AZURE DOCUMENTATION

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Table of Content

User Story 1:

Create an ADF Pipeline to read and write files in Azure Data Lake Gen 2 using Azure Data Factory

Description: Azure Data Lake Gen 2(ADLS) is a storage service provided by Microsoft Azure which allows you to save the data in multiple format.

• Create an input and output container with the naming convention input_modakid and output_modakid(example input_vkg92599)

• Upload the files attached in this story to the input container of the datalake

• Create a pipeline in Azure Data Factory(ADF) to migrate the files from input to output container.

Acceptance Criteria:

• Validate the migration of files using UI

• open the csv file to verify if the data was migrated in the same format

• Record (Screenshots) and document the steps

• verify the story with your team lead

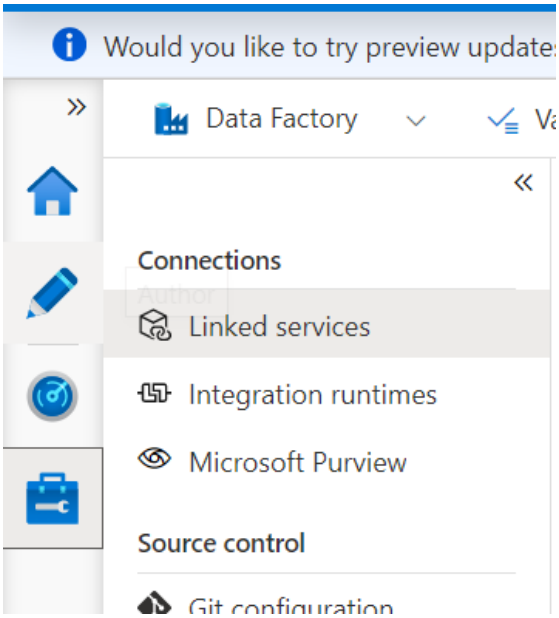
Story Points: 1

Linked Service for Source :

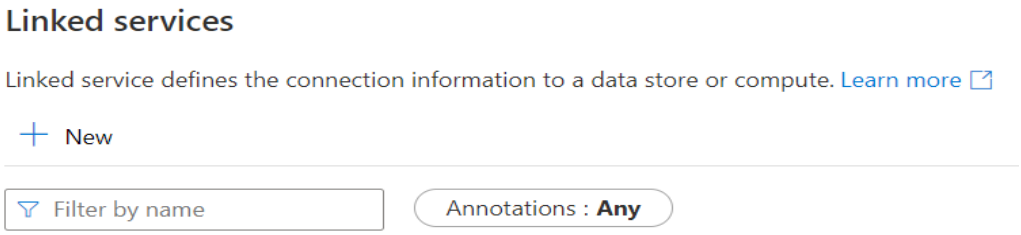
- Created a linked service to link your data store to the Data Factory or Synapse Workspace.
- Linked services are much like connection strings, which define the connection information needed for the service to connect to external resources.
- To create a new linked service in Azure Data Factory Studio.
- Select the Manage tab and then linked services, where you can see any existing linked services you defined. Select New to create a new linked service.
- After selecting New to create a new linked service you will be able to choose any of the supported connectors and configure its details accordingly.
- Selected the Azure Storage gen 2 to create linked Service for it.

Steps Screenshots :

- Select the Manage tab and then linked services, where you can see any existing linked services you defined.



- Select New to create a new linked service.



- Choose any of the supported connectors and configure its details accordingly.
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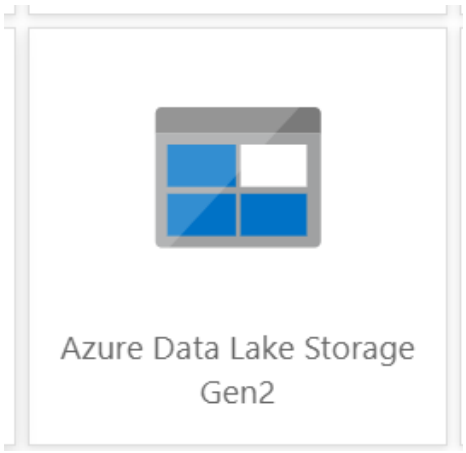
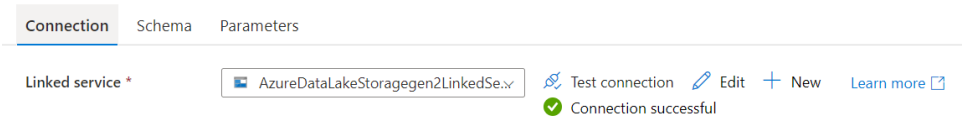


- Created a Linked Service for Azure data lake Storage 2 .

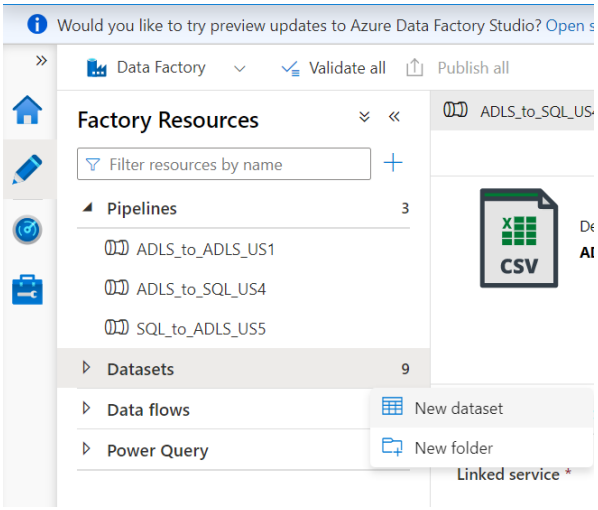
Testing Connection :

- After creation of Connection it was tested.
- The test was successful.

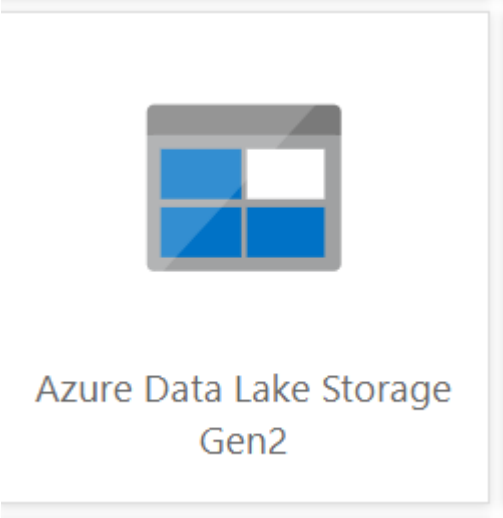


Creating a Dataset for Source :

- An activity can take zero or more input datasets, and produce one or more output datasets.
- An input dataset represents the input for an activity in the pipeline, and an output dataset represents the output for the activity.
- Datasets identify data within different data stores, such as tables, files, folders, and documents.
- Select New dataset to create a new dataset.



