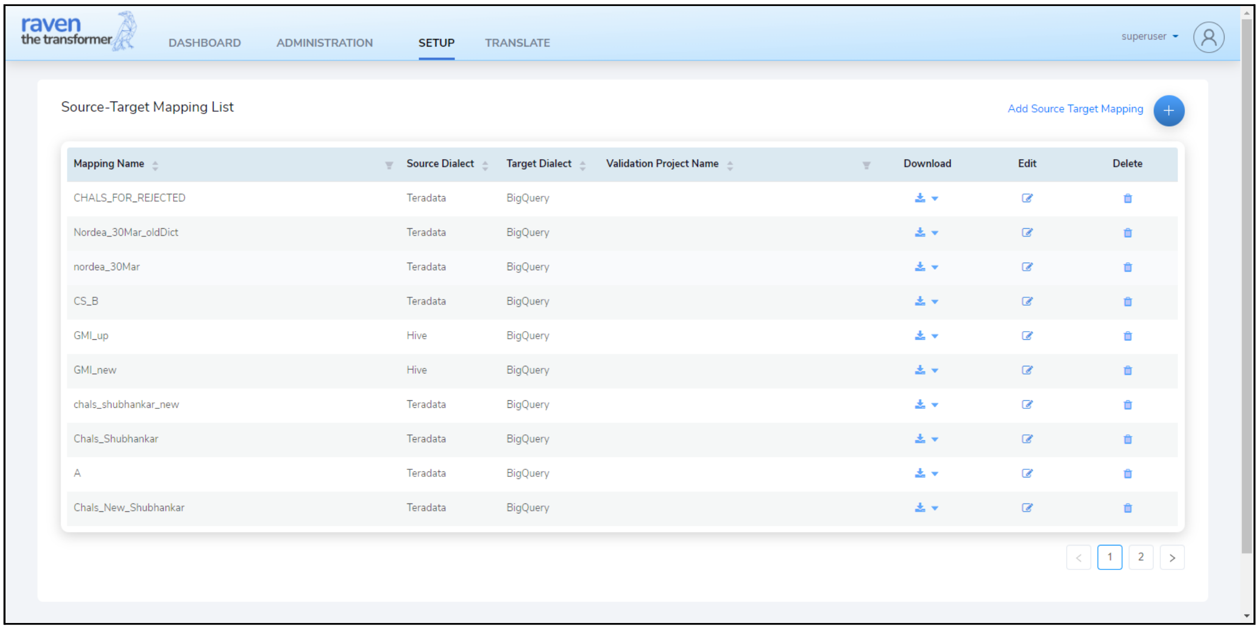
Note:

● In case of any errors, extraction logs are expected to be shared ● Zipped version of Extracted_Data folder needs to be shared with Datametica

5. Setup

In the setup, the source-target mapping is given to provide the base platform for translation of the scripts, which includes directories i.e. metadata of the source system. This allows setting up Raven workspace for validating translation queries, tables, views, columns, data types, metadata etc.

Login -> Setup

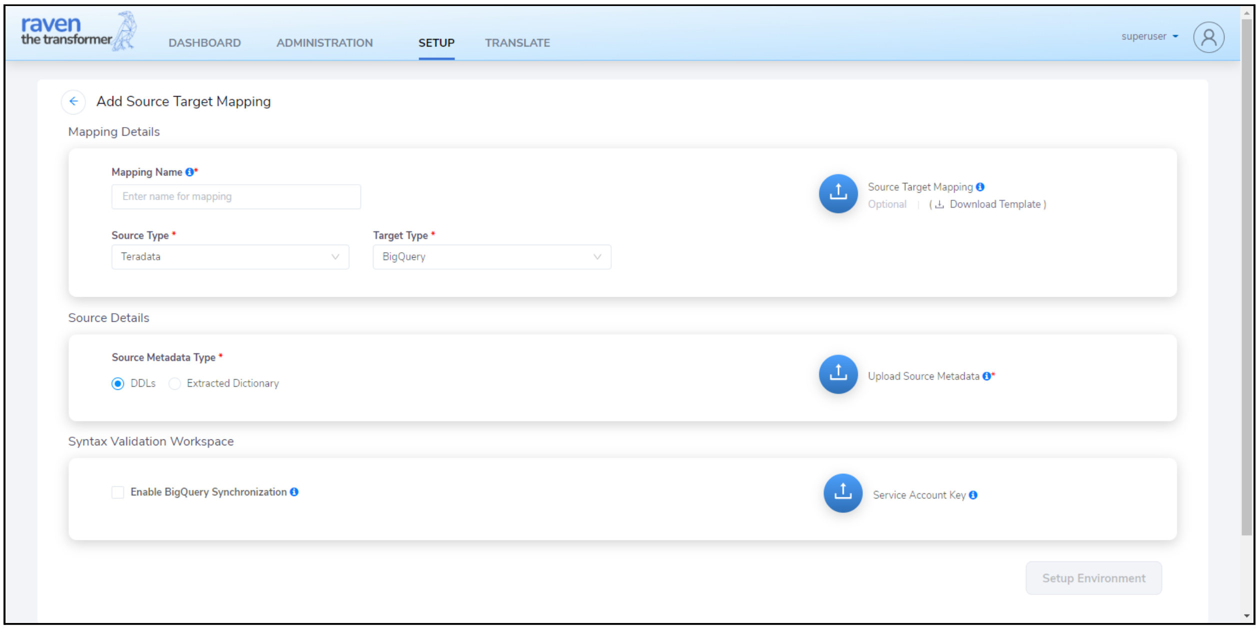


Source-Target Mapping List

Add Source Target Mapping +

Mapping Name	Source Dialect	Target Dialect	Validation Project Name	Download	Edit	Delete
CHALS_FOR_REJECTED	Teradata	BigQuery		⤓	✎	🗑
Nordea_30Mar_oldDict	Teradata	BigQuery		⤓	✎	🗑
nordea_30Mar	Teradata	BigQuery		⤓	✎	🗑
CS_B	Teradata	BigQuery		⤓	✎	🗑
GMI_up	Hive	BigQuery		⤓	✎	🗑
GMI_new	Hive	BigQuery		⤓	✎	🗑
chals_shubhankar_new	Teradata	BigQuery		⤓	✎	🗑
Chals_Shubhankar	Teradata	BigQuery		⤓	✎	🗑
A	Teradata	BigQuery		⤓	✎	🗑
Chals_New_Shubhankar	Teradata	BigQuery		⤓	✎	🗑

< 1 2 >



Add Source Target Mapping

Mapping Details

Mapping Name *
Enter name for mapping

Source Type *: Teradata

Target Type *: BigQuery

Source Target Mapping
Optional | (Download Template)

Source Details

Source Metadata Type *
● DDLs ○ Extracted Dictionary

Upload Source Metadata *

Syntax Validation Workspace

□ Enable BigQuery Synchronization

Service Account Key

Setup Environment

5.1. Adding Source Target Mapping

The Raven application helps to create a Big Query environment by validating the dictionaries for the Translation process. To set up the Source Target Mapping entities from Teradata to Big Query.

Prerequisite for the Big Query environment, to see if tables are valid to run the Translation process.

You can manage any type of Source Metadata:

1. Extracted Dictionary
2. DDLs dictionary.

If you do not have an Extracted Dictionary, then you can **upload DDLs and create runtime dictionaries**. Connect with **Datametica to receive runtime dictionary** on support email.

The Setup allows adding a new Source Target Mapping, editing or deleting an existing Source Target Mapping.

Prerequisite -

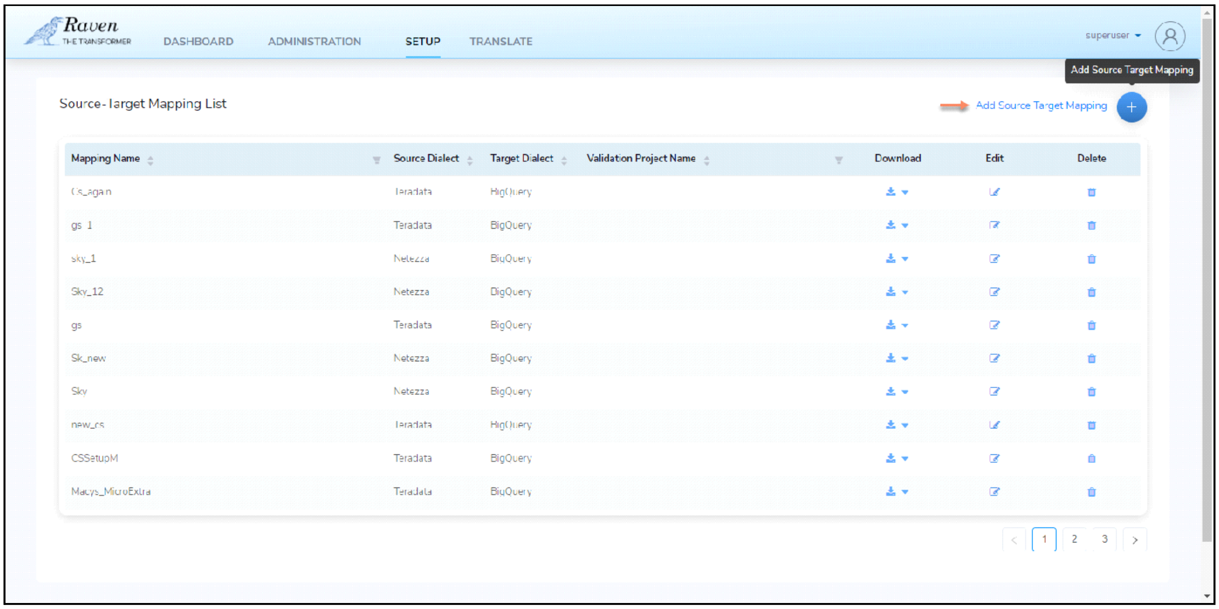
In order to perform Source Target Mapping, you need all the files mentioned in the following table.

Source Target Mapping	Source Target Mapping helps the user to translate tables, views, and columns with their equivalent names in the Target Dialect. In a scenario of using a source system, the user has an employee table, however, after translation the user wants to rename it as an employee, this can be done using this mapping file. However, uploading a Source Target Mapping file is an optional. If the user does not upload the Source Target Mapping file then all tables and views in the source are translated to Target Dialect with the same name. The same Source Target file has been created on the BigQuery.
Source Metadata	As a source metadata, you can choose, Extracted Dictionary or DDLs. . ● Extracted Dictionary is a zip file and you can upload it. Zip file contains the structure of a database and the relationship between various elements such as tables DDLs, temporary tables, columns, views DDLs, and data types of the attributes. Contact Datametica to get the dictionaries.

	● DDL in which you need to upload the file which contains the DDL statements. Here, Raven automatically creates the Metadata file against the provided DDL.
Service Account Key	Service Account Key contains the connection details such as Private Key to access Target Dialect, Project ID, etc. Service Account Key file helps to establish the BigQuery connection on the cloud. Once the Target Dialect (BigQuery) connection is established, the Raven validates the converted code in the BigQuery environment.

