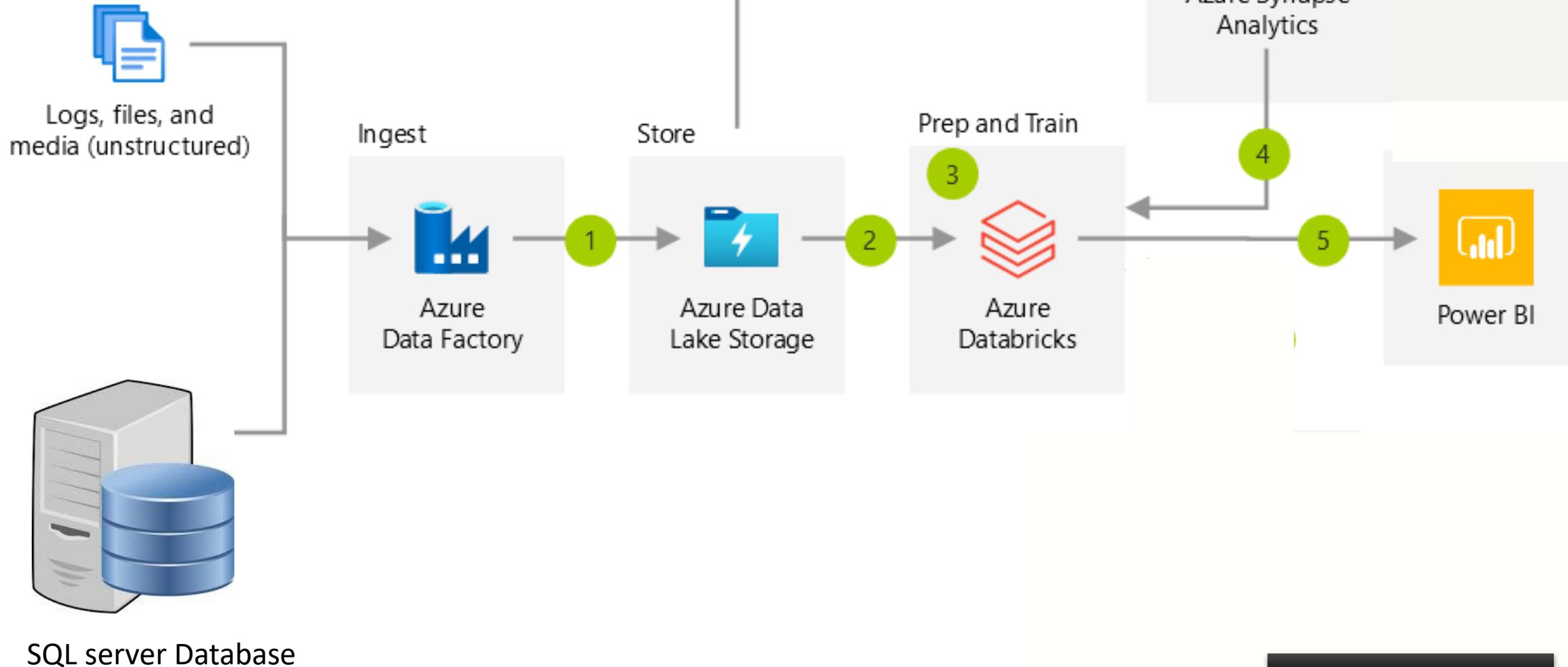


# DATA ENGINEERING END TO END PROJECT



# Download backup files

Use these links to download the appropriate sample database for your scenario.

- OLTP data is for most typical online transaction processing workloads.
  - Data Warehouse (DW) data is for data warehousing workloads.
  - Lightweight (LT) data is a lightweight and pared down version of the OLTP sample.

If you're not sure what you need, start with the OLTP version that matches your SQL Server version.

OLTP	Data Warehouse	Lightweight
AdventureWorks2022.bak	AdventureWorksDW2022.bak	AdventureWorksLT2022.bak
AdventureWorks2019.bak	AdventureWorksDW2019.bak	AdventureWorksLT2019.bak
AdventureWorks2017.bak	AdventureWorksDW2017.bak	AdventureWorksLT2017.bak
AdventureWorks2016.bak	AdventureWorksDW2016.bak	AdventureWorksLT2016.bak
AdventureWorks2016_EXT.bak	AdventureWorksDW2016_EXT.bak	N/A
AdventureWorks2014.bak	AdventureWorksDW2014.bak	AdventureWorksLT2014.bak
AdventureWorks2012.bak	AdventureWorksDW2012.bak	AdventureWorksLT2012.bak
AdventureWorks2008R2.bak	AdventureWorksDW2008R2.bak	N/A

Additional files can be found directly on GitHub:

- SQL Server 2014 - 2022 ↗
  - SQL Server 2012 ↗

## **Additional resources**

 Documentation

Microsoft SQL samples - SQL Server

View information about the WideWorldImporters and AdventureWorks sample databases, Azure samples and templates, and code samples for Microsoft SQL...

SQL Server docs navigation tips - SQL Server

Tips and tricks for navigating the SQL Server technical documentation - explains such things as the hub page, the table of contents, the header, as well as ho...

SQL Server Management Studio (SSMS) - SQL Server  
Management Studio (SSMS)

Learn details about SQL Server Management Studio (SSMS) and what SSMS can do, including how to manage Analysis Services Solutions.

Show 5 more

# Download Dataset from Microsoft website



# SQL Server

# Management Studio

# Management Studio 19

SQLQuery6.sql - RAHUL\SQLEXPRESS.AdventureWorksLT2017 (rahul (60)) - Microsoft SQL Server Management Studio

File Edit View Project Tools Window Help

New Query Activity Monitor

AdventureWorksLT2017 Execute

Object Explorer

Connect

RAHUL\SQLEXPRESS (SQL Server 16.0.1000 - rahul)

- Data  
New Database...  
Attach...  
**Restore Database...**  
Restore Files and Filegroups...  
Deploy Data-tier Application...  
Import Data-tier Application...  
Start PowerShell  
Reports  
Refresh
- SalesLT.Address
- SalesLT.Customer
- SalesLT.CustomerAddress
- SalesLT.Product
- SalesLT.ProductCategory
- SalesLT.ProductDescription
- SalesLT.ProductModel
- SalesLT.ProductModelProductDescription
- SalesLT.SalesOrderDetail
- SalesLT.SalesOrderHeader
- Views
- External Resources
- Synonyms
- Programmability
- Service Broker
- Storage
- Security
  - Users
    - dbo
    - guest
  - INFORMATION\_SCHEMA
  - rlb
  - cvc

SQLQuery6.sql - RAHUL\SQLEXPRESS (rahul (60)) - not connected

SQLQuery5.sql - not connected

SQLQuery4.sql - not connected

getschema.sql - not connected

\*\*\*\*\* Script for SelectTopNRows command from SSMS \*\*\*\*\*

```
SELECT TOP (1000) [CustomerID]
    ,[NameStyle]
    ,[Title]
    ,[FirstName]
    ,[MiddleName]
    ,[LastName]
    ,[Suffix]
    ,[CompanyName]
    ,[SalesPerson]
    ,[EmailAddress]
    ,[Phone]
    ,[PasswordHash]
    ,[PasswordSalt]
    ,[rowguid]
    ,[ModifiedDate]
FROM [AdventureWorksLT2017].[SalesLT].[Customer]
```

