

Assignment 4 QA

PartA

Q1.

Microsoft Azure

rgparta_02

Overview

Activity log

Access control (IAM)

Tags

Resource visualizer

Events

Settings

Deployments

Security

Deployment stacks

Policies

Properties

Locks

Cost Management

Cost analysis

Cost alerts (preview)

Essentials

Subscription (move) : Azure for Students

Subscription ID : 8327bba7-fe34-4042-a7f0-cb60695a470

Location : East US

Tags (edit) : Add tags

Deployments : 4 Succeeded

Resources

Recommendations

Filter for any field...

Type equals all

Location equals all

Add filter

Showing 1 to 4 of 4 records

Show hidden types

No grouping

List view

Name	Type	Location
bsparta02	Storage account	East US
dbparta02 (dbserverparta02/dbparta02)	SQL database	Central US
dbserverparta02	SQL server	Central US
dfparta02	Data factory (V2)	East US

Switch between a list view of your resources and a summary chart view of resource counts.

Q2.

Debug result:

Search factory and documentation

Publish all

CopyPipeline

OutputSqlDataset

SourceBlobDataset

Activities

Search activities

Move and transform

Copy data

Data flow

Synapse

Azure Data Explorer

Azure Function

Batch Service

Databricks

Data Lake Analytics

General

HDInsight

Iteration & conditionals

Machine Learning

Power Query

Copy data

CopyFromBlobToSql

Properties

General

Related

Name *

CopyPipeline

Description

Annotations

New

Parameters

Variables

Settings

Output

Pipeline run ID: 4562dda0-4362-449a-8ee4-117f83176d05

Pipeline status: Succeeded

View debug run consumption

Monitor in Azure Metrics

Export to CSV

Showing 1 - 1 of 1 items

Activity name	Activity status	Activity type	Run start	Duration	Integration runtime	User properties
CopyFromBlobToSql	Succeeded	Copy data	7/17/2024, 11:42:27 PM	12s	AutoResolveIntegration	

Publish and run result:

dfparta02

Search factory and documentation

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All pipeline runs > CopyPipeline - Activity runs

Run

Cancel

Refresh

Update pipeline

List

Gantt

Copy data

CopyFromBlobToSql

Activity runs

Pipeline run ID 36a9ac9a-36d2-4d93-a9f7-510efe1f72f4

All status

Monitor in Azure Metrics

Export to CSV

Showing 1 - 1 items


Activity name	Activity status	Activity type	Run start	Duration	Integration runtime	User properties	Activity run ID	Log
CopyFromBlobToSql	Succeeded	Copy data	7/17/2024, 11:52:06 PM	14s	AutoResolveIntegrationRu		802aa1de-84ec-429c-a7c4-53d9d18100f8	

Details


Refresh

[Learn more on copy performance details from here.](#)

Activity run id: 802aa1de-84ec-429c-a7c4-53d9d18100f8

 Azure Blob Storage
Region: East US

Succeeded

 Azure SQL Database
Region: Central US

Azure IR region: Central US

Data read: 388.834 KB

Files read: 1

Rows read: 2,088

Peak connections: 2

Data written: 628.39 KB

Rows written: 2,088

Peak connections: 2

Copy duration00:00:12

Throughput: 97.209 KB/s

Azure Blob Storage → Azure SQL Database

Start time7/17/2024, 11:52:07 PM

Used DIUs4

Used parallel copies1

Duration00:00:12

Details	Working duration	Total duration
Queue		00:00:06
Pre copy script		00:00:00
Transfer	<div><div>Listing source00:00:00</div><div>Reading from source00:00:00</div><div>Writing to sink00:00:00</div></div>	00:00:04

Data consistency verificationNot verified

Q3.

Different types of triggers are:

Manual via UI: manually trigger the pipeline from data factory UI.

Tumbling windows: trigger the pipeline exactly once in a fixed-size time window. Need to configure the window size.