Steps :-

- Follow login steps as mentioned in Getting Started.
- Click on Setup menu. After clicking setup menu you will get Source-Target Mapping List screen.
- To add new Source target mapping, Click on **Add Source Target Mapping**



Source-Target Mapping List

Mapping Name	Source Dialect	Target Dialect	Validation Project Name	Download	Edit	Delete
Cs_again	Teradata	BigQuery		⬇ ▾	✎	🗑
gs_1	Teradata	BigQuery		⬇ ▾	✎	🗑
sky_1	Netezza	BigQuery		⬇ ▾	✎	🗑
Sky_12	Netezza	BigQuery		⬇ ▾	✎	🗑
gs	Teradata	BigQuery		⬇ ▾	✎	🗑
Sk_new	Netezza	BigQuery		⬇ ▾	✎	🗑
Sky	Netezza	BigQuery		⬇ ▾	✎	🗑
new_cs	Teradata	BigQuery		⬇ ▾	✎	🗑
CSSetupM	Teradata	BigQuery		⬇ ▾	✎	🗑
Macys_MicroExtra	Teradata	BigQuery		⬇ ▾	✎	🗑

- In the Mapping Details section, Enter **Mapping Name**, and download or upload the **sample template** for the Source Target Mapping File. It is an optional task.

Field Description

Mapping details

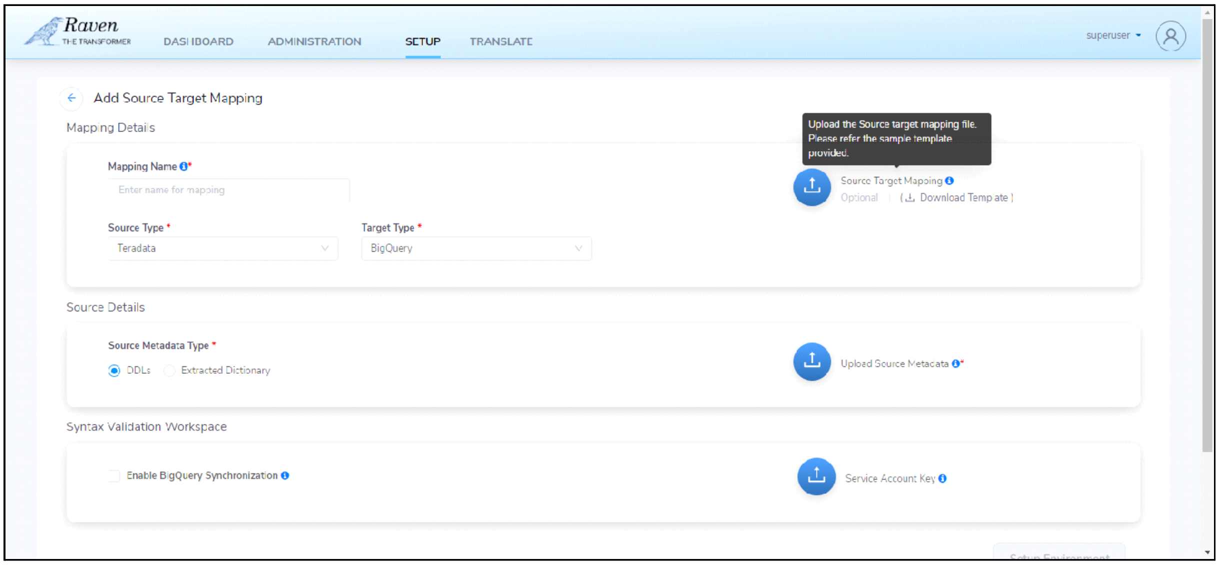
Mapping name -> Enter the Mapping Name, they have to be in alphanumeric format.

- In the Source Details section, select Source Type e.g. Teradata, and Source Metadata Type e.g. DDLs or Extracted Dictionary. Additionally, upload the Source Metadata file and this is a zip file containing DDL files for preparing the Dictionary.

Source details

Source Type - > Select the Source Type from the drop-down list from either of the options Teradata

Source Metadata Type -> Select the Source Metadata Type from the drop-down list from either of the options DDLs or Extracted Dictionary.



Add Source Target Mapping

Mapping Details

Mapping Name *
Enter name for mapping

Source Type * Teradata

Target Type * BigQuery

Upload the Source target mapping file. Please refer the sample template provided.

Source Target Mapping
Optional | (Download Template)

Source Details

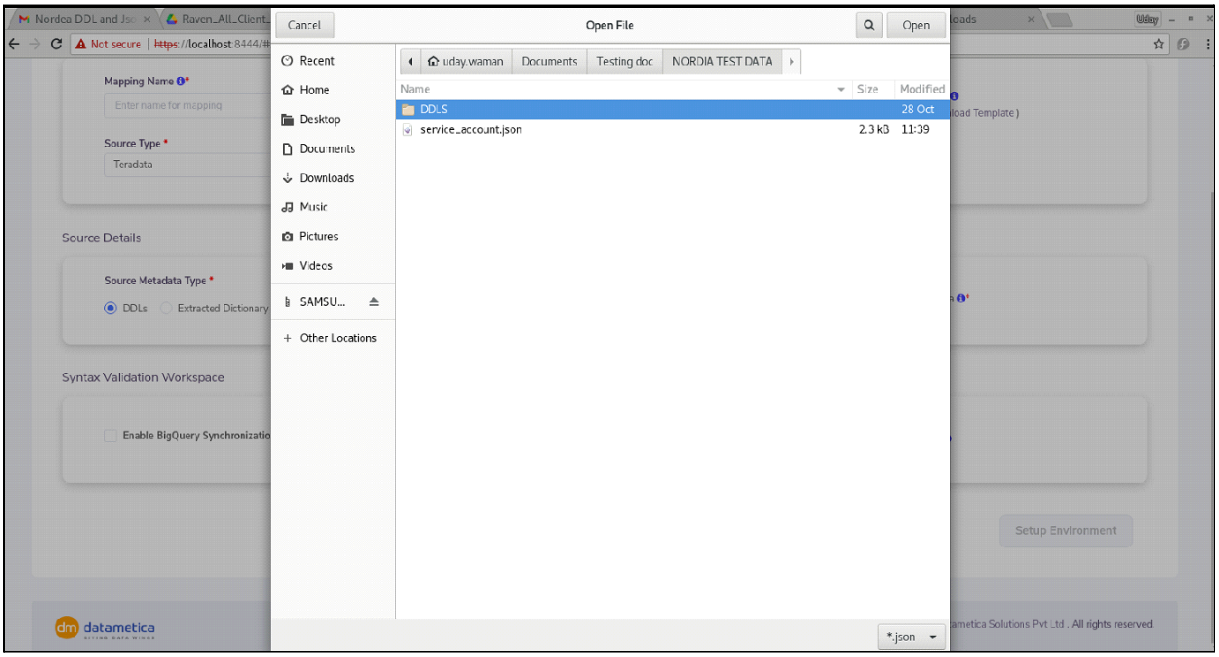
Source Metadata Type *
● DDLs ○ Extracted Dictionary

Upload Source Metadata *

Syntax Validation Workspace

□ Enable BigQuery Synchronization

Service Account Key



Mapping Name
Enter name for mapping
Source Type *
Teradata
Source Details
Source Metadata Type *
● DDLs ○ Extracted Dictionary
Syntax Validation Workspace
□ Enable BigQuery Synchronizatio

Name	Size	Modified
DDLS		28 Oct
service_account.json	2.3 kB	11:39

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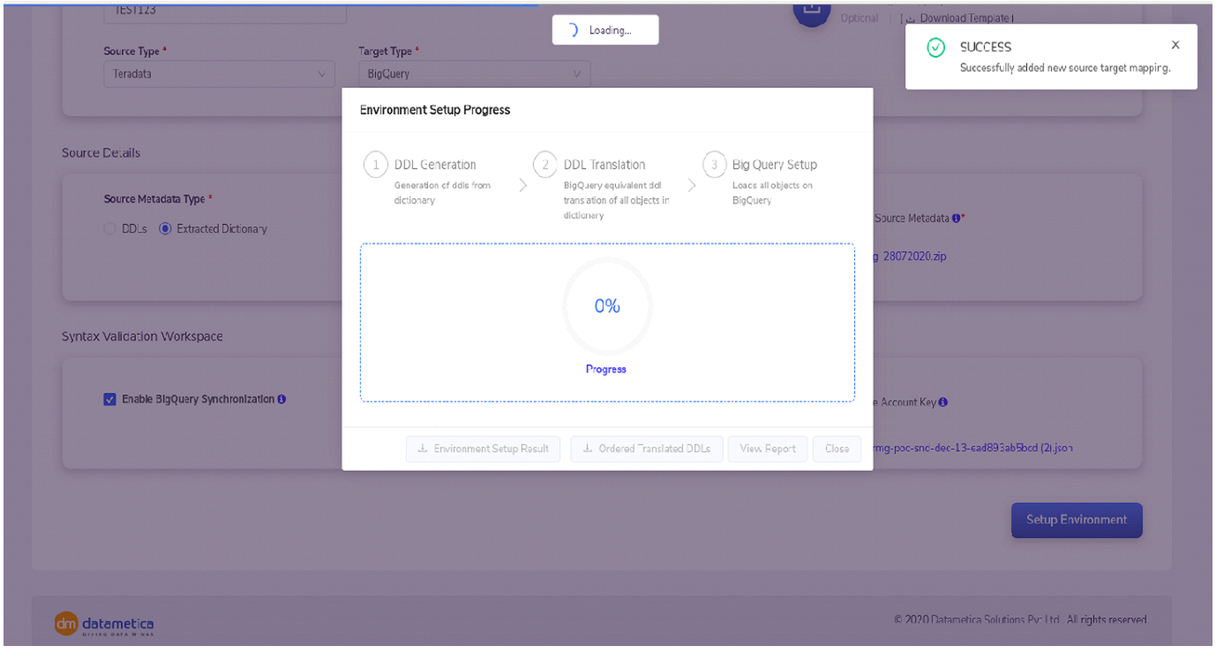
5. In the Syntax Validation Workspace. Upload **Service Account Key**. The Service Account Key is the service account JSON file to access the provided Test Project Name.

Syntax Validation workspace -

Enable BigQuery Synchronization



TEST123
Source Type *
Teradata
Target Type *
BigQuery

SUCCESS
Successfully added new source target mapping.