Store Dataset Into SQL Server Database

Results Messages

CustomerID	NameStyle	Title	FirstName	MiddleName	LastName	Suffix	CompanyName	SalesPerson	EmailAddress	Phone	PasswordHash	
1	1	0	Mr.	Orlando	N.	Gee	NULL	A Bike Store	adventure-works\pamela0	orlando0@adventure-works.com	245-555-0173	LRIwxzp4w7RWmEgXX+A7c
2	2	0	Mr.	Keith	Harris	NULL	Progressive Sports	adventure-works\david8	keith0@adventure-works.com	170-555-0127	YPdRdvqeAhj6wyxEsfdsdBD	
3	3	0	Ms.	Donna	F.	Carreras	NULL	Advanced Bike Components	adventure-works\jillian0	donna0@adventure-works.com	279-555-0130	LNoK27abGQo48gGue3EBVl
4	4	0	Ms.	Janet	M.	Gates	NULL	Modular Cycle Systems	adventure-works\jillian0	janet1@adventure-works.com	710-555-0173	ElzTpSnbUW1Ui+L5cWfIR7M
5	5	0	Mr.	Lucy	NULL	Harrington	NULL	Metropolitan Sports Supply	adventure-works\lulu0	lucy0@adventure-works.com	828-555-0186	KJqV15wsX3PG8TS5Gsdpp6
6	6	0	Ms.	Rosmarie	J.	Carroll	NULL	Aerobic Exercise Company	adventure-works\linda3	rosmarie0@adventure-works.com	244-555-0112	OKT0scizCdlzymHH0tjJKQiCI
7	7	0	Mr.	Dominic	P.	Gash	NULL	Associated Bikes	adventure-works\lulu0	dominic0@adventure-works.com	192-555-0173	ZccoPjzGQm+Xpzc7RKwDhS
8	10	0	Ms.	Kathleen	M.	Garza	NULL	Rural Cycle Emporium	adventure-works\josé1	kathleen0@adventure-works.com	150-555-0127	Qa3aMCxNbVLGrc0b99KsbQ
9	11	0	Ms.	Katherine	NULL	Harding	NULL	Sharp Bikes	adventure-works\josé1	katherine0@adventure-works.com	926-555-0159	uRlorVzDGNJIX9I+ehTIRK+iT
10	12	0	Mr.	Johnny	A.	Caprio	Jr.	Bikes and Motorbikes	adventure-works\garrett1	johnny0@adventure-works.com	112-555-0191	jF9jBoFyeJtaET7x+eJDkd7B
11	16	0	Mr.	Christopher	R.	Beck	Jr.	Bulk Discount Store	adventure-works\jae0	christopher1@adventure-works.com	1 (11) 500 555-0132	sKt9daCzEEKWAzivEGPOp8tr
12	18	0	Mr.	David	J.	Liu	NULL	Catalog Store	adventure-works\michael9	david20@adventure-works.com	440-555-0132	61zeTkO+el5g8GG0swny8Wp
13	19	0	Mr.	John	A.	Beaver	NULL	Center Cycle Shop	adventure-works\pamela0	john8@adventure-works.com	521-555-0195	DzbqWX7B3EK5Dub92CKHY
14	20	0	Ms.	Jean	P.	Handley	NULL	Central Discount Store	adventure-works\david8	jean1@adventure-works.com	582-555-0113	o1GVo3vExeNzo0ctdRgf2eD
15	21	0	NULL	Jinghao	NULL	Liu	NULL	Chic Department Stores	adventure-works\jillian0	jinghao1@adventure-works.com	928-555-0116	laD5AeqK9mRilJiJtZGV06Ei
16	22	0	M.	Heidi	F.	Prather	NULL	Tireless Systems	adventure-works\jillian0	heidi0@adventure-works.com	121-555-0121	Q2AULjOJYyDpMD+G97oJ

Query executed successfully.

RAHUL\SQLEXPRESS (16.0 RTM) | rahul (60) | AdventureWorksLT2017 | 00:00:00 | 847 rows

Ready

getschema.sql - not connected - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query Activity Monitor

AdventureWorksLT2017 Execute

Object Explorer Connect

RAHUL\SQLEXPRESS (SQL Server 16.0.1000 - rahul)

- Databases
  - System Databases
  - Database Snapshots
- AdventureWorksLT2017
  - Database Diagrams
  - Tables
    - System Tables
    - FileTables
    - External Tables
    - Graph Tables
    - dbo.BuildVersion
    - dbo.ErrorLog
    - SalesLT.Address
    - SalesLT.Customer
    - SalesLT.CustomerAddress
    - SalesLT.Product
    - SalesLT.ProductCategory
    - SalesLT.ProductDescription
    - SalesLT.ProductModel
    - SalesLT.ProductModelProductDescription
    - SalesLT.SalesOrderDetail
    - SalesLT.SalesOrderHeader
  - Views
  - External Resources
  - Synonyms
  - Programmability
  - Service Broker
  - Storage
  - Security
    - Users
      - dbo
      - guest
    - INFORMATION\_SCHEMA
    - rlb
    - sys

sp\_CreateSQLServer...LT2017 (rahul (62)) SQLQuery5.sql - not connected SQLQuery4.sql - not connected getschema.sql - not connected

```
SELECT
    s.name AS SchemaName,
    t.name AS TableName
FROM sys.tables t
INNER JOIN sys.schemas s
ON t.schema_id = s.schema_id
WHERE s.name = 'SalesLT'
```

To Get Schema Query

Results Messages

SchemaName	TableName
1 SalesLT	Address
2 SalesLT	Customer
3 SalesLT	CustomerAddress
4 SalesLT	Product
5 SalesLT	ProductCategory
6 SalesLT	ProductDescription
7 SalesLT	ProductModel
8 SalesLT	ProductModelProductDescription
9 SalesLT	SalesOrderDetail
10 SalesLT	SalesOrderHeader

Disconnected.

Ready Ln 7 Col 25 Ch 25 INS

SQLQuery3.sql - RAHUL\SQLEXPRESS.AdventureWorksLT2017 (rahul (63)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query Activity Monitor

AdventureWorksLT2017 Execute

Object Explorer Connect

RAHUL\SQLEXPRESS (SQL Server 16.0.1000 - rahul)

- Databases
  - System Databases
  - Database Snapshots
- AdventureWorksLT2017
  - Database Diagrams
  - Tables
    - System Tables
    - FileTables
    - External Tables
    - Graph Tables
    - dbo.BuildVersion
    - dbo.ErrorLog
    - SalesLT.Address
    - SalesLT.Customer
    - SalesLT.CustomerAddress
    - SalesLT.Product
    - SalesLT.ProductCategory
    - SalesLT.ProductDescription
    - SalesLT.ProductModel
    - SalesLT.ProductModelProductDescription
    - SalesLT.SalesOrderDetail
    - SalesLT.SalesOrderHeader
  - Views
  - External Resources
  - Synonyms
  - Programmability
  - Service Broker
  - Storage
  - Security
    - Users
      - dbo
      - guest

SQLQuery3.sql - RA...LT2017 (rahul (63)) sp\_CreateSQLServer...LT2017 (rahul (62)) SQLQuery5.sql - not connected SQLQuery4.sql - not connected

```
CREATE LOGIN ttt WITH PASSWORD = 'fwIxSu5Xdy4whTbVwqPQwKT';
create user ttt for login ttt
```

Create Users  
Login  
Password

91 %

Connected. (1/1)

RAHUL\SQLEXPRESS (16.0 RTM) | rahul (63) | AdventureWorksLT2017 | 00:00:00 | 0 rows

Ready Ln 3 Col 30 Ch 30 INS



Microsoft Azure

Microsoft Azure

AdventureWorks sa X A Resource groups - | X adf-rlb-demo-01 - | X storagemount - Data X bronze to silver - Data X silver to gold - Data X Azure Synapse Anal X +

portal.azure.com/#view/HubsExtension/BrowseResourceGroups

Apps Course M.ed WhatsApp data science link tool hack Data Science app Aptitude Practice - Easy Pro... Microsoft Azure Azure Data Factory IBM Cloud Other bookmarks

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Resource groups

Default Directory (atharvajavla.outlook.onmicrosoft.com)

Create Manage view Refresh Export to CSV Open query Assign tags

Filter for any field... Subscription equals all Location equals all Add filter

No grouping List view

Showing 1 to 4 of 4 records.

Name	Subscription	Location
[databricks] databricks-rg-dbw-rlb-demo-01-6kqwfh2e33r2y	Free Trial	Australia East
[NetworkWatcherRG]	Free Trial	East US
[rg-data-engineering-project]	Free Trial	East US
[synapeworkspace-managedrg-c6aa027-bb9f-44a4-973a-4370ead0d9d7]	Free Trial	Australia East

Name ↑↓  Subscription ↑↓  Location ↑↓

databricks-rg-dbw-rlb-demo-01-6kqwfh2e33r2y Free Trial Australia East ...