- Select the data store for creating a data store.



- Select the Linked Service which was created for that data store.

Preview the dataset :

- Previewed data to see whether dataset was created or not successfully.

Preview data

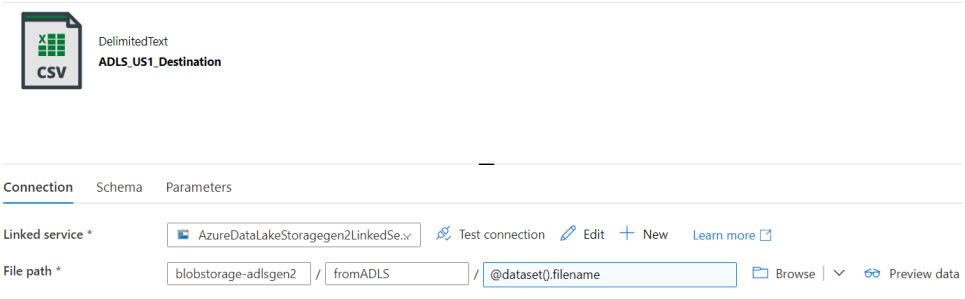
Linked service: AzureDataLakeStoragegen2LinkedService1

Object:

Prop_0	Prop_1	Prop_2
id	ename	state
5001	Sanjana	Telangana
5002	Venkata	Telanaga
5005	Manal	Tamil Nadu

Dataset for Destination :

- In the same way created a data set for destination .



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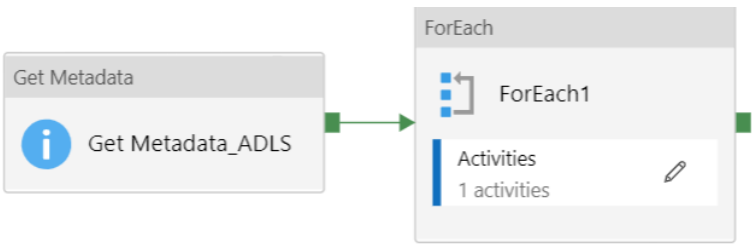

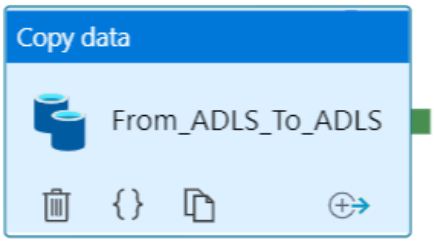

Activities :

Get Metadata :

- Activity can be used to retrieve the metadata of any type of file, folder or relational database table in Azure Data Factory.
- The Output of the " Get Metadata " Activity can be used in the " Conditional Expressions " to perform Validation, or, Consume the Metadata in the Subsequent Activities.

ForEach :

- The ForEach Activity defines a repeating control flow in an Azure Data Factory or Synapse pipeline.
- This activity is used to iterate over a collection and executes specified activities in a loop.

Copy data :

- In Azure Data Factory and Synapse pipelines, you can use the Copy activity to copy data among data stores located on-premises and in the cloud.
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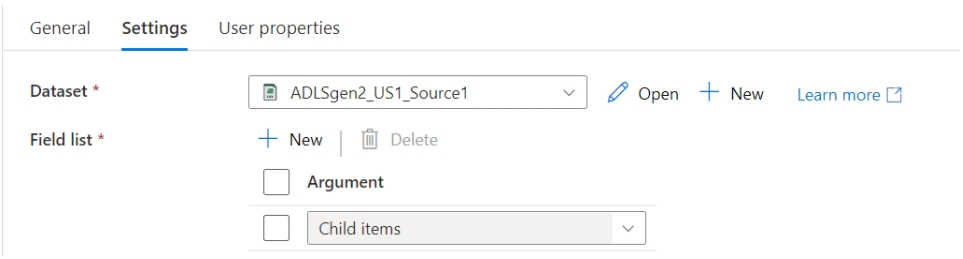
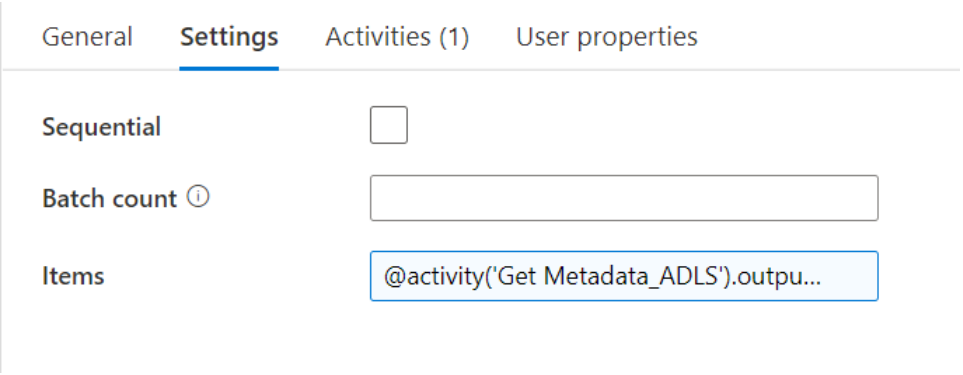
- You can also use the Copy activity to publish transformation and analysis results for business intelligence (BI) and application consumption.

Get Metadata :



- In Mata data dataset was given with was created before.
- In Field list argument was given as Child Items.