Environment Setup Progress

1 DDL Generation — Generation of ddls from dictionary
2 DDL Translation — BigQuery equivalent ddl translation of all objects in dictionary
3 Big Query Setup — Loads all objects on BigQuery

0%

Source Details
Source Metadata Type *
○ DDLs ● Extracted Dictionary
Source Metadata *
g 28072020.zip
Syntax Validation Workspace
☑ Enable BigQuery Synchronization
e Account Key
rmg-poc-snc-dec-13-ead893ab5bcd (2).json

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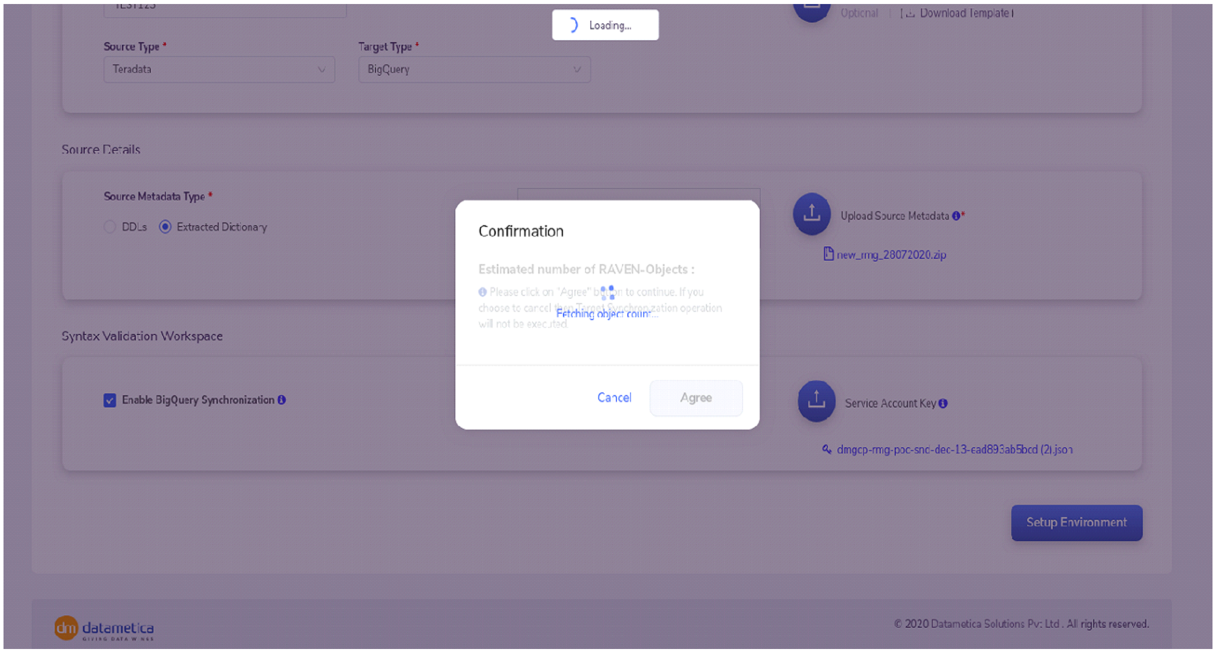
6. Click on **Setup Environment.**


Loading...
Optional | Download Template
Source Type *
Teradata
Target Type *
BigQuery
Source Details
Source Metadata Type *
○ DDLs ● Extracted Dictionary
Upload Source Metadata *
new_rmg_28072020.zip
Syntax Validation Workspace
☑ Enable BigQuery Synchronization
Service Account Key
dmgcp-rmg-poc-snd-dec-13-ead893ab5bcd (2).json
Setup Environment
datametica
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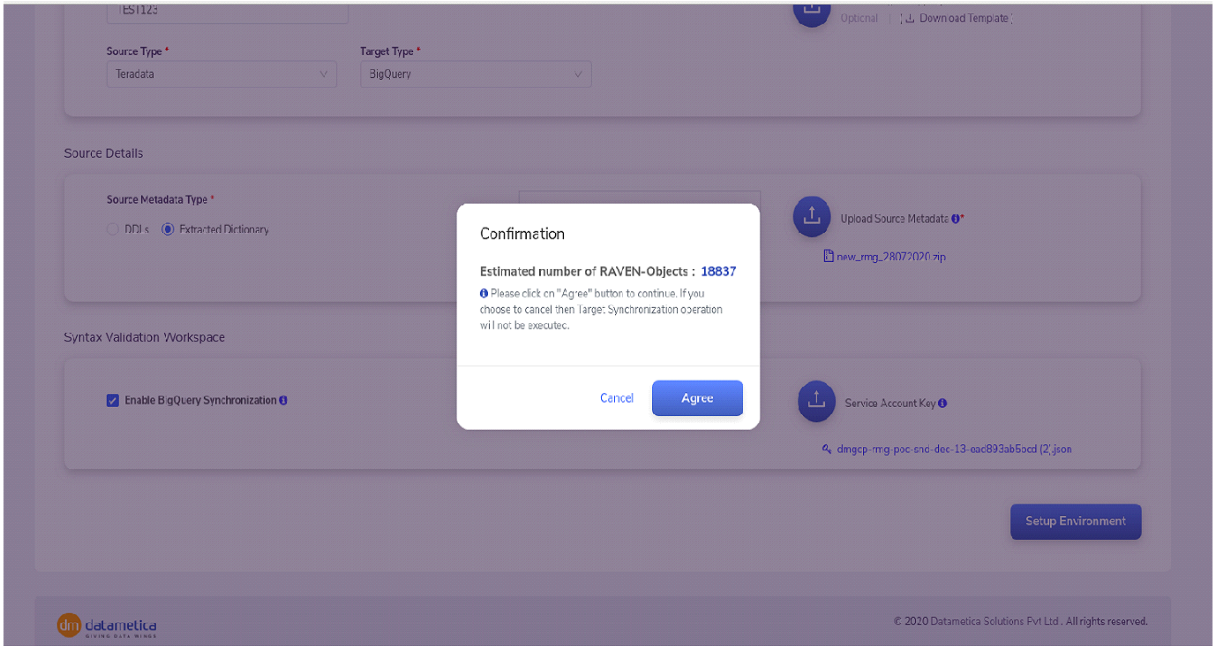
Confirmation

Estimated number of RAVEN-Objects :

Fetching object count

Please click on "Agree" button to continue. If you choose to cancel then Target Synchronization operation will not be executed


Optional | Download Template
Source Type *
Teradata
Target Type *
BigQuery
Source Details
Source Metadata Type *
○ DDLs ● Extracted Dictionary
Upload Source Metadata *
new_rmg_28072020.zip
Syntax Validation Workspace
☑ Enable BigQuery Synchronization
Service Account Key
dmgcp-rmg-poc-snd-dec-13-ead893ab5bcd (2).json
Setup Environment
datametica
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Confirmation

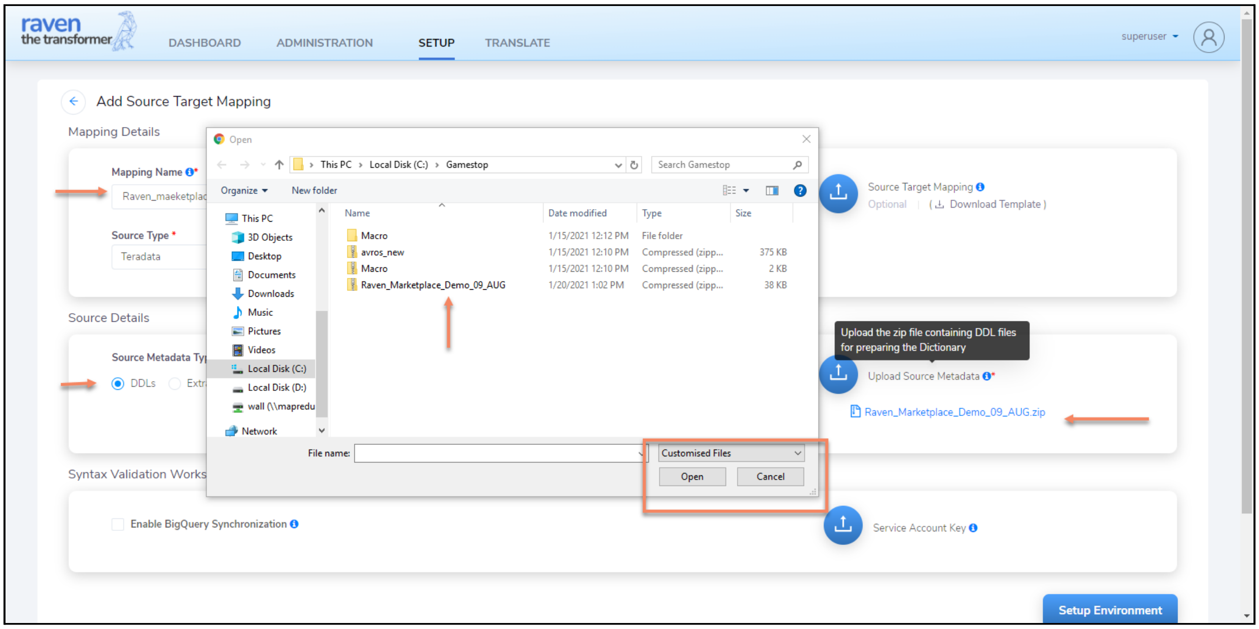
Estimated number of RAVEN-Objects : 18837

Please click on "Agree" button to continue. If you choose to cancel then Target Synchronization operation will not be executed.

5.2. Environment Setup Progress

This progress involves all three processes to accomplish the Setup Environment.

1. **Dictionary Creation:** The dictionaries are created which can be used in the translation.
2. **DDL Translation**: DDL Translation validates the translated query into the BigQuery.
3. **Big Query Setup:** After dictionary creation and DDL translation all the script files are validated so that they can be used for Translation.



Add Source Target Mapping

Mapping Details

Mapping Name * : Raven_maeketplac

Source Type * : Teradata

Source Target Mapping — Optional | (Download Template)

Source Details

Source Metadata Ty — ● DDLs ○ Extr

Upload the zip file containing DDL files for preparing the Dictionary

Upload Source Metadata * — Raven_Marketplace_Demo_09_AUG.zip

Syntax Validation Works

□ Enable BigQuery Synchronization

Service Account Key

This PC > Local Disk (C:) > Gamestop

Name	Date modified	Type	Size
Macro	1/15/2021 12:12 PM	File folder	
avros_new	1/15/2021 12:10 PM	Compressed (zipp...	375 KB
Macro	1/15/2021 12:10 PM	Compressed (zipp...	2 KB
Raven_Marketplace_Demo_09_AUG	1/20/2021 1:02 PM	Compressed (zipp...	38 KB

File name: — Customised Files

5.3. Environment Setup Progress

This progress involves all three processes to accomplish the Setup Environment.

1. **Dictionary Creation:** The dictionaries are created which can be used in the translation.
2. **DDL Translation**: DDL Translation validates the translated query into the BigQuery.
3. **Big Query Setup:** After dictionary creation and DDL translation all the script files are validated so that they can be used for Translation.

5.4. Setup Environment output files include:

5.4.1. Environment Setup Result-

This file displays the list of entities that are successfully created and the entities that are not created in the BigQuery environment.
Ordered Translated DDLs- This file displays the DDL statement and the order in which they are created.

5.4.2. Extracted Dictionary

Extracted dictionary contains information about database objects such as tables, indexes, columns, data types, and views. When you select Extracted Dictionary the Default Database and Default Schema changes to view-only mode. The translation process needs a BigQuery environment for creating the tables and if those tables are missing then the translation process identifies. To get the directories contact Datametica.