NetworkWatcherRG Free Trial East US ...

rg-data-engineering-project Free Trial East US ...

synapeworkspace-managedrg-c6aa027-bb9f-44a4-973a-4370ead0d9d7 Free Trial Australia East ...



Create a resource groups for project

< Previous Page 1 of 1 Next >

Give feedback

AdventureWorks sa X rg-data-engineering X adf-rlb-demo-01 - X storagemount - Data X bronze to silver - Data X silver to gold - Data X Azure Synapse Anal X +

portal.azure.com/#@atharvajavlaoutlook.onmicrosoft.com/resource/subscriptions/77de334e-8920-4e48-8c98-53160d497...

Apps Course M.ed WhatsApp data science link tool hack Data Science app Aptitude Practice - Easy Pro... Microsoft Azure Azure Data Factory IBM Cloud Other bookmarks

Microsoft Azure Search resources, services, and docs (G+)

Home > Resource groups >

rg-data-engineering-project Resource group

Search Create Manage view Delete resource group Refresh Export to CSV Open query Assign tags Move Delete Export template Open in mobile JSON View

Overview Activity log Access control (IAM) Tags Resource visualizer Events

Essentials

Resources Recommendations (3)

Filter for any field... Type equals all Location equals all Add filter

Showing 1 to 5 of 5 records.  Show hidden types No grouping List view

Name	Type	Location
adf-rlb-demo-01	Data factory (V2)	Australia East
dbw-rlb-demo-01	Azure Databricks Service	Australia East
kv-rlb-demo-0001	Key vault	Australia East
rldatalakegen02	Storage account	Australia East
synw-rlb-demo-01	Azure Synapse Analytics workspace	Australia East

< Previous Page 1 of 1 Next >

Tool's are use

1. Azure DataFactory
2. Azure DataBrick
3. Key vault
4. Storage account
5. Azure synapse

Give feedback

Microsoft Azure | Data Factory ▶ adf-rlb-demo-01

 Search factory and documentation



## Integration runtimes

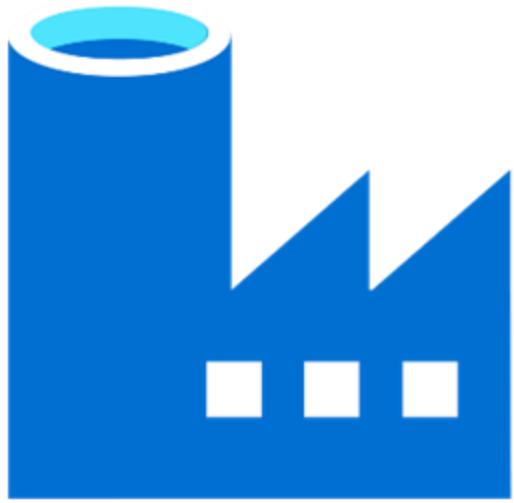
All Self-Hosted Azure Azure-SSIS Airflow

Refresh

 Edit columns

Showing 1 - 2 of 2 items

Name ↑↓	Type ↑↓	Sub-type ↑↓	Status ↑↓	Region ↑↓	Created on ↑↓
AutoResolveIntegrationRuntime	Azure	Public	<span>✓</span> Running	Auto Resolve	---
SHIR	Self-Hosted	---	<span>✓</span> Running	---	7/9/2023, 7:23:30 AM



Azure  
Data Factory

AdventureWorks sa X | rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Data X | bronze to silver - Data X | silver to gold - Data X | Azure Synapse Anal X | +

adf.azure.com/en/management/datalinkedservices?factory=%2Fsubscriptions%2F77de334e-8920-4e48-8c98-53160d497dd5%2Fresou... ↗ ⭐ ↘

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Microsoft Azure Data Factory adf-rlb-demo-01 Search factory and documentation Preview experience Off

General Factory settings Connections **Linked services**

Linked services defines the connection information to a data store or compute. [Learn more](#)

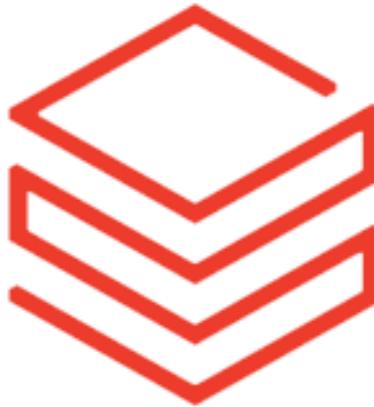
+ New Filter by name Annotations : Any

Showing 1 - 4 of 4 items

Name ↑	Type ↑	Related ↑	Annotations ↑
AzureDatabricks1	Azure Databricks	1	
AzureDataLakeStorage1	Azure Data Lake Storage Gen2	2	
AzureKeyVault1	Azure Key Vault	2	
onpersqlserver	SQL server	3	

**Create linkeservices**

- To connect databricks to datafactory
- To connect storage account to datafactory
- To connect SQL server to datafactory



**databricks**

AdventureWorks sa X | rg-data-engineering X | adf-rlb-demo-01 - X | Cluster Details - Data X | bronze to silver - Data X | silver to gold - Data X | Azure Synapse Anal X | +

adb-4803313058683523.3.azuredatabricks.net/?o=4803313058683523#setting/clusters/0709-154804-pj494drt/configuration

Apps Course M.ed WhatsApp data science link tool hack Data Science app Aptitude Practice - Easy Pro... Microsoft Azure Azure Data Factory IBM Cloud Other bookmarks

Microsoft Azure databricks Search data, notebooks, recents, and more... CTRL + P

dbw-rlb-demo-01 atharvajavla@outlook.com

D Compute > UI preview Provide feedback Atharva javla's Cluster More ... Start Edit

Configuration Notebooks (0) Libraries Event log Spark UI Driver logs Metrics Apps Spark cluster UI - Master ▾

Policy ? Unrestricted

Multi node  Single node

Access mode ? Single user access ?  
 Single user  Atharva javla

UI | JSON

Summary  
1 Driver 14 GB Memory, 4 Cores  
Runtime 12.2.x-scala2.12  
Standard\_DS3\_v2 0.75 DBU/h

Create an Cluster

Performance

Databricks Runtime Version  
12.2 LTS (includes Apache Spark 3.3.2, Scala 2.12)

Use Photon Acceleration ?

New Node type ?  
Standard\_DS3\_v2 14 GB Memory, 4 Cores

Terminate after 15 minutes of inactivity ?

Tags ?  
No custom tags

## storagemount

Python ▾

CTRL + P

File Edit View Run Help Last edit was 23 hours ago

## Provide feedback

dbw-rlb-demo-01

tharvajavla@outlook.com

Cmd 1

Python ► ▾ ⌂ ⌃ ⌁

```
1 configs = {  
2     "fs.azure.account.auth.type": "CustomAccessToken",  
3     "fs.azure.account.custom.token.provider.class": spark.conf.get("spark.databricks.passthrough.adls.gen2.tokenProviderClassName")  
4 }  
5  
6 # Optionally, you can add <directory-name> to the source URI of your mount point.  
7 dbutils.fs.mount(  
8     source = "abfss://bronze@rlbdatalakegen02.dfs.core.windows.net/",  
9     mount_point = "/mnt/bronze",  
10    extra_configs = configs)
```