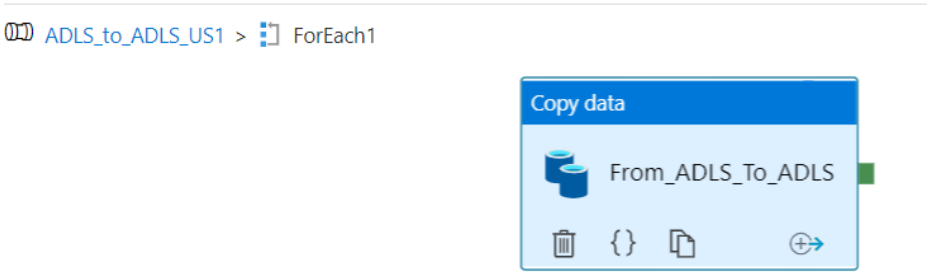
For Each :



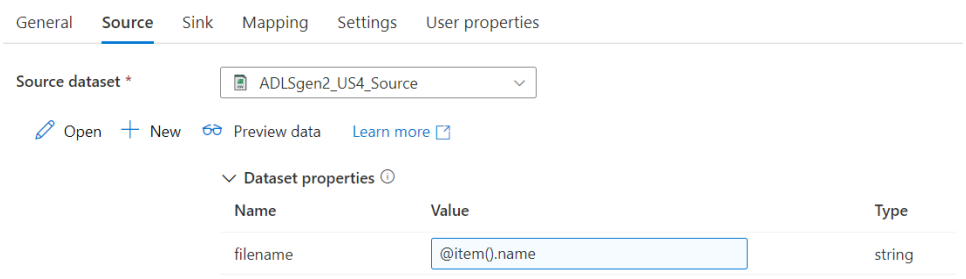
- The For Each will take items from the Get Meta data output.
- @activity('Get Metadata_ADLS').output.childItems was given in items.
- In this we are having one activity that is copy activity.

Copy Activity :

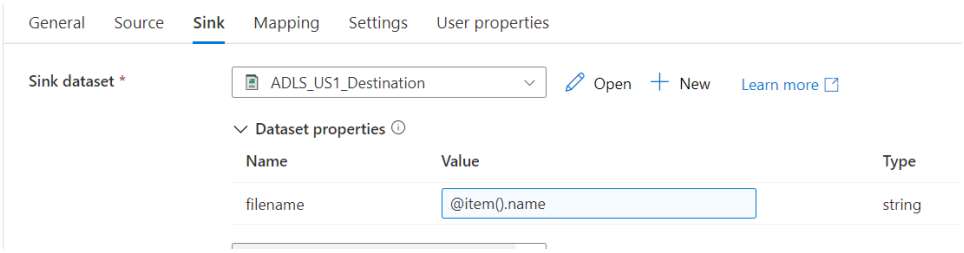
- This is the Copy Activity.



- All the required fields were provided in source.



- All the required fields were provided in destination.



Reading and Writing files in Azure Data Lake Gen 2 :

- Files were sent from source to destination.
- Files were read and written into the Azure Data Lake Gen 2.

User Story 4:

Copy multiple files with same type of data(schema) from ADLS Gen 2 to Azure SQL

Description:

• Upload 4 files into a folder in ADLS Gen2 storage (All the files must contain same type of date i.e. same schema)

• Create a table in Azure SQL database which maps with the schema of files uploaded in datalake

• Create a pipeline to copy data from all the files in the datalake to a single table in Azure SQL Database

Acceptance Criteria:

• Calculate the total rows in Source files and validate the count with the rows in Azure SQL Database

• Record (Screenshots) and document the steps

• Verify the story with your team lead

Story Points: 2

Explanation :

Linked Service for Source :

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- Linked services are much like connection strings, which define the connection information needed for the service to connect to external resources.
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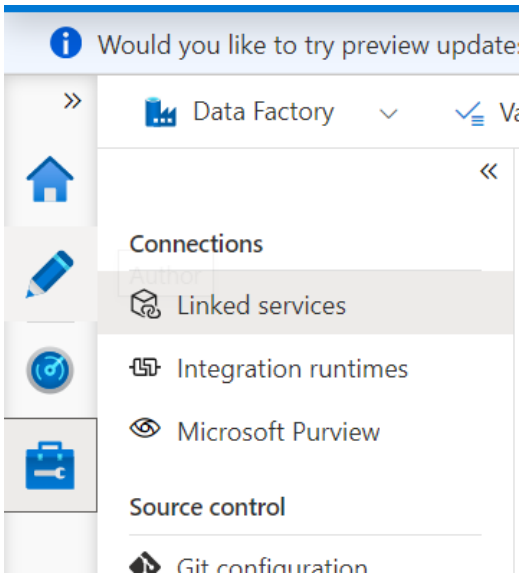
- Select the Manage tab and then linked services, where you can see any existing linked services you defined. Select New to create a new linked service.
- After selecting New to create a new linked service you will be able to choose any of the supported connectors and configure its details accordingly.
- Selected the Azure Storage gen 2 to create linked Service for it.

Steps Screenshots:



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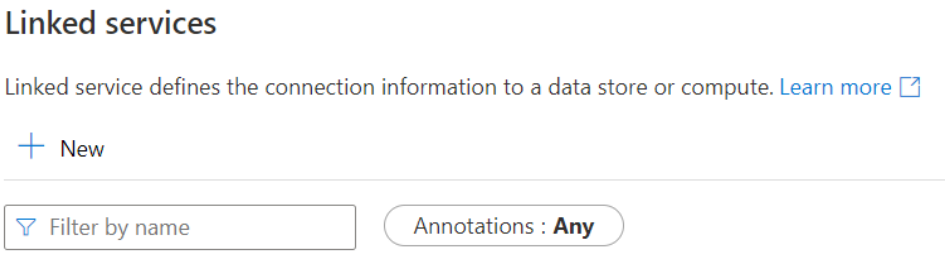
- Select New to create a new linked service.



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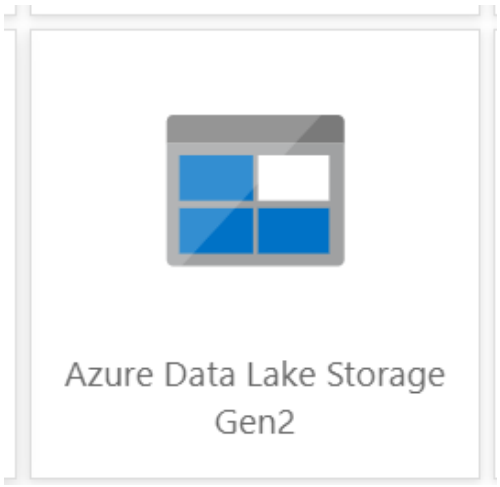

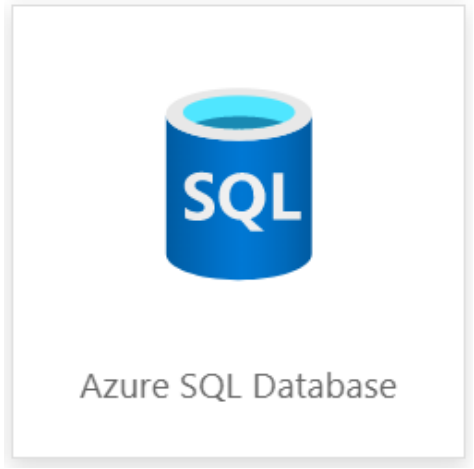

- Created a Linked Service for Azure data lake Storage 2 .

