

# Microsoft

## Exam Questions DP-203

Data Engineering on Microsoft Azure



NEW QUESTION 1

- (Exam Topic 1)

You need to design a data storage structure for the product sales transactions. The solution must meet the sales transaction dataset requirements. What should you include in the solution? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

**Answer Area**

Table type to store the product sales transactions:

Hash

Round-robin

Replicated

When creating the table for sales transactions:

Configure a clustered index.

Set the distribution column to product ID.

Set the distribution column to the sales date.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

**Answer Area**

Table type to store the product sales transactions:

Hash

Round-robin

Replicated

When creating the table for sales transactions:

Configure a clustered index.

Set the distribution column to product ID.

Set the distribution column to the sales date.

NEW QUESTION 2

- (Exam Topic 1)

You need to implement an Azure Synapse Analytics database object for storing the sales transactions data. The solution must meet the sales transaction dataset requirements.

What solution must meet the sales transaction dataset requirements.

What should you do? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

**Answer Area**

Transact-SQL DDL command to use:

CREATE EXTERNAL TABLE

CREATE TABLE

CREATE VIEW

Partitioning option to use in the WITH clause of the DDL statement:

FORMAT\_OPTIONS

FORMAT\_TYPE

RANGE LEFT FOR VALUES

RANGE RIGHT FOR VALUES

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

**Answer Area**

Transact-SQL DDL command to use:

CREATE EXTERNAL TABLE

CREATE TABLE

CREATE VIEW

Partitioning option to use in the WITH clause of the DDL statement:

FORMAT\_OPTIONS

FORMAT\_TYPE

RANGE LEFT FOR VALUES

RANGE RIGHT FOR VALUES

### NEW QUESTION 3

- (Exam Topic 3)

You are designing a slowly changing dimension (SCD) for supplier data in an Azure Synapse Analytics dedicated SQL pool. You plan to keep a record of changes to the available fields. The supplier data contains the following columns.

Name	Description
SupplierSystemID	Unique supplier ID in an enterprise resource planning (ERP) system
SupplierName	Name of the supplier company
SupplierAddress1	Address of the supplier company
SupplierAddress2	Second address line of the supplier company
SupplierCity	City of the supplier company
SupplierStateProvince	State or province of the supplier company
SupplierCountry	Country of the supplier company
SupplierPostalCode	Postal code of the supplier company
SupplierDescription	Free-text description of the supplier company
SupplierCategory	Category of goods provided by the supplier company

Which three additional columns should you add to the data to create a Type 2 SCD? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. surrogate primary key
- B. foreign key
- C. effective start date
- D. effective end date
- E. last modified date
- F. business key

**Answer:** BCF

### NEW QUESTION 4

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You plan to create an Azure Databricks workspace that has a tiered structure. The workspace will contain the following three workloads:

- A workload for data engineers who will use Python and SQL.
- A workload for jobs that will run notebooks that use Python, Scala, and SQL.
- A workload that data scientists will use to perform ad hoc analysis in Scala and R.

The enterprise architecture team at your company identifies the following standards for Databricks environments:

- The data engineers must share a cluster.
- The job cluster will be managed by using a request process whereby data scientists and data engineers provide packaged notebooks for deployment to the cluster.
- All the data scientists must be assigned their own cluster that terminates automatically after 120 minutes of inactivity. Currently, there are three data scientists.

You need to create the Databricks clusters for the workloads.

Solution: You create a High Concurrency cluster for each data scientist, a High Concurrency cluster for the data engineers, and a Standard cluster for the jobs.

Does this meet the goal?

- A. Yes
- B. No

**Answer:** B

#### Explanation:

Need a High Concurrency cluster for the jobs.

Standard clusters are recommended for a single user. Standard can run workloads developed in any language: Python, R, Scala, and SQL.

A high concurrency cluster is a managed cloud resource. The key benefits of high concurrency clusters are that they provide Apache Spark-native fine-grained sharing for maximum resource utilization and minimum query latencies.

Reference:

<https://docs.azuredatabricks.net/clusters/configure.html>

### NEW QUESTION 5

- (Exam Topic 3)

You have several Azure Data Factory pipelines that contain a mix of the following types of activities.