The reports are generated in the form of Excel. To view the output, download it from Environment Setup Result and Ordered Translated DDLs.The Environment Setup Result.
This includes the list of tables that are created and failed in the BigQuery environment. The categorization is based on two sets Raven and customer based. Since, the dictionaries are already available and the Extracted Dictionary option was selected, the DDL Translation and Big Query Setup are proceeded.

5.4.3. DDL Statements

When there is no Processed Dictionary then DDLs are used for the Setup environment. The DDLs are considered in the Teradata or Netezza and the created statements are available for the table information. You can upload all the zip files of create statements.

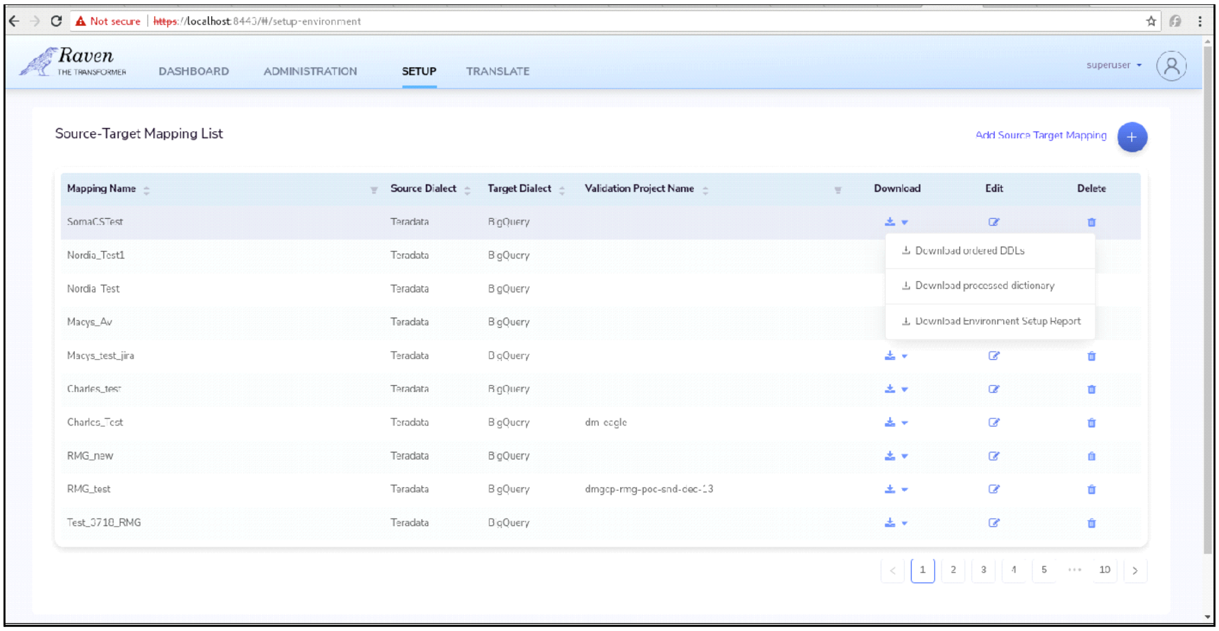
This process takes an extra step of creating the Processed Dictionary by using the DDL statements. Hence, it will proceed with Dictionary Creation, DDL Translation, and Big Query Setup.

The report provides the details of Total DDL, Converted DDL, Partially Converted DDL, and Failed DDL.This report gives the successful tables created which shall be managed in a Big Query. The other report is about the sequences of DDL statements created. In Ordered Translated DDLs shows the results of all the sequences of DDL statements that are created.DDL Statements.

5.5. Downloading Dictionary

Downloading Dictionary allows you to download the different dictionaries that include tables, views, macros, columns, and so on.

- Login -> Setup -> Source Target Mapping List
- To download Dictionary, click on the downloading icon in the Dictionary column


Not secure | https://localhost:8443/#/setup-environment
Raven
THE TRANSFORMER
DASHBOARD
ADMINISTRATION
SETUP
TRANSLATE
superuser
Add Source Target Mapping
+

Source-Target Mapping List

Mapping Name	Source Dialect	Target Dialect	Validation Project Name	Download	Edit	Delete
SomaCSTest	Teradata	BigQuery		⤓ ▾	✎	🗑
Nordia_Test1	Teradata	BigQuery				
Nordia Test	Teradata	BigQuery				
Macys_Av	Teradata	BigQuery				
Macys_test_jira	Teradata	BigQuery		⤓ ▾	✎	🗑
Charles_test	Teradata	BigQuery		⤓ ▾	✎	🗑
Charles_Test	Teradata	BigQuery	dm eagle	⤓ ▾	✎	🗑
RMG_new	Teradata	BigQuery		⤓ ▾	✎	🗑
RMG_test	Teradata	BigQuery	dmgcp-rmg-poc-snd-dec-13	⤓ ▾	✎	🗑
Test_0718_RMG	Teradata	BigQuery		⤓ ▾	✎	🗑

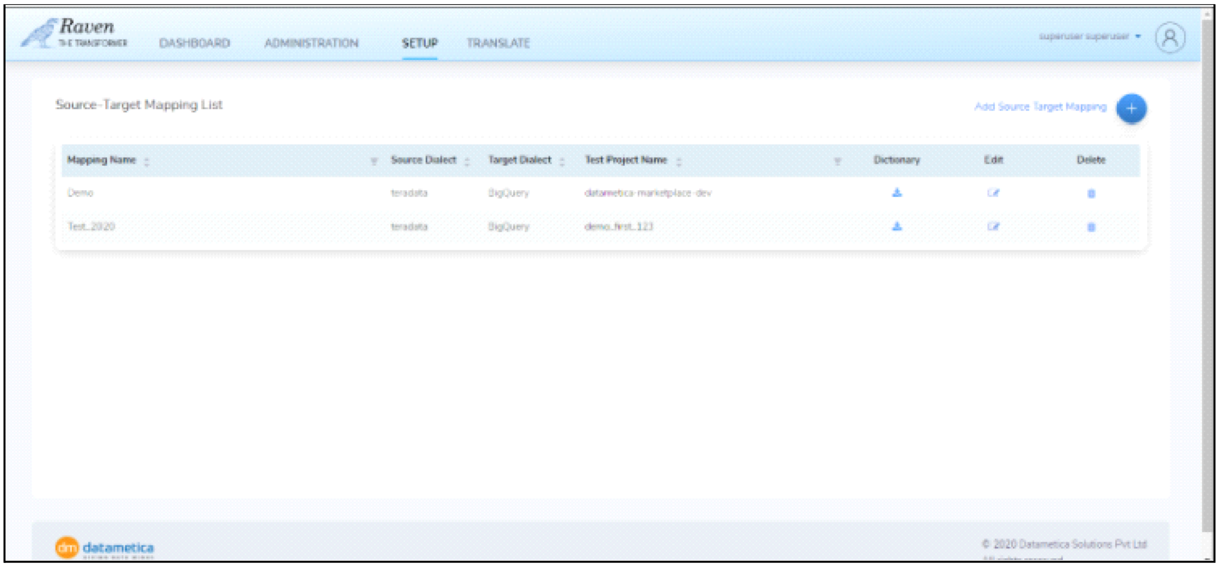
⤓ Download ordered DDLs
⤓ Download processed dictionary
⤓ Download Environment Setup Report

< 1 2 3 4 5 ••• 10 >

5.6. Editing Source Target Mapping

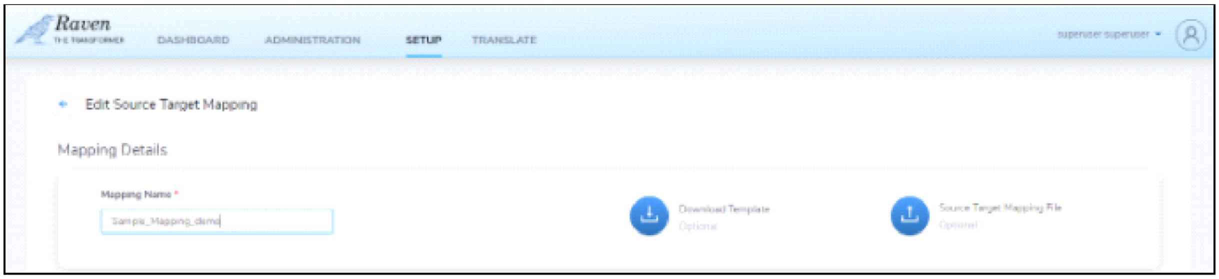
In Raven, to edit previously created Mapping Name of relevant the Source Target Mapping,

- Login -> Setup -> Source Target Mapping List.
- Click on the editing icon in the Edit column.



Source-Target Mapping List

Mapping Name	Source Dialect	Target Dialect	Test Project Name	Dictionary	Edit	Delete
Demo	teradata	BigQuery	datametica-marketplace-dev			
Test_2020	teradata	BigQuery	demo_first_123			



Edit Source Target Mapping

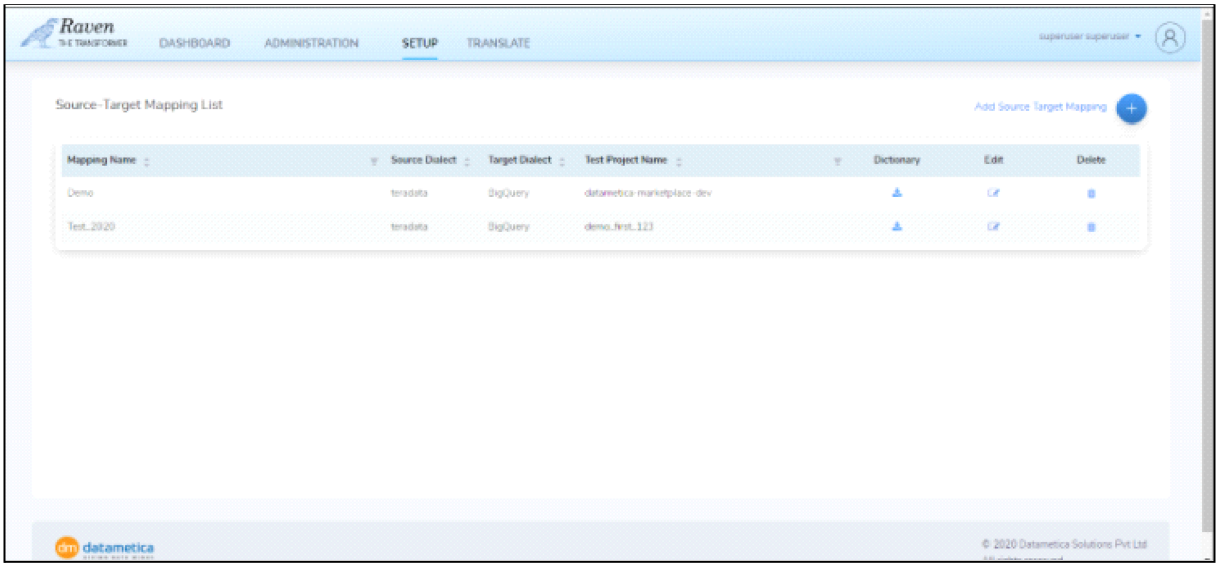
Mapping Details

Mapping Name *: Sample_Mapping_demo

5.7. Deleting Source Target Mapping

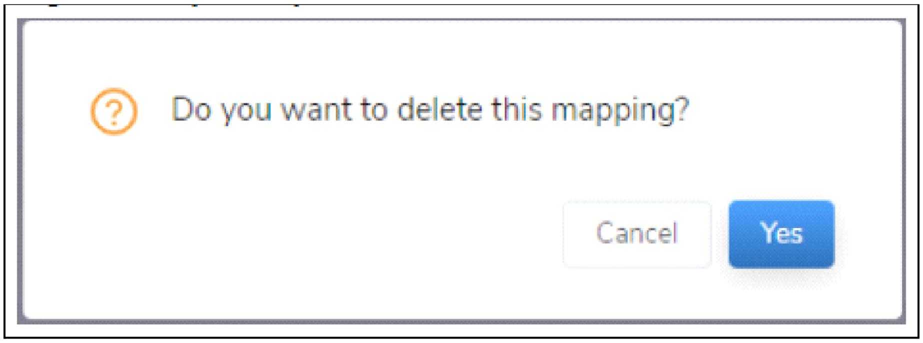
In Raven, to delete mapping and associated batches of relevant the Source Target Mapping.