Testing Connection :

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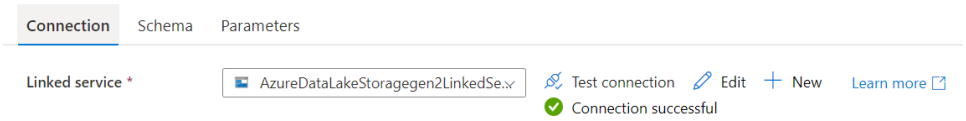
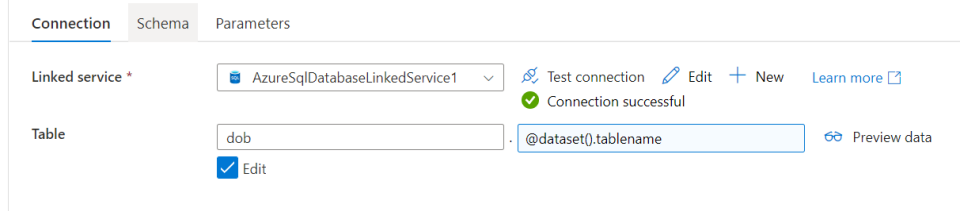
- The test was successful.





- Hence Connection was established.

Creating a Dataset for Source :

- An activity can take zero or more input datasets, and produce one or more output datasets.
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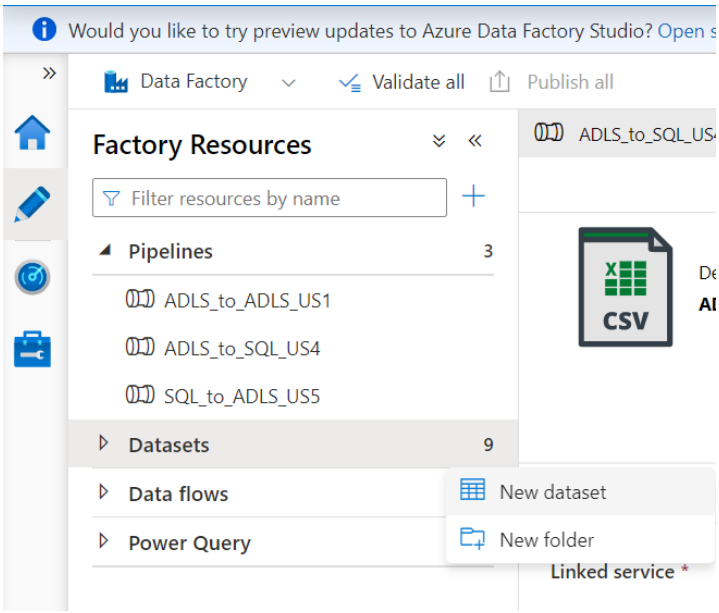

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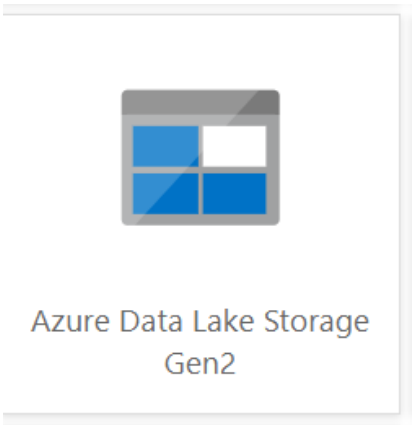

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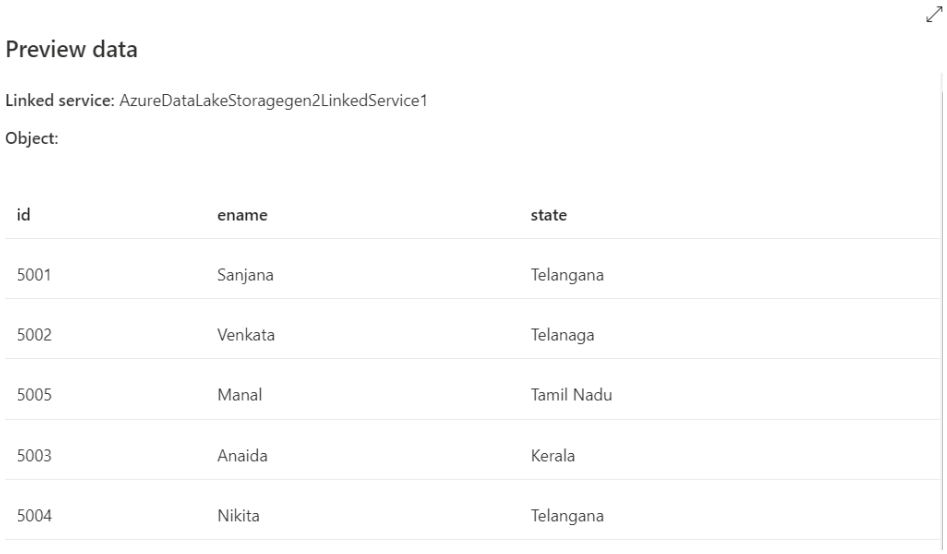

id	ename	state
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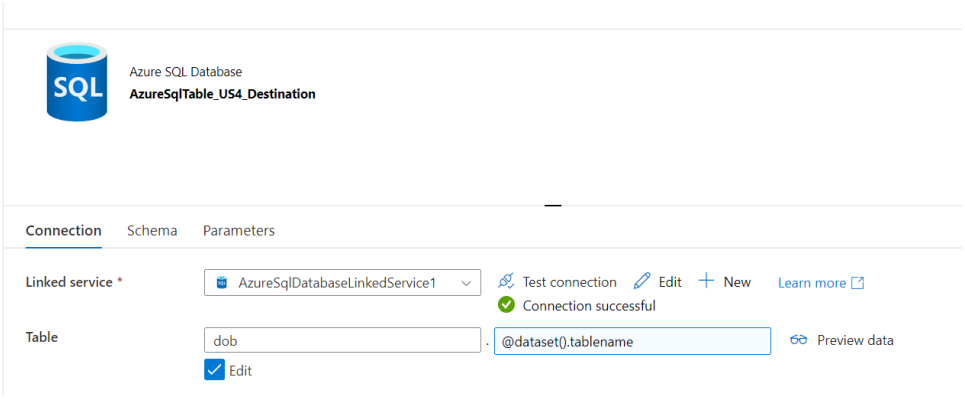

