User Manual

Introduction to the Manual

This user manual intends to provide help with the installation and setting up of Flodata. Flodata is being developed by Forsys Software Inc., headquartered in Milpitas. The document is supported by supporting images for the steps involved in the process of data integration.

Flodata Overview

A data-driven management web application that helps in the integration of several applications which are available on cloud or on-premise. The integrations might be real time, near real time, micro batches or batch mode. It’s a business user driven self driven BI tool in built connectors to integrate.

Flodata is synonym for easy integration, migration and automation of data. It gives users an opportunity to build an enterprise application network which is extendable, reusable, secure and fully controlled.

Accurate and correct data is the cornerstone in maximizing business value for organization big or small and Flodata stands as best rate of investment.

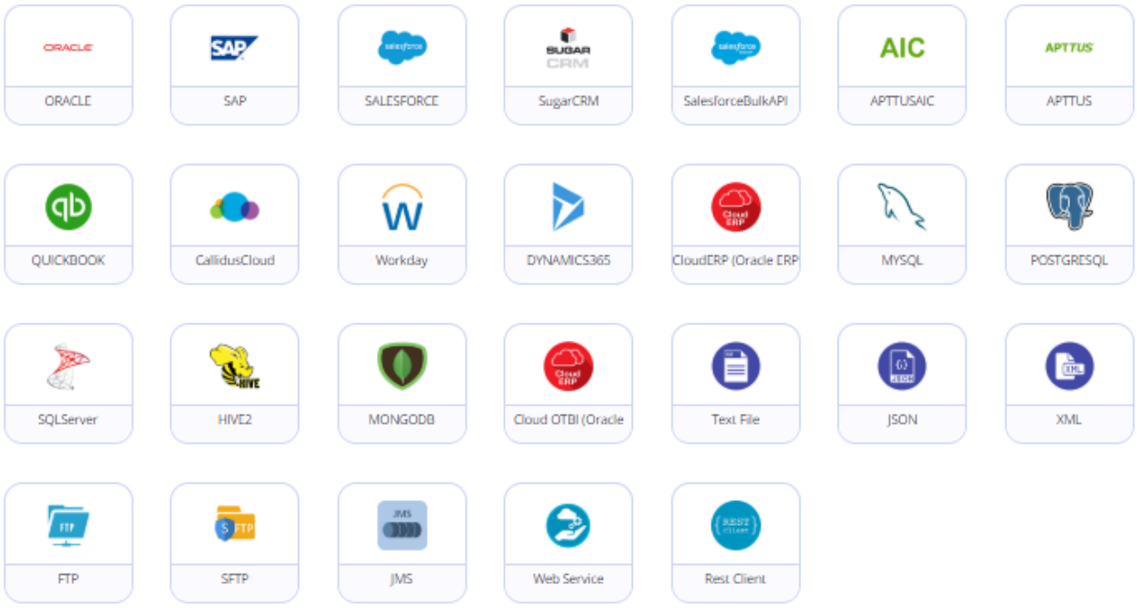
Data integration in simple terms is the act of retrieving data from multiple source systems and combining it in a very comprehensive manner for reports and analysis. The nature of data can be in various forms. With the help of Flodata, a user can be assured of improved efficiency and scalability.

Salient Features

- Large selection of connectors and intermediate steps
- Simple drag and drop
- Easy configuration to build the flow
- Design workflows
- Quick Migration
- Real Time data integration
- Sandbox repository with version management feature
- No coding required
- Supports different kinds of deployment models
- Reporting capabilities
- Business process integration
- Easy Log Management
- Business user friendly
- Import and export -- flows

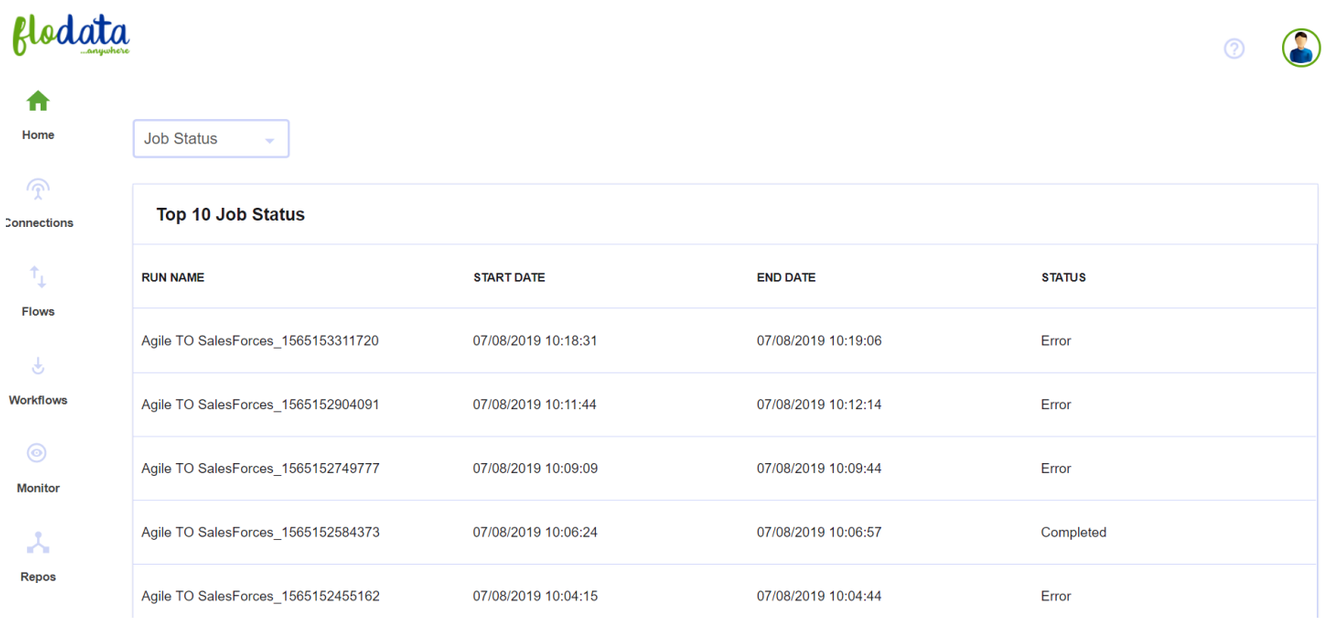
Secure And Ready To Use Connectors

Bring together data from the various silos within your organization. With 60+ plug-and-play connectors, you can easily integrate with any data source in minutes—flat files, Mainframes, CRM, Relational Databases, ERPs and SAAS apps, Mobile Apps, IOT Devices and more.



Home Page

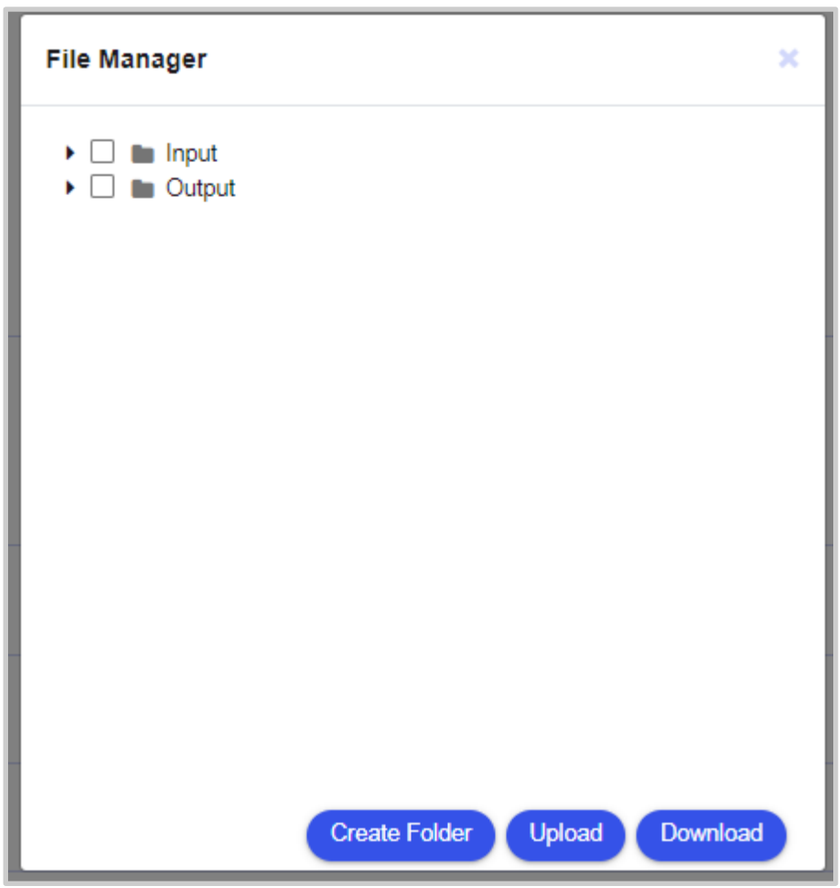
The following screen appears as a home page.



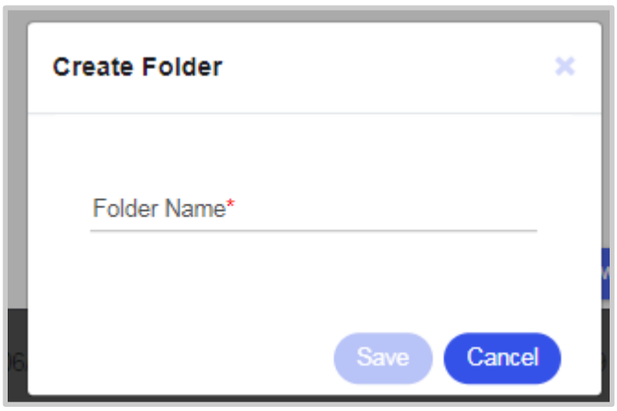
The menu on the left side shares details such as Home, Connections, Flows, Workflows, Monitor and Reports. And, the profile on the right side provide options such as File Manager, Change Password, Access Logs and Logout.

Click for Flodata Help document.

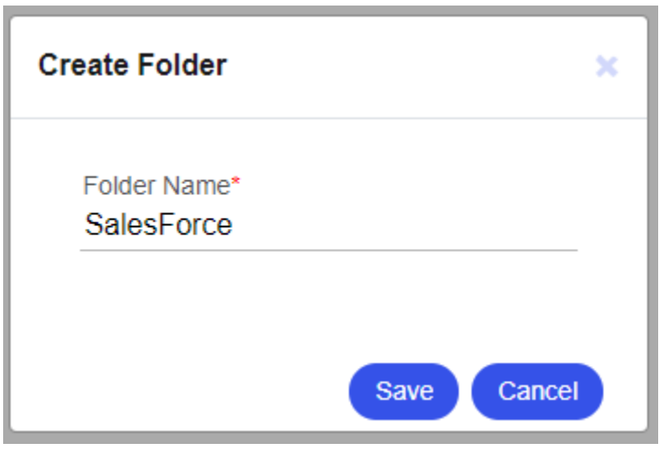
Click File Manager. A user can create a new folder, upload and download a file.



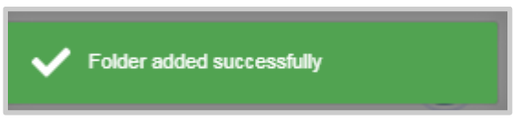
Click Create Folder to add a new folder. The following window appears. Now, enter Folder Name* as shown below.



For example, a user enters the name as TestFolder. Now, Save button is enabled. Click Save or Cancel as required.

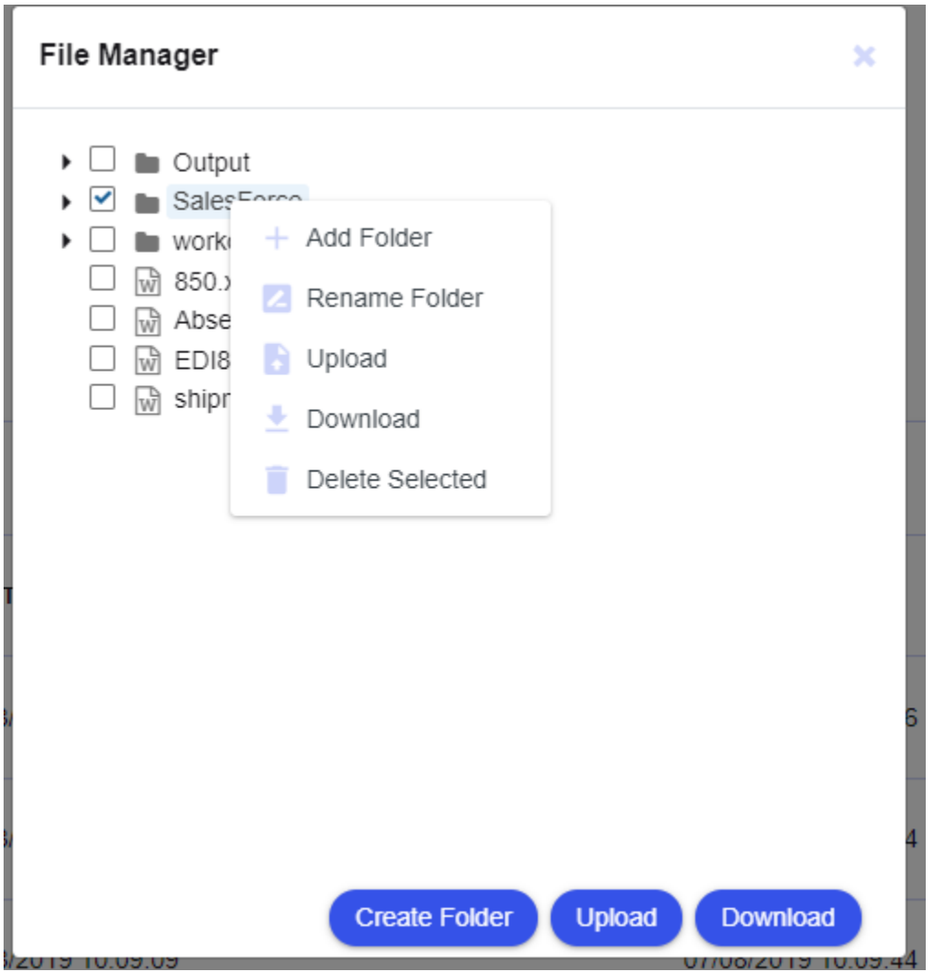


If save is clicked, the following success message appears on the right side of the screen.

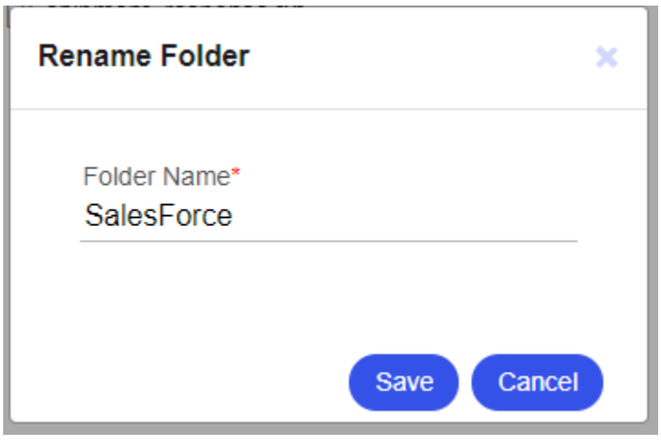


Now, select a checkbox against the folder. And, right-click the cursor/object/ folder/file, the following options are available:

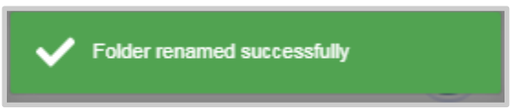
- Add Folder
- Rename Folder
- Upload
- Download
- Delete Selected



Click Rename Folder. The following screen appears. Now enter a new/changed name and click save.

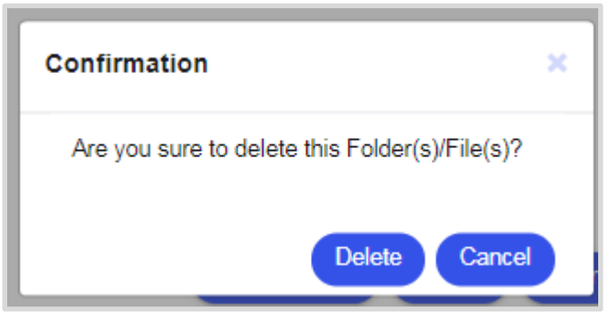


A success message appears on the right side of the screen.

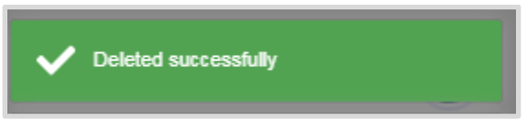


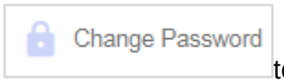
Click Download to download a file/folder. A success message appears on the right side of the screen.

Click Delete Selected to delete a file/folder. A confirmation window appears. Click Delete or Cancel as required.

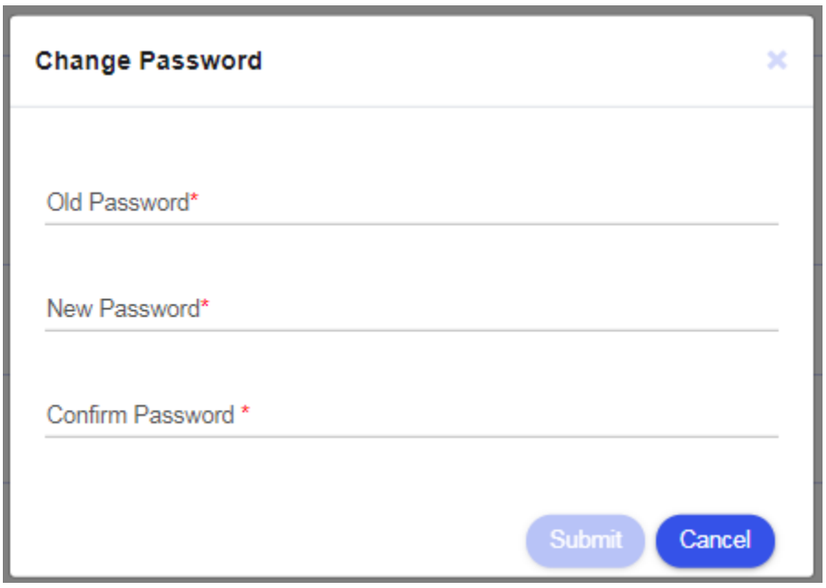


A success message appears on the right side of the screen if a user clicked delete.

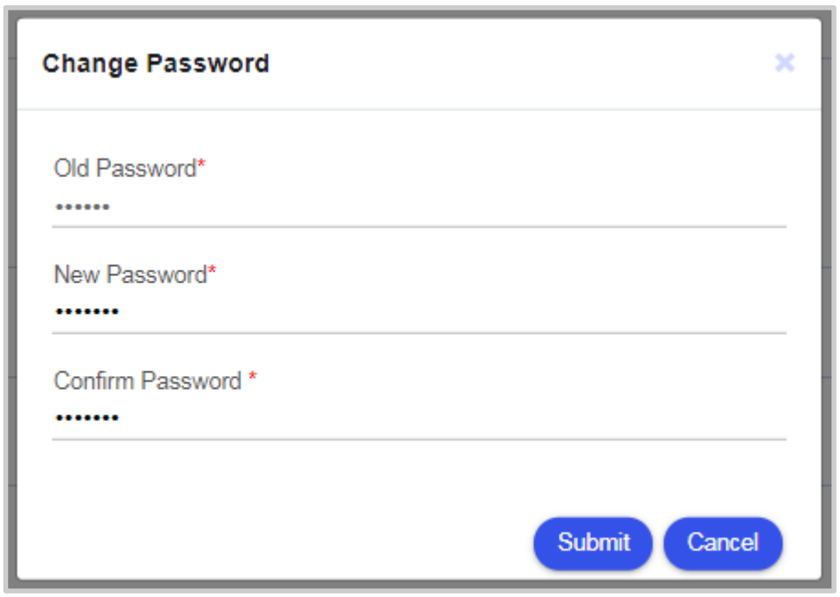


Click 

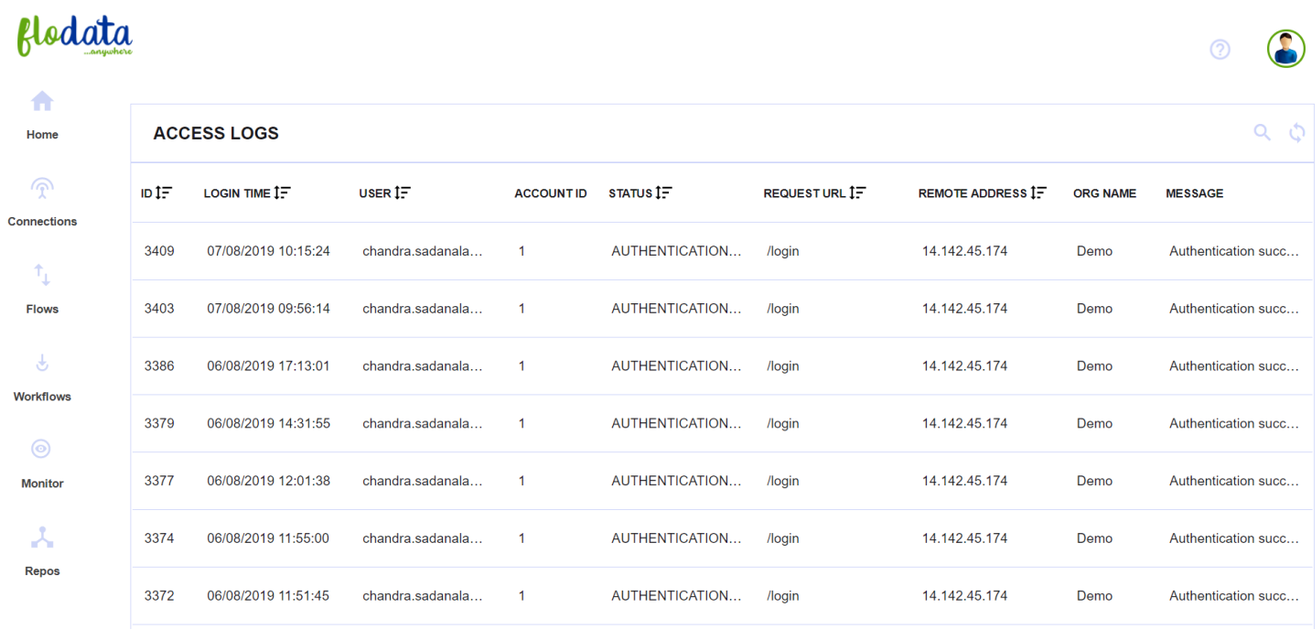
to change the password. The following window appears.



Now, enter Old Password*, New Password*, Confirm Password* and click Submit or Cancel as required.

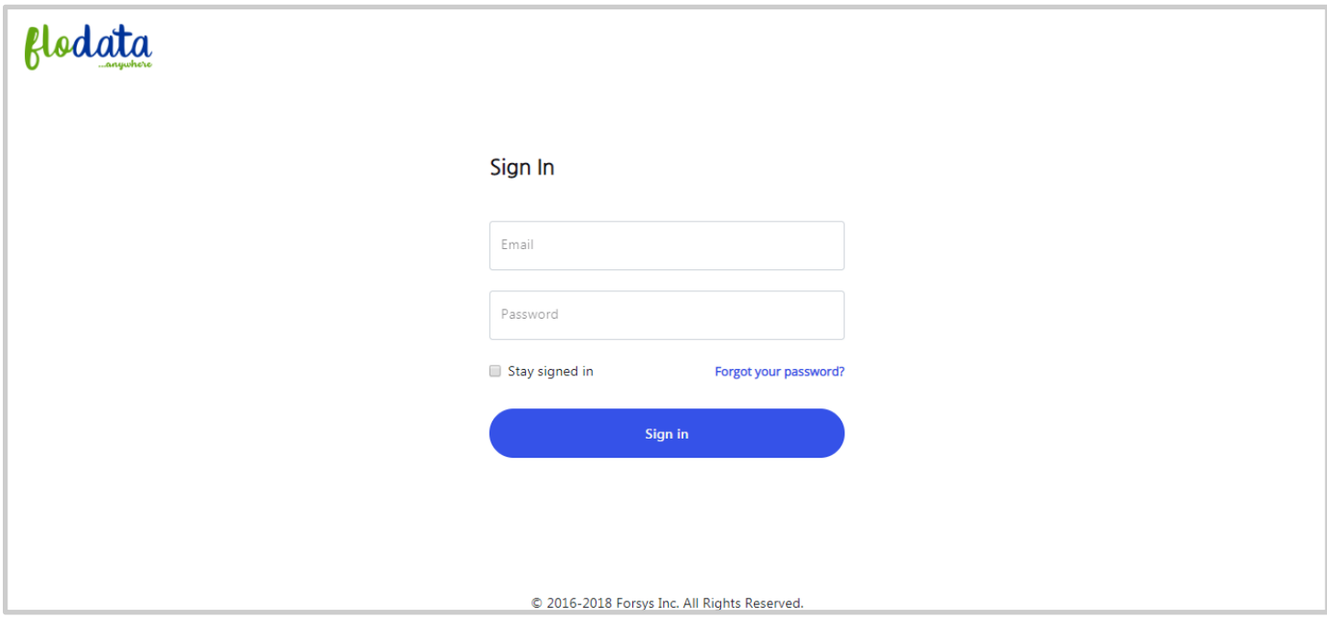


Click Access Logs to access the logs logged in. The window appears with details such as Id, Login Time, User, Id, Status, Request URL, Remote Address, Org Name and Message.



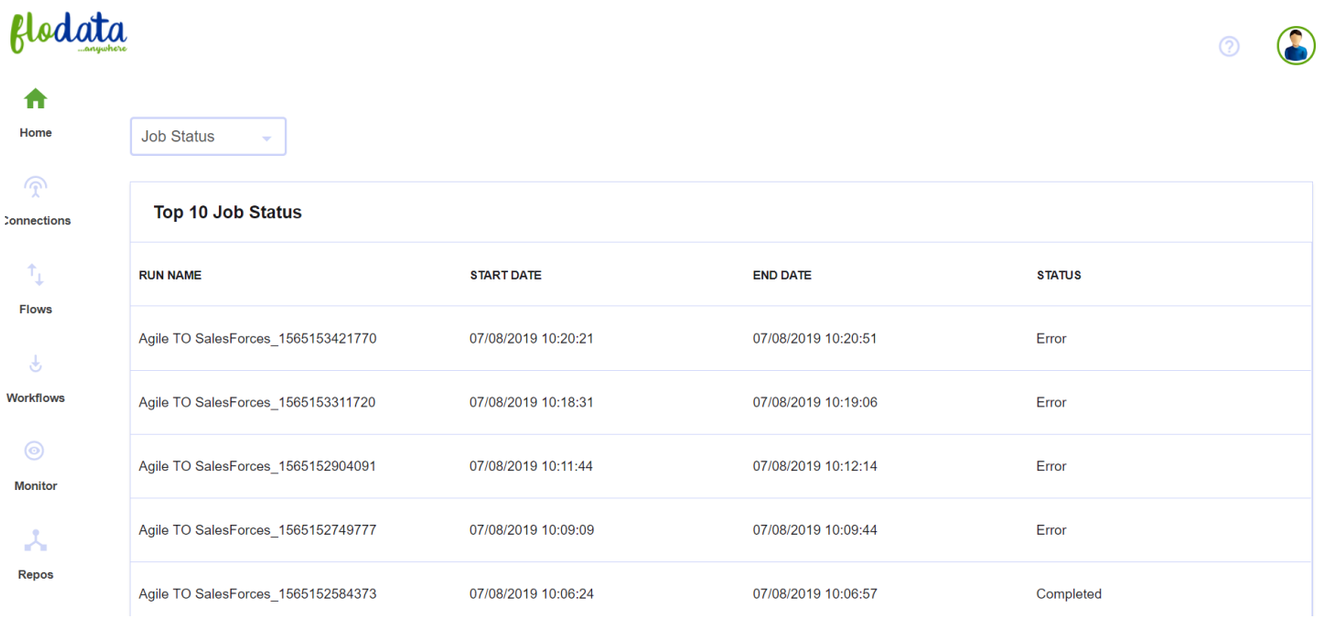
The footer of the window shows the number of Rows per Page.

Click Logout to exit the application. It will redirect to the login screen.

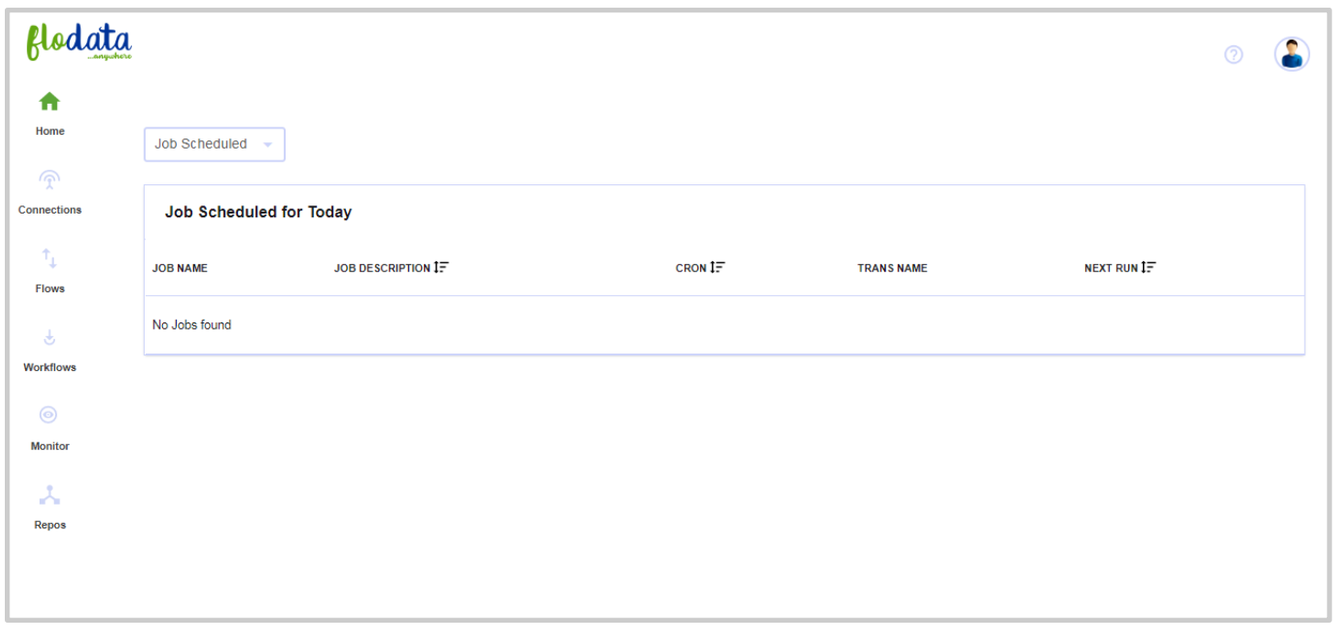


The home page also provides an option to view Top 10 Job Status, Job Scheduled, Month Metrics and Day Metrics.

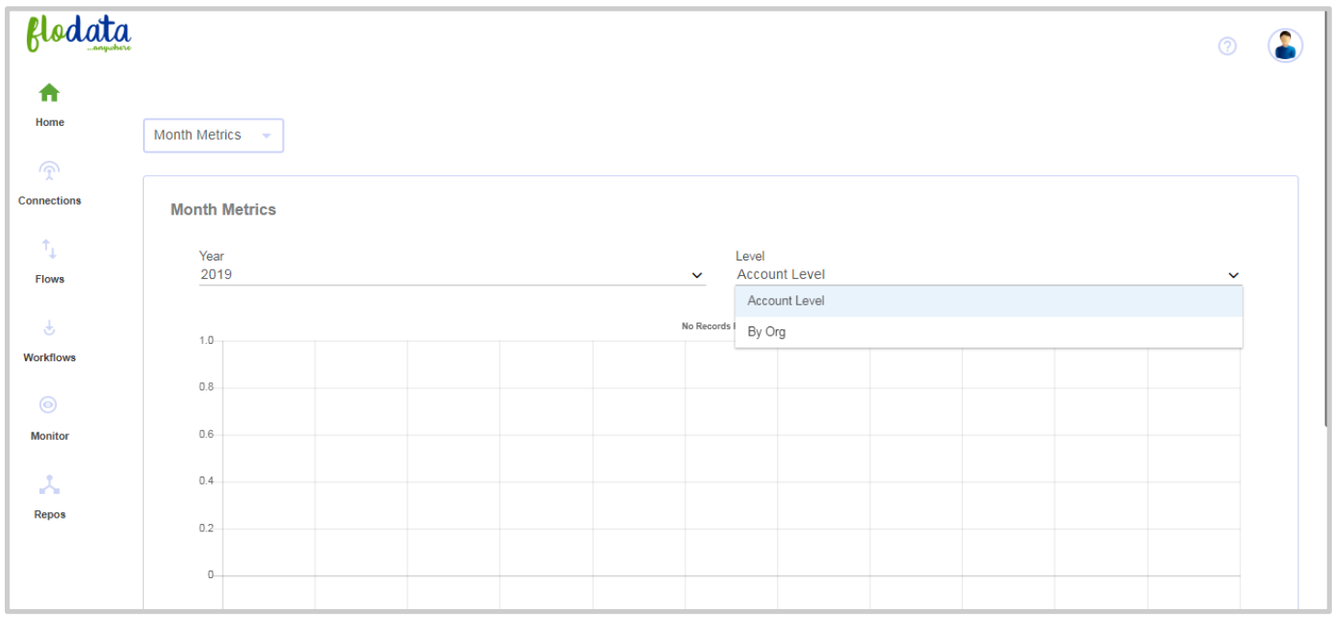
Top 10 Job Status shares details such as Run Name, Start Date, End Date and Status.



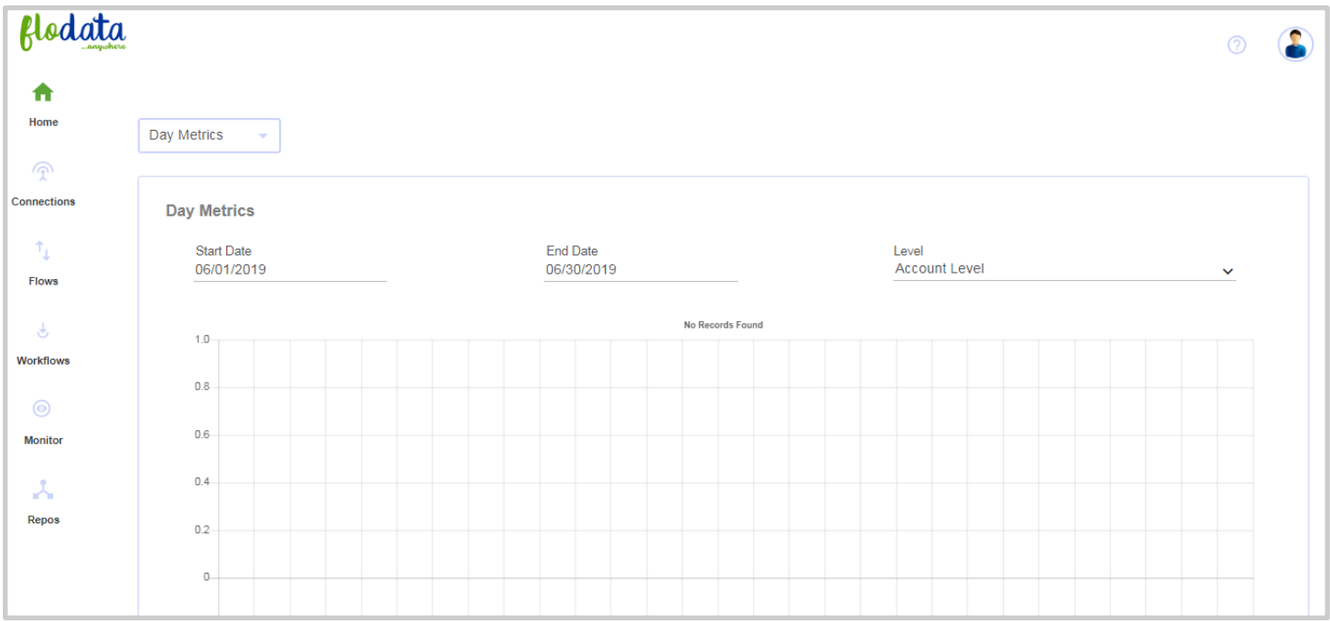
Job Scheduled for today shares details such as Job name, Job Description, Cron, Trans Name, and Next Run.



Month Metrics shares details such as Year and Level. The level metrics is further divided in two sub levels: Account Level and By Org

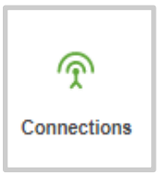


Day Metrics shares details such as Start date, End Date and Level.

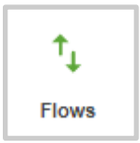


The left side menu items on the home page given below are as follows:

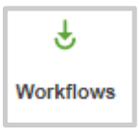
allows a user to quickly view the dashboard having Top 10 job status, job schedule for the day, month metrics and day metrics.



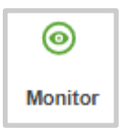
helps a user in creating and saving the connection details.



lets a user define and manage flows.



helps a user can define a workflow containing multiple flows.

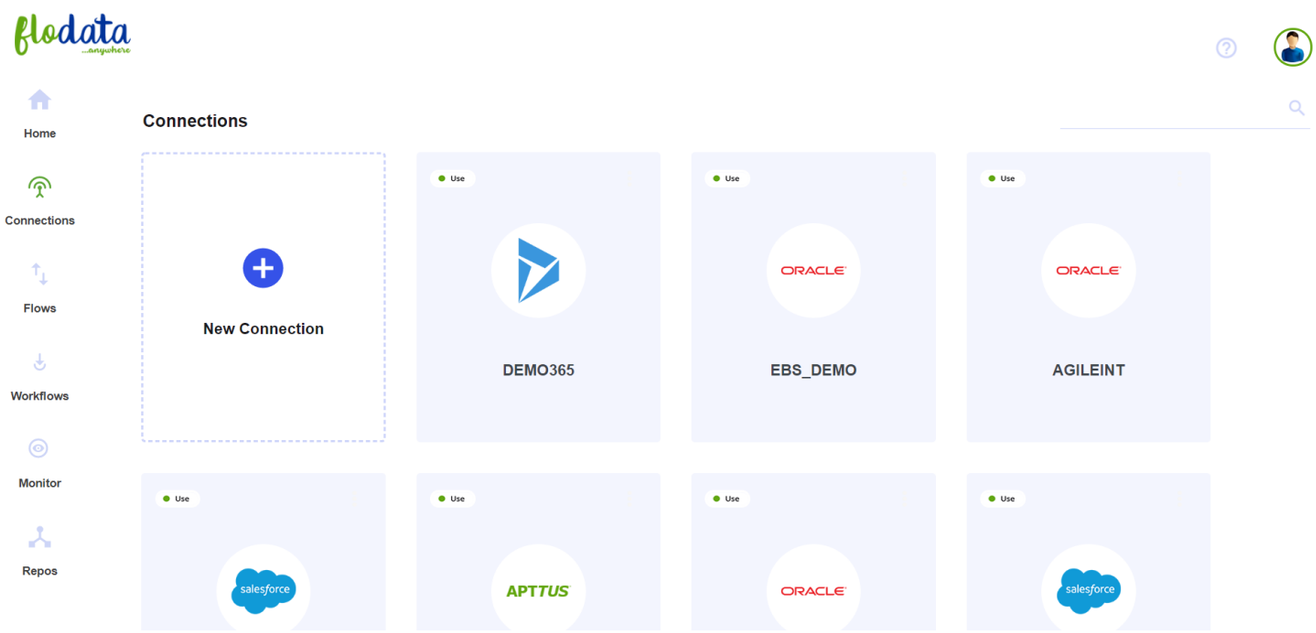


lets a user to schedule a job and monitor the progress.

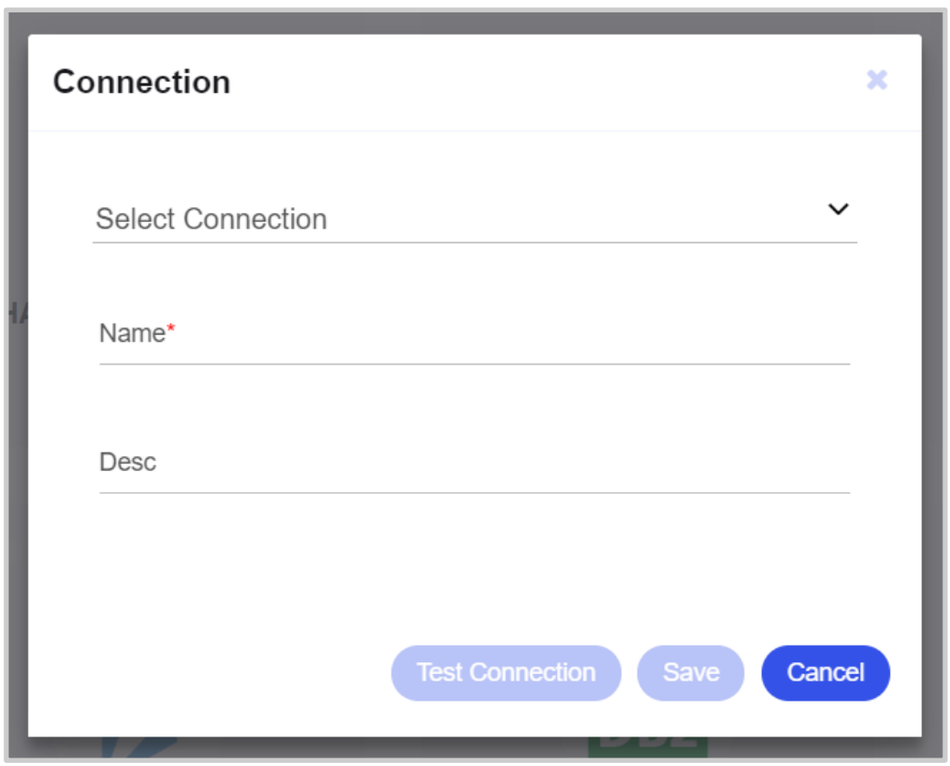
helps a user to compare versions and allow check outs different versions into flows/workflows.

Connections

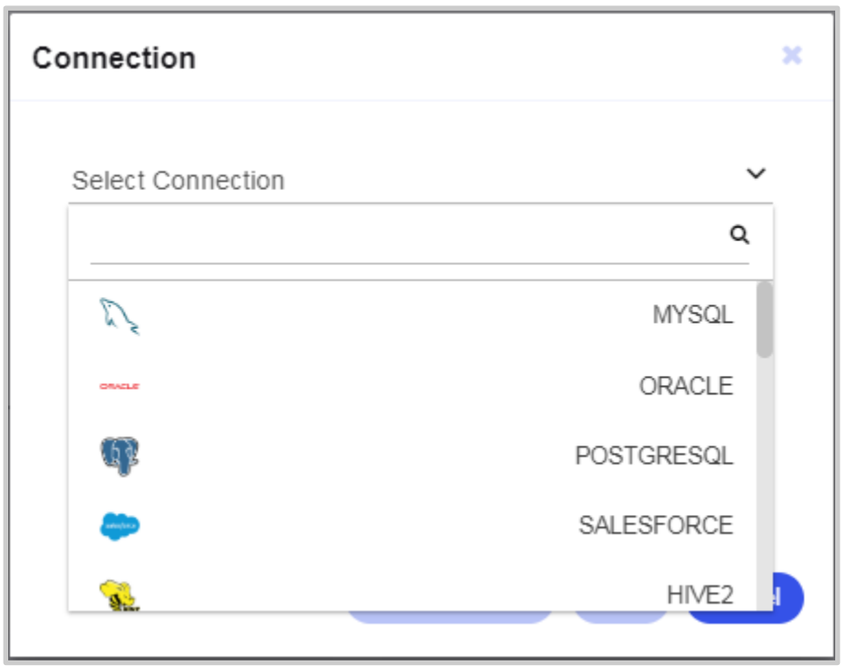
The following screen appears for Connections.



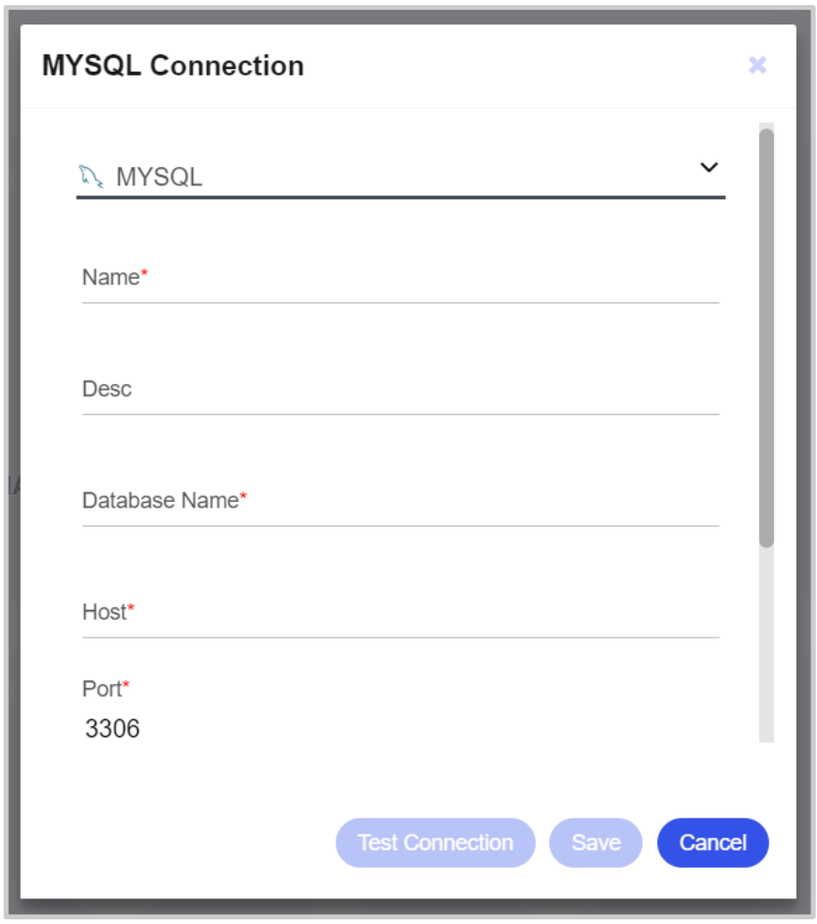
Click  to add a new connection, now enter details such as Select Connection, Name* and Description.



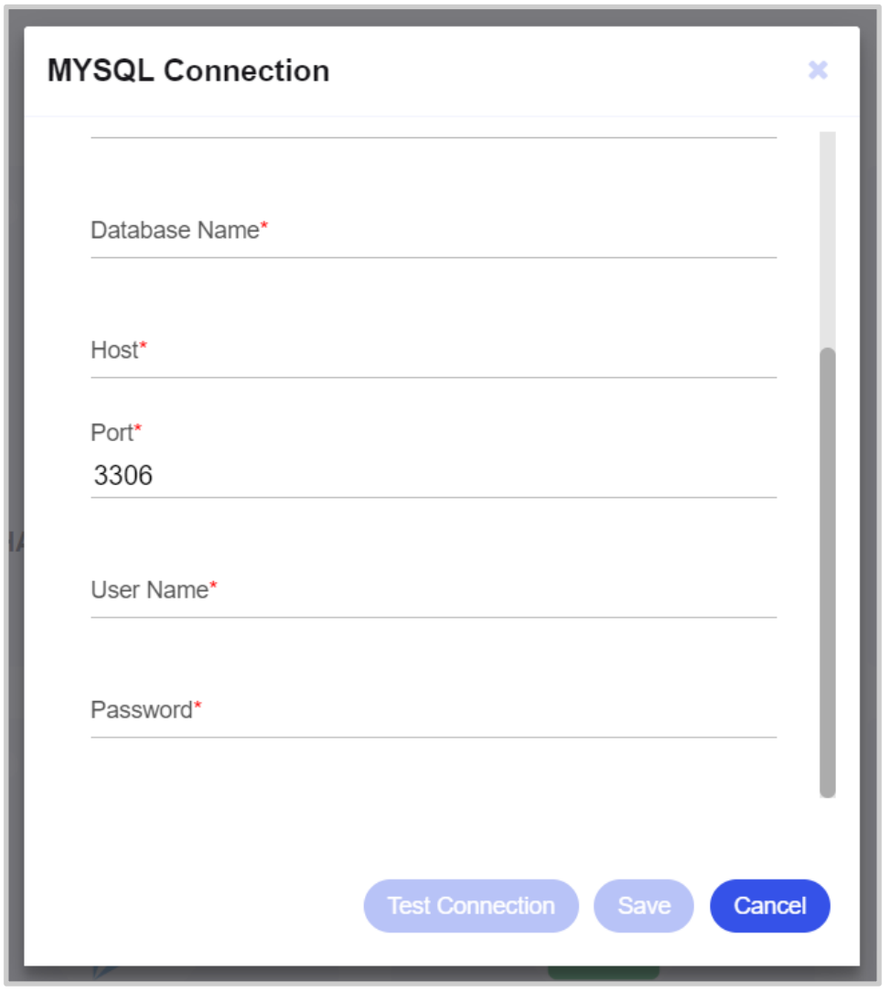
Click Select Connection drop down to select a new connector like MySQL, Oracle, PostgreSQL, Salesforce, Hive2, Apttus, SQLServer, Workday, SAP, CallidusCloud, QuickBooks, MongoDB, Dynamics365, CloudERP, SugarCRM, SalesforceBulkAPI, DB2, Apttus AIC, SalesforceBulkApiSource.



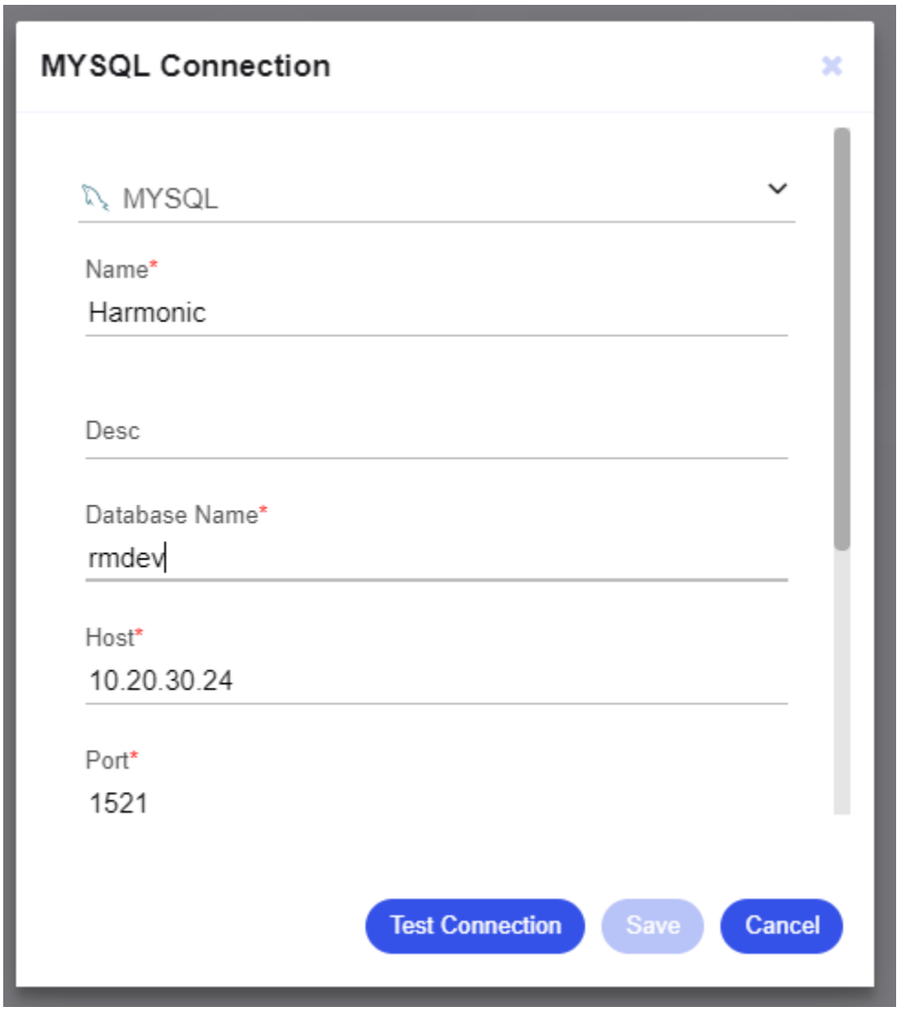
For example, if a user clicks MYSQL Connection as a connection. The following window appears.

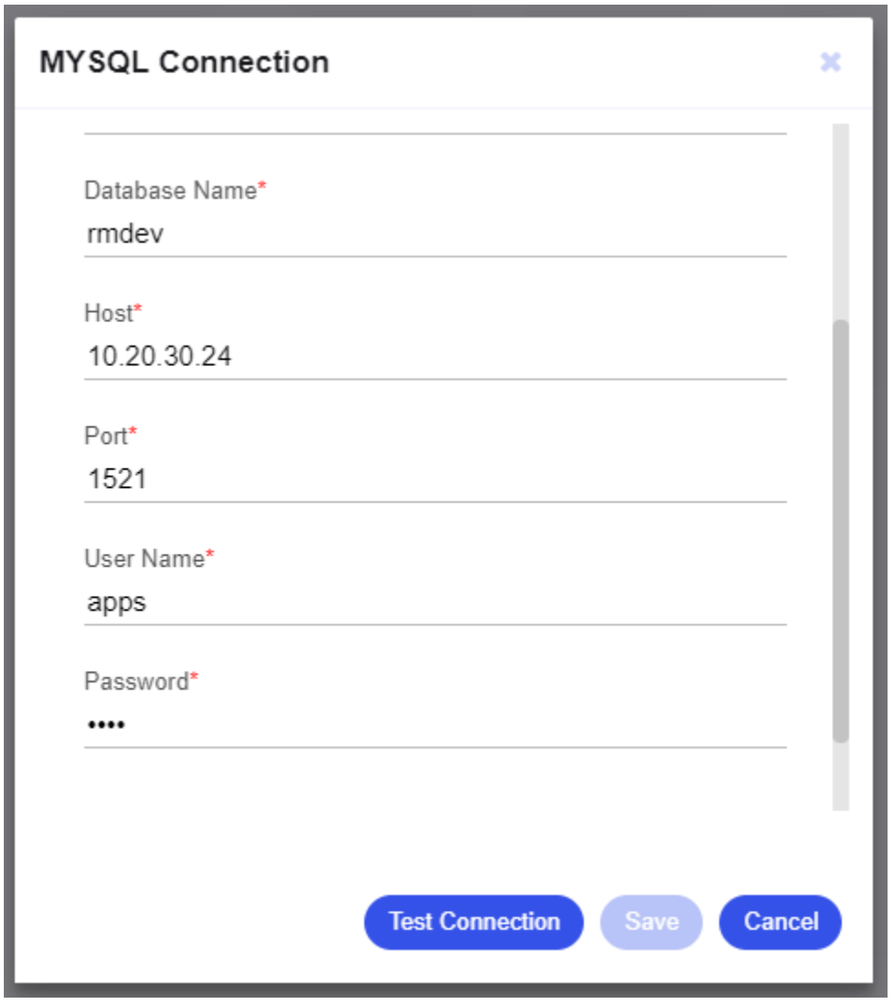


Now, enter details such as Name*, Desc, Database Name*, Host*, Port*, User Name* and Password*.

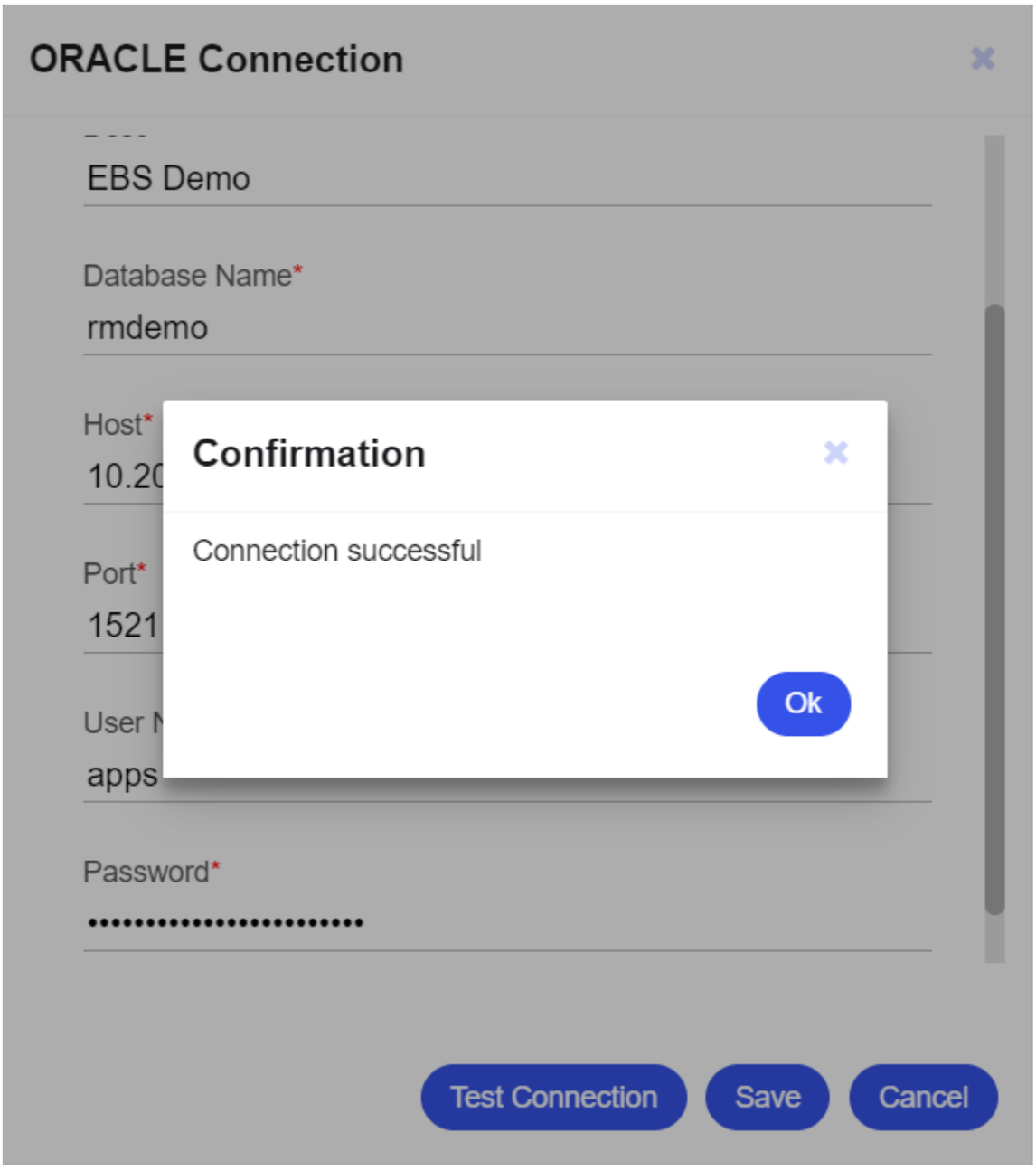


Thereafter, once the mandatory fields are over. The Test Connection gets enabled. Click Test Connection

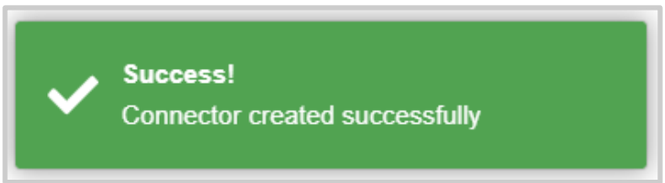



MYSQL Connection
Database Name*
rmdev
Host*
10.20.30.24
Port*
1521
User Name*
apps
Password*
••••
Test Connection
Save
Cancel

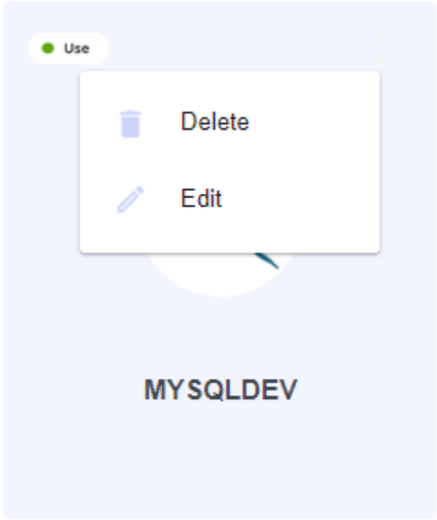
Now, a confirmation message appears. Click OK.



A success message appears if a Test Connection is successful.

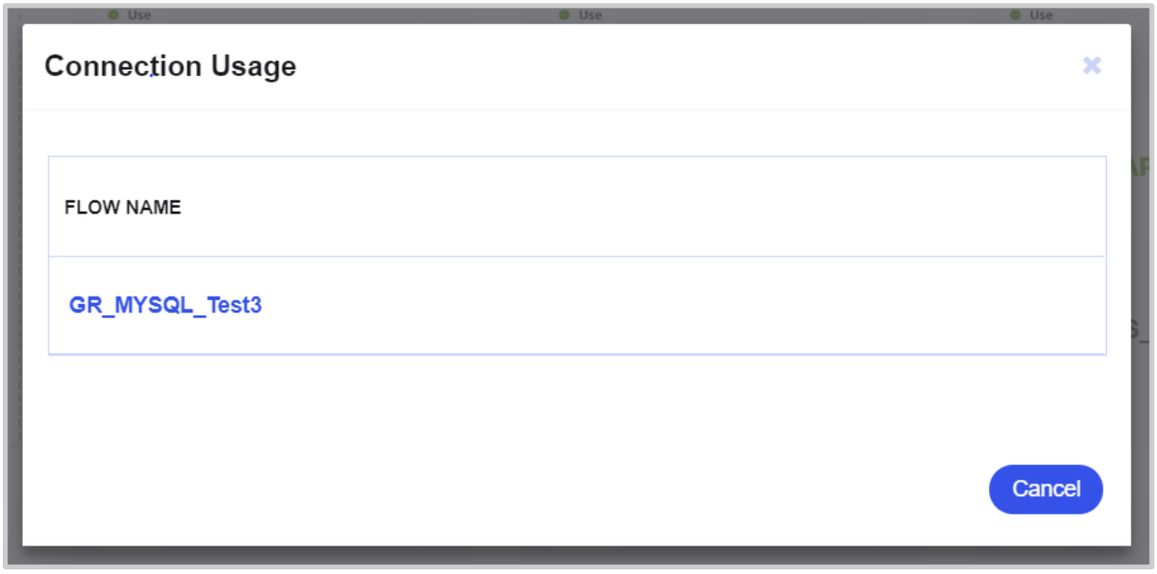


Click  to view options like delete and edit a connection.

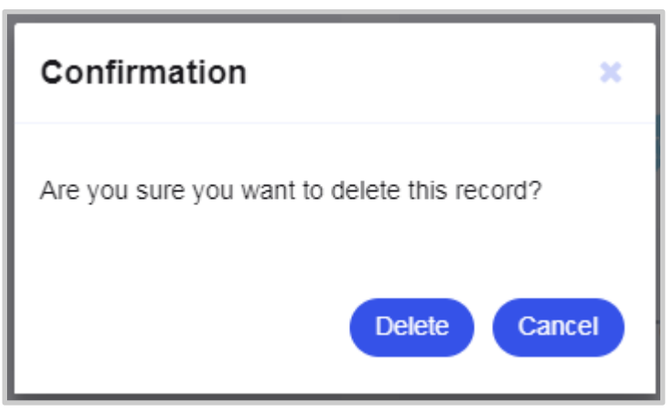


Click  to enter new details such as Name, Desc., Database Name*, Host*, Port*, User Name*, Password*. Now, click on Test Connection, Save and perform. Click Cancel if no change is required.

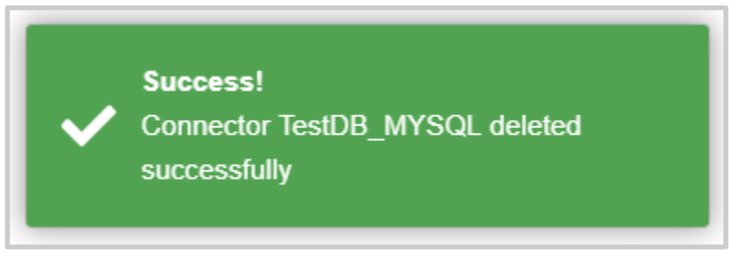
Click to know more about the connection details. A window appears with connection details. Click Cancel or exit the window when required.



Click  to delete the existing connection. A confirmation window appears. Click Delete or Cancel as required.

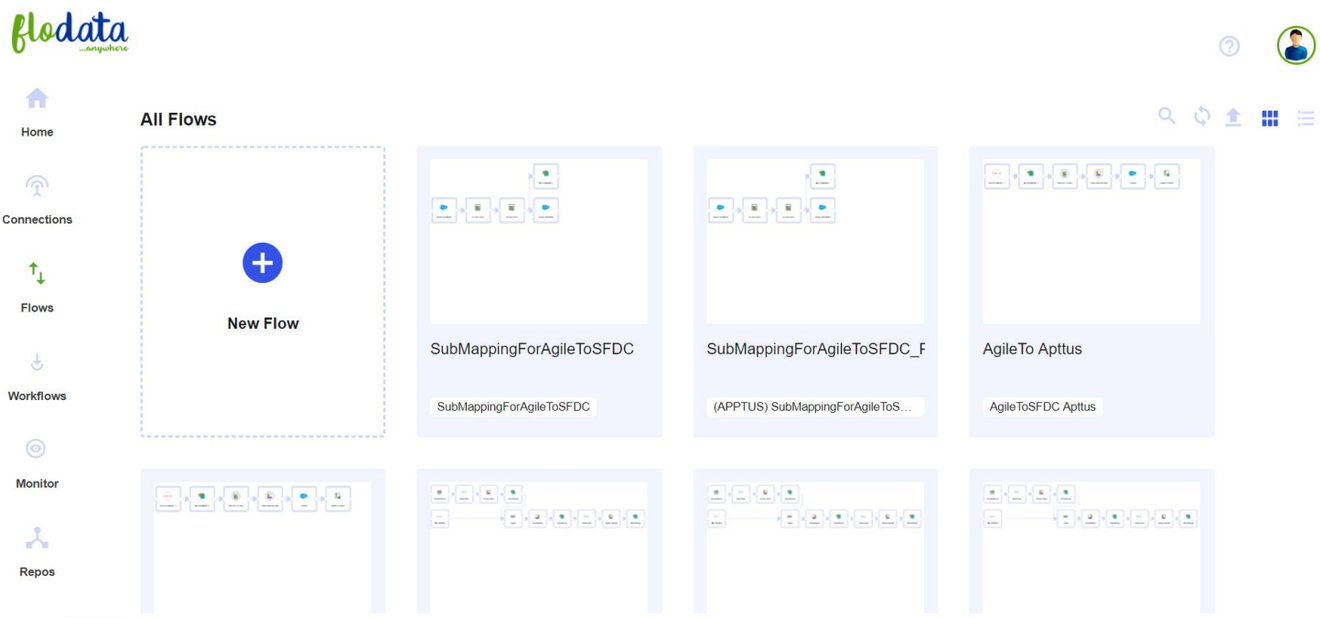


If a user clicks Delete. A success message appears on the right side of the screen.

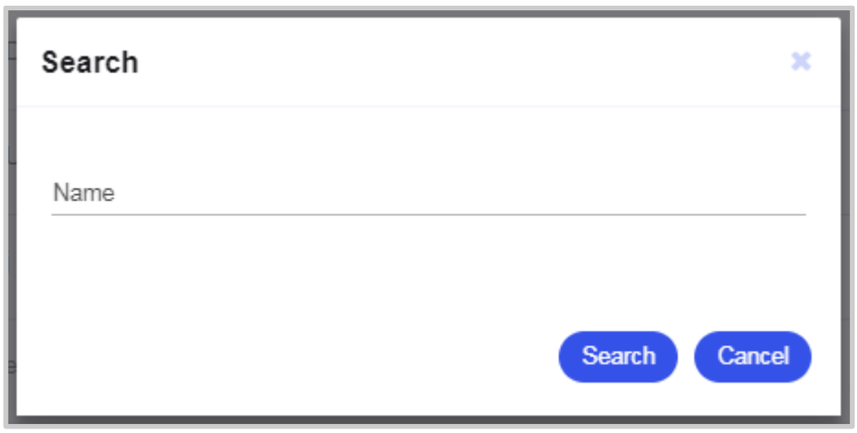

Success!
Connector TestDB_MYSQL deleted successfully

Flows

The flows are available in Table and Grid View.

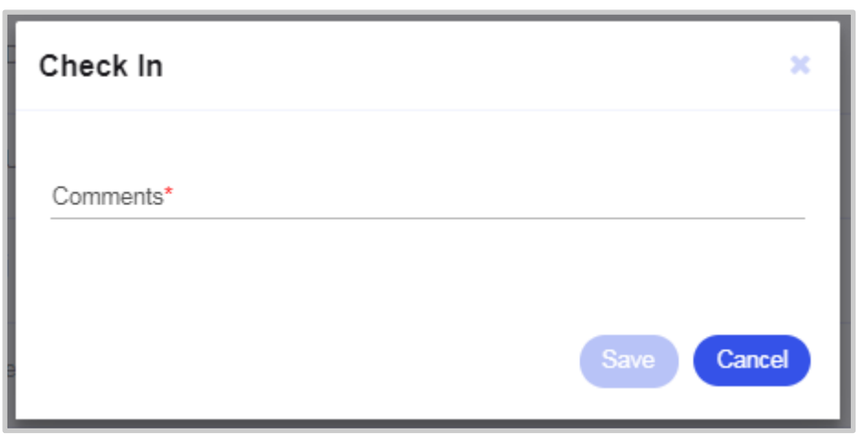


Click  to search an existing flow. A window appears. Now, enter Name. Click Search or Cancel as required.



Click  to Check In a flow. It is mandatory to click a box against the flow or else an error message appears.

Once the flow is selected, a window appears. Now, enter comments and click Save or Cancel as required.

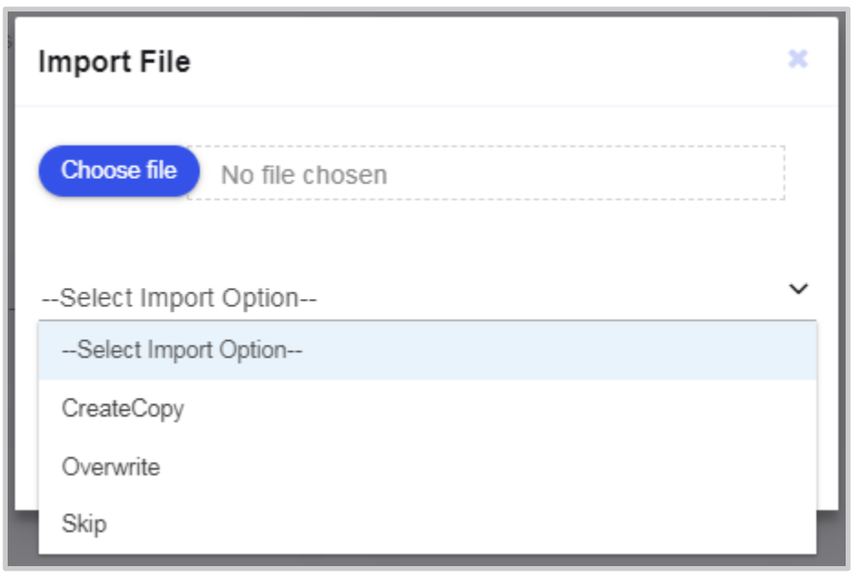


Click to add a new flow. A window appears. Enter details such as Name, Description and Tag Name. Click Save or Cancel as required.

Click  to create a copy. It is mandatory to click a checkbox against the flow or else an error message appears on the screen.

Click to Import a flow to an existing set of records. A window appears to Choose file from a local desktop and select Import Option such as

- CreateCopy
- Overwrite
- Skip



Connections

Salesforce as a Source Connection

The Salesforce Connection as a source provides an ability to read data directly from Salesforce using the Salesforce Web Service.

The following sections describe each of the available features for configuring the Salesforce Source Connection.

General Settings Tab

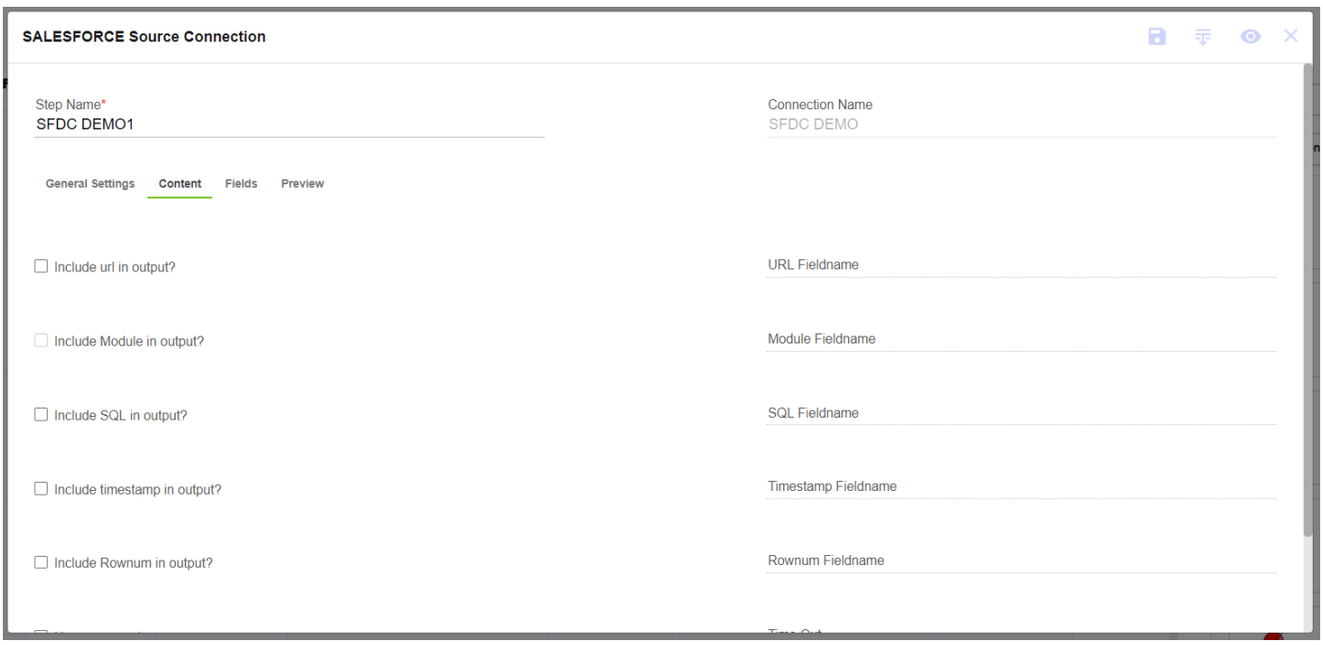
This tab lets you set up basic information about the connection.

Options

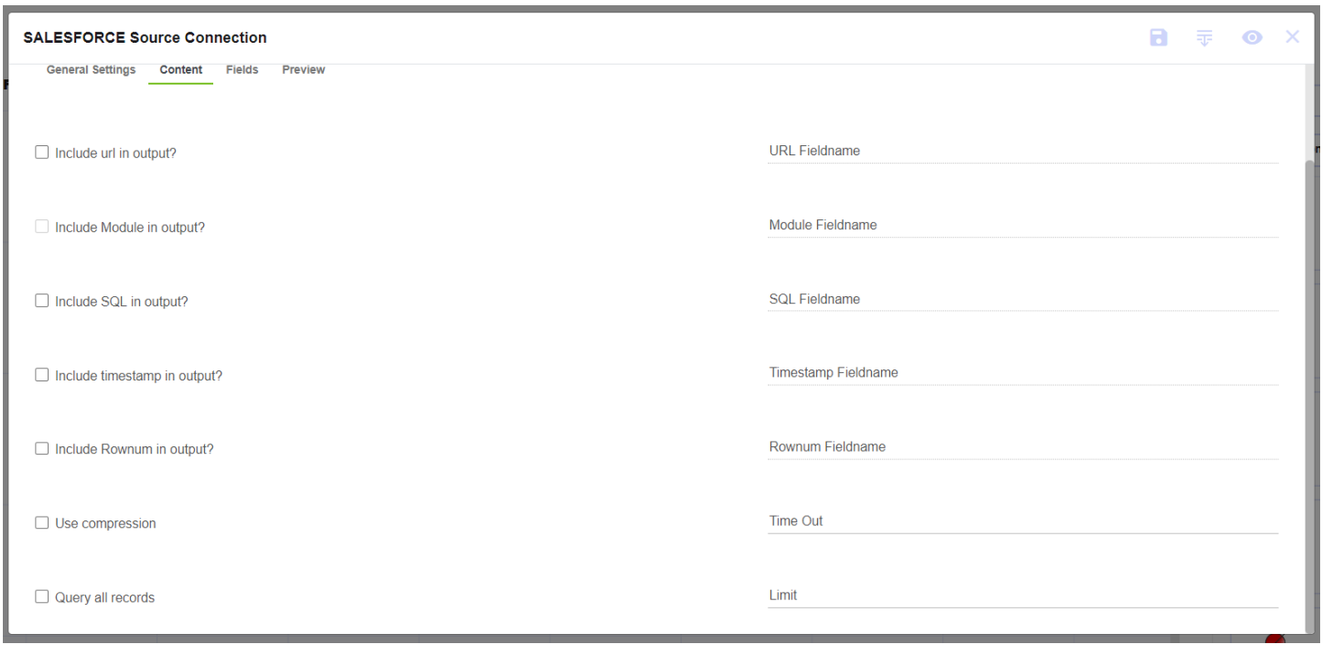
The settings tab supports the configuration of the module to query and query conditions take place.

