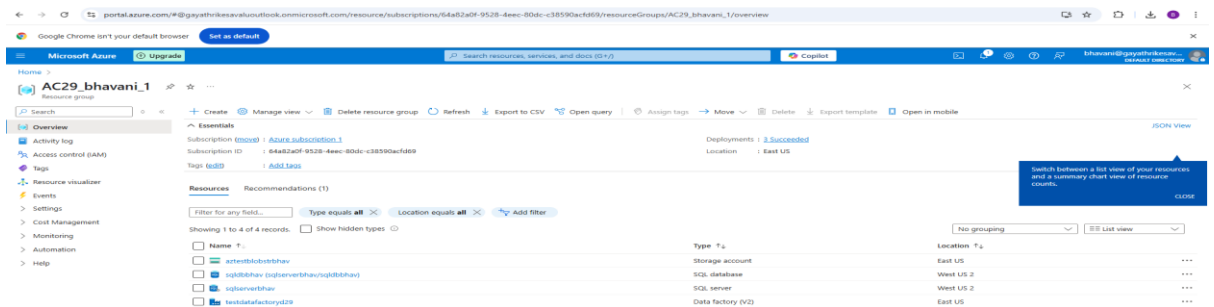
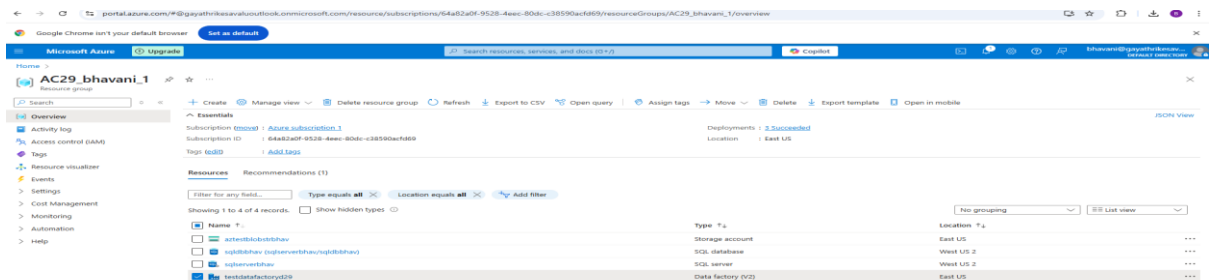


## Homework | Cycle 29 | Session 12

- create dynamic pipeline which loads multiple tables from azure sql database to Adls gen2
- ❖ create dynamic pipeline which loads multiple tables from azure sql database to Adls gen2
- Login into portal.azure.com and go to your resource group