## Mount Data

```
Out[4]: [FileInfo(path='dbfs:/mnt/bronze/SalesLT/Address/', name='Address/', size=0, modificationTime=1688899880000),  
 FileInfo(path='dbfs:/mnt/bronze/SalesLT/Customer/', name='Customer/', size=0, modificationTime=1688899847000),  
 FileInfo(path='dbfs:/mnt/bronze/SalesLT/CustomerAddress/', name='CustomerAddress/', size=0, modificationTime=1688899863000),  
 FileInfo(path='dbfs:/mnt/bronze/SalesLT/Product/', name='Product/', size=0, modificationTime=1688899831000),  
 FileInfo(path='dbfs:/mnt/bronze/SalesLT/ProductCategory/', name='ProductCategory/', size=0, modificationTime=1688899850000),  
 FileInfo(path='dbfs:/mnt/bronze/SalesLT/ProductDescription/', name='ProductDescription/', size=0, modificationTime=1688899871000),  
 FileInfo(path='dbfs:/mnt/bronze/SalesLT/ProductModel/', name='ProductModel/', size=0, modificationTime=1688899831000),  
 FileInfo(path='dbfs:/mnt/bronze/SalesLT/ProductModelProductDescription/', name='ProductModelProductDescription/', size=0, modificationTime=1688899831000),  
 FileInfo(path='dbfs:/mnt/bronze/SalesLT/SalesOrderDetail/' name='SalesOrderDetail/' size=0 modificationTime=1688899864000)]
```

AdventureWorks sa X | rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Dat X | bronze to silver - Dat X | silver to gold - Data X | Azure Synapse Anal X | +

adb-4803313058683523.3.azuredatabricks.net/?o=4803313058683523#notebook/68638679005239/command/68638679005240

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Microsoft Azure databricks Search data, notebooks, recents, and more... CTRL + P

dbw-rlb-demo-01 ? atharvajavla@outlook.com

storagemount Python

File Edit View Run Help Last edit was 23 hours ago Provide feedback

Run all Terminated Schedule Share

## for gold container

Cmd 6

```
1 configs = {  
2     "fs.azure.account.auth.type": "CustomAccessToken",  
3     "fs.azure.account.custom.token.provider.class": spark.conf.get("spark.databricks.passthrough.adls.gen2.tokenProviderClassName")  
4 }  
5  
6 # Optionally, you can add <directory-name> to the source URI of your mount point.  
7 dbutils.fs.mount(  
8     source = "abfss://gold@rlbdatalakegen02.dfs.core.windows.net/",  
9     mount_point = "/mnt/gold",  
10    extra_configs = configs)
```

Python

Out[6]: True

Command took 10.86 seconds -- by atharvajavla@outlook.com at 7/9/2023, 9:44:54 PM on Atharva javla's Cluster

Cmd 7

1

Shift+Enter to run Shift+Ctrl+Enter to run selected text

Transform Data

AdventureWorks sa X | rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Dat X | bronze to silver - Dat X | silver to gold - Data X | Azure Synapse Anal X | +

adb-4803313058683523.3.azuredatabricks.net/?o=4803313058683523#notebook/68638679005249/command/68638679005261

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Microsoft Azure | databricks Search data, notebooks, recents, and more... CTRL + P

bronze to silver Python

File Edit View Run Help Last edit was 6 hours ago Provide feedback

dbw-rlb-demo-01 ? atharvajavla@outlook.com

Run all Terminated Schedule Share

Cmd 1

## Doming Transformation for all tables

Cmd 2

```
1 table_name = []
2
3 for i in dbutils.fs.ls('mnt/bronze/SalesLT/'):
4     table_name.append(i.name.split('/')[0])
```

Python

Command took 0.79 seconds -- by atharvajavla@outlook.com at 7/10/2023, 12:34:45 AM on Atharva javla's Cluster

Cmd 3

```
1 table_name
```

Out[14]: ['Address', 'Customer', 'CustomerAddress', 'Product', 'ProductCategory', 'ProductDescription', 'ProductModel', 'ProductModelProductDescription', 'SalesOrderDetail', 'SalesOrderHeader']

NEW

1/4 NEW

Command took 0.11 seconds -- by atharvajavla@outlook.com at 7/9/2023, 10:36:29 PM on Atharva javla's Cluster

AdventureWorks sa X | rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Dat X | bronze to silver - Dat X | silver to gold - Data X | Azure Synapse Anal X | +

adb-4803313058683523.3.azuredatabricks.net/?o=4803313058683523#notebook/68638679005249/command/68638679005261

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Microsoft Azure | databricks Search data, notebooks, recents, and more... CTRL + P

bronze to silver Python

File Edit View Run Help Last edit was 6 hours ago Provide feedback

Run all Terminated Schedule Share

display(df)

(1) Spark Jobs

Table +

SalesOrderID	RevisionNumber	OrderDate	DueDate	ShipDate	Status	OnlineOrderFlag	SalesOrderNumber	PurchaseOrderNumber	AccountNumber	
1	71774	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71774	PO348186287	10-4020-000609
2	71776	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71776	PO19952192051	10-4020-000106
3	71780	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71780	PO19604173239	10-4020-000340
4	71782	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71782	PO19372114749	10-4020-000582
5	71783	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71783	PO19343113609	10-4020-000024
6	71784	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71784	PO19285135919	10-4020-000448
7	71796	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71796	PO17052159664	10-4020-000420

32 rows | 0.43 seconds runtime Refreshed 22 hours ago

Command took 0.43 seconds -- by atharvajavla@outlook.com at 7/9/2023, 10:58:56 PM on Atharva javla's Cluster

Shift+Enter to run  
Shift+Ctrl+Enter to run selected text

AdventureWorks sa X | rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Dat X | bronze to silver - Dat X | silver to gold - Data X | Azure Synapse Anal X | +

adb-4803313058683523.3.azuredatabricks.net/?o=4803313058683523#notebook/68638679005247/command/68638679005270

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Microsoft Azure | databricks Search data, notebooks, recents, and more... CTRL + P

silver to gold Python

File Edit View Run Help Last edit was 21 hours ago Provide feedback

Run all Terminated Schedule Share

Cmd 1

## doing transformation for all thables (changing column names)

Cmd 2

```
1 table_name = []
2
3 for i in dbutils.fs.ls('mnt/silver/SalesLT/'):
4     table_name.append(i.name.split('/')[0])
```

Command took 0.96 seconds -- by atharvajavla@outlook.com at 7/10/2023, 12:07:01 AM on Atharva javla's Cluster

Cmd 3

Python

```
1 table_name
```

Out[4]: ['Address', 'Customer', 'CustomerAddress', 'Product', 'ProductCategory', 'ProductDescription', 'ProductModel', 'ProductModelProductDescription', 'SalesOrderDetail', 'SalesOrderHeader']

Command took 0.12 seconds -- by atharvajavla@outlook.com at 7/10/2023, 12:07:08 AM on Atharva javla's Cluster

NEW 1/4 NEW

**silver to gold** Python

File Edit View Run Help Last edit was 21 hours ago Provide feedback

Run all Terminated Schedule Share

```
/mnt/silver/SalesLT/ProductDescription  
/mnt/silver/SalesLT/ProductModel  
/mnt/silver/SalesLT/ProductModelProductDescription  
/mnt/silver/SalesLT/SalesOrderDetail  
/mnt/silver/SalesLT/SalesOrderHeader
```

Command took 49.34 seconds -- by atharvajavla@outlook.com at 7/10/2023, 12:07:13 AM on Atharva javla's Cluster

Cmd 5

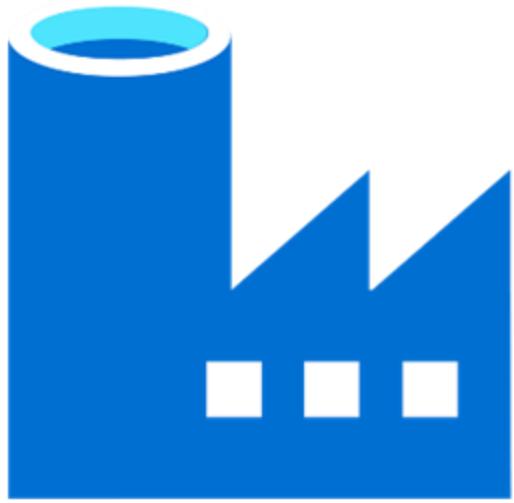
```
1 display(df)
```

(1) Spark Jobs

Table												
Sales_Order_ID	Revision_Number	Order_Date	Due_Date	Ship_Date	Status	Online_Order_Flag	Sales_Order_Number	Purchase_Order_Number	Account_N			
1	71774	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71774	PO348186287	10-4020-00		
2	71776	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71776	PO19952192051	10-4020-00		
3	71780	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71780	PO19604173239	10-4020-00		
4	71782	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71782	PO19372114749	10-4020-00		
5	71783	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71783	PO19343113609	10-4020-00		
6	71784	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71784	PO19285135919	10-4020-00		
7	71796	2	2008-06-01	2008-06-13	2008-06-08	5	false	SO71796	PO17052159664	10-4020-00		