Name	Description
Module	Select the module from which to retrieve data from
Query Condition	Enter any query filters needed to apply. For example, 'fieldname=myvalue AND fieldname2=my value2...'
Specify Query	It is a checkbox And, when this checkbox is in the flagged module the dropdown is disabled Now, a query in the query condition text box can be entered

Content Tab



(Cont'd…)



Options

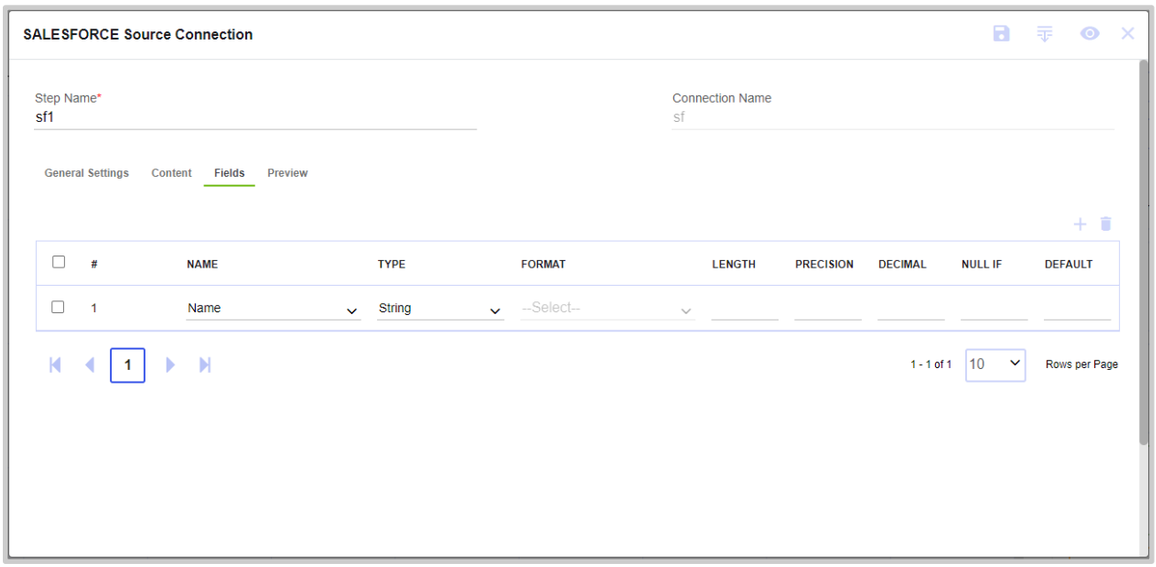
The content tab permits including additional descriptive fields in the result set.

Name	Description
Include URL in Output?	Enable to add a field to the output containing the URL used to retrieve the data
Include Module in output?	Enable to add a field to the output containing the module from which the data was retrieved
Include SQL in output?	Enable to add a field to the output containing the SQL used to generate the result set
Include timestamp in output?	Enable to add a field to the output containing the timestamp for when the record was retrieved

Include Rownum in output?	Enable to add a field to the output containing a row number for record retrieved
Time out	Configure the timeout interval in milliseconds before the Step times out
Limit	Configure the maximum number of records to retrieve
Use compression	Data is compressed in transit

Fields Tab

The Fields tab displays the fields that will be read from the Salesforce object.



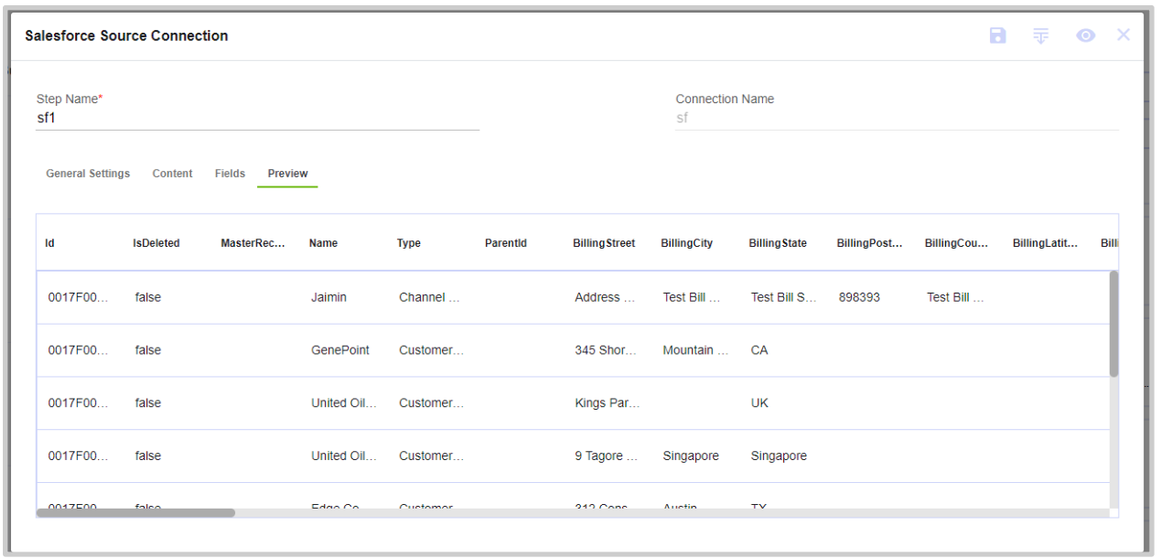
Click "Get Fields" to populate the fields returned before being able to preview the rows returned.

Name	Description
Name	Specify the field name to be used by clicking on “Get fields”
Type	It is a drop down with values • Number • String • DateTime • Boolean • Integer • Big Number
Format	The format mask to convert with. See Number Formats for a complete description of format symbols • #,##0.### • 0.00 • 0000000000000 • #.# • # • ###,###,###.# • #######.### • #####.###%
Length	The length option depends on the field type follows: • Number - total number of significant figures in a number • String - total length of string

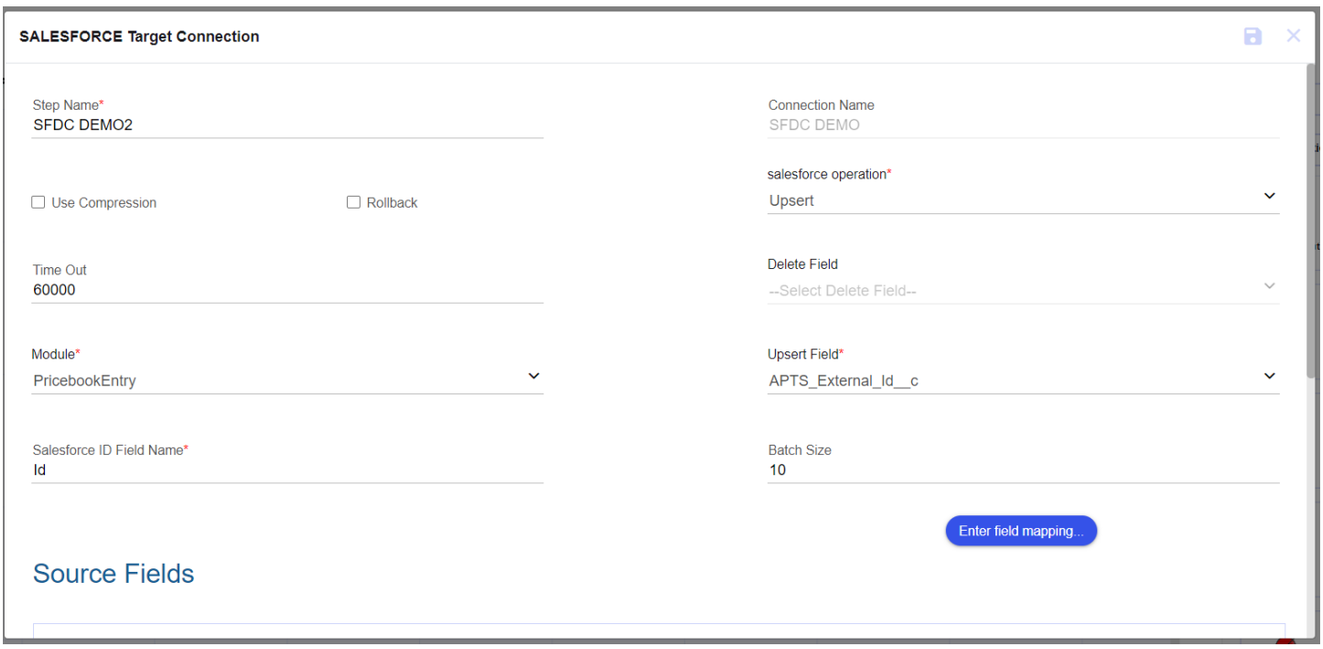
	• Date - length of printed output of the string (e.g. 4 only gives back year)
Precision	For Number: number of floating point digits; For string, date, Boolean: unused;
Decimal	A decimal point can be a "." (10,000.00) or "," (5.000,00)
Nullif	Treat this value as NULL
Default	The default value in case the field in the text file was not specified (empty)

Preview Tab

Click the preview tab to access sample data.



Salesforce as a Target Connection

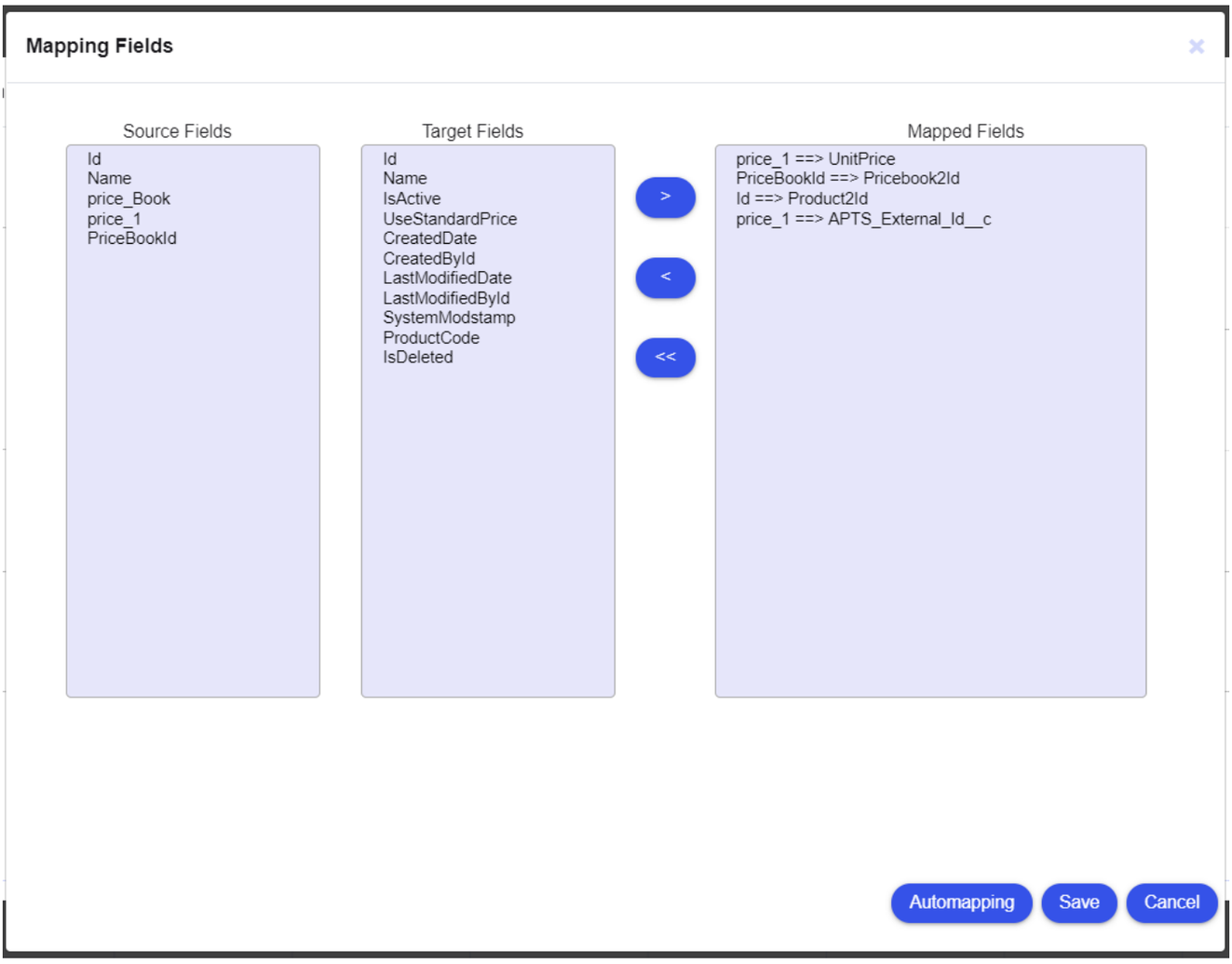


Field	Description
Use Compression	Data can be compressed in transit
Module	Select the module required to retrieve the data from Salesforce

Rollback	Rollback data in Salesforce
IsDelete?	Record is deleted if this flag is set
Time Out	Response time in case of delay
Delete Field	The Field is used for deleting the record
Upsert Field	Field to be inserted/updated for salesforce object
Salesforce ID field Name	Salesforce ID Field name
Batch size	Specifies how many records has to be inserted
Time out	In a specified time, if the operations are not performed, all the operations will be canceled

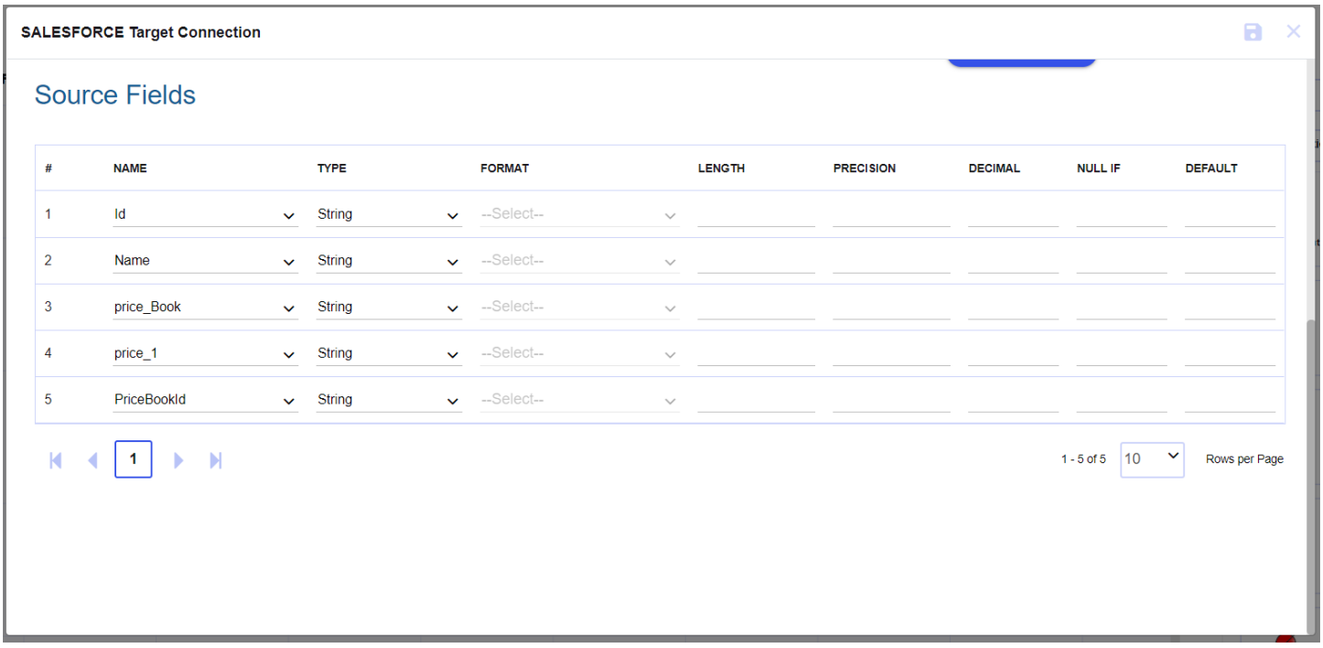
Field Mapping

A picture below represents the available Source and Target Fields.



Source Fields and Target Fields, are reflected upon entering Field Mapping by clicking 'AutoMapping', it will map the fields automatically or user can map fields manually.

Source Fields



The Fields tab displays the fields that will be read from the Salesforce object.

Note: The module is chosen on the Settings tab.

Click Get Fields to populate the fields returned before being able to preview the rows returned.

Name	Description
Name	Specify the field name to be used by clicking get fields
Type	It is a drop down with the options of • Number • String • DateTime • Boolean • Integer • Big Number
Format	The format mask to convert with. See Number Formats for a complete description of format symbols • #,##0.### • 0.00 • 0000000000000 • #.# • # • ###,###,###.# • ########.### • ######.###%
Length	The length option depends on the field type follows: • Number - total number of significant figures in a number • String - total length of string • Date - length of printed output of the string (e.g. 4 only gives back year)
Precision	For Number: number of floating point digits; For String, Date, Boolean: unused;
Decimal	A decimal point can be a "." (10,000.00) or "," (5.000,00)

Nullif	Treat this value as NULL
Default	The default value in case the field in the text file was not specified (empty)

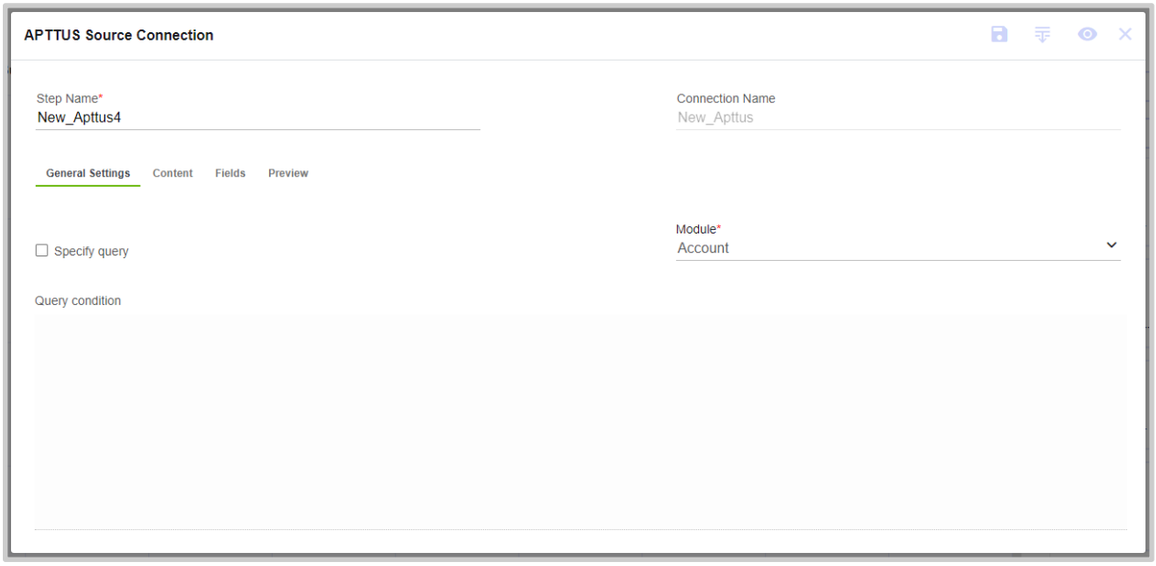
APTTUS as a Source Connection

The Apttus connection provides an ability to read data directly from Apttus using the Apttus web service.

The section(s) below describes each of the available features for configuring the Apttus connection.

General Settings Tab

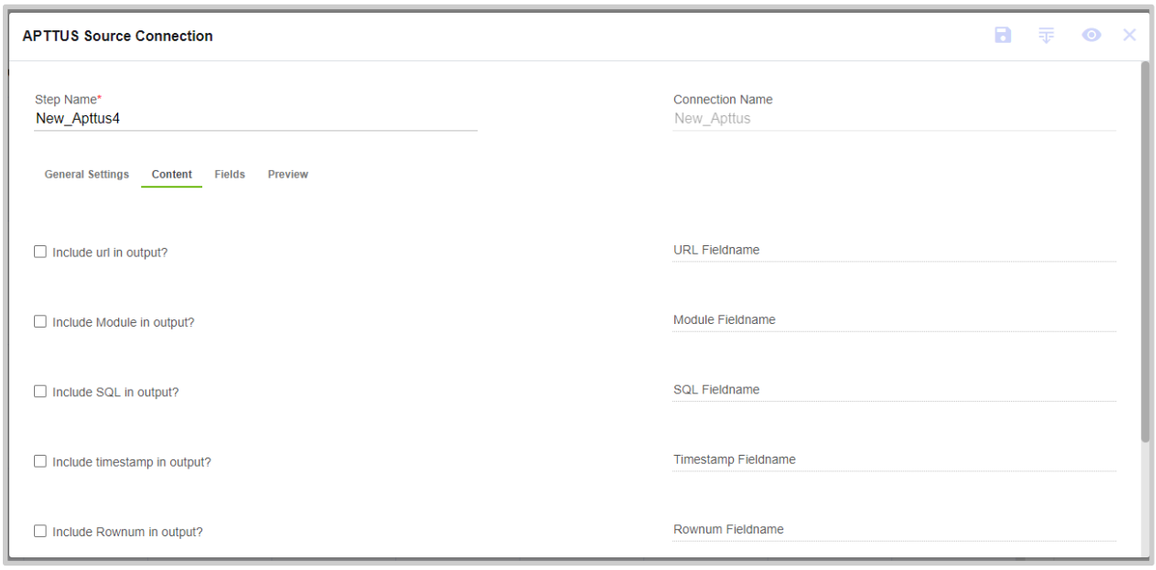
The settings tab helps to configure the module to query and query conditions.



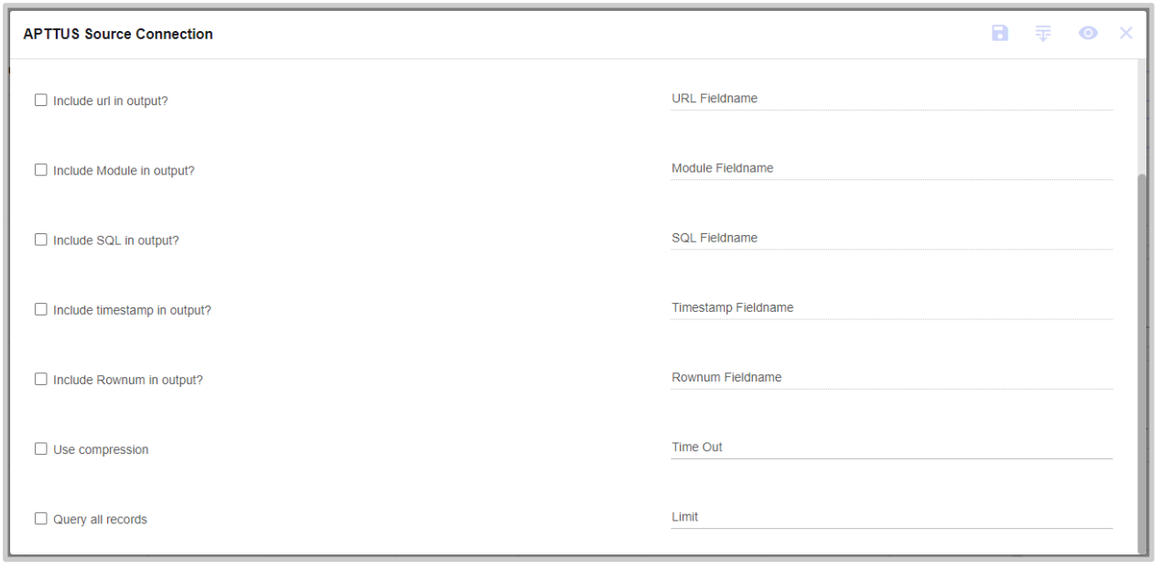
Name	Description
Module	Select the module required to retrieve data from
Query Condition	Enter any query filters need to be applied. For example, 'fieldname=myvalue AND fieldname2=my value2…
Specify Query	A checkbox which in flagged module disables drop down Helps to enter a query in query condition text box

Content Tab

The Content tab permits the inclusion of additional descriptive fields in the result set optionally.



(Cont'd…)

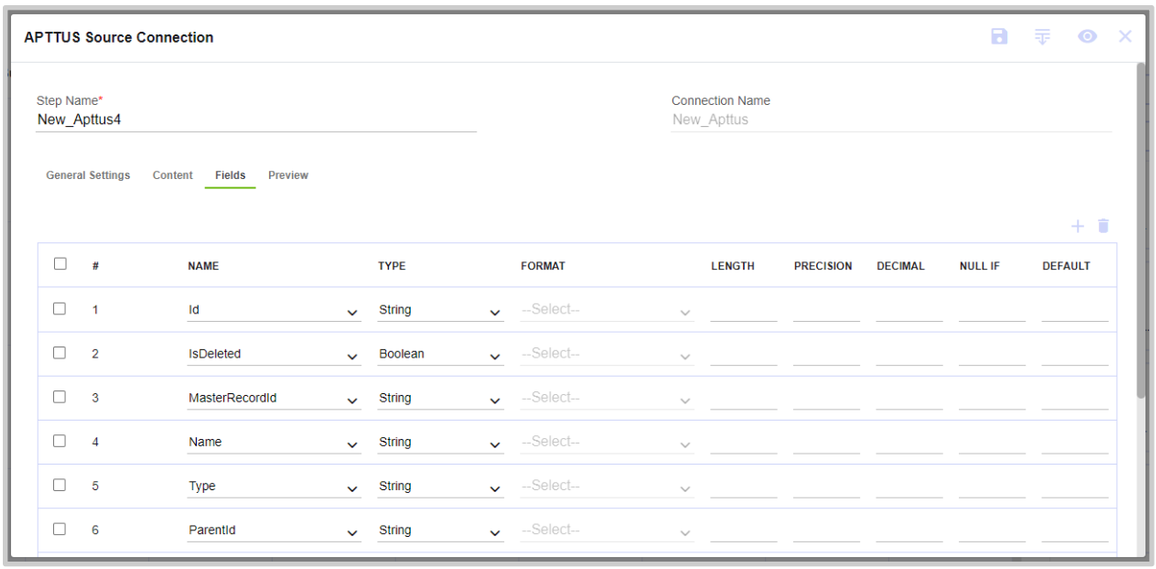


Name	Description
Include URL in Output?	Enable to add a field to the Output containing the URL used to retrieve the data
Include Module in Output?	Enable to add a Field to the Output containing the module from which the data was retrieved
Include SQL in Output?	Enable to add a field to the Output containing the SQL used to generate the result set
Include timestamp in Output?	Enable to add a field to the Output containing the timestamp for when the record was retrieved
Include Rownum in Output?	Enable to add a field to the Output containing a row number for each record retrieved
Time out	Configure the timeout interval in milliseconds before the Step times out
Limit	Configure the maximum number of records to retrieve Setting this to '0' means there will be no limit placed on the number of records that can be retrieved

Use compression	Data is compressed in transit

Fields Tab

The Fields tab displays the fields that will be read from the Salesforce object.
Click Get Fields to populate the fields returned before being able to preview the rows returned.



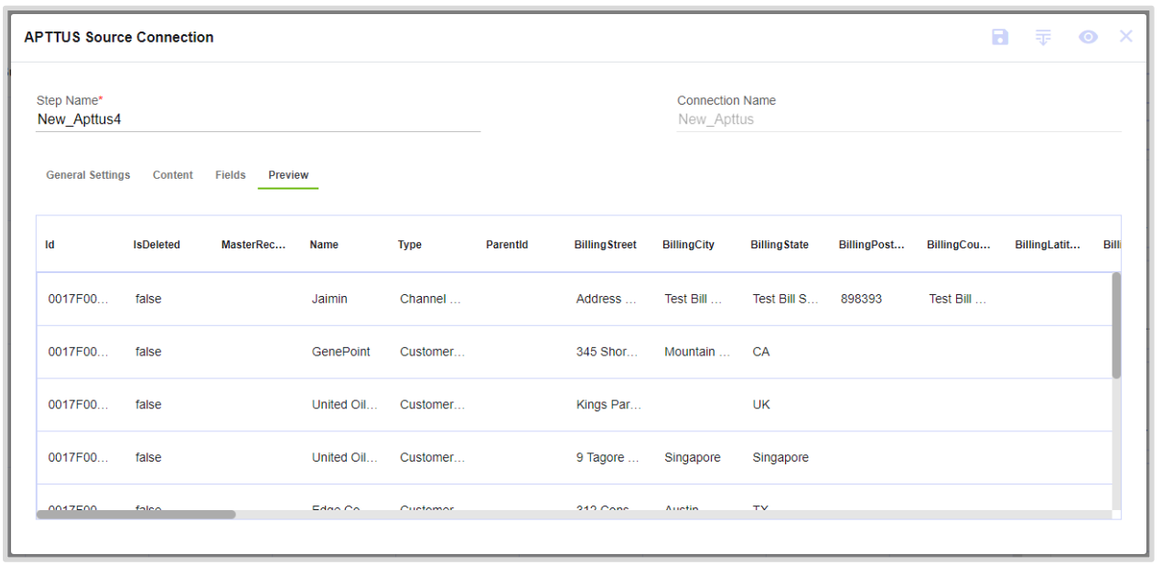
Option

Name	Description
Name	Specify the field name to be used
Type	It is a drop down with the following options: • Number • String • DateTime • Boolean • Integer • Big Number
Format	The format mask to convert with Please refer to Number Formats for a complete description of format symbols • #,##0.### • 0.00 • 0000000000000 • #.# • # • ###,###,###.# • ########.### • #####.###%
Length	The length option depends on the field type follows: • Number - total number of significant figures in a number • String - total length of string • Date - length of printed output of the string (e.g. 4 only gives back year)
Precision	For Number: number of floating point digits; For String, Date, Boolean: unused;

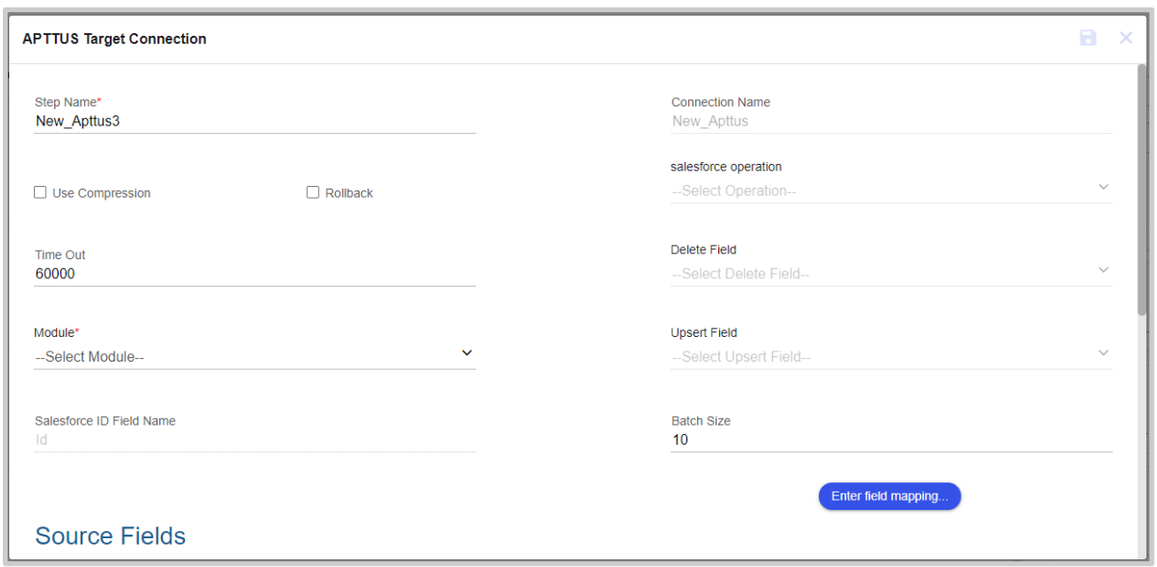
Decimal	A decimal point can be a "." (10,000.00) or "," (5.000,00)
Nullif	Treat this value as NULL
Default	The default value in case the field in the text file was not specified (empty)

Preview Tab

The Preview tab displays the sample data.



Apttus as a Target Connection (Same as Salesforce connection)



Option

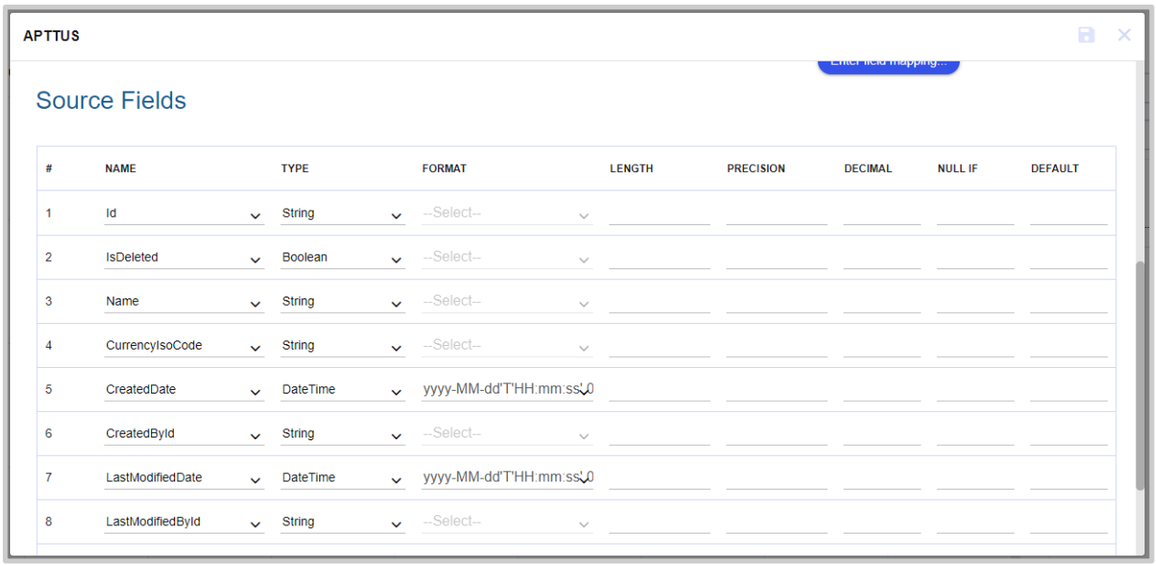
Field	Description
Use Compression	Data can be compressed in transit
Module	Select the module required to retrieve data from Salesforce
Rollback	Rollback data in Salesforce
Is Delete?	Record is deleted if this flag is set
Time Out	Response time in case of delay
Delete Field	This field will be used for deleting the record
Upsert Field	Field to be inserted /updated for Salesforce object
Salesforce ID field Name	Salesforce ID field name
Batch size	Specify how many records has to be inserted
Time out	In a specified time, if the operations are not performed, all the operations will be canceled

Field Mapping

A picture below represents the available Source and Target Fields. Click Automapping to map the fields automatically. It can be mapped manually also.

Source Fields

The Fields tab displays the fields which will be read from the Salesforce object.



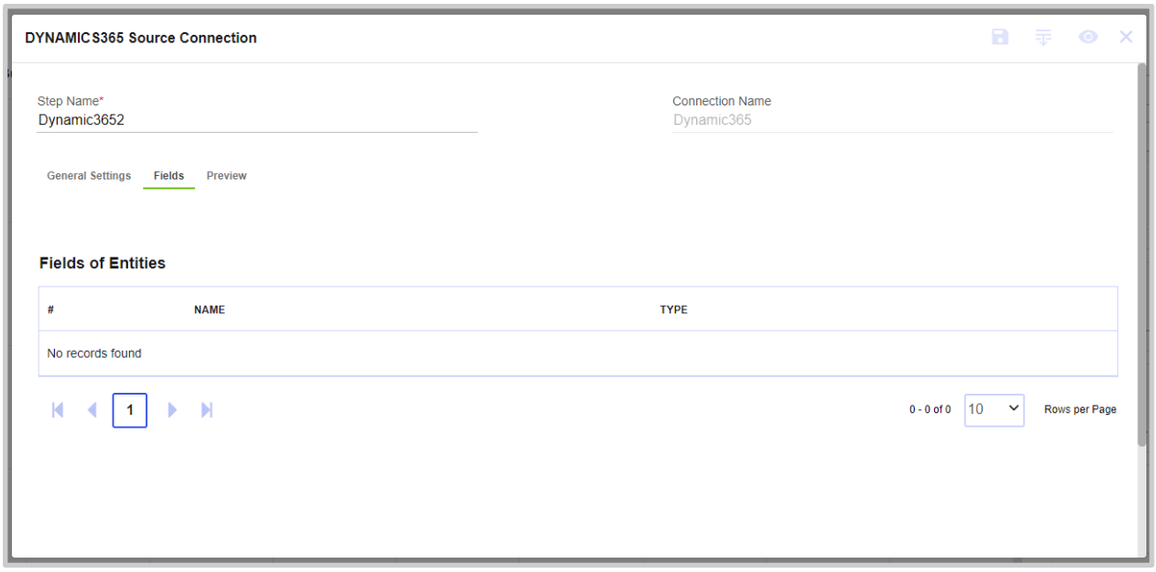
Option

Name	Description
Name	Specify the field name to be used
Type	Drop down with the options of: • Number • String • DateTime • Boolean • Integer • Big Number
Format	The format mask to convert with. Please refer to Number Formats for a complete description of Format symbols • #,##0.### • 0.00 • 0000000000000 • #.# • # • ###,###,###.# • ########.### • #####.###%
Length	The length depends on the field type as follows: • Number - total number of significant figures in a number • String - total length of string • DateTime - length of printed output of the string (e.g. 4 only gives back year)
Precision	For Number: number of floating point digits; For String, Date, Boolean: unused
Decimal	A decimal point can be a "." (10,000.00) or "," (5.000,00)
Nullif	Treat this value as Null
Default	The default value in case the field in the text file was not specified (empty)

Dynamics365 as a Source Connection

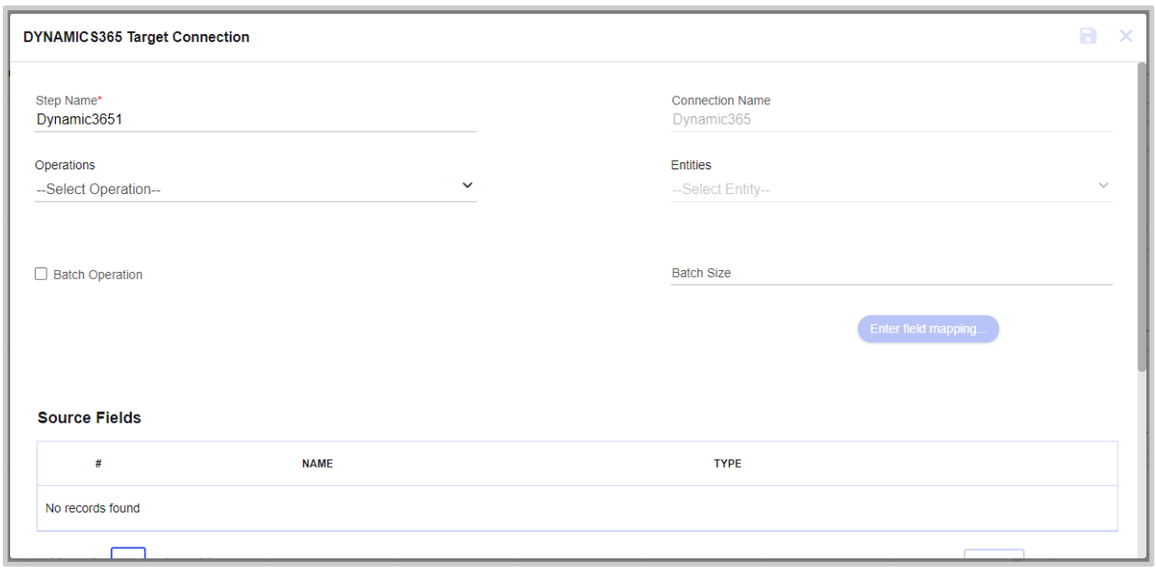
This connector is used to connect Microsoft’s Dynamics 365 CRM application and perform data transformations.

(Cont’d…)



Dynamics365 as a Target Connection

Dynamics 365 Connector can be used to push data to Dynamics 365 platform

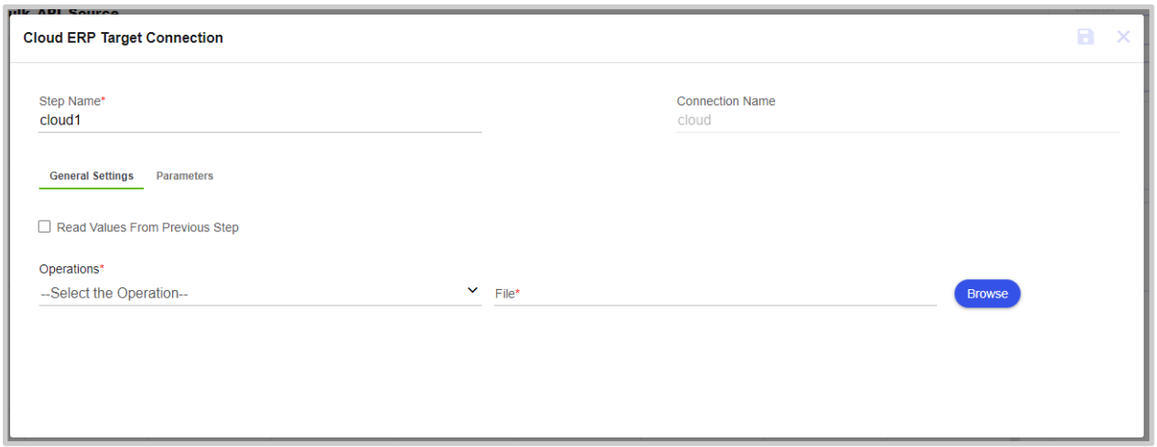


Mapping Fields

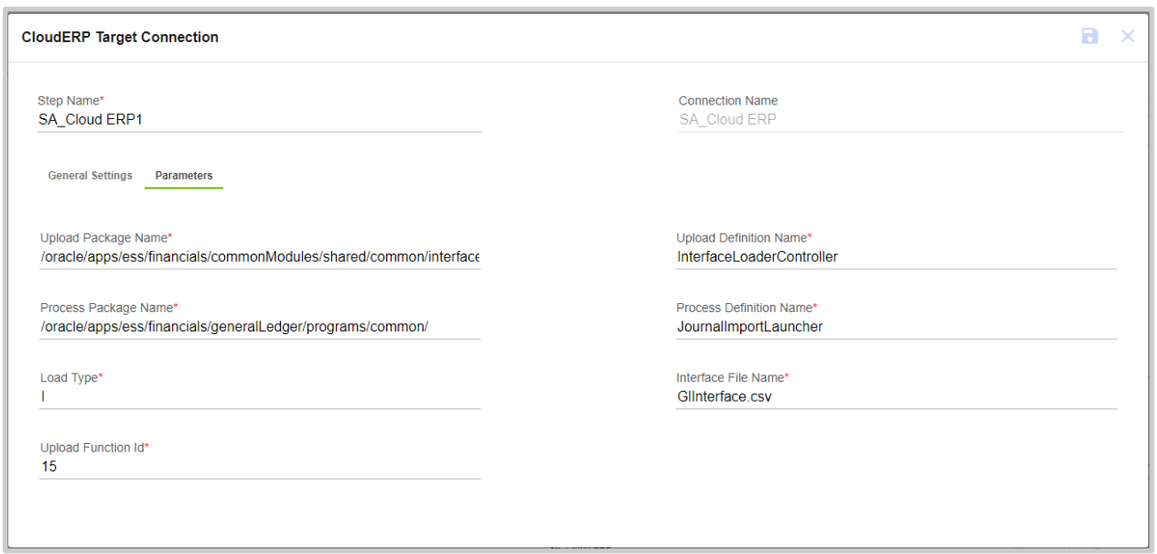
A picture below represents the available Source and Target Fields. Click Automapping to map the fields automatically. It can be mapped manually also.

Cloud ERP Target Connection

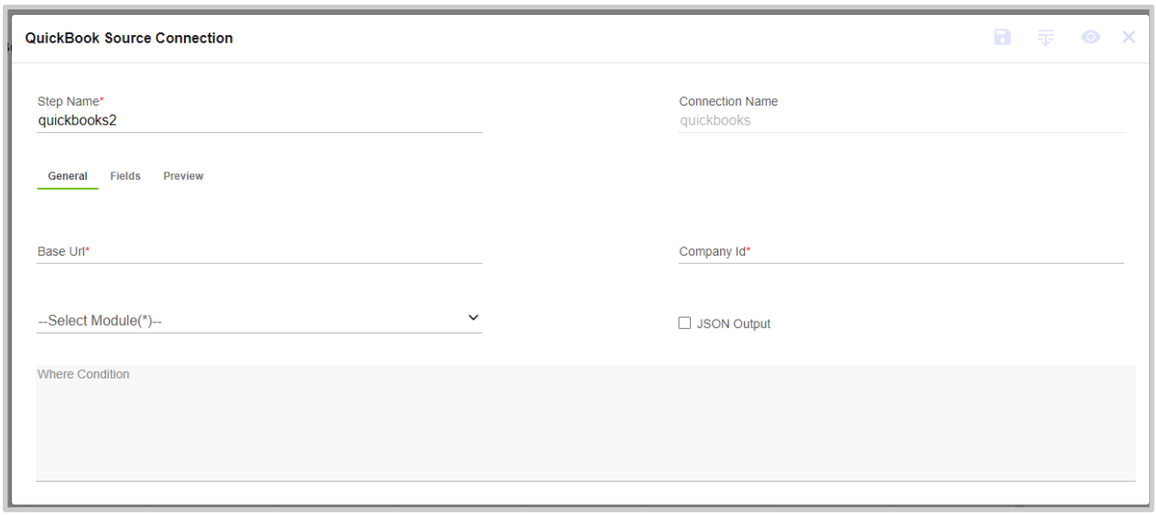
This connector is used to transform data from any legacy systems into Cloud ERP.


Cloud ERP Target Connection
Step Name*
cloud1
Connection Name
cloud
General Settings
Parameters
Read Values From Previous Step
Operations*
--Select the Operation--
File*
Browse

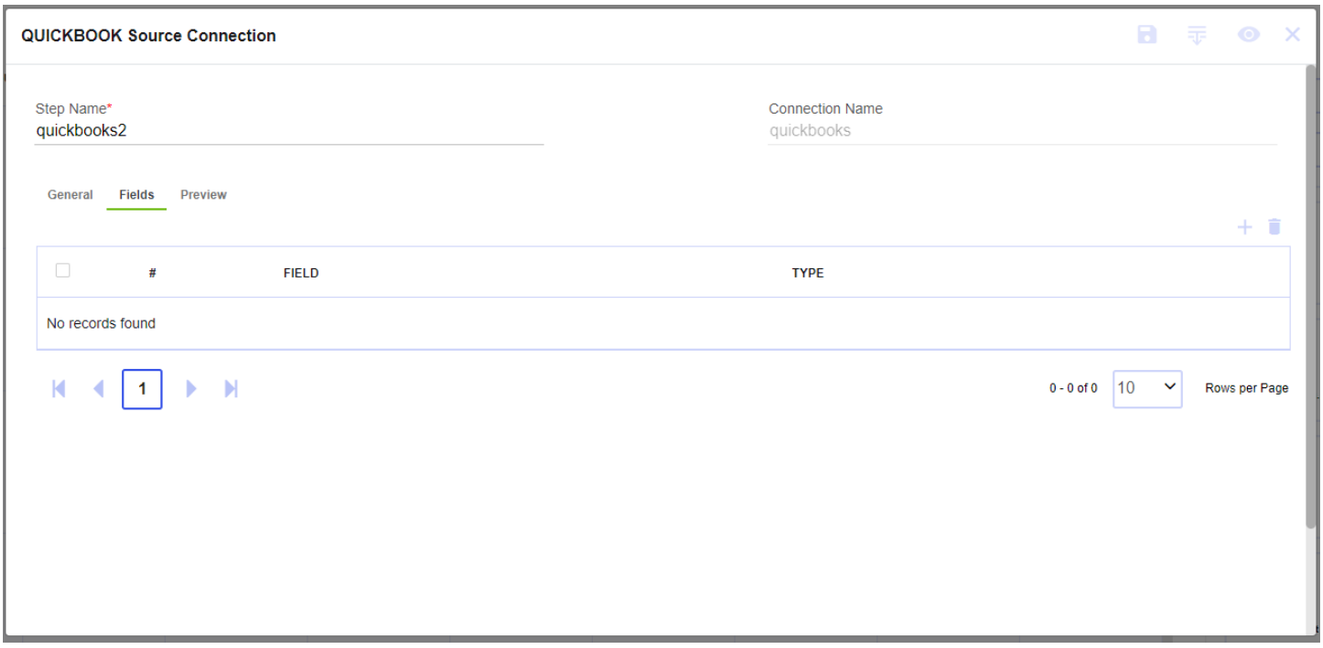
(Cont'd…)


CloudERP Target Connection
Step Name*
SA_Cloud ERP1
Connection Name
SA_Cloud ERP
General Settings
Parameters
Upload Package Name*
/oracle/apps/ess/financials/commonModules/shared/common/interface
Upload Definition Name*
InterfaceLoaderController
Process Package Name*
/oracle/apps/ess/financials/generalLedger/programs/common/
Process Definition Name*
JournalImportLauncher
Load Type*
I
Interface File Name*
GlInterface.csv
Upload Function Id*
15

QuickBooks Source Connection



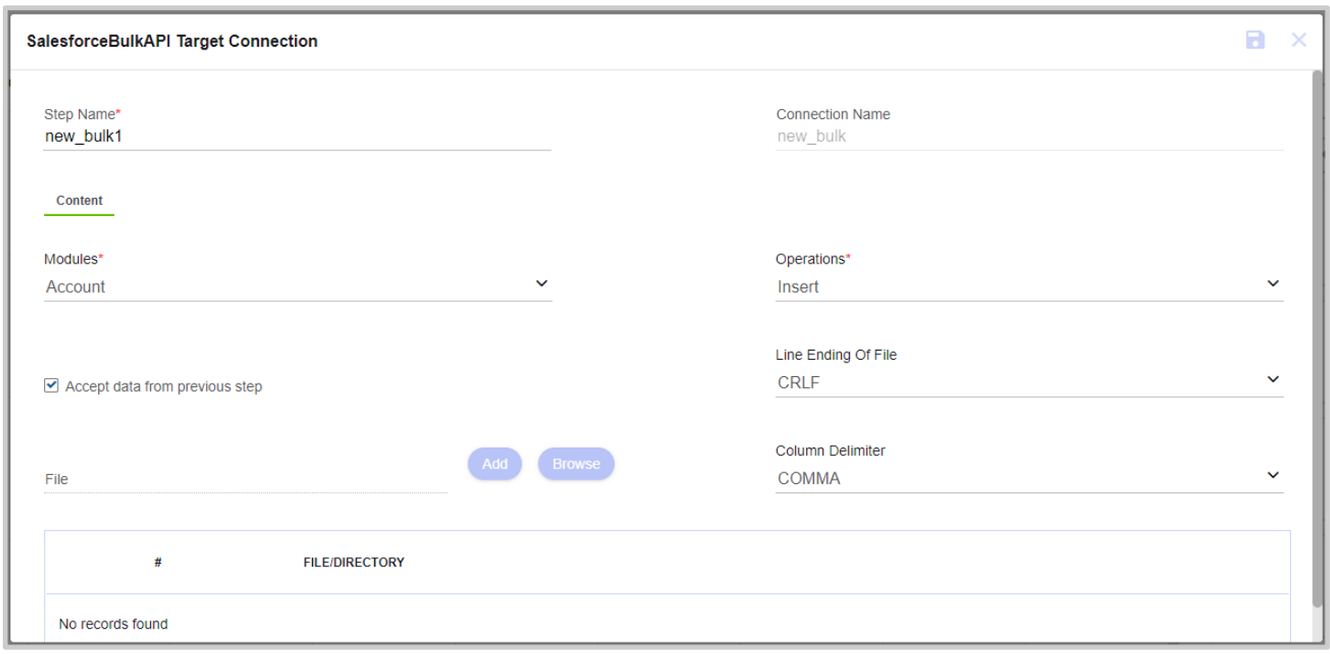
Fields



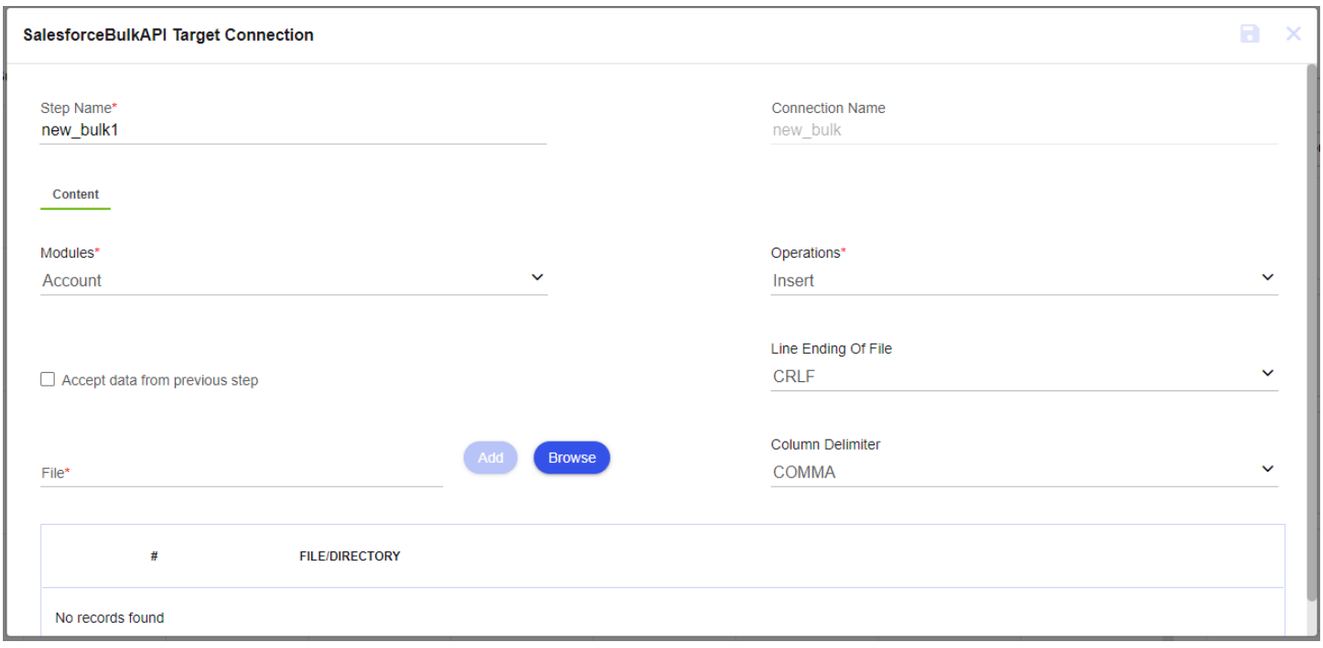
Salesforce Bulk API Target Connection

Salesforce Bulk API is used if the user is dealing with a large datasets to transfer.

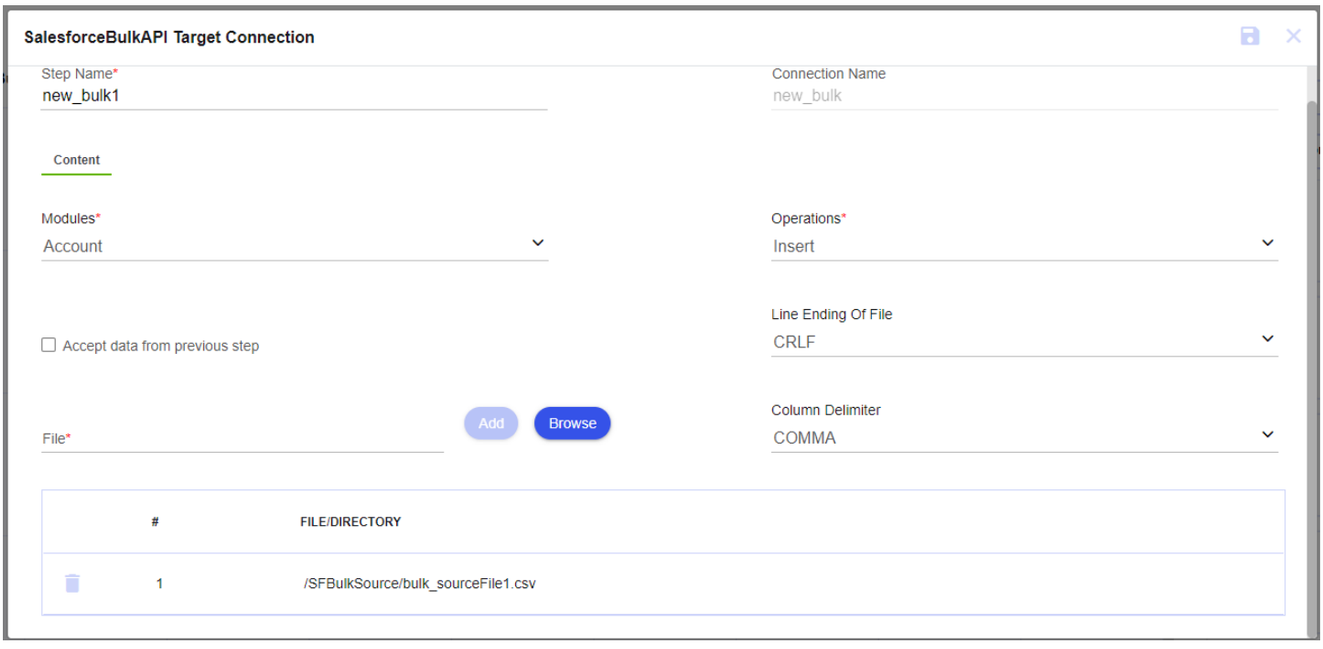
Enter Modules and Operations. A user has an option to either to accept data from the previous step or to browse a file from a local desktop.


SalesforceBulkAPI Target Connection
Step Name*
new_bulk1
Connection Name
new_bulk
Content
Modules*
Account
Operations*
Insert
Accept data from previous step
Line Ending Of File
CRLF
File
Add
Browse
Column Delimiter
COMMA
#
FILE/DIRECTORY
No records found

Cont'd...


SalesforceBulkAPI Target Connection
Step Name*
new_bulk1
Connection Name
new_bulk
Content
Modules*
Account
Operations*
Insert
Accept data from previous step
Line Ending Of File
CRLF
File*
Add
Browse
Column Delimiter
COMMA
#
FILE/DIRECTORY
No records found

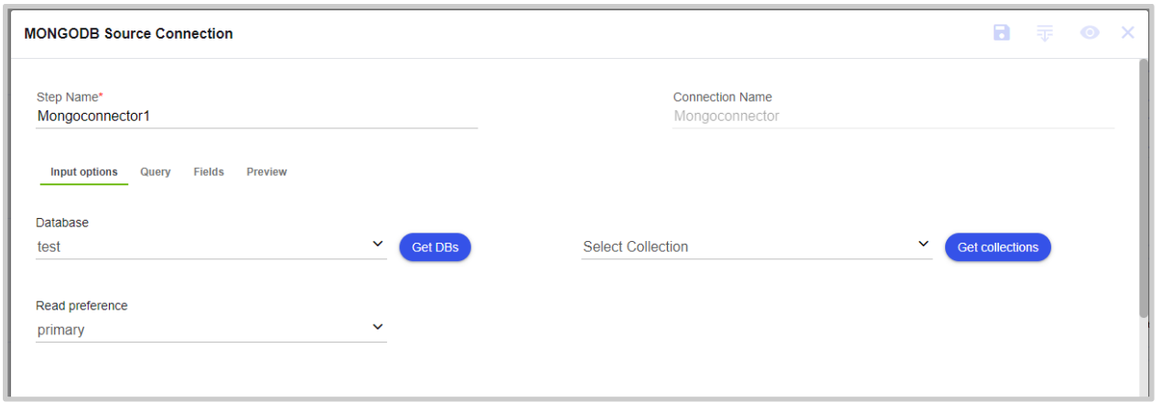
Cont'd...


SalesforceBulkAPI Target Connection
Step Name*
new_bulk1
Connection Name
new_bulk
Content
Modules*
Account
Operations*
Insert
Accept data from previous step
Line Ending Of File
CRLF
File*
Add
Browse
Column Delimiter
COMMA
#
FILE/DIRECTORY
1
/SFBulkSource/bulk_sourceFile1.csv

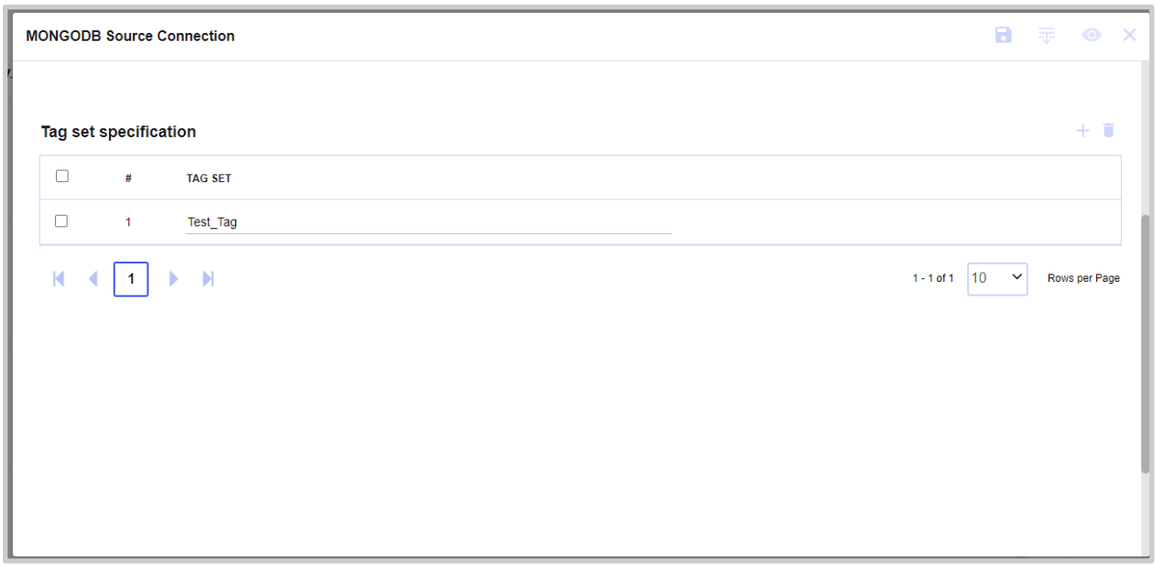
MongoDB As Source

MongoDB Input empowers the user to retrieve documents or records from a collection within MongoDB.

Input Options Tab



Tag set specification



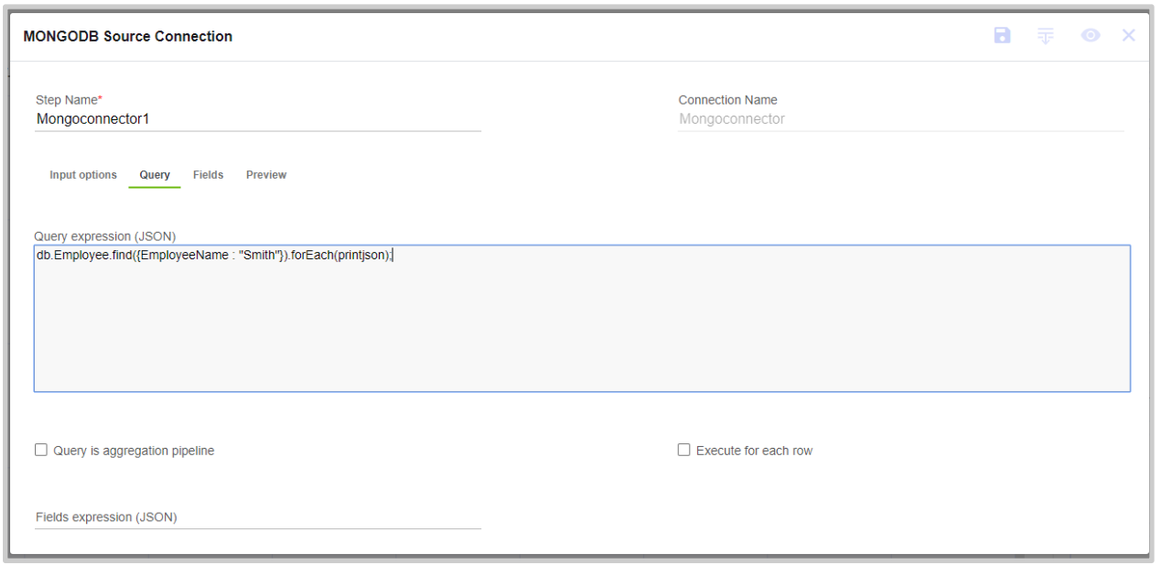
Options

Input Options helps in specifying which database and collection are required to retrieve information from. The read preferences and tag sets in this tab can also be indicated.

Name	Description
Database	Name of the database to retrieve data from Click Get DBs to populate the drop-down menu with a list of databases on the server
Collection	Name of the collection to retrieve data from Click Get collections to populate the drop-down menu with a list of collections database
Read Preference	Indicates which node to be read first Primary, Primary preferred, Secondary, Secondary preferred or Nearest

Tag set specifications	Tag set let customization, writing concerns and reading preferences for a replica set Let specify criteria for selecting replica set members. Click Get tags to populate specification with the tag sets that are available on the database, in order of execution Tag sets can be joined, deleted, copy or pasted tag sets. The # field indicates the number of the tag set. The Tag set field displays the tag set criteria
Get Tags	Retrieves a list of the tag sets that are in the DB and also indicated in the database field
Join tags	Appends selected tag sets to match the criteria, which are queried or written simultaneously If selecting individual tag sets, then click Join tags, the tag sets are combined to create one tag set Note, that this change occurs in the MongoDB Input dialogue box only, not on the database
Test tag set	Displays the set members that match the tags indicated in the tag set specification Clicking Test tag set displays the Id, Hostname, Priority and Tags for each replica set member that matches the tag set specification criteria

Query Tab



Options

Query supports refining the read request. It operates in two different modes. It can be created using JSON Query expression or using the Aggregation Framework.

JSON Query expression can be entered when the Query is an aggregation pipeline checkbox is deselected.

A table given below describes the options for the above screen:

Name	Description
Query expression(JSON)	JSON expression to limit the output
Aggregation pipeline specification	Use this field is required to use the MongoDB Aggregation A framework to perform simple or complex aggregations or selections such as totaling or averaging field values

Query is aggregation pipeline	Pipes multiple JSON expressions together to execute at once An aggregation pipeline strings several JSON expressions together, with the output of the previous expression becoming the input for the next When selected, the Aggregation pipeline specification (JSON) field shows up When deselected, the Query expression (JSON) field shows up
Execute for each row	Perform the query on each row of the data
Fields Expression(JSON)	The Field becomes active when “Query aggregation pipeline” is not selected Controls the fields to return If empty, all fields are returned Enter true or false after the fields to indicate selected or not, respectively

Fields Tab

The Fields tab helps in defining properties for the exported fields. It operates in two different modes that impact how query results are formatted.

Preview Tab

Options

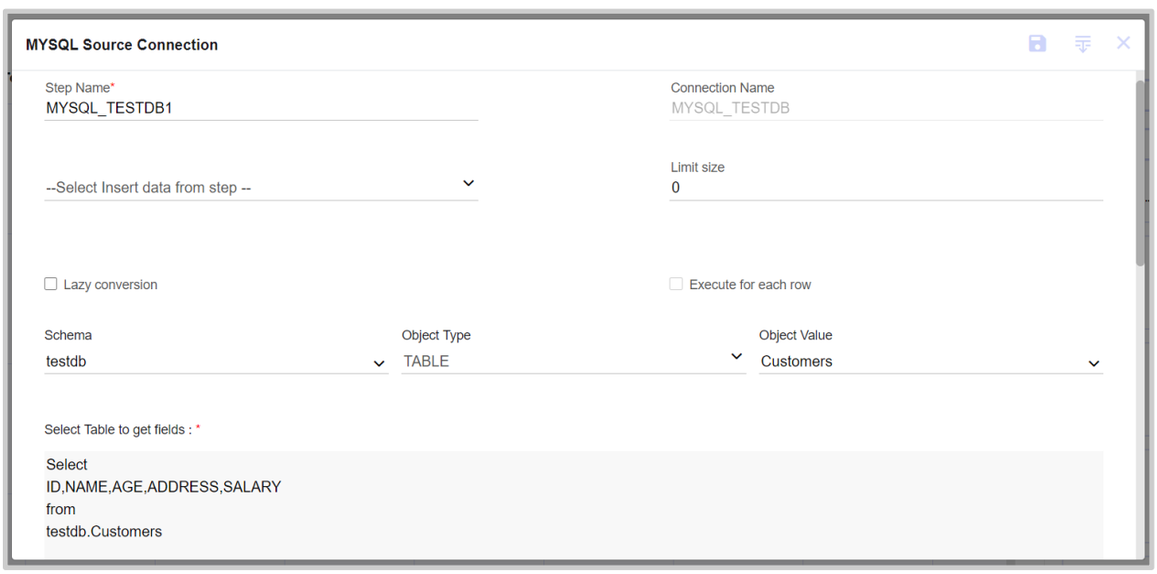
A table given below describes the options for Field Tab MongoDB Input.

Name	Description
Output single JSON field	Indicate whether the JSON result of the query should result in a single field that has the String data type User can parse this JSON using the JSON Input Transformation Step, eval("{"JSONString"}") in JavaScript

Name of JSON output field	Designate the name of the field that contains the JSON output from the server
Get Fields	Create a sample set of documents, then displays the name and field for each record
Name	Display an easy to understand the name of the field that is based on the value in the Path field The name that shows up here maps the name of the field as it shows up in the Flow in the field that shows up in the MongoDB database Edit the name if required
Path	Indicate the JSON path of the field in MongoDB If the path is shown is an array, select a specific element in the array by passing it the key value, which is contained in the bracketed part of the array
Type	Indicate the type of data
Indexed Value	Allow entering a comma-separated list of legal values for String fields
Sample: array min: max index	Indicate the minimum and maximum values for the index
Sample:#occur/#docs	Indicate how often the field occurs as well as the number of documents processed
Sample:disparate type	If several documents are sampled, but the same field contains different data types, the sample: disparate type field is populated with a "Y"
Preview	Display first look at the data

MySQL Source

This step is used to read information from the database, using connection SQL basic.

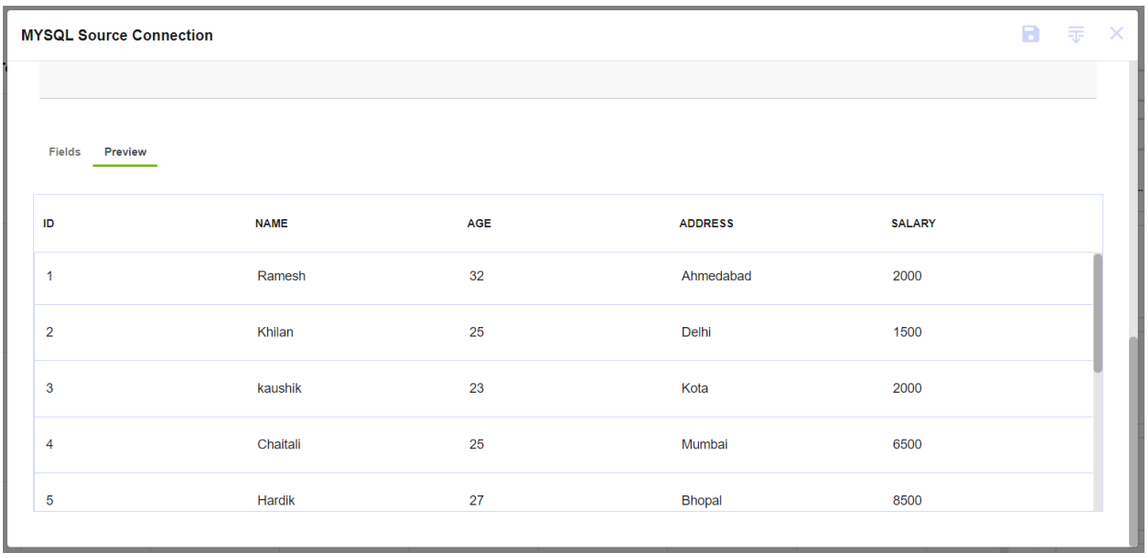


Fields Tab

The fields tab displays a field outcome….

Preview Tab

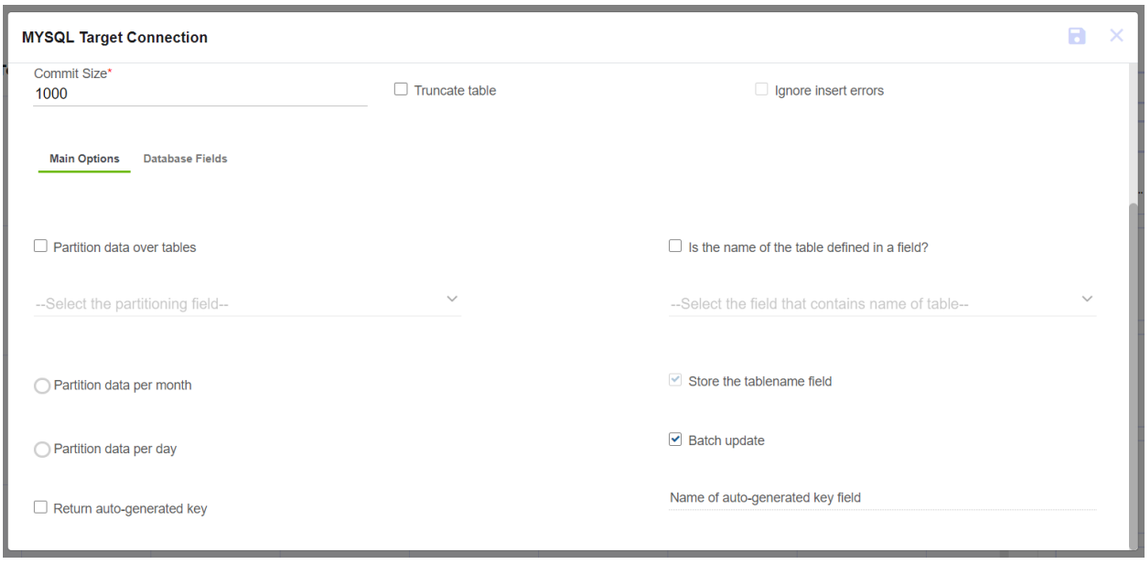
The preview tab displays the fields generated in the transformation.



MySQL Target

Using MySQL as a target connection allows a user to load data into a database load.

Main Options



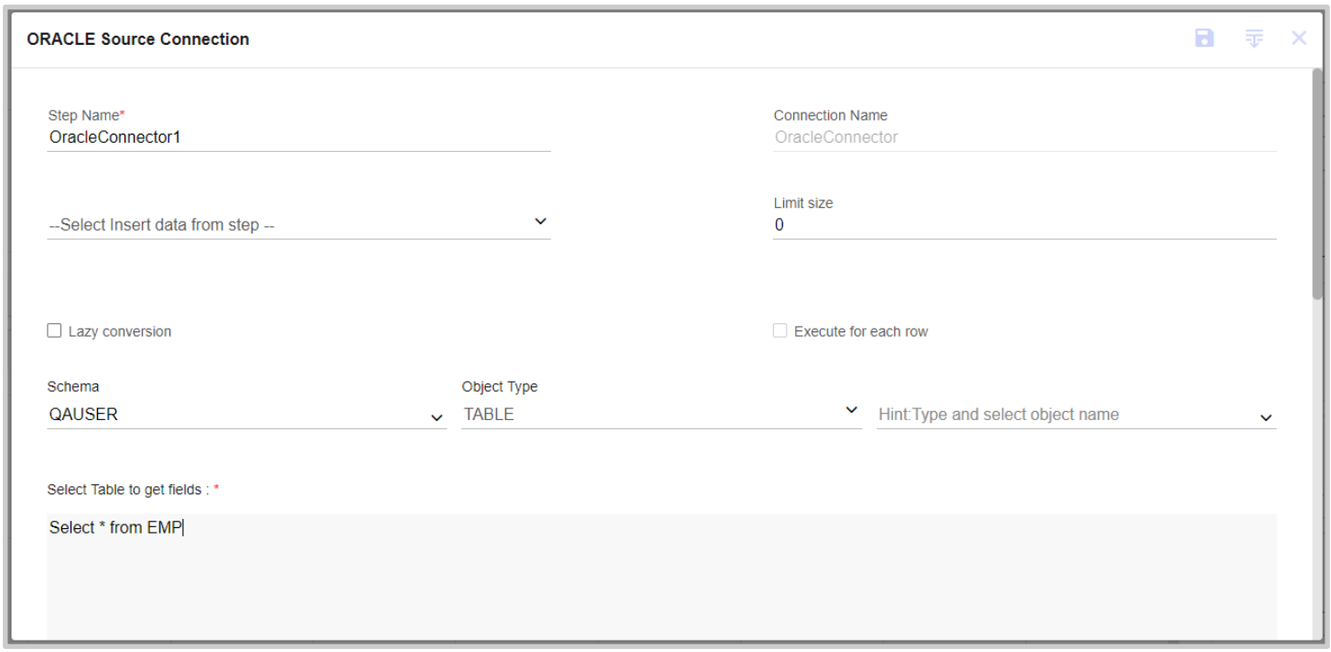
Database Fields

Mapping Fields

A picture below represents the available Source and Target Fields. Click Automapping to map the fields automatically. It can be mapped manually also.

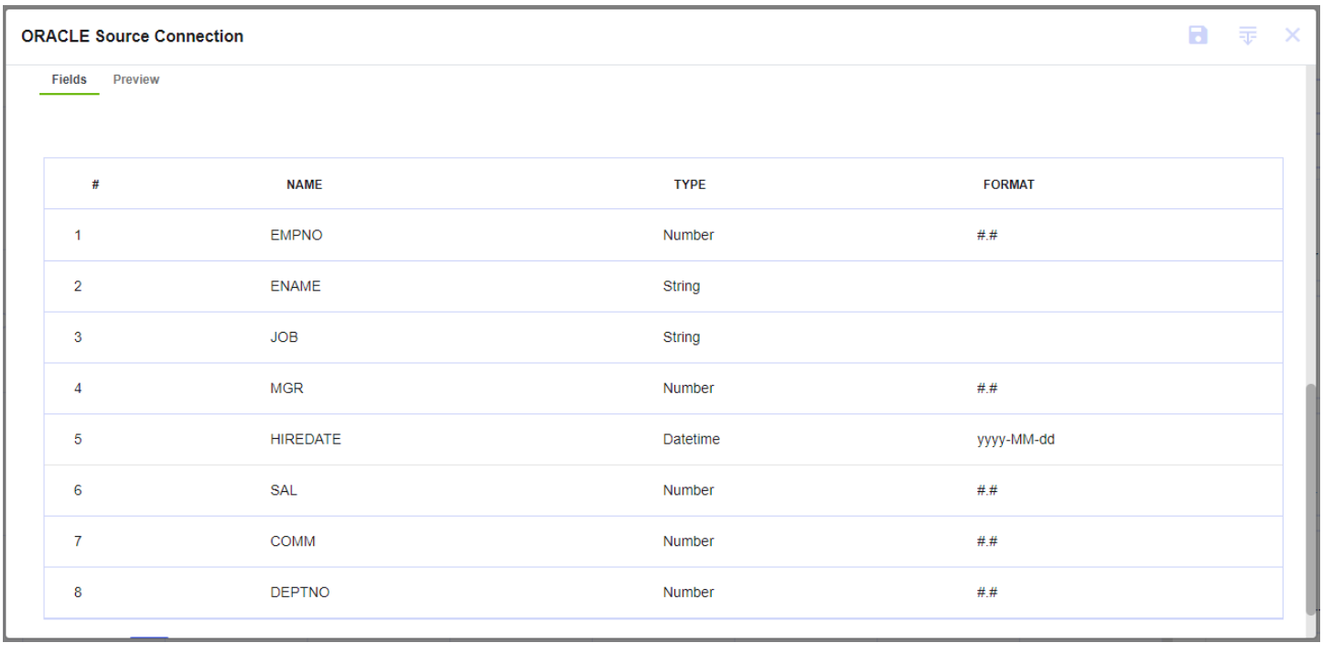
Oracle Source

A user can read information from a database using Oracle as a connection.