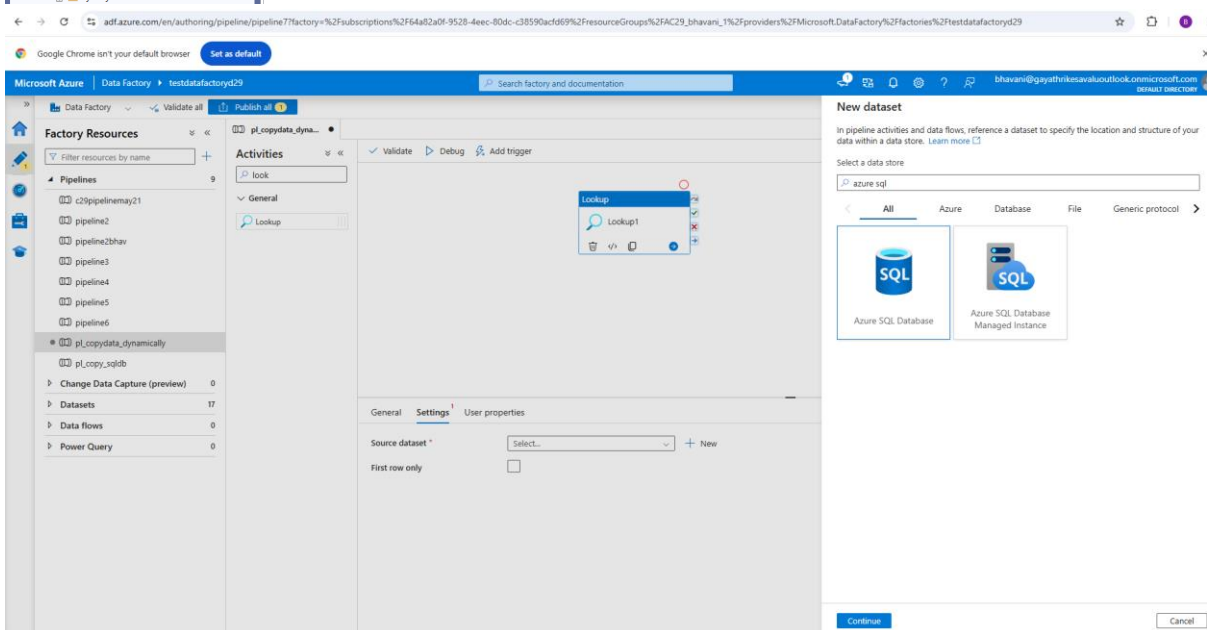
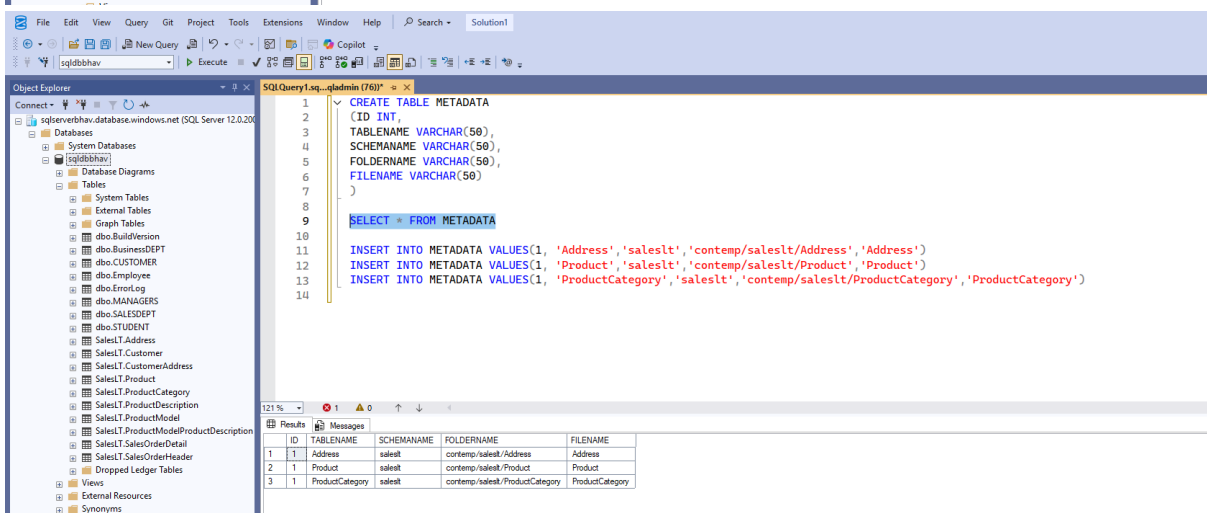
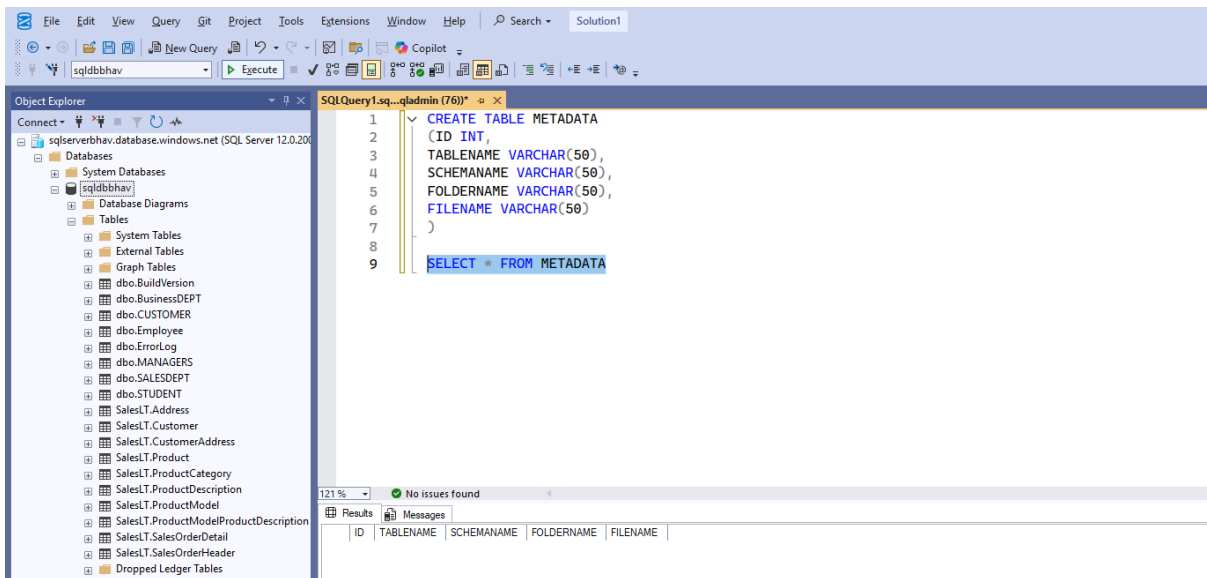
Go to your Data factory and open