32 rows | 0.46 seconds runtime Refreshed 21 hours ago

Command took 0.46 seconds -- by atharvajavla@outlook.com at 7/10/2023, 12:07:28 AM on Atharva javla's Cluster



Azure  
Data Factory

AdventureWorks sa X | A rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Dat X | bronze to silver - D X | silver to gold - Data X | Azure Synapse Anal X | +

adf.azure.com/en/authoring/pipeline/copy\_all\_table?factory=%2Fsubscriptions%2F77de334e-8920-4e48-8c98-53160d497dd5%2Freso... ↗ ⭐ ↘

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Microsoft Azure | Data Factory > adf-rlb-demo-01

Search factory and documentation

9 13 ? Preview experience Off

Factory Resources

Pipelines

- copy address table
- copy\_all\_table

Change Data Capture (preview)

Datasets

- address
- address\_Parquet
- parquetTables
- SqlDBTables
- SqlServercopy

Data flows

Power Query

Activities

copy address table

copy\_all\_table

parquetTables

Validate all Publish all

For Each

Lookup

Look for all tables

ForEach Schema Table

Activities

copy each table

Notebook

Bronze to Silver

Notebook

Silver to Gold

Filter resources by name

Search activities

Move & transform

Synapse

Azure Data Explorer

Azure Function

Batch Service

Databricks

Data Lake Analytics

General

HDInsight

Iteration & conditionals

Machine Learning

Power Query

Parameters Variables Settings Output

Pipeline run ID: 586063b6-6bcb-4dbc-833a-000000000000

All status List

Showing 1 - 1 of 1 items

Activity name ↑↓	Status ↑↓	Activity type ↑↓	Run start ↑↓	Duration ↑↓	Log	Int
Look for all tables	✓ Succeeded	Lookup	7/9/2023, 3:48:12 PM	15s	↗ ↘	SI

Create end to end pipeline Azure DataFactory to Azure Databricks

View debug run consumption

Export to CSV

```
graph LR; copy_all_table[copy_all_table] --> LookUp[Look for all tables]; LookUp --> ForEach[ForEach Schema Table]; ForEach --> copy_each_table[copy each table]; copy_each_table --> BronzeToSilver[Bronze to Silver]; BronzeToSilver --> SilverToGold[Silver to Gold]
```

AdventureWorks sa X | A rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Dat X | bronze to silver - D X | silver to gold - Data X | Azure Synapse Anal X | +

adf.azure.com/en/monitoring/pipelineruns?factory=%2Fsubscriptions%2F77de334e-8920-4e48-8c98-53160d497dd5%2FresourceGrou... ↗ ⭐ ↘

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Microsoft Azure | Data Factory > adf-rlb-demo-01 Search factory and documentation

Pipeline runs

Triggered Debug Rerun Cancel options Refresh Edit columns List Gantt

Filter by run ID or name Chennai, Kolkata, Mu... : Last 24 hours Pipeline name : All Status : All Runs : Latest runs Triggered by : All Add filter

Copy filters Export to CSV

Showing 1 - 1 items Refreshing...

Pipeline name ↑	Run start ↑	Run end ↑	Duration	Triggered by	Status ↑	Run	Parameters
> copy_all_table	7/10/2023, 12:35:55 AM	7/10/2023, 12:38:13 AM	2m 18s	Manual trigger	Succeeded	Rerun (Latest)	

Notifications Alerts & metrics

Successfully runs Pipeline



AdventureWorks sa X | rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Data X | bronze to silver - Data X | silver to gold - Data X | Azure Synapse Anal X | +

adf.azure.com/en/monitoring/pipelineruns/da5a72d5-5f43-4b60-a45a-ffa1ee585dab?factory=%2Fsubscriptions%2F77de334e-8920-4e... ↗ ⭐ ↘

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Microsoft Azure Data Factory adf-rlb-demo-01 Search factory and documentation

All pipeline runs > copy\_all\_table - Activity runs

Rerun Cancel Refresh Update pipeline List Gantt

ForEach

Lookup Look for all tables

ForEach Schema Table Activities copy each table

Notebook Bronze to Silver

Notebook Silver to Gold

Activity runs

Pipeline run ID da5a72d5-5f43-4b60-a45a-ffa1ee585dab

All status List

Showing 1 - 14 items

Activity name	Status	Activity type	Run start time
Silver to Gold	Succeeded	Notebook	7/10/2023, 12:36:02 AM
Bronze to Silver	Succeeded	Notebook	7/10/2023, 12:36:02 AM
copy each table	Skipped	Copy data	7/10/2023, 12:35:58 AM
copy each table	Skipped	Copy data	7/10/2023, 12:35:58 AM

Successfully Transform Data  
Bronze container to Silver & Silver to Gold

Export to CSV

Dashboard Runs Pipeline runs Trigger runs Change Data Capture (previ...) Runtimes & sessions Integration runtimes Data flow debug Notifications Alerts & metrics

atharvajavla@outlook.com DEFAULT DIRECTORY

The screenshot shows the Azure Data Factory pipeline 'copy\_all\_table' in the 'Activity runs' view. The pipeline consists of a 'Lookup' activity followed by a 'ForEach' loop. Inside the loop, there are two 'Notebook' activities: 'Bronze to Silver' and 'Silver to Gold'. All activities have succeeded. An orange arrow points from the 'Silver to Gold' activity to a blue overlay message that reads 'Successfully Transform Data' and 'Bronze container to Silver & Silver to Gold'.



Azure Synapse Analytics

AdventureWorks sa X | rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Dat X | bronze to silver - D X | silver to gold - Data X | synw-rlb-demo-01 X +

web.azure-synapse.net/en/authoring/explore/linked/storageaccounts/synw-rlb-demo-01-WorkspaceDefaultStorage-rlbdatalakeg... 🔍 🖼 ⭐

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Microsoft Azure | Synapse Analytics > synw-rlb-demo-01

Synapse live Validate all Publish all 1

Data

Workspace Linked

Filter resources by name

Azure Data Lake Storage Gen2 2

- synw-rlb-demo-01 (Primary - rlbdatalakegen2)
- bronze (Primary)
- gold
- new
- silver

(Attached Containers)

Integration datasets 1

- goldtables

SQL script 1 gold

New SQL script New data flow New integration dataset Upload Download New folder Select all Copy link Rename Manage access More

gold > SalesLT

Name	Last Modified	Content Type	Size
Address	7/10/2023, 12:07:21 AM	Folder	
Customer	7/10/2023, 12:07:39 AM	Folder	
CustomerAddress	7/10/2023, 12:07:43 AM	Folder	
Product	7/10/2023, 12:07:46 AM	Folder	
ProductCategory	7/10/2023, 12:07:49 AM	Folder	
ProductDescription	7/10/2023, 12:07:52 AM	Folder	
ProductModel	7/10/2023, 12:07:54 AM	Folder	
ProductModelProductDescription	7/10/2023, 12:07:57 AM	Folder	
SalesOrderDetail	7/10/2023, 12:07:59 AM	Folder	
SalesOrderHeader	7/10/2023, 12:08:01 AM	Folder	

Showing 1 to 10 of 10 cached items

Data Lake Storage Gen 2 linked to Azure Synapses

Microsoft Azure | Synapse Analytics ▶ synw-rlb-demo-01

Search



## Develop

- <<

 Filter resources by name

## ► SQL scripts

```
1 USE gold_db
2 GO
3
4 CREATE OR ALTER PROC CreateSQLServerlessView_gold @ViewName nvarchar(1
5 AS
6 BEGIN
7
8 DECLARE @statement VARCHAR(MAX)
9
10 SET @statement = N'CREATE OR ALTER VIEW ' + @ViewName + ' AS
11     SELECT *
12     FROM
13         OPENROWSET(
14             BULK ''https://rlbdatalakegen02.dfs.core.windows.net/gold/S
15             FORMAT = ''DELTA''
16         ) as [result]
17
18
19 EXEC (@statement)
20
21
22 END
23 GO
```