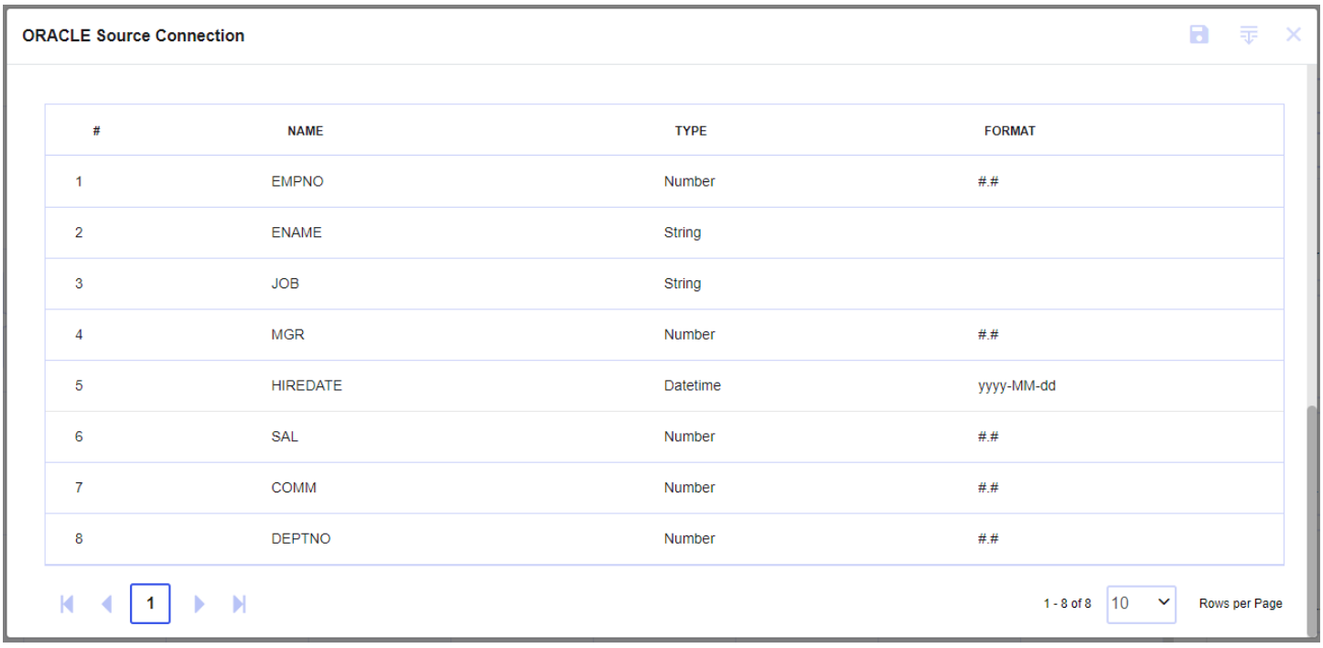


Fields Tab

The Fields tab displays the fields that will be read from the Oracle source.

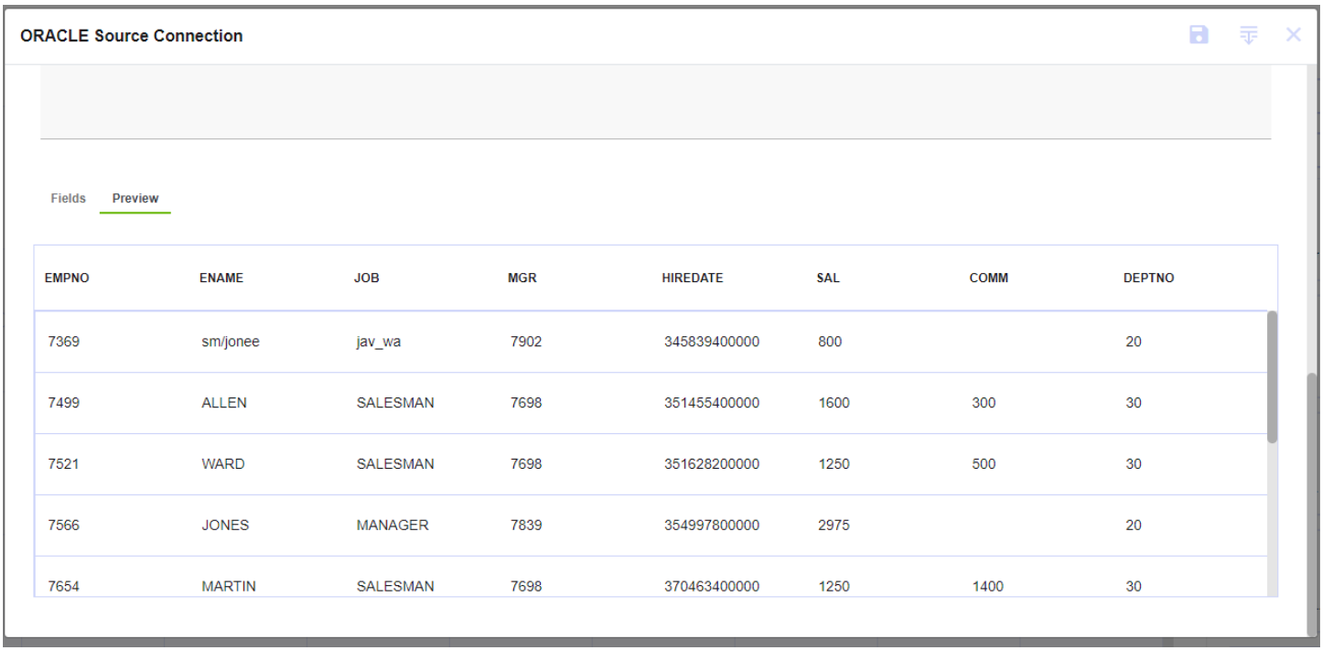


Cont'd …



Preview

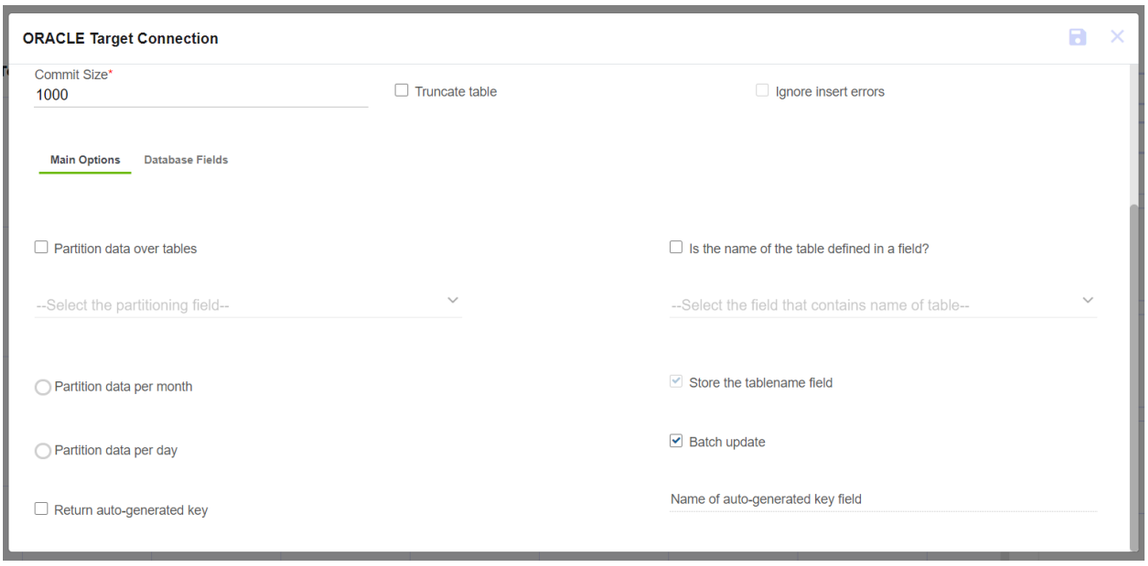
The preview tab shows the sample data available in the fields of a connector.



Oracle Target

This step allows a user to load data into a database table using Oracle.

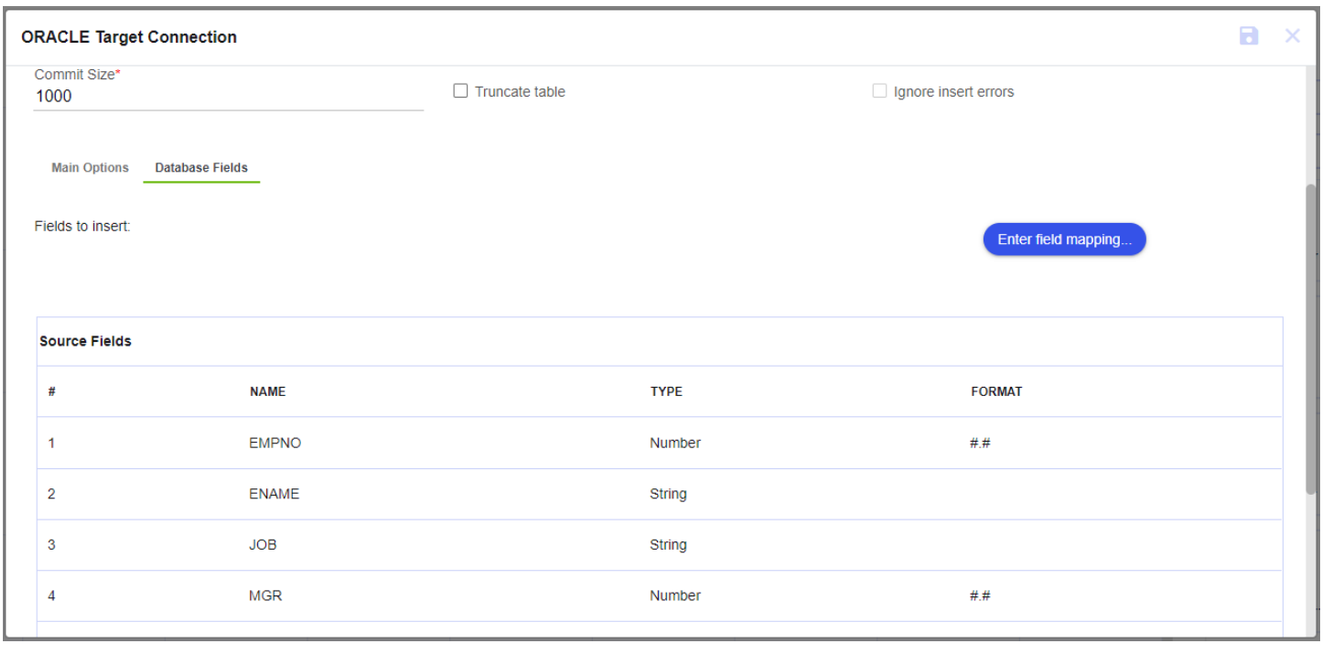
Main Options

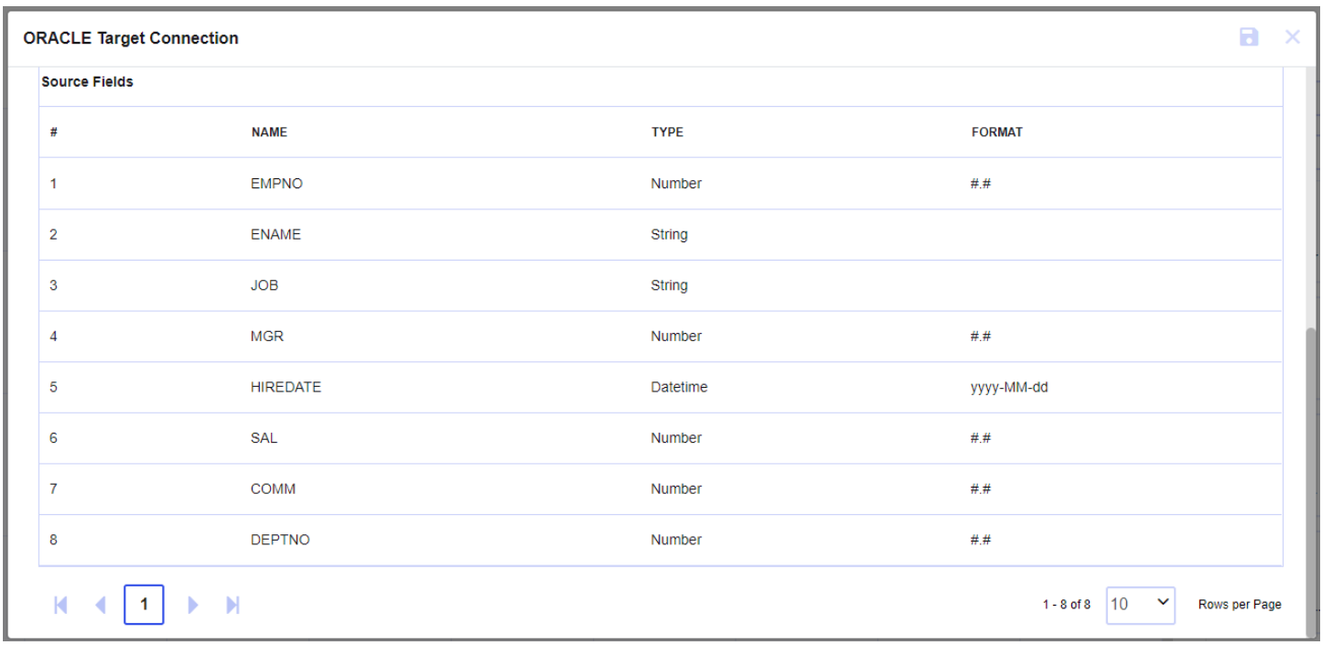


Name	Description
Commit Size	Mention the size of commit

Database Fields

This step is used to read information from a database using a connection and database fields.



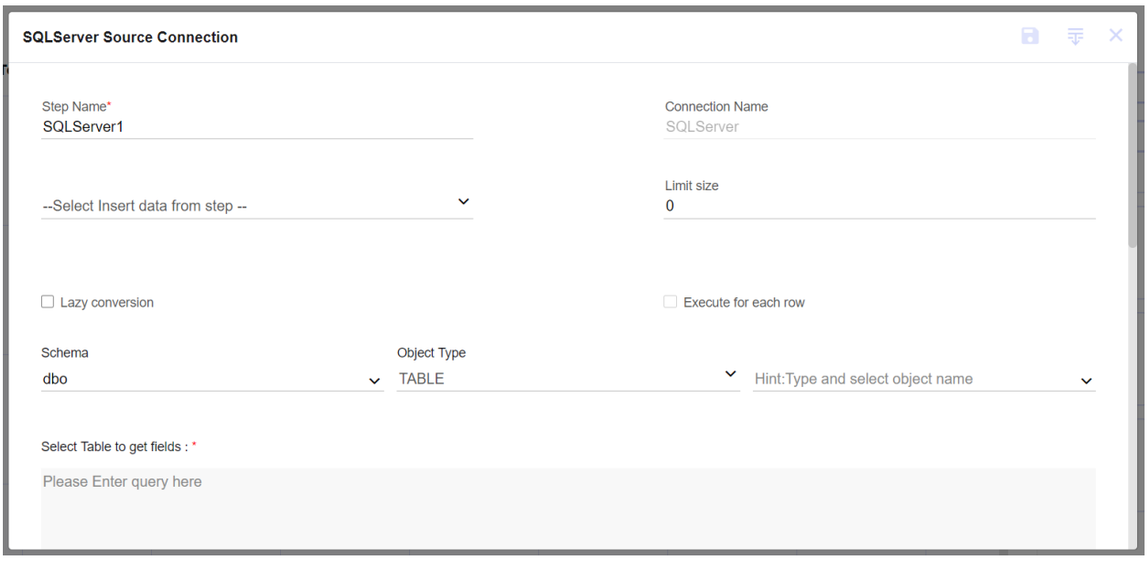


Mapping Fields

A picture below represents the available Source and Target Fields. Click Automapping to map the fields automatically. It can be mapped manually also.

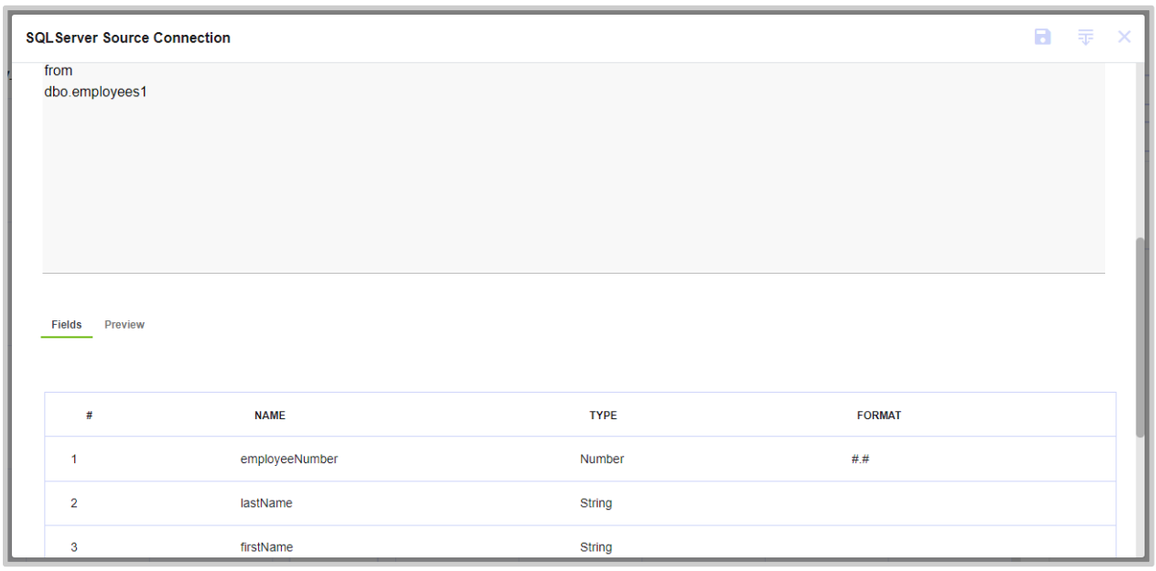
SQLServer Source

This step is used for reading information from database using connection and SQL server.

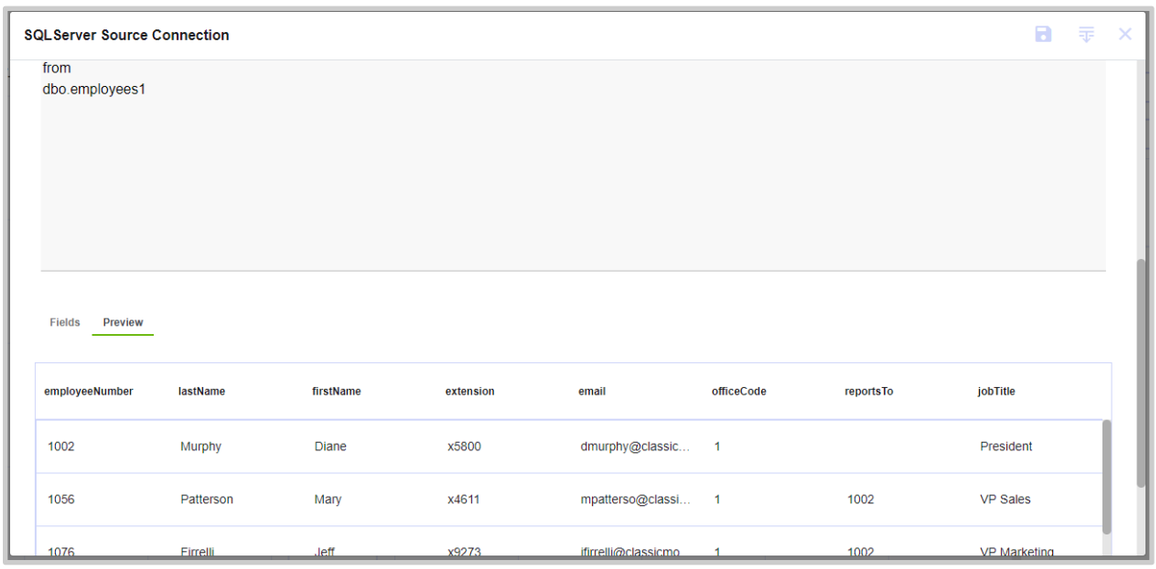


Fields Tab

The Fields tab displays field definitions of SQL Server source connection.

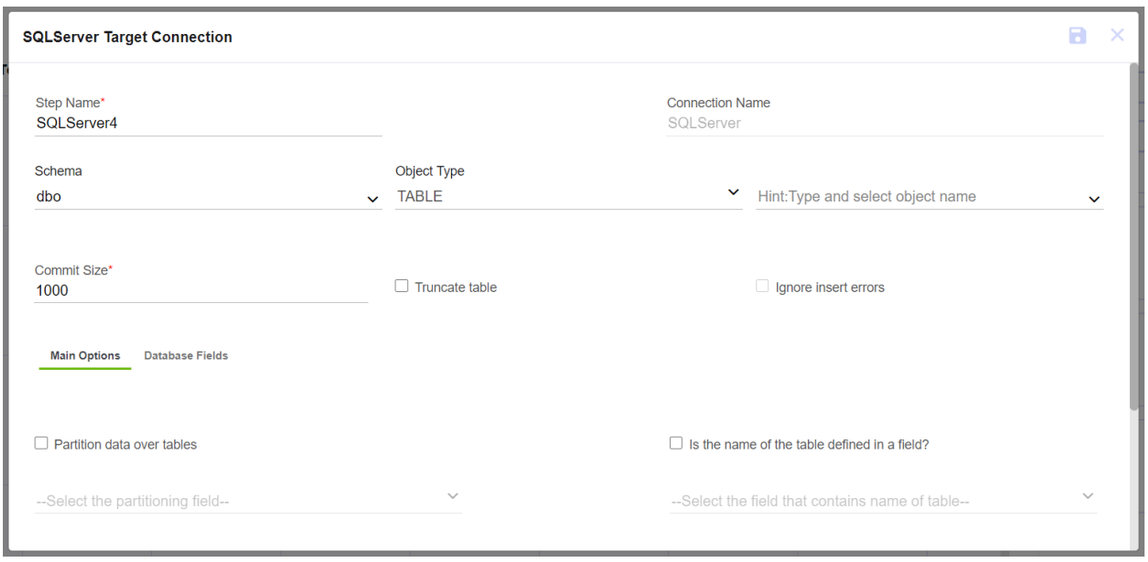

SQLServer Source Connection
from
dbo.employees1
Fields
Preview
NAME TYPE FORMAT
1 employeeNumber Number #.#
2 lastName String
3 firstName String

Preview Tab

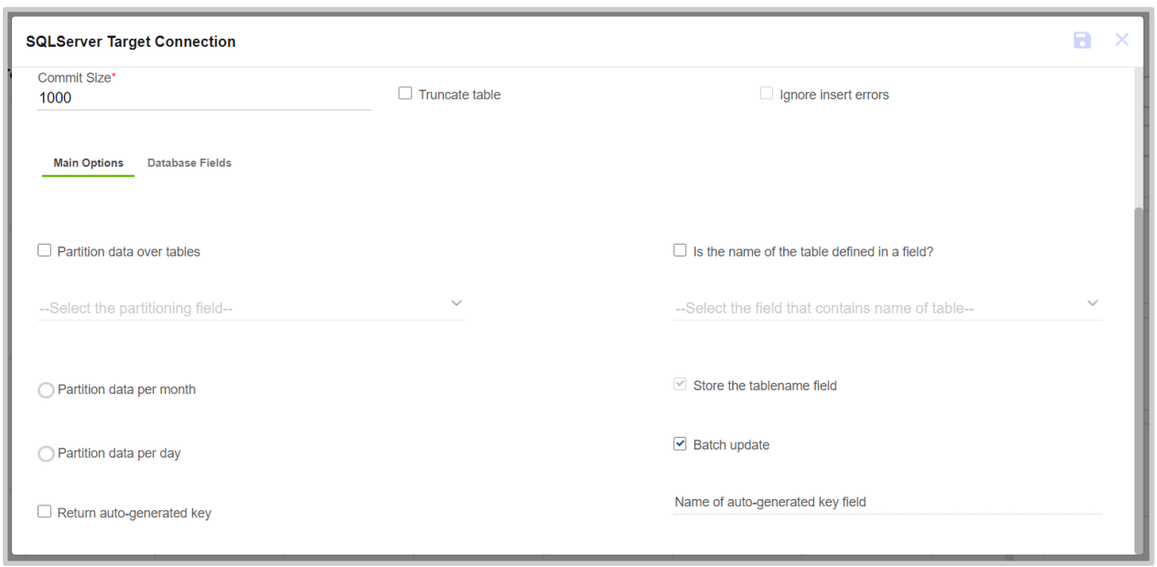

SQLServer Source Connection
from
dbo.employees1
Fields
Preview
employeeNumber lastName firstName extension email officeCode reportsTo jobTitle
1002 Murphy Diane x5800 dmurphy@classic... 1 President
1056 Patterson Mary x4611 mpatterso@classi... 1 1002 VP Sales
1076 Firrelli Jeff x9273 jfirrelli@classicmo... 1 1002 VP Marketing

SQLServer Target Connection

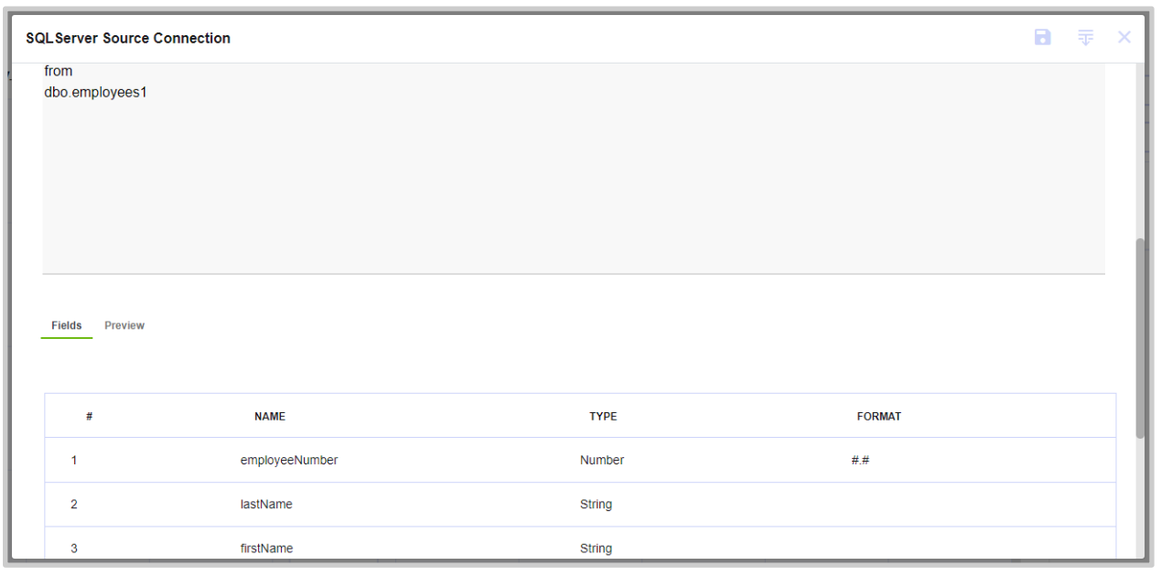
This allows a user to load data into a database using SQL Server.



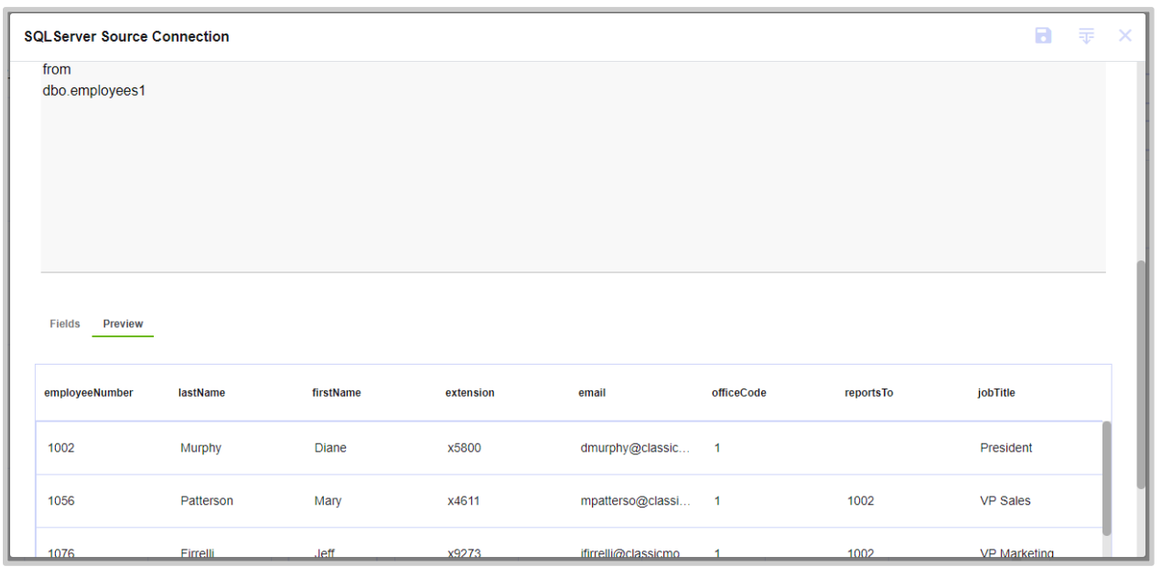
Main Options



Database Fields

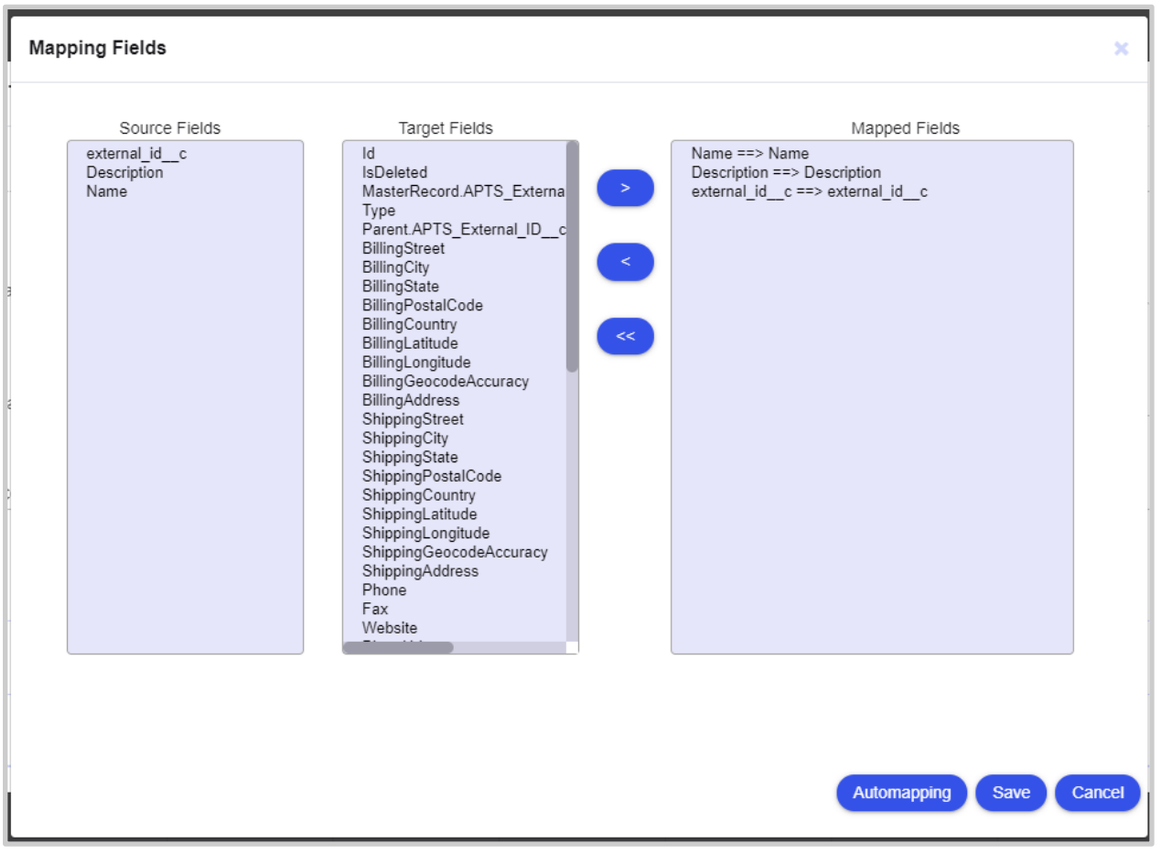


Preview Tab

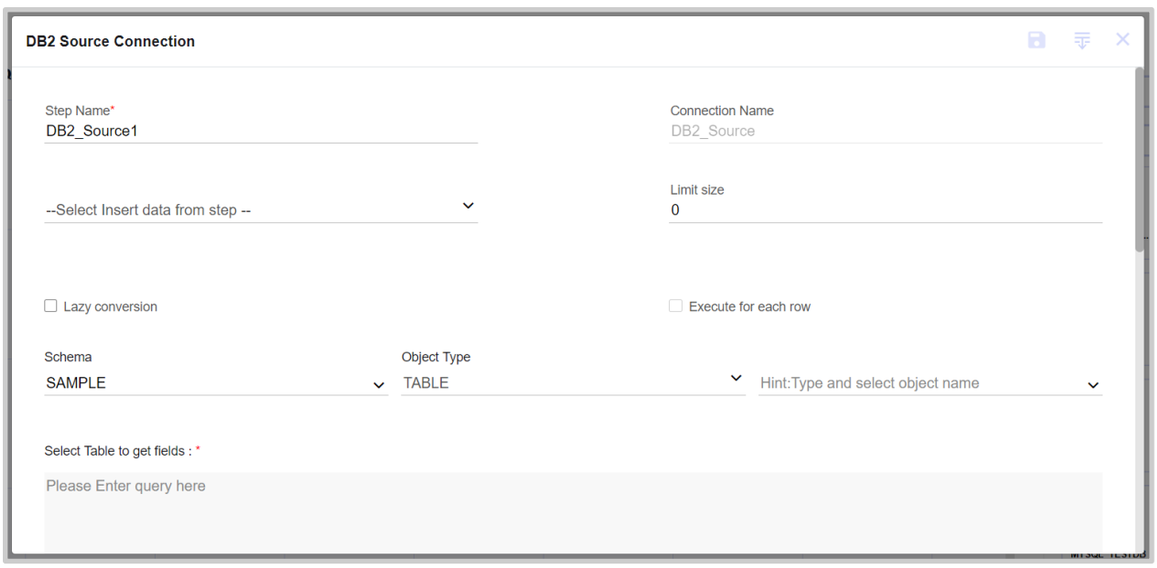


Mapping Fields

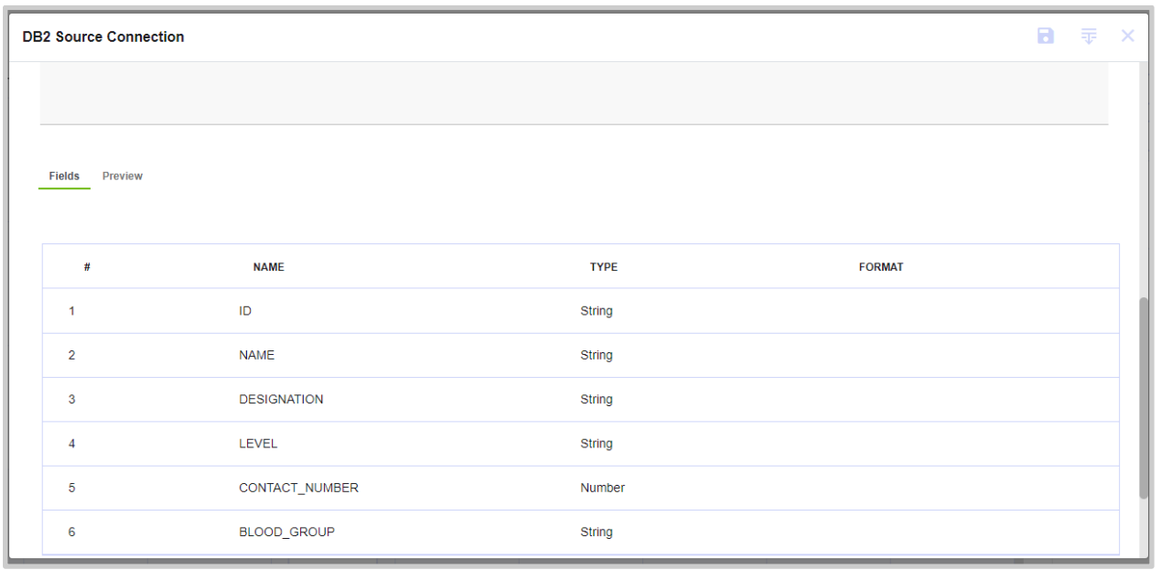
A picture below represents the available Source and Target Fields. Click Automapping to map the fields automatically. It can be mapped manually also.



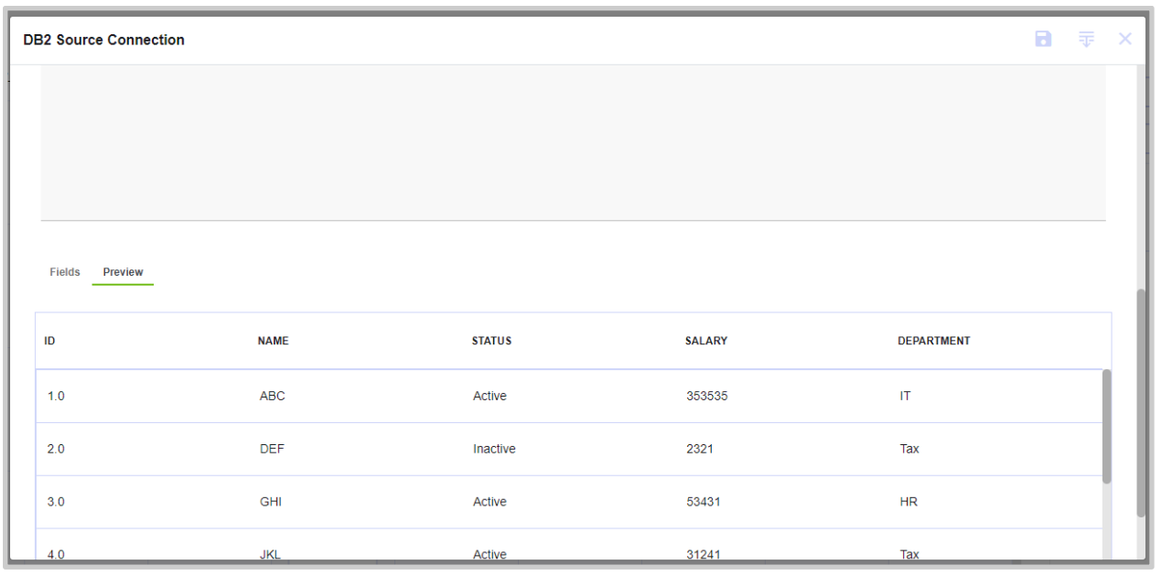
DB2 Source Connection



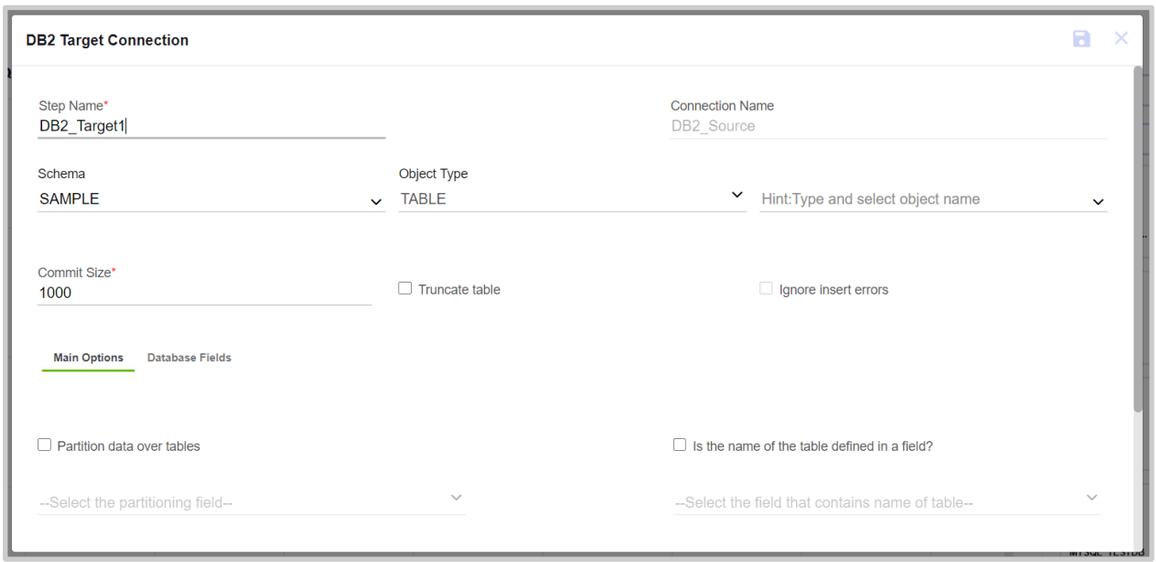
Fields Tab



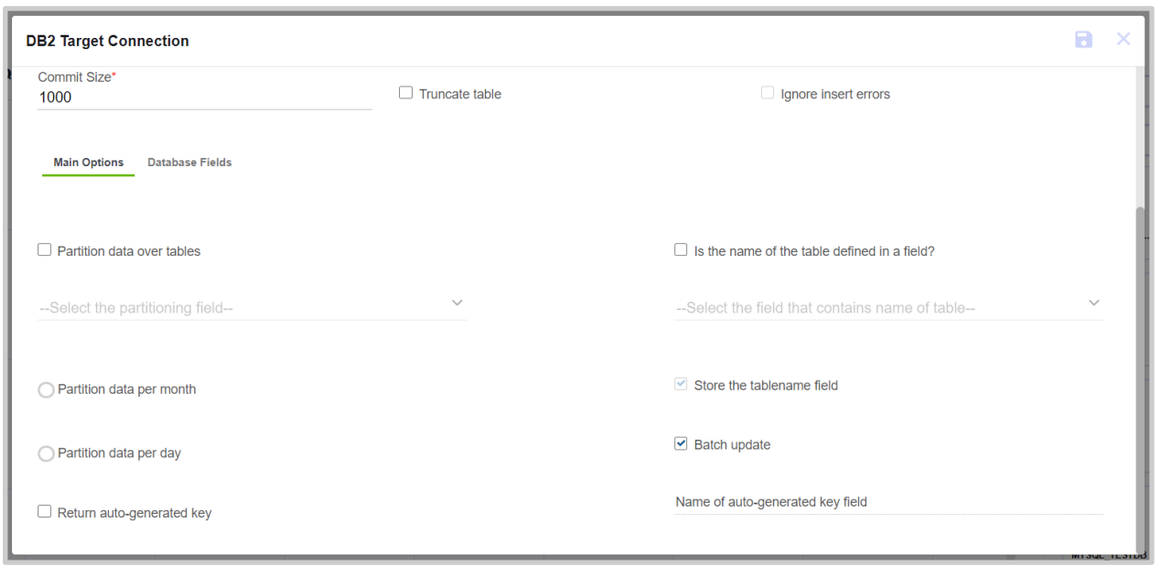
Preview Tab



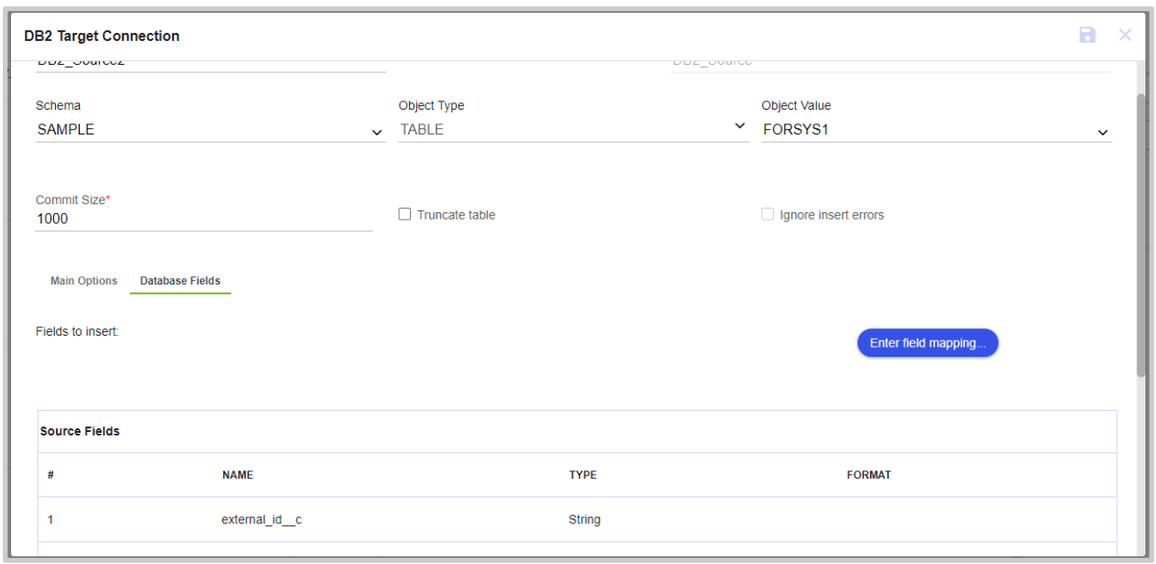
DB2 Target Connection



Main Options



Database Fields



Mapping Fields

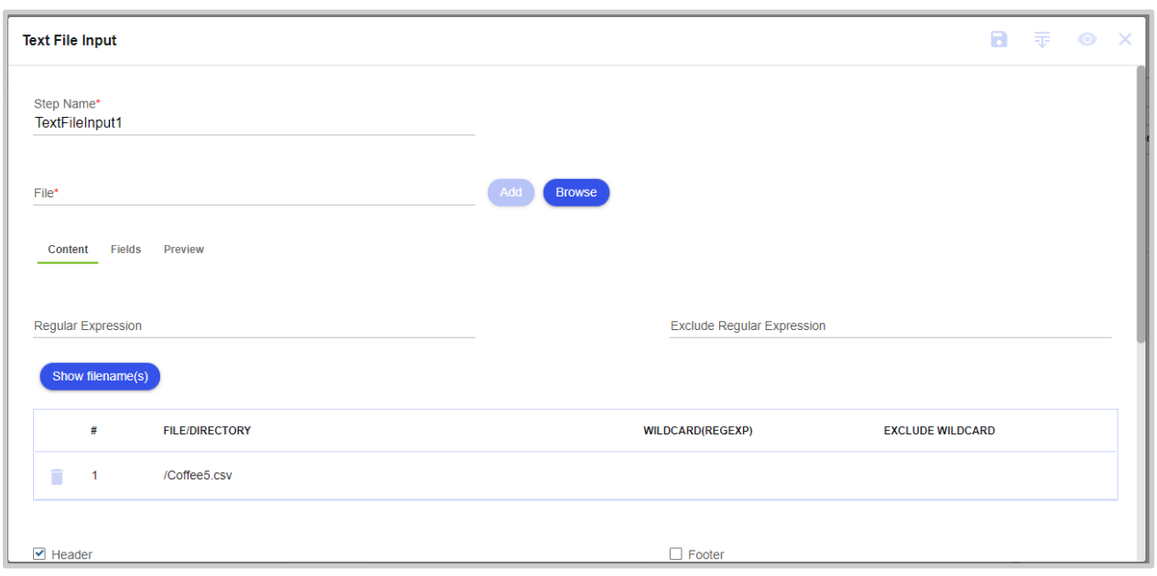
A picture below represents the available Source and Target Fields. Click Automapping to map the fields automatically. It can be mapped manually also.

Text File Input

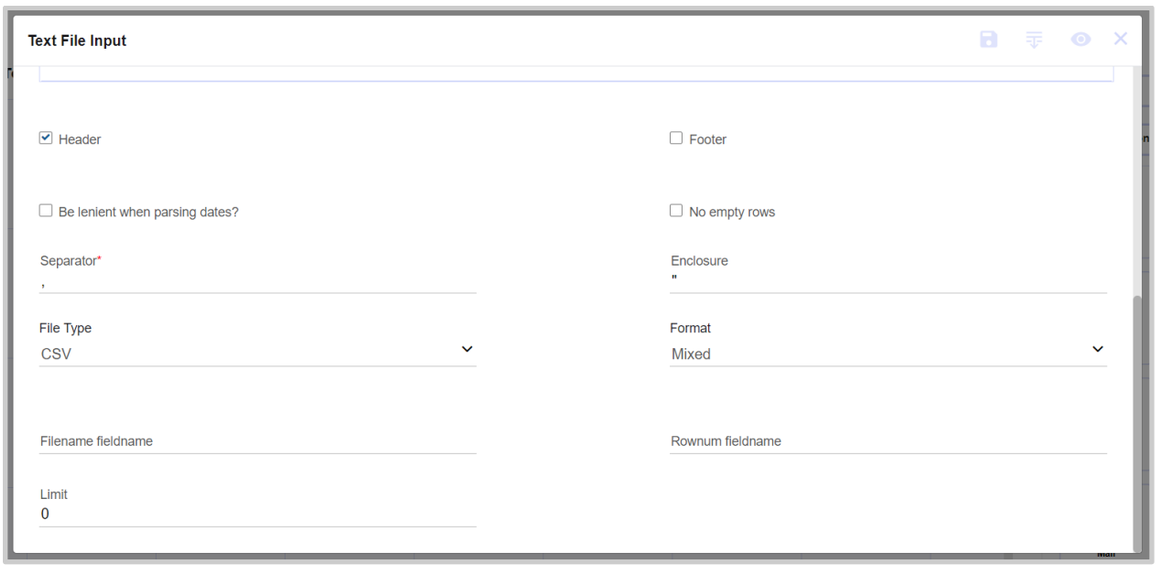
The Text File Input Step is used to read data from a variety of different text-file types. The most commonly used formats include Comma Separated Values (CSV files) generated by spreadsheets and fixed width flat files.

It gives an ability to specify a list of files to read, or a list of directories with wildcards in the form of regular expressions. In addition, file names from a previous Step or making filename handling more generic can be processed.

Content Tab



Content Tab (Cont'd…)

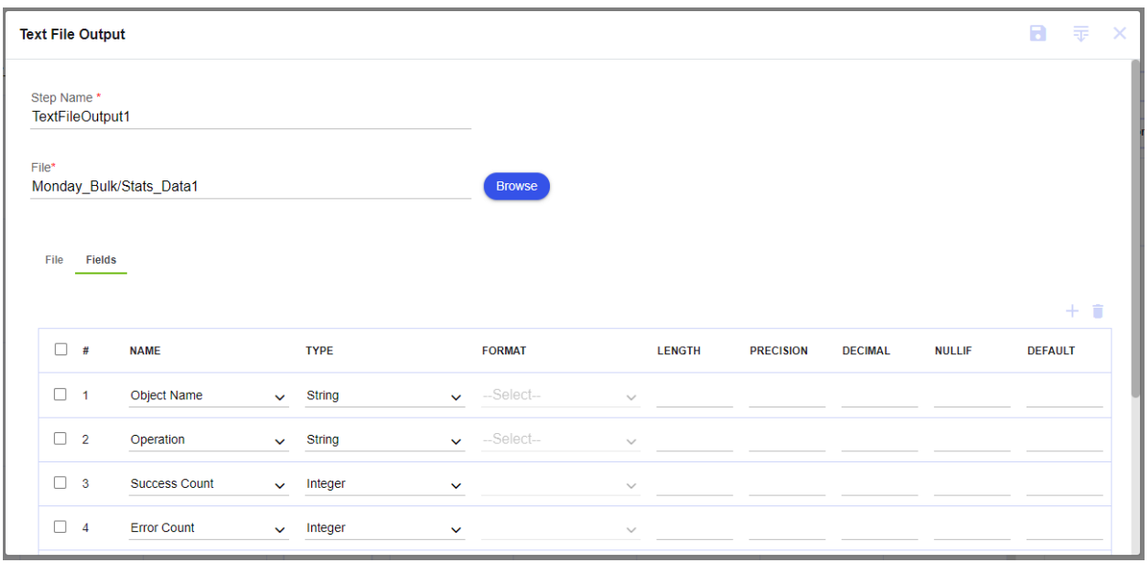


Options

A table given below describes Text File Input.

Name	Description
Regular expression	Specify the regular expression required to use to select the files in the directory specified in the previous option For example, if required to process all files that have a .txt extension
Show file names(s)...	Display a list of all files that will be loaded based on the current selected file definitions
File or directory	This field specifies the location and/or name of the input text file
Separator	One or more characters that separate the fields in a single line of text Typically this is ; or a tab. Special characters (e.g. CHAR ASCII HEX01) can be set with the format $[value], e.g. $[01] or $[6F,FF,00,1F]
Format	Can be either DOS, UNIX or mixed UNIX files have lines that are terminated by line feeds DOS files have lines separated by carriage returns and line feeds
Limit	Set the number of lines that is read from the file; 0 means read all lines

Fields Tab

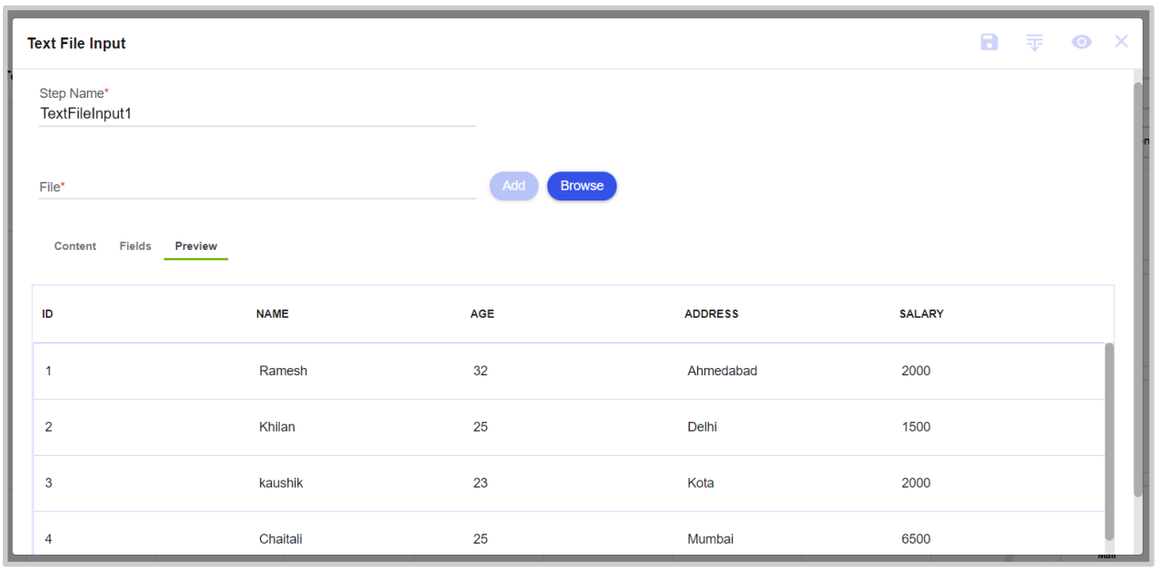


A table given below describes the fields in the Fields Tab.

Name	Description
Name	Name of the field
Type	Type of the field can be either a String, Date or Number
Format	See Number Formats for a complete description of format symbols
Position	This is needed when processing the 'Fixed' filetype It is zero based, so the first character is starting with position 0
Length	For Number: total number of significant figures in a number; - For String: total length of string; - For Date: length of printed output of the string
Precision	For Number: number of floating point digits; For String, Date, Boolean: unused;
Null if	Treat this value as NULL
Decimal	A decimal point can be a "." (10;000.00) or "," (5.000,00)
Default	Default value in case the field in the text file was not specified (empty)

Preview Tab

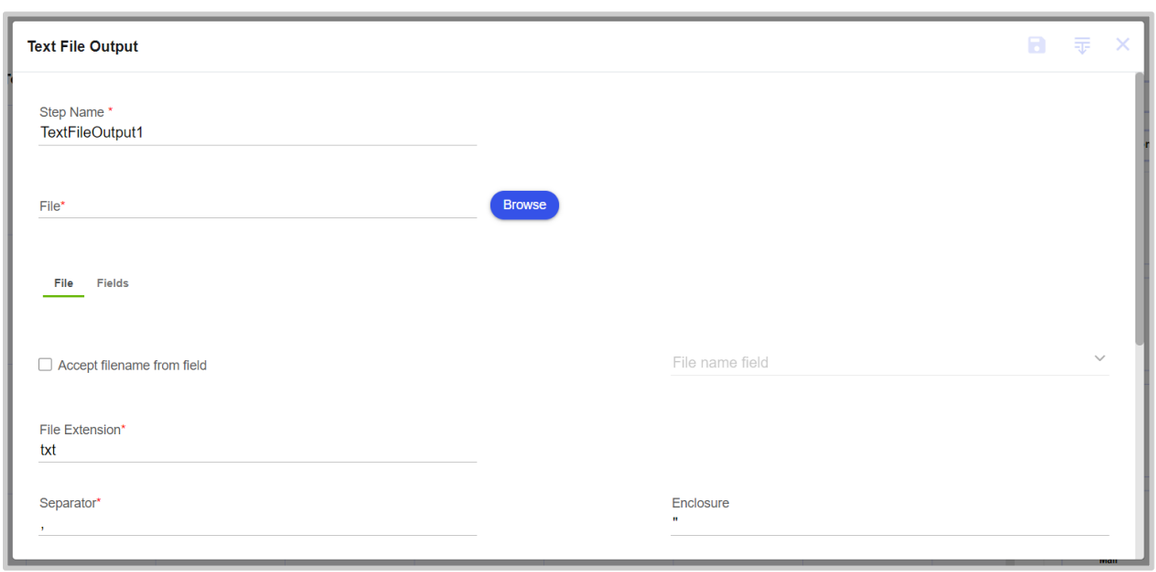
Click Preview to view the rows generated.



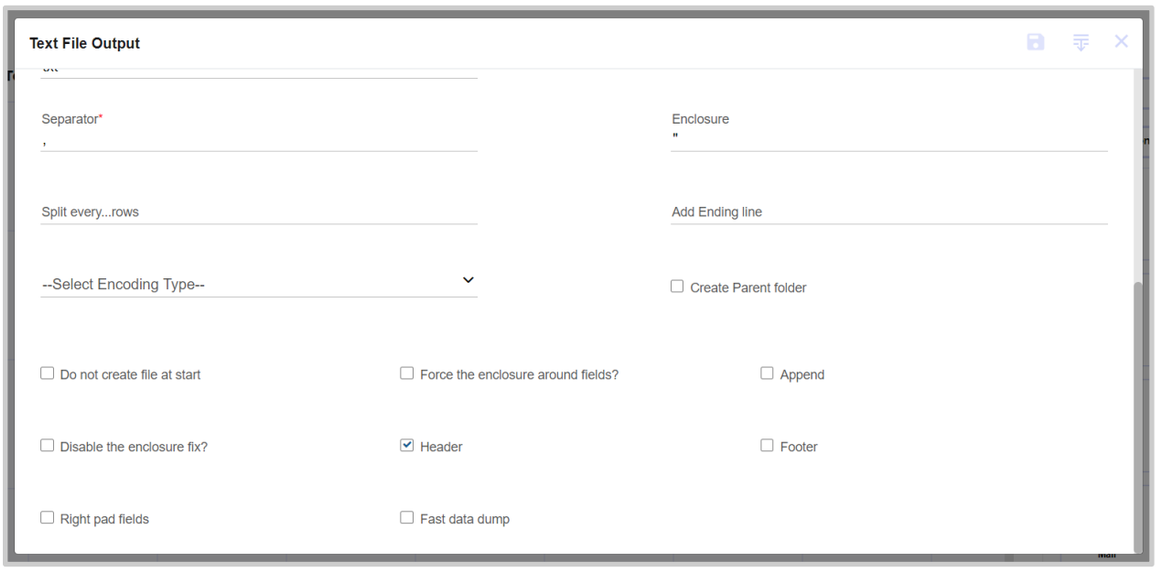
Text File Output

The Text file output Step is put to use to export data to text file format. This is commonly used to generate Comma separated Values (CSV files) that can be read by spreadsheet applications. It is also possible to generate fixed width files by setting lengths on the fields in the fields tab.

File Tab



Cont'd...



Options

A table given below describes Text File Output.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Filename	This field specifies the filename and location of the output text file
Accept file name from field?	Enable to specify the file name(s) in a field in the input stream
File name field	When the previous option is enabled, specify the field that will contain the filename(s) at runtime
Extension	Add a point and the extension to the end of the filename. (.txt)
Separator	Specify the character that separates the fields in a single line of text. Typically this is ; or a tab
Enclosure	A pair of strings can enclose some fields This allow separator or enclosure characters in fields to function The enclosure string is optional
Split every ... rows	If this number N is larger than zero, split the resulting text-file into multiple parts of N rows
Add Ending line of file	Enable to specify an alternate ending row to the output file

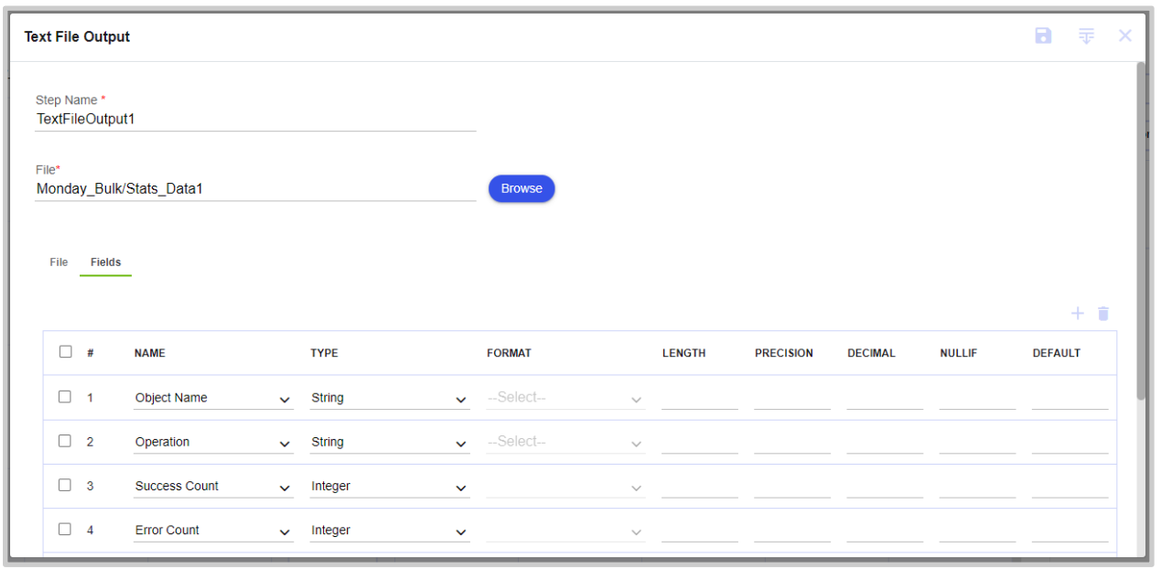
Options

A table given below describes Text File Output.

Name	Description
Create parent folder	Enable to create the parent folder

Append	Check this to append lines to the end of the specified file
Footer	Enable this option if required the text file to have a footer row There are use cases where this option is wanted, e.g. to have a footer after each run of a flow to separate sections within the file
Do not create file at start	Enable to avoid empty files when no rows are getting processed
Right pad fields	Add spaces to the end of the fields (or remove characters at the end) until they have the specified length
Force the enclosure around fields?	This option forces all fields of an incoming string type (independent of the eventually changed field type within the Text File Output field definition) to be enclosed with the character specified in the Enclosure property above
Header	Enable this option if required the text file to have a header row (First line in the file)
Fast data dump (no formatting)	Improves the performance when dumping large amounts of data to a text file by not including any formatting information

Fields Tab



Option

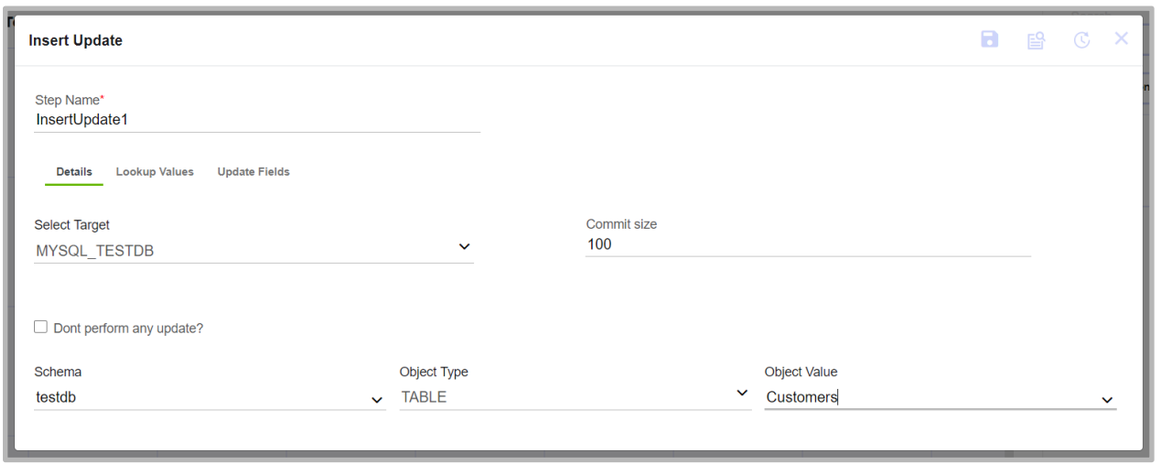
A table given below describes Text File Output.

Name	Description
Name	The name of the field

Type	Type of the field can be either a String, Date or Number
Format	The format mask to convert with. See Number Formats for a complete description of format symbols
Length	The length option depends on the field type follows: • Number - total number of significant figures in a number • String - total length of string • Date - length of printed output of the string (e.g. 4 only gives back year)
Precision	The precision option depends on the field type as follows: • Number - number of floating point digits • String - unused • Date - unused
Decimal	A decimal point can be a "." (10,000.00) or "," (5.000,00)
Null If	If the value of the field is null, insert this string into the Text file
Default	Default value in case the field in the text file was not specified (empty)

Insert Update

The Insert/Update Step first looks up a row in a table using one or more lookup key. If the row can't be found, it inserts the row. If it can be found and the fields to update are the same, no action takes place. If the fields are not the same, the row in the table is updated.



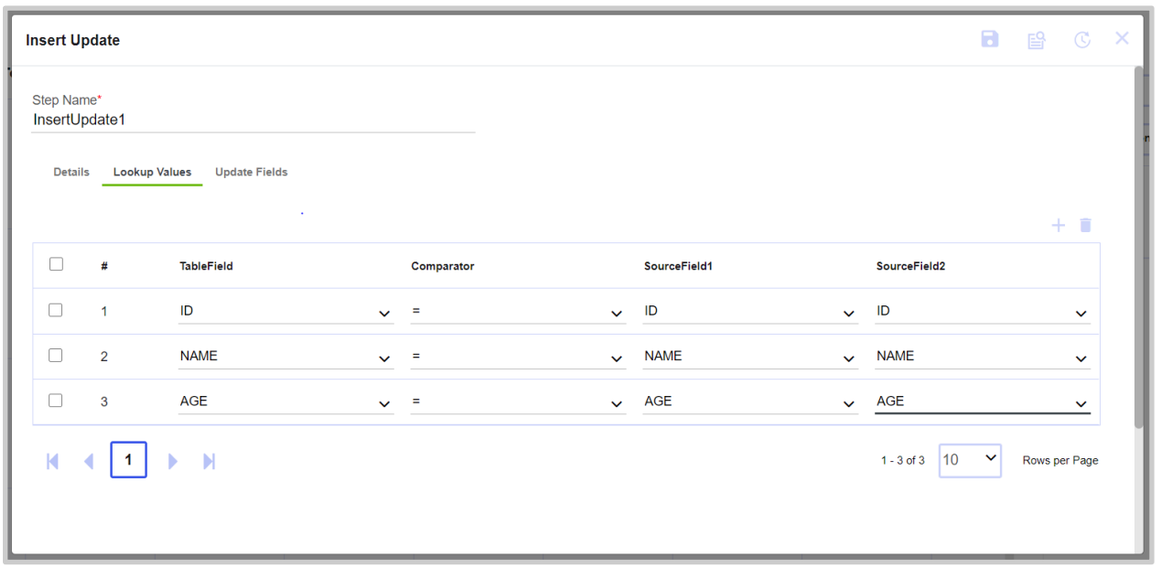
Options

A table given below describes the above Insert Update option.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Commit size	The number of rows to change (insert / update) before running a commit (Slower)
Select Target Source	Select Target or Source from the established connections
Schema	The name of the Schema for the table to write data to This is important for data Sources that allow for table names with periods in them
Object Type	To select the Object Type, whether it is Table or Synonym

Object Value	To get the Object Value based on the Object Type
Don't perform any updates	If enabled, the values in the database are never updated; only inserts are performed

Lookup Values Tab



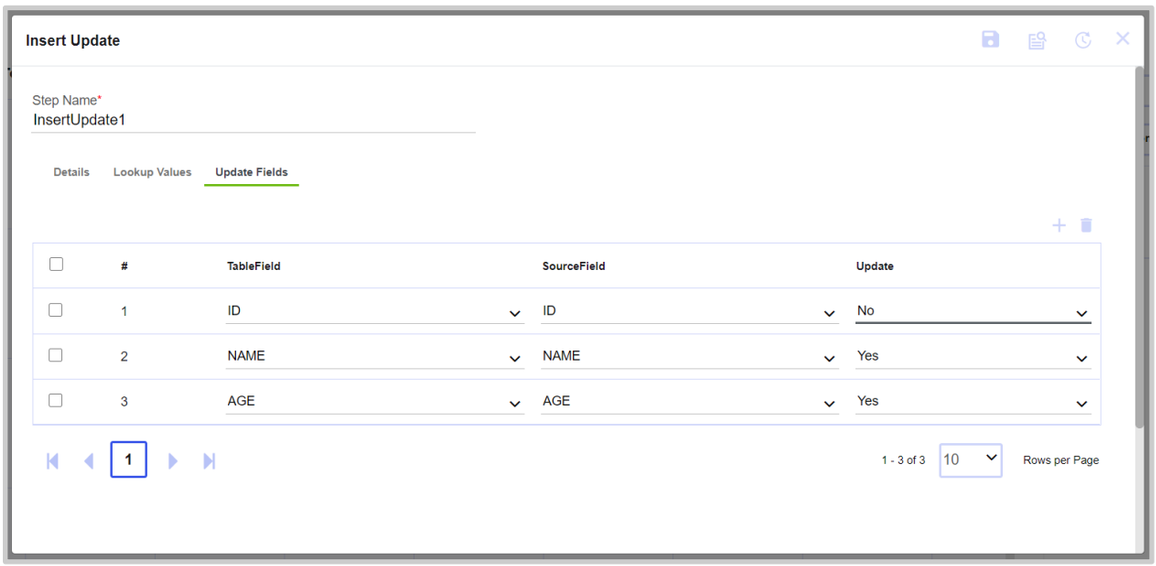
Options

A table given below describes the Lookup Value Tab.

Name	Description
TableField	It consists of Table Fields of selected database
Comparator	It consists of several comparators to compare table field with Source Field1 and Source Field2
Source Field1	It consists of Fields from the Input Step
Source Field2	It consists of Fields from the Input Step

Update Fields Tab

The tab allows a user to specify all the fields in the tablefields, sourcefield and update.



Options

A table given below describes the Update Fields Tab.

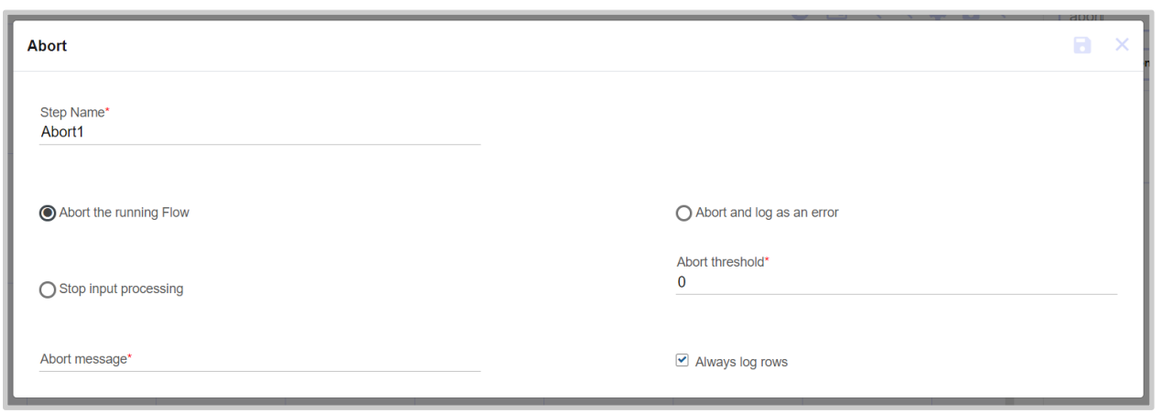
Name	Description
TableField	It contains fields of selected database
Update	Whether it has any update or not (Y or N)
Source Field	It contains fields from the Input Step

Flow Steps

Abort

Abort restricts a flow upon seeing input. It’s used primarily to handle error(s). For example, use this step so that a flow can be aborted after x number of rows flow out from the Input.

A dialogue box shows up to enter Step Name, Abort threshold and Abort message.



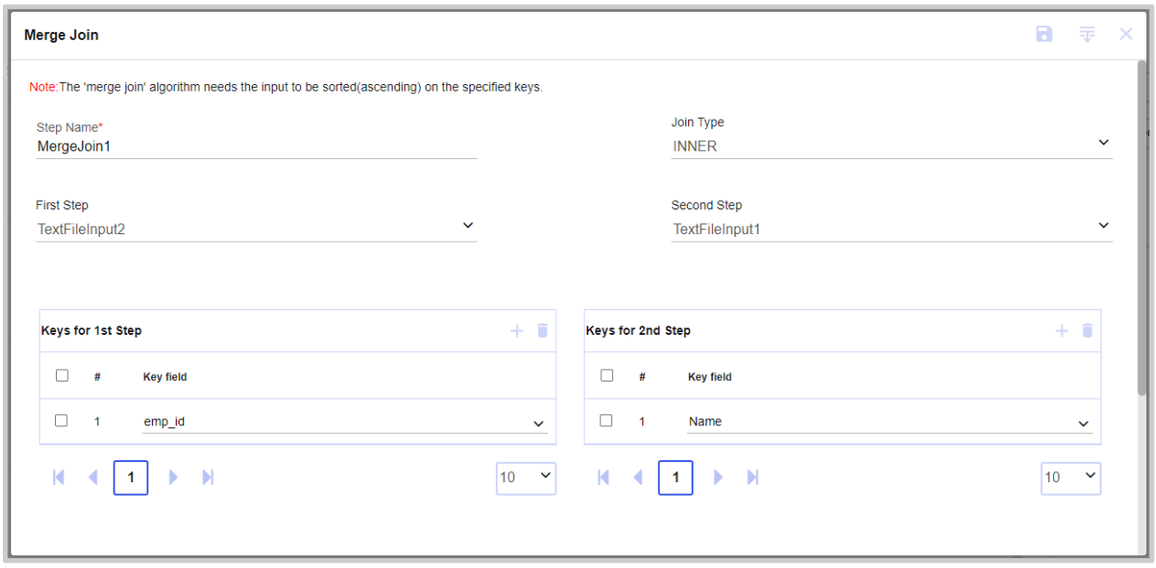
Options

A table given below describes the options for the Abort.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Abort threshold	The threshold of number of rows after which it starts to abort the flows
Abort message	The message to be put in the log upon aborting. If not filled in, a default message will be used
Always log	Always log the rows processed by the Abort Step This allows the rows to be logged although the log level of the Flow would normally not do it and brings out the log where rows caused the Flow to abort

Merge Join

It performs a classic Merge Join between data sets with data coming from the two different input Steps. The Join options include Inner, Left Outer, Right Outer and Full Outer.



Options

A table given below describes the options for Merge Join.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow

First Step	Specify the first input Step to the merge join (left)
Second Step	Specify the second input Step to the merge join (right)
Join Type	Select from the available types of joins: • FULL OUTER: all rows from *both* Sources will be included in the result, with empty values for non-matching keys in both data streams • LEFT OUTER: all rows from the *first* Source will be in the result, with empty values for non-matching keys in the second data stream • RIGHT OUTER: all rows from the *second* Source will be in the result, with empty values for non-matching keys in the first data stream • INNER JOIN: only rows having the same key in both Sources will be included in the result
Keys for 1st Step	Specify the key fields on which the incoming data is sorted; click Get key fields to retrieve a list of fields from the specified Step
Keys for 2nd Step	Specify the key fields on which the incoming data is sorted; click Get key fields to retrieve a list of fields from the specified Step

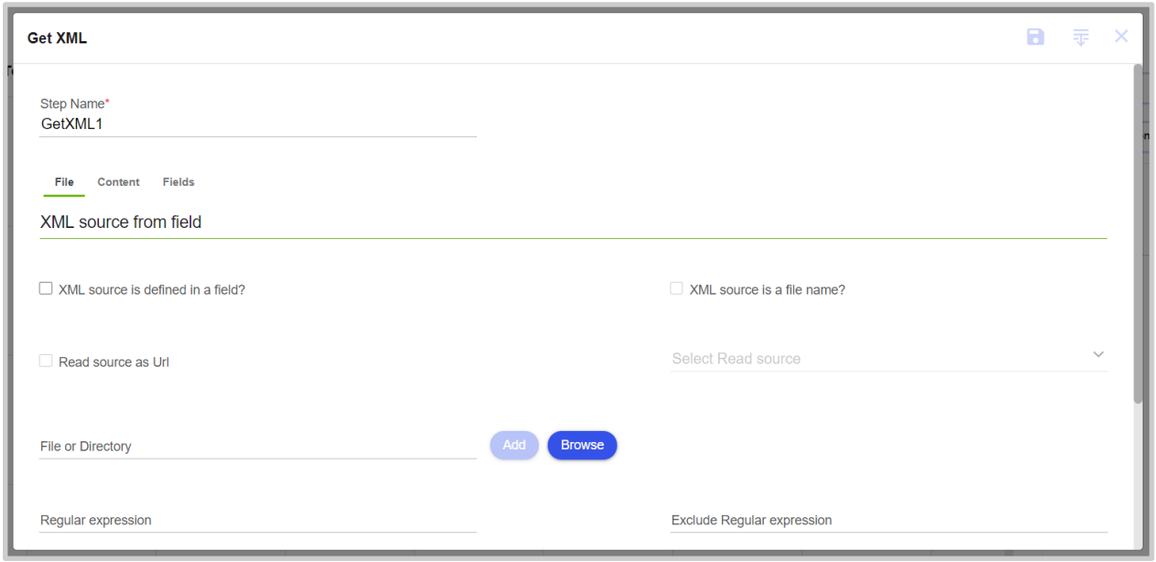
Get XML

Get XML provides the ability to read data from any type of XML file using XPath specifications. "Get Data From XML" can read data from the given below sources in 2 modes (Static or Dynamic):

1. Files
2. Stream
3. Url

The location of the XML files can be defined in the File Tab.