- \* Wrangling data flow
- \* Notebook
- \* Copy
- \* jar



Which two Azure services should you use to debug the activities? Each correct answer presents part of the solution NOTE: Each correct selection is worth one point.

- A. Azure HDInsight
- B. Azure Databricks
- C. Azure Machine Learning
- D. Azure Data Factory
- E. Azure Synapse Analytics

**Answer:** CE

#### NEW QUESTION 6

- (Exam Topic 3)

You are monitoring an Azure Stream Analytics job.

The Backlogged Input Events count has been 20 for the last hour. You need to reduce the Backlogged Input Events count.

What should you do?

- A. Drop late arriving events from the job.
- B. Add an Azure Storage account to the job.
- C. Increase the streaming units for the job.
- D. Stop the job.

**Answer:** C

#### Explanation:

General symptoms of the job hitting system resource limits include:

➤ If the backlog event metric keeps increasing, it's an indicator that the system resource is constrained (either because of output sink throttling, or high CPU).  
 Note: Backlogged Input Events: Number of input events that are backlogged. A non-zero value for this metric implies that your job isn't able to keep up with the number of incoming events. If this value is slowly increasing or consistently non-zero, you should scale out your job: adjust Streaming Units.

Reference:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-scale-jobs> <https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-monitoring>

#### NEW QUESTION 7

- (Exam Topic 3)

You have an Azure Synapse Analytics dedicated SQL pool that contains a table named Table1.

You have files that are ingested and loaded into an Azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and transform the data. Each row of data in the files will produce one row in the serving layer of Table1.

You need to ensure that when the source data files are loaded to container1, the DateTime is stored as an additional column in Table1.

Solution: You use a dedicated SQL pool to create an external table that has a additional DateTime column. Does this meet the goal?

- A. Yes
- B. No

**Answer:** A

#### NEW QUESTION 8

- (Exam Topic 3)

You develop a dataset named DBTBL1 by using Azure Databricks. DBTBL1 contains the following columns:

- SensorTypeID
- GeographyRegionID
- Year
- Month
- Day
- Hour
- Minute
- Temperature
- WindSpeed
- Other

You need to store the data to support daily incremental load pipelines that vary for each GeographyRegionID. The solution must minimize storage costs. How should you complete the code? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

**Answer Area**

df.write

.bucketBy  
.format  
.partitionBy  
.sortBy

("")  
("GeographyRegionID")  
("GeographyRegionID", "Year", "Month", "Day")  
("Year", "Month", "Day", "GeographyRegionID")

.csv("/DBTBL1")  
.json("/DBTBL1")  
.parquet("/DBTBL1")  
.saveAsTable("/DBTBL1")

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Answer Area

```
df.write
  .bucketBy
  .format
  .partitionBy
  .sortBy
  ("")
  ("GeographyRegionID")
  ("GeographyRegionID", "Year", "Month", "Day")
  ("Year", "Month", "Day", "GeographyRegionID")
  .csv("/DBTBL1")
  .json("/DBTBL1")
  .parquet("/DBTBL1")
  .saveAsTable("/DBTBL1")
```

NEW QUESTION 9

- (Exam Topic 3)

You are developing a solution using a Lambda architecture on Microsoft Azure. The data at test layer must meet the following requirements:

Data storage:

- Serve as a repository (or high volumes of large files in various formats.
- Implement optimized storage for big data analytics workloads.
- Ensure that data can be organized using a hierarchical structure. Batch processing:
- Use a managed solution for in-memory computation processing.
- Natively support Scala, Python, and R programming languages.
- Provide the ability to resize and terminate the cluster automatically. Analytical data store:
- Support parallel processing.
- Use columnar storage.
- Support SQL-based languages.

You need to identify the correct technologies to build the Lambda architecture.

Which technologies should you use? To answer, select the appropriate options in the answer area NOTE: Each correct selection is worth one point.