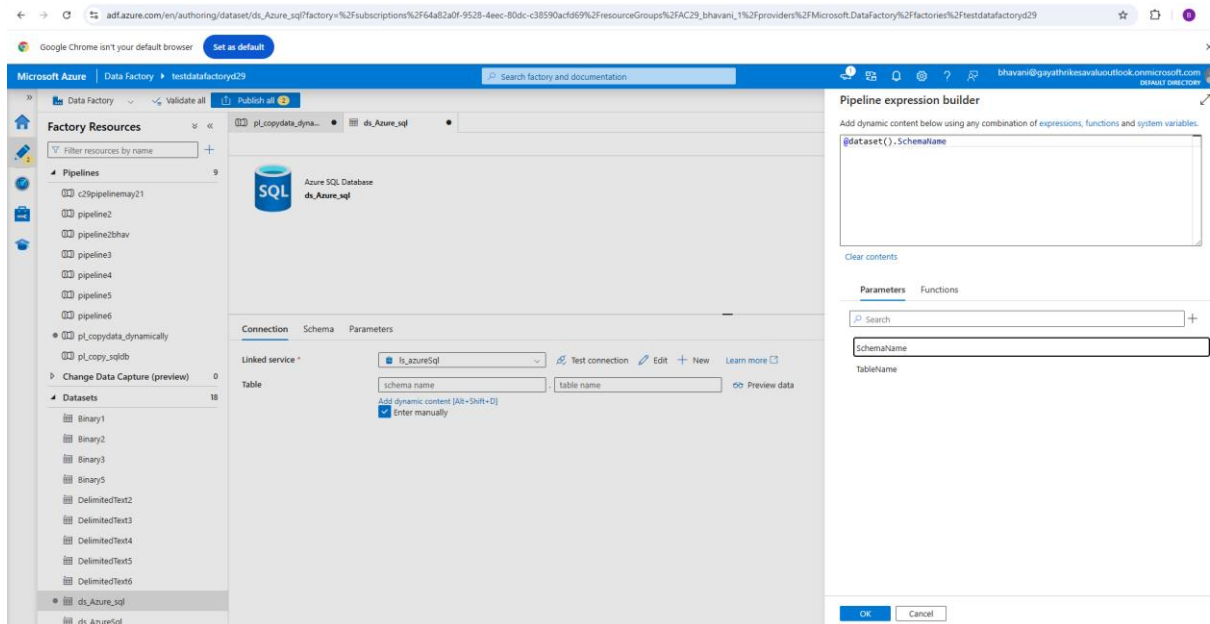
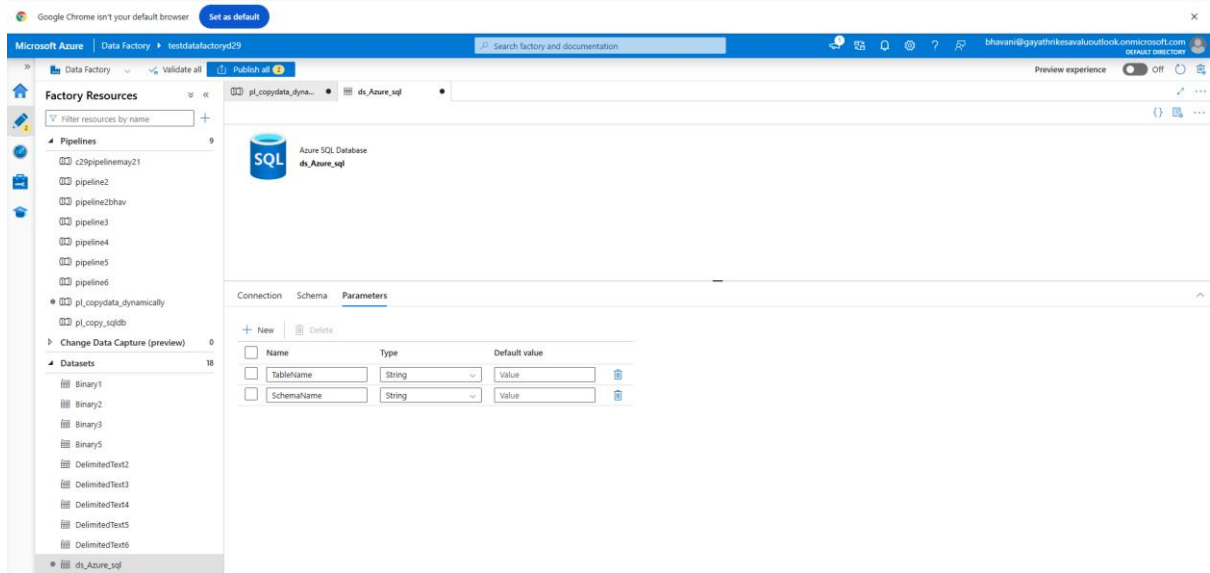
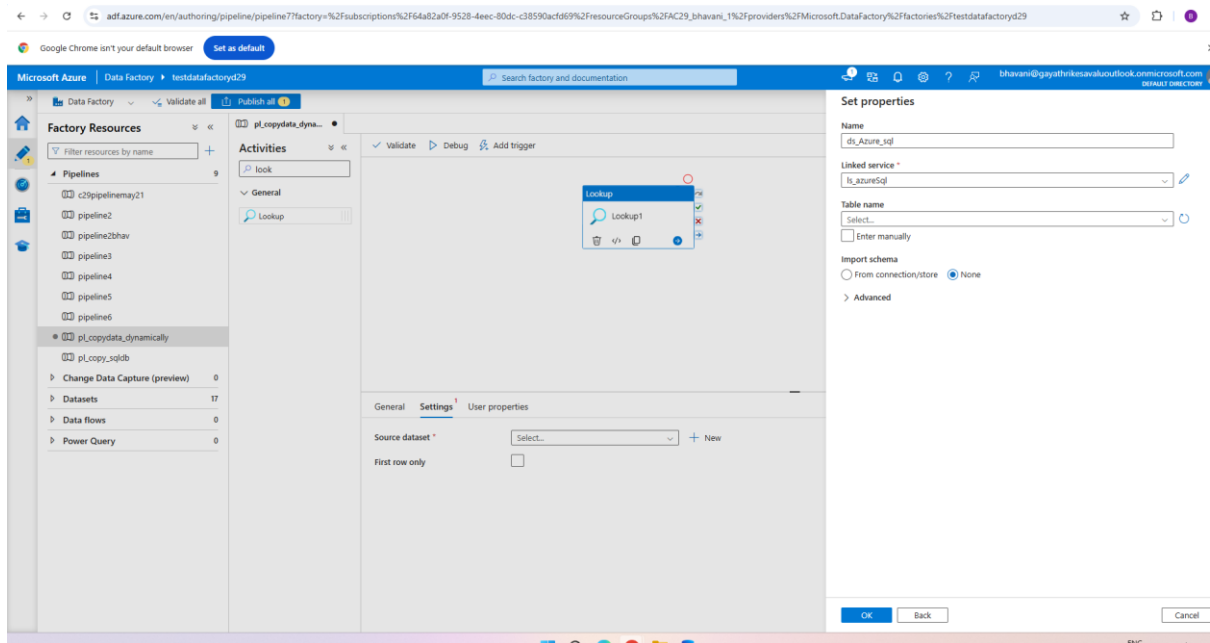