File Tab



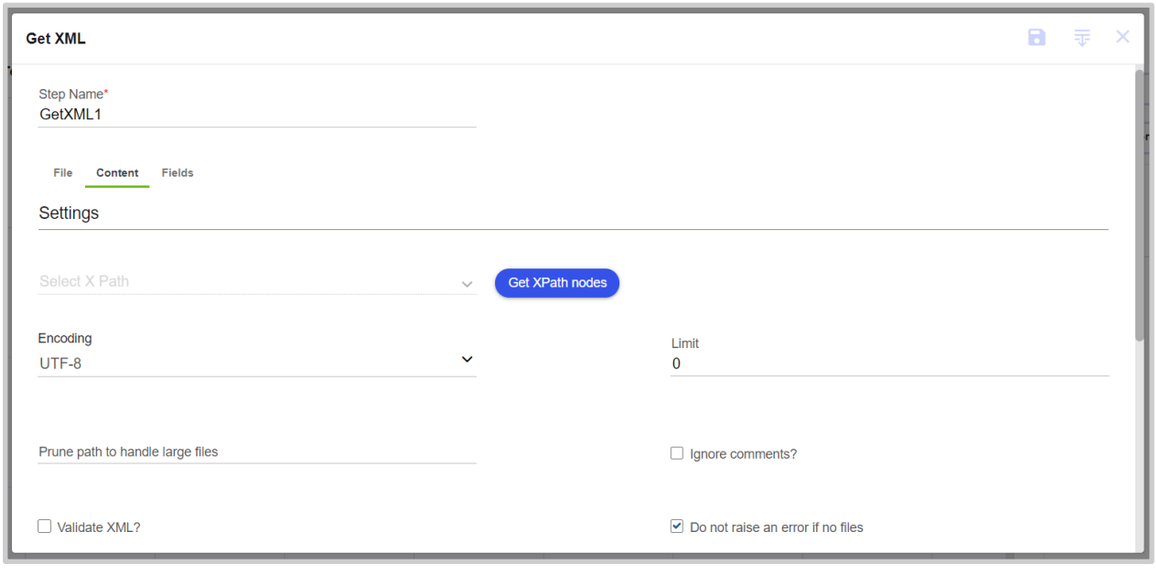
Options

The following table describes the options for the Get XML Step:

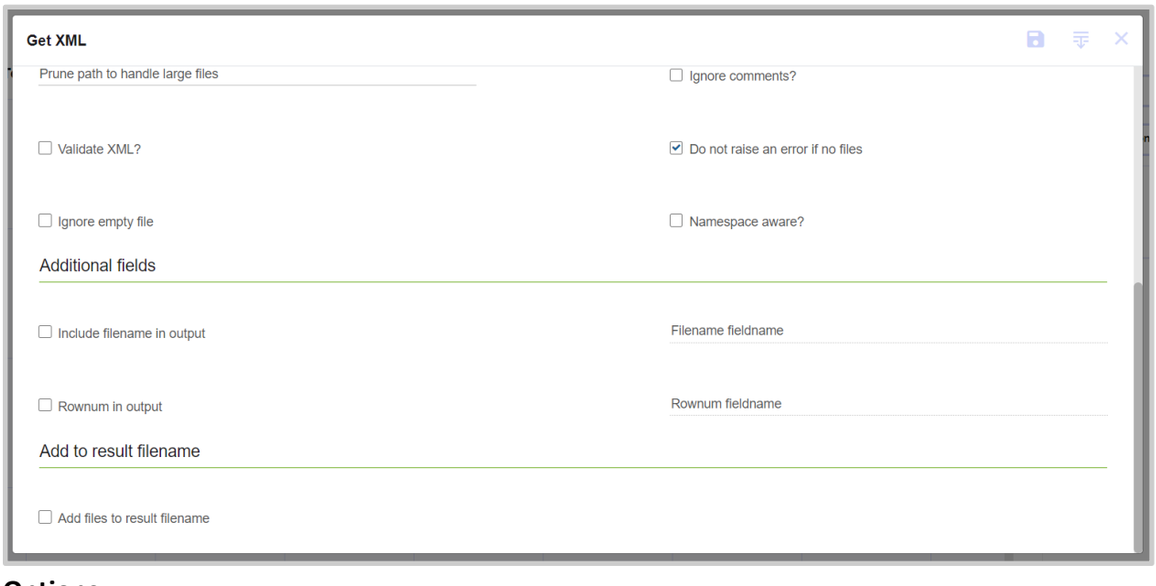
Name	Description
Step Name	Name of the Step The name has to be unique in a single Flow
XML Source is defined in a field?	The previous Step is giving XML data in a certain field in the input stream

	XML Source is a filename : the previous Step is giving filenames in a certain field in the input stream These are read Read Source as URL : the previous Step is giving URLs in a certain field in the input stream These are read Get XML Source from a field : specify the field to read XML, filename or URL from
Show filename(s)	Displays a list of all the files that will be loaded based on the current selected file definitions
Selected Files	Contains a list of selected files (or wildcard selections) and a property specifying if file is required or not If a file is required but it is not found, an error is generated; otherwise, the file name is skipped
Regular expression	Specify the regular expression required to select the files in the directory specified in the previous option
File or directory	Specify the location and/or name of the input text file
Regular expression	Specify the regular expression required to select the files in the directory specified in the previous option

Content Tab



Cont'd…

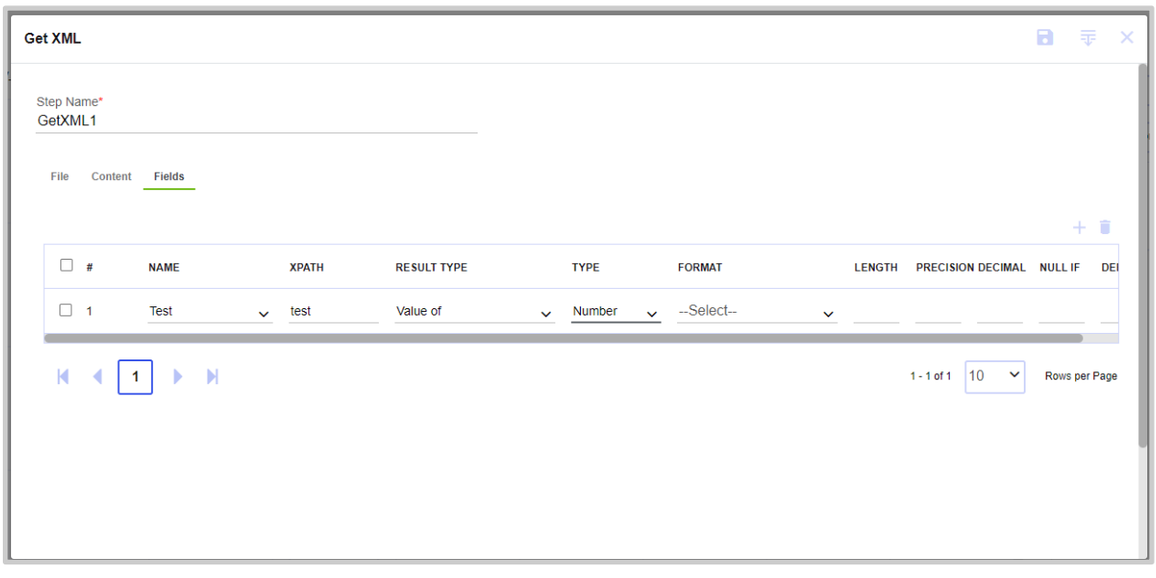


Options

A table given below describes the options for the Get XML Step.

Name	Description
XPath	For every "XPath" location found in the XML file(s), an output of one row of data takes place This is the main specification used to flatten the XML file(s) Use "Get XPath nodes" to search for the possible repeating nodes in the XML document
Encoding	The XML filename encoding in case none is specified in the XML documents
Namespace aware	Check this to make the XML document namespace aware
Ignore comments	Ignore all comments in the XML document while parsing
Validate XML	Validate the XML prior to parsing Use a token if want to replace dynamically in an Xpath field value A token is between @_ and - (@_fieldname-)
Ignore empty file	An empty file is not a valid XML document Check this if required to ignore these altogether
Do not raise an error if no file	Don't raise an error if no files are found
Limit	Limits the number of rows to this number (zero (0) means all rows)
Prune path to handle large files	Almost the same value as the "Loop XPath" property with some exceptions
Include filename in output	Permits to specify a field name to include the file name (String) in the output of this Step
Rownum in output	Permits to specify a field name to include the row number (Integer) in the output of this Step

Fields Tab



Options

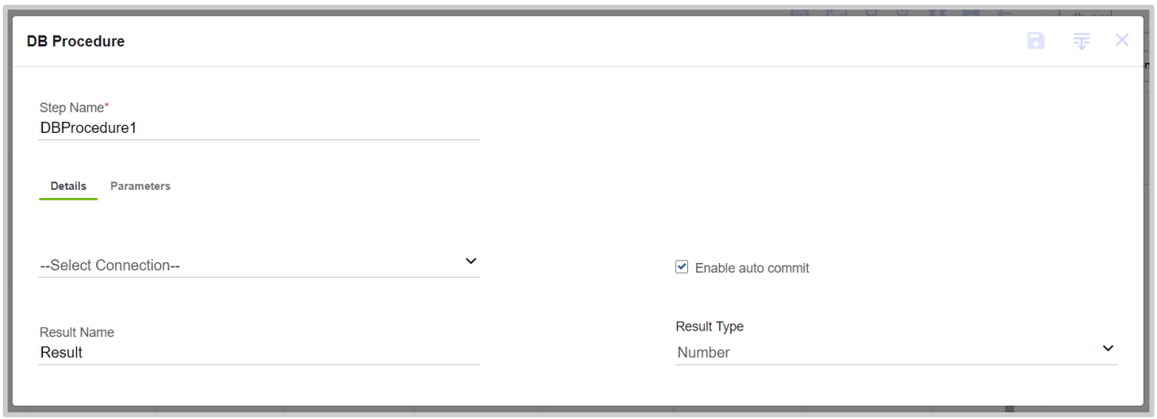
A table given below describes the options for the Get XML Step.

Name	Description
Name	The name of the output field
XPath	The path to the element node or attribute to read
Element	The element type to read: Node or Attribute
Type	The data type to convert to (Required)
Format	The format or conversion mask to use in the data type conversion
Length	The length of the output data type
Precision	The precision of the output data type
Currency	The currency symbol to use during data type conversion
Decimal	The numeric decimal symbol to use during data type conversion
Group	The numeric grouping symbols to use during data type conversion
Trim type	The type of trimming to use during data type conversion
Repeat	Repeat the column value of the previous row if the column value is empty (null)

DB Procedure

This Step helps in retrieving data from a stored procedure. CallDBProcedure (Functionality) approves execution of a DP. It is not possible to retrieve the result set of a stored procedure with MySQL and JDBC.

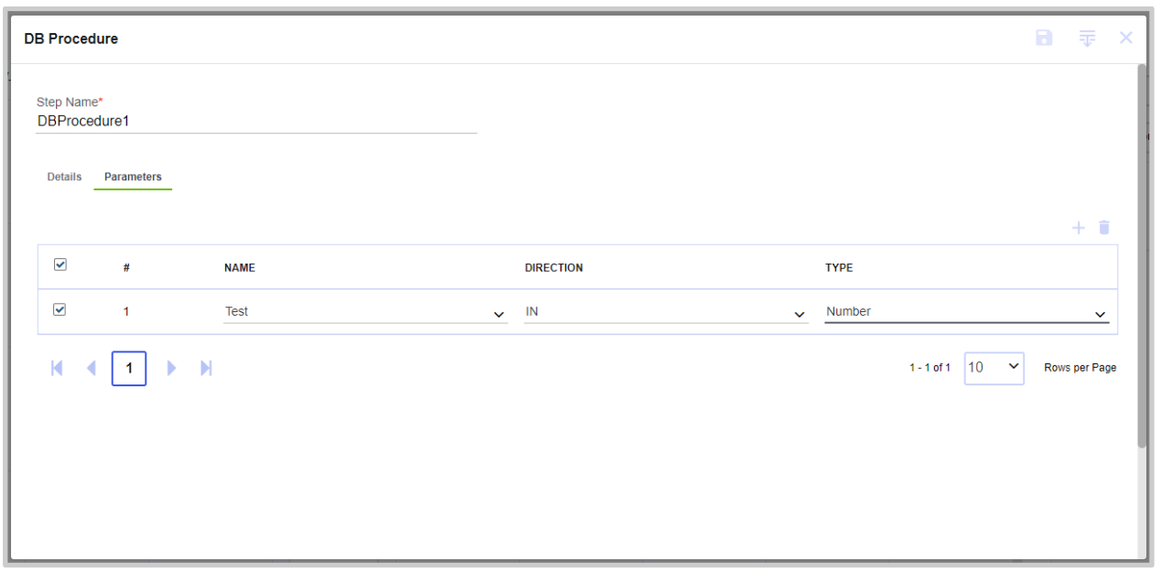
Also, the stored procedures and functions can only return values through their function arguments and those arguments must be defined in the Parameters section of the DB Procedure Call configuration.



A table given below describes the available options for the Call DB Procedure Step.

Name	Description
Step name	Name of the Step The name has to be unique in a single flow
Connection	Name of the database connection on which the procedure resides
Schema	Name/select the schema from database
Object Type	Name/select procedure/function/package from selected database
Proc-name	Name of the procedure or function to call
Enable auto	In case needs to perform updates
Result name	Name of the result of the function call; leave blank if this is a procedure
Result type	Type of the result of the function call; not used in case of a procedure

Parameters Tab



Options

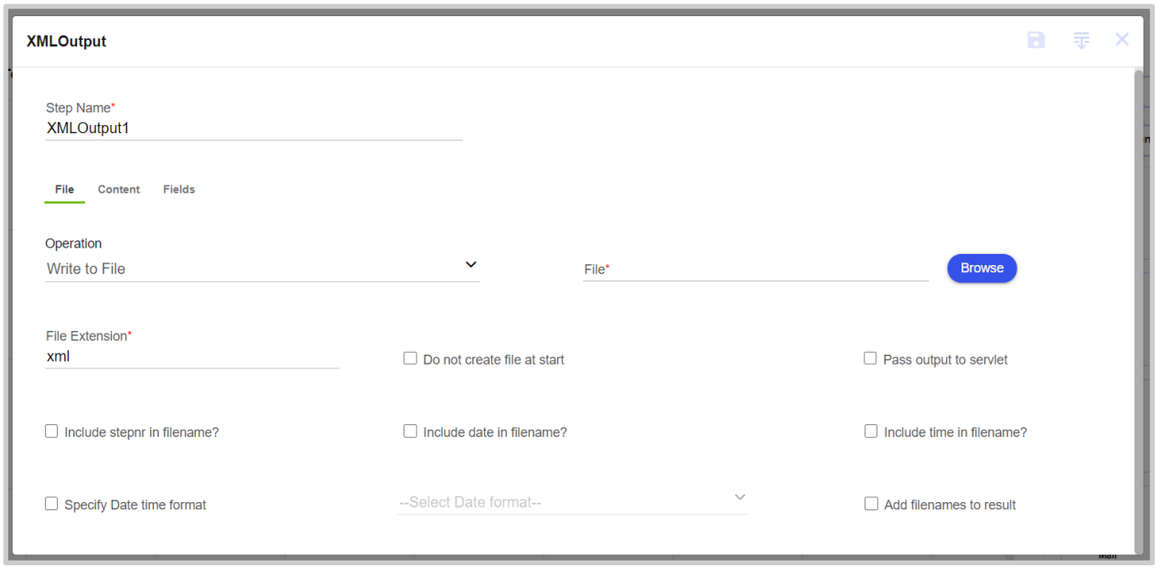
A table given below describes the available options for above screen.

Name	Description
Parameters	List of parameters that the procedure or function needs
Name (field Name)	Name of the field
Direction	Direction can be either IN(input only) or OUT (output only)
Type	Used for output parameters

XML output

This XML Output Step permits a user to write rows from any Source to one or more XML files.

File Tab



Options

The file tab grants setting general properties for the XML output file format.

Field	Description
Step name	Name of the Step The name has to be unique in a single flow
Filename	Specify the file name and location of the output text file
Do not create file at start	Enable to avoid empty files when no rows are getting processed
Pass output to servlet	Enable this option to return the data via a web service instead of writing into a file
Extension	Add a period and the extension at the end of the file name (.xml)
Include Step in filename	If running the Step in multiple copies The copy number is included in the file name before the extension (_0)
Include date in filename	Include the system date in the file name (_20041231)
Include time in filename	Include the system date in the file name (_235959)

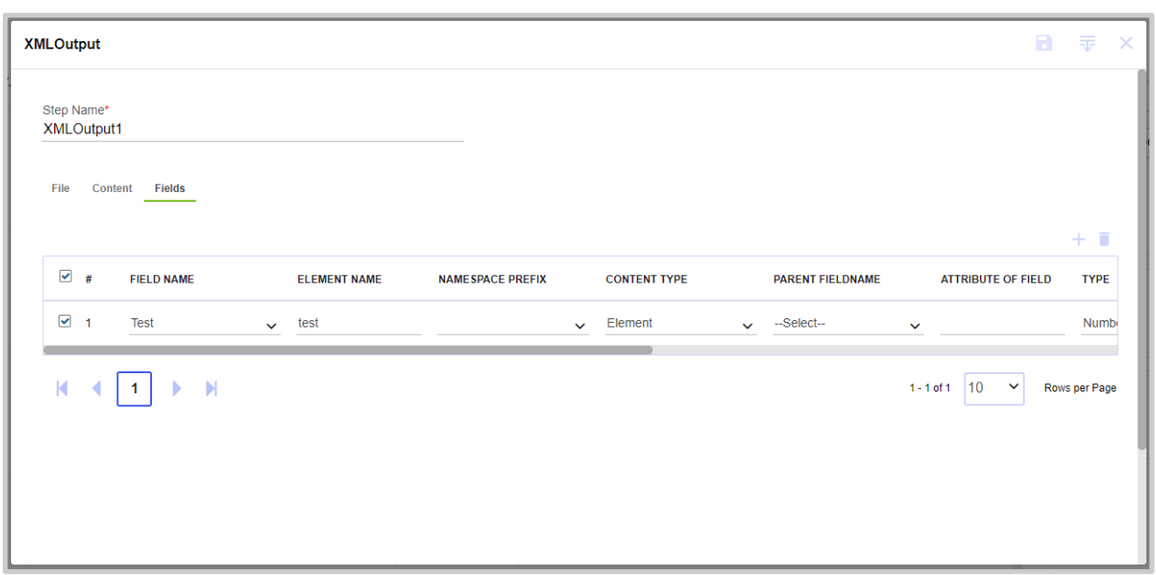
Content Tab

Options

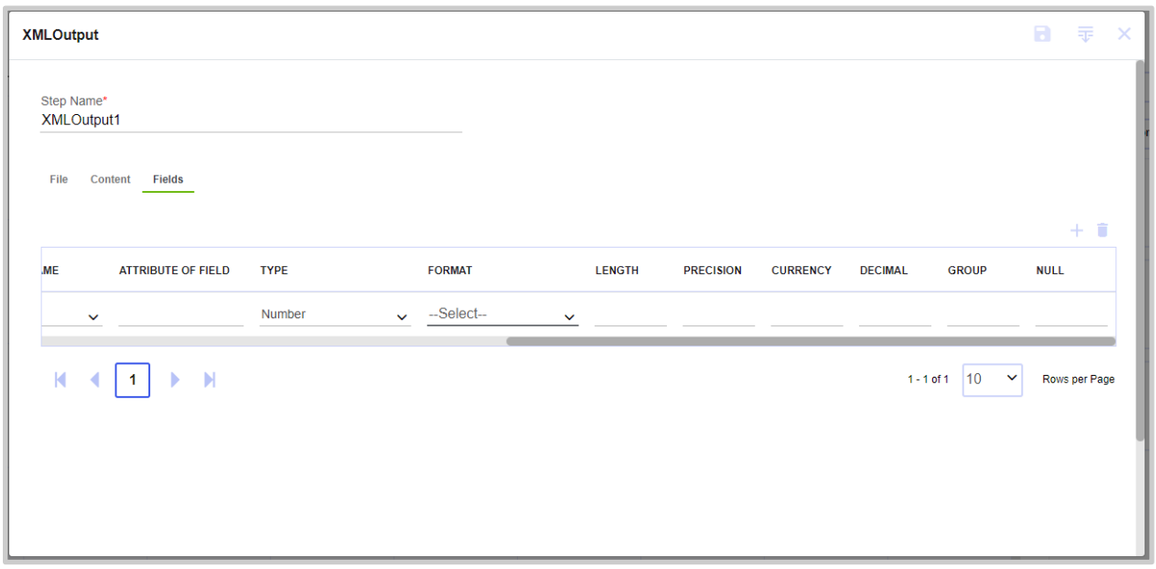
The file tab grants setting general properties for the XML output file format.

Field	Description
Zipped	Check this if required XML file to be stored in a ZIP archive
Encoding	The encoding to use This encoding is specified in the header of the XML file
Parent XML element	The name of the root element in the XML document
Row XML element	The name of the row element to use in the XML document
Split every ... rows.	The maximum number of rows of data to put in a single XML file before another is created
Omit null values from XML output	XML will be generated without null values

Fields Tab



Cont'd…



Options

The file tab grants setting general properties for the XML output file format.

Field	Description
Fieldname	The name of the field
Element name	The name of the element in the XML file to use Type: Type of the field can be either a String, Date or Number
Type	Type of the field can be either String, Date, or Number Format mask from which to convert; see Number formats for a complete description of format specifiers
Length	The length option depends on the field type follows: • Number - total number of significant figures in a number • String - total length of string • Date - length of printed output of the string (e.g. 4 only gives back year)
Precision	The precision option depends on the field type as follows: • Number - number of floating point digits • String - unused • Date - unused
Currency	Symbol used to represent currencies such as $10,000.00 or E5.000,00
Decimal	A decimal point can be a "." (10,000.00) or "," (5.000,00)
Group	A grouping can be a "," (10,000.00) or "." (5.000,00)
Null	If the value of the field is null, insert this string into the text file
Get fields	Click to retrieve the list of fields from the input stream(s)
Minimal width	Alter the options in the fields tab in such a way that the resulting width of lines in the text file is minimal; for example instead of save 0000001, "1" is written, and so on String fields are not padded to their specified length

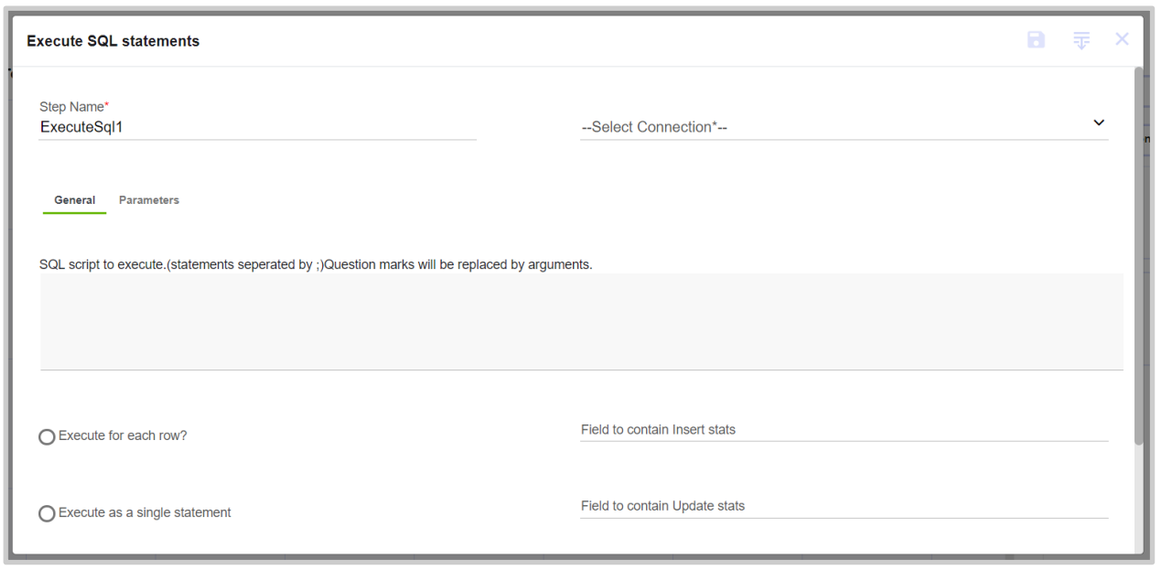
Execute SQL

Execute SQL scripts from two options

1) Either, during the initial phase of the Flow
   Or
2) Once for every input-row

However, the second option can be put to use parameters in SQL scripts.

General Tab

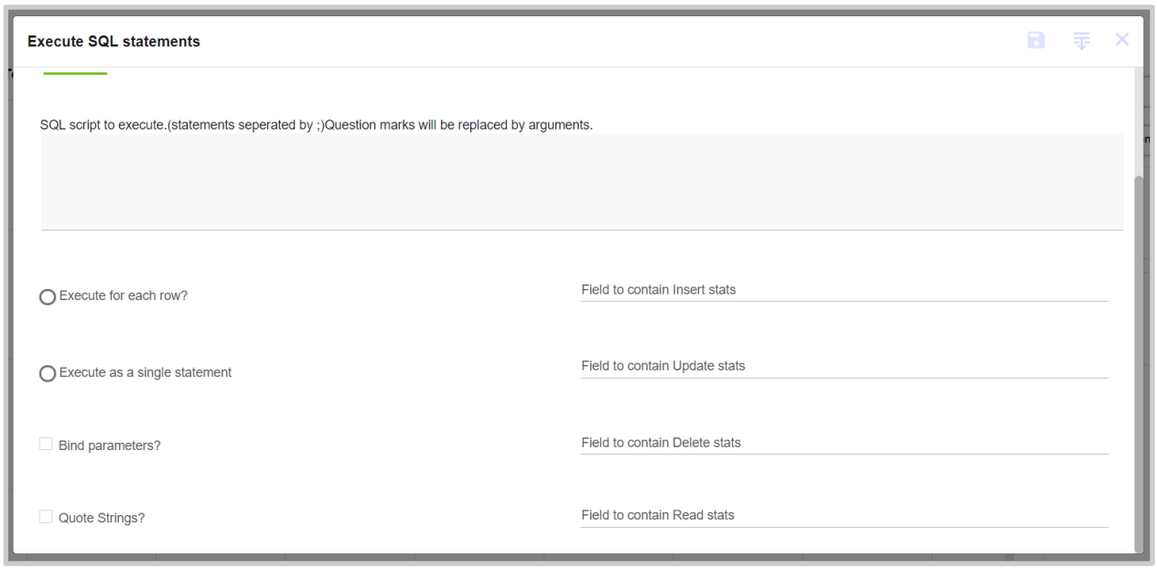


Options

A table given below describes the options for the General Tab.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Connection	Select a database connection to use
SQL script to execute	Specify the SQL to execute Separate statements by ; and use question marks as the place holders for the parameter
Execute for each row?	Select this option to execute the SQL for each incoming row In this case, parameters can be used When this option is unchecked, the SQL statement is executed at the initial Step of the phase
Field to contain insert stats Optional	If required to get an additional field in our stream with the number or records that were inserted, please define the field name here

Execute SQL Statements



Options

A table given below describes the options for executing SQL statements.

Name	Description
Execute as a single statement	This option does not split the statements by ; and also send the whole SQL to the database
Field to contain update stats	Same as insert stats, but for updated rows
Bind parameters?	Check this option to bind parameters using earlier prepared statements or else, this Step will perform a literal string replacement of the parameters
Quote Strings?	This option adds quotes around the string according to the database dialect and also escapes special characters as CR, LF and the quote character itself
Field to contain delete stats	Same as insert stats, but for deleted rows
Field to contain read stats	Same as insert stats, but for read rows

Parameters

Option

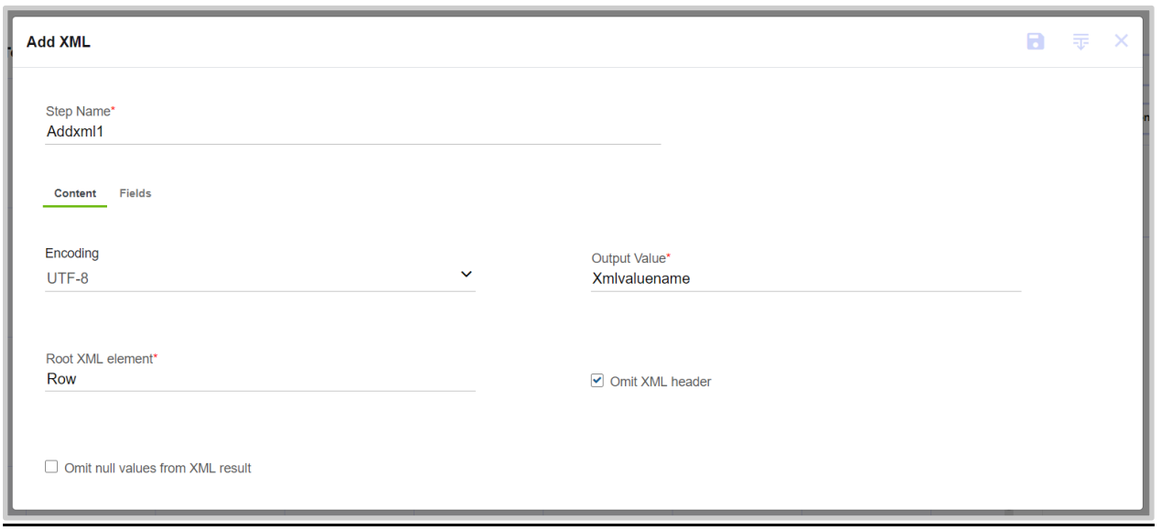
A table given below describes the options for executing SQL statements.

Name	Description
Parameters	The list of used parameters that will replace the question marks in the query in the given order So the first question mark will be replaced by the first parameter, the second question mark by the second parameter etc

Add XML

The XML Step allows to encode the content of a number of fields in a row in XML. This XML is added to the row in the form of a string field.

Content Tab



Options

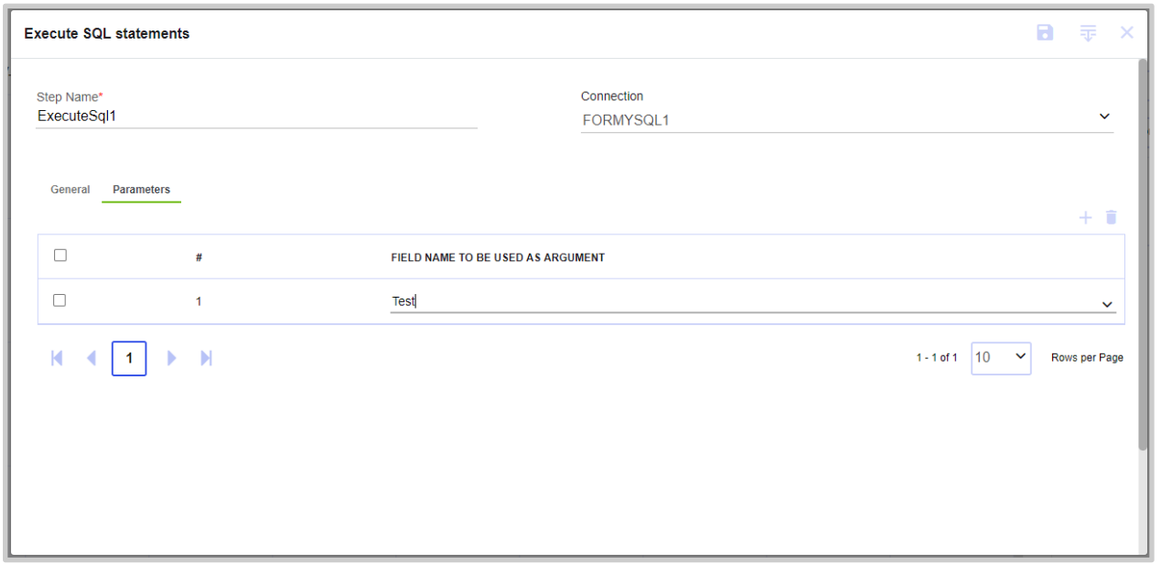
A table given below describes the options for Add XML Step.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Encoding	The encoding to use The encoding is specified in the header of the XML file
Output Value	The name of the new field that contains the XML
Root XML element	The name of the root element in the generated element
Omit XML header	Disable to enter XML header in the output

Omit null values from the XML result	Do not add elements or attributes with null values This is often used to limit the size of the Target XML

Fields Tab

The fields tab provides the opportunity/ functionality to configure the output fields and their formats. An image below describes each of the available properties for a field.



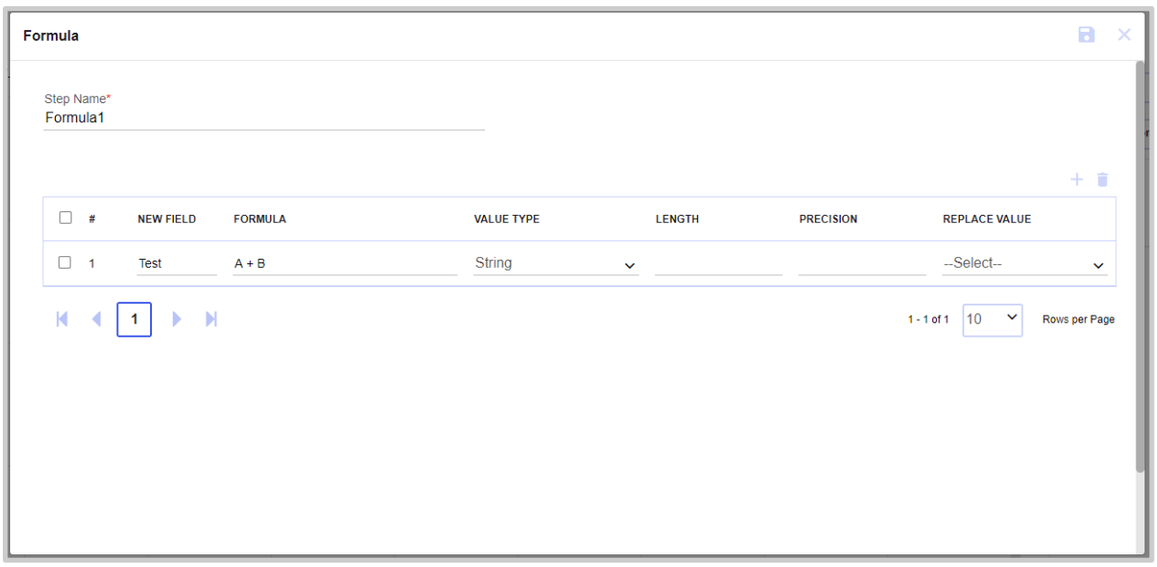
Options

A table given below describes the options for the Add XML Step.

Name	Description
Fieldname	Name of the field
Element name	The name of the element in the XML file to use
Type	Type of the field can be either a String, Date or Number
Format	Format mask to convert data Please refer to Number Formats for a complete description of format specifiers
Length	Output string is padded to this length if it is specified
Precision	The precision to use
Currency	Symbol used to represent currencies - $10,000.00 or E5.000, 00
Decimal	A decimal point can be "." (10,000.00) or "," (5.000, 00)
Grouping	A grouping can be “," (10,000.00) or "." (5.000,00)
Null	The string to use in case the field value is null
Attribute	Make this attribute (N means: element)
Attribute parent name	Specify the name of the parent element to add the attribute to if previous parameter attribute is set to Y If no parent name is specified, the attribute is set in the parent element

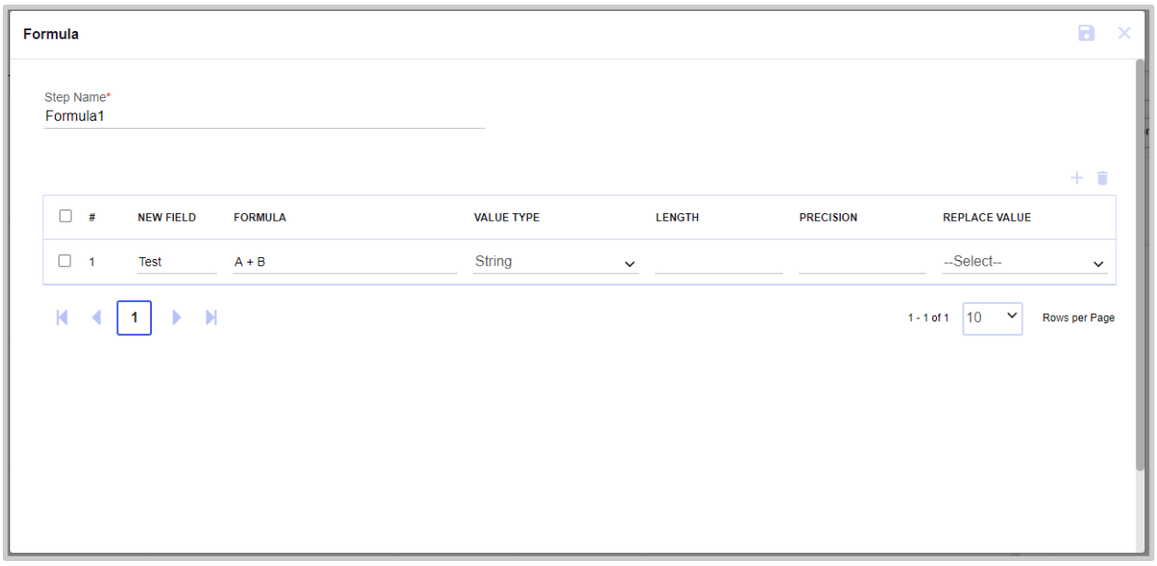
Formula

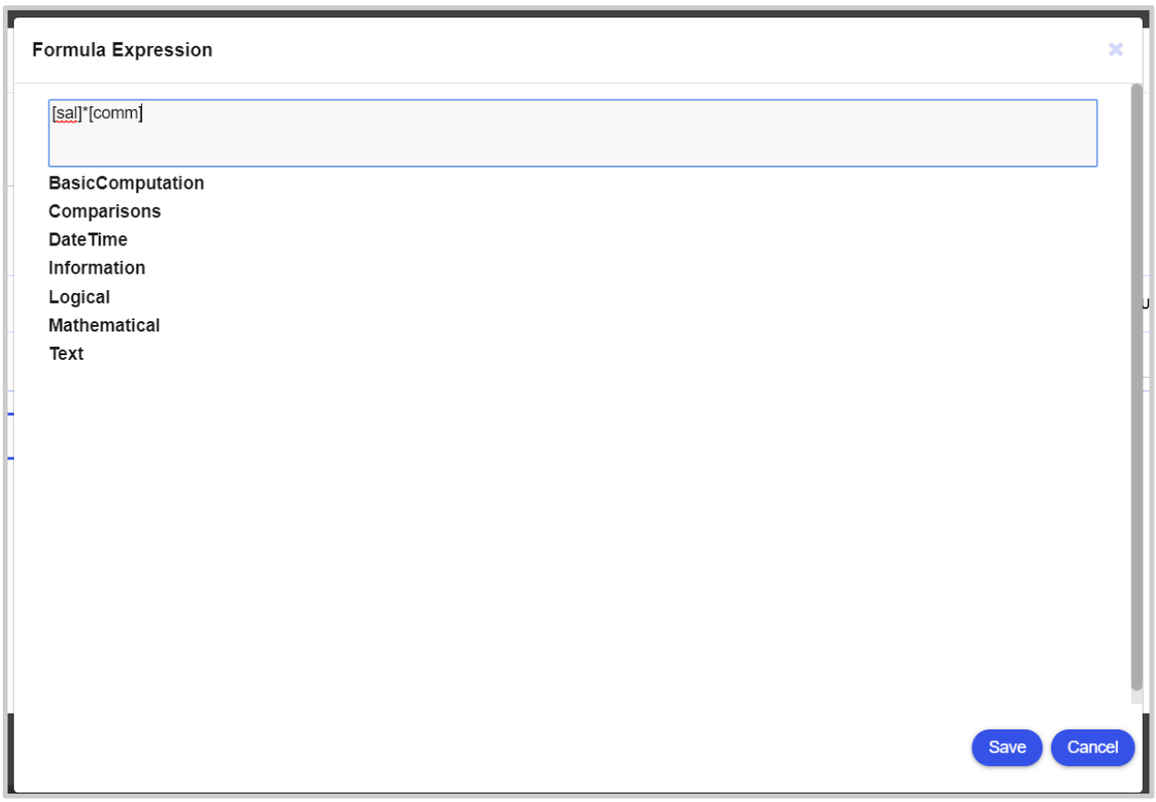
It supports calculation of Formula Expressions within a data stream. It can be used to create simple calculations such as [A] + [B] or more complex business logic with a lot of nested if / then logic.



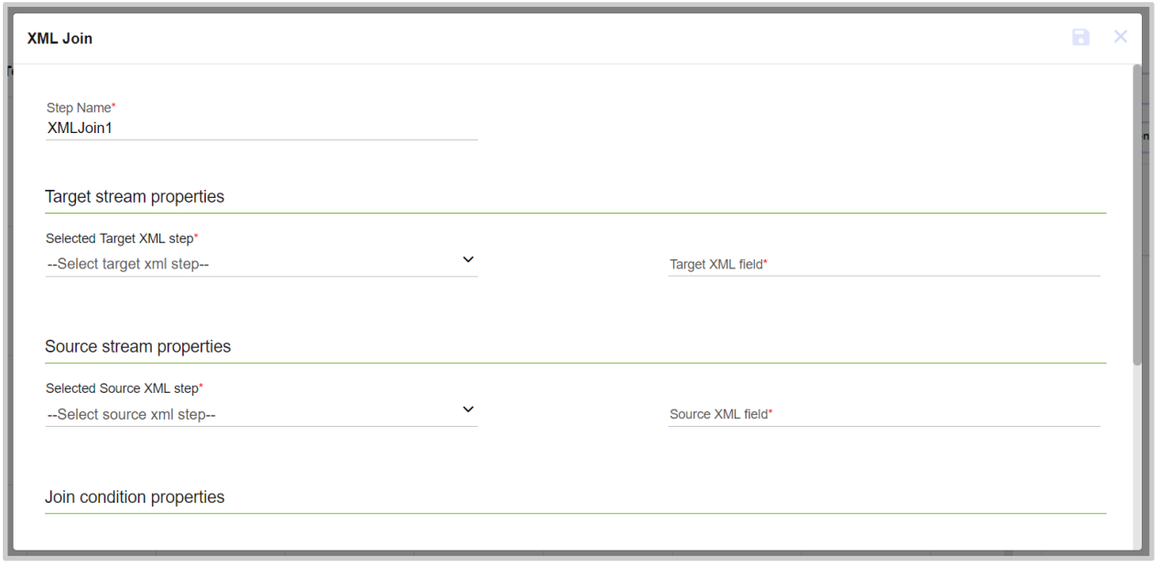
Select formula field. And, a dialogue box shows up to enter the formula expression.

Formula Expression

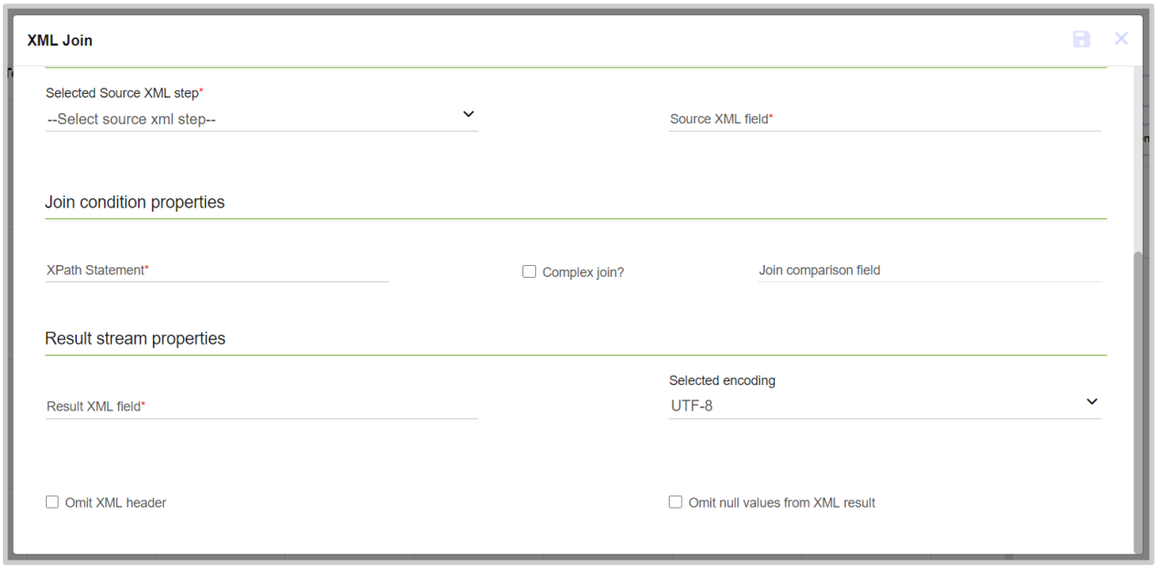




XML Join



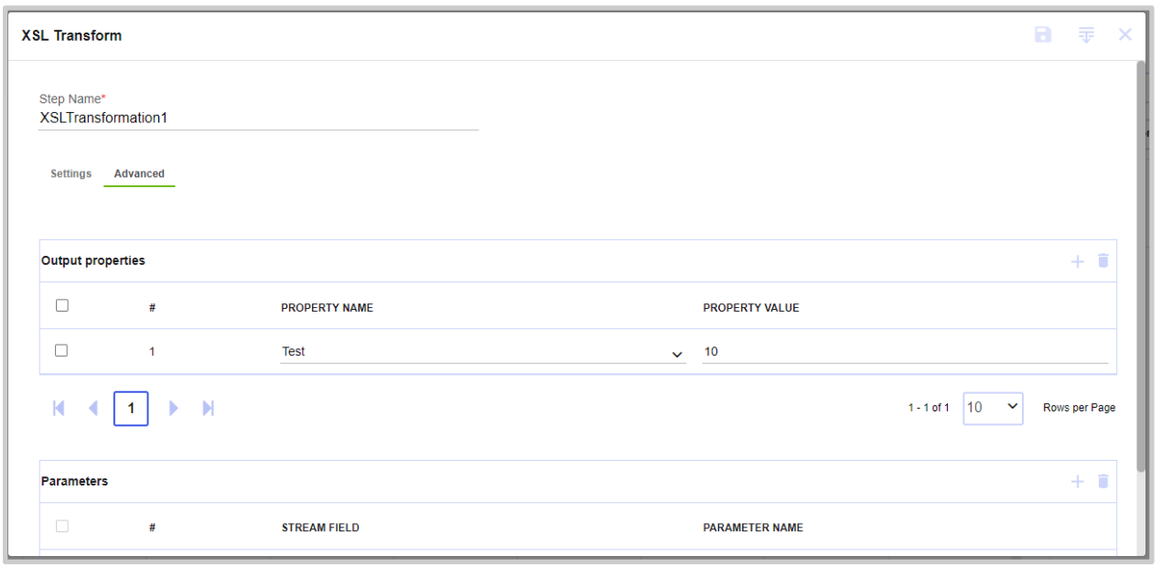
Cont'd...



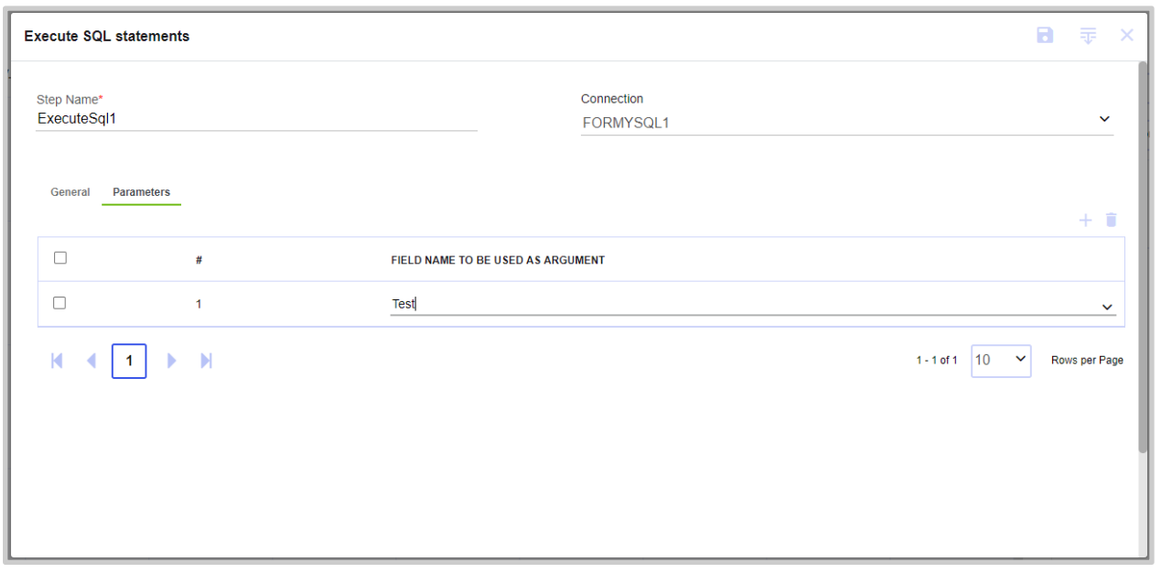
XSL Transformation

Cont'd…

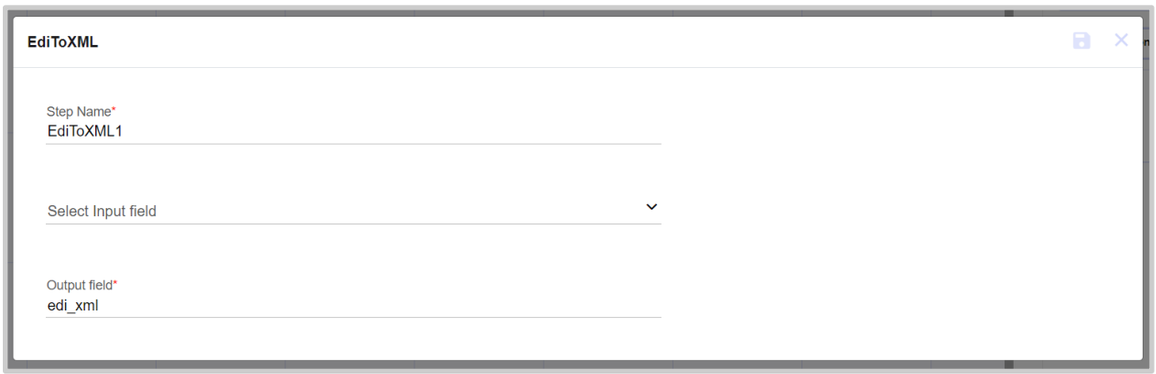
Advanced Tab



Cont'd...

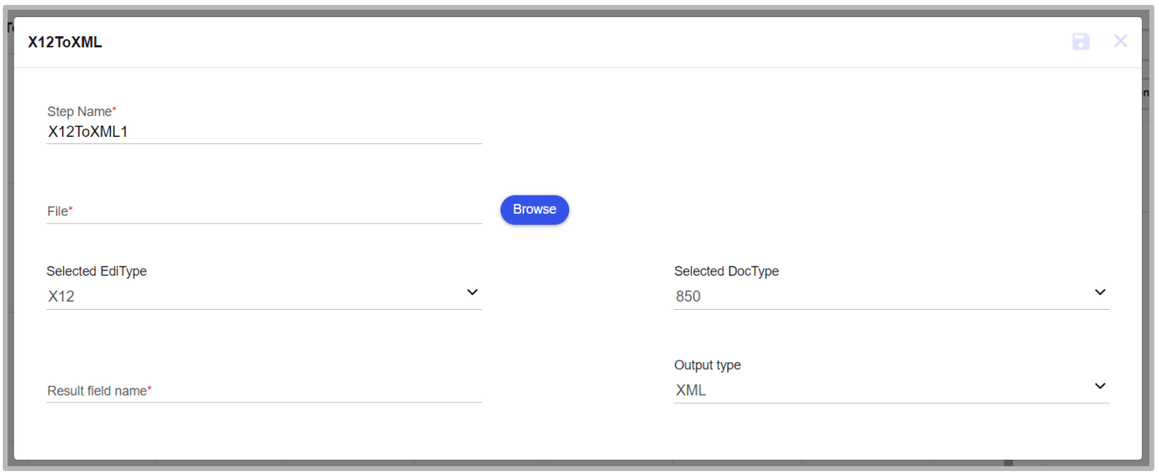


EDI to XML



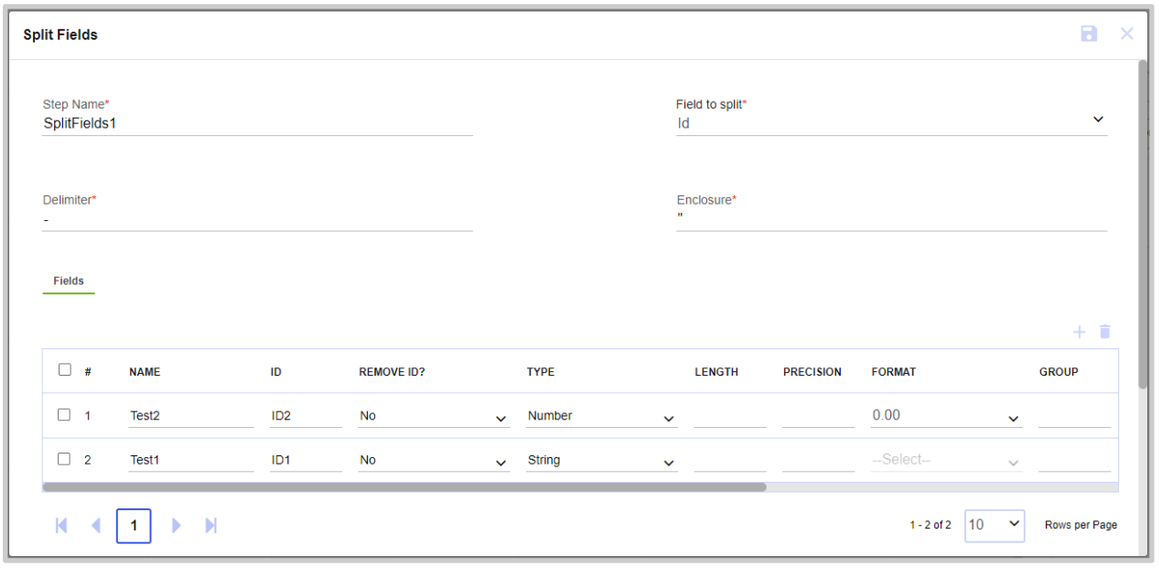
X12 to XML

This step is used to transform data from X12 format to XML format.



Split Fields

This step allows to split fields based on delimiter information.



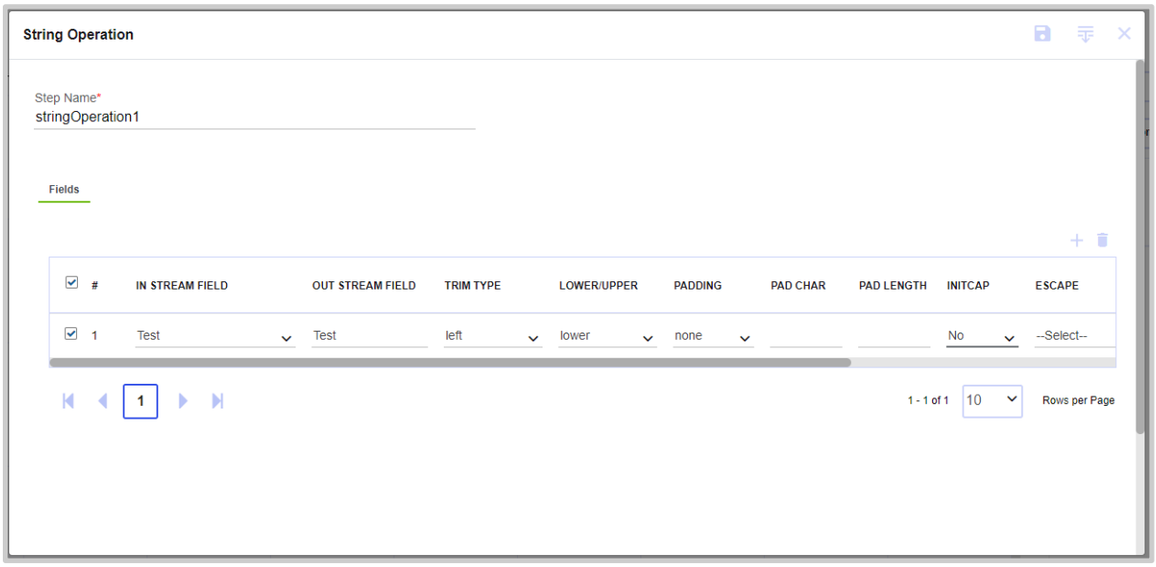
A table given below contains the options for configuring the Split Fields Step.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Field to split	The name of the field required to split
Delimiter	Delimiter that determines the field
Fields table	This table is where the properties for each new field created by the split For each new field are defined
Name	Specify the name to be used
Id	Based on the name field the Id is represented (Eg:SALES_VALUES field containing "Sales2=310.50, Sales4=150.23" Use these settings to split the field into four new fields • Field: SALES1, SALES2, SALES3, SALES4

	• Id: Sales1=, Sales2=, Sales3=, Sales4=)
Remove ID?	A drop down with value ‘Y’ and ‘N’
Type	It is a drop down with an option of • Number • String • Date • Boolean • Integer • Big Number • Binary • Timestamp • Internet Address
Length	The length option depends on the field type follows: • Number - total number of significant figures in a number • String - total length of string • Date - length of printed output of the string (e.g. 4 only gives back year)
Precision	For Number: number of floating point digits; For String, Date, Boolean: unused;
Format	The format mask to convert with. See Number Formats for a complete description of format symbols • #,##0.### • 0.00 • 0000000000000 • #.# • # • ###,###,###.# • ########.### • #####.###%
Group	A grouping can be a "," (10,000.00) or "." (5.000,00)
Decimal	A decimal point can be a "." (10,000.00) or "," (5.000,00)
Currency	Symbol used to represent currencies like $10,000.00 or E5.000,00
Nullif	Treat this value as NULL
Default	Default value in case the field in the text file was not specified (empty)
Trim type	The trimming method to apply on the string It only works when there is no field length given

String Operations

Apply operations such as trimming, padding and other to the string value.



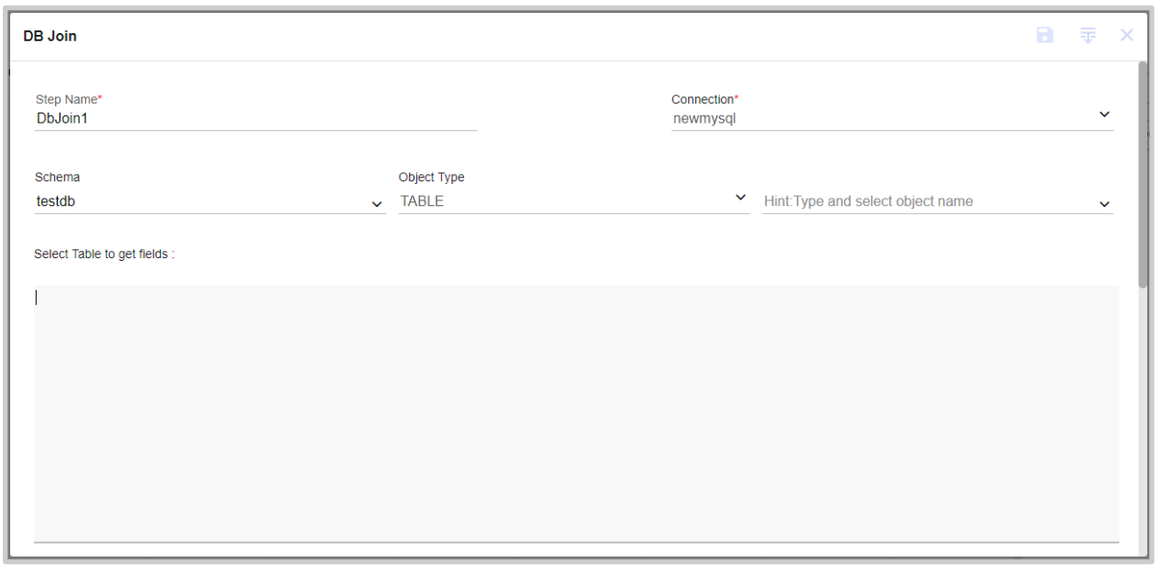
Main Option

A table given below describes the options for the String Operation Step.

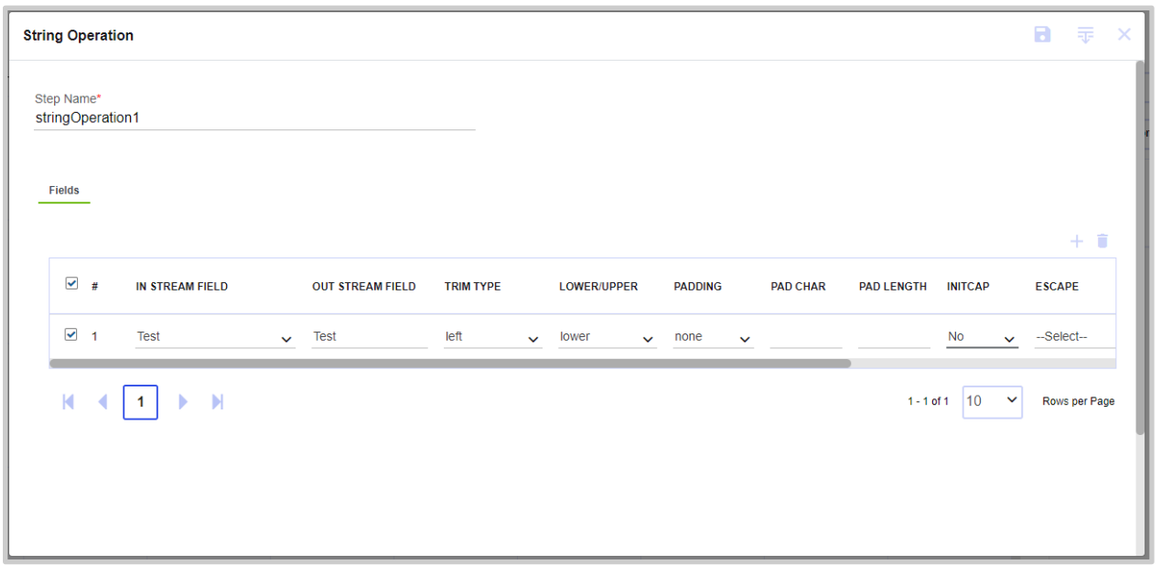
Option	Definition
Digits	Designate whether to return, remove or do nothing to digits
Escape	Define to Escape or Unescape XML, HTML, use CDATA or Escape SQL
In stream field	Designate the field to transform
InitCap	Transform to initial capitalization
Lower/Upper	Designate upper or lowercase
Out stream field	Designate the name of the field to be created
Pad char	Designate the padding character
Pad Length	Designate how long the padding will be
Padding	Designate left or right padding
Remove Special character	Designate a special character to remove
Step name	The name of this Step as it shows up in the Flow workspace
Trim type	Designate the trim type: none, left, right or both

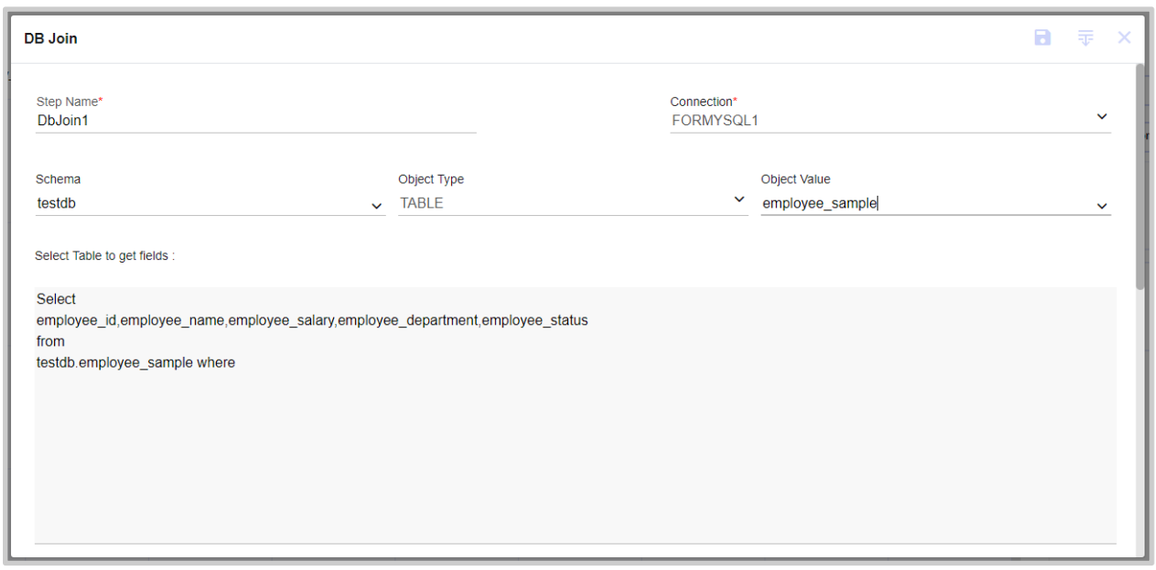
Database Join

Database Join permits running a query against a database using data obtained from the previous Steps.


DB Join
Step Name*
DbJoin1
Connection*
newmysql
Schema
testdb
Object Type
TABLE
Hint:Type and select object name
Select Table to get fields :

Cont'd...


String Operation
Step Name*
stringOperation1
Fields
IN STREAM FIELD OUT STREAM FIELD TRIM TYPE LOWER/UPPER PADDING PAD CHAR PAD LENGTH INITCAP ESCAPE
1 Test Test left lower none No --Select--
1
1 - 1 of 1
10
Rows per Page


DB Join
Step Name*
DbJoin1
Connection*
FORMYSQL1
Schema
testdb
Object Type
TABLE
Object Value
employee_sample
Select Table to get fields :
Select
employee_id,employee_name,employee_salary,employee_department,employee_status
from
testdb.employee_sample where

Options

A table given below describes the options for the Database Join Step.

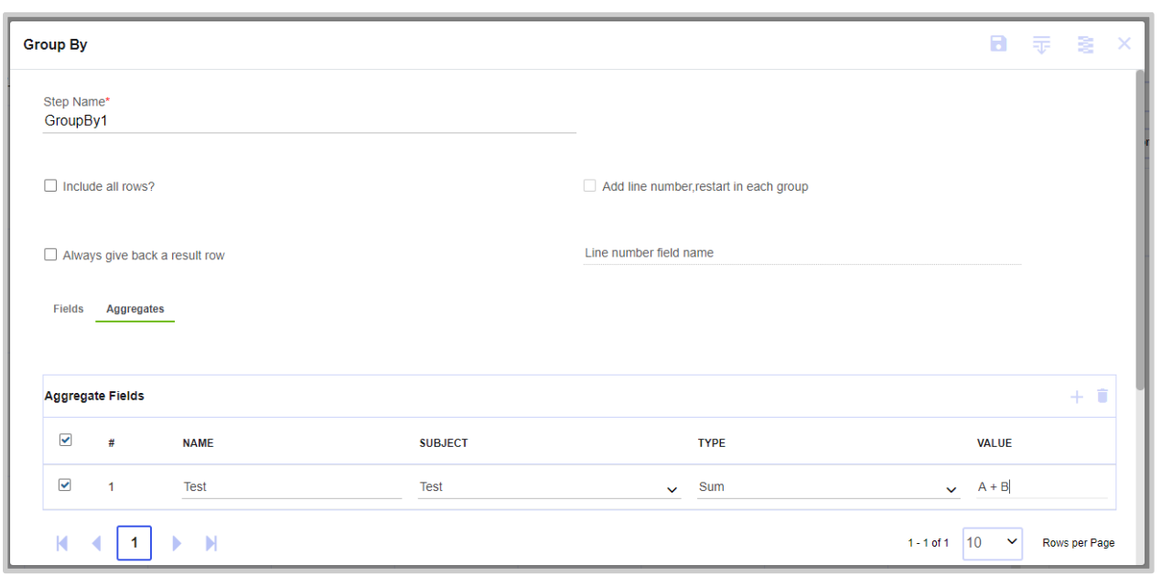
Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Connection	The database connection to use for the query
Schema	Name of the schema for the table to do
Object type	Object value from database such as tables/views/synonyms
Object name	Name of the table for Join operation
SQL	SQL query to form the join. Use question marks as parameter placeholders
Number of rows to return	Zero(0) returns all rows, any other number limits the number of rows returned
Outer Join?	Enable to return a result always, even if the query did not return as a result
Parameters table	Specify the fields containing parameters. The parameter type is required

Group By

This Step permits the calculation of values over a defined group of fields.

To illustrate, calculate the average sales per product or get the number of yellow shirts that are available in the stock.

Aggregates Tab



Options

A table given below provides a description of the options available for the Group By Step.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Include all rows?	Enable if required all rows in the output, not just the aggregation; to differentiate between the two types of rows in the output, a flag is required in the output Remember to specify the name of the flag field in that case (the type is Boolean)
Add line number, restart in each group	Enable to add a line number that restarts at 1 in each group
Always give back a result row	If enabled, the Group By Step will always give back a result row, even if there is no input row This can be useful if required to count the number of rows. A count of zero (0) would never be available without enabling this option
Line number field name	Enable to add a line number that restarts at 1 in each group
Group fields table	Specify the fields required to be grouped. Click Get Fields to add all fields from the input stream(s)
Aggregates table	Specify the fields that must be aggregated, the method and the name of the resulting new field Here are the available aggregation methods : • Sum • Average (Mean) • Median • Percentile • Minimum • Maximum • Number of values (N) • Concatenate strings separated by, (comma) • First non-null value • Last non-null value • First value (including null) • Last value (including null) • Cumulative sum (all rows option only!) • Cumulative average (all rows option only!) • Standard deviation • Concatenate strings separated by <Value>: specify the separator in the Value column • Number of distinct values • Number of rows (without field argument)

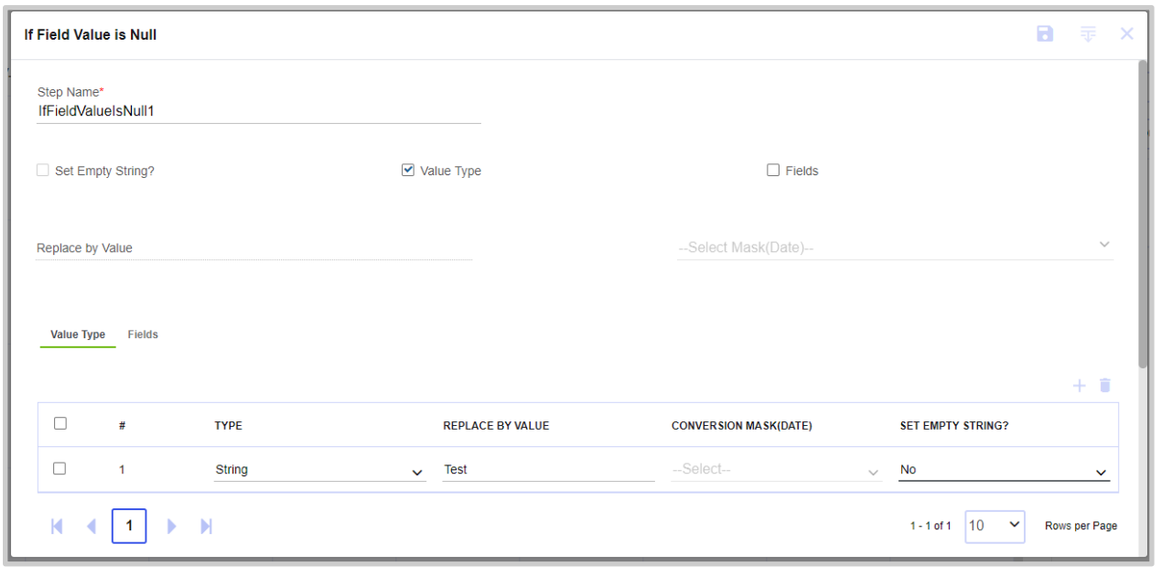
If Field value is null

The Step "Changing a numeric field type to an empty string field type" can cause an error in the subsequent Steps. If field value is null, it is able to replace nulls by a given value either by:

- Processing the complete row with all fields

- Processing the complete row but only for specific field types (Number, String, Date etc)
- Processing the complete row but only for specific fields by nam

A dialogue box shown below shows up for ‘If Field Value is Null’ Step:



Options

A table given below describes the options for If Field Value is Null.

Name	Description
Step Name	Name of the Step. The name has to be unique in a single flow
Set Empty String	Check if required to set an empty string value
Value type	Check if required to change data based on the Type
Fields	Check if required to change data based on Field selected
Replace by Value	Enter the value with which to replace data with
-Select Mask(Date)-	Select the mask for the data List of Formats available: 'yyyy/MM/dd HH:mm:ss', 'yyyy/MM/dd HH:mm:ss.SSS', 'yyyy/MM/dd HH:mm:ss.SSS XXX', 'yyyy/MM/dd HH:mm:ss', 'yyyy/MM/dd HH:mm:ss XXX', 'yyyyMMddHHmmss', 'yyyy/MM/dd', 'yyyy-MM-dd', 'yyyy-MM-dd HH:mm:ss',

	'yyyy-MM-dd HH:mm:ss XXX', 'yyyyMMdd', 'MM/dd/yyyy', 'MM/dd/yyyy HH:mm:ss', 'MM-dd-yyyy', 'MM-dd-yyyy HH:mm:ss', 'MM/dd/yy', 'MM-dd-yy', 'dd/MM/yyyy', 'dd-MM-yyyy', 'yyyy-MM-dd HH:mm:ss.SSSXXX'

Click '+' icon to add new Value Type and ensure to keep it checked.

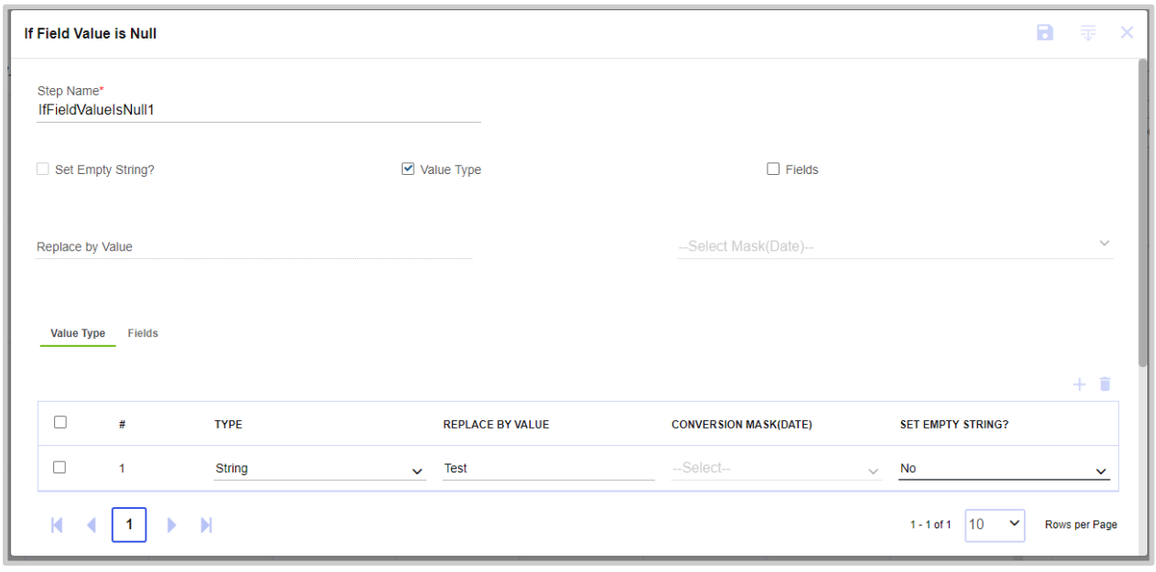
Value Type Options

A table given below describes options for Value Type.

Name	Description
Type	Enter the Name for the Field. List of Options available are: Number String Boolean Datetime Bignumber
Replace By Value	Enter a value with required to be replaced
Conversion mask(date)	Select mask for Field List of Formats available '#,##0.###', '0.00', '0000000000000', '#.#', '#', ' ###,###,###.#', '#######.###', '#####.###%', 'yyyy/MM/dd HH:mm:ss', 'yyyy/MM/dd HH:mm:ss.SSS', 'yyyy/MM/dd HH:mm:ss.SSS XXX',

	'yyyy/MM/dd HH:mm:ss', 'yyyy/MM/dd HH:mm:ss XXX', 'yyyyMMddHHmmss', 'yyyy/MM/dd', 'yyyy-MM-dd', 'yyyy-MM-dd HH:mm:ss', 'yyyy-MM-dd HH:mm:ss XXX', 'yyyyMMdd', 'MM/dd/yyyy', 'MM/dd/yyyy HH:mm:ss', 'MM-dd-yyyy', 'MM-dd-yyyy HH:mm:ss', 'MM/dd/yy', 'MM-dd-yy', 'dd/MM/yyyy', 'dd-MM-yyyy', 'yyyy-MM-dd HH:mm:ss.SSSXXX'
Set Empty String?	Select if required to set an empty string

Click '+' icon to add new Field and keep it checked. Please refer to below image.