Architecture requirement	Technology
Data storage	<div><div></div><div>Azure SQL Database</div><div>Azure Blob Storage</div><div>Azure Cosmos DB</div><div>Azure Data Lake Store</div></div>
Batch processing	<div><div></div><div>HDInsight Spark</div><div>HDInsight Hadoop</div><div>Azure Databricks</div><div>HDInsight Interactive Query</div></div>
Analytical data store	<div><div></div><div>HDInsight HBase</div><div>Azure SQL Data Warehouse</div><div>Azure Analysis Services</div><div>Azure Cosmos DB</div></div>

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Data storage: Azure Data Lake Store

A key mechanism that allows Azure Data Lake Storage Gen2 to provide file system performance at object storage scale and prices is the addition of a hierarchical namespace. This allows the collection of objects/files within an account to be organized into a hierarchy of directories and nested subdirectories in the same way that the file system on your computer is organized. With the hierarchical namespace enabled, a storage account becomes capable of providing the scalability and

cost-effectiveness of object storage, with file system semantics that are familiar to analytics engines and frameworks.

Batch processing: HD Insight Spark

Apache Spark is an open-source, parallel-processing framework that supports in-memory processing to boost the performance of big-data analysis applications. HDInsight is a managed Hadoop service. Use it to deploy and manage Hadoop clusters in Azure. For batch processing, you can use Spark, Hive, Hive LLAP, MapReduce.

Languages: R, Python, Java, Scala, SQL Analytic data store: SQL Data Warehouse

SQL Data Warehouse is a cloud-based Enterprise Data Warehouse (EDW) that uses Massively Parallel Processing (MPP).

SQL Data Warehouse stores data into relational tables with columnar storage. References:

<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-namespaces> <https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/batch-processing> <https://docs.microsoft.com/en-us/azure/sql-data-warehouse/sql-data-warehouse-overview-what-is>

#### NEW QUESTION 10

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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You are designing an Azure Stream Analytics solution that will analyze Twitter data.

You need to count the tweets in each 10-second window. The solution must ensure that each tweet is counted only once.

Does this meet the goal?

A. Yes

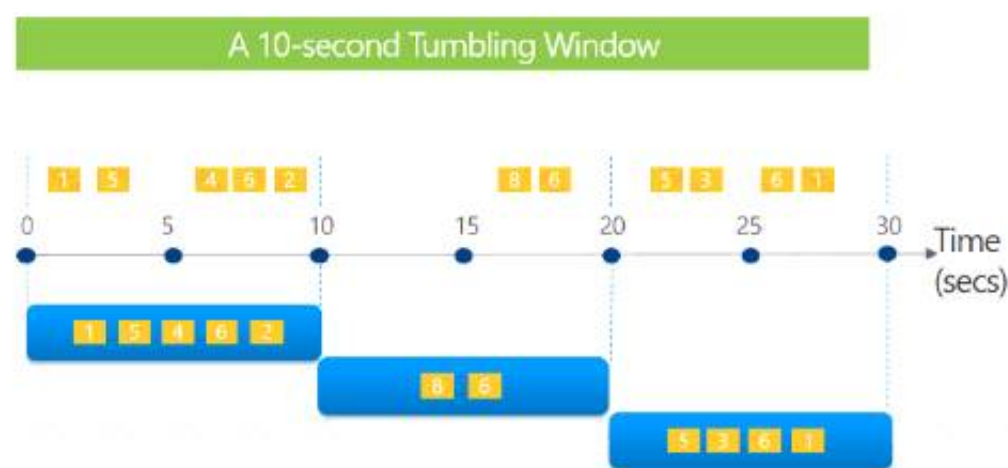
B. No

**Answer: A**

#### Explanation:

Tumbling windows are a series of fixed-sized, non-overlapping and contiguous time intervals. The following diagram illustrates a stream with a series of events and how they are mapped into 10-second tumbling windows.

**Tell me the count of tweets per time zone every 10 seconds**



```
SELECT TimeZone, COUNT(*) AS Count
FROM TwitterStream TIMESTAMP BY CreatedAt
GROUP BY TimeZone, TumblingWindow(second,10)
```

Reference:

<https://docs.microsoft.com/en-us/stream-analytics-query/tumbling-window-azure-stream-analytics>

#### NEW QUESTION 10

- (Exam Topic 3)

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- > A workload that data scientists will use to perform ad hoc analysis in Scala and R.

The enterprise architecture team at your company identifies the following standards for Databricks environments:

- > The data engineers must share a cluster.
- > The job cluster will be managed by using a request process whereby data scientists and data engineers provide packaged notebooks for deployment to the cluster.
- > All the data scientists must be assigned their own cluster that terminates automatically after 120 minutes of inactivity. Currently, there are three data scientists.