Steps:

- In this activity we are bring data for multiple tables using single pipeline
- For this create 1<sup>st</sup> METADATA table in Azure Sqlldb and insert data into created meta data table with detaqlis of ID, Tablename, foldername, filename.
- Create a lookup activity in ADF which brings metadata table information details and displays into json format file as output.
- In the settings tab uncheck the First row only check box and provide the source dataset details by clciking on New button.
- Select the azure sql db from dataset and click on continue in the **Set Properties** window provide the dataset name and linked service details.
- Select linked service and dont select the table name from the list as we are passing dynamic values and click on ok

- To create parameters i should go to parametrs level so click on open button from dataset, it will open a tab of connection, schema and Parameters tabs.
- Go to Parameters session 1. Table Name, Schema Name, then go to connection tab as we have to pass those parameters whatever we created in Parameters tab.
- Click enter manually , click on Table name box, you will be able to see dynamic option aqnd select schema and table name paqrameters as shown in snaps.
- Then go to your pipeline and provide the table name and schema name and click on debug.
- You will be able to see the input and output files after the pipeline runs completed successfully
- So lookup will bring the metadata whatever we created azure sql database in the json format.
- The json output we will be passing in the similarr way to next activity (for each)
- Step2: Take foreach activity and pass look up activity output to foreach input
- Click on lookup activity on **success button**  as shown in picture and drag it to foreach activity input.
- Go to foreach settings tab and clcik on Items box and clcik on Add dynamic content there you will be able to see lookup activity outputs and select last option Look up value array
- Click on Edit button from inside foreach activity (pencil icon) as shown below
- And select your Copy activity inside foreach as below
- Go to source tab and select your dataset from source dataset dropdown
- Now select parametrs from foreach (we will get parameters from foreach) and clcik on tablename and click dynamic content and select foreach option
- As my main parameters from json file is TABLENAME and SCHEMANAME, i will add beside to item as .TABLENAME for TableName and .SCHEMANAME for Schema name and click on OK.
- Go to Sink tab, as we are loading data to Adls gen2, so will select the connector and select CSV format
- and click on edit to provide the parameters as foldername and filename then go to connection tab
- Provide `@concat(dataset().FileName, '.csv')` as format
- Open copydata pipeline and give the values as parameters of foldername and filename as shown below
- Save the pipeline and publish it and Click on debug
- Files are placed to GEN2





Microsoft Azure | Data Factory | testdatafactoryd29

Factory Resources

- Pipelines (9)
  - c29pipelinemay21
  - pipeline2
  - pipeline2bhav
  - pipeline3
  - pipeline4
  - pipeline5
  - pipeline6
  - pl\_coppydata\_dynamically
  - pl\_coppy\_sqldb
- Datasets (18)
  - Binary1
  - Binary2
  - Binary3
  - Binary5
  - DelimitedText2
  - DelimitedText3
  - DelimitedText4
  - DelimitedText5
  - DelimitedText6
  - ds\_Azure\_sql
  - ds\_AzureSql

Connection Schema Parameters

Linked service \*  Test connection Edit + New Learn more

Table   Preview data

☒ Enter manually

Microsoft Azure | Data Factory | testdatafactoryd29

Factory Resources

- Pipelines (9)
  - c29pipelinemay21
  - pipeline2
  - pipeline2bhav
  - pipeline3
  - pipeline4
  - pipeline5
  - pipeline6
  - pl\_coppydata\_dynamically
  - pl\_coppy\_sqldb
- Datasets (18)
  - Binary1
  - Binary2
  - Binary3
  - Binary5
  - DelimitedText2
  - DelimitedText3
  - DelimitedText4
  - DelimitedText5
  - DelimitedText6
  - ds\_Azure\_sql
  - ds\_AzureSql

Activities

Look

Lookup

Lookup1

General Settings User properties

Source dataset \*  Open + New Preview data Learn more

Dataset properties


Name	Value	Type
TableName	<input type="text" value="testdatafactoryd29"/>	string
SchemaName	<input type="text" value="dbo"/>	string

First row only ☐

Use query ☒ Table ☐ Query ☐ Stored procedure

Query timeout (minutes)

## Input

 Copy to clipboard

```
{
  "source": {
    "type": "AzureSqlSource",
    "queryTimeout": "02:00:00",
    "partitionOption": "None"
  },
  "dataset": {
    "referenceName": "ds_Azure_sql",
    "type": "DatasetReference",
    "parameters": {
      "TableName": "metadata",
      "SchemaName": "dbo"
    }
  },
  "firstRowOnly": false
}
```

### Input

 Copy to clipboard

```
{
  "source": {
    "type": "AzureSqlSource",
    "queryTimeout": "02:00:00",
    "partitionOption": "None"
  },
  "dataset": {
    "referenceName": "ds_Azure_sql",
    "type": "DatasetReference",