## Create View for all tables

AdventureWorks sa X | rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Dat X | bronze to silver - D X | silver to gold - Data X | synw-rlb-demo-01 X +

web.azure-synapse.net/en/authoring/explore/workspace/sqlscripts/SQL%20script%201?workspace=%2Fsubscriptions%2F77de33... 🔍 ↗ ⭐

Apps Course M.ed WhatsApp data science link tool hack Data Science app Aptitude Practice - Easy Pro... Microsoft Azure Azure Data Factory IBM Cloud Other bookmarks

Microsoft Azure | Synapse Analytics > synw-rlb-demo-01 Search

Synapse live Validate all Publish all 1

Data

Workspace Linked

Filter resources by name

SQL database 1

- gold\_db (SQL)
  - External tables
  - External resources
- Views
  - dbo.Address
    - Columns
  - dbo.Customer
  - dbo.CustomerAddress
  - dbo.Product
  - dbo.ProductCategory
  - dbo.ProductDescription
  - dbo.ProductModel
  - dbo.ProductModelProductD...
  - dbo.SalesOrderDetail
  - dbo.SalesOrderHeader
  - System views
- Schemas
- Security

SQL script 1

Run Undo Publish Query plan Connect to Built-in Use database gold\_db

```
1 SELECT TOP (100) [Address_ID]
2 , [Address_Line1]
3 , [Address_Line2]
4 , [City]
5 , [State_Province]
6 , [Country_Region]
7 , [Postal_Code]
8 , [rowguid]
9 , [Modified_Date]
10 FROM [dbo].[Address]
```

Properties

General Related (0)

Name \* SQL script 1

Description

Type .sql script

Size 172 bytes

Results settings per query ⓘ

First 5000 rows (default)

All rows

Results Messages

View Table Chart Export results

Search

Address_ID	Address_Line1	Address_Line2	City	State_Province	Country_Region	Postal_Code	rowguid	Modified_Date
9	8713 Yosemite Ct.	(NULL)	Bothell	Washington	United States	98011	268af621-76d7...	2006-07-01
11	1318 Lasalle Street	(NULL)	Bothell	Washington	United States	98011	981b3303-aca2...	2007-04-01
25	9178 Jumping St.	(NULL)	Dallas	Texas	United States	75201	c8df3bd9-48f0...	2006-09-01
28	9228 Via Del Sol	(NULL)	Phoenix	Arizona	United States	85004	12ae5ee1-fc3e...	2005-09-01
32	26910 Indela Road	(NULL)	Montreal	Quebec	Canada	H1Y 2H5	84a95f62-3ae8...	2006-08-01

00:00:37 Query executed successfully.

AdventureWorks sa X | rg-data-engineering X | adf-rb-demo-01 - X | storagemount - Data X | bronze to silver - Data X | silver to gold - Data X | synw-rb-demo-01 X +

web.azure-synapse.net/en/authoring/orchestrate/pipeline/create%20view?workspace=%2Fsubscriptions%2F77de334e-8920-4e48... Search

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Microsoft Azure | Synapse Analytics > synw-rb-demo-01

Search

Synapse live Validate all Publish all 1

Integrate

Filter resources by name

Pipelines 1

create view

Activities

SQL script 1 gold sp\_CreateSQLServer... create view

Validate Debug Add trigger

Get Metadata Get Tablenames

ForEach For each table name

Activities Stored procedure...

General Settings User properties

Name \* Get Tablenames Learn more

Description

Activity state (preview) Active Inactive

Timeout 0.12:00:00

Retry 0

Retry interval (sec) 30

Secure output

atharvajavla@outlook.com DEFAULT DIRECTORY

More options

The screenshot shows the Azure Synapse Studio interface. The top navigation bar includes 'Synapse live', 'Validate all', 'Publish all 1', and other standard navigation items. The left sidebar has icons for Home, Pipelines, Datasets, and Jobs. The main area is titled 'Integrate' and shows a pipeline named 'SQL script 1'. The pipeline contains a single activity named 'gold' which is a 'sp\_CreateSQLServerl...' stored procedure. Below this, there is a 'create view' activity. The 'Activities' pane on the left lists various options like Synapse, Move & transform, Azure Data Explorer, etc. A search bar is also present in the activities pane. The bottom half of the screen shows the configuration details for the 'Stored procedure' activity. It has tabs for General, Settings, and User properties. Under General, the 'Name' is set to 'Stored procedure1', 'Activity state (preview)' is set to Active (radio button selected), 'Timeout' is set to '0.12:00:00', 'Retry' is set to '0', 'Retry interval (sec)' is set to '30', and 'Secure output' is unchecked. On the right side, there is a preview pane showing the 'Stored procedure' configuration with a 'Stored procedure1' entry and a green checkmark icon.

AdventureWorks sa X | rg-data-engineering X | adf-rb-demo-01 - X | storagemount - Dat X | bronze to silver - D X | silver to gold - Data X | synw-rb-demo-01 X +

← → C Home 🔒 web.azure-synapse.net/en/monitoring/pipelineruns?workspace=%2Fsubscriptions%2F77de334e-8920-4e48-8c98-53160d497dd5... 🔍 ↗ ⭐ ↘ ↙ R ⋮

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Microsoft Azure | Synapse Analytics > synw-rb-demo-01

Pipeline runs

Triggered Debug Rerun Cancel options Refresh Edit columns List Gantt

Filter by run ID or name: Chennai, Kolkata, Mu... : Last 24 hours Pipeline name : All Status : All

Showing 1 - 3 items

Pipeline name ↑↓	Run start ↑↓	Run end ↑↓	Duration
create view	7/10/2023, 2:36:51 PM	7/10/2023, 2:37:19 PM	29s
create view	7/10/2023, 2:30:08 PM	7/10/2023, 2:30:27 PM	20s
create view	7/10/2023, 2:25:10 PM	7/10/2023, 2:25:22 PM	13s

Error

Copy to clipboard

Operation on target For each table name failed: Activity failed because an inner activity failed; Inner activity name: Stored procedure1, Error: Execution fail against sql server. Please contact SQL Server team if you need further support. Sql error number: 13807.

Error Message: Content of directory on path '[https://mrkdatalakegen2.dfs.core.windows.net/gold/SalesLT/CustomerAddress/\\_delta\\_log/\\*.\\*](https://mrkdatalakegen2.dfs.core.windows.net/gold/SalesLT/CustomerAddress/_delta_log/*.*)' cannot be listed.

Annotations Run ID

Last refreshed 0 minutes ago

4b66e3b7-833d-48cc-958d-06e4135db...  
c682367f-9f9d-491f-895b-d10361b9d3...  
5b2777a4-4288-4428-a2f8-39771ca235...