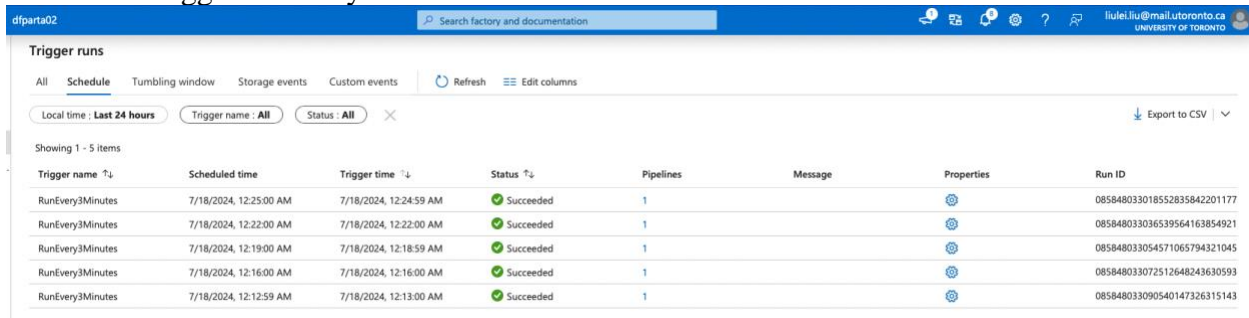
Scheduled: trigger the pipeline on a recurring schedule. Need to configure the frequency.

Event-based: trigger the pipeline when there is certain event happening from the data sources.

Custom-event: trigger the pipeline when the events specified in Event Grid happening.

Logic App Calls: *not a built-in trigger in data factory* it can make API calls to trigger pipelines and respond to various events.

Schedule a trigger for every 3 minutes and show 5 successful runs:



The screenshot shows the 'Trigger runs' page in the Azure Data Factory portal. The 'Schedule' tab is selected, and the view is filtered to show the last 24 hours. The table displays 5 successful runs of the 'RunEvery3Minutes' trigger. Each run has a 'Scheduled time', a 'Trigger time', a 'Status' of 'Succeeded', and a 'Run ID'.

Trigger name	Scheduled time	Trigger time	Status	Pipelines	Message	Properties	Run ID
RunEvery3Minutes	7/18/2024, 12:25:00 AM	7/18/2024, 12:24:59 AM	Succeeded	1			085848033018552835842201177
RunEvery3Minutes	7/18/2024, 12:22:00 AM	7/18/2024, 12:22:00 AM	Succeeded	1			085848033036539564163854921
RunEvery3Minutes	7/18/2024, 12:19:00 AM	7/18/2024, 12:18:59 AM	Succeeded	1			085848033054571065794321045
RunEvery3Minutes	7/18/2024, 12:16:00 AM	7/18/2024, 12:16:00 AM	Succeeded	1			085848033072512648243630593
RunEvery3Minutes	7/18/2024, 12:12:59 AM	7/18/2024, 12:13:00 AM	Succeeded	1			085848033090540147326315143

Q4.

To replicate objects in ADLS Gen 2 between Canada and Europe, we could set up an Event-based trigger. Event-based trigger can respond to storage events (any modifications happened in the storage can be captured), and replicate the modifications to achieve high consistency.

First, we create the replicate pipeline in datafactory. We need to link the ADLS Gen 2 (in Canada and Europe) to the data factory, and describe the storage event that we want to capture in trigger configuration.

PART B

Q1.

Use the WHERE condition to filter the table with the specific major_category and year.

Query 1 × Query 2 ×

Run

Cancel query

Save query

Export data as

Show only Editor

Launch inline copilot

```
1 SELECT *
2 FROM [dbo].[gender_jobs]
3 WHERE major_category='Computer, Engineering, and Science' AND year=2013;
```

Results Messages

Search to filter items...

year	occupation	major_category	minor_category	total_workers	workers_male	workers_fem
2013	Computer and information res...	Computer, Engineering, and Sci...	Computer and mathematical	12993	9222	3771
2013	Computer systems analysts	Computer, Engineering, and Sci...	Computer and mathematical	441538	280626	160912
2013	Information security analysts	Computer, Engineering, and Sci...	Computer and mathematical	50853	40681	10172
2013	Computer programmers	Computer, Engineering, and Sci...	Computer and mathematical	374314	298175	76139
2013	Software developers, applicatio...	Computer, Engineering, and Sci...	Computer and mathematical	924888	741308	183580
2013	Web developers	Computer, Engineering, and Sci...	Computer and mathematical	136446	95672	40774
2013	Computer support specialists	Computer, Engineering, and Sci...	Computer and mathematical	458736	339470	119266
2013	Database administrators	Computer, Engineering, and Sci...	Computer and mathematical	101323	61969	39354
2013	Network and computer system...	Computer, Engineering, and Sci...	Computer and mathematical	195372	160376	34996

Query succeeded | 0s

Q2.

User aggregate function COUNT to count the numbers of rows matching the WHERE condition of the specified minor_category.