Field Options

A table given below describes the options for "If Field Value is Null".

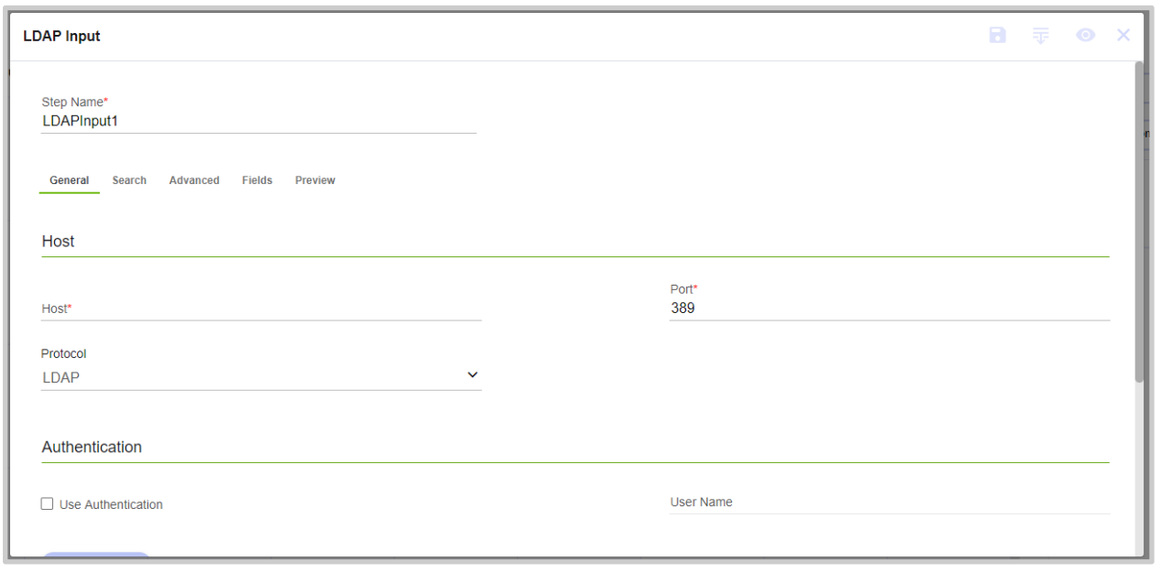
Name	Description
Field	Select Field on which operation needs to be performed

Replace By Value	Enter value which needs to be replaced
Conversion mask(date)	Select mask for Field List of Formats available '#,##0.###', '0.00', '0000000000000', '#.#', '#', ' ###,###,###.#', '#######.###', '#####.###%', 'yyyy/MM/dd HH:mm:ss', 'yyyy/MM/dd HH:mm:ss.SSS', 'yyyy/MM/dd HH:mm:ss.SSS XXX', 'yyyy/MM/dd HH:mm:ss', 'yyyy/MM/dd HH:mm:ss XXX', 'yyyyMMddHHmmss', 'yyyy/MM/dd', 'yyyy-MM-dd', 'yyyy-MM-dd HH:mm:ss', 'yyyy-MM-dd HH:mm:ss XXX', 'yyyyMMdd', 'MM/dd/yyyy', 'MM/dd/yyyy HH:mm:ss', 'MM-dd-yyyy', 'MM-dd-yyyy HH:mm:ss', 'MM/dd/yy', 'MM-dd-yy', 'dd/MM/yyyy', 'dd-MM-yyyy', 'Yyyy-MM-dd HH:mm:ss.SSSXXX'
Set Empty String?	Select if required to set an empty string

LDAP Input

The LDAP Input supports reading information such as users, roles and other data from an LDAP server. The sections mentioned below describes the available options for the LDAP Input Step.

General Tab

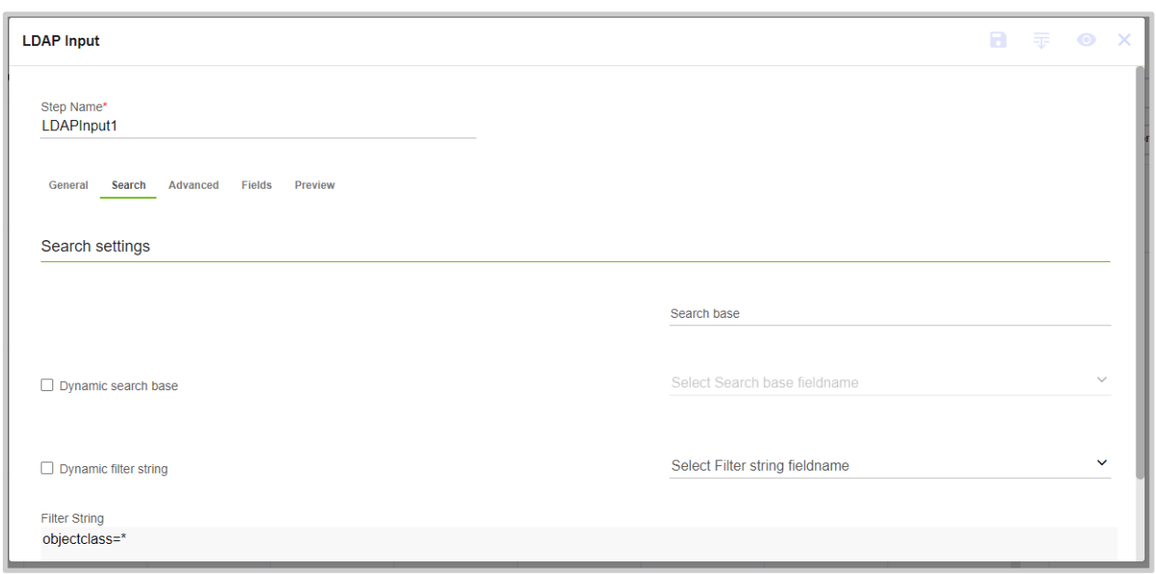


Options

A table given below describes the options for the LDAP Input Step.

Name	Description
Step Name	Name of the Step. The name has to be unique in a single Flow
Host	Host on which LDAP server is running
Port	Port number on which LDAP server is running
Use Authentication	LDAP Authentication to use
Username	LDAP username on which LDAP server is running
Password	LDAP password on which LDAP server is running.
Test Connection	Validating LDAP server connectivity
Use certificate	Enable to authenticate mechanism
Trust store path	Browse to get trust store file
Trust all certificates	Enable to authenticate all trust certificates on which LDAP server is running

Search Tab

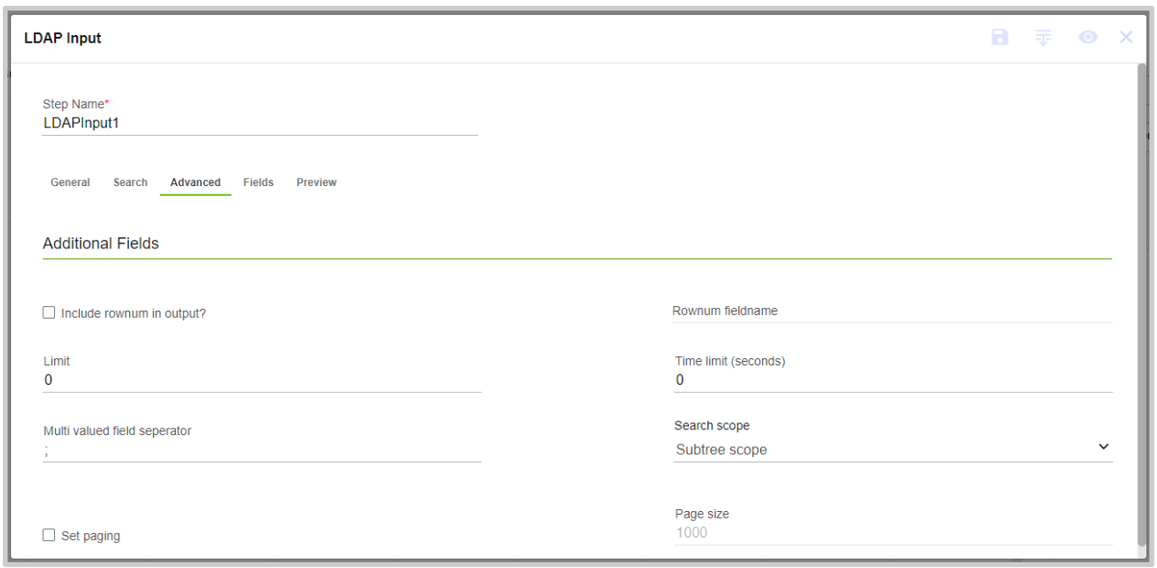


Options

A table describes the options for LDAP Input.

Name	Description
Search base	Base LDAP node to search LDAP contents
Filter String	LDAP filter to search the customized contents, in the current stage only "single filter format" is supported like Example: mail=*
Dynamic search base	Dynamic LDAP search from base
Select Search base field	Search base field from Input Stream
Dynamic filter string	Enables LDAP filter search based on string
Select Filter string Fieldname	Filter Fieldname from Input Stream

Advanced Tab



Options

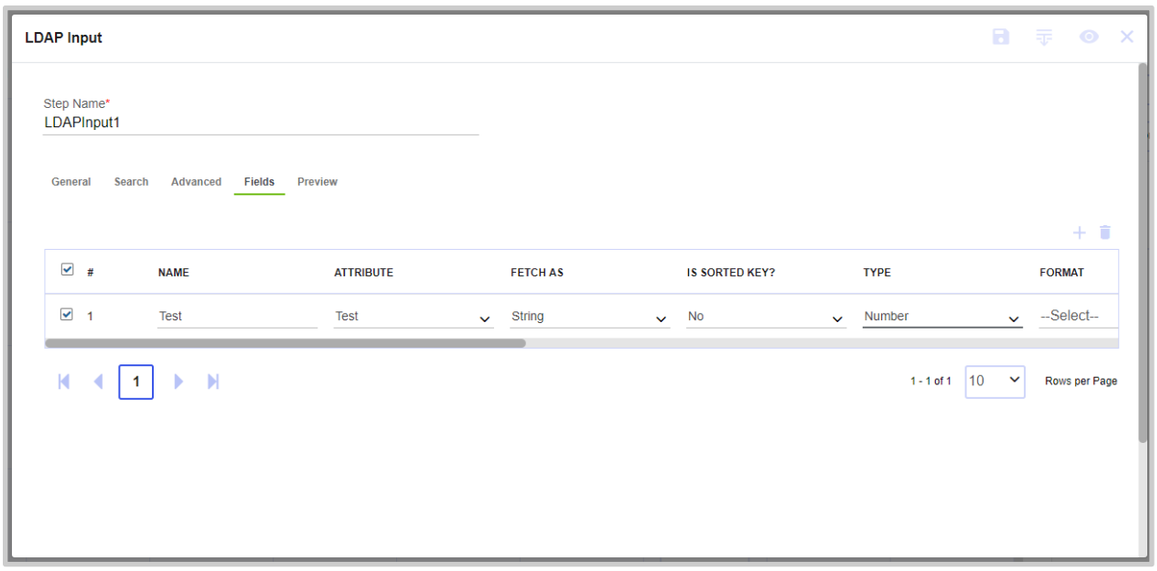
A table given below describes the options for Advance Tab LDAP Input.

Name	Description
Include rownum in output?	Enable if need the filename to be part of the output
Rownum fieldname	Name of the field that contains the row number
Limit	Sets the number of lines that is read from the file; 0 means read all lines
Time limit	Time response delay for LDAP server

Multi valued field separator	One or more characters that separates the fields in a single line of text
Search scope	Scope to search LDAP attributes on which LDAP server is running
Set paging	Enable to set value for paging
Page size	Sets the size of the page

Fields Tab

The fields tab supports defining the information about the name and format of the fields being read from a text file.



Options

A table given below describes the options are for Fields Tab LDAP Input.

Name	Description
Name	Name of the field
Attribute	Value from Inputstream
Fetch as	Fetch value either as a binary or string
Is sorted key?	Value to be sorted or not
Type	Type of the field can either be a string, date or number
Format	See Number Formats for a complete description of format symbols
Length	For Number: total number of significant figures in a number; For String: total length of string; For Date: length of printed output of the string (e.g. 4 only gives back the year)
Precision	For Number: number of floating point digits; For string, date, Boolean: unused
Currency	Used to interpret numbers like $10,000.00 or E5.000, 00
Decimal	A decimal point can be a "." (10; 000.00) or "," (5.000, 00)

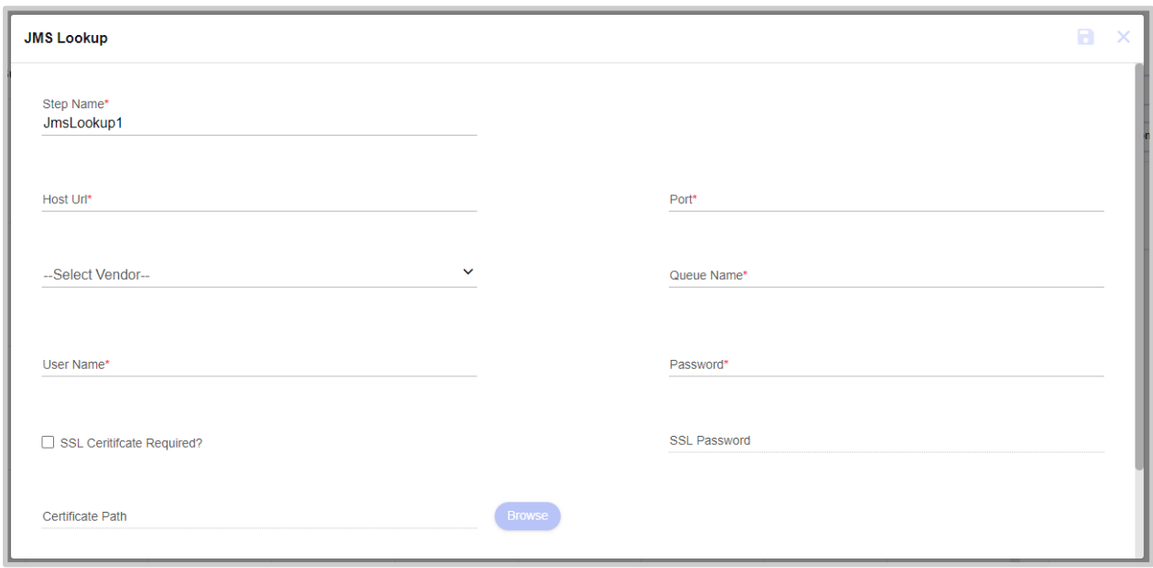
Group	A grouping can be a dot "," (10; 000.00) or "." (5.000,00)
Trim Type	Type trim this field (left, right, both) before processing
Repeat	If LDAP returns no value for an attribute, use the value of the previous row
Preview	Preview the rows generated by this Step

JMS Lookup

JMS Lookup produce and consume the messages from the Apache ActiveMQ server. It can be used in various ways.

- To get data from the service (Query)
- To send data to the service (Pots)

A dialogue box shown below shows up for “JMS Lookup” Step.



Options

A table given below describes the options for JMS Lookup.

Name	Description
Step Name	Name of the Step. The name has to be unique in a single Flow
Host Url	IP address of the Apache ActiveMQ server
Port	Port number on which JMS server is running
Select Vendor	Select the vendor i.e. ActiveMQ
Queue Name	Name of the message queue on the server where data should be sent
User Name	User Name for which authorization is there to access the Queue

Password	Password for the above user
SSL Certificate Required?	Check if required SSL certification between the JMS Lookup and server
Certificate Path	Path to the SSL Certificate
SSL Password	Password for the Certificate
Input Field	Select the Field coming from previous Step to be sent to the server
Result Field Name	Name of the Output Column

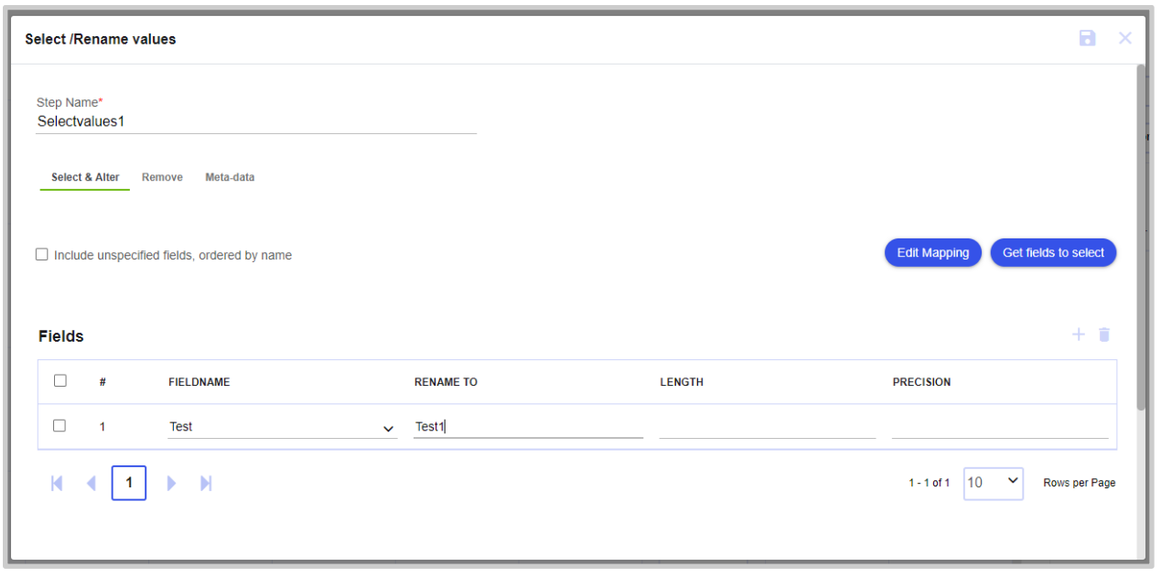
Select/Rename Step

The Select/Rename values step is used for selecting, removing, renaming, changing data types and configuring the length and precision of the fields on the stream. These operations are organized into different categories:

Select and Alter - specify the exact order and name in which the fields have to be placed in the output rows

Remove - specify the fields that have to be removed from the output rows

Meta-data - Change the name, type, length and precision (the metadata) of one or more fields



Options

Select & Alter tab

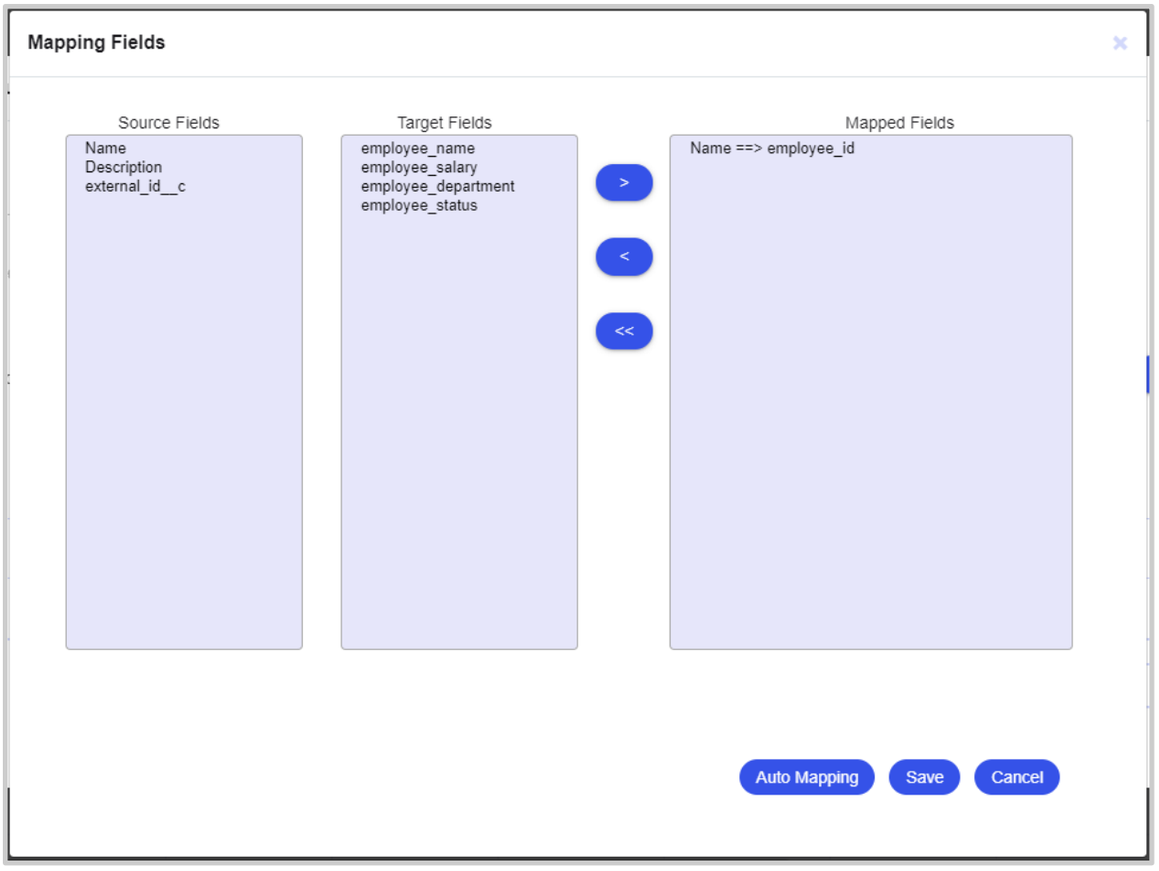
This tab contains options for selecting and changing data types and fields. The ‘Get Fields to Select’ button will retrieve available fields based on the existing input steps and populate the entries in this tab.

Option	Description

Step Name	Name of the step Note: This name has to be unique in a single Flow
Fieldname	The name of the field from the input stream
Rename to	The new name of the field Leave blank if you do not wish to rename the field
Length	Specify this value if you want to implicitly select all other fields from the input stream(s) that are not explicitly selected in the Fields section
Precision	The precision option depends on the field type, but only Number is supported; it returns the number of floating point digits
Include unspecified fields, ordered by name	Enable if you want to implicitly select all other fields from the input stream(s) that are not explicitly selected in the Fields section

Mapping Fields

A picture below represents the available Source and Target Fields. Click Automapping to map the fields automatically. It can be mapped manually also.



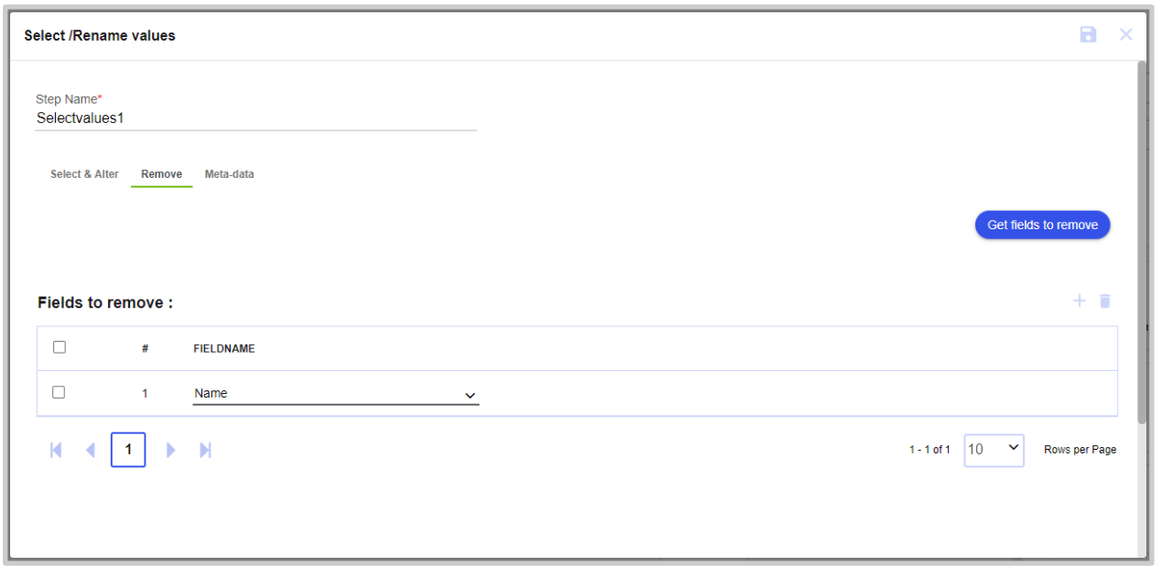
Edit Mapping

The Edit Mapping dialog allows you to define multiple mappings between source and target fields.

Option	**Description**

Source fields	A list of input fields available to map Select a field to begin mapping
Target fields	A list of fields that source fields can be mapped to Once you have selected a source field, select a target field to create a mapping
Mapped fields	Shows the list of all mapped fields

Select/Rename values

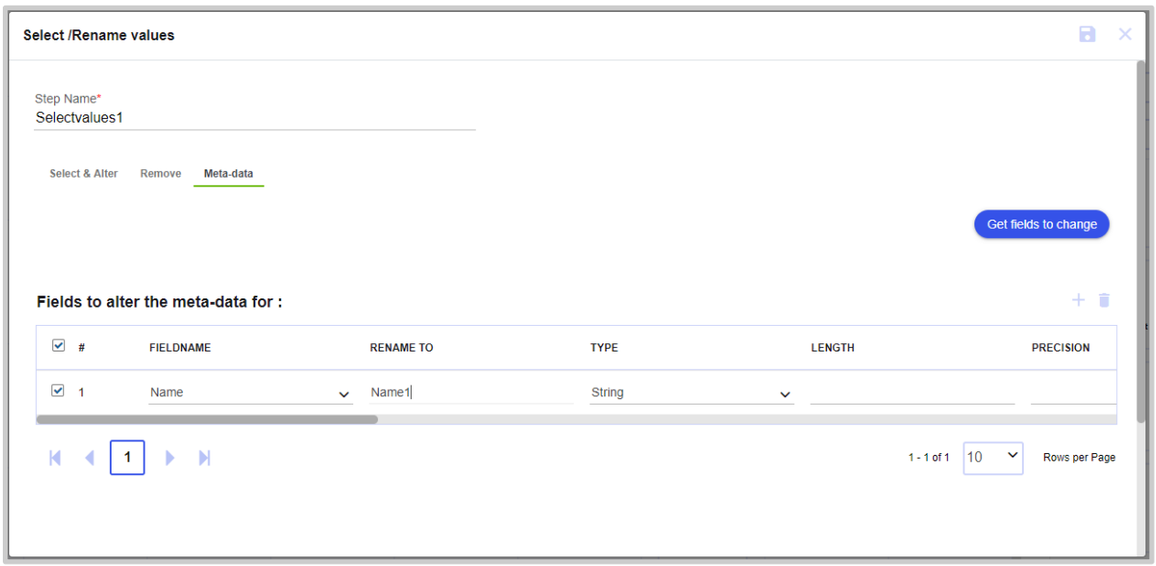


Remove tab

This tab allows you to remove fields from the input stream. Click ‘Get fields to remove’ to import fields from previous steps.

> Note: Field removals can slow down the process since the field order gets internally changed.

Meta-data



Meta-data Tab

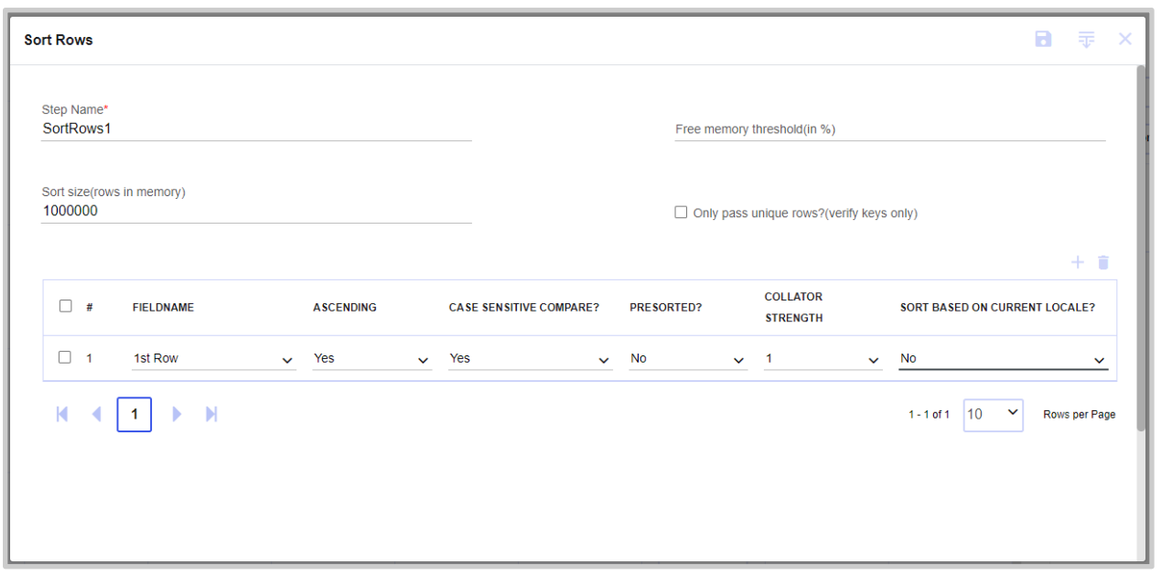
Options under this tab allow you to rename input fields, convert them to different data types, and alter their length, and precision. Click ‘Get fields to change’ to import fields from previous steps.

Option	**Description**
Fieldname	The name of the imported field
Rename to	If you want to rename this field, this is where you put the new name
Type	The data type for this field
Length	The field length
Precision	The precision option depends on the field type, but only Number is supported; it returns the number of floating point digits
Binary to Normal?	Converts a string to a numeric data type, when appropriate
Format	The format mask (number type or date format)
Date Format Lenient?	Determines whether the date parser is strict or lenient Leniency means that invalid date values are processed If set to N, only strictly valid date values will be accepted; if set to Y, the parser will attempt to determine the intention of an incorrect date, if possible, and correct it
Date Locale	Specifies the date locale to use for date conversions and calculations Leave blank to use the default encoding on your system or choose from the populated this list accordingly

Date Time Zone	Specifies the date time zone to use for date conversions and calculations Leave blank to use the default encoding on your system or choose from the populated list accordingly
Lenient number conversion	When this option is set to Y, numbers get parsed until it finds a non-numeric value (e.g. a dash or slash) and stops parsing without reporting an error When set to N, numbers get parsed strictly throwing an error in case invalid numbers are in the input The default behaviour is set to N and can be changed to Y
Encoding	Specifies the text file encoding to use Leave blank to use the default encoding on your system To use Unicode, specify UTF-8 or UTF-16. On first use, Spoon searches your system for available encodings and populates this list accordingly
Decimal	A decimal point; this is either a dot or a comma
Grouping	A method of separating units of thousands in numbers of four digits or larger This is either a dot or a comma
Currency	Symbol used to represent currencies

Sort Rows

It sort rows based on the fields which are specified. It also checks if rows if should be sorted in ascending or descending order.



Options

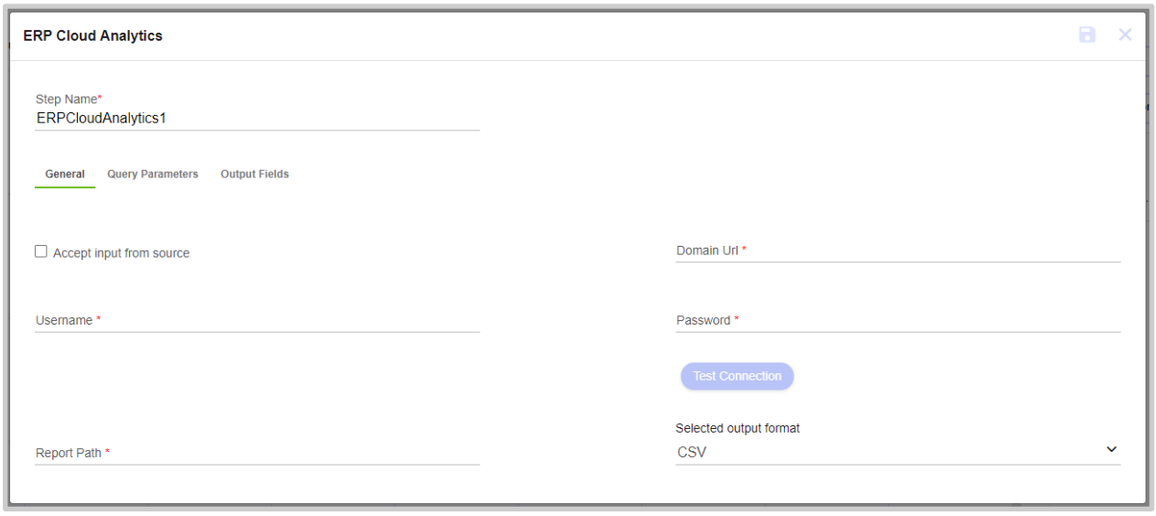
A table given below describes the fields associated with the Sort Step:

Name	Description
Step Name	Name of the Step The name has to be unique in a single Flow

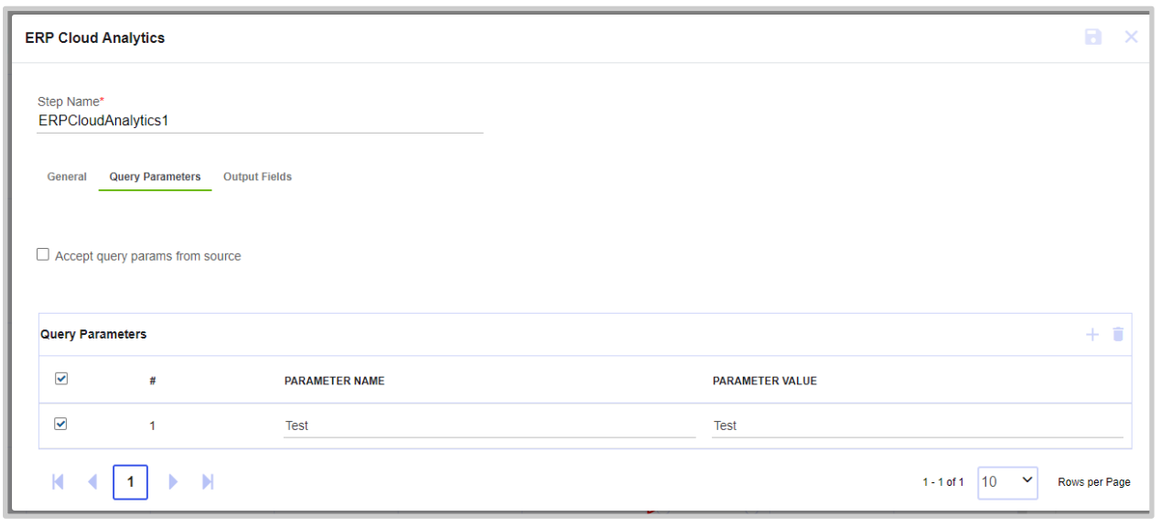
Free memory threshold (in %)	If the sort algorithm finds less available free memory than the indicated number; it will start paging data to disk
Sort size	The more rows stored in memory, the faster the sorting process because fewer temporary files must be used and less I/O is generated
Only pass unique rows?	Enable if required to pass unique rows only to the output stream(s)
Fields table	Specify the fields and direction (ascending/descending) to sort And, choose whether to perform a case sensitive sort (optional) or Presort
Get Fields	Click to retrieve a list of all fields coming in on the stream(s)

ERP Cloud Analytics

ERP Cloud Analytics step is used to pull data from Reports stored in Cloud ERP. User needs to specify ERP user credentials in order to make a valid connection and a valid report path from where data would be fetched.



Cont'd…



Output Fields

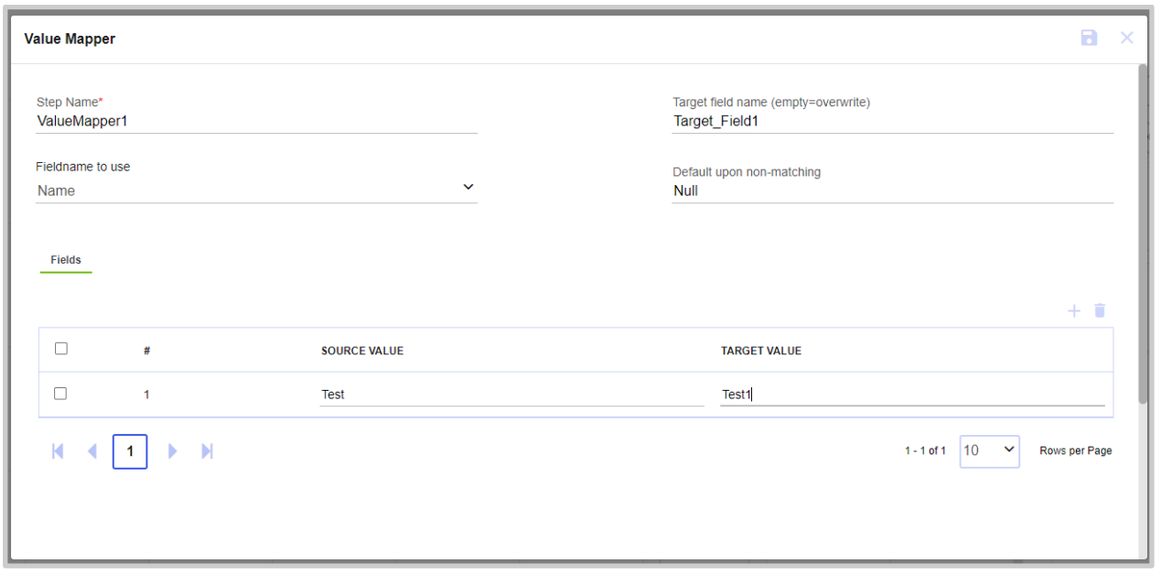
User Defined Java Class

This step allows a user to enter User Defined Java Class to drive the functionality of a complete step.

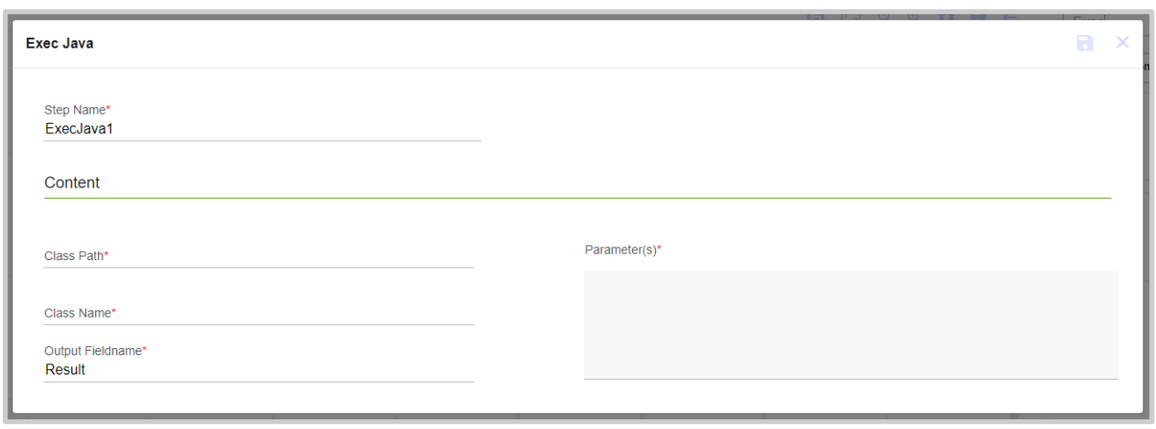
Fields Tab

Value Mapper

The Value Mapper maps string values from one value to another. Mapping is usually solved by storing the conversion table in a database. The Value Mapper provides you with a simple alternative.

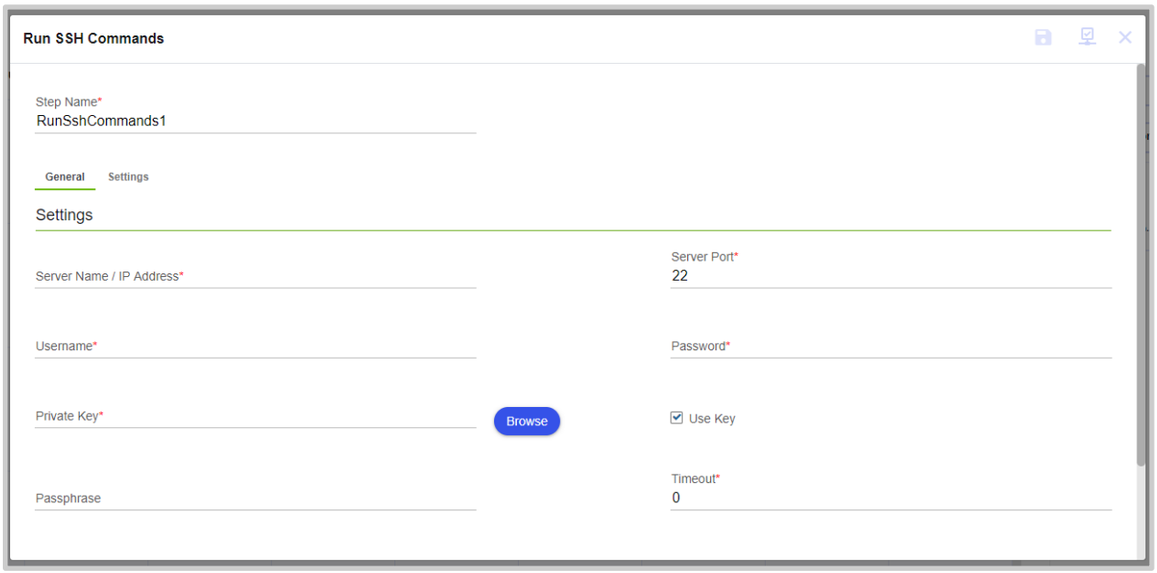


Exec Java

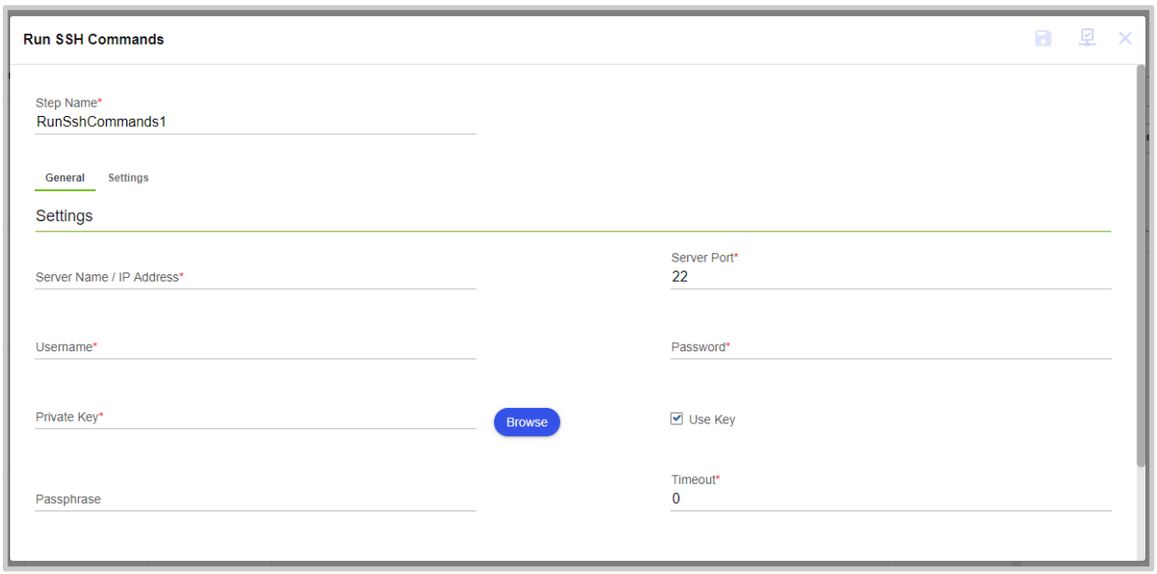


Run SSH Commands

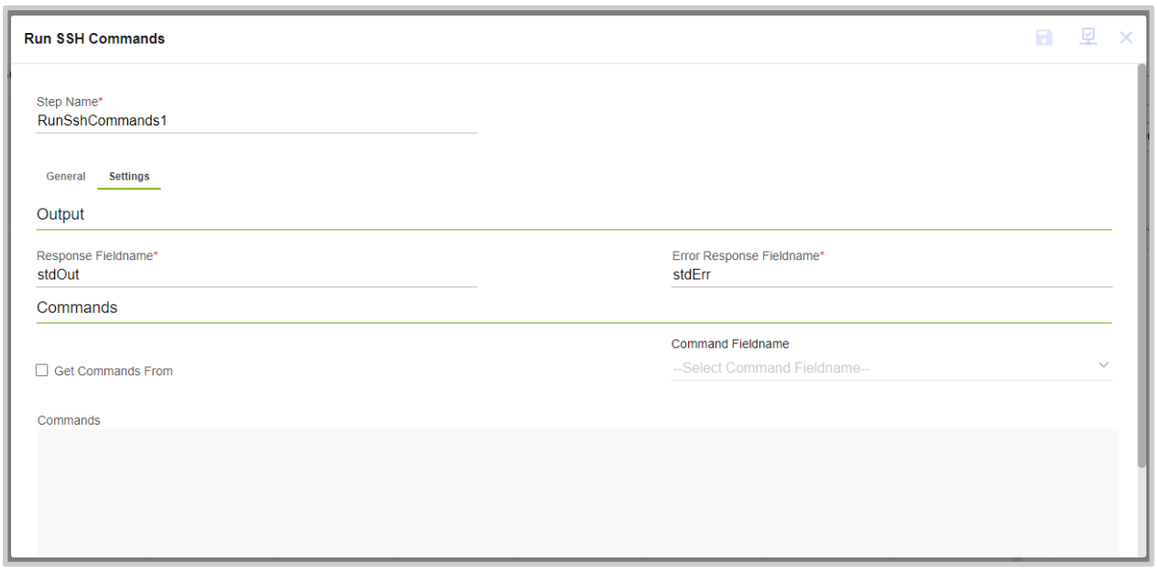
This step helps user readily to execute commands over the secure shell TCP/IP protocol.



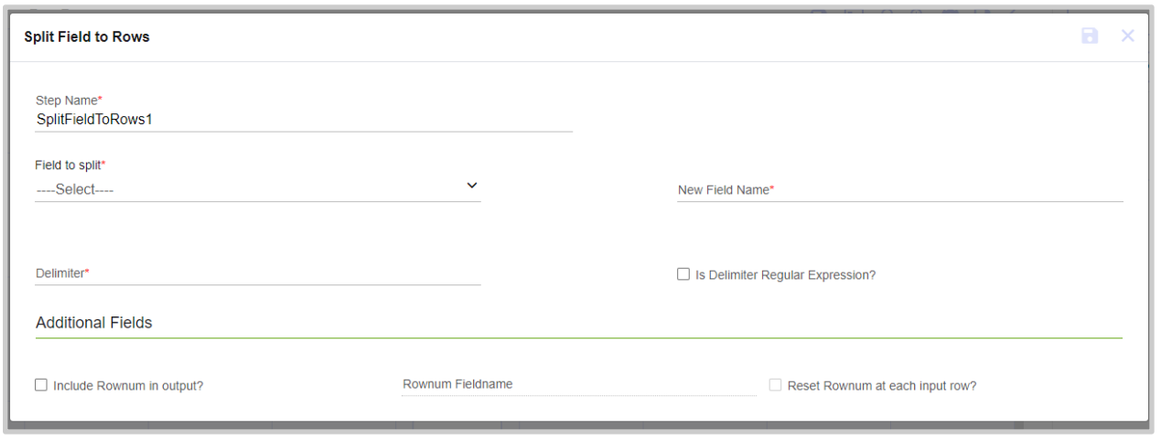
General Tab



Settings Tab



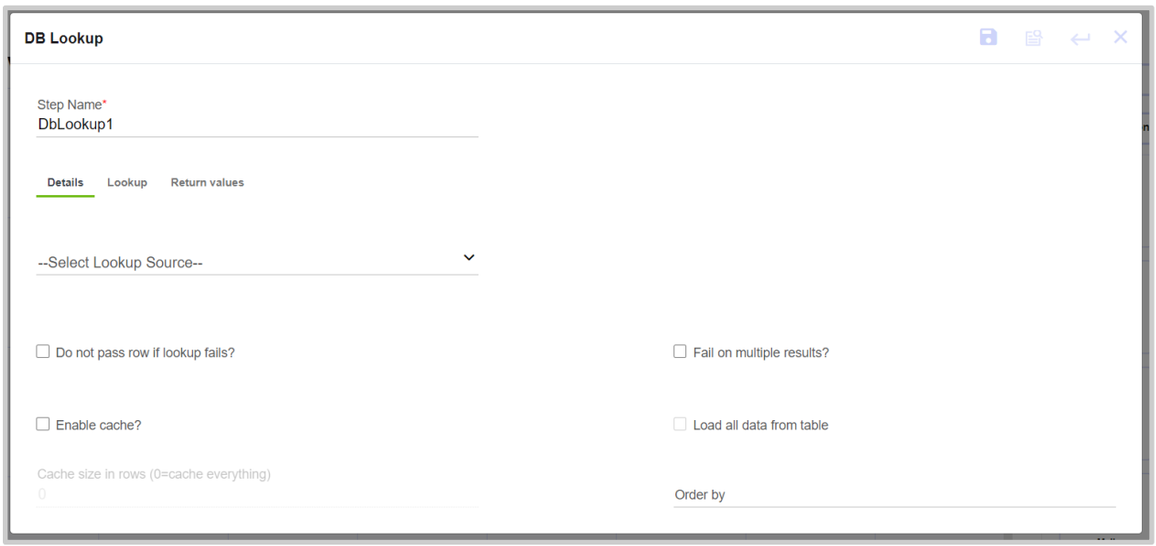
Split Field to Rows



Database Lookup

Database Lookup grants access to look up values in a database table. Lookup values are added as new fields onto the stream.

Details Tab



Options

A table given below describes the available options for configuring the Database Lookup.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Connection	Database connection to the lookup table
Schema	Name of the schema for the table to do
Object type	Object value from database such as tables/views/synonyms
Object name	Name of the table to lookup
Lookup Table	Name of the database table used for the lookup
Enable cache?	Enable caching of database lookups It implies that once a key (or groups of key) has been looked up, the looked up values are stored, and returned again the next time this key (or groups of key) is being looked up (without incurring the cost of a database call)
Cache size in rows	The size of the cache (number of rows), 0 means cache everything
Load all data from table	Pre-loads the cache with all the data present in the lookup table This may improve performance by avoiding database calls However, in the case of large table, this risk of running out of memory is high
Do not pass the row if the lookup fails	Enable to avoid passing a row when lookup fails Within the SQL syntax, enabling this would be an INNER JOIN, otherwise it would be an OUTER JOIN
Fail on multiple results?	Enable to force the Step to fail if the lookup returns multiple results
Order by	If the lookup query returns multiple results, the ORDER BY clause helps in selecting the record to take
Get Fields	Click to return a list of available fields from the input stream(s) of the Step

Get lookup fields	Click to return a list of available fields from the lookup table that can be added to the Step's output stream

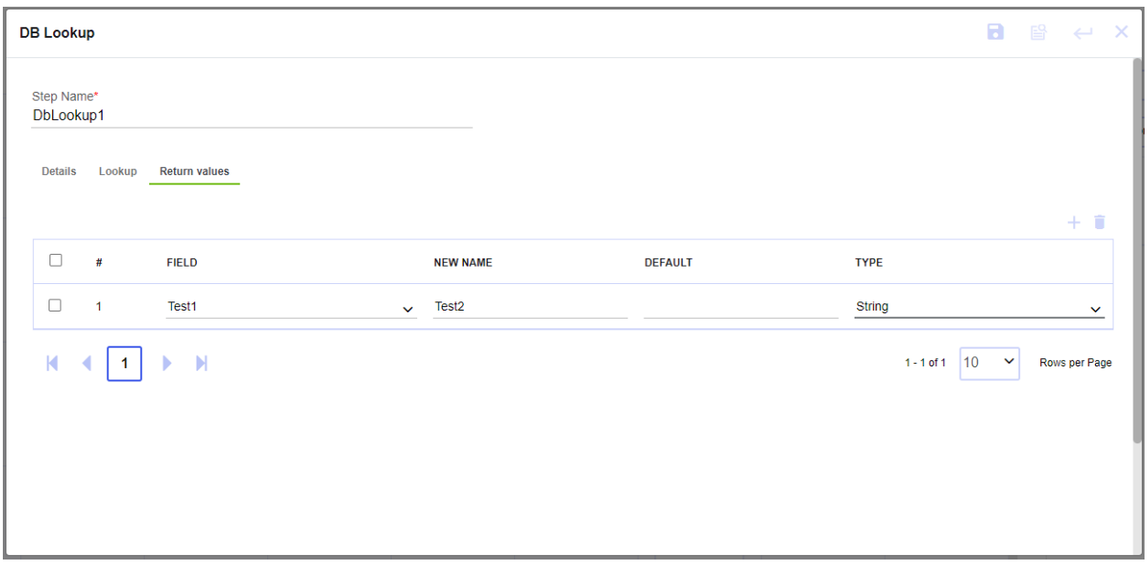
Lookup Tab

Options

A table given below describes the available Options for Lookup Tab.

Name	Description
Keys to look up table	The keys and conditions to perform the database lookup
Table Field	Field value from the selected table
Comparator	Comparable fields like =, <>,<, <=, >,>=, LIKE, BETWEEN, IS NULL and IS NOT NULL
Field1/Field2	The fields from the lookup table to add from the input stream

Return Values



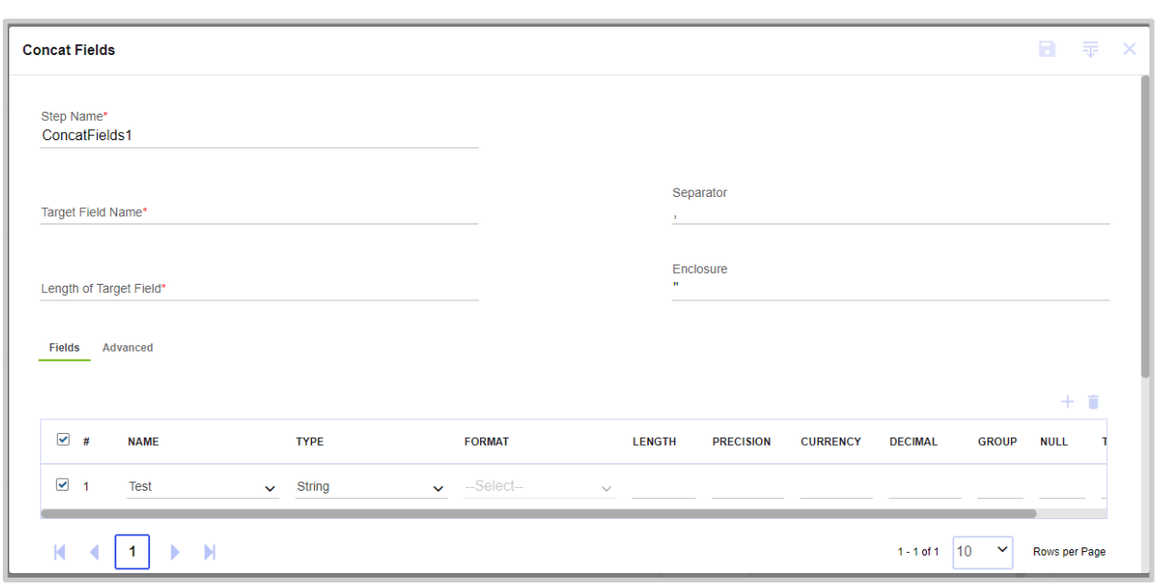
Options

A table given below describes the available Options for Return Values Tab.

Name	Description
Values to return table	The fields from the lookup table to add to the output stream
Field	Field to select from lookup table
New Name	Describe new name to the field
Default	Value to be taken as default
Type	Specify the column/field type

Concat Fields

The Concat Fields is used to bring different fields into one Target Field. The fields can be separated by a separator and the enclosure logic is completely compatible with the Text File Output Step.



Options

A table below describes the options for Concat Fields.

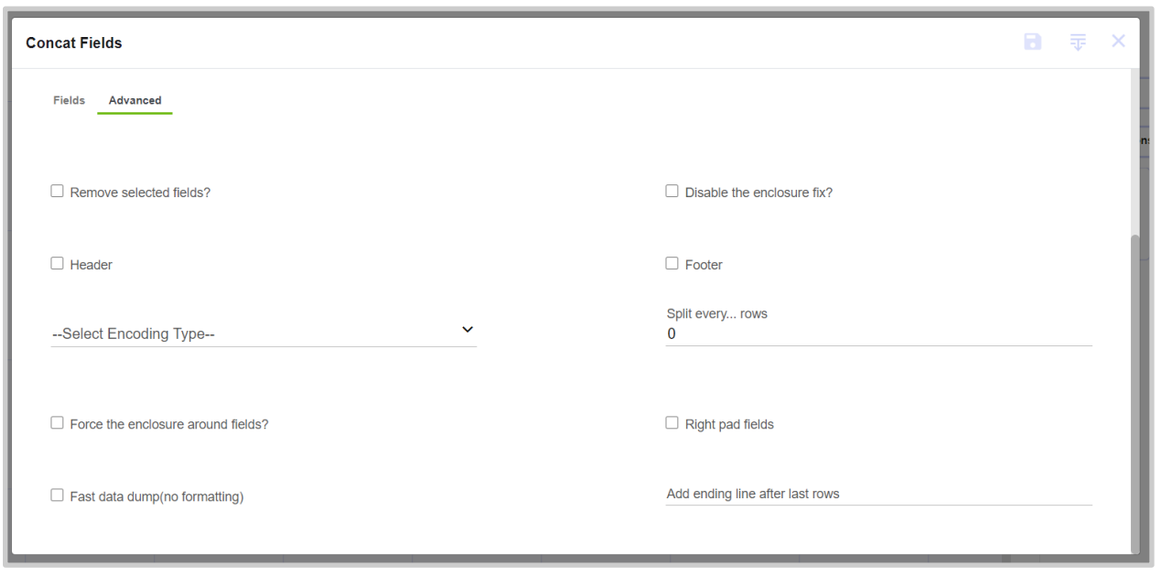
Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Target Field Name	The name of the Target field (String type)
Length of Target Field	The length of the string type (setting the metadata of the String type, this is also used by the Fast Data Dump option for performance optimization)
Separator	Specify the character that separates the fields in a single line of text Typically, it is ; or a tab
Enclosure	A pair of strings can enclose some fields This allows separator characters in fields The enclosure string is optional

Field Tab

The following table describes the options for Field tab.

Name	Description
Name	The name of the field
Type	Type of the field can be either a String, Date or Number
Format	The format mask to convert with. See Number Formats for a complete description of format symbols
Length	The length option depends on the field type follows: • Number - total number of significant figures in a number • String - total length of string • Date - length of printed output of the string (e.g. 4 only gives back year)
Precision	The precision option depends on the field type as follows: • Number - number of floating point digits • String - unused • Date - unused
Decimal	A decimal point can be a "." (10,000.00) or "," (5.000,00)
Trim type	The trimming method to apply on the string. It only works when there is no field length given
Null if	If the value of the field is null, insert this string into the text file

Advanced

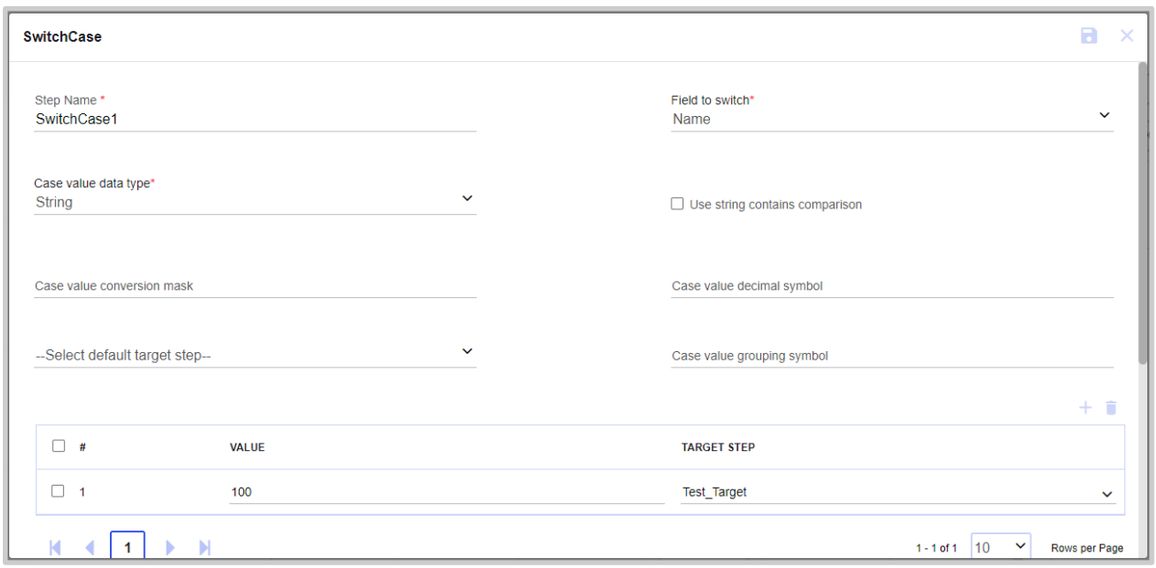


A table below describes the options for Advanced Tab.

Name	Description
Remove selected fields	Check this to remove all selected fields from the output stream
Disable the enclosure fix?	When a string field contains an enclosure it gets enclosed and the enclosure itself gets escaped When a string field contains a separator, it gets enclosed
Header	Enable this option if required a Header row (First line in the stream) All other output stream fields are set to Null when this line is produced
Footer	Enable this option if required a Footer row (Last line in the stream) All other output stream fields are set to Null when this line is produced
Encoding	Specify the String encoding to use Leave blank to use the default encoding on the system To use Unicode, specify UTF-8 or UTF-16 On first use, Flodata app will search the system for available encodings. Note: This is required especially when a concatenation of different encoded fields are held into the Target field with a unique encoding. This also applies on Binary stored string fields due to Lazy conversion.
Split every ... rows	If the number N is larger than zero, split the resulting stream into multiple parts of N rows Note: This is only needed when a Header/Footer is used to be compatible with the result of the Text File Output Step.

Switch Case

This Step implements the Switch Case statement found in popular programming languages such as Java. In this case, we route rows of data to one or more Target Steps based on the value encountered in a certain field.



Options

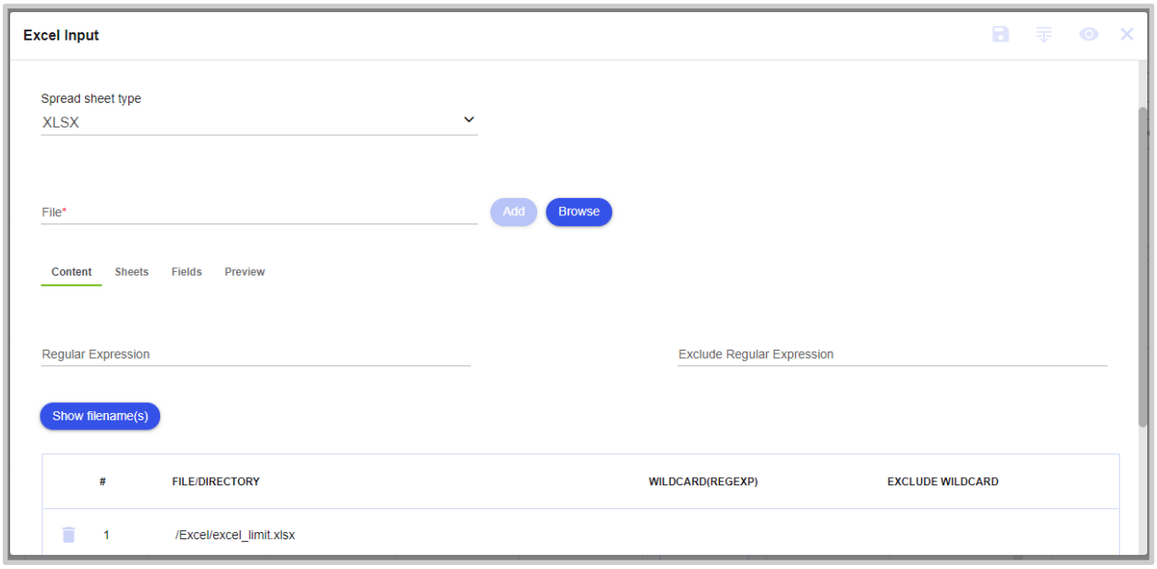
A table given below describes the options for the Switch case Step.

Name	Description
Step name	The name that uniquely identifies the Step
Field name to switch	The field name that contains the value to use as a base for the row routing
Use string contains comparison	If checked, the comparison will be true if the value is found anywhere in the field being tested Unchecked and the value has to match the field exactly
Case value data type	The data type of the values specified in this dialogue
Case value conversion mask	The conversion mask of the values specified in this dialogue (numeric / date values)
Case value decimal symbol	The decimal symbol of the values specified in this dialogue (numeric values)
Case value grouping symbols	The grouping symbol of the values specified in this dialogue (numeric values)
Case values	Here, specify a Value-Target Step pair, one per row To specify a null value, simply leave the value column blank while entering a Target Step Please note that it is possible to specify the same Target Step more than once
Default Target Step	All the rows that don't match any of the case values above are sent to this Target Step

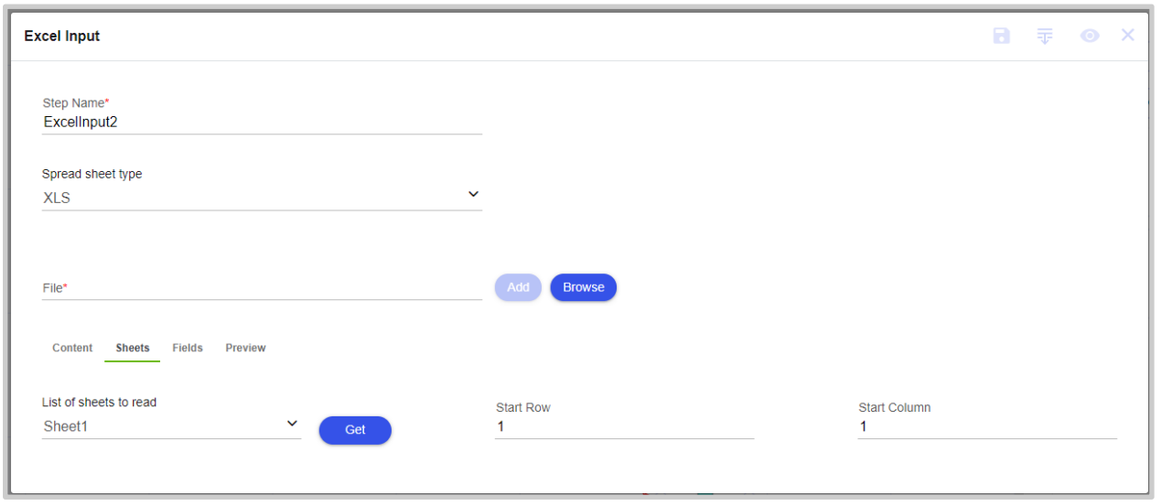
Excel Input

The Microsoft Excel Input step provides a user with the ability to read data from Microsoft Excel.

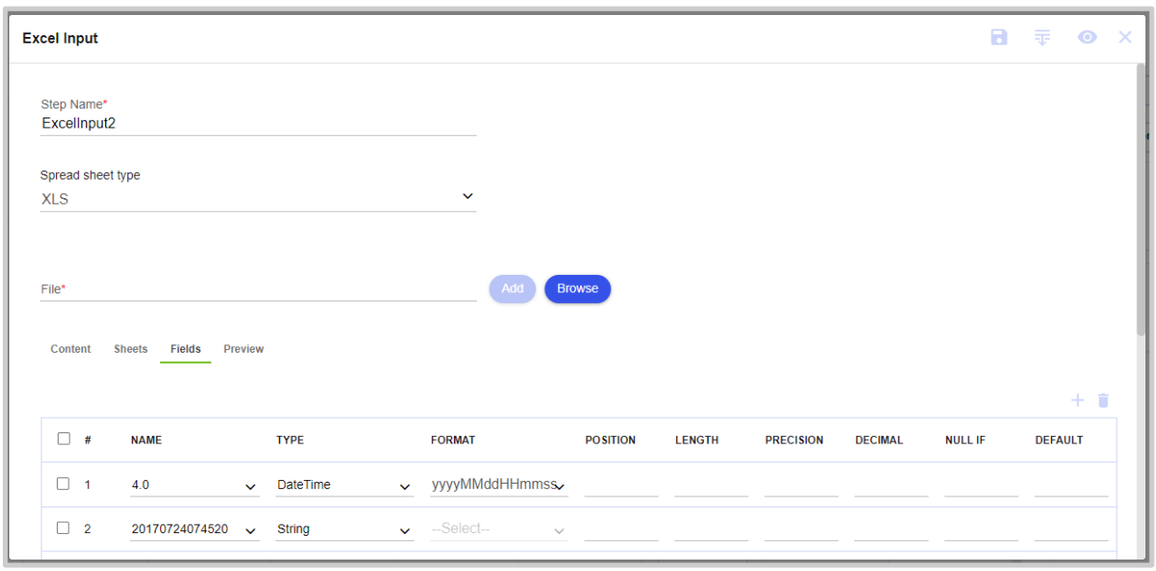
Content Tab



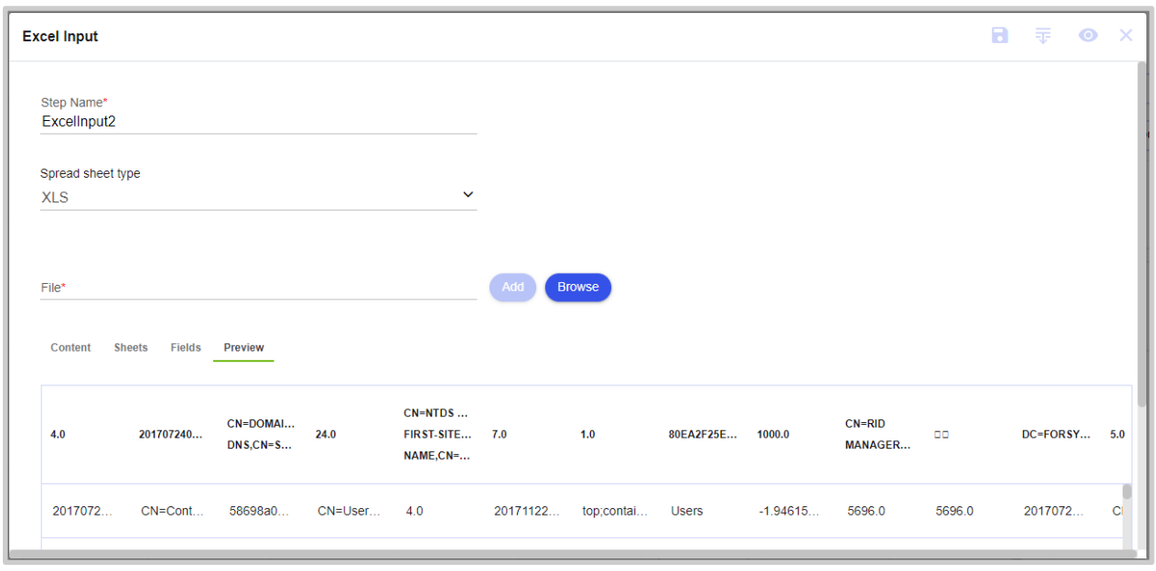
Sheet Tab



Fields Tab



Preview Tab

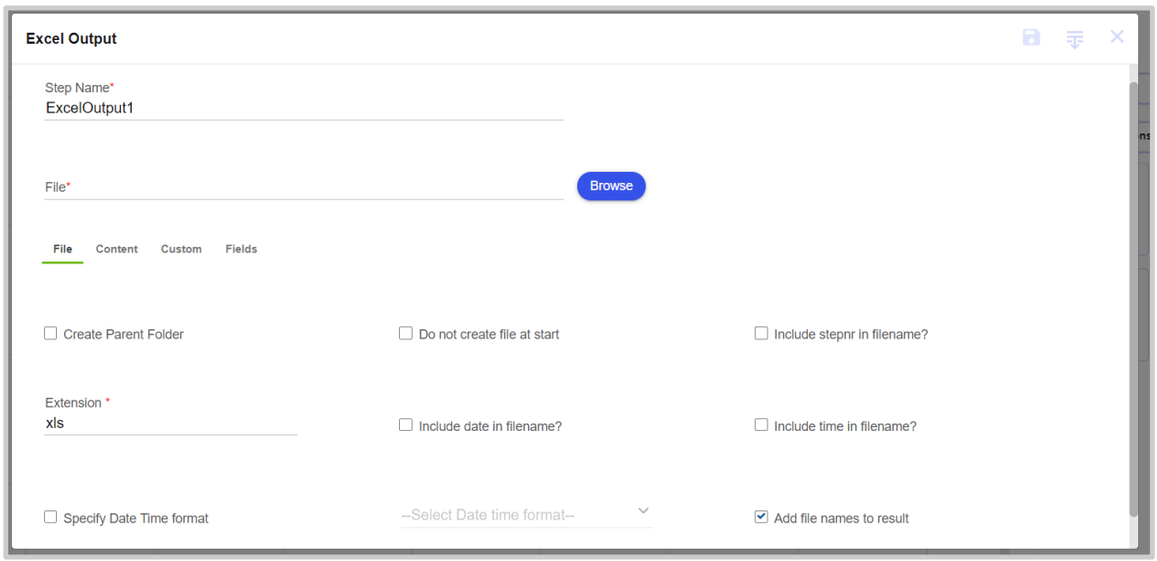


Options	Description
Spreadsheet Type	Select the Spreadsheet type
File or directory	Specify the source location if the source is not defined in a field
Regular expression	Specify a regular expression to match filenames within a specified directory
Exclude regular expression	Specify a regular expression to exclude filename within a specified directory
Accept filenames from previous steps	Select the previous step that contains file names and the input field for reading the data
Sheet name	The name of sheet in the excel workbook to read
Start row	Starting row in the sheet to read

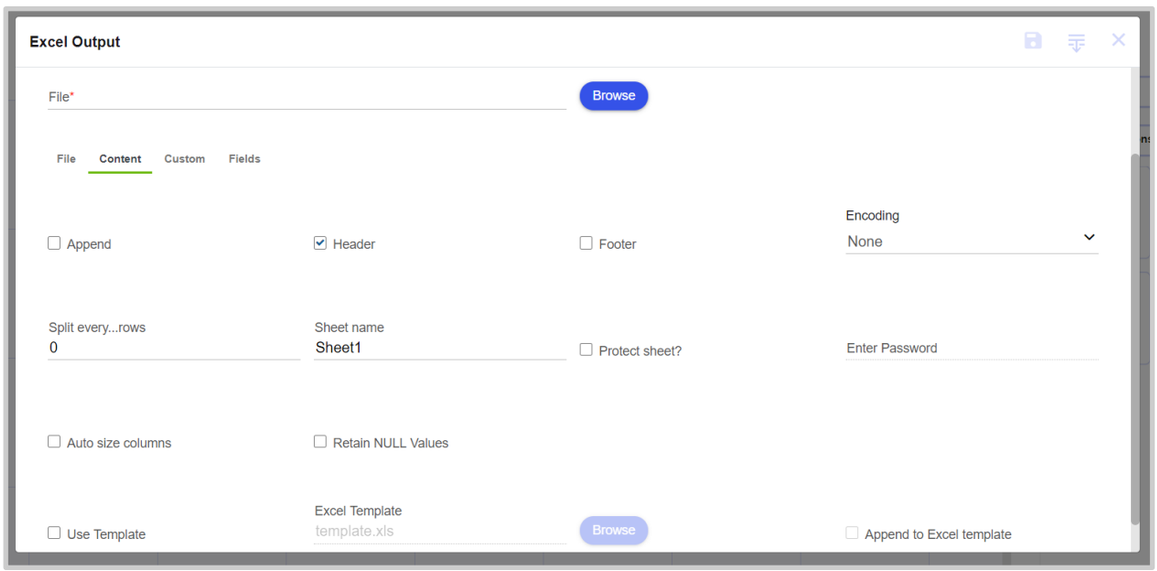
Start column	Starting column in the sheet to read

Excel Output

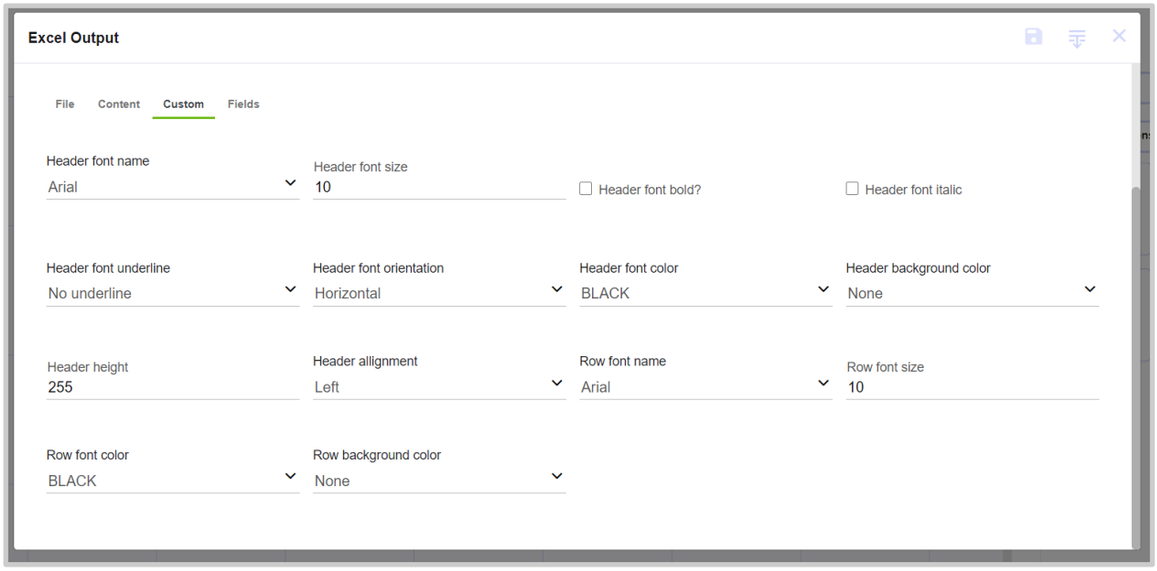
File Tab



Content Tab



Custom Tab



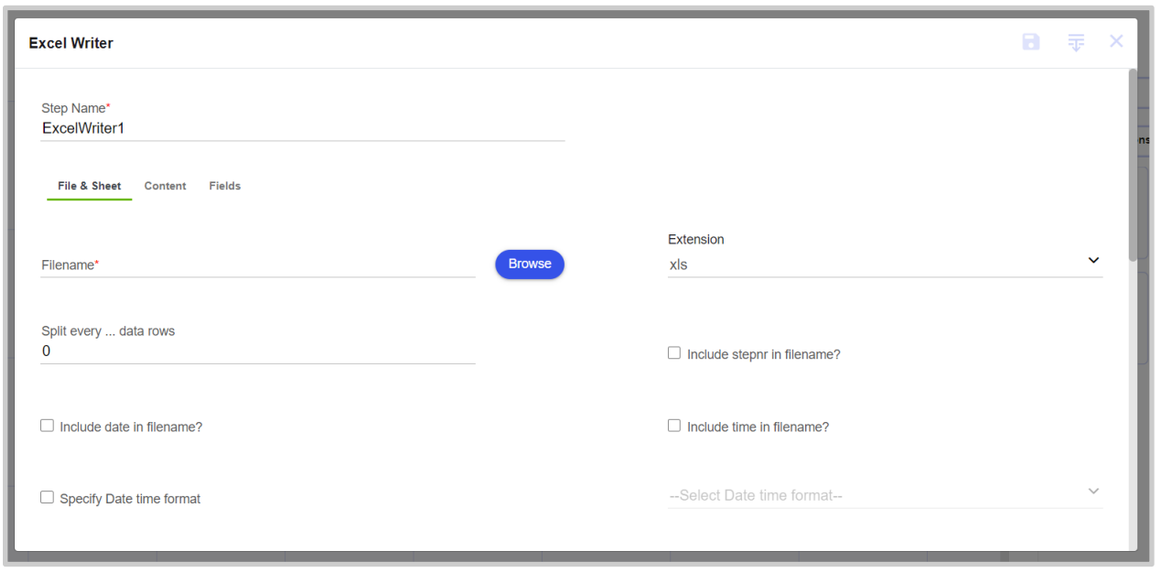
Fields Tab

Excel Writer

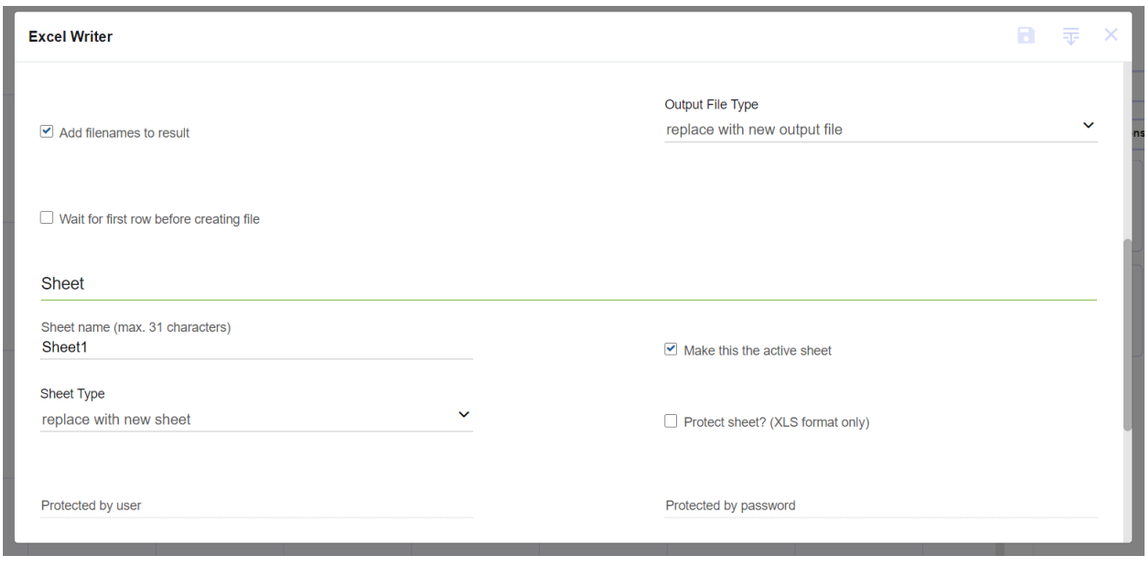
Microsoft Excel Writer records incoming rows in an MS Excel file. It supports XLS as well as XLSX file formats. The XLSX format is primarily a good choice when working with the template files, as it is more likely to preserve charts and other miscellaneous objects in the output.