Manual trigger Failed Original

Facing Error to create view because to give invalid path

AdventureWorks sa X | rg-data-engineering X | adf-rlb-demo-01 - X | storagemount - Dat X | bronze to silver - D X | silver to gold - Data X | synw-rlb-demo-01 X +

← → C Home 🔒 web.azure-synapse.net/en/monitoring/pipelineruns?workspace=%2Fsubscriptions%2F77de334e-8920-4e48-8c98-53160d497dd5... 🔍 ↻ ⭐ ↺ ↻ R ⋮

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Microsoft Azure | Synapse Analytics > synw-rlb-demo-01

Pipeline runs

Triggered Debug Rerun Cancel options Refresh Edit columns List Gantt

Filter by run ID or name: Chennai, Kolkata, Mu... : Last 24 hours Pipeline name: All Status: All Runs: Latest runs Triggered by: All Add filter

Copy filters Export to CSV

Last refreshed 0 minutes ago

Showing 1 - 3 items

Pipeline name ↑↓	Run start ↑↓	Run end ↑↓	Duration	Triggered by	Status ↑↓	Run	Parameters	Annotations	Run ID
create view	7/10/2023, 2:36:51 PM	7/10/2023, 2:37:19 PM	29s	Manual trigger	<span style="color: green;">✓ Succeeded</span>	Original			4b66e3b7-833d-48cc-958d-06e4135db
create view	7/10/2023, 2:30:08 PM	7/10/2023, 2:30:27 PM	20s	Manual trigger	<span style="color: red;">✗ Failed</span>	Original			c682367f-9f9d-491f-895b-d10361b9d3
create view	7/10/2023, 2:25:10 PM	7/10/2023, 2:25:22 PM	13s	Manual trigger	<span style="color: red;">✗ Failed</span>	Original			5b2777a4-4288-4428-a2f8-39771ca235

Integration

Pipeline runs Trigger runs Integration runtimes Link connections

Successfully create view



Power BI Desktop

File Home Help Table tools Column tools

Name Title Format Text Summarization Don't summarize Data category Uncategorized Sort by column Sort Data groups Groups Manage relationships New column Calculations

Structure Formatting Properties

Customer\_ID Name\_Style Title First\_Name Middle\_Name Last\_Name Suffix Company\_Name Sales\_Person Email\_Address Phone

Customer_ID	Name_Style	Title	First_Name	Middle_Name	Last_Name	Suffix	Company_Name	Sales_Person	Email_Address	Phone
2	False	Mr.	Keith		Harris		Progressive Sports	adventure-works\david8	keith0@adventure-works.com	170-555-0127
5	False	Mr.	Lucy		Harrington		Metropolitan Sports Supply	adventure-works\shu0	lucy0@adventure-works.com	828-555-0186
23	False	Mr.	Kerim		Hanif		Bike World	adventure-works\shu0	kerim0@adventure-works.com	216-555-0122
24	False	Mr.	Kevin		Liu		Eastside Department Store	adventure-works\linda3	kevin5@adventure-works.com	926-555-0164
29	False	Mr.	Bryan		Hamilton		Cross-Country Riding Supplies	adventure-works\jose1	bryan2@adventure-works.com	344-555-0144
37	False	Mr.	Jim		Geist		Two Bike Shops	adventure-works\pamela0	jim1@adventure-works.com	724-555-0161
40	False	Mr.	Darren		Gehring		Journey Sporting Goods	adventure-works\jillian0	darren0@adventure-works.com	417-555-0182
42	False	Mr.	Jeremy		Los		Healthy Activity Store	adventure-works\linda3	jeremy0@adventure-works.com	911-555-0165
55	False	Mr.	Eric		Lang		Kickstands and Accessories Company	adventure-works\pamela0	eric6@adventure-works.com	932-555-0163
56	False	Mr.	Brian		Groth		Latest Accessories Sales	adventure-works\david8	brian5@adventure-works.com	461-555-0118
58	False	Mr.	Peter		Kurniawan		Largest Bike Store	adventure-works\jillian0	peter4@adventure-works.com	436-555-0160
59	False	Mr.	Douglas		Groncki		Locks Company	adventure-works\shu0	douglas2@adventure-works.com	385-555-0140
61	False	Mr.	Jeffrey		Kurtz		Many Bikes Store	adventure-works\shu0	jeffrey3@adventure-works.com	452-555-0179
64	False	Mr.	Vamsi		Kuppa		Metal Clearing House	adventure-works\jose1	vamsi1@adventure-works.com	290-555-0196
70	False	Mr.	Deepak		Kumar		Outdoor Aerobic Systems Company	adventure-works\jae0	deepak0@adventure-works.com	1 (11) 500 555
77	False	Mr.	Michael		Brundage		Mechanical Products Ltd.	adventure-works\shu0	michael13@adventure-works.com	128-555-0148
78	False	Mr.	Stefan		Delmarco		Preferred Bikes	adventure-works\linda3	stefan0@adventure-works.com	819-555-0186
79	False	Mr.	Mitch		Kennedy		Reasonable Bicycle Sales	adventure-works\shu0	mitch0@adventure-works.com	996-555-0192
93	False	Mr.	Prashanth		Desai		Stationary Bikes and Stands	adventure-works\jillian0	prashanth0@adventure-works.com	138-555-0156
94	False	Mr.	Scott		Konersmann		Specialty Sports Store	adventure-works\jillian0	scott6@adventure-works.com	556-555-0192
97	False	Mr.	Eugene		Kogan		Mountain Bike Center	adventure-works\shu0	eugene2@adventure-works.com	136-555-0134
118	False	Mr.	Yale		Li		Rapid Bikes	adventure-works\jose1	yale0@adventure-works.com	316-555-0138
120	False	Mr.	Pat		Coleman		Machines & Cycles Store	adventure-works\garrett1	pat2@adventure-works.com	292-555-0128
133	False	Mr.	Michael		Graff		Commercial Sporting Goods	adventure-works\shu0	michael16@adventure-works.com	132-555-0150
136	False	Mr.	Derek		Graham		Wholesale Parts	adventure-works\jose1	derek0@adventure-works.com	674-555-0187
142	False	Mr.	Jon		Grande		Riding Cycles	adventure-works\jae0	jon1@adventure-works.com	
145	False	Mr.	Ted		Bremer		Raw Materials Inc	adventure-works\pamela0	ted0@adventure-works.com	

Load all the Data in Power-BI

Table: Customer (847 rows) Column: Title (5 distinct values)

File Home Help

Clipboard

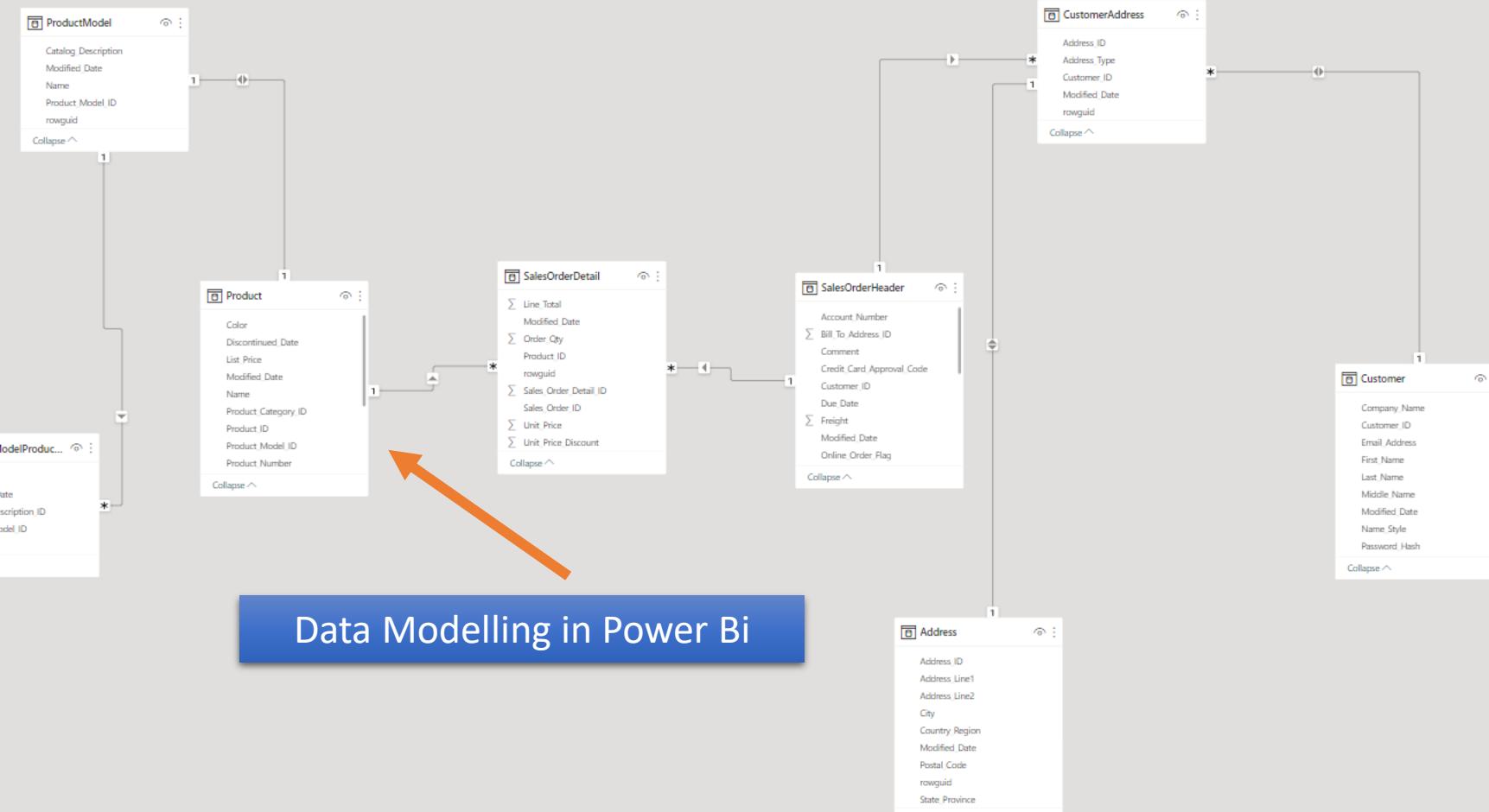
Get data ▾ Excel workbook OneLake data hub ▾ SQL Server Enter data Recent sources ▾