```

Lookup1

✓ Succeeded

Lookup

5/30/2025, 2:28:11 AM

Parameters

Variables

Settings

Output

Pipeline run ID

77ede115-7d38-448a-adac-467ad6e9f42f

Pipeline status

Succeeded

All status

Showing 1 - 1 of 1 items

Activity name		Activity st...	Activit...	Run start	Duration	Integration runtime
Lookup1	<div><div></div><div></div></div>	<div><div></div>Succeeded</div>	Lookup	5/30/2025, 2:28:11 AM	25s	AutoResolveIntegrationRunf

Google Chrome isn't your default browser [Set as default](#)

Microsoft Azure | Data Factory | testdatafactoryd29 | Search factory and documentation | bhavani@gyathikesavaluendlook.onmicrosoft.com

**Factory Resources**

- Pipelines (9)
  - c29pipelinemay21
  - pipeline2
  - pipeline2bhav
  - pipeline3
  - pipeline4
  - pipeline5
  - pipeline6
  - pl\_copydata\_dynamically**
  - pl\_copy\_sqldb
- Change Data Capture (preview) (0)
- Datasets (18)
  - Binary1
  - Binary2
  - Binary3
  - Binary5
  - DelimitedText2
  - DelimitedText3
  - DelimitedText4
  - DelimitedText5
  - DelimitedText6

**Activities**

- look
- Lookup

**Lookup1**

**Parameters Variables Settings **Output****

**Pipeline run ID** 77ede115-7d38-448a-adac-467ad6e9f42f **Pipeline status** ✓ Succeeded

All status ▼

Showing 1 - 1 of 1 items

Activity name	Activity st...	Activit...	Run start	Duration	Integration runtime	User prop...	Activity run ID
Lookup1	<span>✓</span> Succeeded	Lookup	5/30/2025, 2:28:11 AM	25s	AutoResolveIntegrationRuntime (West US 2)		81293afc-7654-4305-8690-f9f702a4e


**Output**

[Copy to clipboard](#)

```
{
  "count": 3,
  "value": [
    {
      "ID": 1,
      "TABLENAME": "Address",
      "SCHEMANAME": "saleslt",
      "FOLDERNAME": "contemp/saleslt/Address",
      "FILENAME": "Address"
    }
  ]
}
```

Run start	Duration	Integrat
Lookup1	<span>✓</span> Succeeded	Lookup
5/30/2025, 2:28:11 AM	25s	AutoRes

## Output

 Copy to clipboard

```
{
  "count": 3,
  "value": [
    {
      "ID": 1,
      "TABLENAME": "Address",
      "SCHEMANAME": "saleslt",
      "FOLDERNAME": "contemp/saleslt/Address",
      "FILENAME": "Address"
    },
    {
      "ID": 1,
      "TABLENAME": "Product",
      "SCHEMANAME": "saleslt",
      "FOLDERNAME": "contemp/saleslt/Product",
      "FILENAME": "Product"
    },
    {
      "ID": 1,
      "TABLENAME": "ProductCategory",
      "SCHEMANAME": "saleslt",
      "FOLDERNAME": "contemp/saleslt/ProductCategory",
      "FILENAME": "ProductCategory"
    }
  ],
  "effectiveIntegrationRuntime": "AutoResolveIntegrationRuntime (West US 2)",
  "billingReference": {
    "activityType": "PipelineActivity",
    "billableDuration": [
      {
        "meterType": "AzureIR",
        "duration": 0.016666666666666666,
        "unit": "Hours"
      }
    ]
  },
  "totalBillableDuration": [
    {
      "meterType": "AzureIR",
      "duration": 0.016666666666666666,
      "unit": "Hours"
    }
  ]
}
```

Google Chrome isn't your default browser [Set as default](#)

Microsoft Azure | Data Factory | testdatafactoryd29 | Search factory and documentation | bhavani@gayathirikesavaluoutlook.onmicrosoft.com | DESKTOP DIRECTORY

Factory Resources | Filter resources by name | Publish all | Preview experience | Off

Pipelines | 9 | c29pipeliney21 | pipeline2 | pipeline2bhav | pipeline3 | pipeline4 | pipeline5 | pipeline6 | pl\_copydata\_dynamically | pl\_copy\_sqldb | Change Data Capture (preview) 0 | Datasets | 18 | Binary1 | Binary2 | Binary3 | Binary5 | DelimitedText2 | DelimitedText3 | DelimitedText4 | DelimitedText5 | DelimitedText6 | ds\_Azure\_sql | ds\_AzureSql

Activities | Validate | Debug | Add trigger | Lookup | Lookup1 | ForEach | ForEach1

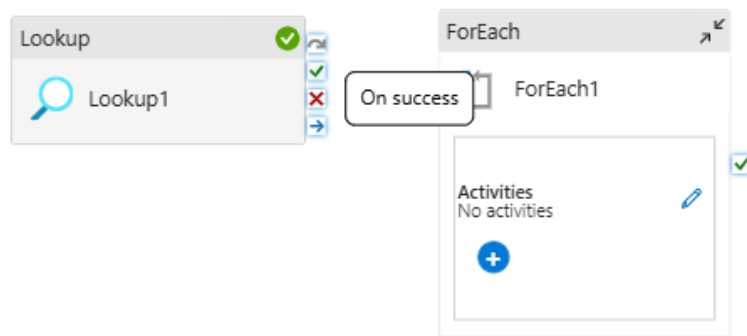
General | Settings 1 | Activities (0) | User properties