Query 1 × Query 2 ×

Run

Cancel query

Save query

Export data as

Show only Editor

Launch inline copilot

```
1
2 SELECT COUNT(DISTINCT occupation)
3 FROM [dbo].[gender_jobs]
4 WHERE minor_category='Business and Financial Operations'
5 ;
```

Results Messages

Search to filter items...

28

Q3.

Filter the table where occupation = bus drivers

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Query editor (preview) ☆ ...

Login + New Query Open query Feedback Getting started

Query 1 Query 2

Run Cancel query Save query Export data as Show only Editor Launch inline copilot

```
1
2 SELECT *
3 FROM [dbo].[gender_jobs]
4 WHERE occupation='Bus drivers'
5 ;
```

Results Messages

Search to filter items...

year	occupation	major_category	minor_category	total_workers	workers_male	workers_female	percent_female
2013	Bus drivers	Production, Transportation, an...	Transportation	275991	174830	101161	36.7
2014	Bus drivers	Production, Transportation, an...	Transportation	267775	161334	106441	39.8
2015	Bus drivers	Production, Transportation, an...	Transportation	288778	174214	114564	39.7
2016	Bus drivers	Production, Transportation, an...	Transportation	280228	178493	101735	36.30436644

Q4.

SUM the workers_female for the specified major_category, group them by year.

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Query editor (preview) ☆ ...

Feedback Getting started

Query 1 Query 2

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```
1
2 SELECT year, SUM(workers_female)
3 FROM [dbo].[gender_jobs]
4 WHERE major_category='Management, Business, and Financial'
5 GROUP BY year
6 ;
```

Results Messages

Search to filter items...

year	
2013	7748347
2014	8061480
2015	8381812
2016	8617853

Q5.
Filter the table with service major category and year 2015

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FeedbackGetting started

Query 1 <Query 2 <

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```
1
2 SELECT year, total_earnings_male
3 FROM [dbo].[gender_jobs]
4 WHERE major_category='Service' and year=2015
5 ;
```

ResultsMessages

Search to filter items...

year	total_earnings_male
2015	28461
2015	45980
2015	47197
2015	31658
2015	37076
2015	32623
2015	45282
2015	36714
2015	38167

Q6.
Sum the female workers in management minor category and year 2015

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FeedbackGetting started

Query 1 <Query 2 <

RunCancel querySave queryExport data asShow only EditorLaunch inline copilot

```
1
2 SELECT year, SUM(workers_female) as num_workers_female
3 FROM [dbo].[gender_jobs]
4 WHERE minor_category='Management' and year=2015
5 GROUP BY year
6 ;
```

ResultsMessages

Search to filter items...

year	num_workers_female
2015	5166720

Q7.

Take the Average for total_earnings_female and total_earnings_male, Group them by year.

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Feedback Getting started

Query 1 × Query 2 ×

Run Cancel query Save query Export data as Show only Editor Launch inline copilot

```
1
2 SELECT year, AVG(total_earnings_male) as average_total_earnings_male, AVG(total_earnings_female) as average_total_earnings_female
3 FROM [dbo].[gender_jobs]
4 GROUP BY year
5 ;
```

Results Messages

Search to filter items...

year	average_total_earnings_male	average_total_earnings_female
2013	51920	43585
2016	54632	45784
2014	52726	44449
2015	53272	44908

Q8.

Filter the table with the occupation that contains 'engineer' and year 2016.

Since there are multiple occupations related to engineer, I used LIKE to filter the occupation as long as it contains 'engineer' as a substring.

Sum all the total_earnings_female and display the sum for year 2016.

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Feedback Getting started

Query 1 × Query 2 ×

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```
1
2 SELECT year, SUM(total_earnings_female) as total_earnings_female_for_all_engineers_occupaiton
3 FROM [dbo].[gender_jobs]
4 WHERE occupation LIKE '%engineer%' and year=2016
5 GROUP BY year
6 ;
```

Results Messages

Search to filter items...

year	total_earnings_female_for_all_engineers_occupaiton
2016	1844254

Q9.

SUM the part time and full time female workers, and SUM the part time and full time male workers, group them by year.

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Feedback Getting started

Query 1 × Query 2 ×

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```
1
2 SELECT year, SUM(full_time_female + part_time_female) as female_workers,
3 SUM(full_time_male + part_time_male) as male_workers
4 FROM [dbo].[gender_jobs]
5 GROUP BY year
6 ;
```

Results Messages

Search to filter items...

year	female_workers	male_workers
2013	52200	52200
2016	52200	52200
2014	52200	52200
2015	52200	52200