You need to create the Databricks clusters for the workloads.

Solution: You create a Standard cluster for each data scientist, a High Concurrency cluster for the data engineers, and a Standard cluster for the jobs.

Does this meet the goal?

A. Yes

B. No

**Answer: B**



**Explanation:**

We would need a High Concurrency cluster for the jobs. Note:

Standard clusters are recommended for a single user. Standard can run workloads developed in any language: Python, R, Scala, and SQL.

A high concurrency cluster is a managed cloud resource. The key benefits of high concurrency clusters are that they provide Apache Spark-native fine-grained sharing for maximum resource utilization and minimum query latencies.

Reference: <https://docs.azuredatabricks.net/clusters/configure.html>

**NEW QUESTION 14**

- (Exam Topic 3)

You plan to implement an Azure Data Lake Gen2 storage account.

You need to ensure that the data lake will remain available if a data center fails in the primary Azure region. The solution must minimize costs.

Which type of replication should you use for the storage account?

- A. geo-redundant storage (GRS)
- B. zone-redundant storage (ZRS)
- C. locally-redundant storage (LRS)
- D. geo-zone-redundant storage (GZRS)

**Answer:** A

**Explanation:**

Geo-redundant storage (GRS) copies your data synchronously three times within a single physical location in the primary region using LRS. It then copies your data asynchronously to a single physical location in the secondary region.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy>

**NEW QUESTION 18**

- (Exam Topic 3)

You plan to monitor an Azure data factory by using the Monitor & Manage app.

You need to identify the status and duration of activities that reference a table in a source database.

Which three actions should you perform in sequence? To answer, move the actions from the list of actions to the answer area and arrange them in the correct order.

**Actions**

**Answer Area**

From the Data Factory monitoring app, add the Source user property to the Activity Runs table.

From the Data Factory monitoring app, add the Source user property to the Pipeline Runs table.

From the Data Factory authoring UI, publish the pipelines.

From the Data Factory monitoring app, add a linked service to the Pipeline Runs table.

From the Data Factory authoring UI, generate a user property for Source on all activities.

From the Data Factory authoring UI, generate a user property for Source on all datasets.



- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Step 1: From the Data Factory authoring UI, generate a user property for Source on all activities. Step 2: From the Data Factory monitoring app, add the Source user property to Activity Runs table.

You can promote any pipeline activity property as a user property so that it becomes an entity that you can

monitor. For example, you can promote the Source and Destination properties of the copy activity in your pipeline as user properties. You can also select Auto Generate to generate the Source and Destination user properties for a copy activity.

Step 3: From the Data Factory authoring UI, publish the pipelines

Publish output data to data stores such as Azure SQL Data Warehouse for business intelligence (BI) applications to consume.

References:

<https://docs.microsoft.com/en-us/azure/data-factory/monitor-visually>

**NEW QUESTION 19**

- (Exam Topic 3)

You have an Azure data factory.

You need to examine the pipeline failures from the last 60 days. What should you use?

- A. the Activity log blade for the Data Factory resource

- B. the Monitor & Manage app in Data Factory
- C. the Resource health blade for the Data Factory resource
- D. Azure Monitor

**Answer:** D

**Explanation:**

Data Factory stores pipeline-run data for only 45 days. Use Azure Monitor if you want to keep that data for a longer time.  
Reference:  
<https://docs.microsoft.com/en-us/azure/data-factory/monitor-using-azure-monitor>

**NEW QUESTION 20**

- (Exam Topic 3)

You have an Azure data factory.

You need to ensure that pipeline-run data is retained for 120 days. The solution must ensure that you can query the data by using the Kusto query language.

Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

NOTE: More than one order of answer choices is correct. You will receive credit for any of the correct orders you select.

Actions

Answer Area

Select the PipelineRuns category.

Create a Log Analytics workspace that has Data Retention set to 120 days.

Stream to an Azure event hub.

Create an Azure Storage account that has a lifecycle policy.

From the Azure portal, add a diagnostic setting.

Send the data to a Log Analytics workspace.

Select the TriggerRuns category.

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Step 1: Create an Azure Storage account that has a lifecycle policy

To automate common data management tasks, Microsoft created a solution based on Azure Data Factory. The service, Data Lifecycle Management, makes frequently accessed data available and archives or purges other data according to retention policies. Teams across the company use the service to reduce storage costs, improve app performance, and comply with data retention policies.