Transform Refresh data ▾ Relationships

New measure column New table Calculations

Manage roles as Security Q&amp;A Linguistic schema ▾ Sensitivity ▾

Sensitivity ▾ Publish Share



All tables



50%



Data engineering project • Last saved: Today at 9:18 PM

File Home Insert Modeling View Optimize Help

Search

Sign in Share

Themes

Gridlines Snap to grid Lock objects

Page view Mobile layout Mobile

Filters

Selection

Build a visual

Page options

Format

Performance analyzer

Bookmarks Sync slicers

Show panes

**Number of Products**

**295**  
Count of Product\_ID

**AdventureWorksLT2017**

**708.69K**  
Sum of Line\_Total

**Sum of Line\_Total, Sum of Unit\_Price and Sum of Unit\_Price\_Discount**

207.52K (0%)  
(22.65%)  
0.01K (0%)  
Sum of Line\_To...  
Sum of Unit\_Pri...  
Sum of Unit\_Pri...  
708.69K (77.35%)

**Sum of Line\_Total and Count of Product\_ID**

542.00 1.42M  
708.69K

**Count of Parent\_Product\_Category\_ID, Count of Product\_Category\_ID, Count of Bill\_To\_Address\_ID and Sum of Revision**

Count of Par... Count of Pr... Count of ...  
(Blank) 2008-06-13  
Due Date  
0% 50% 100%  
Count of Parent\_Product\_Category\_ID...

**Sum of Unit\_Price and Sum of Unit\_Price\_Discount**

Sum of Unit\_Price Sum of Unit\_Price\_Discount  
0.2M 0.0M

**847**  
Count of Customer\_ID

**Count of Product\_Category\_ID by Name**

1 (2.44%) Mountain Frames  
1 (2.44%) Panniers  
1 (2.44%) Pedals

Page 1 +

80%

Filters

Search

Filters on this page Add data fields here

Filters on all pages Add data fields here

Data

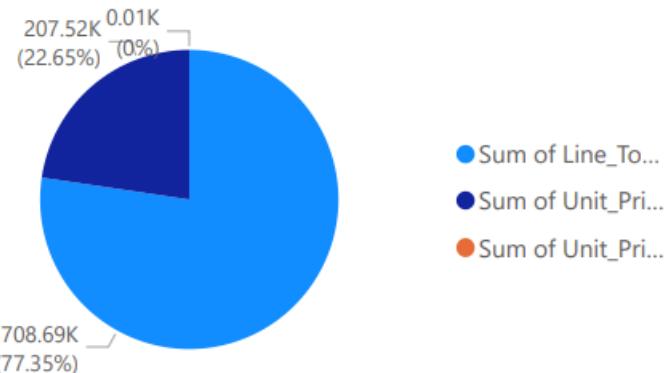
Address Customer CustomerAddress Product ProductCategory ProductDescription ProductModel ProductModelProperty SalesOrderDetail SalesOrderHeader

# Number of Products

295

## Count of Product ID

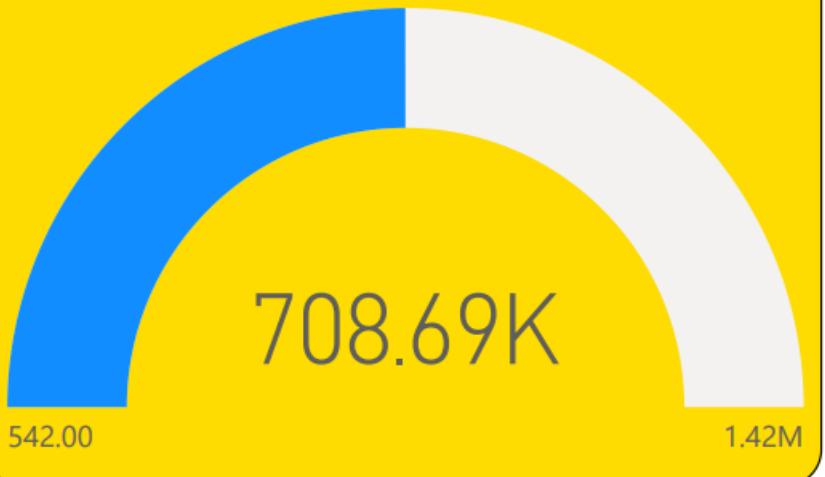
## **Sum of Line\_Total, Sum of Unit\_Price and Sum of Unit Price Discount**



**AdventureWorksLT2017**

708.69K

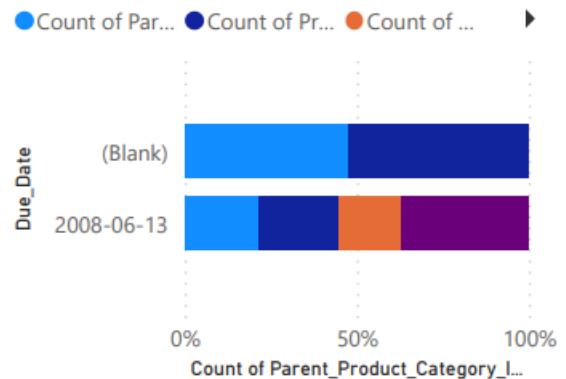
#### **Sum of Line\_Total and Count of Product\_ID**



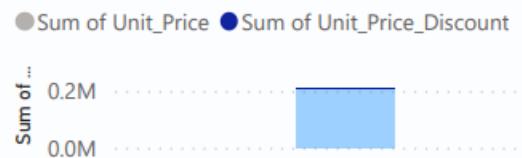
### Product\_ID

680 | 999

**Count of Parent\_Product\_Category\_ID, Count of Product\_Category\_ID, Count of Bill\_To\_Address\_ID and Sum of Revision\_**



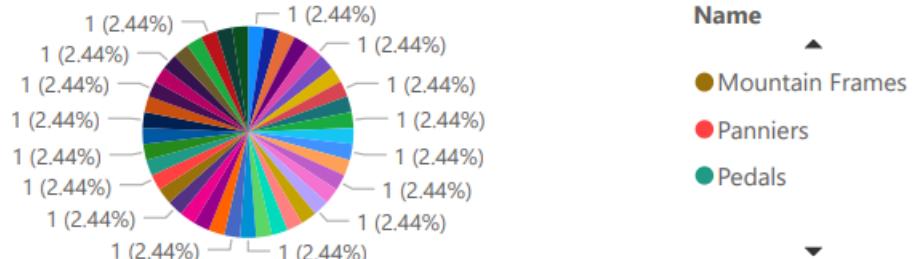
## **Sum of Unit\_Price and Sum of Unit\_Price\_Discount**



847

### Count of Customer\_ID

## Count of Product\_Category\_ID by Name



**Thank you**