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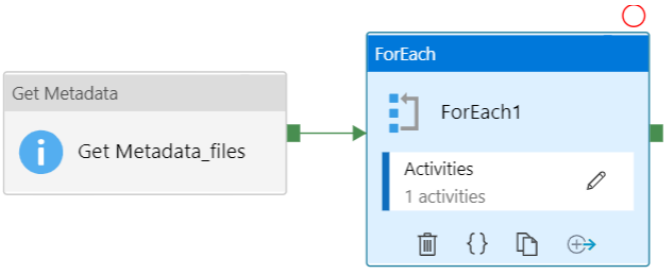

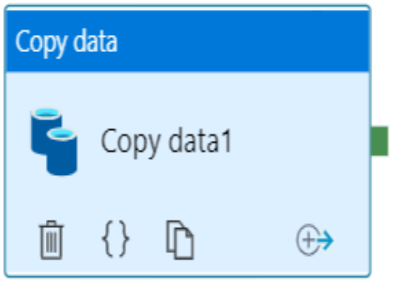

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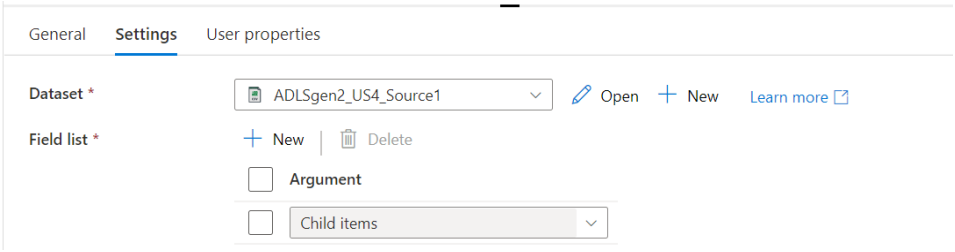

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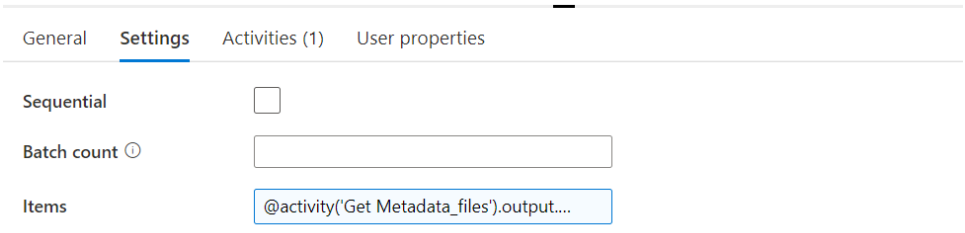

- The For Each will take items from the Get Meta data output.
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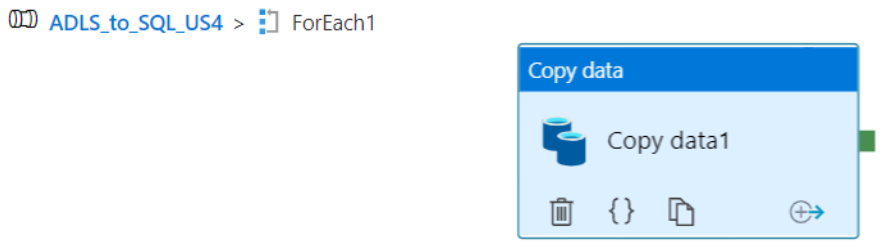

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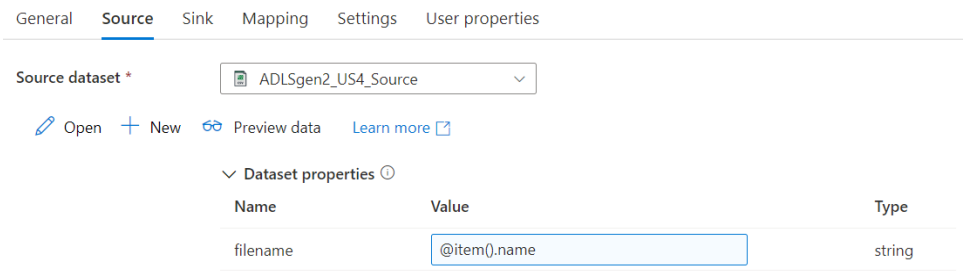

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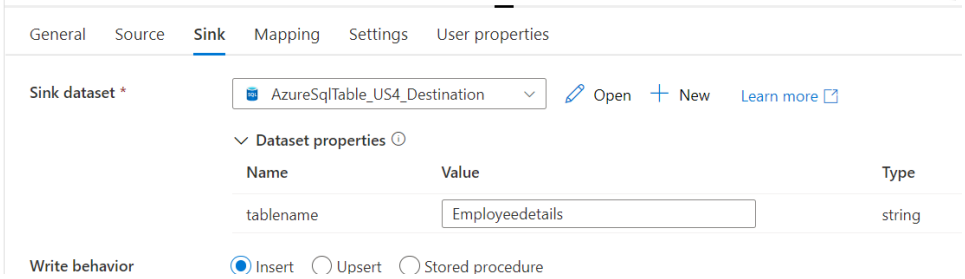

- Data from multiple files were copied into single table.

```
1   SELECT TOP (1000) * FROM [dbo].[Employee_Details_Us4]
```

Results Messages

Search to filter items...

id	ename	state
3001	Sathwi	MAnipur
5004	Saniya	Telangana
5001	Sanjana	Telangana

User Story 5:

Create a pipeline to copy 4 different tables from Azure SQL Database to ADLS Gen1/Gen2.