- Login -> Setup -> Source Target Mapping List.
- Click on the deletion icon in the Delete column.
- The system displays a confirmation dialog box.
- Click on Yes for deletion.



Source-Target Mapping List

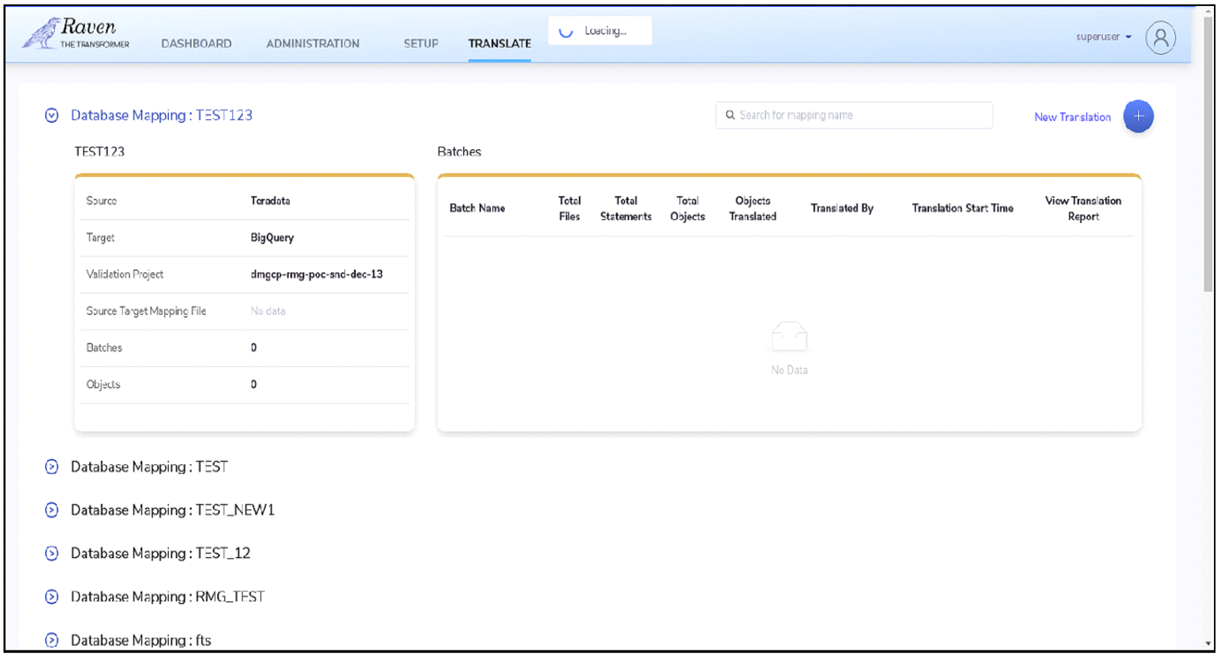
Mapping Name	Source Dialect	Target Dialect	Test Project Name	Dictionary	Edit	Delete
Demo	teradata	BigQuery	datametica-marketplace-dev	⤓	✎	🗑
Test_2020	teradata	BigQuery	demo_first_123	⤓	✎	🗑


Do you want to delete this mapping?

6. Translate

To accomplish the translation process you have to go through three steps -

- Translate
- Analyze
- Report



Database Mapping : TEST123

TEST123

Source	Teradata
Target	BigQuery
Validation Project	dmgcp-rmg-poc-snd-dec-13
Source Target Mapping File	No data
Batches	0
Objects	0

Batches

Batch Name	Total Files	Total Statements	Total Objects	Objects Translated	Translated By	Translation Start Time	View Translation Report

No Data

Database Mapping : TEST

Database Mapping : TEST_NEW1

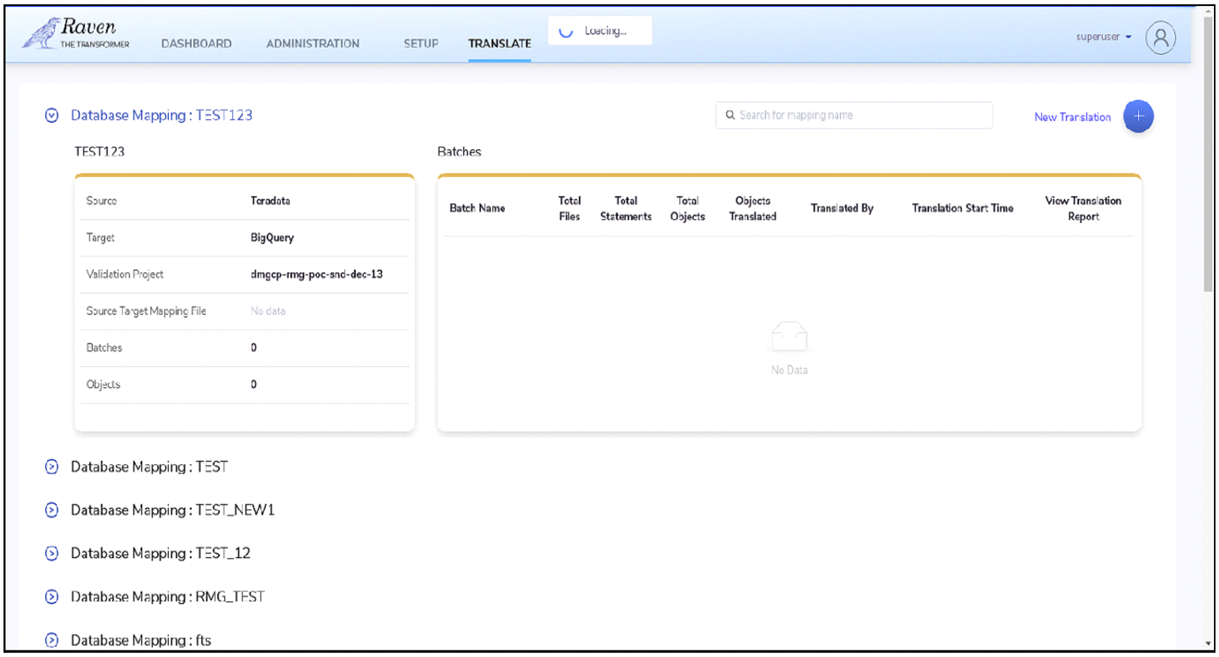
Database Mapping : TEST_12

Database Mapping : RMG_TEST

Database Mapping : fts

6.1. Translation Process

Raven translates the input scripts from source dialect to target dialect. To start the translation, select source dialect, target dialect, and dictionary. Even the user can provide value for the various parameterized variables that are used in the query script files. The Translate screen displays all the variables present in the script, the has to categorize them as per the requirement. However, providing value for these variables is optional. The screen analyses the tables and views, which are not present in the dictionary.



Database Mapping : TEST123

TEST123

Source	Teradata
Target	BigQuery
Validation Project	dmgcp-rmg-poc-snd-dec-13
Source Target Mapping File	No data
Batches	0
Objects	0

Batches

Batch Name	Total Files	Total Statements	Total Objects	Objects Translated	Translated By	Translation Start Time	View Translation Report

Database Mapping : TEST

Database Mapping : TEST_NEW1

Database Mapping : TEST_12

Database Mapping : RMG_TEST

Database Mapping : fts

Source section consists of:

● **Source Dialect**- This field displays two options namely, **Teradata**

● **Mapping Name-** This is the **Source Target Mapping** created during the dictionary source setup environment process.

● **Target Dialect**- This field is to the target destination source for translating to the Big Query (Default).

● **Big Query Project Name**- This is a mandated field that requires the Big Query project name.

● **Validate Translated Scripts**- Selecting this option allows validating the translated queries in the Big Query environment. If you de-select this will not validate the scripts in the Big Query environment.

● **Target Advance Options**- An icon that displays the Target Advance Options requiring Big Query Data File Format, Big Query Data File Base Path along with the two toggle options:

Note:

Print fully qualified entity and Use Safe Cast. These toggle options enable printing entities in fully qualified form and the **use safe_cast function** instead of the **cast function** in translated BigQuery Script.

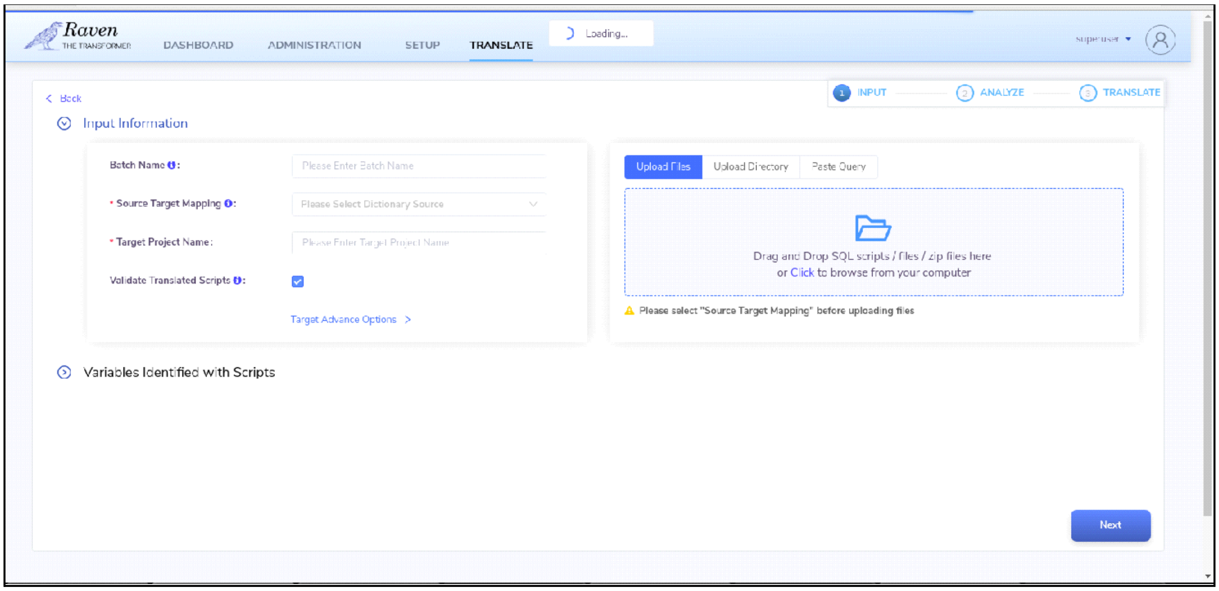
Input Query Script/Files -

- Upload Files

- Upload Directory
- Paste Queries

In Translate, the input script is translated from Source Dialect to Target Dialect. You need to select **Source dialect, target dialect, and Source Target Mapping dictionary**. You can provide value for the various parameterized variables that are used in the query script files. The Translate page displays all the variables present in the script, the user can categorize them as per the requirement. However, providing value for these variables is optional.