Name \* | ForEach1 | Learn more

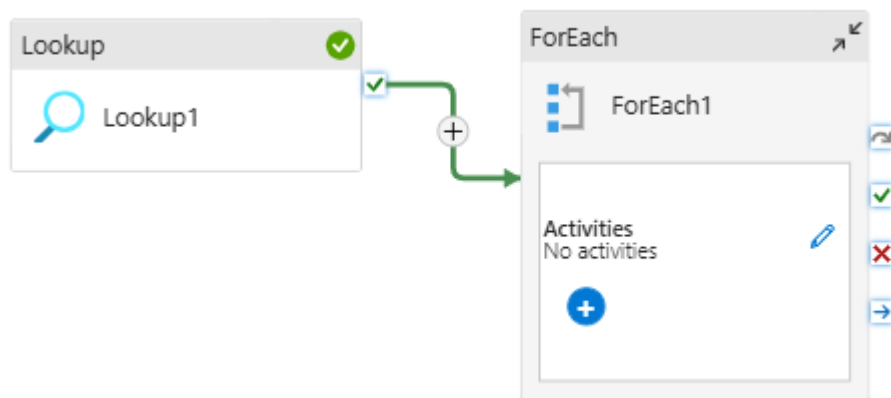
Description |

Activity state | ☒ Activated ☐ Deactivated





Click on lookup activity on **success** button  as shown in picture and drag it to foreach activity input.



Search factory and documentation

ds\_Azure\_sql

Validate Debug Add trigger

Lookup1

ForEach1

Activities: No activities

General Settings Activities (0) User properties

Sequential ☐

Batch count

Items

Add dynamic content [Alt+Shift+D]

Pipeline expression builder

Add dynamic content below using any combination of expressions, functions and system variables.

Clear contents

Activity outputs Parameters System variables Functions Variables

Search

Lookup1  
Lookup1 activity output

Lookup1 count  
Count of the rows

Lookup1 value array  
Array of row data

OK Cancel

Search factory and documentation

ds\_Azure\_sql

Validate Debug Add trigger

Lookup1

ForEach1

Activities: No activities

General Settings Activities (0) User properties

Sequential ☐

Batch count

Items

Add dynamic content [Alt+Shift+D]

Pipeline expression builder

Add dynamic content below using any combination of expressions, functions and system variables.

Clear contents

Activity outputs Parameters System variables Functions Variables

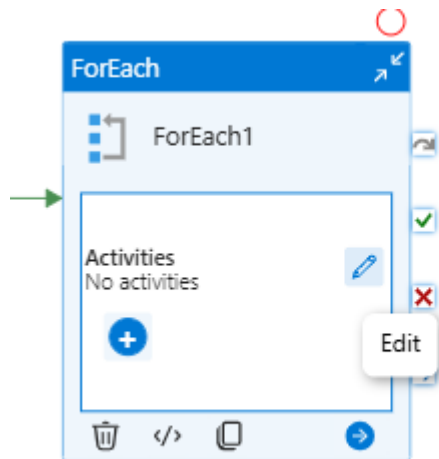
Search

Lookup1  
Lookup1 activity output

Lookup1 count  
Count of the rows

Lookup1 value array  
Array of row data

OK Cancel



ate all [Publish all](#) 2

pl\_copydata\_dyna... ds\_Azure\_sql

✓ Validate ✓ Validate copy runtime ▶ Debug ⚙ Add trigger

pl\_copydata\_dynamically > ForEach1

**Activities**

- for
- Move and transform
  - Copy data
- Data flow
- Iteration & conditionals
  - ForEach

**Copy data**

Copy data1

General Source<sup>1</sup> Sink<sup>1</sup> Mapping Settings User properties

Name \*  [Learn more](#)

Description

Activity state ☒ Activated ☐ Deactivated

Timeout


Retry

Retry interval (sec)





Secure output ☐

General **Source**<sup>1</sup> Sink<sup>1</sup> Mapping Settings User properties

Source dataset \*

Select... 

Filter...

-  DelimitedText4
-  DelimitedText5
-  DelimitedText6
-  ds\_Azure\_sql

+ New

pl\_copydata\_dyna... ds\_Azure\_sql

Activities

for

Move and transform

- Copy data
- Data flow

Iteration & conditionals

- ForEach

pl\_copydata\_dynamically > ForEach1

Copy data





Copy data1

Copy data1

Copy data1

General **Source**<sup>1</sup> Sink<sup>1</sup> Mapping Settings User properties

Source dataset \*

ds\_Azure\_sql    

Dataset properties

Name	Value	Type
TableName	Value	string
SchemaName	Value	string

Use query

☒ Table ☐ Query ☐ Stored procedure

Query timeout (minutes)

120

Isolation level

Select...

Partitioning method

☒ None ☐ Physical partitions of table ☐ Dynamic range

ds\_Azure\_sql

Validate Validate copy runtime Debug Add trigger

pl\_copydata\_dynamically > ForEach1

Copy data

Copy data1

General Source Sink Mapping Settings User properties

Source dataset \* ds\_Azure\_sql

Dataset properties

Name	Value
TableName	Value
SchemaName	Value

Use query ☒ Table ☐ Query ☐ Stored procedure

Query timeout (minutes) 120

Isolation level Select...

## Pipeline expression builder

Add dynamic content below using any combination of expressions, functions and system variables.

Clear contents

### ForEach iterator

Activity outputs

Parameters

System variables

...