The proprietary (binary) XLS format is not as well understood and deciphered, so moving/replicating nontrivial XLS content in Non-MS Software environments is usually problematic.

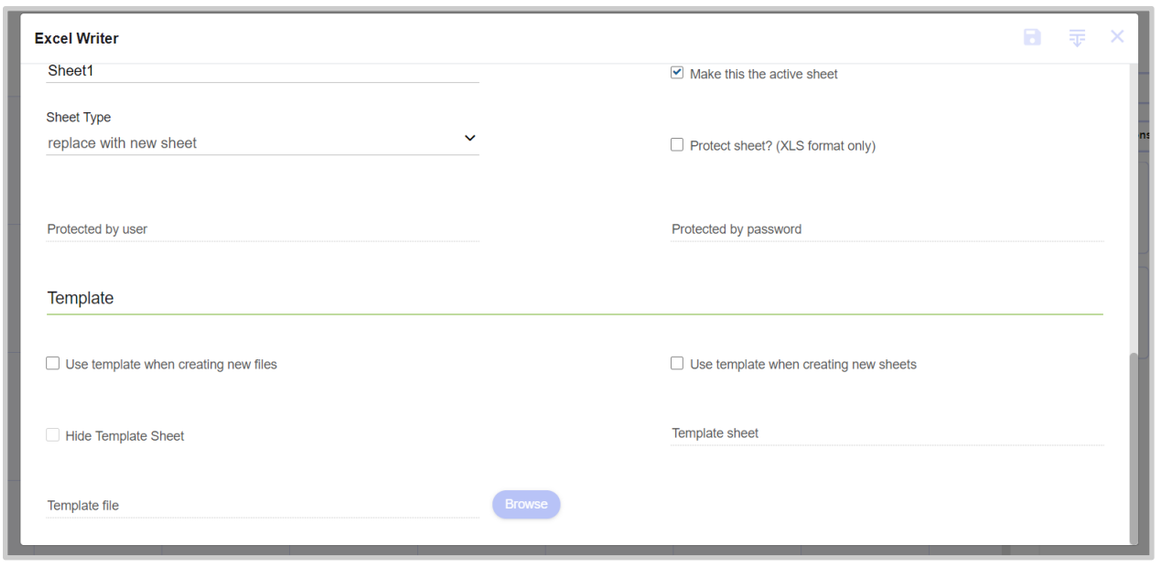
File & Sheet


Excel Writer
Step Name*
ExcelWriter1
File & Sheet
Content
Fields
Filename*
Browse
Extension
xls
Split every ... data rows
0
Include stepnr in filename?
Include date in filename?
Include time in filename?
Specify Date time format
--Select Date time format--

Sheet


Excel Writer
Add filenames to result
Output File Type
replace with new output file
Wait for first row before creating file
Sheet
Sheet name (max. 31 characters)
Sheet1
Make this the active sheet
Sheet Type
replace with new sheet
Protect sheet? (XLS format only)
Protected by user
Protected by password

Cont'd...


Excel Writer
Sheet1
Make this the active sheet
Sheet Type
replace with new sheet
Protect sheet? (XLS format only)
Protected by user
Protected by password
Template
Use template when creating new files
Use template when creating new sheets
Hide Template Sheet
Template sheet
Template file
Browse

Options

A table given below describes the options for Excel Writer.

File Tab

File Tab permits to choose the result filename and extension, possibly including file generation timestamp information. Multiple files will be created if in every x row, the split data is used.

Name	Description
Split every …..rows	If number N is larger than zero, split the resulting text-file into multiple parts of N rows
Include Stepnr in filename?	In case of running the Step in multiple copies (Launching several copies of a Step), the copy number is included in the filename, before the extension (_0)
Include date in filename?	Include the system date in the filename(Default _20041231)
Include time in filename?	Include the system time in the filename (Default _235959)
Specify Date time format	Enable to specify the date time format
Date time format	Chose the date time format to append to the filename
Add filename(s) to result	To check if the filename is added to the result filenames
Output File Type	Check this option when writing large XLSX files It makes use of internal streaming API and is able to write large files without any memory restrictions
Wait for first row before creating file	Check this Step to ensure that the file is created, after it has seen a row If this is disabled, the output file is always created, regardless of whether rows are actually written in the file
If output file exists	Check this option in case of large XLSX files It makes use of internal streaming API and is able to write large files without any memory restrictions

Sheet section

Name	Description
Sheet name (max.31 character)	The output file already has this sheet Choose an option to write in the existing sheet or replace it
Make this the active sheet	If this checkbox is chosen, the Excel file will open with the sheet having the desired output
Sheet Type	The output file already has this sheet Choose an option to write to the existing sheet, or replace it
Protect Sheet	The XLS file format grants to protect an entire sheet from the changes
Protected by user	Excel will indicate that the sheet is protected
Protected by password	Provide password if the sheet is protected

Template Section

To upload a new file, choose the required options

1) Create new file
Or
2) Create a copy of existing template file

Ensure that the template file is of the same type as the output file.

Afterwards, when required to create new sheets, the Step may copy a sheet from the current document (the template or an otherwise existing file the Step is writing to). A new sheet can be created if the Target sheet is not present, or an existing sheet shall be replaced as per the above mentioned configuration.

Content Tab

Options

Name	Description
Start writing at cell	The Step will find the last line of the sheet, and start writing from there
Write Header	If checked, the first line written will contain the field names
Auto size columns	If chosen, the last line written will contain the field names
Leave styles of existing cells unchanged	If chosen, the Step will not try to set the style of existing cells it is writing to This is useful when writing to pre-styled template sheets
Cells Type	If chosen, the Step may overwrite existing cells (fast), or shift existing cells down (append new rows at the top of sheet)
Write Footer	If checked, the last line written will contain the field names

Force formula recalculation	If checked, the Step ensures that all the formula fields in the output file are updated • The XLS file format supports a "dirty" flag that the Step sets The formulas are recalculated as soon as the file is opened in MS Excel • For the XLSX file format, the step must try to recalculate the formula fields itself Since the underlying POI library does not support the full set of Excel formulas yet, this may give errors The Step will throw errors if it cannot recalculate the formulas

When writing to existing sheet section

Name	Description
Start writing at end of sheet (appending lines)	Attempt to find the last line of the sheet, and start writing from there
Begin by writing ... empty lines	Attempt to find the empty line of the sheet, and start writing from there
Offset by ... rows	Any non-0 number will cause the Step to move this amount of rows down (positive numbers) or up (negative numbers) before writing rows Negative numbers may be useful if required to append to a sheet, but still preserve a pre-styled footer
Omit header	Any non-0 number will cause the Step to move this amount of rows down (positive numbers) or up (negative numbers) before writing rows Negative numbers might be useful if to append to a sheet, but still preserve a pre-styled footer

Fields Tab

Options

The Fields Tab forms the output columns in the excel document.

Name field	Description
Name	The field to write
Type	The type of data
Format	The Excel format to use in the sheet Please consult the Excel manual for valid formats
Style from cell	A cell (i.e. A1, B3 etc.) to copy the styling from for the specific column (usually some pre-styled cell in a template)
Field Title	If set, this is used for the Header/Footer instead of the Flodata-app field name
Header/Footer style from cell	A cell to copy the styling from for headers/footers (usually some pre-styled cell in a template)
Field Contains Formula	Set to Yes, if the field contains an Excel formula (no leading '=')
Hyperlink	A field, that contains the Target to link to The supported Targets are Link to other cells, HTTP, FTP, email and local documents
Cell Comment / Cell Author	The XLSX format permits to put comments on cells If required to generate comments, specify fields holding the comment and author for a given column

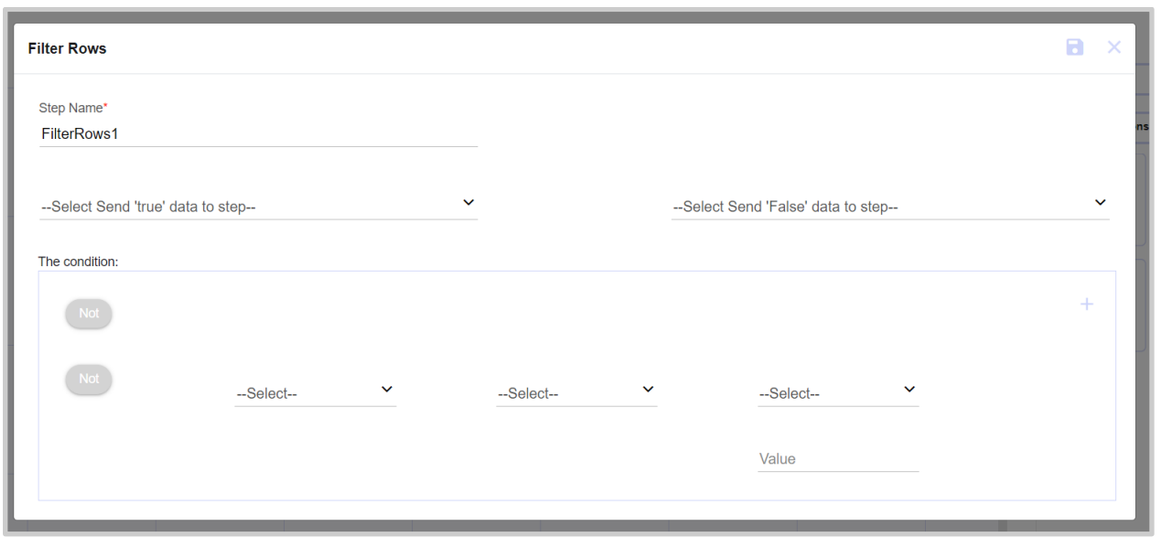
Filter Rows

It is used to filter rows based on conditions and comparisons.

Click "<field>" "=" and "<value>" areas to construct a condition if previous Step is connected to the previous Step.

To enter an IN LIST operator, use a string value separated by semicolons. It also works on numeric values such as integers.

The list of values must be entered with a string type, e.g.: 2;3;7;8



Options

A table given below describes the options for the Filter rows.

Name	Description
Step name	Change the name of this Step to fit the requirements
Send 'false' data to Step	The rows for which the condition specified are false are sent to this Step
Send 'true' data to Step	The rows for which the condition specified is true are sent to this Step
The Condition	Click not to negate the condition
Add Condition	Click '+'(Add condition) to add conditions It converts the original condition into a sub-level condition Click sub-condition to edit it by going one level down in the condition tree
Comparators	The following are the comparators values In drop down box '=' , '<>' , '< , '<=' , '>' '>=', 'REGEXP', 'IS NULL', 'IS NOT NULL', 'IN LIST', 'CONTAINS', 'STARTS WITH', 'ENDS WITH', 'LIKE', 'TRUE',
Value	Value contains 'Type', 'value', 'select format', 'Length', 'Precision'

Null If

If the string representation of a certain field is equal to the specified value, then the value is set the null (empty). All fields from the input stream(s) can be added using Get Fields.

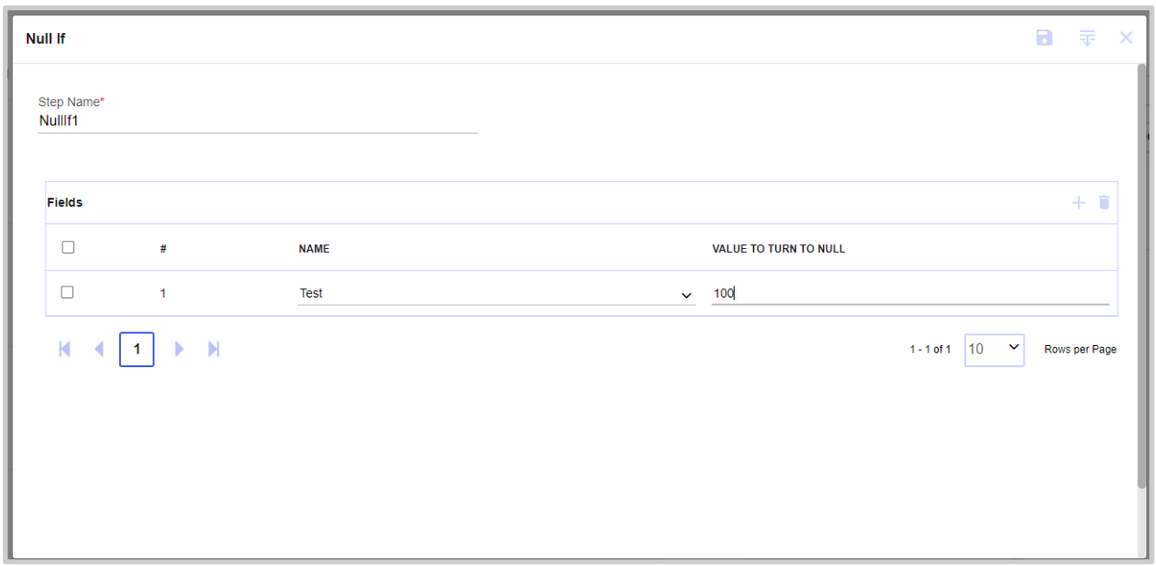
Options

A table describes the options for the Null If Step.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow

Click '+' icon to add new field. To select the field, which need to be turn null.

Please refer to the image below.



Field Types

The following table describes the options in Fields for ‘Null If’:

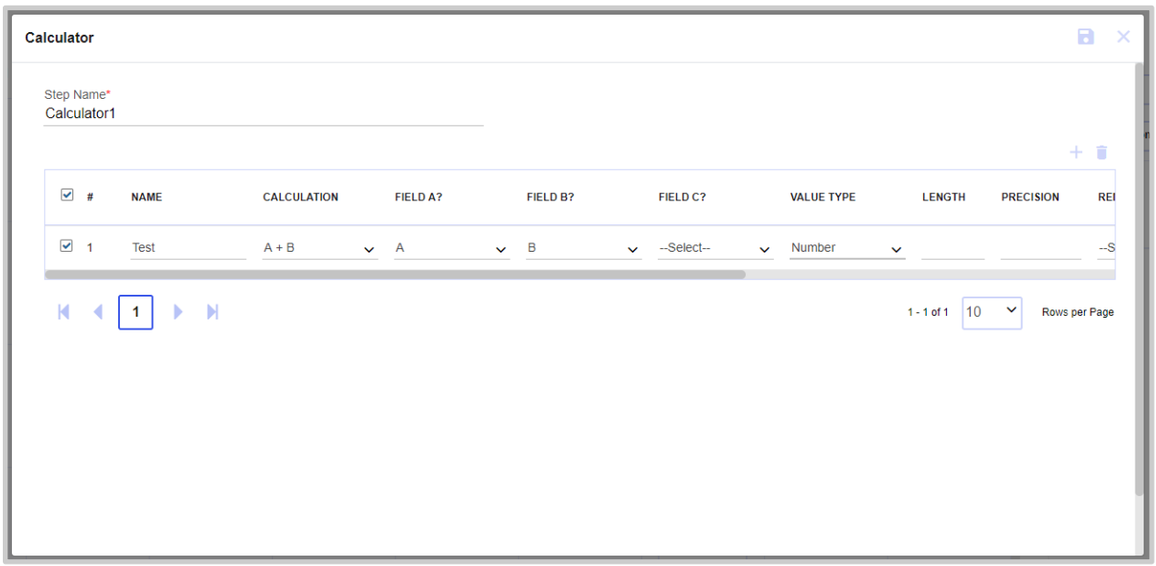
Name	Description
Key Field	Select which field needs to be turn null
Value to turn to Null	Value of the field which has to be turned null

Calculator

The calculator provides predefined functions that can be executed on Input Field values. And, also provides other generic functions if required.

Define the return type of the function apart from the arguments (Field A, Field B and Field C).

There is also an option available to remove the Field from the result (Output) after all the values are calculated.



Options

A table given below describes the options for the Calculator Step.

Name	Description
New field	Name of the field
Calculation	Operation of Field(s)
Field A	Validation of Input Stream and Accept string or number from Input Values
Field B	Validation of Input Stream and Accept number from Input Values
Field c	Validation of Input Stream and Accept number from Input Values
Value Type	Type of the field can be either a String, Date or Number
Length	The length option depends on the field type follows: • Number - total number of significant figures in a number • String - total length of string • Date - length of printed output of the string (e.g. 4 only gives back year)
Precision	Precision option depends on the field type as follows: • Number - number of floating point digits • String - unused • Date - unused
Remove	Remove option drop down to values “Y” and “N”
Conversion Mask	Mask to use to convert the data specified in this validation rule
Decimal Symbol	The decimal symbol is used to convert the data specified in this validation rule
Grouping Symbol	The decimal symbol of the values specified in this dialogue (numeric values)
Currency Symbol	Used to interpret numbers like $10,000.00 or E5.000,00

A table given below describes the Functions to be used in calculator Step.

Function	Description	Required Fields
Set field to constant A	Create a field with a constant value	A
Create a copy of field A	Create a copy of a field with the given field value	A
A + B	A plus B	A and B
A - B	A minus B	A and B
A * B	A multiplied by B	A and B
A / B	A divided by B	A and B
A * A	The square of A	A
SQRT(A)	The square root of A	A
100 * A / B	Percentage of A in B	A and B
A - (A * B / 100)	Subtract B% of A	A and B
A + (A * B / 100)	Add B% to A	A and B
A + B *C	Add A and B times C	A, B and C
SQRT(A*A + B*B)	Calculate?(A2+B2)	A and B
ROUND(A)	Returns the closest Integer to the argument The result is rounded to an Integer by adding 1/2, taking the floor of the result, and casting the result to type int. In other words, the result is equal to the value of the expression: floor (a + 0.5) In case, required the rounding method "Round half to even", use the following method ROUND (A, B) with no decimals (B=0)	A
ROUND(A, B)	Round A to the nearest even number with B decimal The used rounding method is "Round half to even", it is also called unbiased rounding, convergent rounding, statistician's rounding, Dutch rounding, Gaussian rounding, odd-even rounding, bankers' rounding or broken rounding, and is widely used in the book-keeping This is the default rounding mode used in IEEE 754 computing functions and operators. In Germany, it is often called "Mathematisches Runden"	A and B
STDROUND(A)	Round A to the nearest integer. The used rounding method is "Round half away from zero", it is also called standard or common rounding. In Germany, it is known as "*kaufmännische Rundung"* (and defined in DIN 1333)	A
STDROUND(A, B)	Same rounding method used as in STDROUND (A) but with B decimals	A and B

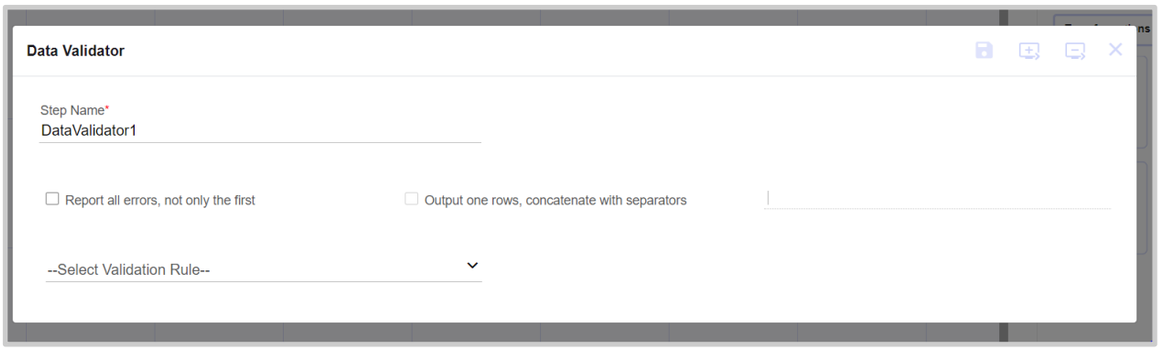
CEIL(A)	The ceiling function maps a number to the smallest following integer	A
FLOOR(A)	The floor function maps a number to the largest previous integer	A
NVL(A, B)	If A is not NULL, return A, else B. Note that sometimes the variable would not be null but an empty string	A and B
Date A + B days	Add B days to Date field A. Please note that only integer values for B are supported If needed the non-integer calculations, please add a second calculation with hours	A and B
Year of date A	Calculate the year of date A	A
Month of date A	Calculate number the month of date A	A
Day of year of date	Calculate the day of the year (1-365)	A
Day of the month of date A	Calculate the day of month (1-31)	A
Day of week of date A	Calculate the day of week (1-7)	A
Week of year of date A	Calculate the week of year (1-54)	A
ISO 8601 Week of year of date A	Calculate the week of the year ISO 8601 style (1-53)	A
ISO 8601 Year of date A	Calculate the year ISO 8601 style	A
Byte to hex encode of string A	Encode bytes in a string to a hexadecimal representation	A
Hex encode of string A	Encode a string in its own hexadecimal representation	A
Char to hex encode of string A	Encode characters in a string to a hexadecimal representation	A
Hex decode of string A	Decode a string from its hexadecimal representation (add a leading 0 when A is of odd length)	A
Checksum of a file A using CRC-32	Calculate the checksum of a file using CRC-32	A
Checksum of a file A using Adler-32	Calculate the checksum of a file using Adler-32	A
Checksum of a file A using MD5	Calculate the checksum of a file using MD5	A

Checksum of a file A using SHA-1	Calculate the checksum of a file using SHA-1	A
Absolute value ABS(A)	Calculates the Absolute value of A	A
Remove time from a date A	Removes time value of A	A
Date A - Date B (in days)	Calculates difference, in days, between A date field and B date field	A and B
A + B + C	A plus B plus C	A, B, and C
First letter of each word of a string A in capital	Transforms the first letter of each word within a string	A
UpperCase of a string A	Transforms a string to uppercase	A
LowerCase of a string A	Transforms a string to lowercase	A
Mask XML content from string A	Escape XML content; replace characters with & values	A
Protect (CDATA) XML content from string A	Indicates an XML string is general character data, rather than non-character data or character data with a more specific, limited structure The given string will be enclosed into <![CDATA[String]]>	A
Remove CR from a string A	Removes carriage returns from a string	A
Remove LF from a string A	Removes linefeeds from a string	A
Remove CRLF from a string A	Removes carriage returns / line feeds from a string	A
Remove TAB from a string A	Removes tab characters from a string	A
Return only digits from string A	Outputs only digits (0-9) from a string from a string	A
Remove digits from string A	Removes all digits (0-9) from a string	A
Return the length of a string A	Returns the length of the string	A
Load file content in binary	Loads the content of the given file (in field A) to a binary data type (e.g. pictures)	A
Add time B to date A	Add the time to a date, returns date and time as one value	A and B

Quarter of date A	Returns the quarter (1 to 4) of the date	A
variable substitution in string A	Substitute variables within a string	A
Unescape XML content	Unescape XML content from the string	A
Escape HTML content	Escape HTML within the string	A
Unescape HTML content	Unescape HTML within the string	A
Escape SQL content	Escape the characters in a String to be suitable to pass to an SQL query	A
Date A - Date B (working days)	Calculate the difference between Date field A and Date field B (only working days Mon-Fri)	A and B
Date A + B Months	Add B months to Date field A Please note that only integer values for B are supported	A
Check if an XML file A is well formed	Validate XML file input	A
Check if an XML string A is well formed	Validate XML string input	A
Get encoding of file A	Guess the best encoding (UTF-8) for the given file	A
Damerau levenshtein distance between String A and String B	Calculate Damerau levenshtein distance between strings	A and B
Needleman Wunsch distance between String A and String B	Calculate Needleman Wunsch distance between strings	A and B
Jaro similitude between String A and String B	Return the Jaro similarity coefficient between two strings	A and B
Jaro Winkler similitude between String A and String B	Return the Jaro similarity coefficient between two string	A and B
SoundEx of String A	Encode a string into a SoundEx value	A
Refined SoundEx of String A	Retrieve the Refined SoundEx code for a given string object	A

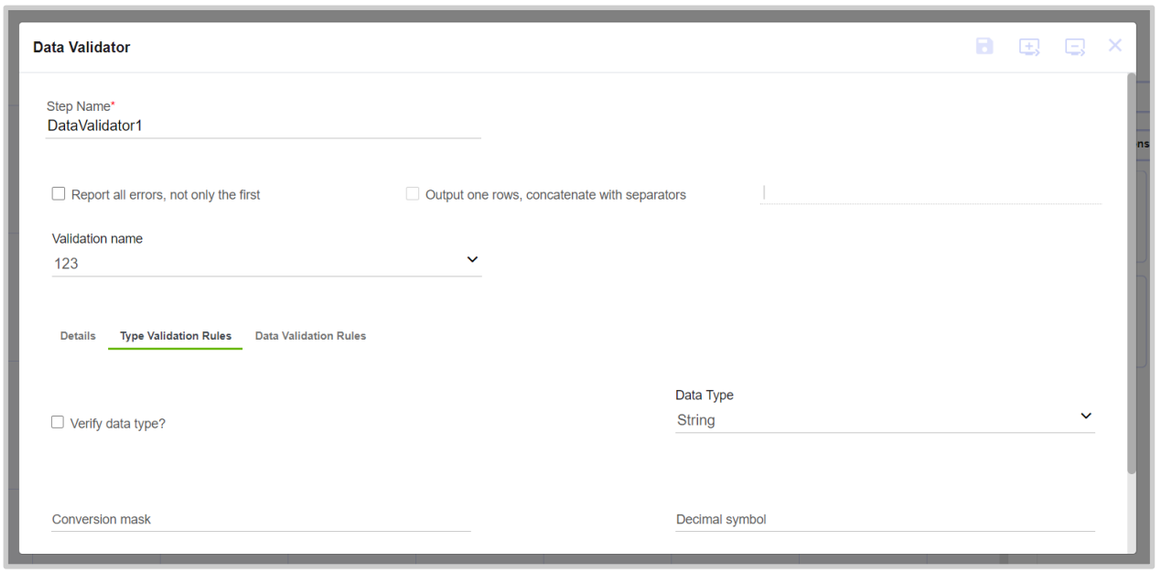
Date A + B Hours	Add B hours to Date field	A and B
Date A + B Minutes	Add B minutes to Date field	A and B
Date A - Date B (milliseconds)	Subtract B milliseconds from Date field A	A and B
Date A - Date B (seconds)	Subtract B seconds from Date field A	A and B
Date A - Date B (minutes)	Subtract B minutes from Date field A	A and B
Date A - Date B (hours)	Subtract B hours from Date field A	A and B
Hour of Day of Date A	Extract the hour part of the given date	A
Minute of Hour of Date A	Extract the minute part of the given date	A
Second of Hour of Date A	Extract the second part of a given date	A

Data Validator

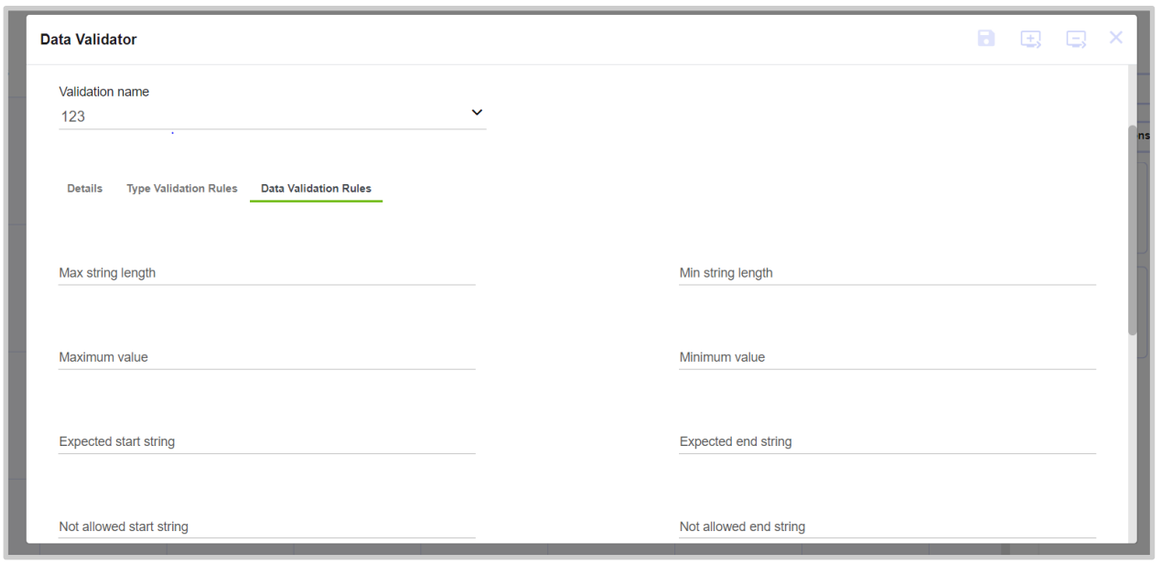


Cont'd...

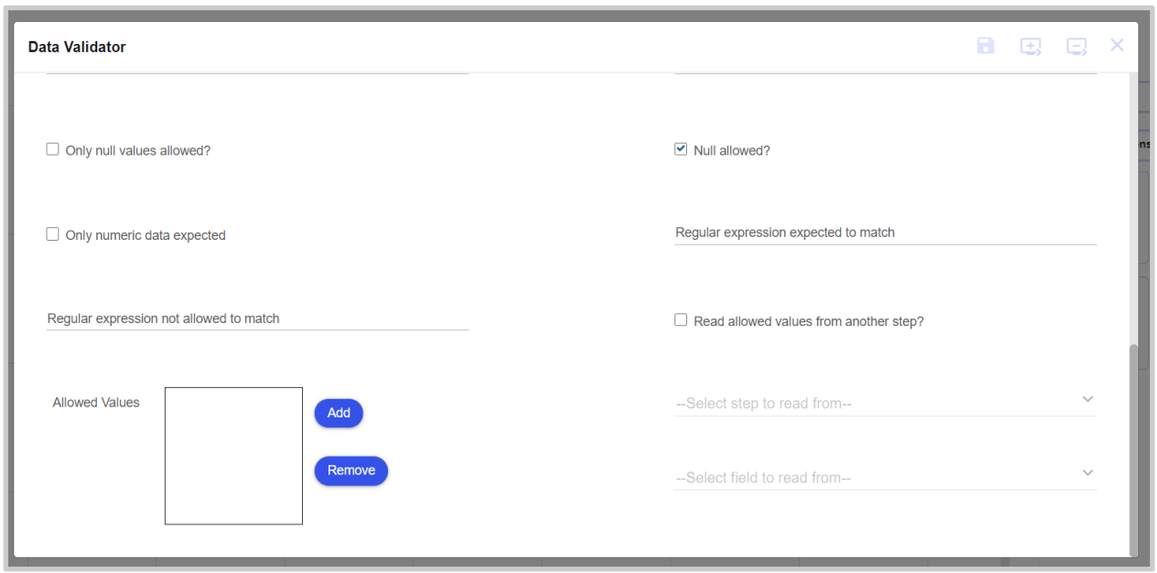
Type Validation Rules



Data Validation Rules

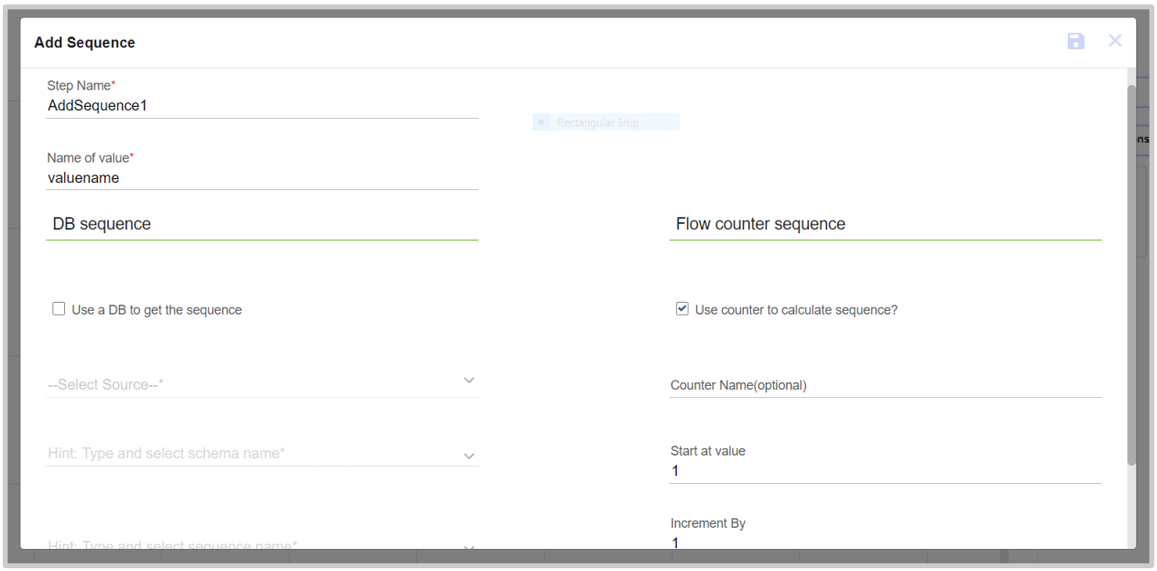


Cont'd...

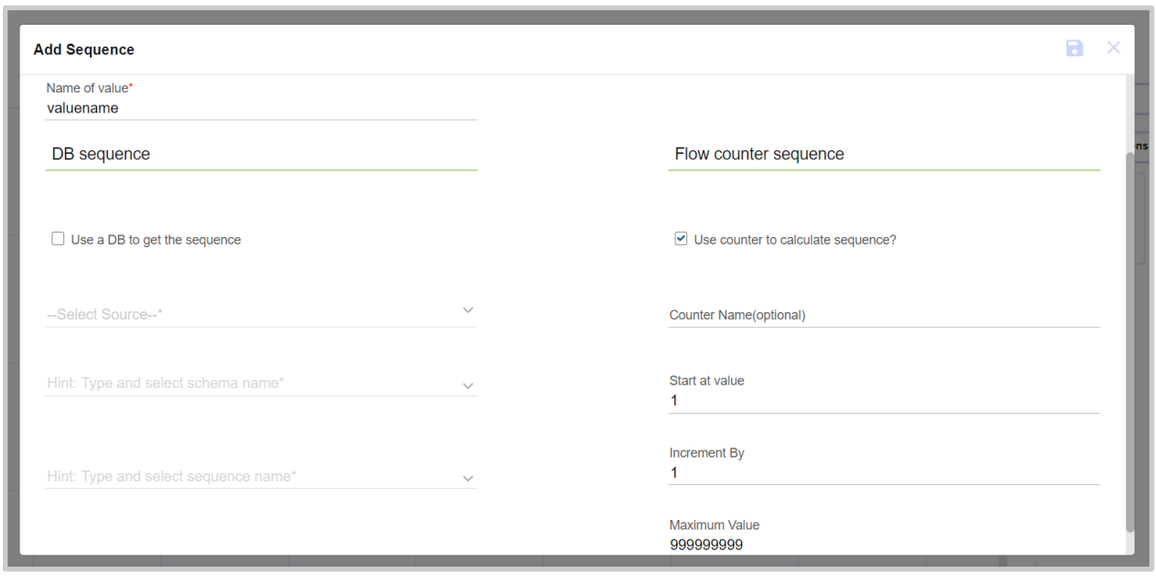


Add Sequence

This allows a Sequence to be added to the stream. A Sequence is an ever-changing integer value with a specific beginning and an increment value. Use a Database Sequence to determine the value of the Sequence or have it generated by the application. A pictorial representation is available below.



Cont'd…



Options

A table given below describes the fields associated with Add Sequence Step.

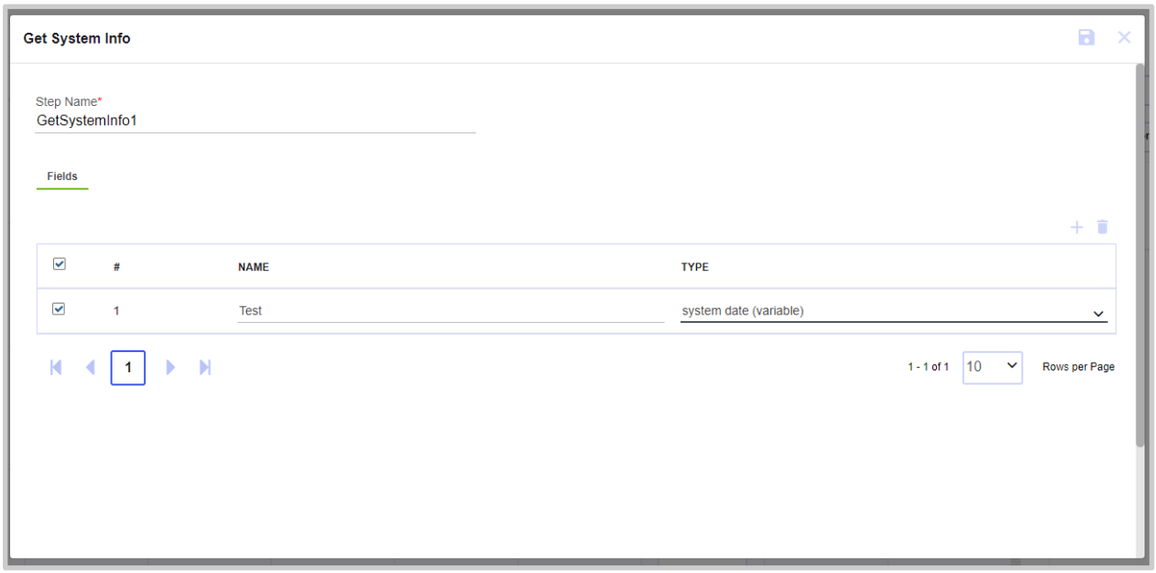
Name	Description
Step Name	The name of the Step as it shows up in the Flow workspace The name must be unique within a single Flow
Name of value	Name of the new Sequence value that is added to the stream
Use DB to generate the Sequence	Enable if required the Sequence to be driven by a Database sequence, then set these parameters: Connection name, Schema name (optional), Sequence name
Select Source	The name of the connection on which the database sequence resides
Schema name	The table's Schema name
Select sequence name	The name of the database sequence
Transformation counter sequence	Enable if required the sequence to be generated by Flodata application, then set these parameters: Counter name (optional), Start, Increment by, Maximum value
Counter name	If multiple Steps in a Flow generate the same value name, this option provides the ability to specify the name of the counter to associate with Helps in preventing forced unique sequencing across the multiple Steps
Start at	The value to begin the Sequence with
Increment by	The amount by which the Sequence increases or decreases
Maximum value	The value after which the Sequence returns to the Start At value

Get System Info

This retrieves information from the Flodata environment. A table given below contains the available information types.

Get System Info also generates a single row with the fields containing requested information. It also accepts input rows. The selected values are added to the rows found in the input stream(s).

A dialogue box below shows up for Get System Info.

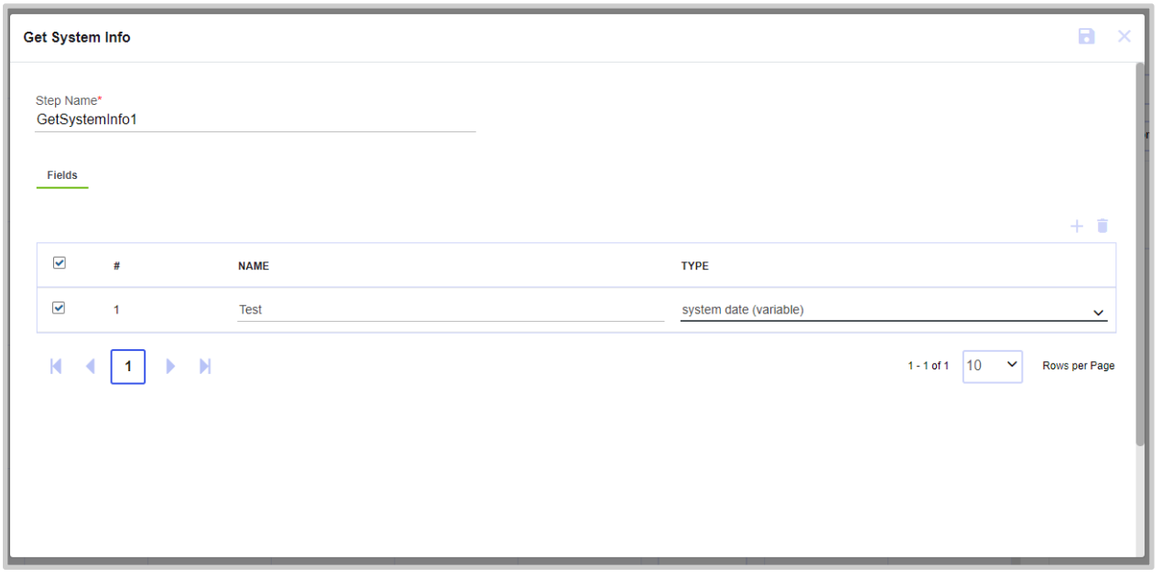


Options

A table given below describes the options for the Get System Info.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow

To add new field, click '+' icon. Please refer to the below image.



Field Options

A table given below describes the options in Fields for 'Get System Info':

Name	Description
Name	Name of the system variable
Type	Information Type need to be selected

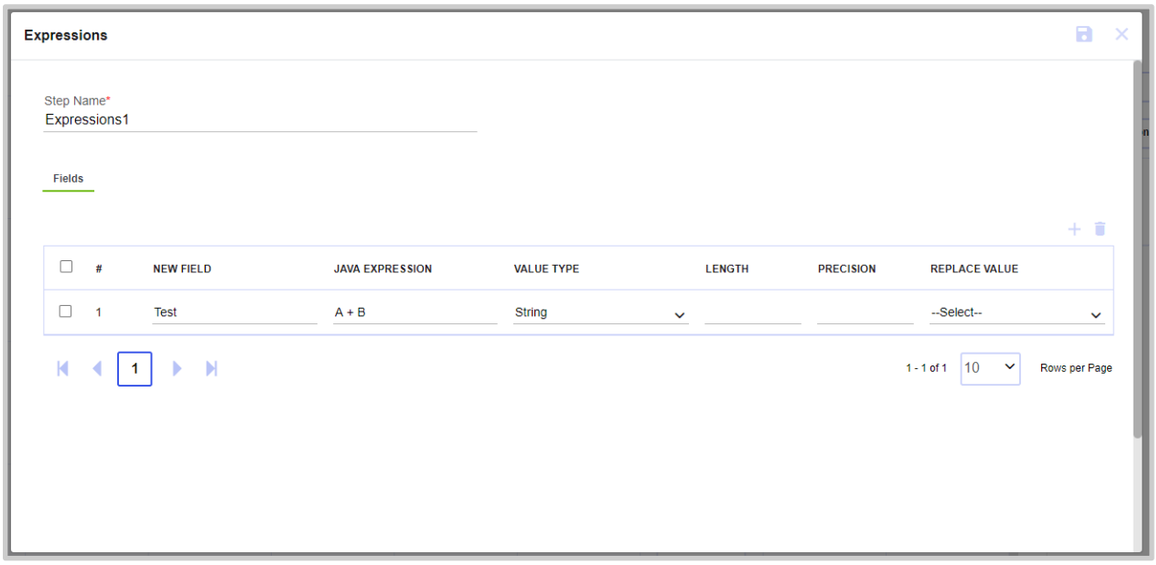
Information types

Below is the list of items available for Type for 'Get System Info'.

Item	Description
Command line argument 1	Argument 1 on the command line
Command line argument 2	Argument 2 on the command line
Command line argument 3	Argument 3 on the command line
Command line argument 4	Argument 4 on the command line
Command line argument 5	Argument 5 on the command line
Command line argument 6	Argument 6 on the command line
Command line argument 7	Argument 7 on the command line
Command line argument 8	Argument 8 on the command line
Command line argument 9	Argument 9 on the command line
Command line argument 10	Argument 10 on the command line
Copy of Step	Copy number of the Step which also launch several copies of a Step
Current process identifier (PID)	The PID under which the Java process is currently running
End date range (Job)	End of date range based upon information in the ETL log table
end date range (Flow)	End of date range, based upon information in ETL log table
First day of last month 00:00:00	Start of last month
First day of next month 00:00:00	Start of next month

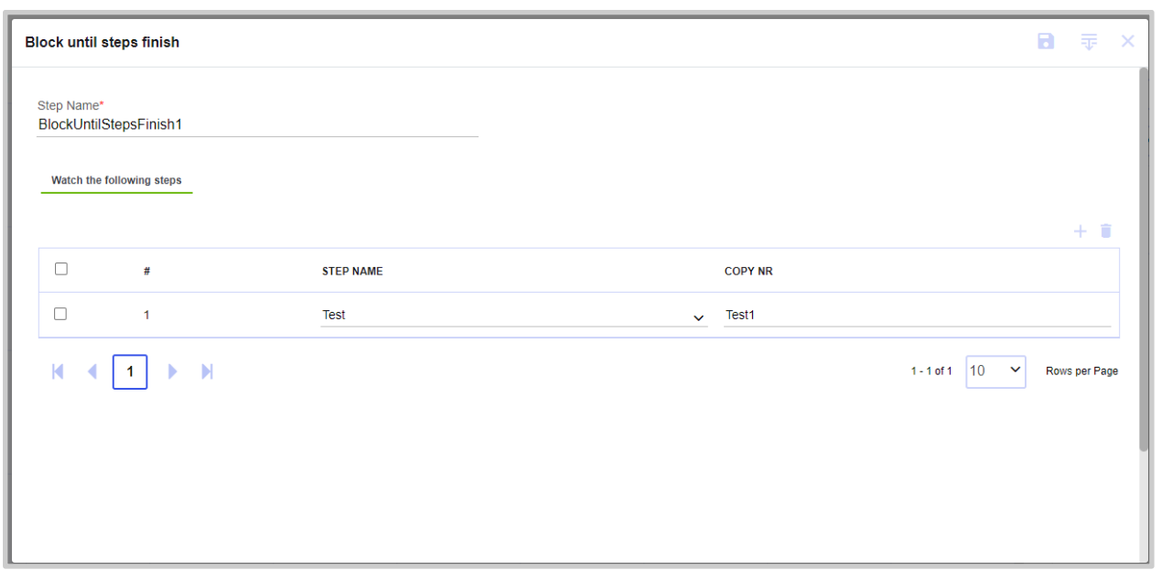
First day of this month 00:00:00	Start of this month
Hostname	Returns the hostname of the server
IP address	Returns the IP address of the server
Last day of last month 23:59:59	End of last month
Last day of next month 23:59:59	End of next month
Last day of this month 23:59:59	End of this month
Parent job batch ID	The Flodata batch ID of the parent job taken from the job logging table Please enable logging in the job and set "Pass batch ID" in the job settings
start data range (Job)	Start of date range based upon information in the ETL log table See also .08 Flow Settings
start date range (Flow)	Start of date range, based upon information in ETL log table See, also .08 Flow Settings
system date (fixed)	System time, determined at the start of the Flow
system date (variable)	System time, changes every time if asked for a date
Today 00:00:00	Start of today
Today 23:59:59	End of today
Tomorrow 00:00:00	Start of tomorrow
Tomorrow 23:59:59	End of tomorrow
Flow batch ID	ID_BATCH value in the logging table. Please refer to 08 Flow Settings
Flow file name	File name of the Flow (XML only)
Flow name	Name of the Flow
Yesterday 00:00:00	Start of yesterday
Yesterday 23:59:59	End of yesterday

Expressions



Block Until Steps Finish

This step simply waits until all the step copies that are specified in the dialogue have finished.

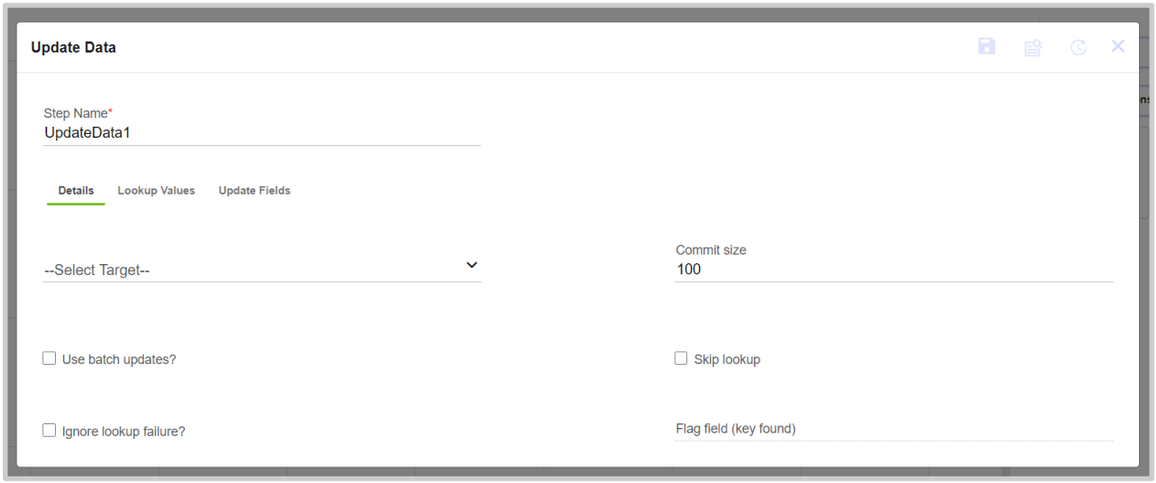


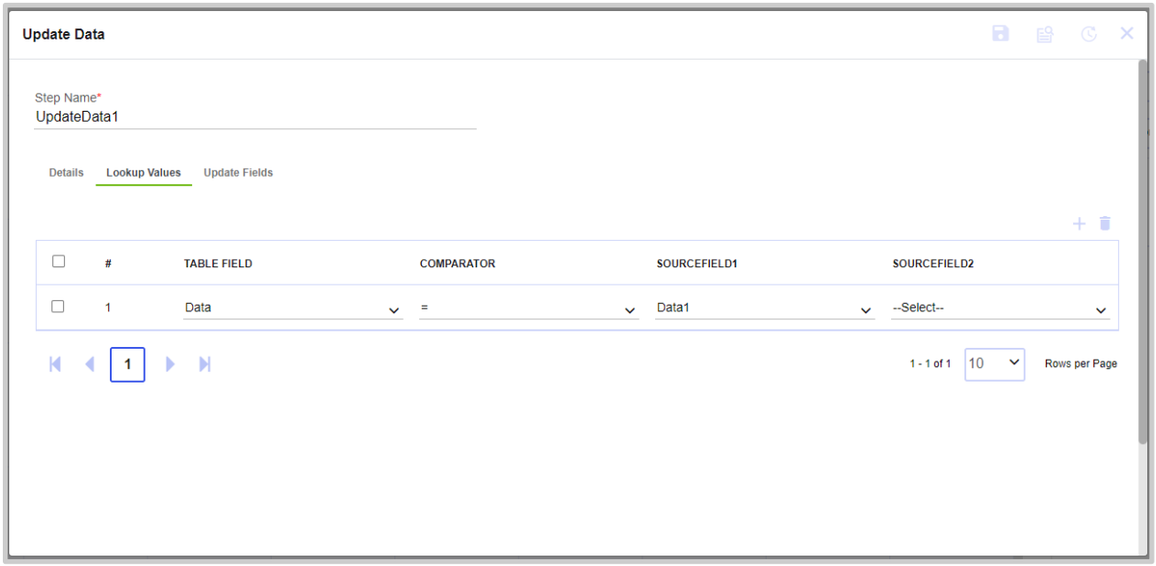
Blocking Step

The Blocking step blocks all output until the very last row is received from the previous step.

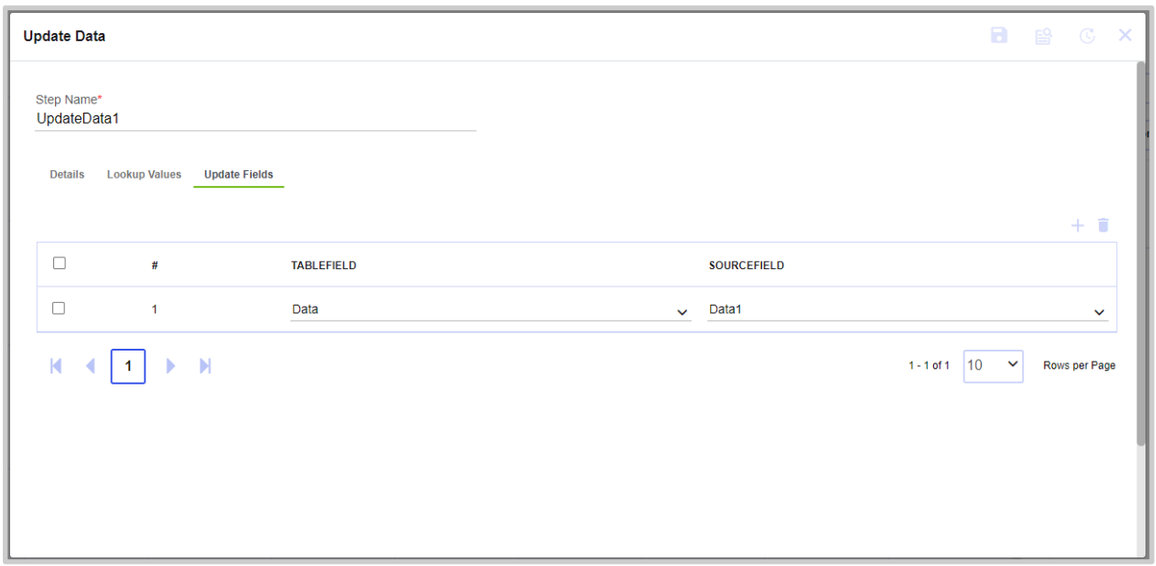
Update Data

Details Tab

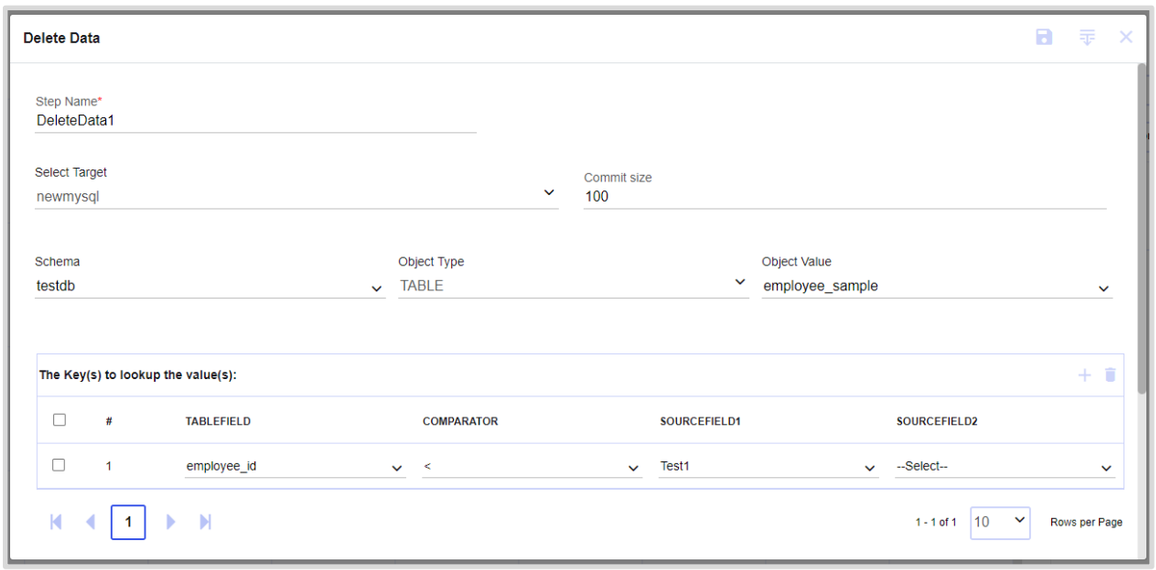




Update Fields Tab



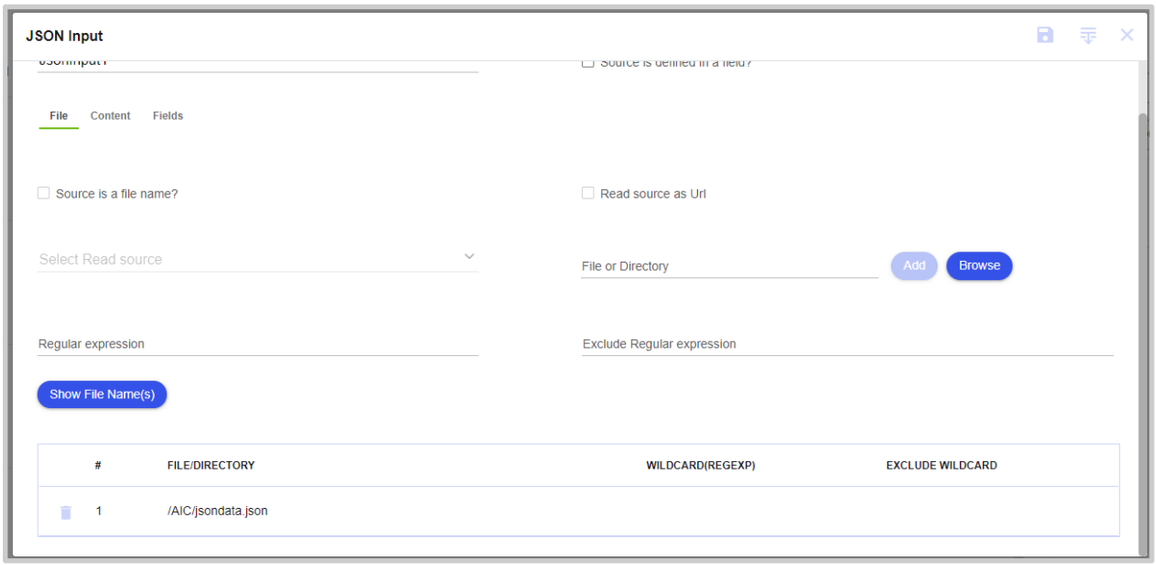
Delete Data



JSON Input

It extracts relevant portions out of JSON structures such as files or incoming fields, and outputs rows.

File Tab

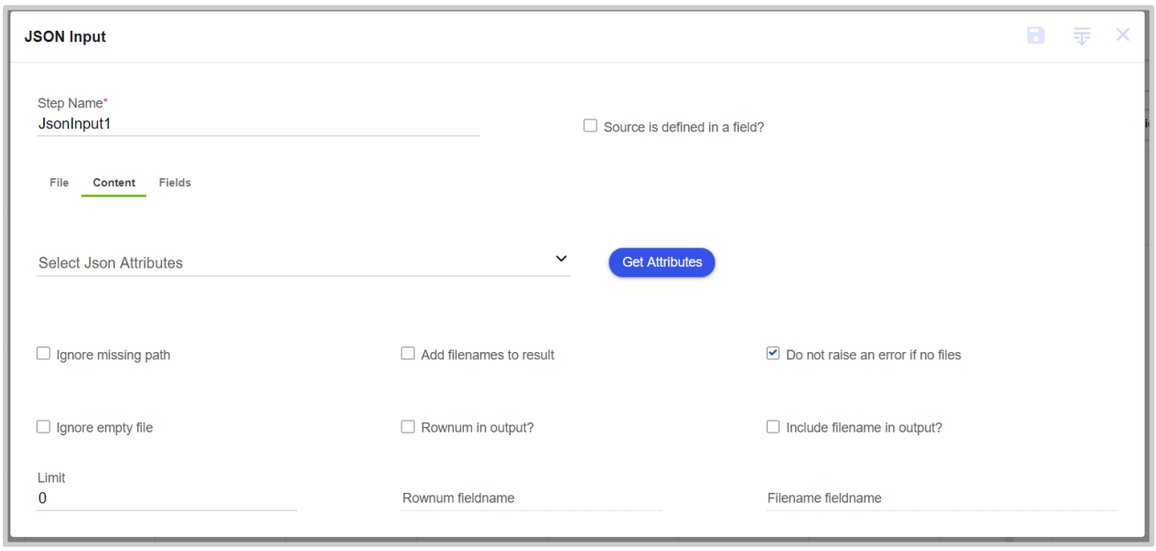


Options

A table given below describes the options for the JSON Input Step.

Name	Description
Step name	Name of the Step as it shows up in the Flow workspace
Source is defined in a field	Retrieves the Source of a previously defined field
Source is a filename	Indicates that the Source is a filename
Read Source as URL	Indicates that the Source should be accessed as a URL
Get Source from field	Indicates that the field to retrieve a Source from
File or directory	Indicates the location of the Source if the Source is not defined in a field
Regular expression	All filenames that match this regular expression are selected if a directory is specified
Exclude regular expression	All filenames that match this regular expression are excluded if a directory is specified
Show filename	Displays the file names of the connected Source

Content Tab

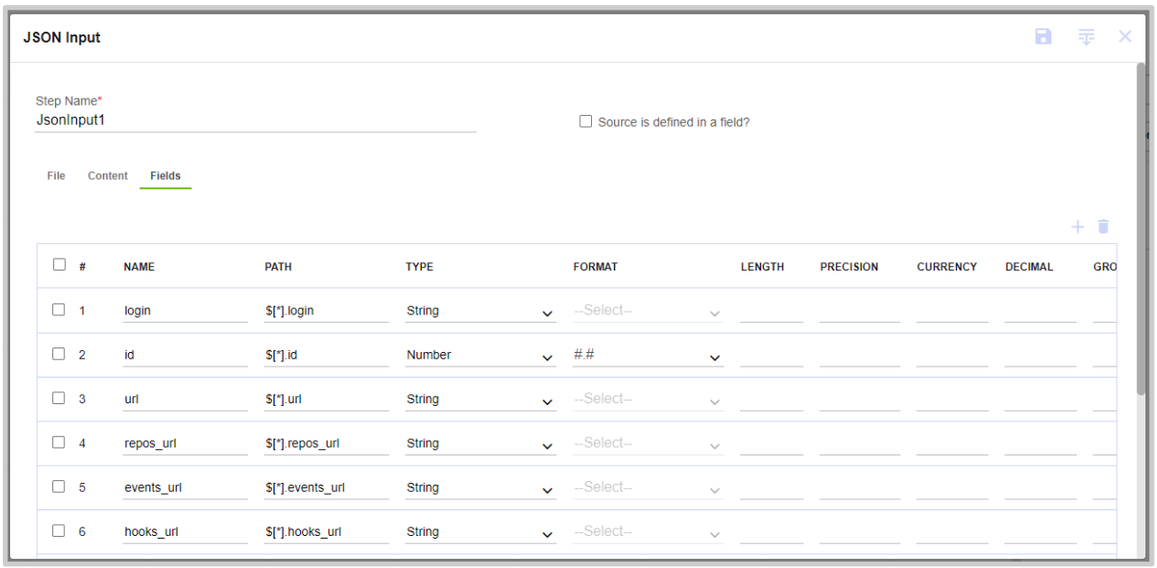


Options

A table given below describes the options for the above screen.

Name	Description
Ignore empty file	When checked, indicates to skip empty files And, when unchecked, instances of empty files causes the process to fail and stop
Do not raise an error if no files	When unchecked, causes the Flow to fail if there is no file to process And, when checked, avoids failure if there is no file to process
Ignore missing path	When unchecked, it causes the Flow to fail if the JSON path is missing When checked, it avoids failure when there is no JSON path
Limit	Sets a limit on the number of records generated from the Step when set greater than zero
Include filename in output	Adds a string field with the filename in the result
Rownum in output	Adds an integer field with the row number in the result
Add files to result filename	If checked, adds processed files to the result file list
Rownum fieldname	The name of the fieldname that holds the rownum output
Filename fieldname	The name of the fieldname that holds the filename

Fields Tab



Options

A table below given describes the options for JSON Input.

Name	Description
Name	Name of the field
Path	JSONPath uses special notation to represent nodes and their connections to adjacent nodes in a JSON Path. There are two styles of notation, namely dot and bracket Eg: { "firstName": "John", "lastName" : "doe","age" : 26, "address" : { "streetAddress": "naist street", "city" : "Nara", "postalCode" : "630-0192" }, "phoneNumbers": [{ "type" : "iPhone", "number": "0123-4567-8888" } ,{"type" : "home", "number": "0123-4567-8910" }] } From the above JSON a sample JSON Path is $.phoneNumbers[*].type
Type	The data type to convert to
Format	The format or conversion mask to use in the data type conversion
Length	The length of the output data type
Precision	The precision of the output data type

Options

A table given below describes the options for JSON Input.

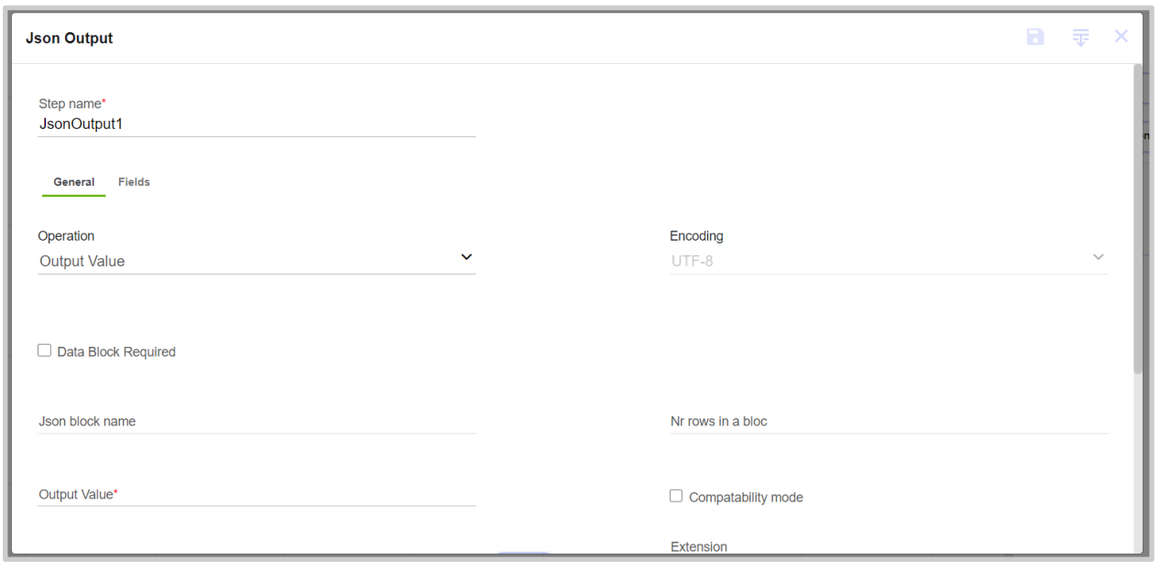
Name	Description
Currency	The currency symbol to use during data type conversion
Decimal	The numeric decimal symbol used during data type conversion
Group	The numeric grouping symbols to use during data type conversion
Trim type	The type of trimming to use during data type conversion

Repeat	Repeat the column value of the previous row if the column value is empty (null)

JSON output

JSON output generates JSON blocks based on input Step values and will be available as JavaScript array or JavaScript object depends on the settings of the Step.

General Tab



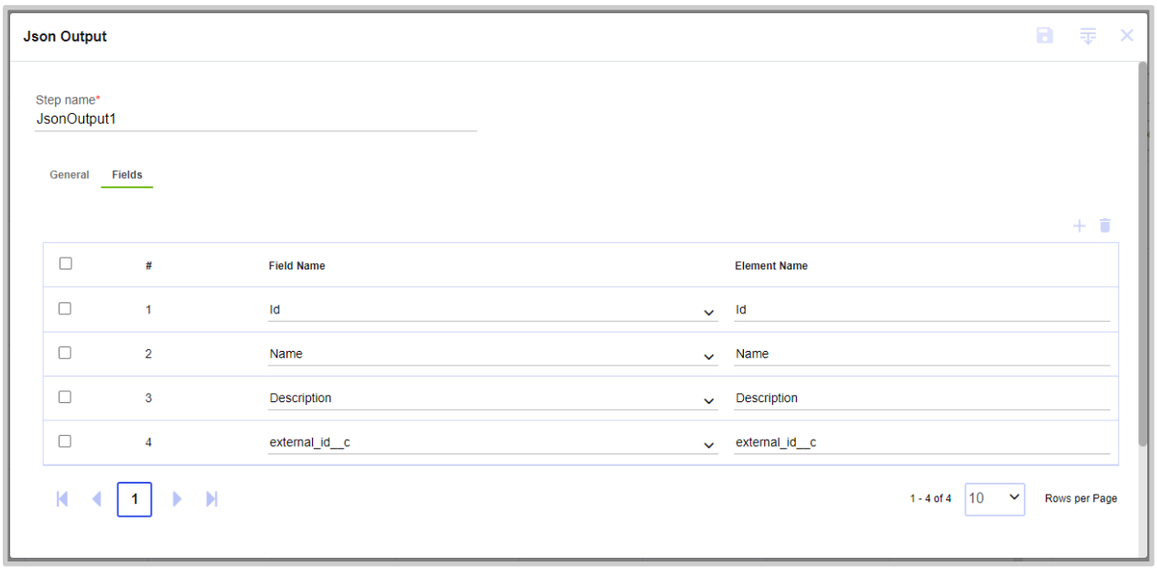
Options

A table given below describes the options for the JSON Output.

Name	Description
Step name	The name should be unique in the context of the flow
Operation	Specify operation type. The three types of operation are: • Output value - do not create a file, only let the output field pass • Write to file - only write to file, do not pass to output field • Output value and write to file - write to file and pass generated JSON as a Step output file
JSON block name	Value to be used as a name for JSON block Can be empty string that will affect the output JSON structure, see detailed description below
Nr. rows in a block	Number of JSON block key - value pairs Note: 1 is a special value, in case of 1, every output will be generated as one object. See description below
Output value	This value will be used as a Step output field Will contain generated JSON Output block depending on Step settings
Compatibility mode	This check box handles compatibility configuration
Encoding	Output file encoding

File	Full path to Output file
Pass output to servlet	Enable this option to return to the data via a web service instead of writing into a file
Include date in filename?	If checked, Output file name will contain file name value + current date. This may help to generate unique output files
Include time in filename	If checked, Output file name will contain file creation time. Same as for 'Include date in filename' option
Append	If not checked, new file will be created every time the action is applied If a file with the specified name already existed, it will be replaced by a new one If checked - new JSON output will be appended at the end of an existing file Or if existing file does not exists, it will be created as in the previous case
Create Parent folder	Usually the file name contains some path folder as a parent folder If the parent folder does not exist and this option is checked, parent folder will be created as a new folder. Or else, file not be found and Step will fail
Do not open create at start	If not checked, file (and in some cases parent folder) will be created/opened to write during Flow initialization If checked, file and parent folder will be created only after Step will get any first Input data

Fields Tab



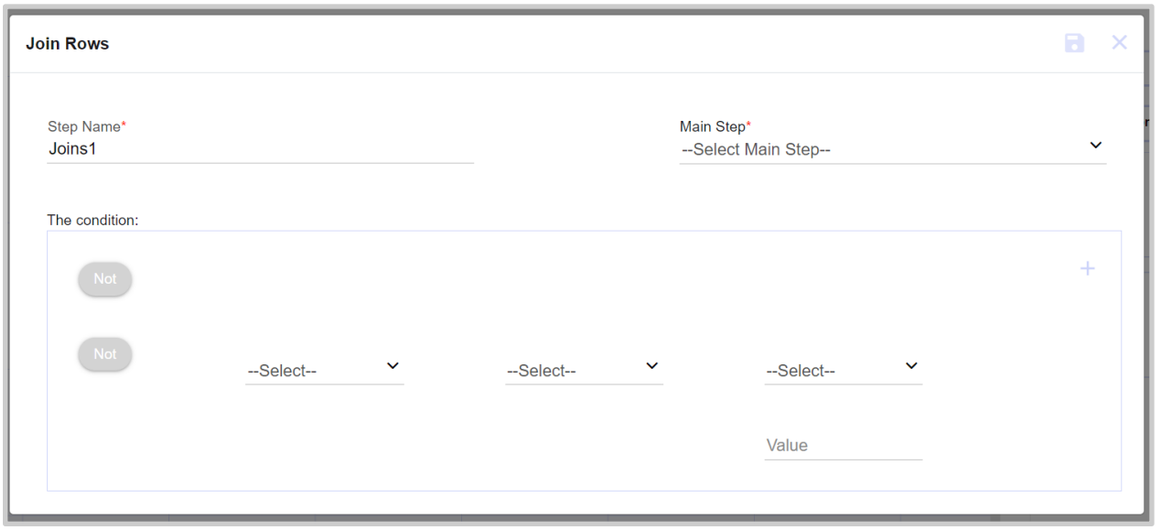
Options

A table given below describes the options for JSON Output.

Name	Description
Fieldname	Input Step field name Use Get Fields button to discover available input fields
Element name	JSON element name as a key. For example "A":"B" A is an element name, B is an actual input value mapped for this Element name

Join Rows

Join Rows combines all rows (Cartesian product) in the Input stream as shown below.



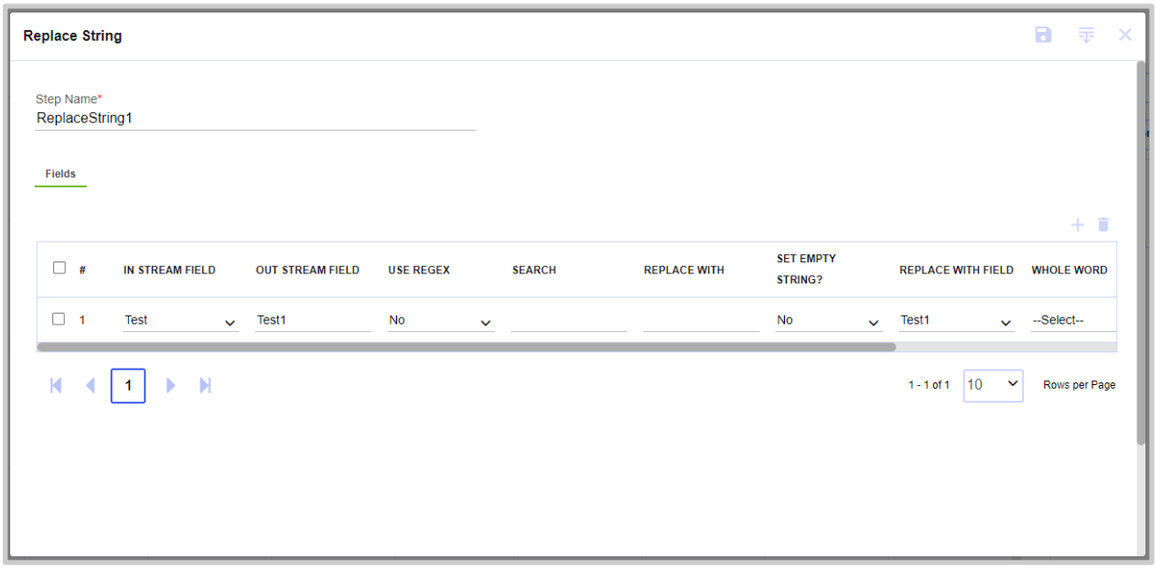
Options

A table given below describes the options available for configuring Join Rows.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Temp directory	Specify the name of the directory where the system stores the temporary files; if required to combine more than the cached number of rows
TMP-file prefix	A prefix of the temporary files which will be generated
Maximum cache size	The number of rows to cache before the system reads data from temporary files; if required to combine large row sets that do not fit into memory
Main Step to read from	Select the Step from where to read most of the data; while the data from the other Steps are cached or spooled to disk, the data from this Step is not
The Condition(s)	A complex condition to limit the number of output rows can be entered
Comparators	The following are the comparators values In drop down box '=' , '<>' , '<' , '<=' , '>' '>=' , 'REGEXP', 'IS NULL', 'IS NOT NULL' 'IN LIST', 'CONTAINS', 'STARTS WITH', 'ENDS WITH', 'LIKE', 'TRUE'
Value	Value contains 'Type', 'value', 'select format', 'Length', 'Precision'

Replace String

It is a simple search and replace, which supports regular expressions and group references. Group references are picked up in the replace with string as $n where n is the number of the group.