Translate screen analyses the tables and views which are not present in the dictionary. Here, the user has an option to include/exclude those scripts or SQL statements from being translated. The screen displays the details of the missing entities, total statements, and a number of statements that can not be translated successfully if the particular script has opted for translation.



Input Information

Batch Name: Please Enter Batch Name

* Source Target Mapping: Please Select Dictionary Source

* Target Project Name: Please Enter Target Project Name

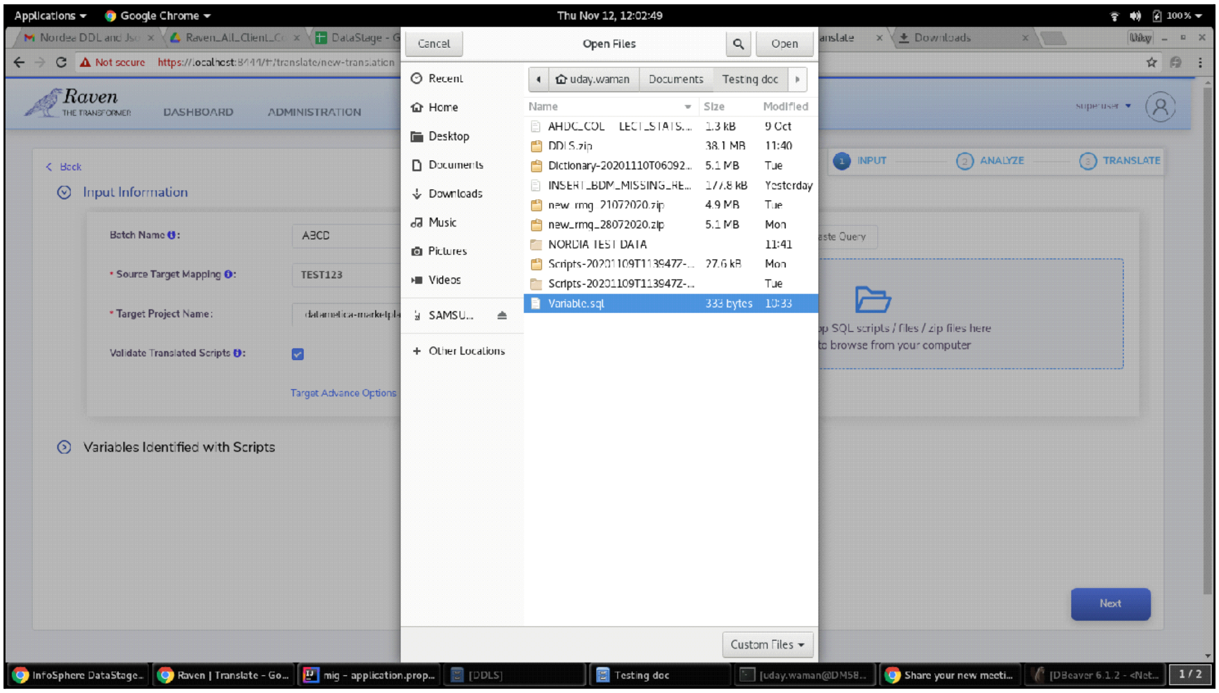
Validate Translated Scripts: ☑

Target Advance Options >

Drag and Drop SQL scripts / files / zip files here
or Click to browse from your computer

⚠ Please select "Source Target Mapping" before uploading files

Variables Identified with Scripts



Batch Name: ABCD

* Source Target Mapping: TEST123

* Target Project Name: datametica-marketpl

Validate Translated Scripts: ☑

Name	Size	Modified
AHDC_COL LECT_STATS...	1.3 kB	9 Oct
DDLS.zip	38.1 MB	11:40
Dictionary-20201110T06092...	5.1 MB	Tue
INSERT_BDM_MISSING_RE...	177.8 kB	Yesterday
new_rmg_21072020.zip	4.9 MB	Tue
new_rmq_28072020.zip	5.1 MB	Mon
NORDIA TEST DATA		11:41
Scripts-20201109T113947Z-...	27.6 kB	Mon
Scripts-20201109T113947Z-...		Tue
Variable.sql	333 bytes	10:33

Analysis - In Analysis, the input files which the user provides shall do a detailed analysis and if any syntax errors found, those are separated. So those files are analyzed to verify the syntactical errors and missing tables, Additionally, it analyzes the insight of the file and provides user brief detail on the file. If there is any missing entity information related to the queries, then details will be shown to the users.

Once the analysis is complete, a table is generated displaying the detailed script information such as **Script Name- Name of the SQL file. Missing Tables / Views- Missing object information** in a number of missing tables or views.

Total Statements- Number of statements. Impacted Statements- Number of impacted statements due to the missing tables.

The syntactical errors aren't displayed in the table. The user has an option to include/exclude the scripts or SQL statements from being translated.

Summary of input

The report contains the following database translation output results:

Total files: - Number of files uploaded

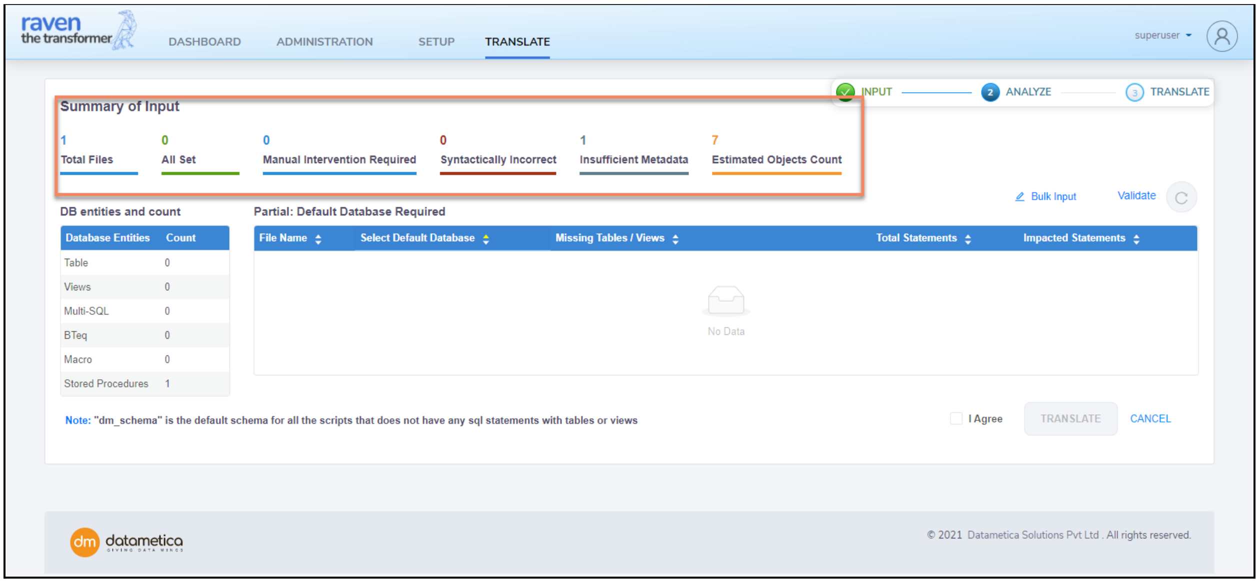
All set- No of translate files

Manual intervention - Number of manual inputs carried out from the end user

Syntactically incorrect - No of files having parsing issue and syntax error

Insufficient Metadata - Number of files in which ddl or dictionary are missing

Estimated object count - the number of scripts in a file.



Summary of Input

1	0	0	0	1	7
Total Files	All Set	Manual Intervention Required	Syntactically Incorrect	Insufficient Metadata	Estimated Objects Count

DB entities and count

Database Entities	Count
Table	0
Views	0
Multi-SQL	0
BTeq	0
Macro	0
Stored Procedures	1

Partial: Default Database Required

File Name	Select Default Database	Missing Tables / Views	Total Statements	Impacted Statements

No Data

Note: "dm_schema" is the default schema for all the scripts that does not have any sql statements with tables or views