Description:

• Create 4 different tables in Azure SQL Database

• Create a single pipeline to copy all the 4 tables from source to destination

• Create an alert to send message to the team when the pipeline run is successful

Acceptance Criteria:

• Validate the migration of data

• Verify the alert email with your team lead

• Record (Screenshots) and document the steps

• Verify the story with your team lead

Story Points: 3

Explanation :

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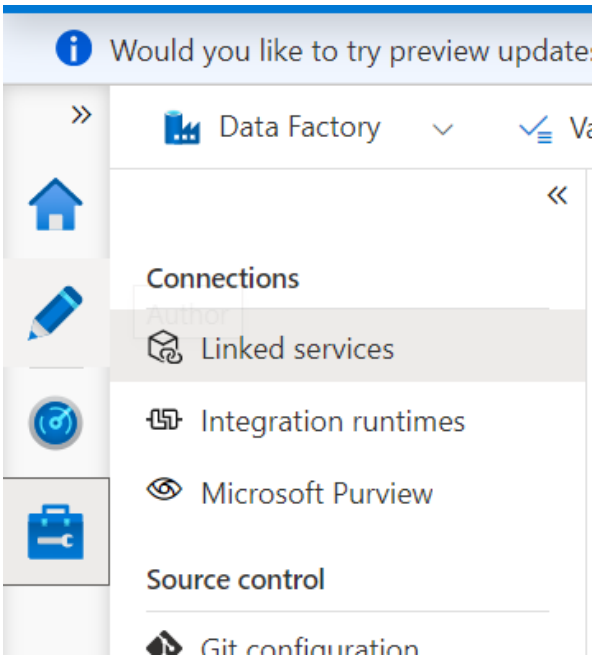

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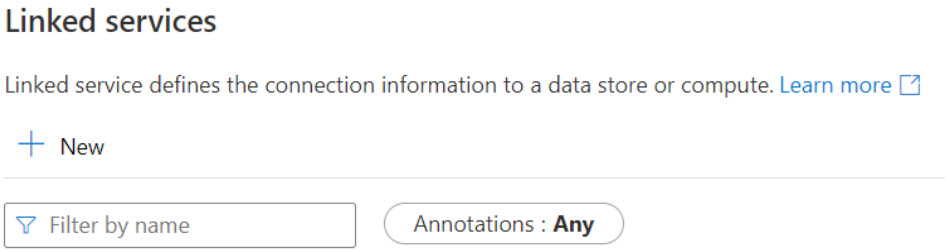

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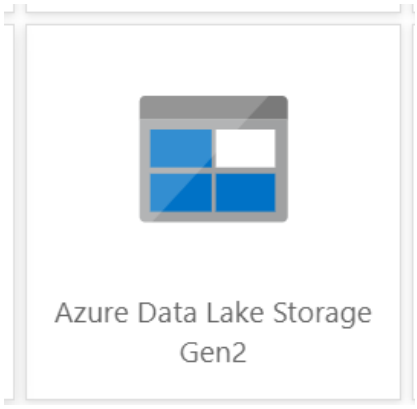

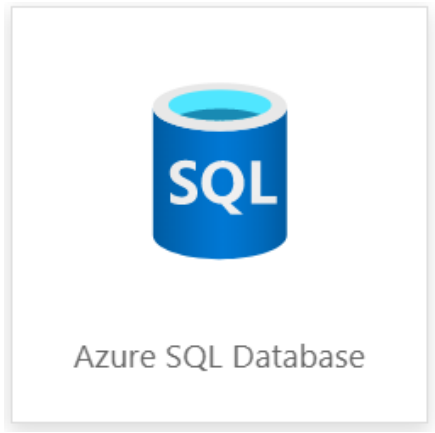

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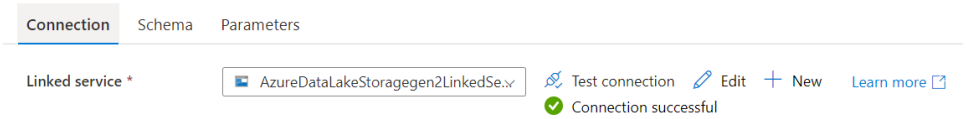
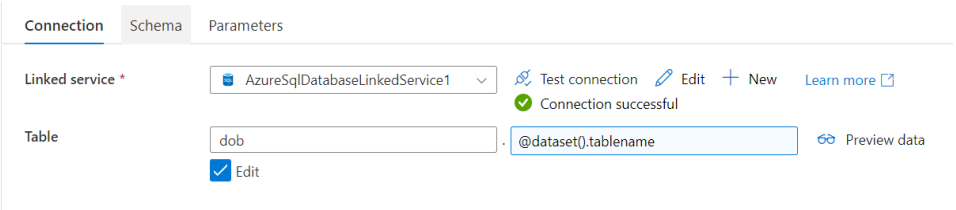
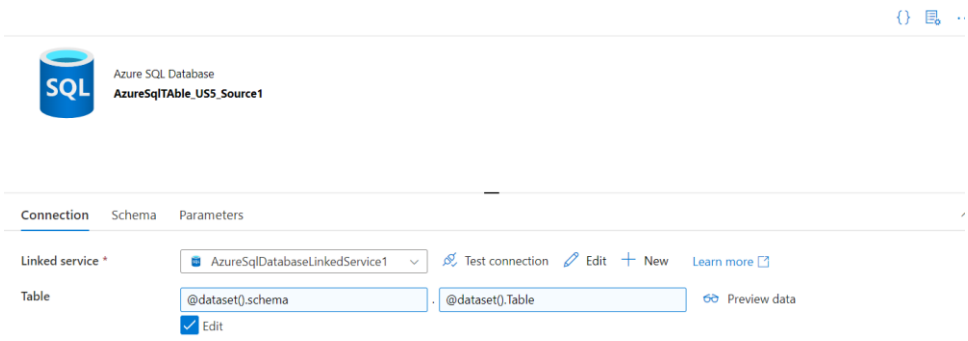




- Hence Connection was established.

Dataset for source :

- Created the dataset for source.