Search

ForEach1

Current item

OK

Cancel

Search factory and documentation

ds\_Azure\_sql

Validate Validate copy runtime Debug Add trigger

pl\_copydata\_dynamically > ForEach1

Copy data

Copy data1

General Source Sink Mapping Settings User properties

Source dataset \* ds\_Azure\_sql

Dataset properties

Name	Value
TableName	@item().TABLENAME
SchemaName	Value

Use query ☒ Table ☐ Query ☐ Stored procedure

Query timeout (minutes) 120

Isolation level Select...

Partition option ☒ None ☐ Physical partitions of table ☐ Dynamic range

## Pipeline expression builder

Add dynamic content below using any combination of expressions, functions and system variables.

@item()

Clear contents

### ForEach iterator

Activity outputs

Parameters

System variables

...

Search

ForEach1

Current item

OK

Cancel

toriyd29 Search factory and documentation bhavani@gayathnikesavaluoutlook.onmicrosoft.com

Publish all

Activities

- for
- Move and transform
  - Copy data
  - Data flow
- Iteration & conditionals
  - ForEach

pl\_copydata\_dyna... ds\_Azure\_sql

pl\_copydata\_dynamically > ForEach1

Copy data

Copy data1

General Source Sink Mapping Settings User properties

Source dataset \* ds\_Azure\_sql Open + New Preview

Dataset properties

Name	Value
TableName	@item().TABLENAME
SchemaName	@item().SCHEMANAME

Use query ☒ Table ☐ Query ☐ Stored procedure

Query timeout (minutes) 120

Isolation level Select...

Partition option ☒ None ☐ Physical partitions of table ☐ Dynamic range

Pipeline expression builder

Add dynamic content below using any combination of expressions, functions and system variables.

@item().SCHEMANAME

Clear contents

ForEach iterator Activity outputs Parameters System variables ...

Search

ForEach1  
Current item

OK Cancel

General Source Sink Mapping Settings User properties

Source dataset \* ds\_Azure\_sql Open + New Preview data Learn more

Dataset properties

Name	Value
TableName	@item().TABLENAME
SchemaName	@item().SCHEMANAME

Use query ☒ Table ☐ Query ☐ Stored procedure

Query timeout (minutes) 120

Isolation level Select...

Partition option ☒ None ☐ Physical partitions of table ☐ Dynamic range

factoryd29 Search factory and documentation

Publish all

pl\_copydata\_dyna... ds\_Azure\_sql

Activities

Move and transform

Copy data

Data flow

Iteration & conditionals

ForEach

pl\_copydata\_dynamically > ForEach1

Copy data

Copy data1

General Source Sink Mapping Settings User properties

Sink dataset \* Select... + New

New dataset

In pipeline activities and data flows, reference a dataset to specify the location and structure of your data within a data store. [Learn more](#)

Select a data store

gen

All Azure Database File Generic protocol

Azure Data Lake Storage Gen2

Continue Cancel

Search factory and documentation

ds\_Azure\_sql

pl\_copydata\_dynamically > ForEach1

Copy data

Copy data1

General Source Sink Mapping Settings User properties

Sink dataset \* Select... + New

Set properties

Name

ds\_csv\_file

Linked service \*

AzureDataLakeStorage1

File path

contemp / Directory / File name

First row as header

☒

Import schema

☐ From connection/store ☐ From sample file ☒ None

Advanced

OK Back Cancel

Microsoft Azure Data Factory testdatafactoryd29 Search factory and documentation

Factory Resources Filter resources by name

- Pipelines 9
  - c29pipelinemay21
  - pipeline2
  - pipeline2bhav
  - pipeline3
  - pipeline4
  - pipeline5
  - pipeline6
  - pl\_copydata\_dynamically
  - pl\_copy\_sqldb
- Change Data Capture (preview) 0
- Datasets 19
  - Binary1
  - Binary2
  - Binary3
  - Binary5
  - DelimitedText2
  - DelimitedText3

DelimitedText ds\_csv\_file

Connection Schema Parameters

Name	Type	Default value
FolderName	String	Value
FileName	String	Value

pl\_copydata\_dyna... ds\_Azure\_sql ds\_csv\_file

DelimitedText ds\_csv\_file

Connection Schema Parameters

Linked service \* AzureDataLakeStorage1 Test connection Edit + New Learn more

File path contemp / contemp / FolderName / @concat(dataset().FileName,'.csv') Browse Preview data

Compression type No compression

Column delimiter Comma (,)

Row delimiter Default (\r\n, or \n)

Encoding Default(UTF-8)

Quote character Double quote (")

Escape character Backslash (\)

First row as header ☒

Null value



testdatafactory29 Search factory and documentation

Validate all Publish all

Activities

- Move and transform
  - Copy data
  - Data flow
- Iteration & conditionals
  - ForEach

pl\_copydata\_dynamically > ForEach1

Copy data

Copy data1

General Source Sink Mapping Settings User properties

Sink dataset \*

ds\_csv\_file

Dataset properties

Name	Value
FolderName	@item().FOLDERNAME
FileName	Value Add dynamic content [Alt+Shift+D]

Copy behavior

Max concurrent connections

Block size (MB)

Pipeline expression builder

Add dynamic content below using any combination of expressions, functions and system variables.