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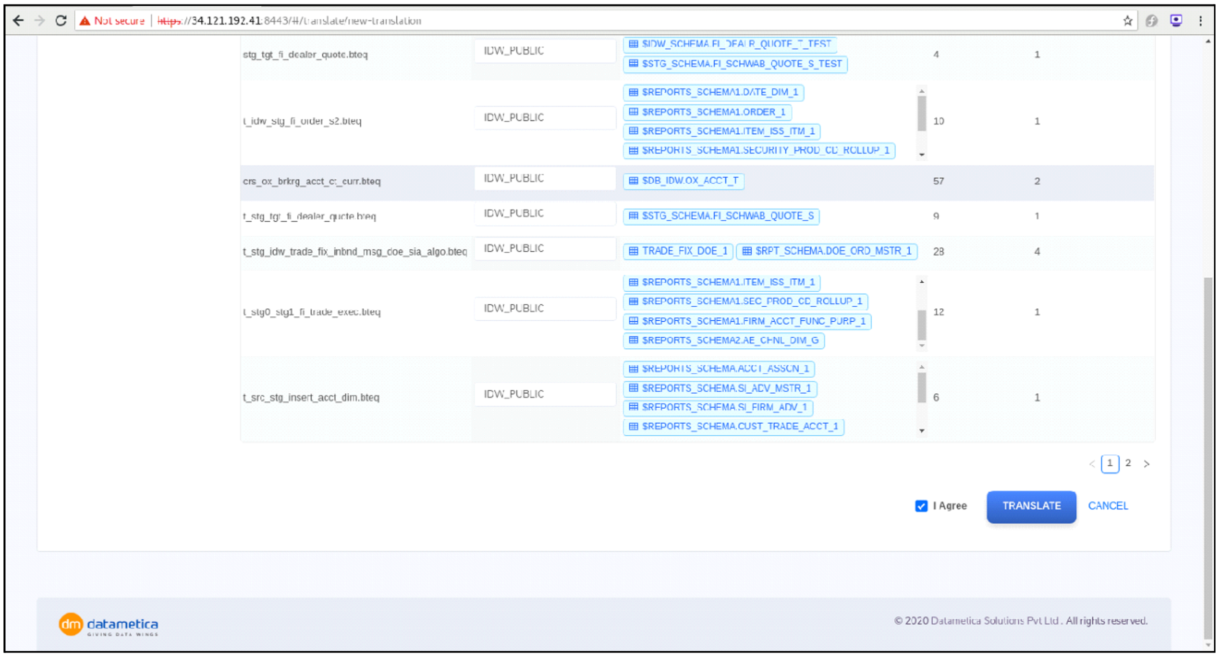
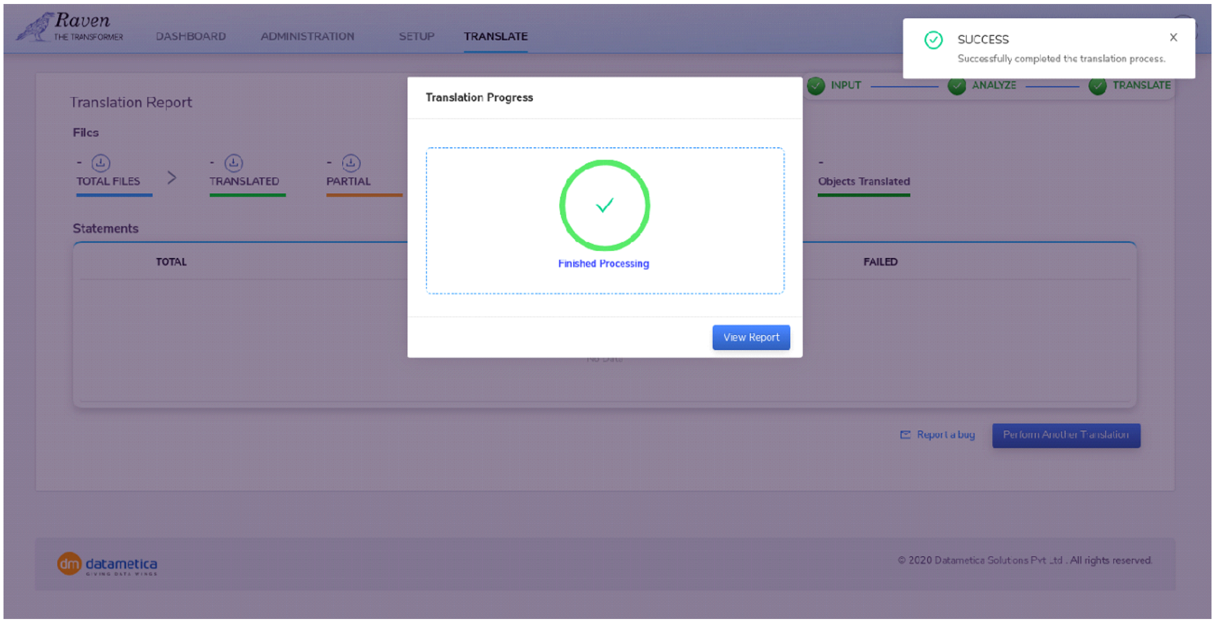


▲ Not secure | https://34.121.192.41:8443/#/translate/new-translation

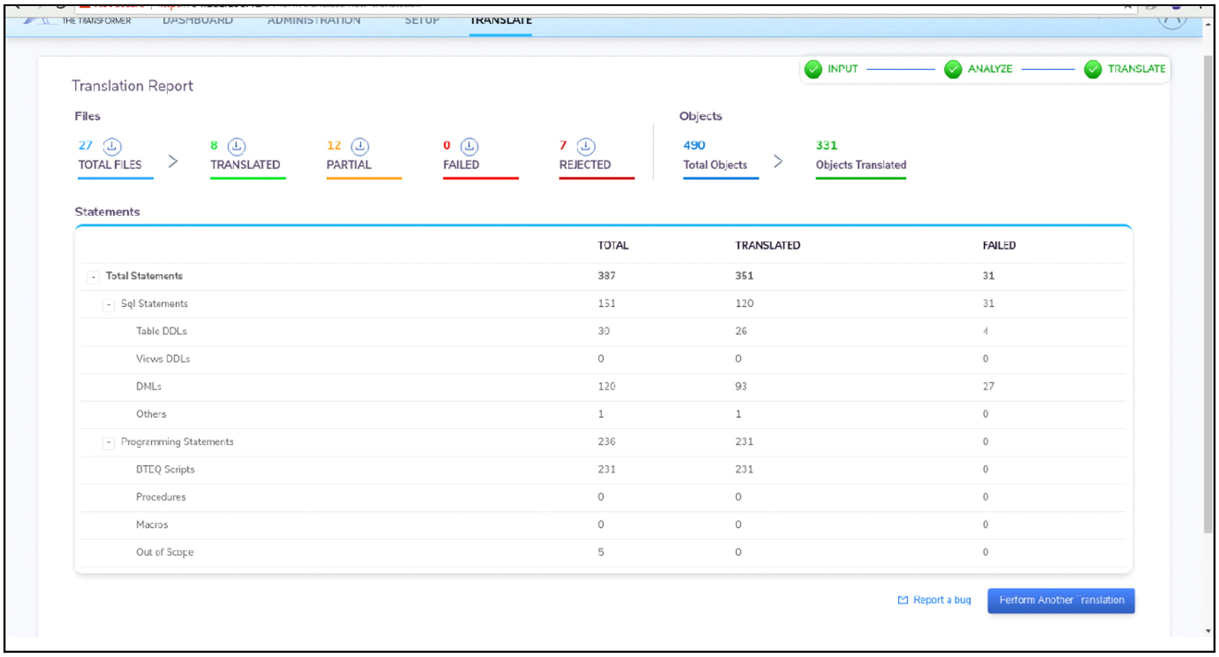
stg_tgt_fi_dealer_quote.bteq	IDW_PUBLIC	$IDW_SCHEMA.FI_DEALR_QUOTE_T_TEST $STG_SCHEMA.FI_SCHWAB_QUOTE_S_TEST	4	1
t_idw_stg_fi_order_s2.bteq	IDW_PUBLIC	$REPORTS_SCHEMA1.DATE_DIM_1 $REPORTS_SCHEMA1.ORDER_1 $REPORTS_SCHEMA1.ITEM_ISS_ITM_1 $REPORTS_SCHEMA1.SECURITY_PROD_CD_ROLLUP_1	10	1
crs_ox_brkrg_acct_c_curr.bteq	IDW_PUBLIC	$DB_IDW.OX_ACCT_T	57	2
t_stg_tgt_fi_dealer_quote.bteq	IDW_PUBLIC	$STG_SCHEMA.FI_SCHWAB_QUOTE_S	9	1
t_stg_idw_trade_fix_inbnd_msg_doe_sia_algo.bteq	IDW_PUBLIC	TRADE_FIX_DOE_1 $RPT_SCHEMA.DOE_ORD_MSTR_1	28	4
t_stg0_stg1_fi_trade_exec.bteq	IDW_PUBLIC	$REPORTS_SCHEMA1.ITEM_ISS_ITM_1 $REPORTS_SCHEMA1.SEC_PROD_CD_ROLLUP_1 $REPORTS_SCHEMA1.FIRM_ACCT_FUNC_PURP_1 $REPORTS_SCHEMA2.AE_CHNL_DIM_G	12	1
t_src_stg_insert_acct_dim.bteq	IDW_PUBLIC	$REPORTS_SCHEMA.ACCT_ASSCN_1 $REPORTS_SCHEMA.SI_ADV_MSTR_1 $REPORTS_SCHEMA.SI_FIRM_ADV_1 $REPORTS_SCHEMA.CUST_TRADE_ACCT_1	6	1

Reports - The Translation results are displayed in the statics manner with the different parameters such as total translated files, partial, failed, and rejected file count, object stats, exception stats, translated and failed SQL statements (DDL, DML), and programming constructs BETQ, The below sections are displayed in the reports that describe a complete analysis. The reports can be downloaded in one click.



SUCCESS

Successfully completed the translation process.



Translation Report

Files

27	8	12	0	7
TOTAL FILES	TRANSLATED	PARTIAL	FAILED	REJECTED

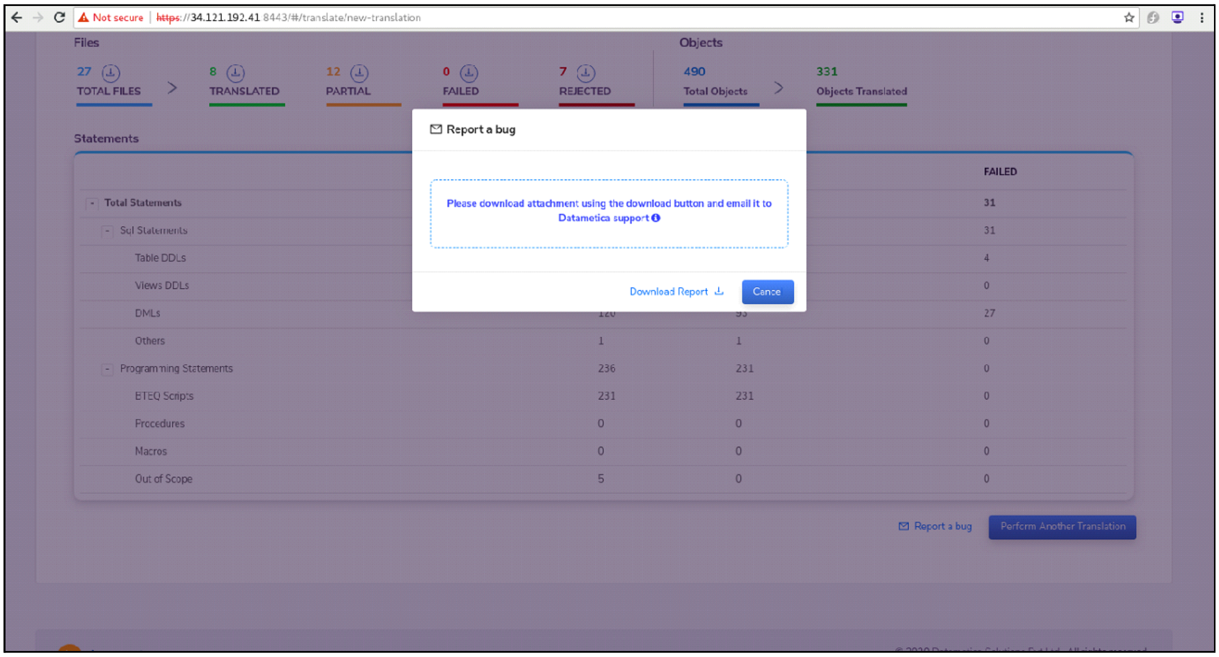
Objects

490	331
Total Objects	Objects Translated

Statements

	TOTAL	TRANSLATED	FAILED
Total Statements	387	351	31
Sql Statements	151	120	31
Table DDLs	30	26	4
Views DDLs	0	0	0
DMLs	120	93	27
Others	1	1	0
Programming Statements	236	231	0
BTEQ Scripts	231	231	0
Procedures	0	0	0
Macros	0	0	0
Out of Scope	5	0	0

Report a bug
Perform Another Translation


Not secure
https://34.121.192.41:8443/#/translate/new-translation

Report a bug

Please download attachment using the download button and email it to Datametica support

6.2. Translation Process execution

About the task, this task shall process the translation of scripts from source to target.