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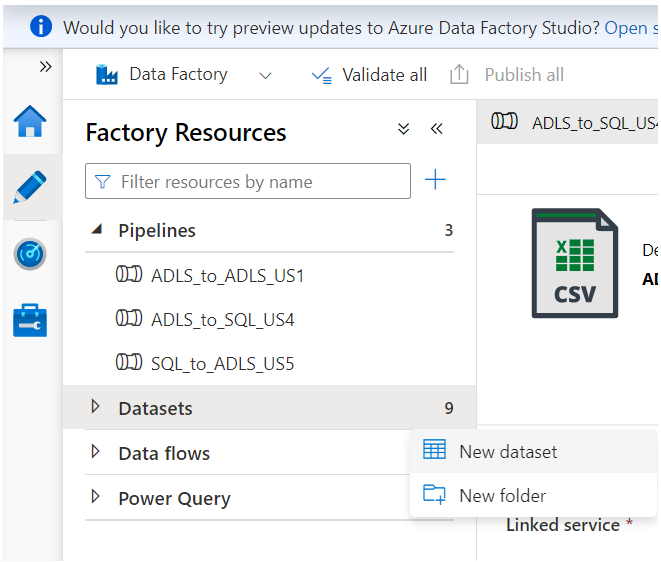
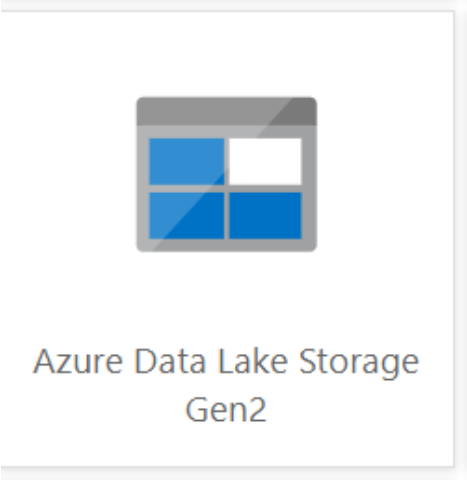


- Select the data store for creating a data store.

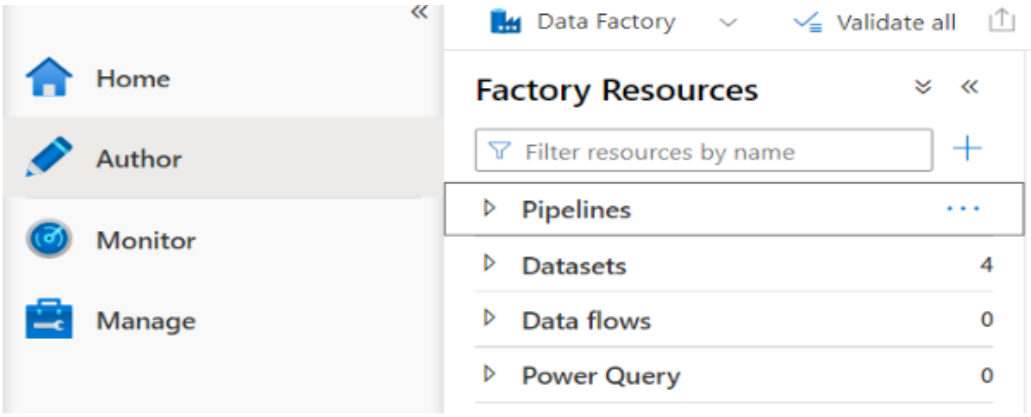


- Select the Linked Service which was created for that data store.

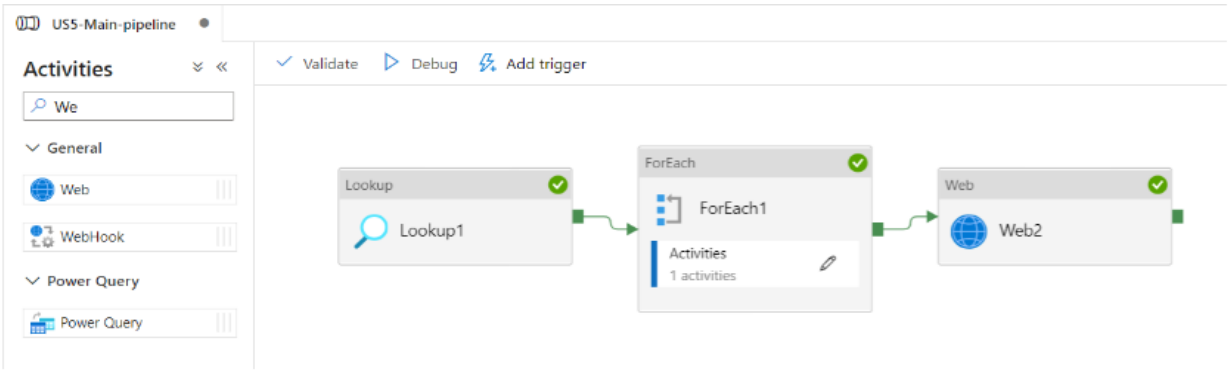
Step-1: Pipeline was created using below steps

- To create a pipeline, first opened azure data factory and clicked on **Author tab** and in the pipelined tab, clicked on create new pipeline
- From the available list of **Activities,** selected **Lookup** activity to read multiple files from the source container
- Next selected **ForEach** activity to get each file from the previous configuration
- In the ForEach activity, selected **copy data** activity to copy the data from input container to output container
- After the ForEach activity, **Web activity** was taken to get the email notification

Author tab :



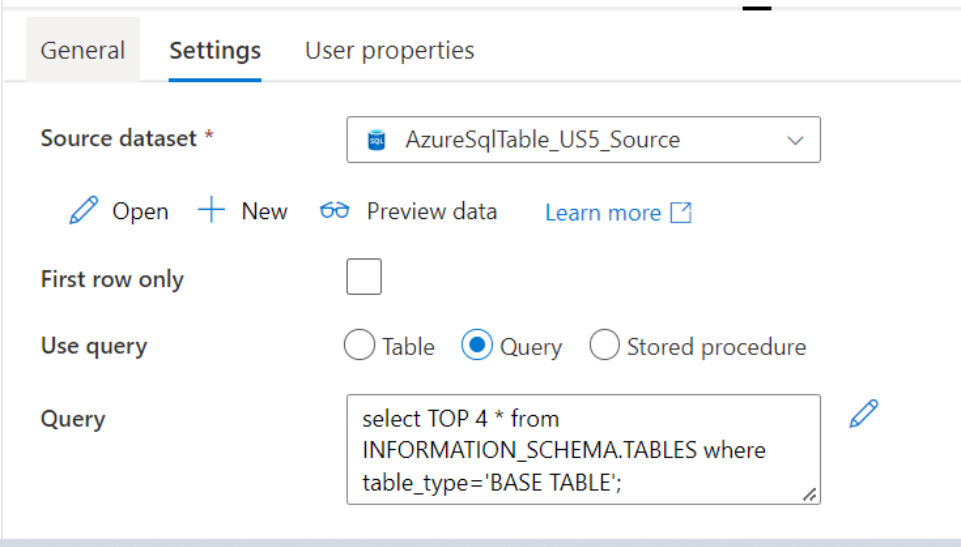
Pipeline created :