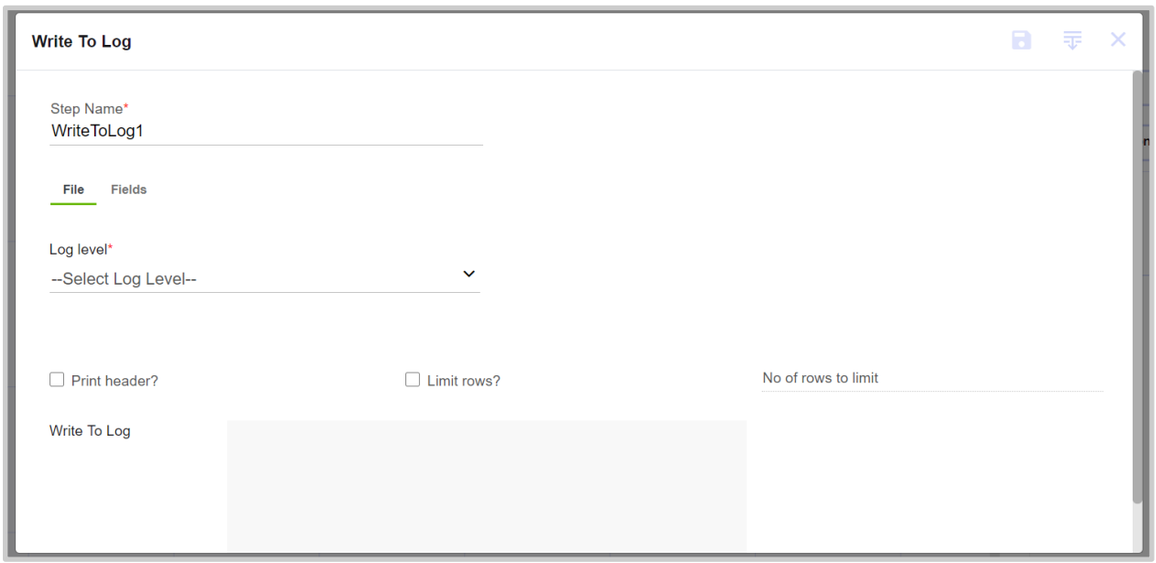
Options

A table given below describes the fields associated with the Replace String Step.

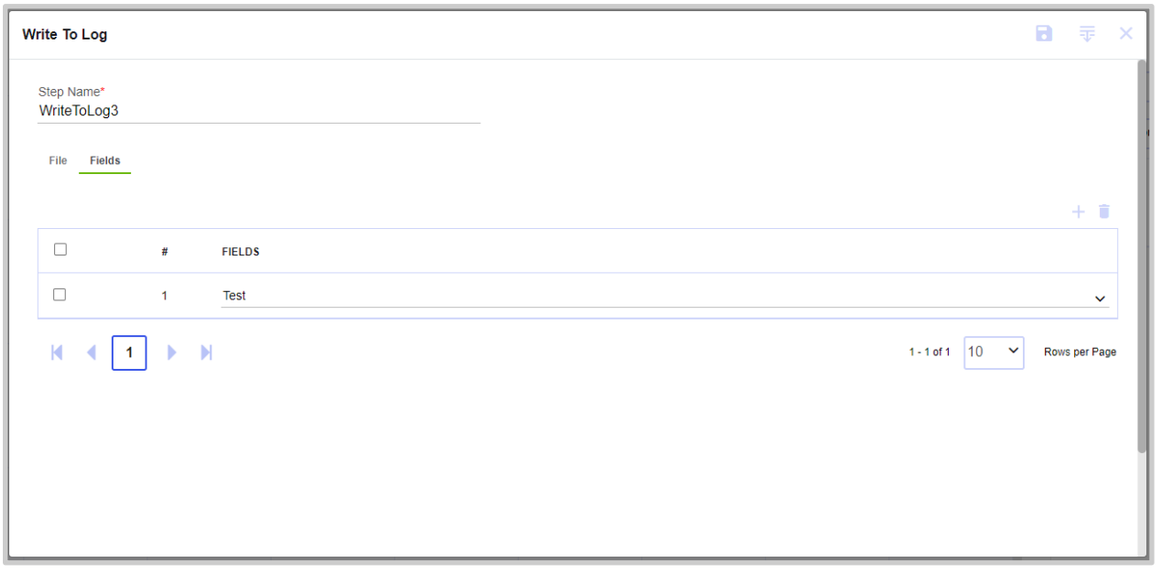
Name	Description
Step Name	Name of the Step The name has to be unique in a single Flow
In Stream Field	Designate the field from input stream
Out Stream Field	Designate the name of the field to be created
Use RegEx	A regular expression is a special text string for describing a search pattern
Search	Search based on keyword or pattern
Get Fields	Click to retrieve a list of all fields coming in on the stream(s)
Replace With	Simple search and replace
Set Empty String?	Set this to Y to allow an empty string instead of a NULL value when the value is empty correct
Replace With Field	Replace the value of a field with the value of another field
Whole Word	Set this to Y, it will replace whole word with the specified replace string
Case Sensitive	Set this to Y, it will convert string into the capital format if a written word such as the password is case-sensitive, it must be written in a particular form

Write To Log

This step writes a specific string to the Flodata logs.



Fields Tab



Options

A table given below describes the options for the above screens.

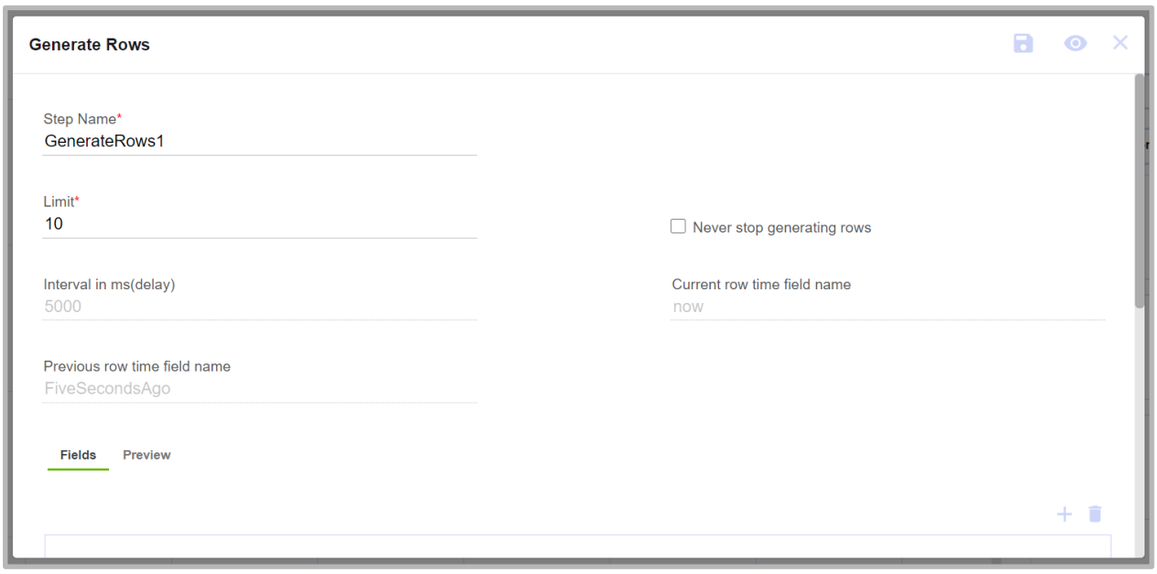
Name	Description
Step Name	The name of the job entry
Log level	The logging level to use
Log subject	The subject to use in the logging line(s)
Log message	The log message to write to the log
Log fields	Shows log message for given fields

Generate Rows

Generate rows outputs a specified number of rows. The rows are empty as in-built; however they can contain a number of static fields.

This step is used primarily for testing purposes. It may be useful for generating a fixed number of rows. To illustrate, 12 rows are required for 12 months.

Generate Rows are required to generate one row which also is an initial point for the Flow.

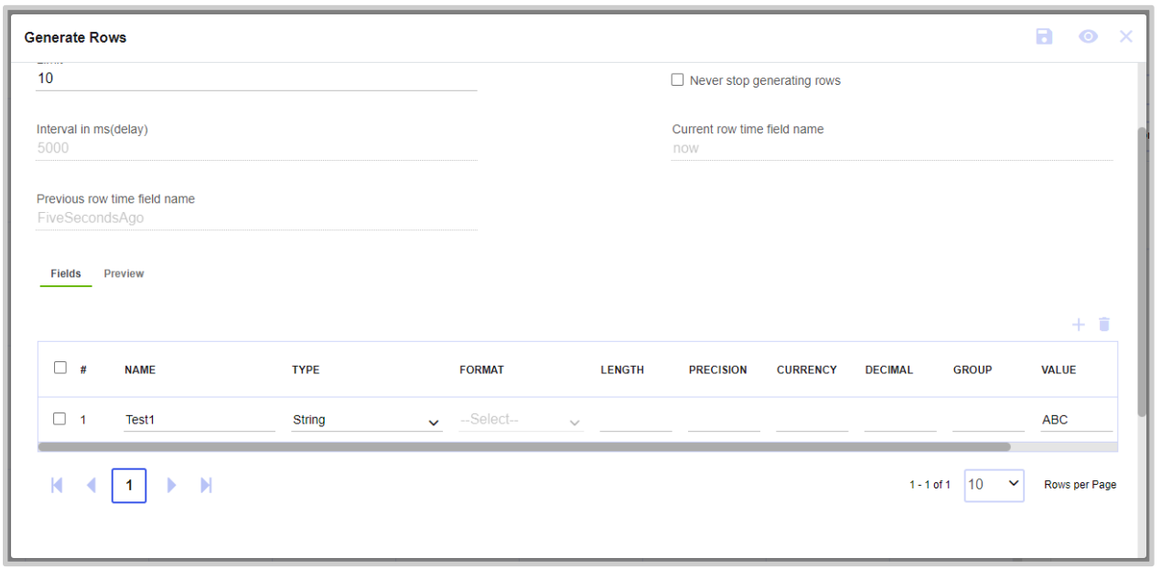


Options

A table given below describes the options for the Generate Rows.

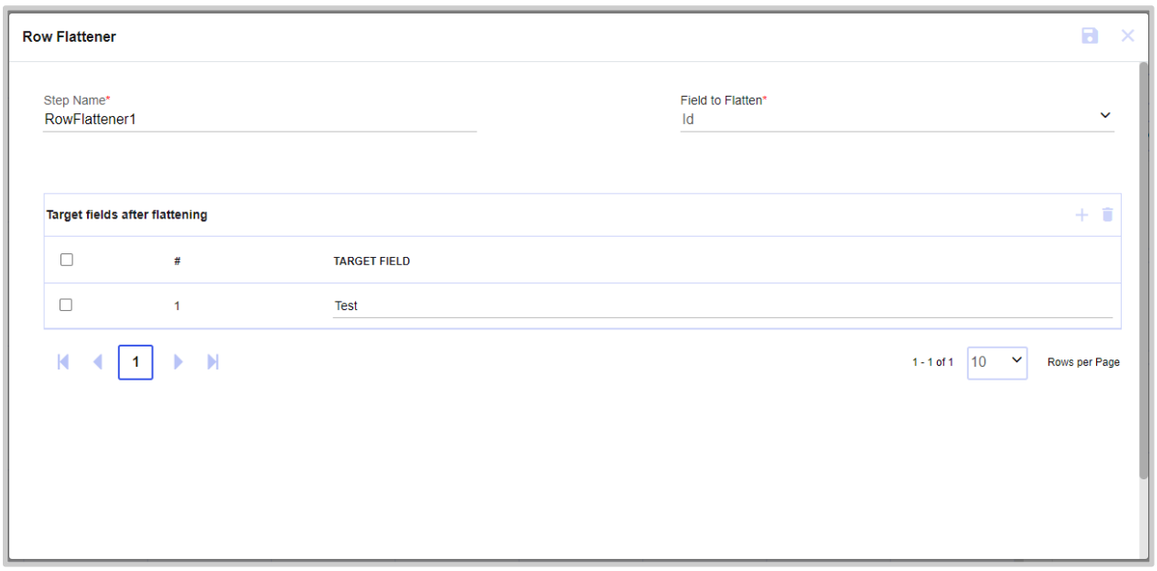
Name	Description
Step Name	Name of the Step The name has to be unique in a single Flow
Previous row time field name	The *optional* field name for the Date field containing the time when the previous row was generated
Never stop generating rows	This option is intended for real-time use cases when the Flow shouldn't be stopped The output of this Step is then used to drive recurring tasks such as polling from a file, queue and database
Limit	Sets the maximum number of rows required to generate
Interval in ms	The interval between generated rows in milliseconds
Fields	The table where the configuration of the structure and values of the rows are generated (This is an optional task)
Current row time field name	The *optional* field name for the Date Field containing the time when the current row was generated

To add new field, click '+' icon. Please refer to the image below.



Row Flattener

The Flattener Step allows flattening the data sequentially.



Options

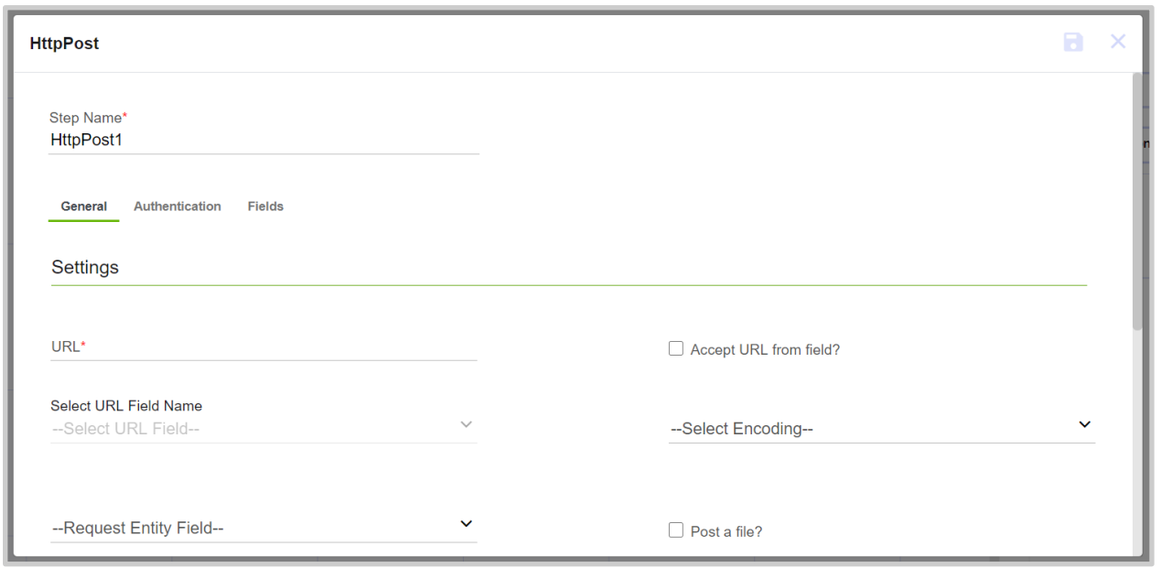
A table given below describes the fields associated with the Row Flattener Step.

Name	Description
Step name	Name of the Step. The name has to be unique in a single Flow
Select field to flatten	The field that must be flattened into different Target fields
Target fields	The name of the Target field to which the field is flattened

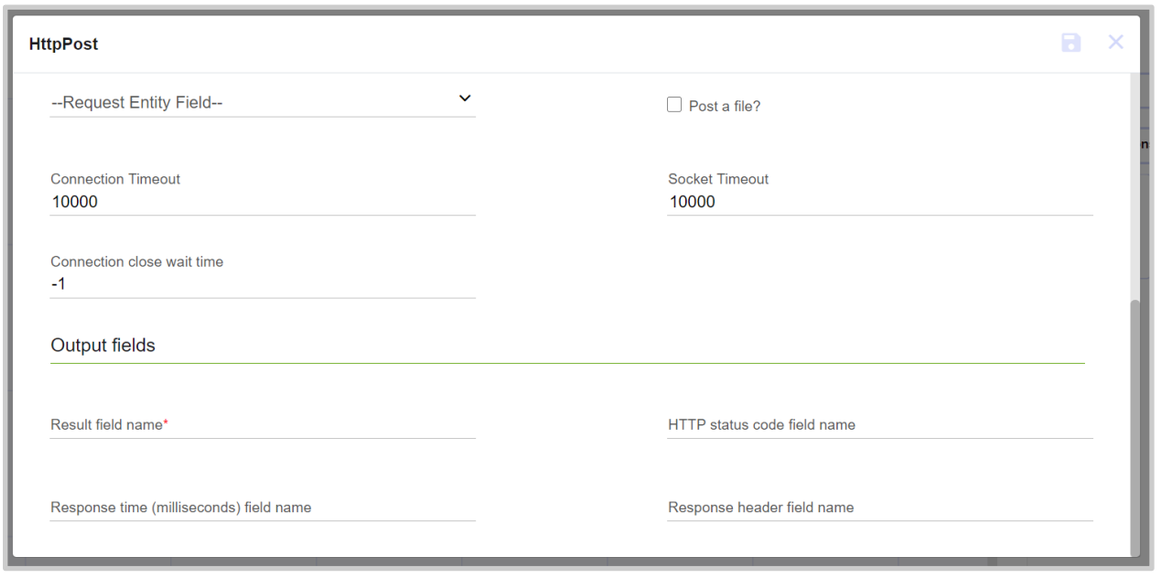
HTTP Post

This Step uses HTTP Post command to submit form data via a URL.

General Tab



Cont'd…

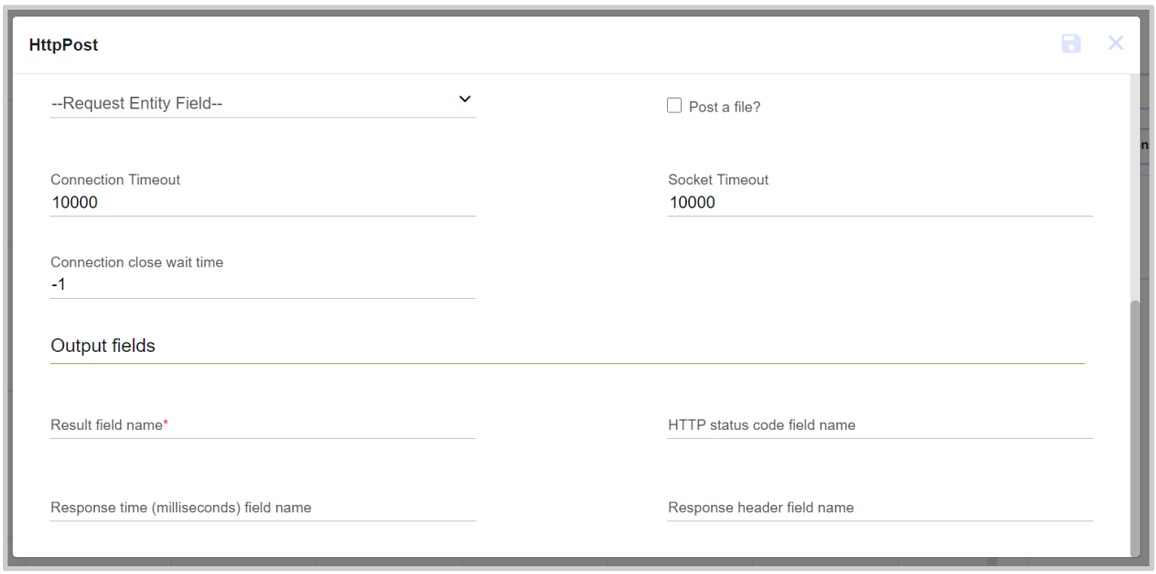


Options

A table given below describes the options for HTTP Post.

Name	Description
Step name	The name of the Step in the Flow workspace
URL	The web service URL to submit to
Accept URL from field?	If checked, remember to specify which field to retrieve the URL from
URL field name	If the previous option is checked, specify the URL field at this place
Encoding	The encoding standard for the files being accessed
Request entity field	The name of the field that will contain the POST request When enabled, the Post a file option will retrieve the file named in this field, and post the contents of that file
Post a file	If a file is defined in the Request entity field, its contents will be posted if this option is checked
Connection timeout	Defines the timeout (defaults to 10000) in Milliseconds when a connection attempt will error out

Socket timeout	Defines the timeout (defaults to 10000) in Milliseconds when a socket will error out
Connection close wait time	Define the wait time after the connection is closed in Milliseconds, the default-1 means the default wait time from the operating system (often 2 minutes)

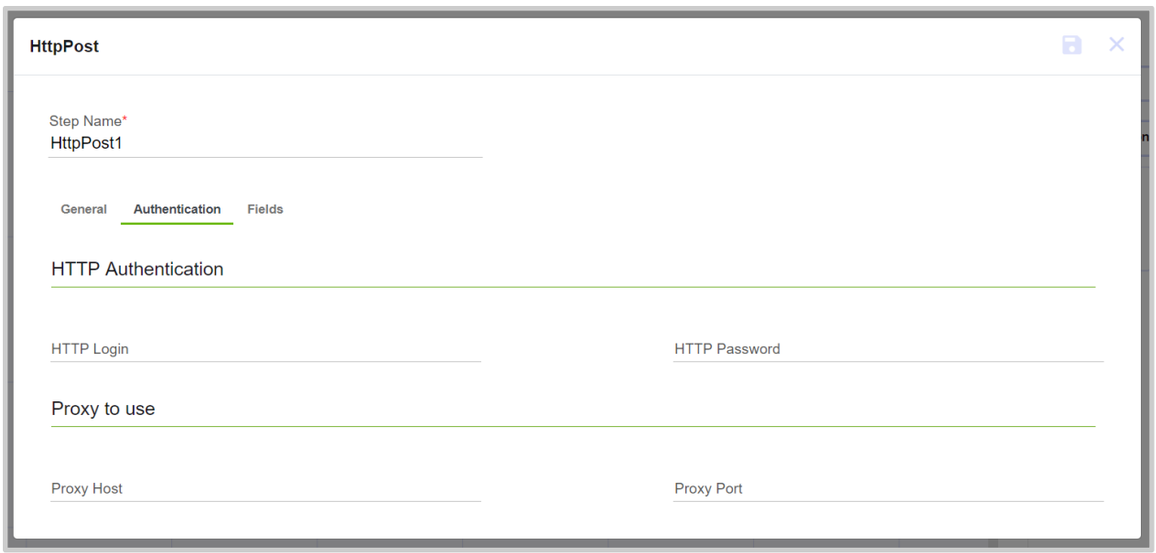


Options

A table given below describes the options for HTTPPost.

Name	Description
Result fieldname	The field where the result output needs to be posted
HTTP status code fieldname	The field where the status code output needs to be posted
Response time (milliseconds) fieldname	The field where the response time needs to be posted in milliseconds

Authentication Tab

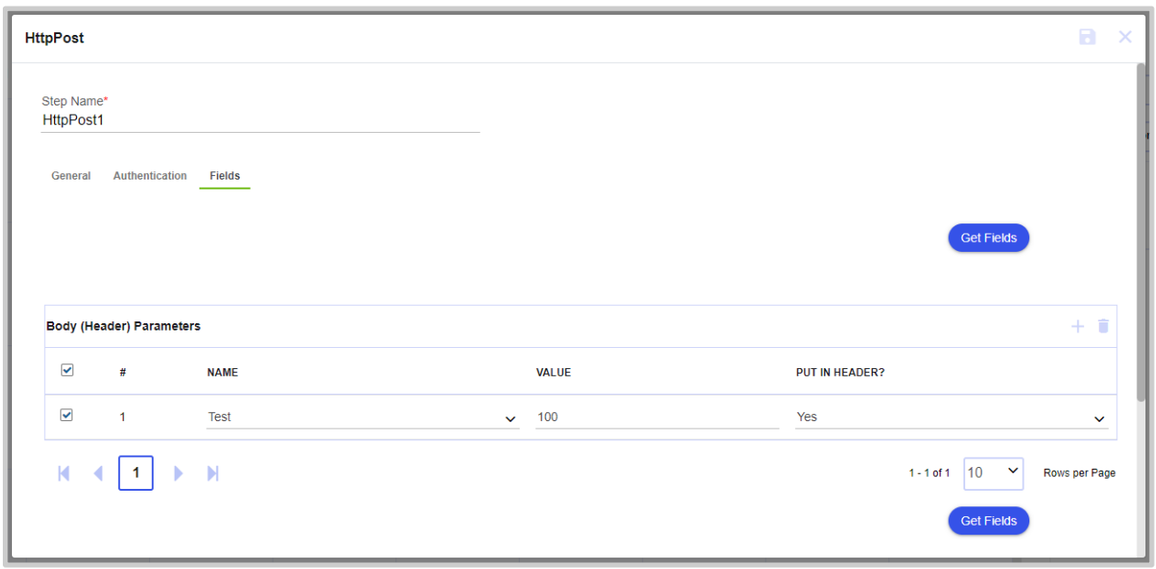


Options

A table given below describes the options for HTTP Post.

Name	Description
HTTP login	If this form requires authentication, this field should contain the username
HTTP password	If this form requires authentication, this field should contain the password that corresponds with the username
Proxy host	Hostname or IP address of the proxy server
Proxy port	Port number of the proxy server

Fields Tab



Options

A table given below describes the options for HTTP Post.

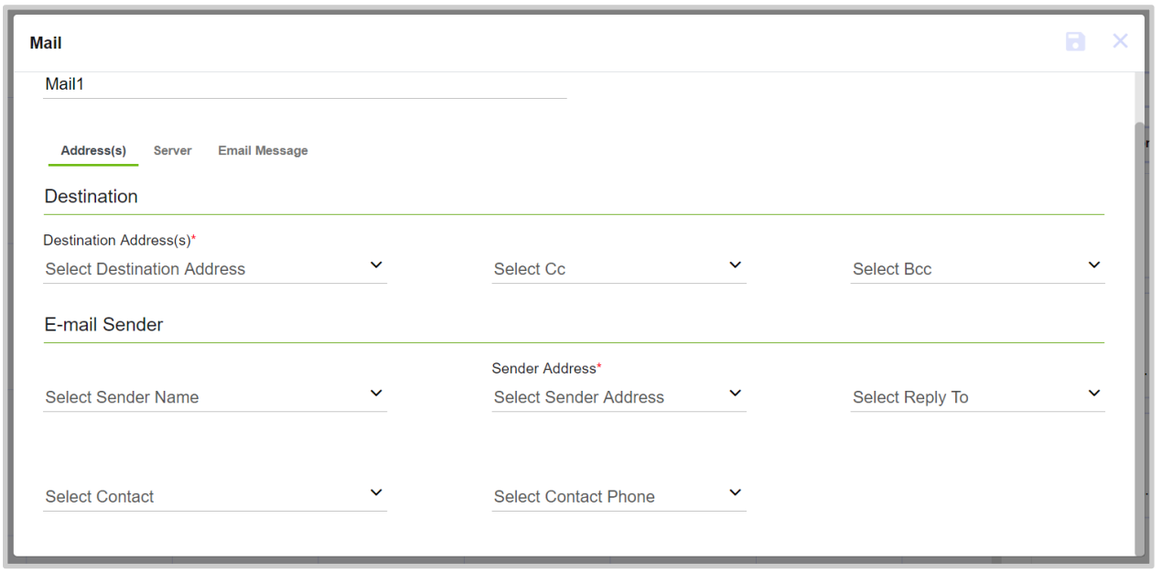
Name	Description
#	The order that this parameter will be passed to the Web application.
Name	The name of the field that contains the value to map to the parameter.
Parameter	The parameter to map the value of Name to.
Put in Header?	If set to Y, the parameter will be put into the request header.

Mail

Mail lets SMTP server send an email containing data from the previous step.

Address (es) Tab

Cont'd…

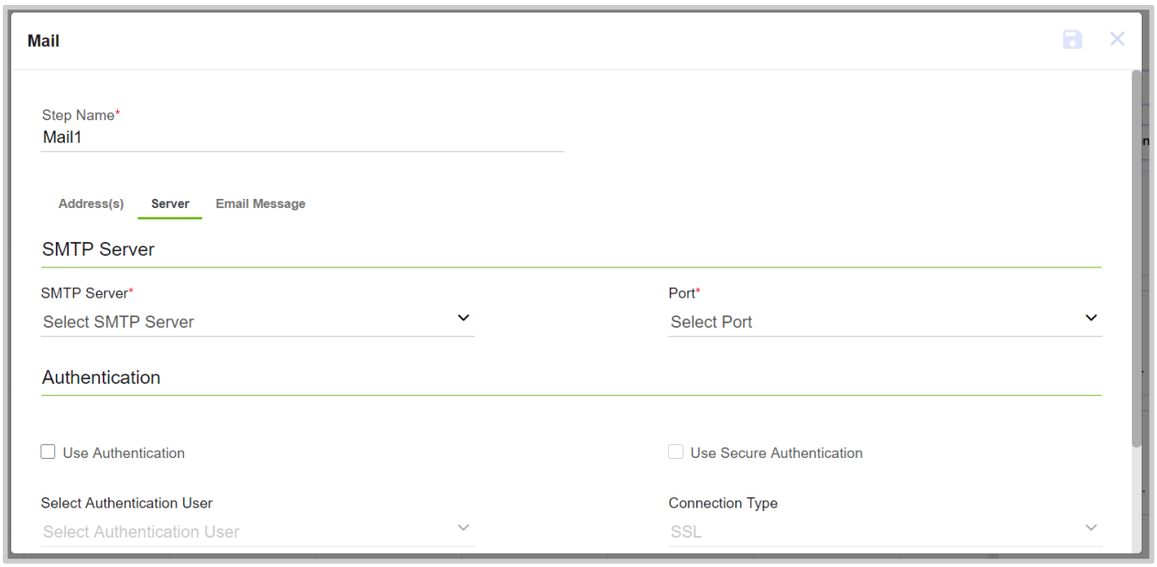


Options

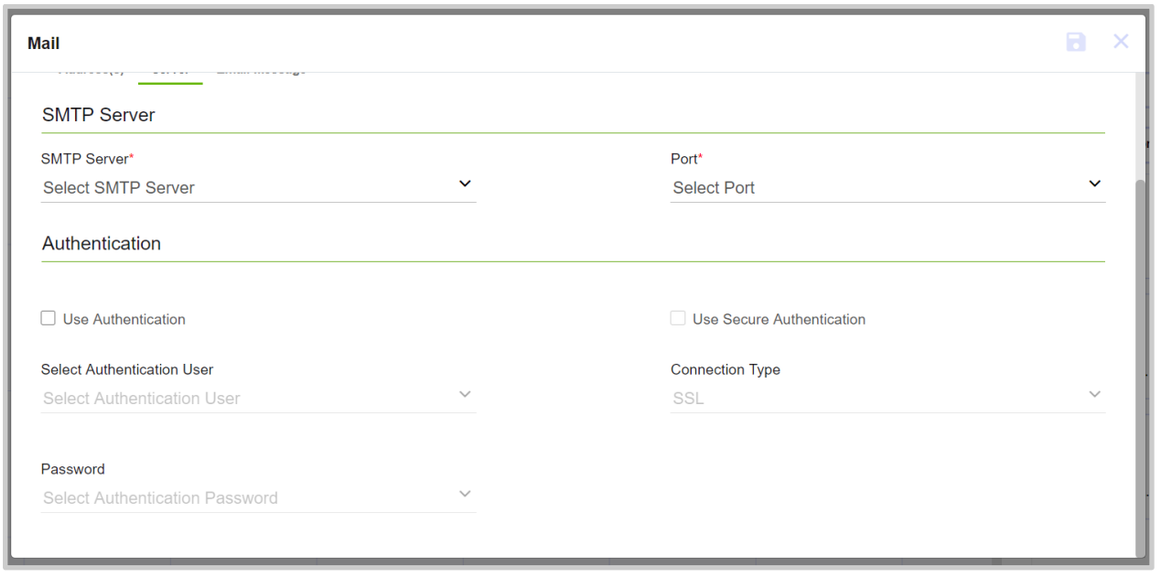
A table given below describes the options in Address (es) Tab Mail. It defines the sender, contact person and recipients of a Flodata-generated email.

Field	Description
Destination address	The destination for the email This can be a single address, a space-separated list of addresses or an email alias for a distribution list
Cc	An email address, space-separated list of email addresses, or a distribution list to send a carbon copy of the email to
Bcc	An email address, space-separated list of email addresses, or a distribution list to send a blind carbon copy of the email to
Sender name	The name of the person the email to be sent
Sender Address	The email address of the person or an account the email is required
Reply to	The email address that recipients will use if chosen to reply
Contact	The name of the person to contact with regard of the email contents
Contact phone	The phone number of the contact person defined in the previous field

Server Tab



Cont'd…

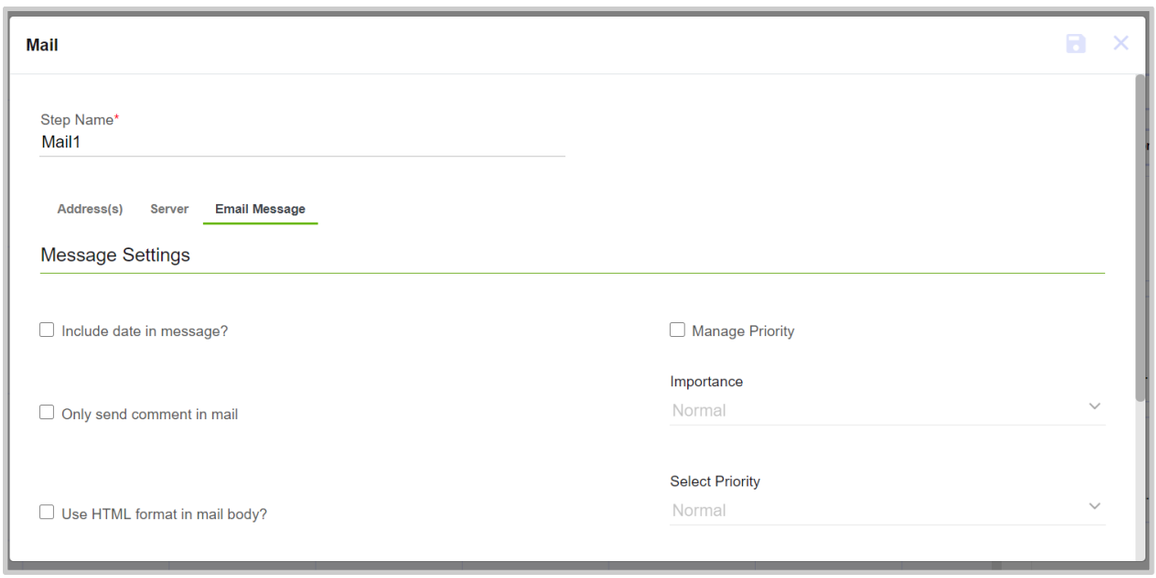


Options

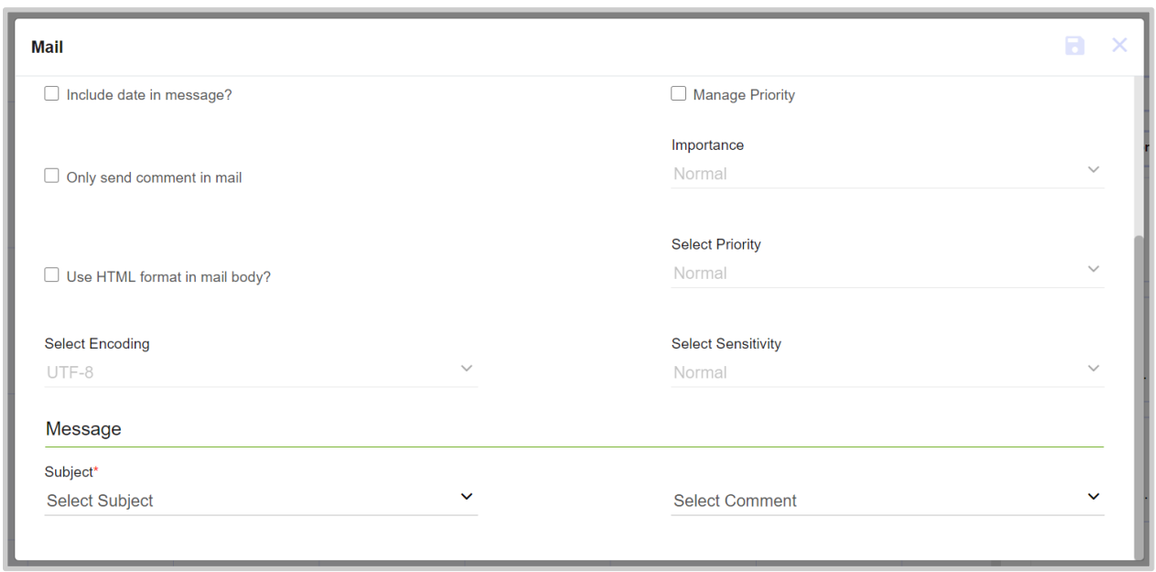
Server Tab contains details for the SMTP server such as authentication and encryption.

Field	Description
SMTP server	URL, hostname or IP address of SMTP server
Port	Port number for SMTP service
Use authentication	If checked, SMTP username and password in the next few fields can be entered
Authentication user	SMTP username to use for the server authentication
Authentication password	Password of the previously defined SMTP username
Use secure authentication	If checked, SSL or TLS encryption in the next field can be specified
Secure connection type	Determines whether the server will use SSL or TLS encryption protocols

Email Message Tab



Cont'd…



Options

Email Message Tab determines the text content of the email.

A table given below describes the options for Email Message Tab.

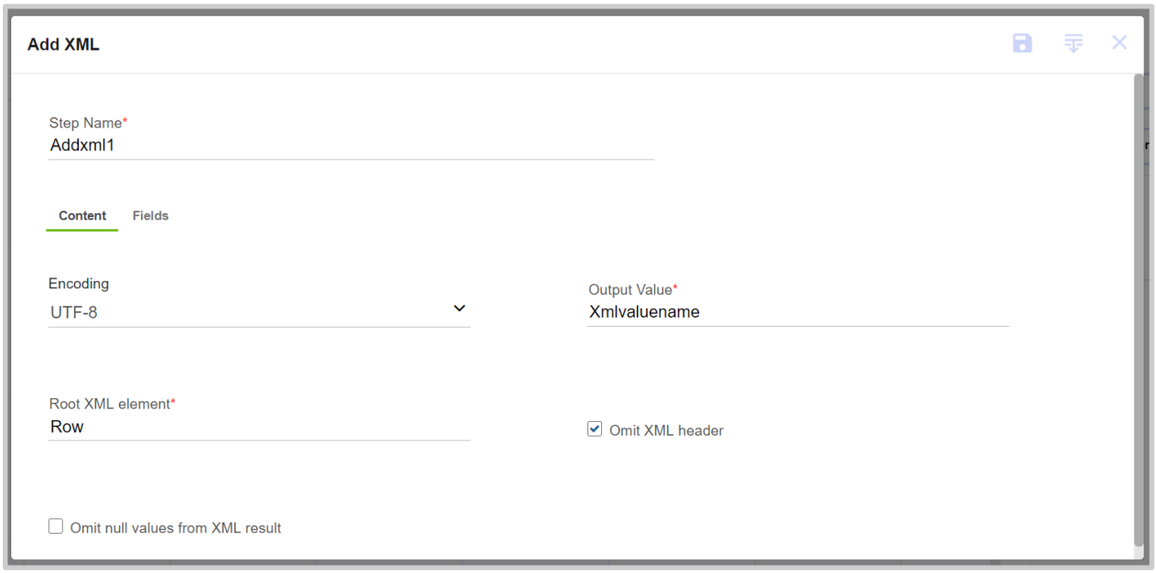
Field	Description
Include date in message?	If checked, the date will be printed in the email body
Only send comment in mail body	If checked, information about the Flow will not be included, only the content from the Comment field will be sent in the message body
Use HTML format in mail body?	If checked, this email will be in HTML format instead of the plain text
Encoding	Character encoding for the text of an HTML email
Manage priority	If checked, enable the following two fields to set email priority and importance levels

Priority	The priority level to assign in the email metadata
Importance	The importance level to assign in the email metadata
Sensitivity	This allows to set the "Sensitivity" header information to Normal, Personal, Private, Confidential
Subject	The email subject line
Comment	The email body. Please refer to the option "Attach content file"

Add XML

The XML Step allows to encode the content of a number of fields in a row in XML. This XML is added to the row in the form of a string field.

Content Tab



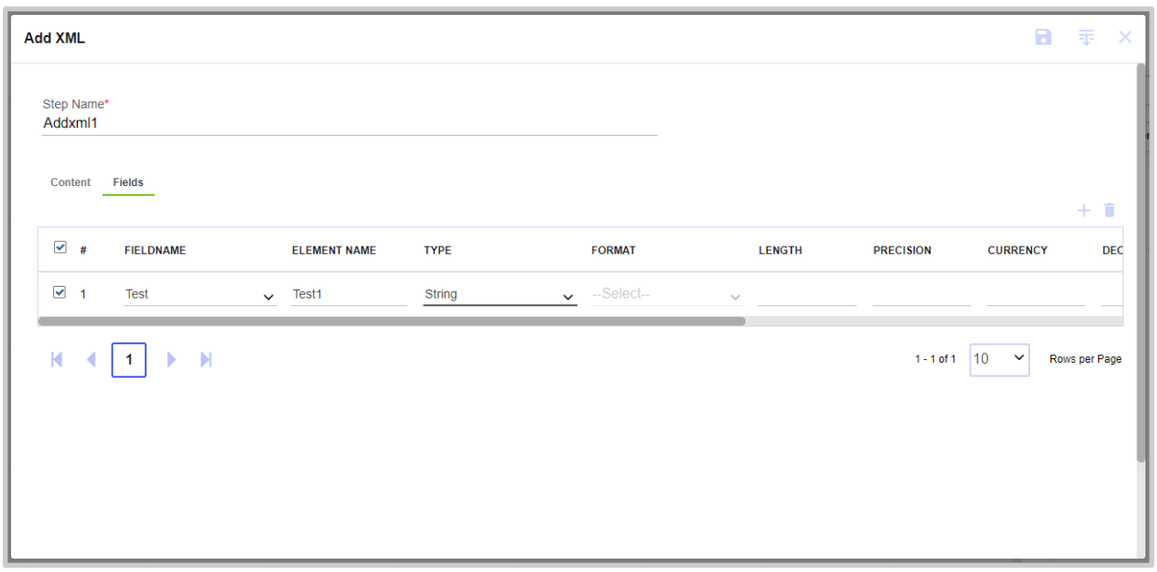
Options

A table given below describes the options for Add XML Step.

Name	Description
Step name	Name of the Step The name has to be unique in a single Flow
Encoding	The encoding to use The encoding is specified in the header of the XML file
Output Value	The name of the new field that contains the XML
Root XML element	The name of the root element in the generated element
Omit XML header	Disable to enter XML header in the output
Omit null values from the XML result	Do not add elements or attributes with null values This is often used to limit the size of the Target XML

Fields Tab

The Fields tab provides the opportunity/ functionality to configure the output Fields and their Formats. An image below describes each of the available properties for a Field.



Options

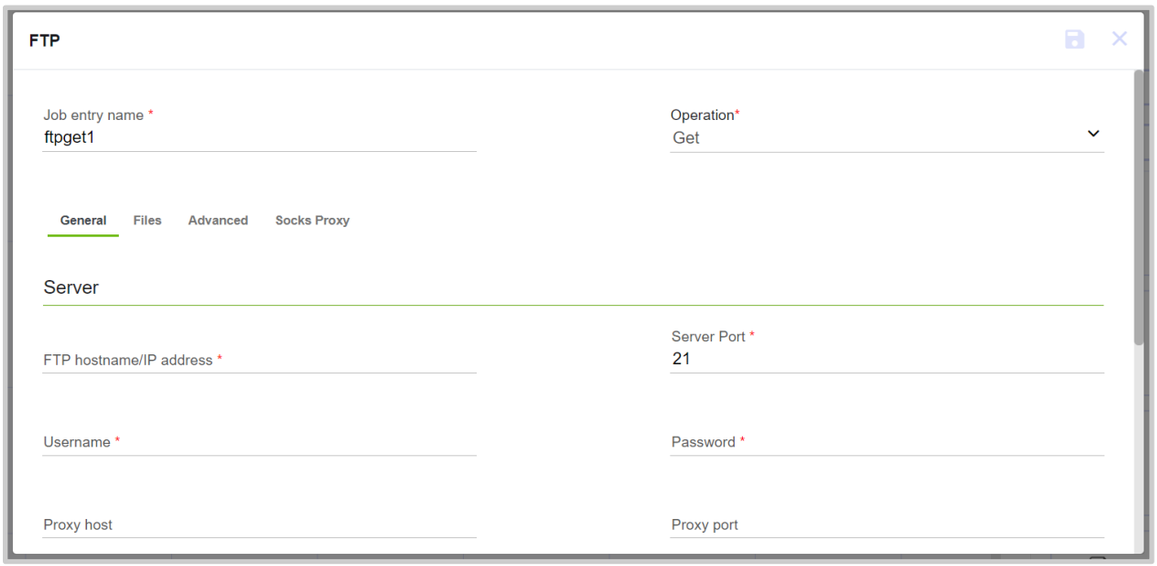
A table given below describes the options for the Add XML Step.

Name	Description
Fieldname	Name of the field
Element name	The name of the element in the XML file to use
Type	Type of the field can be either a String, Date or Number
Format	Format mask to convert data Please refer to Number Formats for a complete description of format specifiers
Length	Output string is padded to this length if it is specified
Precision	The precision to use
Currency	Symbol used to represent currencies - $10,000.00 or E5.000, 00
Decimal	A decimal point can be "." (10,000.00) or "," (5.000, 00)
Grouping	A grouping can be “," (10,000.00) or "." (5.000,00)
Null	The string to use in case the field value is null
Attribute	Make this attribute (N means: element)
Attribute parent name	Specify the name of the parent element to add the attribute to if previous parameter attribute is set to Y If no parent name is specified, the attribute is set in the parent element

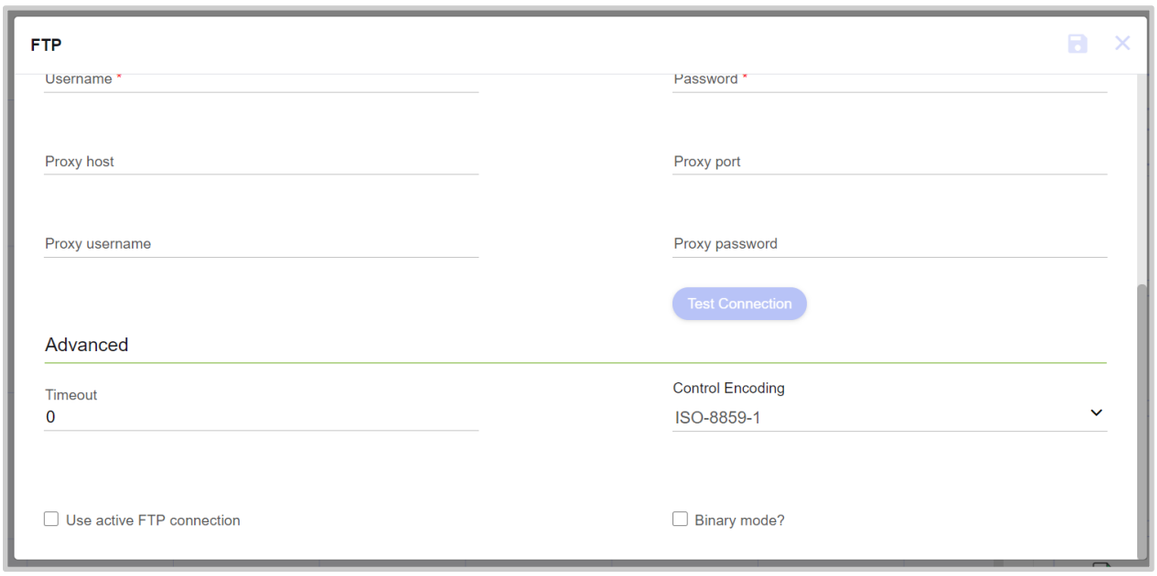
FTP Get

FTP Get helps in retrieving one or more files from the FTP server. This job entry does not "crawl" systems. To illustrate, it will not go to other directories to find files that match a wildcard as it only retrieves files from one directory.

General Tab



Cont'd…



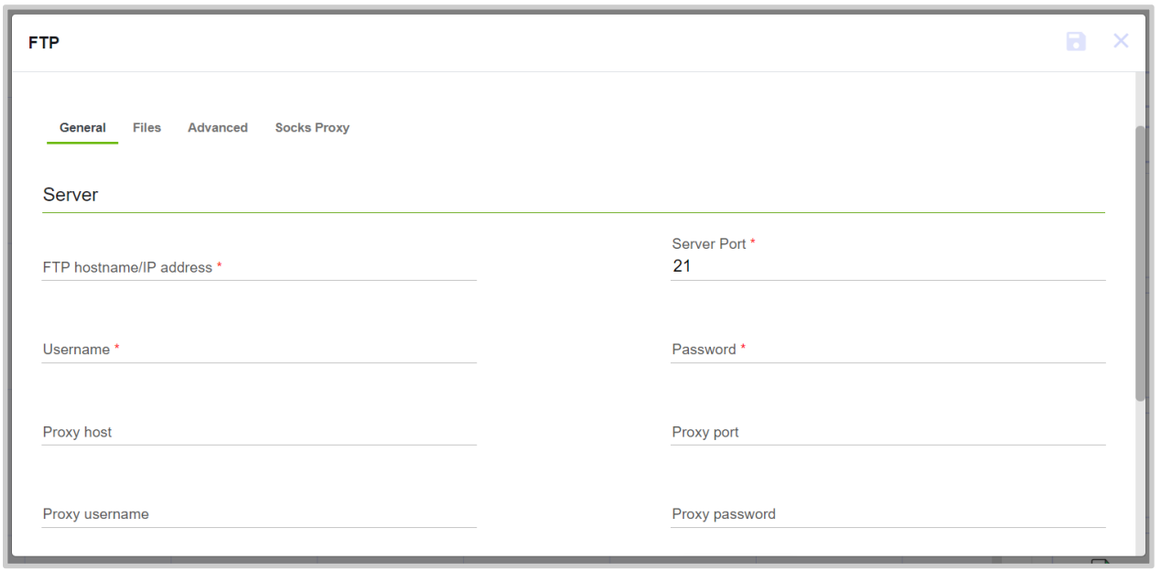
Options

A table below describes the options for FTP.

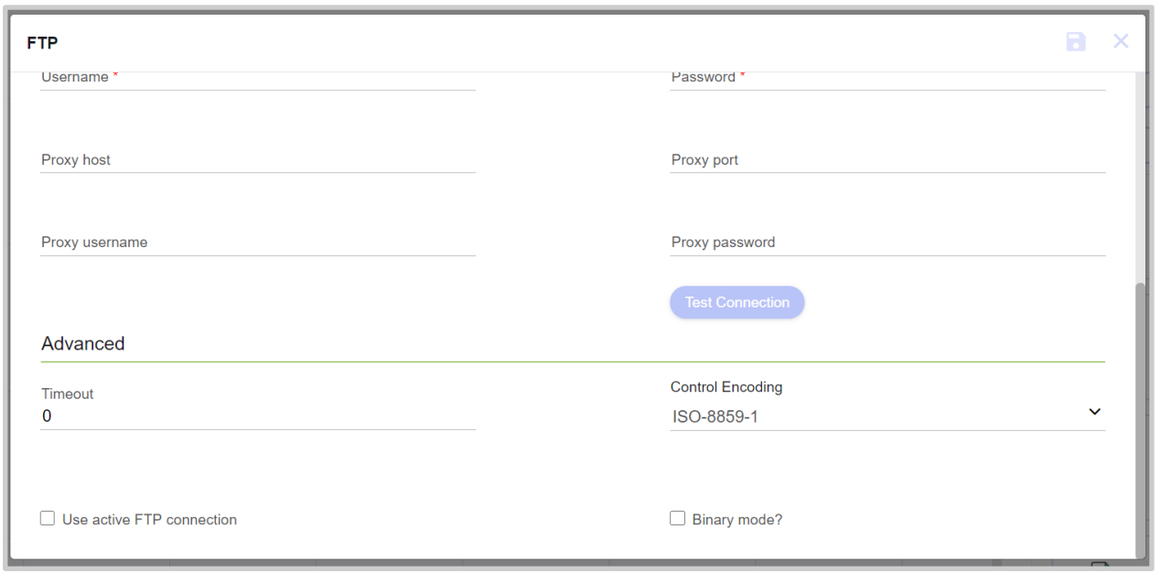
Name	Description
Job entry name	The unique name of the Job entry on the canvas A Job entry can be placed on the canvas several times; however, it will be the same job
Operation	Select which operation to perform. For example, if user selects Get then the Step acts as FTP GET
FTP server name/IP address	The name of the server or the IP address
Server Port	Port number of the FTP server

Username	The username associated with the FTP server account
Password	The password associated with the FTP server account
Proxy host	Proxy server hostname
Proxy port	Proxy server port number
Proxy username	Proxy server account username
Proxy password	Proxy server account password
Timeout	The FTP server timeout in seconds
Control Encoding	Encoding matters when retrieving file names that contain special characters. For Western Europe and the USA, ISO-8859-1 is used

General Tab



Cont'd…

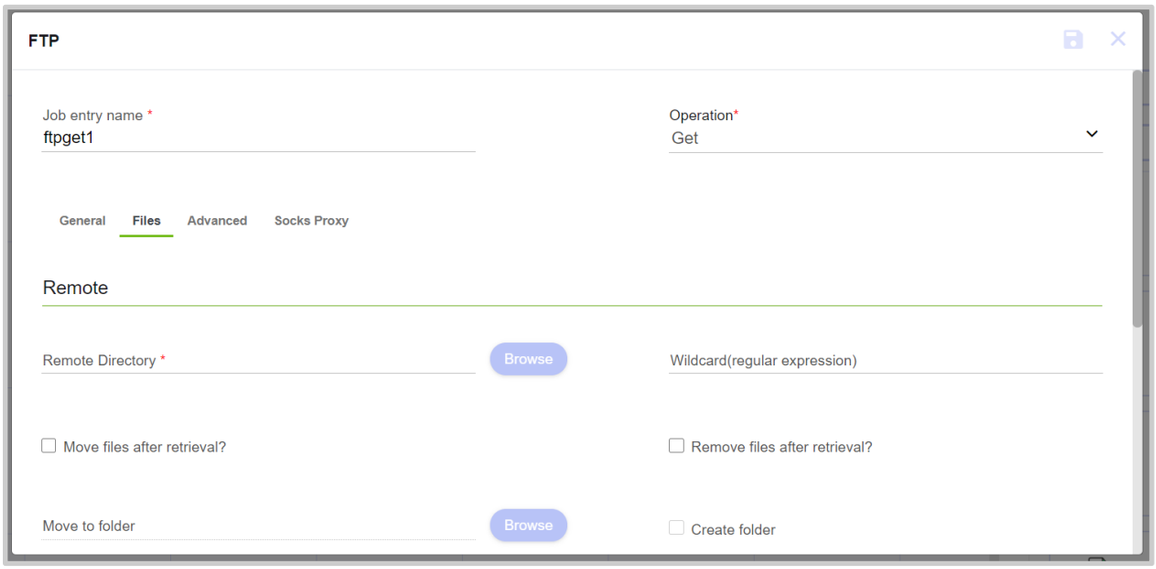


Options

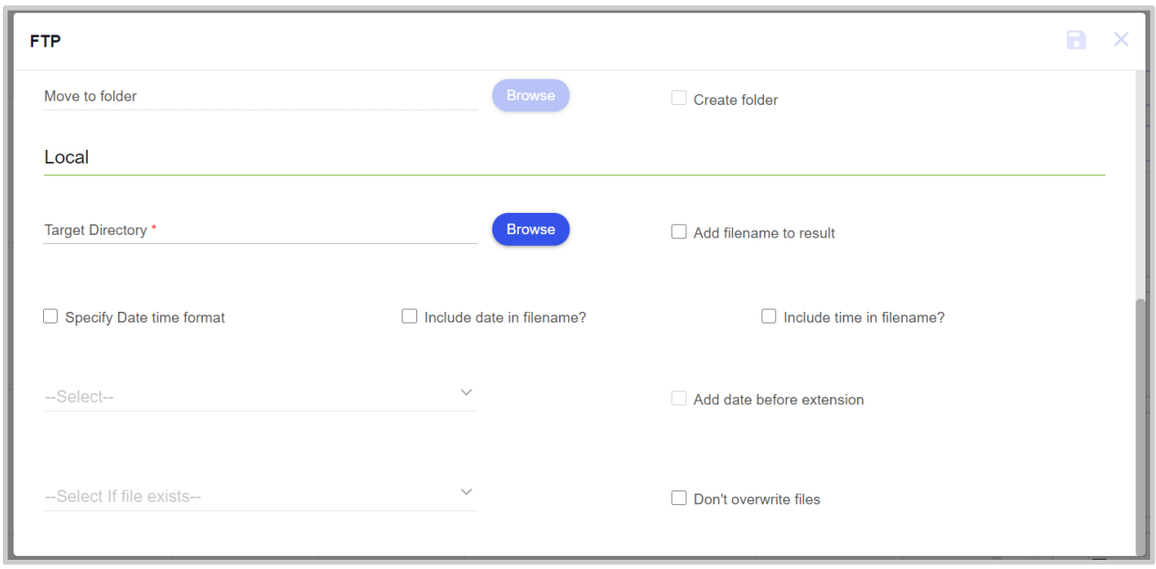
A table given below describes the options for the General Tab.

Name	Description
Use Active FTP connection	Enable if required to connect to the FTP server using Active mode; the firewall must be set to accept connections to the port which can be operated by the FTP client The default is Passive mode
Binary mode	Enable if files must be transferred in binary mode

Files Tab



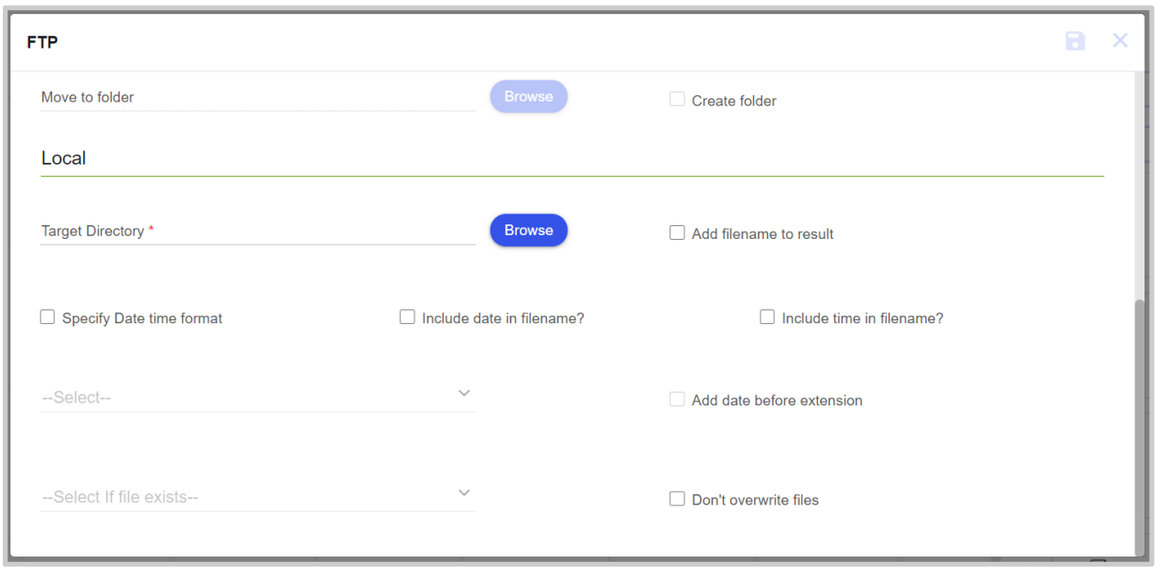
Cont'd…



Option

A table given below describes the options for Files Tab.

Name	Description
Remote directory	The remote directory on FTP server from which files are taken
Wildcard (regular expression)	Regular expression if required to select multiple files. For example: .txt$: get all text files A.ENG:0-9.txt : files starting with A, ending with a number and .txt
Remove files after retrieval	Remove the files on the FTP server, but ensure that all selected files have been successfully transferred
Move to Folder	Move files to specified folder
Create Folder	Create folder that will contain files
Target Directory	The directory where the retrieved files needs to be placed
Include date in filename	Add the system date to the filename (_20101231)
Include time in filename	Add the system time to the filename (_235959)
Specify date time format	Enable to provide chosen date/time format; the default is yyyyMMdd '_' HHmmss
Date time format	Select date time format
Add date before extension	Add date to the file name before the extension
Add filenames to result	Enable to add the file name(s) read to the result of this job

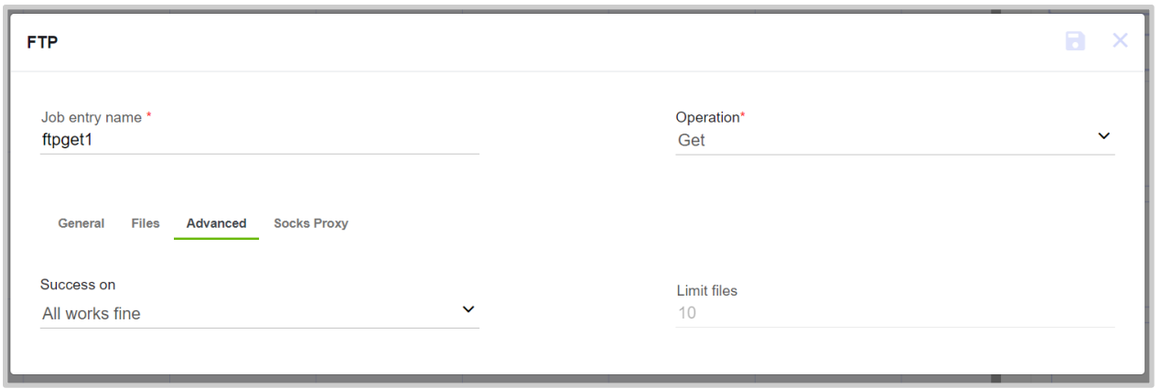


Options

A table given below describes the options for Files Tab.

Name	Description
Don't overwrite files	Check this field to skip, rename or fail, if a file with an identical name already exists in the Target directory
If file exists	Action to take if a file with an identical name already exists in the Target directory

Advanced Tab

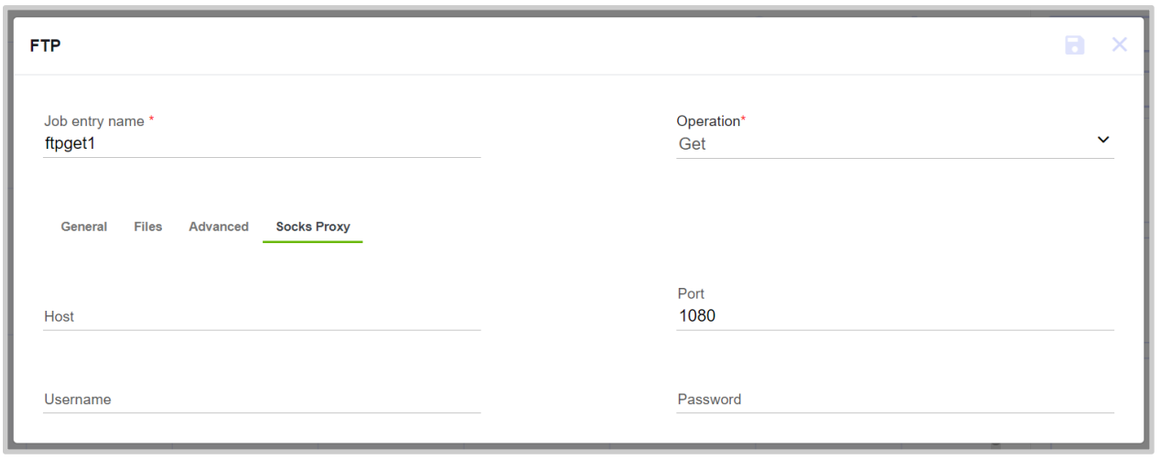


Options

A table given below describes the options for Advanced Tab.

Name	Description
Success on	Set conditions of success
Limit files	Set number of files associated with a condition of success

Socks Proxy Tab



Options

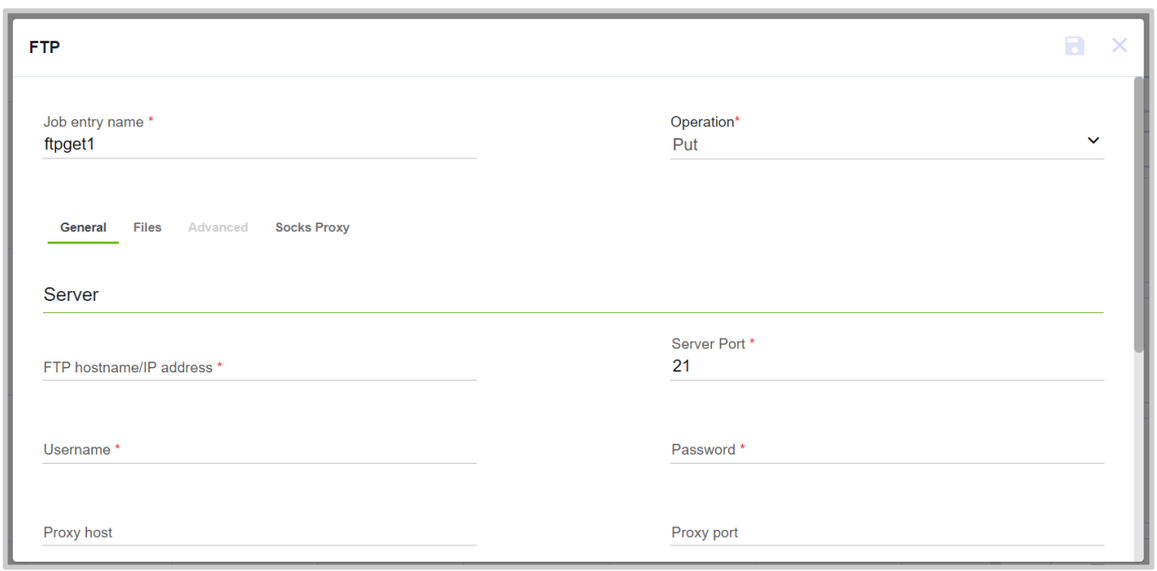
A table given below describes the options for Socks Proxy Tab.

Name	Description
Host	Socks Proxy host name
Port	Socks Proxy port number
Username	User name associated with the Socks Proxy account
Password	Password associated with the Socks Proxy account

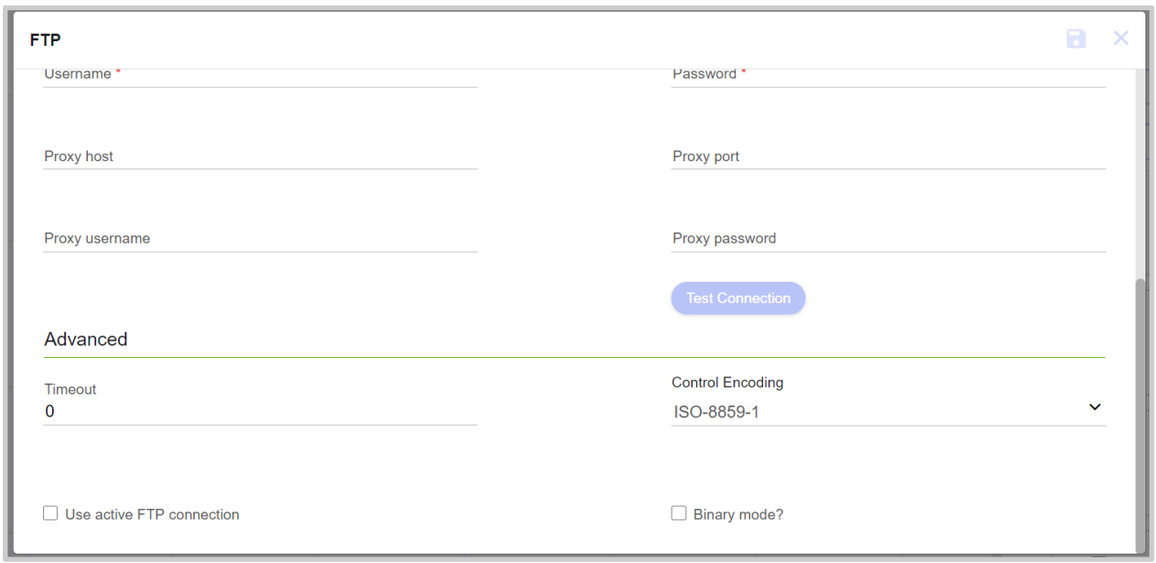
FTP Put

FTP Put is used to insert one or more files from Local Machine to FTP server.

General Tab



Cont'd…

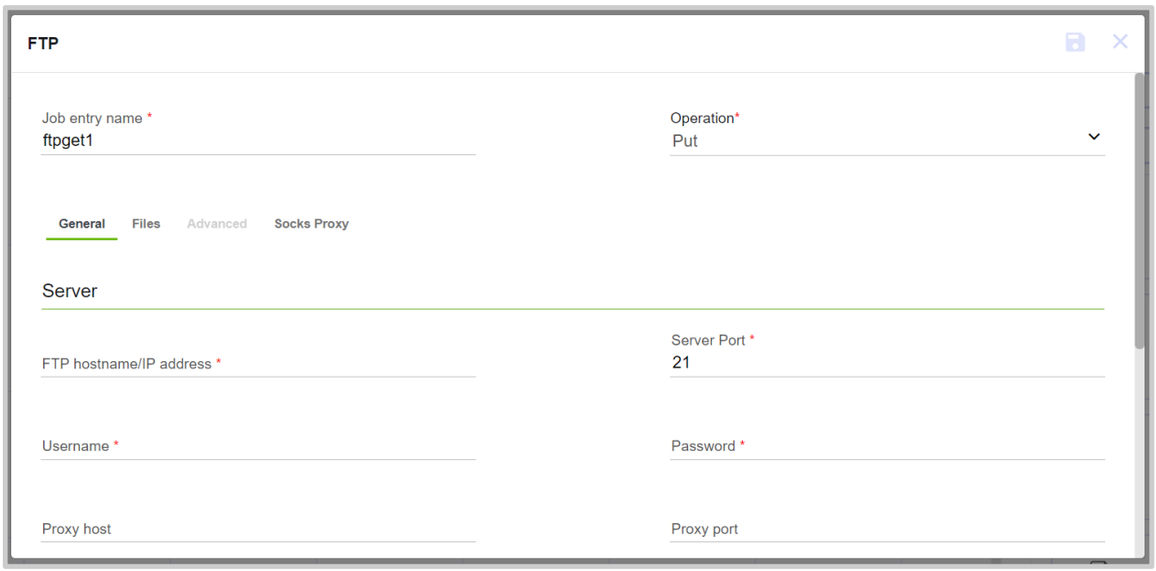


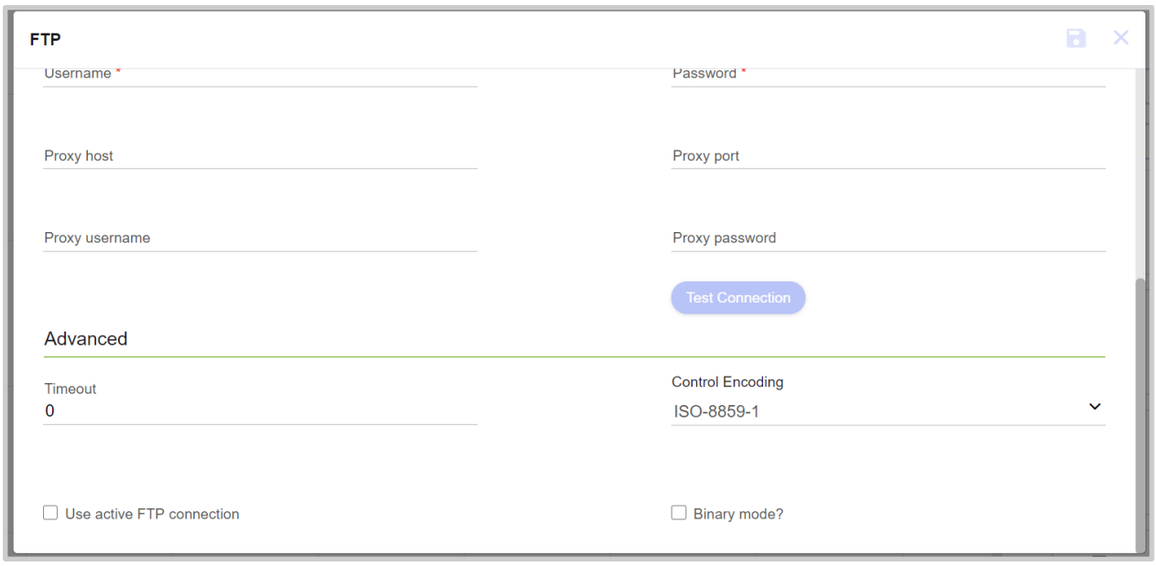
Options

A table given below describes the options for FTP Put.

Name	Description
Job entry name	The unique name of the job entry on the canvas A job entry can be placed on the canvas several times; however, it will be the same job entry
FTP server name/IP address	The name of the server or the IP address
Server Port	Port number of the FTP server
Username	The username associated with FTP server account
Password	The password associated the FTP server account
Proxy host	Proxy server hostname
Proxy port	Proxy server port number
Proxy username	Proxy server account username
Proxy password	Proxy server account password
Timeout	The FTP server timeout in seconds
Control Encoding	Encoding matters when retrieving the file names that contain special characters For Western Europe and the USA, ISO-8859-1 is used

General Tab



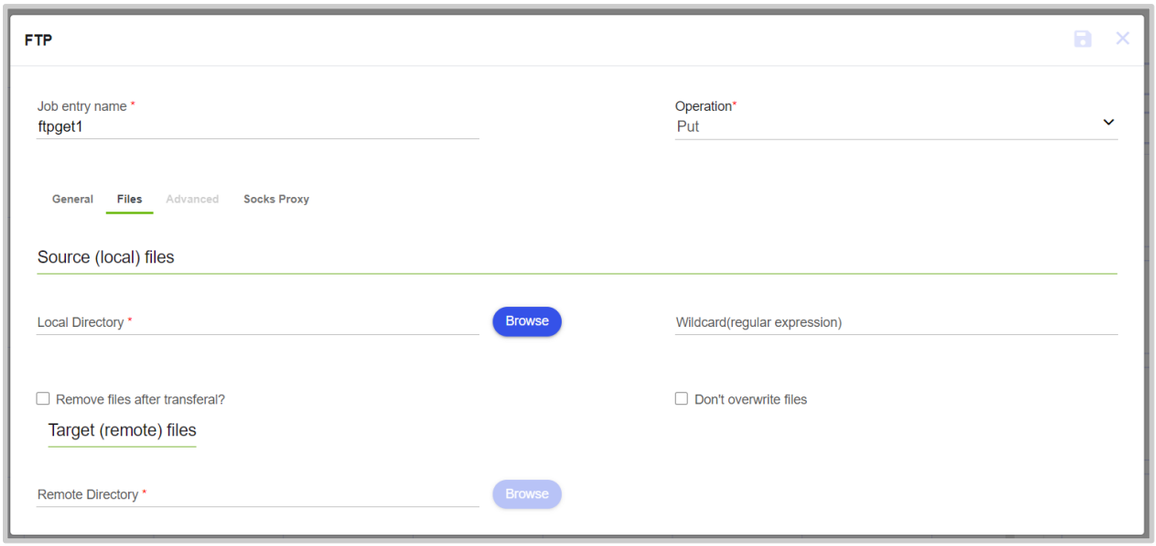


Options

A table given below describes the options for FTP Server.

Name	Description
Binary mode	Enable if files must be transferred in binary mode
Use Active FTP connection	Enable if requires to connect to the FTP server using Active mode; the firewall must be set to accept connections to the port which can be operated by the FTP client Passive mode is in-built

Files Tab

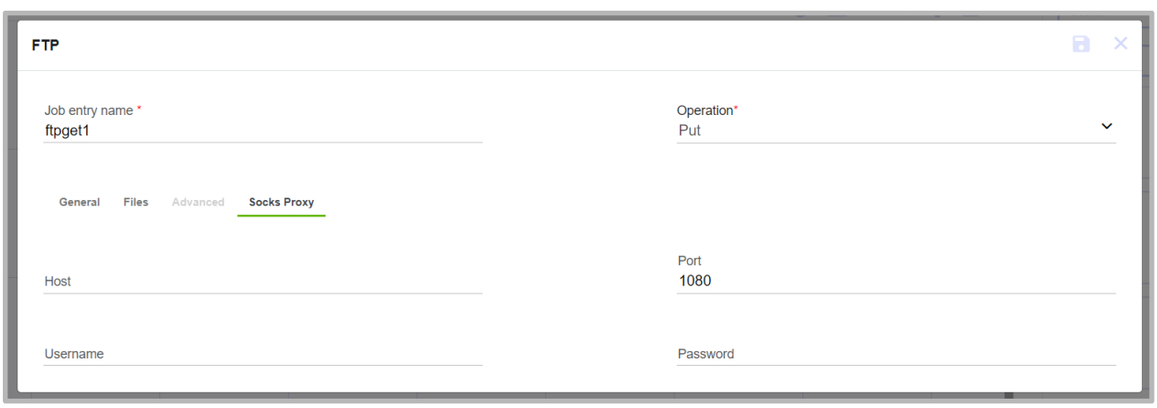


Options

A table given below describes the options for Files Tab.