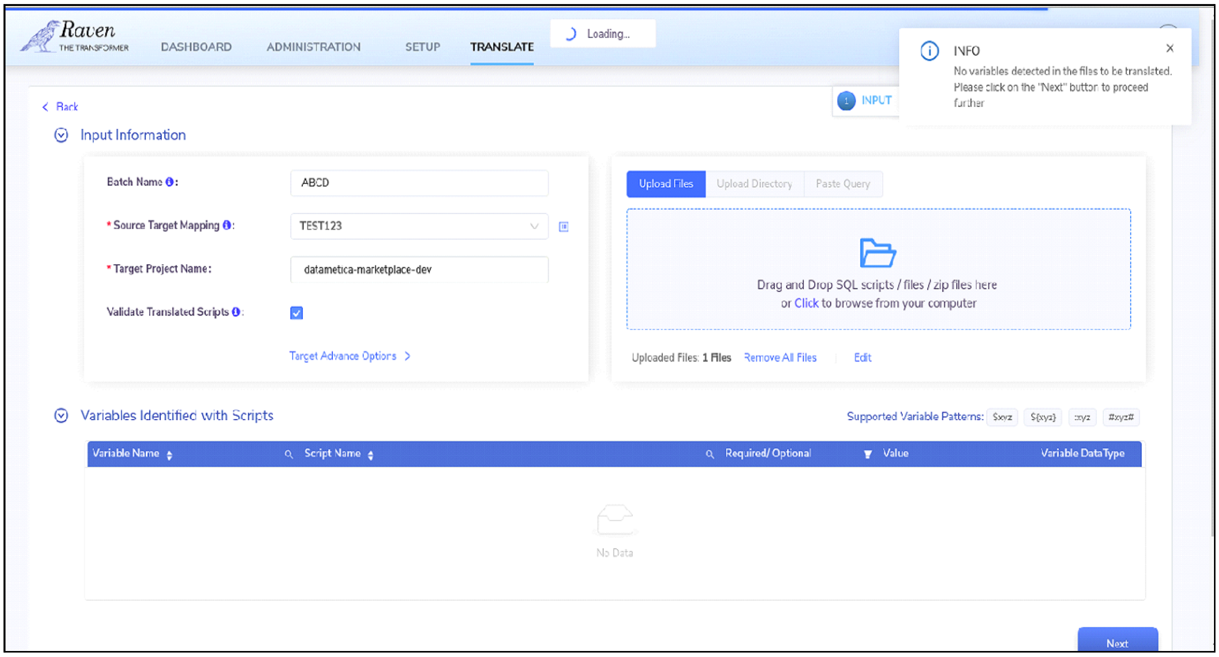
Prerequisites

Ensure that the Dictionary Source is available.

Steps

1. Follow the log in steps in *Getting Started.*

2. Click on Translate



INFO
No variables detected in the files to be translated. Please click on the "Next" button to proceed further

Input Information

Batch Name: ABCD

* Source Target Mapping: TEST123

* Target Project Name: datametica-marketplace-dev

Validate Translated Scripts: ☑

Drag and Drop SQL scripts / files / zip files here
or Click to browse from your computer

Uploaded Files: **1 Files**

Variables Identified with Scripts

Supported Variable Patterns: $xyz ${xyz} :xyz #xyz#

Variable Name	Script Name	Required/ Optional	Value	Variable DataType

No Data

To initiate translation:

a. Select Dictionary Source in the Source section

b. Enter Default Database and in the Target section enter Big Query Project Name.

c. Select the Validate Translated Scripts.

d. Click or Drag SQL script or files.

3. Click on Next.

4. In the Variable Explore the list of variables is displayed that are available in the input script files. You need to enter the value of the respective variable. In the case of a parameterized table it is mandatory to assign value, for other objects such as database, schema, and column it is optional. Click on Next.

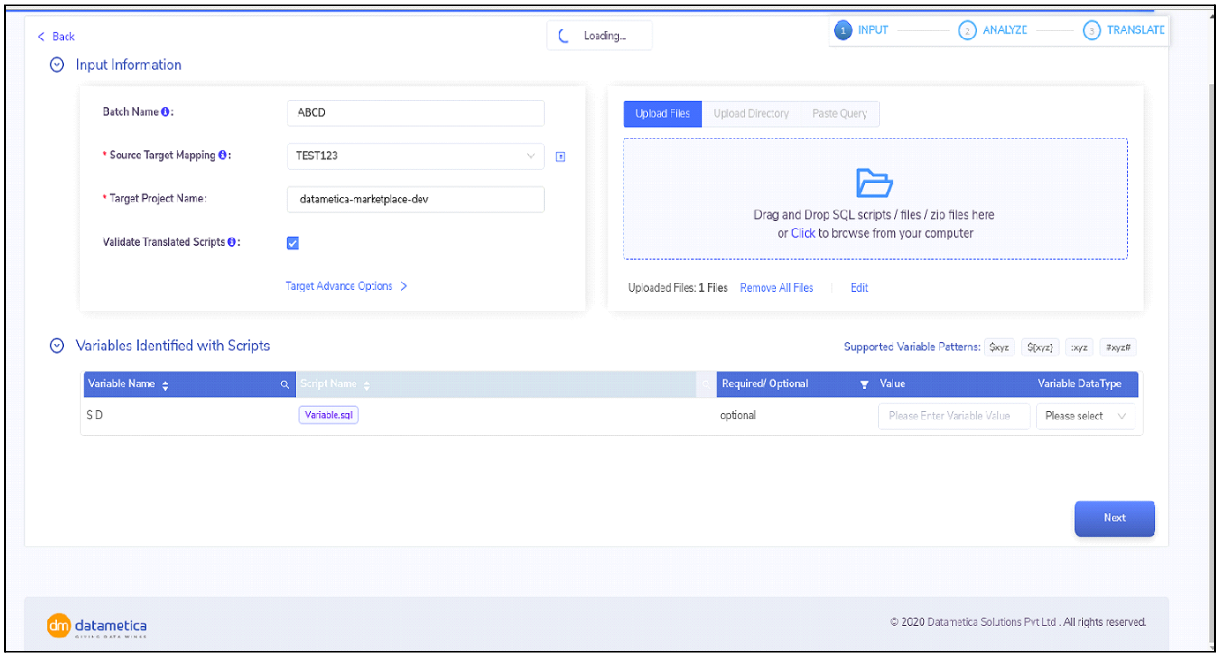
Note:

A selection of value and data type is optional for parameterized expression and schema variable but mandatory for the parameterized table. 5. In Analyze, it analyses the tables and views which are not present in the dictionary. You have options to include or exclude the scripts or SQL statements from being translated. The user can translate SQL scripts with or without these entities. Select the Include in Translation those should include the respective script in the translation

6. Click on Download

To download the script files that have syntactical errors. Raven counts those files in rejected after translation.

7. Click on Translation and, then, click on View Report.



Input Information

Batch Name: ABCD

Source Target Mapping: TEST123

Target Project Name: datametica-marketplace-dev

Validate Translated Scripts: ☑

Uploaded Files: 1 Files

Variables Identified with Scripts

Variable Name	Script Name	Required/ Optional	Value	Variable DataType
SD	Variable.sql	optional	Please Enter Variable Value	Please select

Back
Loading...
INPUT
ANALYZE
TRANSLATE
Target Advance Options
Upload Files
Upload Directory
Paste Query
Drag and Drop SQL scripts / files / zip files here
or Click to browse from your computer
Remove All Files
Edit
Supported Variable Patterns:
$xyz
${xyz}
:xyz
#xyz#
Next
datametica
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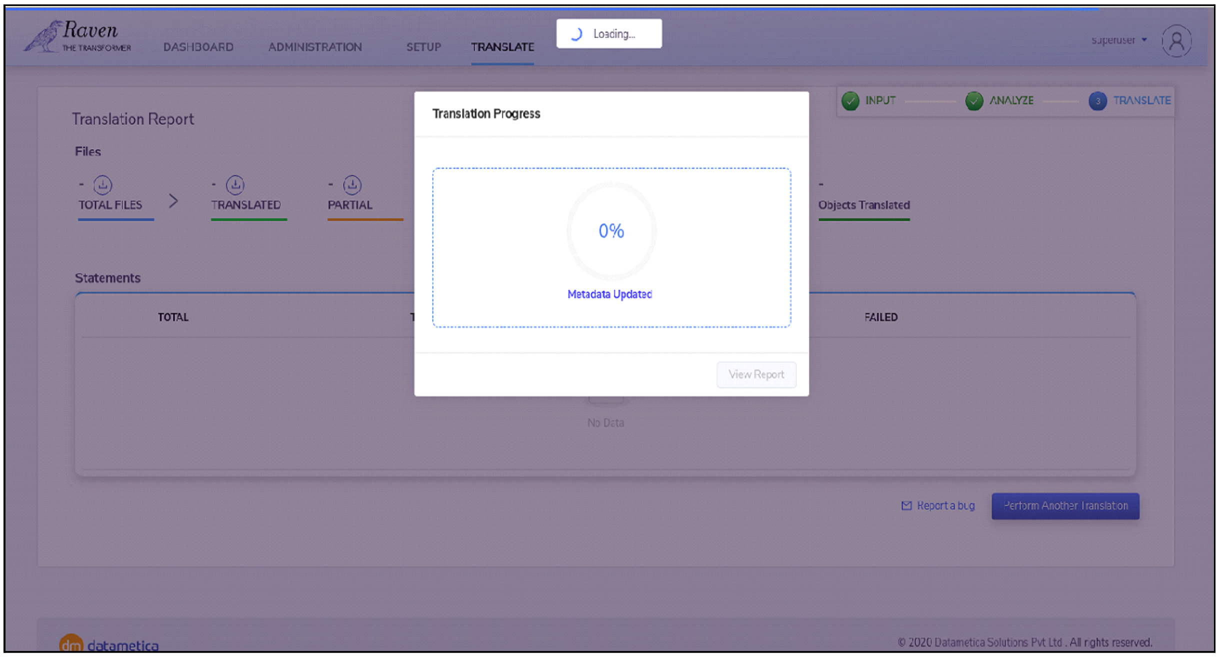

Translation Progress

0%

Metadata Updated