Step-2: Configuration for the pipeline

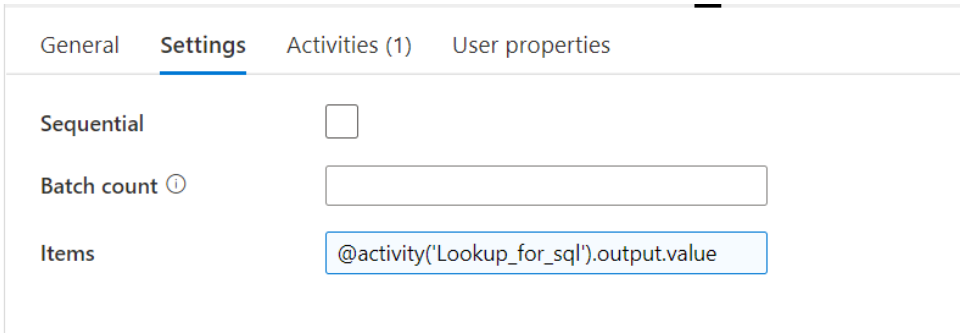
Lookup Configuration

- A Lookup activity is used to read data from any datastore in azure
- **Azure_Sql_Sourc1_us5_DS** was taken as dataset for lookup activity and in the body of the query, a query was written to read all the tables

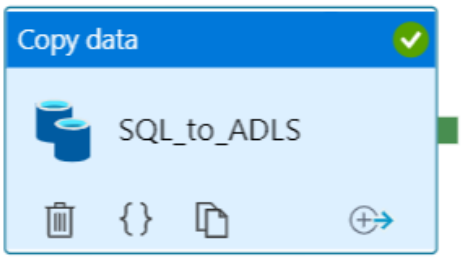


ForEach Configuration :

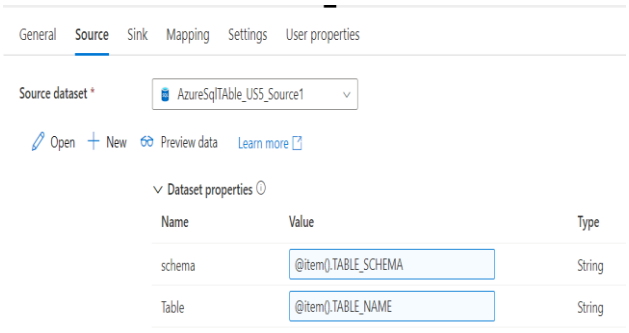
- ForEach Activity takes input from the output of GetMedata activity. So in the items field, output of childitems was taken from the dynamic content parameters



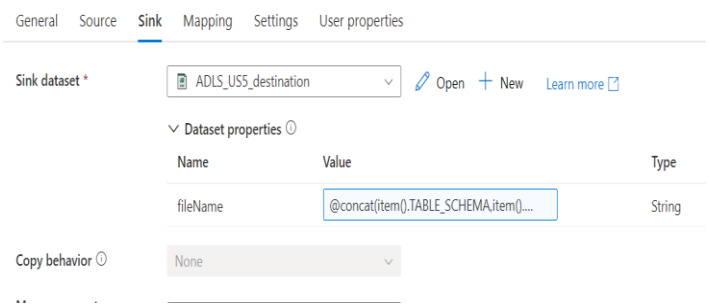
Copy Activity Configuration :



- **Source configuration**



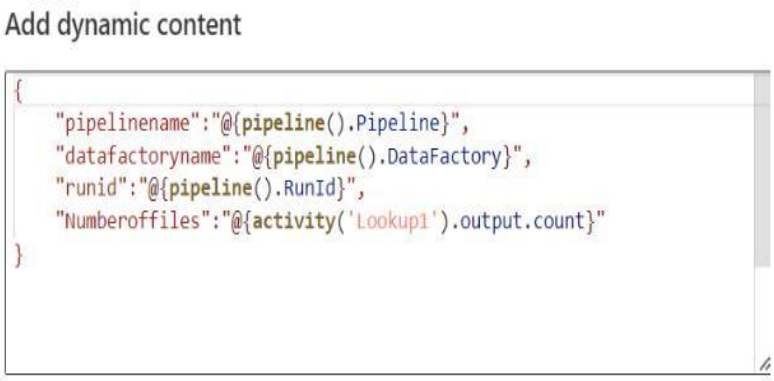
- **Sink Configuration**



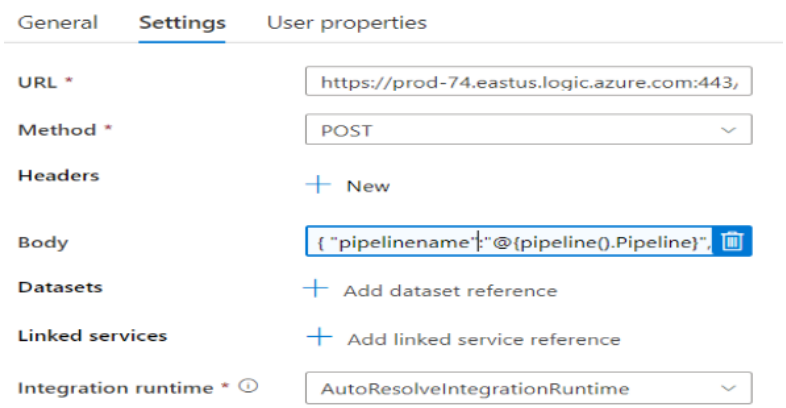
Web app Configuration

- In the web app, URL for connecting to logic app was given by copying it from the logic app designer
- POST method was given in the method field and in the body field, dynamic content parameters were given

Body field of Web Activity



Web Activity configuration



Output :

- The output was verified in the output container.

- **Email notification:**