@item().FILENAME

Clear contents

ForEach iterator Activity outputs Parameters System variables

Search

ForEach1  
Current item

OK Cancel

fault browser Set as default

testdatafactory29 Search factory and documentation

Validate all Publishing

Activities

- Move and transform
  - Copy data
  - Data flow
- Iteration & conditionals
  - ForEach

pl\_copydata\_dynamically > ForEach1

Copy data

Copy data1

General Source Sink Mapping Settings User properties

Sink dataset \*

ds\_csv\_file

Dataset properties

Name	Value
FolderName	@item().FOLDERNAME
FileName	@item().FILENAME

Copy behavior

Max concurrent connections

Block size (MB)

Metadata

Publish all

You are about to publish all pending changes to the live environment. [Learn more](#)

Pending changes (3)

NAME	CHANGE	EXISTING
Pipelines		
pl_copydata_dynamically	(New)	-
Datasets		
ds_Azure_sql	(New)	-
ds_csv_file	(New)	-

Publish Cancel

datafactoryd29

Search factory and documentation

bhavan@gayathikesavaluoutlook.onmicrosoft.com

Preview experience Off

Activities

for

Move and transform

Copy data

Data flow

Iteration & conditionals

ForEach

Lookup

ForEach1

Activities

No activities

Parameters Variables Settings Output

Pipeline run ID 0282e393-23e3-4ecc-8df9-48e0154e7b17

Pipeline status In progress

All status List

Showing 1 - 1 of 1 items

Activity name	Activity st...	Activit...	Run start	Duration	Integration runtime	User prop...	Activity run ID
Lookup1	In progress	Lookup	5/30/2025, 3:36:54 AM	39s			5f9b69ad-c33e-469a-976b-3d3409e1

Parameters Variables Settings Output

Pipeline run ID 0282e393-23e3-4ecc-8df9-48e0154e7b17

Pipeline status Succeeded

View debug run consumption

Monitor in Azure Metrics Export to CSV

Showing 1 - 5 of 5 items

Activity name	Activity st...	Activit...	Run start	Duration	Integration runtime	User prop...	Activity run ID
Copy data1	Succeeded	Copy data	5/30/2025, 3:37:06 AM	18s	AutoResolveIntegrationRuntime (East US)		2d515d98-357c-4d71-a030-e0c04
Copy data1	Succeeded	Copy data	5/30/2025, 3:37:06 AM	16s	AutoResolveIntegrationRuntime (East US)		bc46ca47-16f5-4450-b655-ab1e5f
Copy data1	Succeeded	Copy data	5/30/2025, 3:37:06 AM	16s	AutoResolveIntegrationRuntime (East US)		c36ebe97-e68a-4252-8df0-3443d
ForEach1	Succeeded	ForEach	5/30/2025, 3:37:06 AM	20s			56b58a0d-fbd8-4198-bcdd-0877c
Lookup1	Succeeded	Lookup	5/30/2025, 3:36:54 AM	11s	AutoResolveIntegrationRuntime (West US 2)		5f9b69ad-c33e-469a-976b-3d340

Microsoft Azure Upgrade

Search resources, services, and docs (Ctrl+K)

Copilot

bhavan@gayathikesavaluoutlook.onmicrosoft.com

Home > adigend21 | Containers >

contemp

Containers

Search

Overview

Diagnose and solve problems

Access Control (IAM)

Settings

Authentication method: Access key (Switch to Microsoft Entra user account)

Search blobs by prefix (case-sensitive)

Only show active objects

Showing all 4 items

Name	Last modified	Access tier	Blob type	Size	Lease state
contemp	5/30/2025, 3:37:20 AM				

Microsoft Azure

Upgrade

Search resources, services, and docs (0/1)

Copilot

bhavana@gayathirikesav...  
DEFAULT DIRECTORY (LUNARDBL)

Home > adislegend21 | Containers >

contemp

Container

Search

+ Add Directory

Upload

Refresh

Delete

Copy

Paste

Rename

Acquire lease

Break lease

Edit columns

Overview

Diagnose and solve problems

Access Control (IAM)

Settings

contemp > contemp > saleslt

Authentication method: Access key [\(Switch to Microsoft Entra user account\)](#)

Search blobs by prefix (case-sensitive)

Only show active objects

Showing all 3 items

<input type="checkbox"/>	Name	Last modified	Access tier	Blob type	Size	Lease state
<input type="checkbox"/>	[-]					...
<input type="checkbox"/>	Address	5/30/2025, 3:37:20 AM				...
<input type="checkbox"/>	Product	5/30/2025, 3:37:22 AM				...
<input type="checkbox"/>	ProductCategory	5/30/2025, 3:37:20 AM				...

Microsoft Azure

Upgrade

Search resources, services, and docs (0/1)

Copilot

bhavana@gayathirikesav...  
DEFAULT DIRECTORY (LUNARDBL)

Home > adislegend21 | Containers >

contemp

Container

Search

+ Add Directory

Upload

Refresh

Delete

Copy

Paste

Rename

Acquire lease

Break lease

Edit columns

Overview

Diagnose and solve problems

Access Control (IAM)

Settings

contemp > contemp > saleslt > Address

Authentication method: Access key [\(Switch to Microsoft Entra user account\)](#)

Search blobs by prefix (case-sensitive)

Only show active objects

Showing all 1 items

<input type="checkbox"/>	Name	Last modified	Access tier	Blob type	Size	Lease state
<input type="checkbox"/>	[-]					...
<input type="checkbox"/>	Address.csv	5/30/2025, 3:37:20 AM	Hot (inferred)	Block blob	61.26 KiB	Available