Name	Description
Local directory	The local directory from which the files are taken
Wildcard (regular expression)	Regular expression to select multiple files For example: .txt$: get all text files A.ENG:0-9.txt : files starting with A, ending with a number and .txt
Remove files after transferal?	Remove the files on the local machine, but only after all selected files have been successfully transferred
Don't overwrite files	Check this field to skip, rename, or fail if a file with an identical name already exists in the Target director
Remote directory	The remote directory on FTP Server is where the retrieved files needs to be placed

Socks Proxy Tab



Options

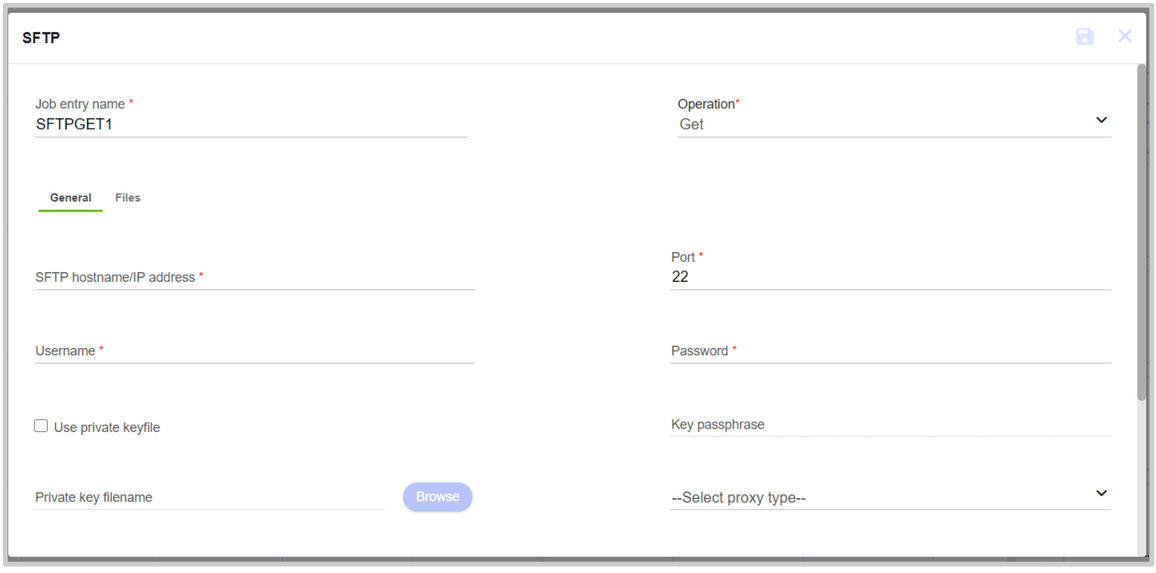
A table given below describes the options for Socks Proxy Tab.

Name	Description
Host	Socks Proxy host name
Port	Socks Proxy port number
Username	User name associated with the Socks Proxy account
Password	Password associated with the Socks Proxy account

SFTP Get

Use the SFTP GET job entry to retrieve one or more files from the FTP server using the Secure FTP protocol.

General Tab



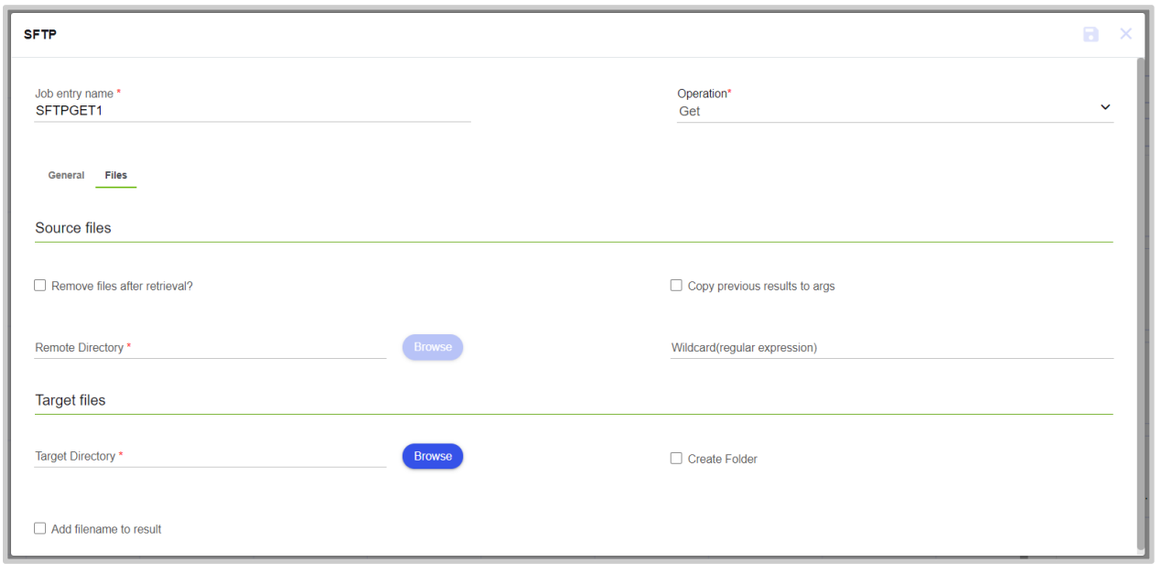
Options

A table given below describes the options for SFTP.

Name	Description
job entry name	The name of the job entry The name has to be unique in a single job A job entry can be placed several times on the canvas, however it will be the same job entry
SFTP-server name /IP	The name of the SFTP server or the IP address
SFTP port	The TCP port to use. This is usually 22
User name	The user name to log into the SFTP server
Password	The password to log into the SFTP server
Use private keyfile	Indicates whether or not a private keyfile is to be used

Private key filename	If "Use private keyfile" is checked then this field is enabled The file can be browsed using the browse button to the right of the field The Private Key should be in the PEM file format For PuTTY-based Private Keys, use PuTTYgen to convert the file into "OpenSSH" format
Key passphrase	If "Use private keyfile" is checked then this field is enabled If a passphrase is required then enter it here
Proxy type	The proxy type (SOCKS5, HTTP) of the specified proxy server
Proxy host	The host name or the IP address of the proxy server
Proxy port	The port of the proxy server to connect to
Proxy username	The username to log into the proxy server as
Proxy password	The password associated with "Proxy username"
Compression	The compression to use in the file transfer. Current options are "none" and "zlib"

Files Tab



Options

A table given below describes the options for SFTP Get.

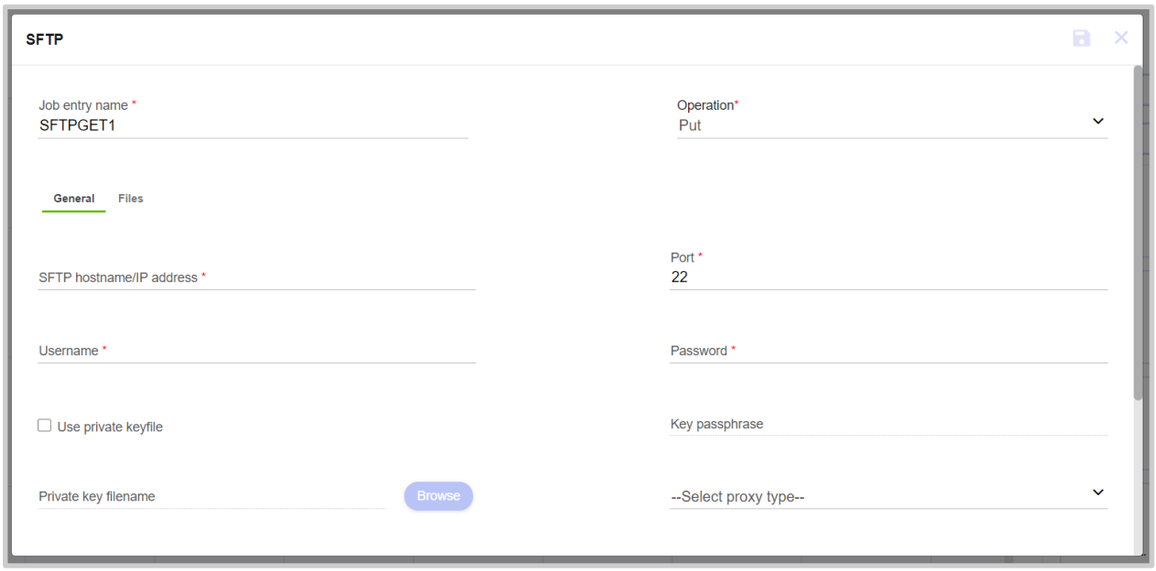
Name	Description
Copy previous results to args	If files to send are dynamically generated by another Flow or if there is a need to identify files to send, check this option Flodata will select files list from previous result rows (not result files) and send these files
Remote Directory	The remote directory on the SFTP is used to get the Files Use the "test folder" button to connect to the remote server and validate that the folder exists
Wildcard (regular expression)	Specify a regular expression here if required to select multiple files For example:

	{code} .*txt$: get all text files A.*[ENG:0-9].txt : files starting with A, ending with a number and .txt {code}
Remove files after retrieval	Delete the remote file after the file is transferred
Target Directory	The remote directory on the SFTP server is used to get the files Use the "test folder" button to connect to the remote server and validate that the folder exists
Create Target folder	Check this option if the destination folder does not exist and should be created
Add filenames to result	{code} If checked the name of the file is added to the result stream. {code}

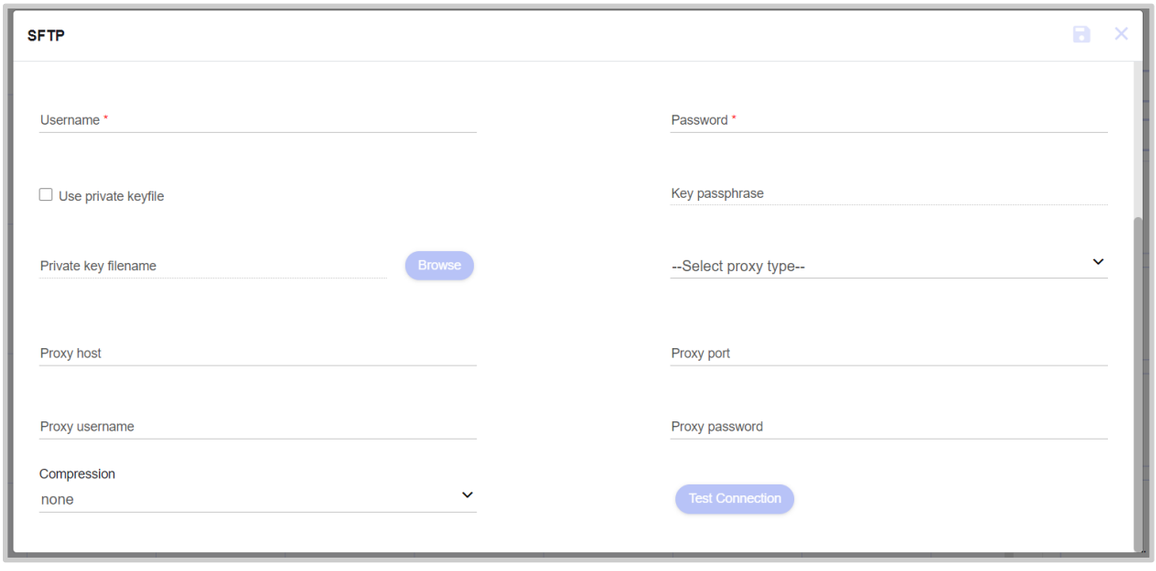
SFTP put

Use the Put files with SFTP Job entry to put one or more files from the FTP server using the Secure FTP protocol.

General Tab



Cont'd...

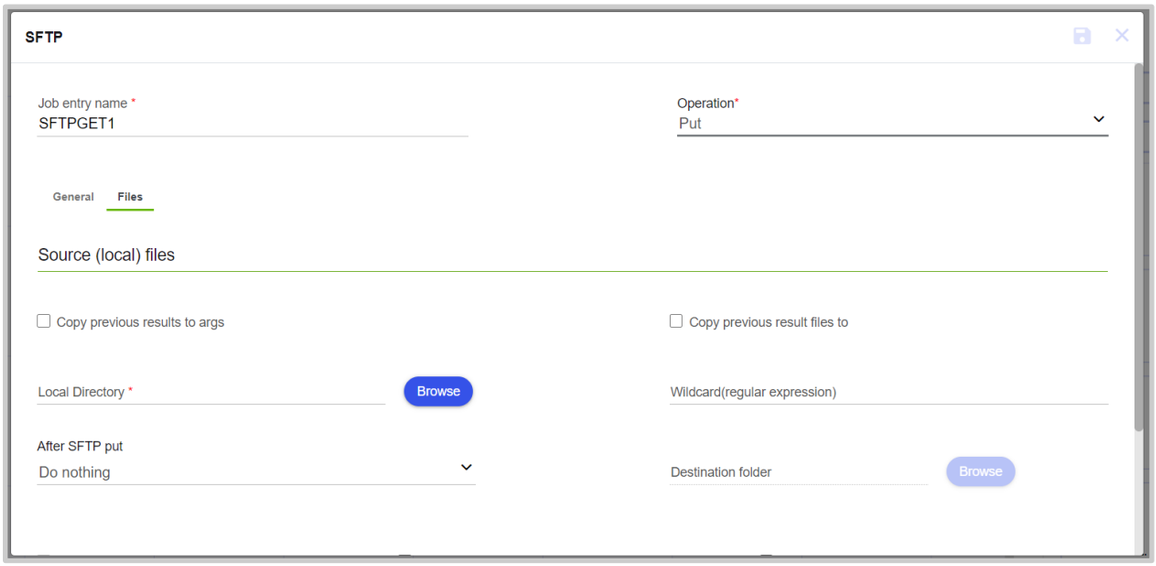


Options

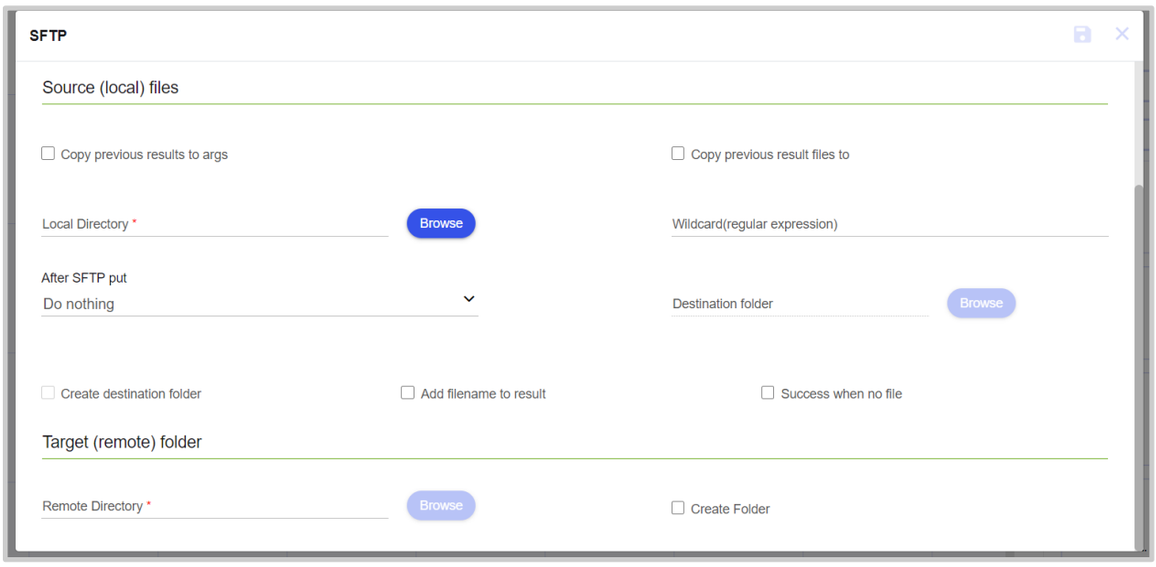
A table given below describes the options for SFTP Put.

Name	Description
Job entry name	The name of the job entry The name has to be unique in a single job It can be placed several times on the canvas, however it will be the same job entry
SFTP-server name /IP	The name of the SFTP server or the IP address
SFTP port	The TCP port to use This is usually 22
User name	The username to log into the SFTP server
Password	The password to log into the SFTP server
Use private keyfile	Indicates whether or not a private keyfile is to be used
Private key filename	If "Use private keyfile" is checked then this field is enabled The file can be browsed by using the browse option available to the right of the field The Private Key should be in the PEM file format For PuTTY-based Private Keys, use PuTTYgen to convert the file into "OpenSSH" format
Key passphrase	If "Use private keyfile" is checked then this field is enabled If a passphrase is required then enter it here
Proxy type	The proxy type (SOCKS5, HTTP) of the specified proxy server
Proxy host	The host name or the IP address of the proxy server
Proxy port	The port of the proxy server to connect to
Proxy username	The username to log into the proxy server as
Proxy password	The password associated with "Proxy username"
Compression	The compression to use in the file transfer Current options are "none" and "zlib"

Files Tab



Cont'd…



Options

A table given below describes the options for Files Tab (SFTP Put).

Name	Description
Copy previous results to args	If files to send are dynamically generated by another Flow or if required to identify files to send, check this option Flodata will select files list from previous result rows and send these files If the file cannot be found, Flodata will ignore it
Copy previous result files to args	If files to send are dynamically generated by another Flow or job entry or if required to identify files to sent, please check this option Flodata will select files from previous files result entry and send these files If the file cannot be found, Flodata will ignore it
Local directory	The directory on the machine on which app-engine runs from which required to FTP the files from
Success when no file	Check this option if the job entry has to success when there is no file to process otherwise the job will fail
After SFTP Put	Action to take after the file is transferred

	The actions are "Do nothing", "Delete file" and "Move file to"
Destination folder	Enabled if "After SFTP Put" is set to "Move file to" The destination on the Source file for the move is specified here Now, browse the destination folder
Create destination folder	Enabled if "After SFTP Put" is set to "Move file to" If the "Destination folder" does not exists check this option to create it.
Add filename to result	Enabled if "After SFTP Put" is set to "Do nothing" If checked the name of the file is added to the result stream
Remote directory	The remote directory on the SFTP server is used to get the files Use "test folder" to connect to the remote server and validate that the folder exists
Create folder	Check this option if the destination folder does not exist and should be created

Webservice Connector

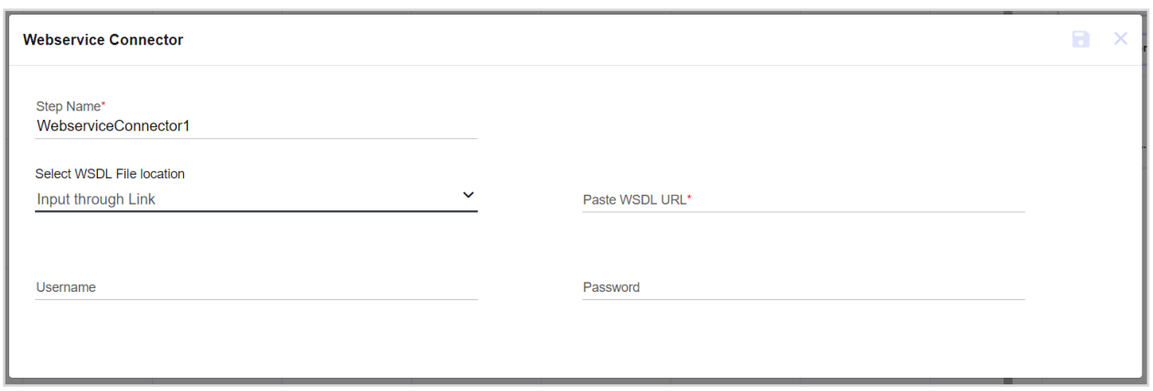
Webservice Connector is used for accessing SOAP based webservices

SOAP based webservice are usually shared to the users in the form of WSDL and our connector provides WSDL selection via link or file.

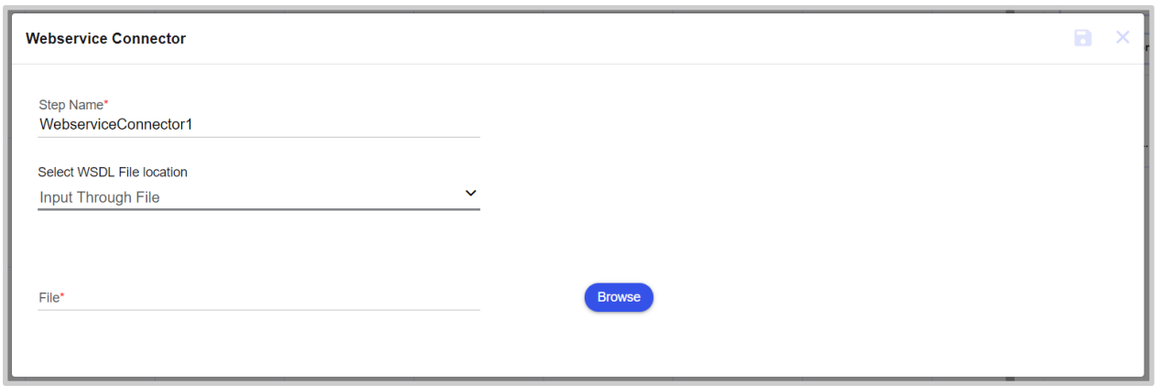
Once we choose WSDL either via link or file, we have to click on Get Operation to fetch operations available in that webservice.

Each operation will have request and response fields, which are shown in Fields table upon choosing the operation for request fields values can be inserted from input fields.

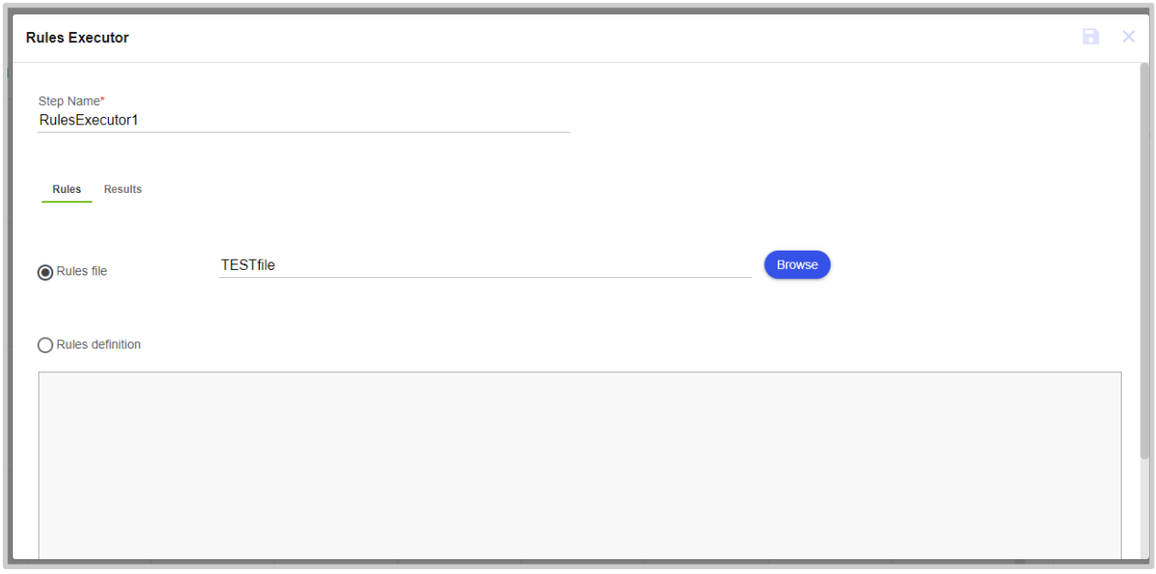
Cont'd…



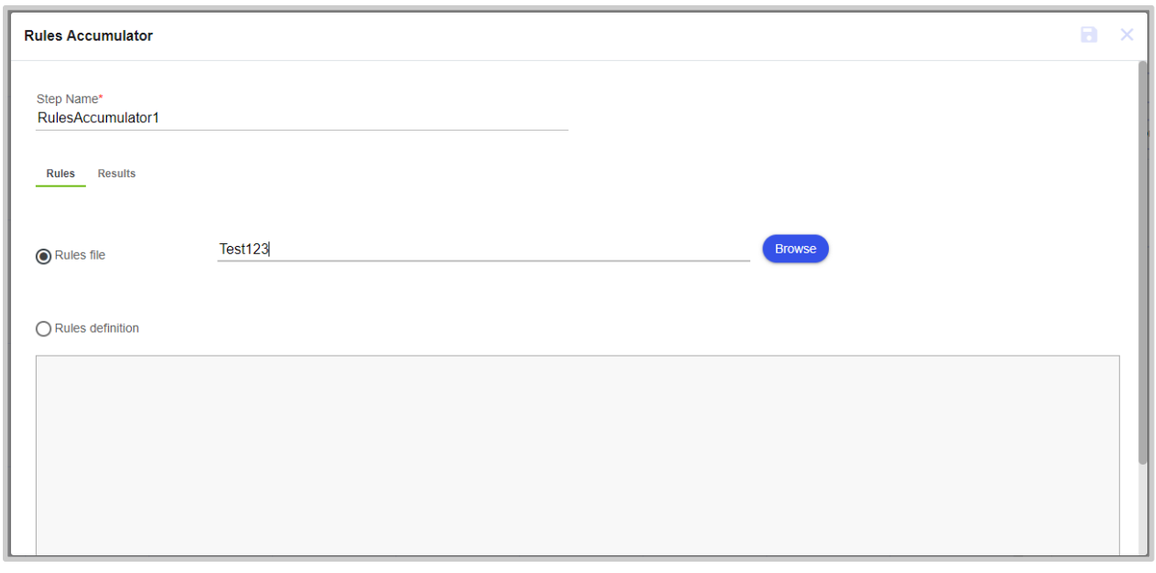
Input Through File



Rules Executor

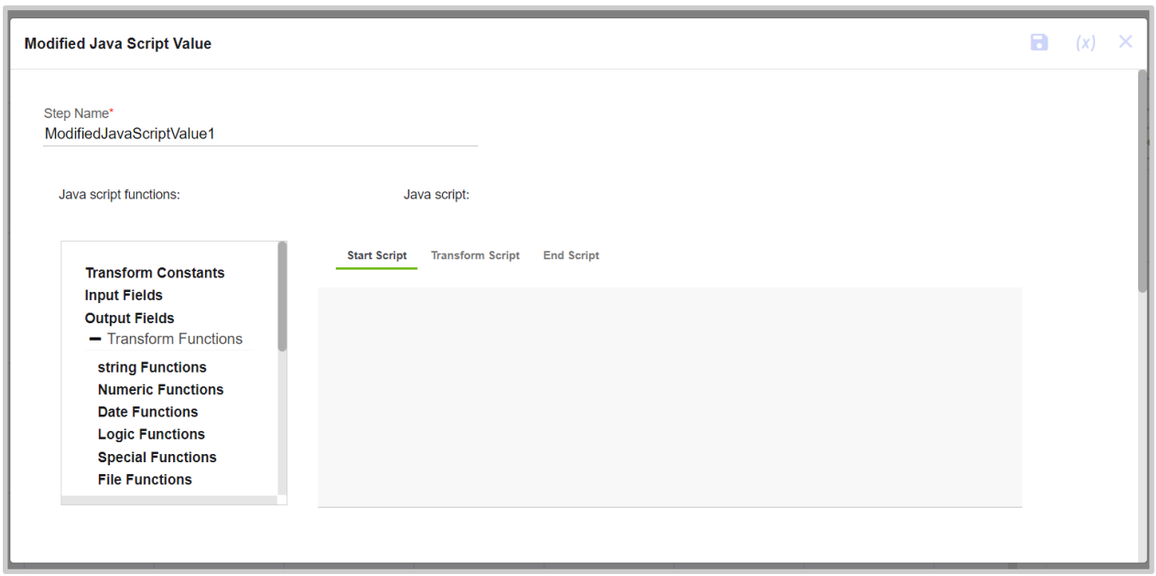


Rules Accumulator



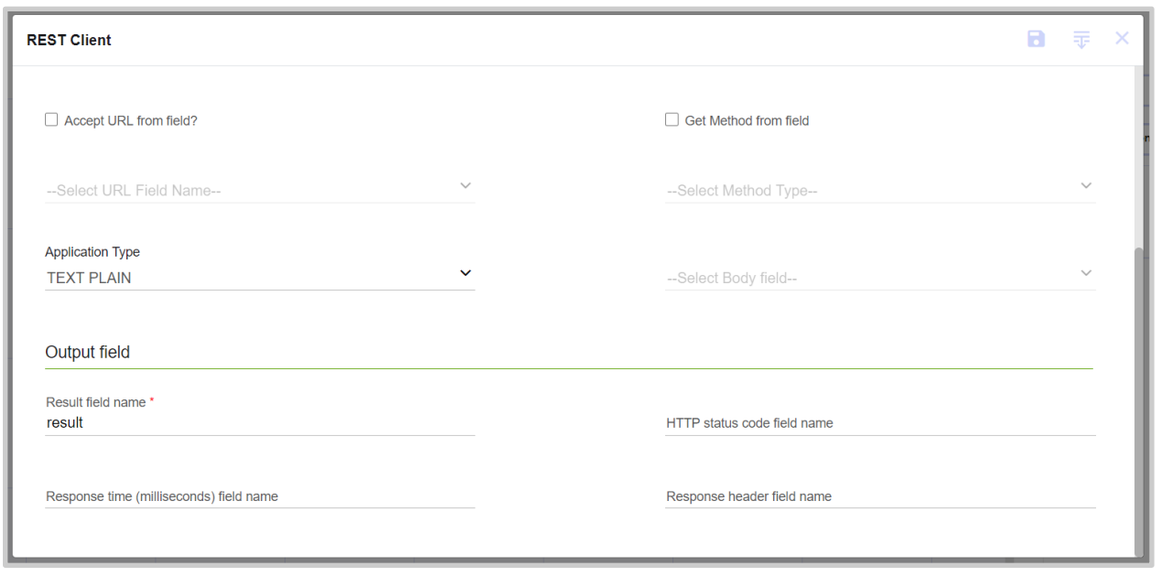
Modified Java Script

This provides better performance and an easier, expression based user interface for building JavaScript expressions. This step also allows a user to create multiple scripts for each step.

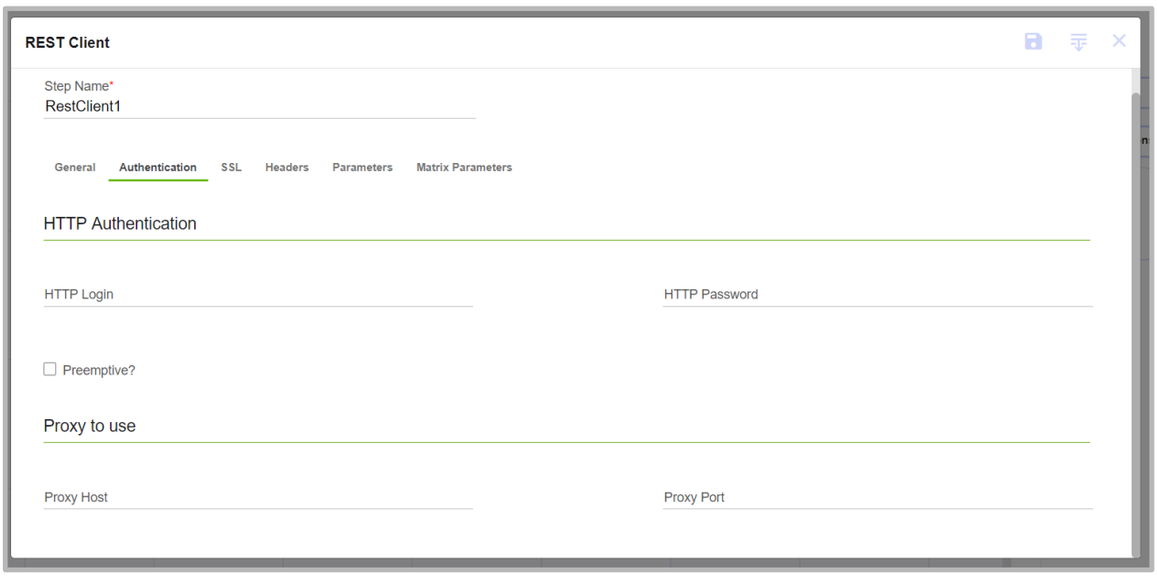


Rest Client

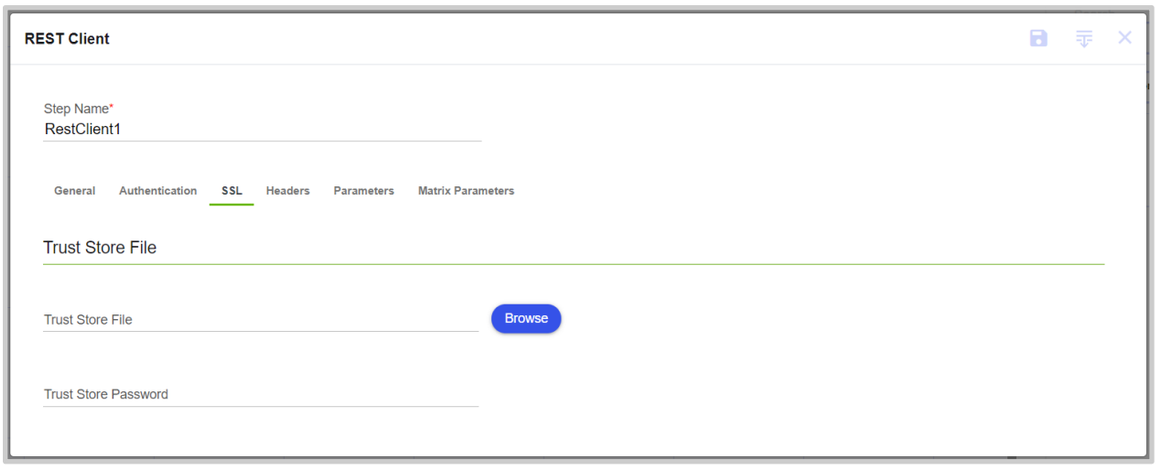
This step enables a user to consume RESTfull services.



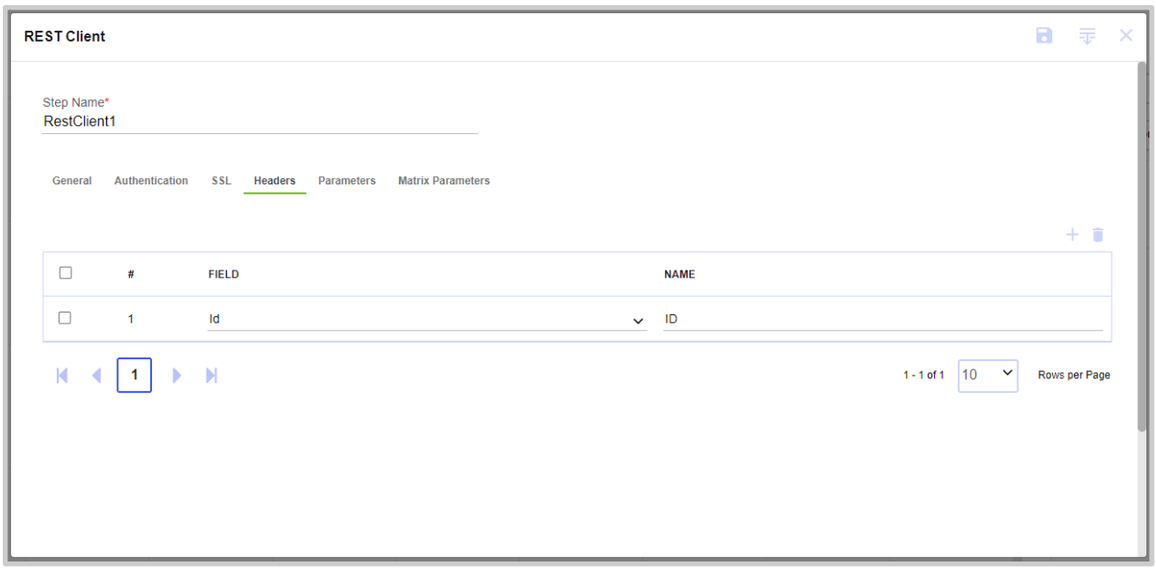
Authentication Tab



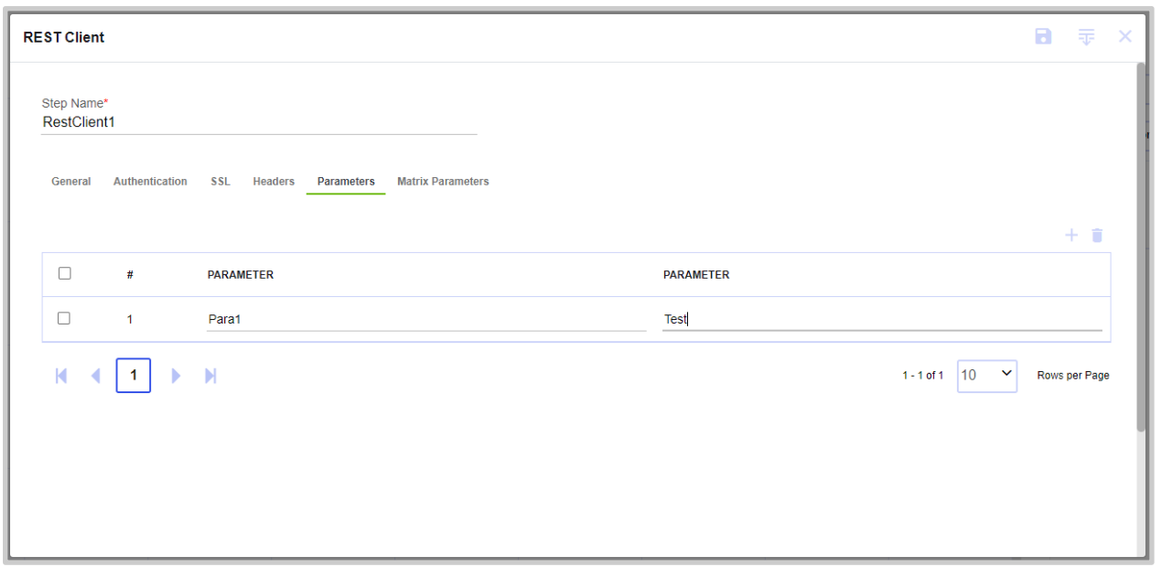
SSL



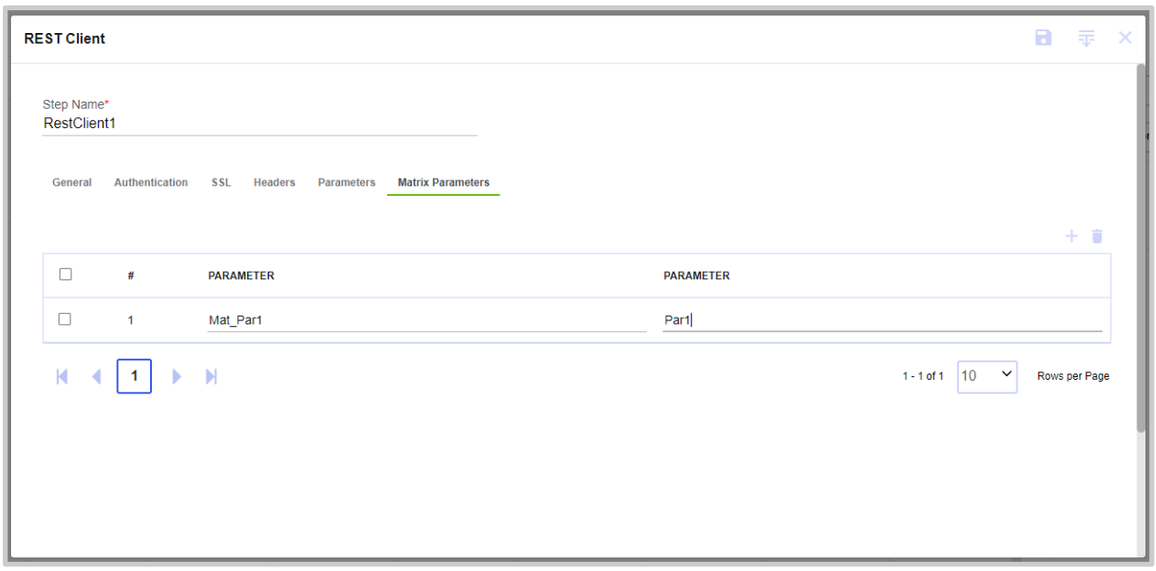
Headers



Parameters

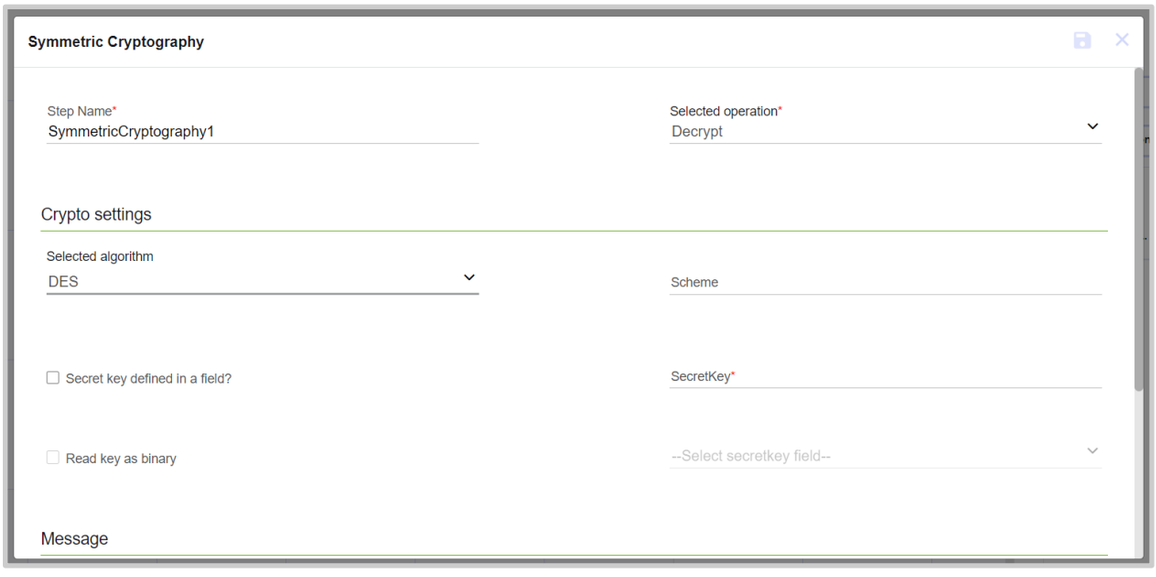


Matrix Parameters



Symmetric Cryptography Encrypt

Cont'd...



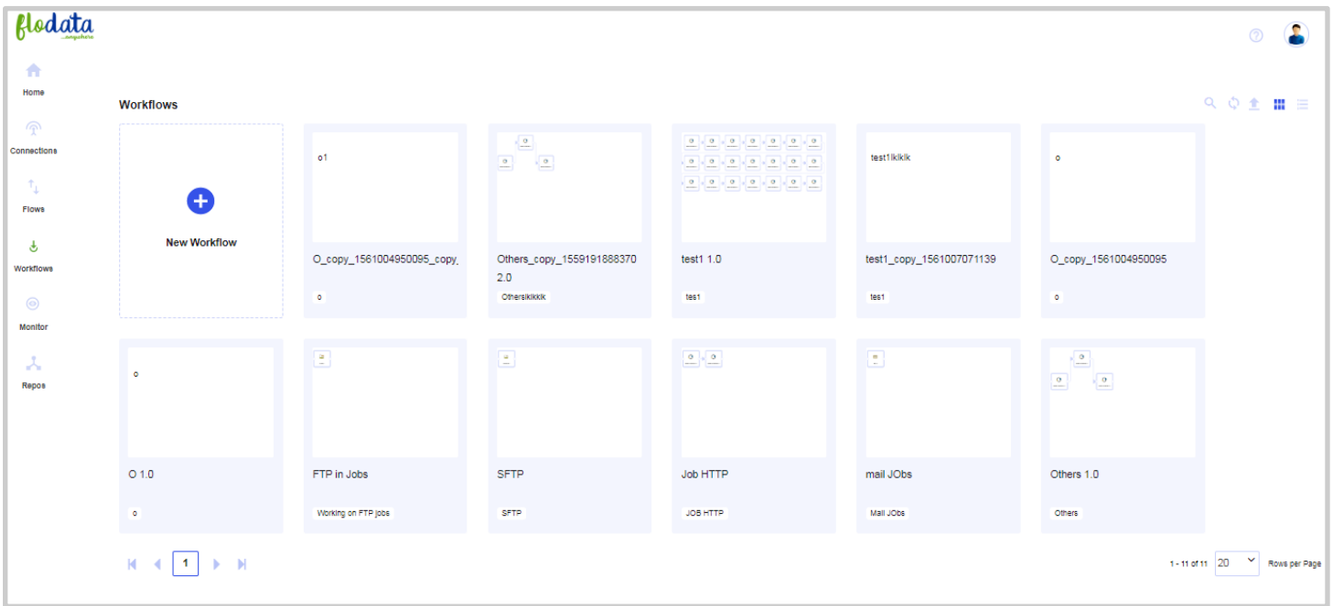
Cont'd...


Symmetric Cryptography
Secret key defined in a field?
SecretKey*
Read key as binary
--Select secretkey field--
Message
--Select message field name--
Result Fields
Save result as binary
Result Fieldname*
result

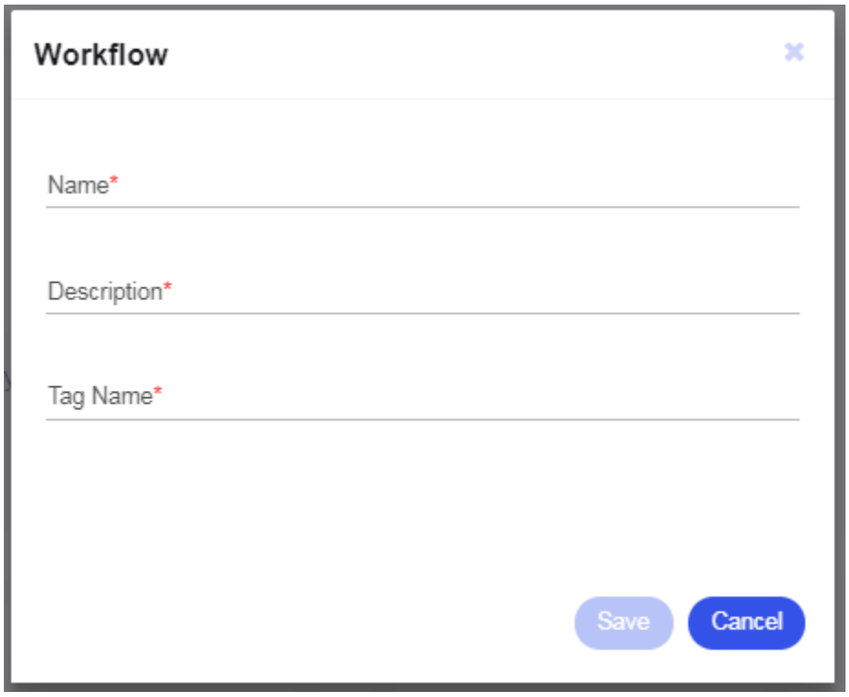
Workflows

The following is a grid view of the Workflow section.

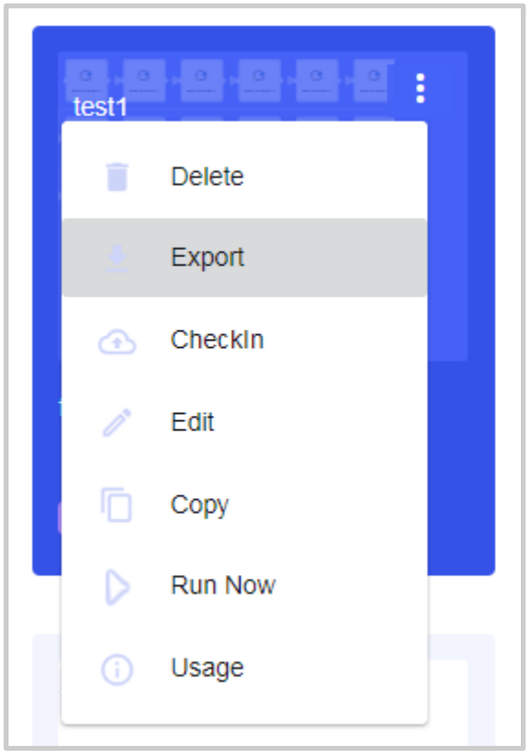
It is also presented in GridView which is given below.



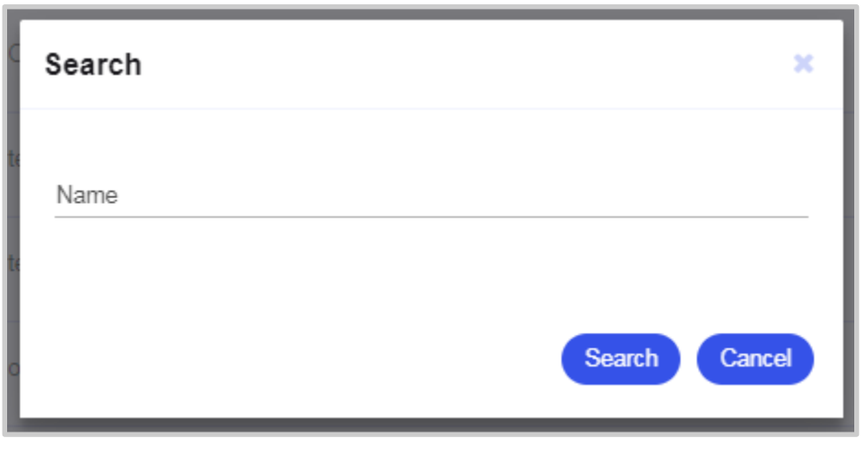
Click  to add a new Workflow. A window appears to enter details such as Name*, Description* and Tag Name*. Click Save or Cancel as required.



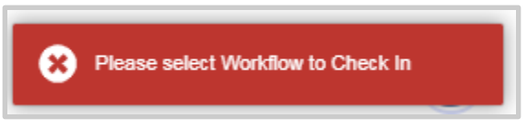
The options to Delete, Export, Check In, Edit, Copy, Run Now and Usage is available on the right click on the .



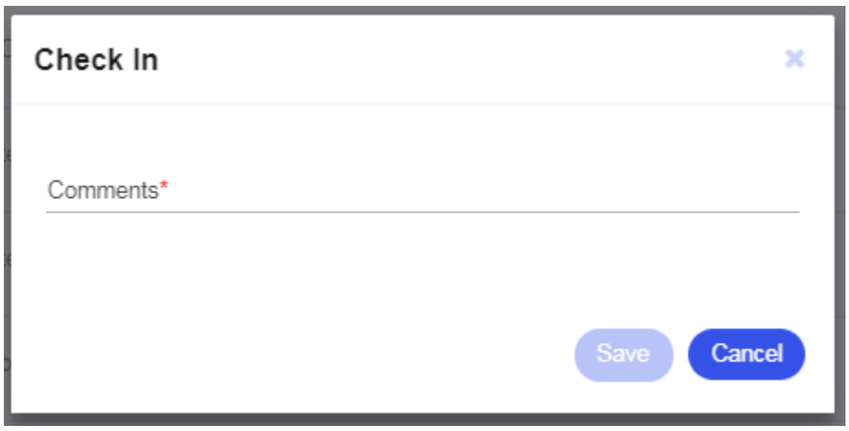
Click to search an existing Workflows in the application.



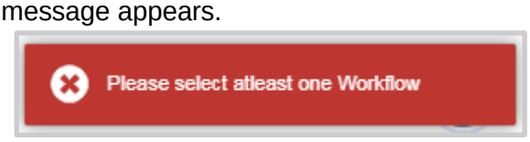
Click to Check In a Workflow. It is mandatory to click a checkbox against the Workflow in order to check in or else an error message appears.



Now, when a Workflow is selected, click . A window opens to enter Comments*. Click Save or Cancel as required.



Click to export a Workflow. It is mandatory to click a checkbox against the Workflow in order to export or else an error message appears.



Monitor

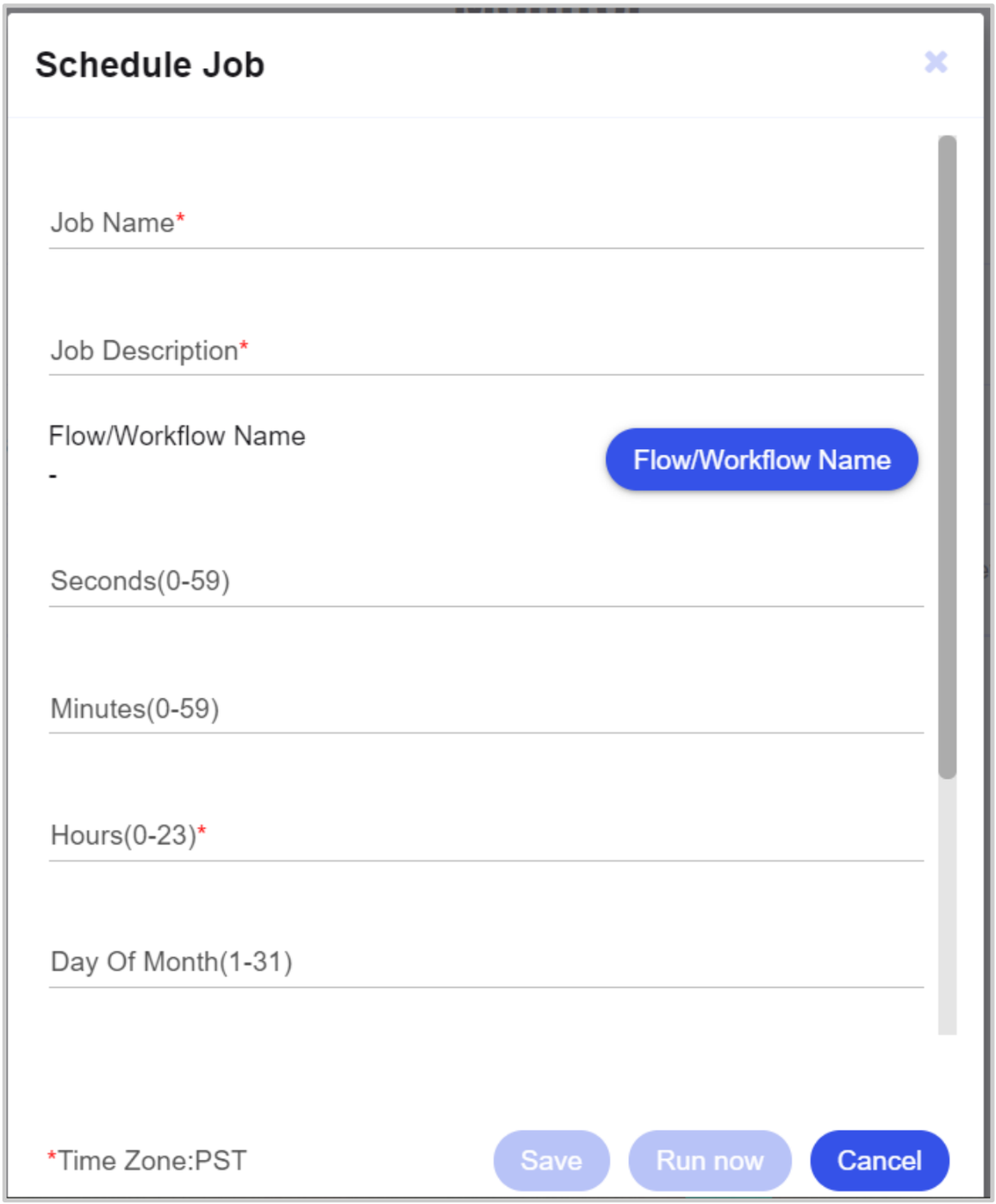
Monitor provides features such as Job Schedule and Job Monitor.

Job Schedule

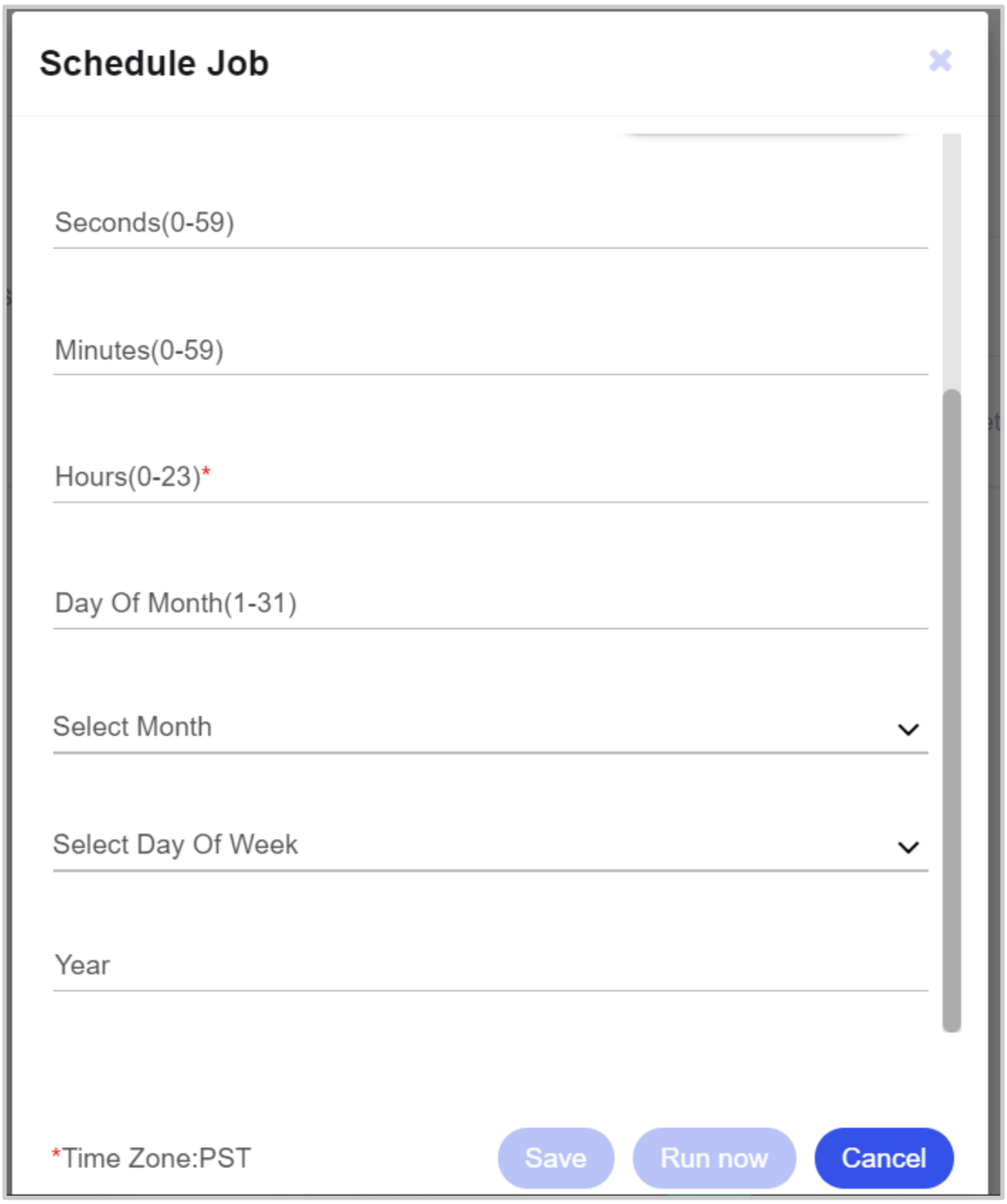
Job Schedule executes the Flow & Workflow periodically. Its functionality is similar to the Unix Cron job.

To Schedule a Job

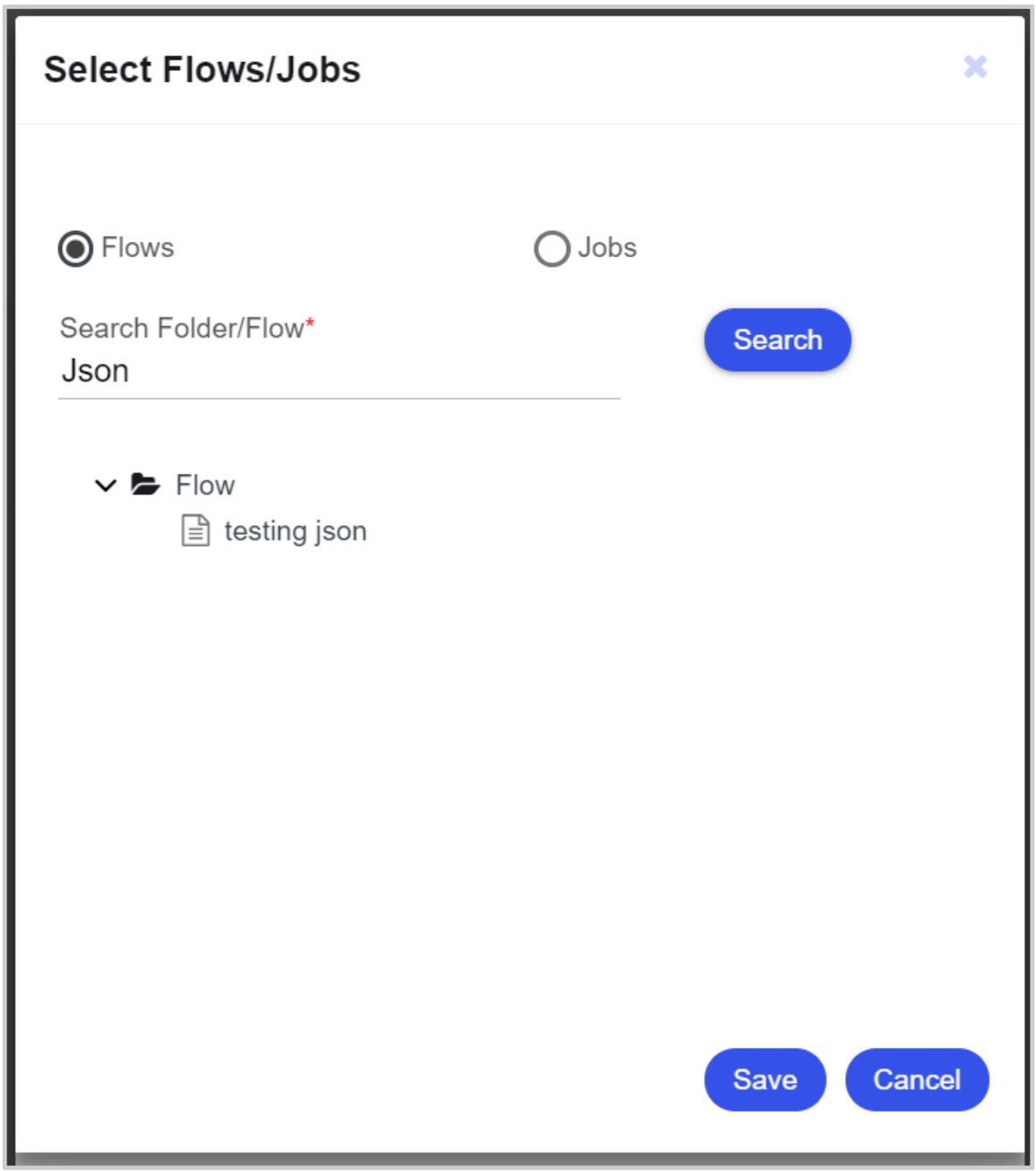
Click + icon, a dialogue box shows up to enter Job Name, Job Description, Time and Frequency on which Job should be running.



Cont'd...



Click **Flows/Jobs** Name. A dialogue box shows up to Select Flow/Workflow.



Search Flow/Workflow

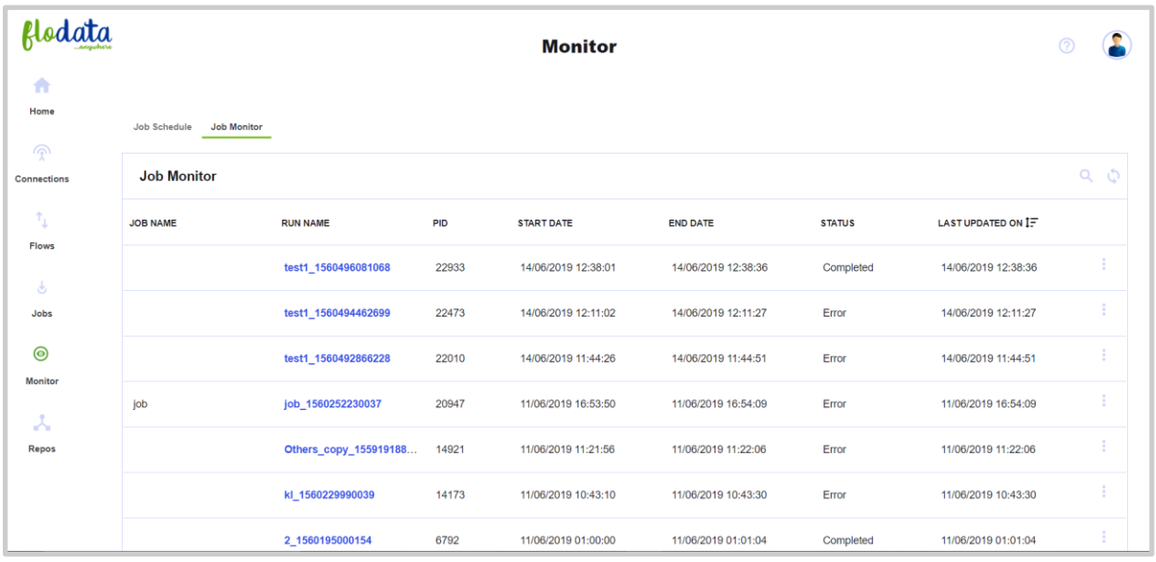
- Search the required Folder/Flows.
- Choose one of the two radio buttons for Flow andJobs.
- Enter the name of the Flows/WorkFlows.
- Click Search. The application performs case insensitive search and shows the result of the same page.
- Select the Flows/Workflows and click Save.

Enter the required fields to enable Run Now and Save.

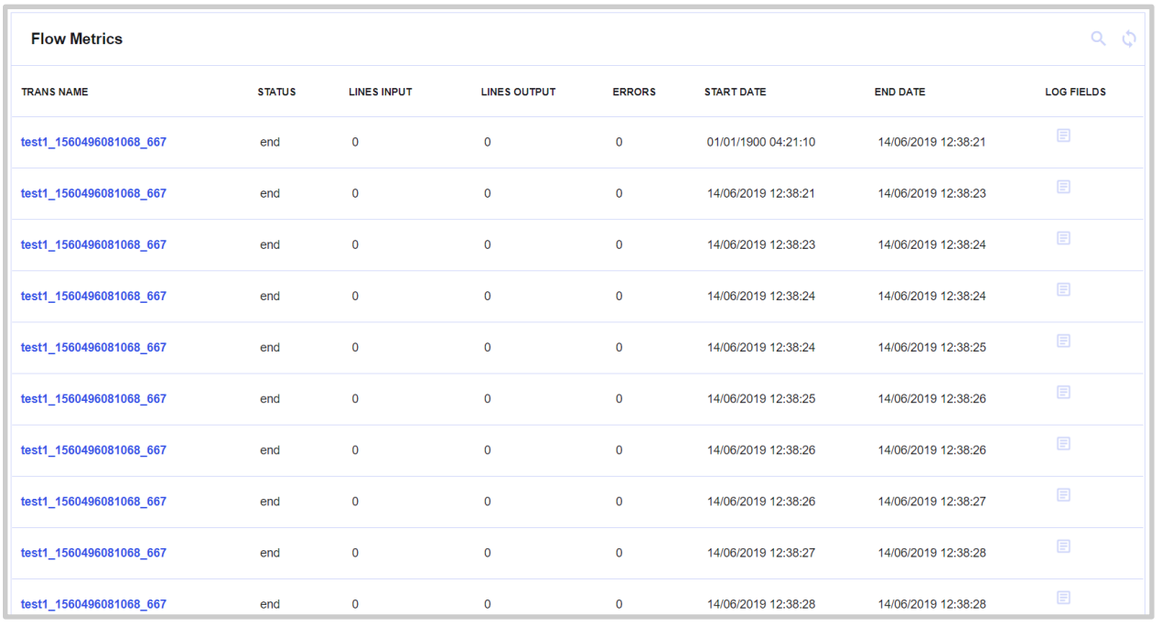
Click  to execute the flow. It would run immediately but for just once. Though, there is no restriction on the number of times to click Run Now.

Click **Save** to schedule Job at the required frequency.

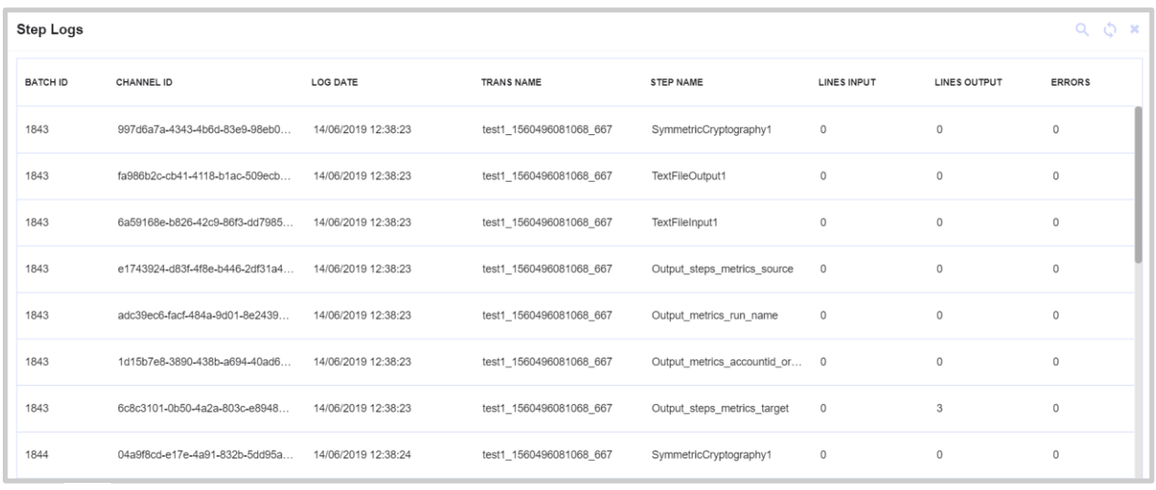
Job Monitor



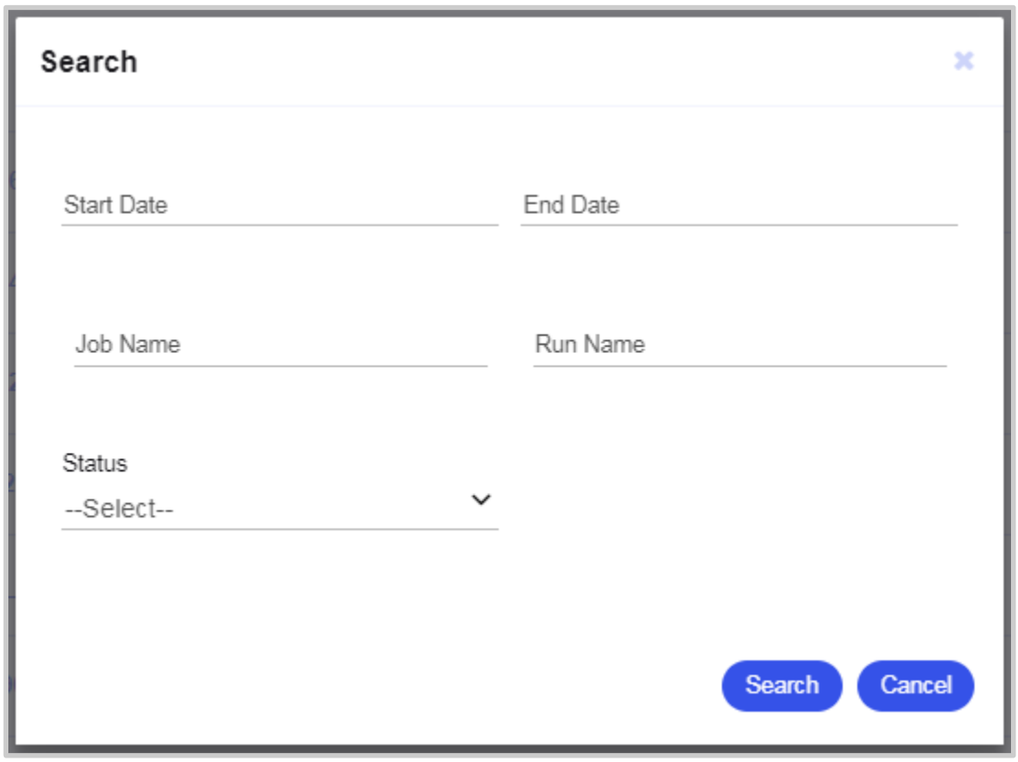
Flow Metrics



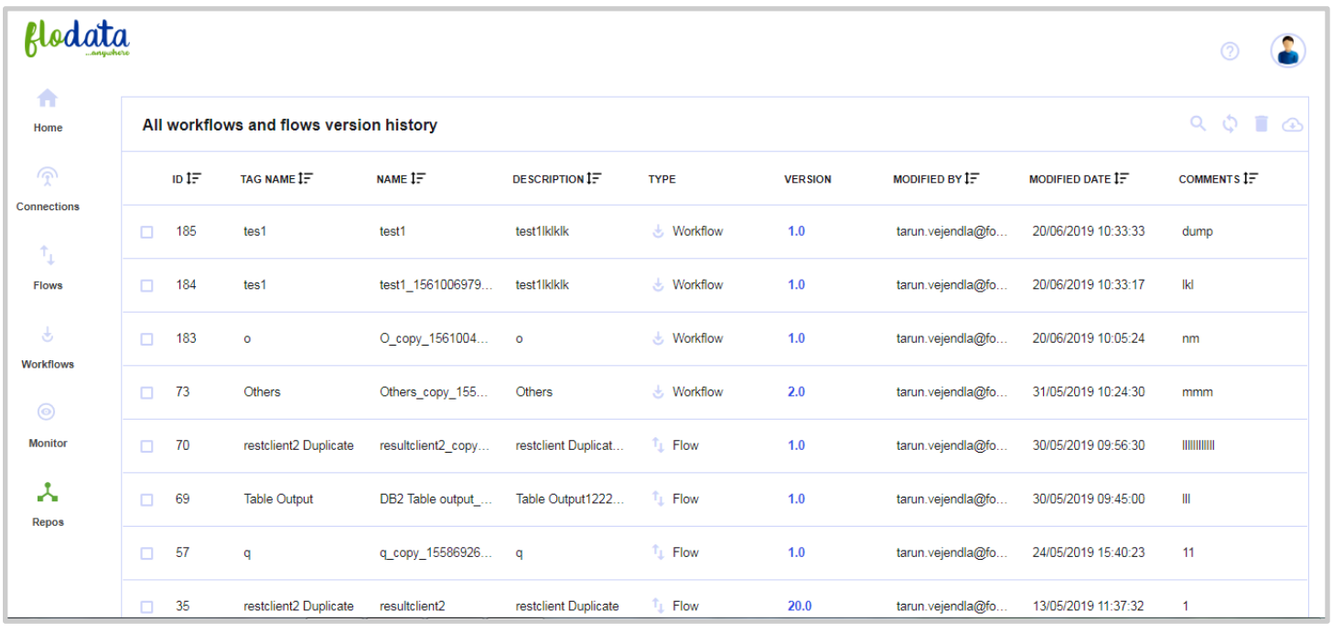
Step Logs



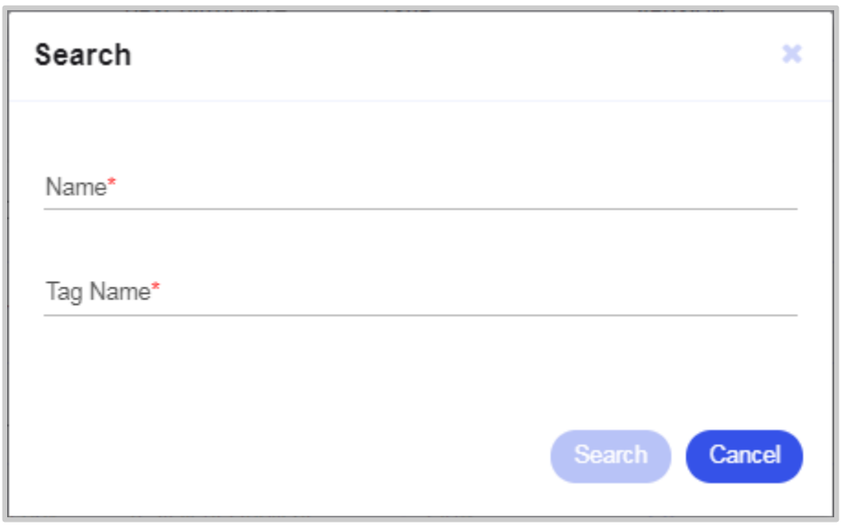
Click to search a job record. Enter details such as Start Date, End Date, Job Name, Run Name and Status. Click Search or Cancel as required.



Repos

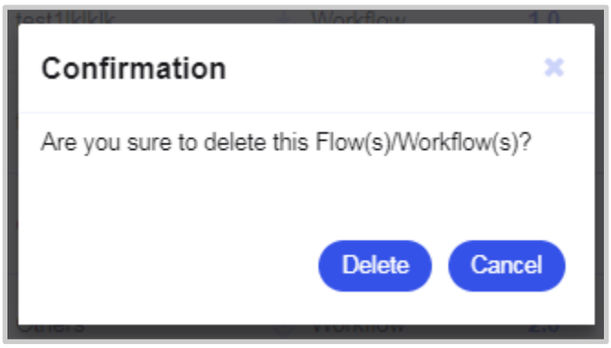


Click to search for any workflow. A window appears to enter details such as Name* and Tag Name*. Click Search or Cancel as required.

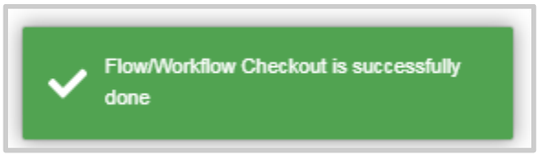


Click to reset the repository.

Click to delete a flow. It is mandatory to click a box against the flow.



Click to check out flow. It is mandatory to click a box against the flow to be checked-out. Once selected, a success message appears on the right side of the screen.



xxxxx_____xxxxx_____
__xxxxx

Glossary

FTP - File Transfer Protocol

SFTP - Secure File Transfer Protocol

ARGS - Arrangement as an array of strings

WSDL - Web Services Descriptive Language

SQL - Structured Query Language

JDBC - Java Database Connectivity

SOAP - Simple Object Access Protocol

LDAP - Lightweight Directory Access Protocol

JMS - Java Message Service

REST - Representational State Transfer

JSON - JavaScript Object Notation

XML - Extensible Markup Language

WSDL - Web Service Description Language

Note: The mandatory fields are marked with * in the application.