Step 2: Create a Log Analytics workspace that has Data Retention set to 120 days.

Data Factory stores pipeline-run data for only 45 days. Use Azure Monitor if you want to keep that data for a longer time. With Monitor, you can route diagnostic logs for analysis to multiple different targets, such as a Storage Account: Save your diagnostic logs to a storage account for auditing or manual inspection. You can use the diagnostic settings to specify the retention time in days.

Step 3: From Azure Portal, add a diagnostic setting. Step 4: Send the data to a log Analytics workspace,

Event Hub: A pipeline that transfers events from services to Azure Data Explorer. Keeping Azure Data Factory metrics and pipeline-run data.

Configure diagnostic settings and workspace.

Create or add diagnostic settings for your data factory.

- > In the portal, go to Monitor. Select Settings > Diagnostic settings.
- > Select the data factory for which you want to set a diagnostic setting.
- > If no settings exist on the selected data factory, you're prompted to create a setting. Select Turn on diagnostics.
- > Give your setting a name, select Send to Log Analytics, and then select a workspace from Log Analytics Workspace.
- > Select Save. Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/monitor-using-azure-monitor>

**NEW QUESTION 23**

- (Exam Topic 3)

You are designing an enterprise data warehouse in Azure Synapse Analytics that will contain a table named Customers. Customers will contain credit card information.

You need to recommend a solution to provide salespeople with the ability to view all the entries in Customers. The solution must prevent all the salespeople from viewing or inferring the credit card information.

What should you include in the recommendation?



- A. data masking
- B. Always Encrypted
- C. column-level security
- D. row-level security

**Answer:** A

**Explanation:**

SQL Database dynamic data masking limits sensitive data exposure by masking it to non-privileged users. The Credit card masking method exposes the last four digits of the designated fields and adds a constant string as a prefix in the form of a credit card.

Example: XXXX-XXXX-XXXX-1234

Reference:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-dynamic-data-masking-get-started>

**NEW QUESTION 28**

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this scenario, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Storage account that contains 100 GB of files. The files contain text and numerical values. 75% of the rows contain description data that has an average length of 1.1 MB.

You plan to copy the data from the storage account to an Azure SQL data warehouse. You need to prepare the files to ensure that the data copies quickly.

Solution: You modify the files to ensure that each row is less than 1 MB. Does this meet the goal?

- A. Yes
- B. No

**Answer:** A

**Explanation:**

When exporting data into an ORC File Format, you might get Java out-of-memory errors when there are large text columns. To work around this limitation, export only a subset of the columns.

References:

<https://docs.microsoft.com/en-us/azure/sql-data-warehouse/guidance-for-loading-data>

**NEW QUESTION 31**

- (Exam Topic 3)

You need to output files from Azure Data Factory.

Which file format should you use for each type of output? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Columnar format:

▼

Avro

GZip

Parquet

TXT

JSON with a timestamp:

▼

Avro

GZip

Parquet

TXT

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Box 1: Parquet

Parquet stores data in columns, while Avro stores data in a row-based format. By their very nature, column-oriented data stores are optimized for read-heavy analytical workloads, while row-based databases are best for write-heavy transactional workloads.

Box 2: Avro

An Avro schema is created using JSON format.

AVRO supports timestamps.

Note: Azure Data Factory supports the following file formats (not GZip or TXT).



- Avro format
- Binary format
- Delimited text format
- Excel format
- JSON format
- ORC format
- Parquet format
- XML format

Reference:

<https://www.datanami.com/2018/05/16/big-data-file-formats-demystified>

#### NEW QUESTION 35

- (Exam Topic 3)

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After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are designing an Azure Stream Analytics solution that will analyze Twitter data.

You need to count the tweets in each 10-second window. The solution must ensure that each tweet is counted only once.

Solution: You use a hopping window that uses a hop size of 5 seconds and a window size 10 seconds. Does this meet the goal?

- A. Yes
- B. No

**Answer: B**

#### Explanation:

Instead use a tumbling window. Tumbling windows are a series of fixed-sized, non-overlapping and contiguous time intervals.

Reference:

<https://docs.microsoft.com/en-us/stream-analytics-query/tumbling-window-azure-stream-analytics>

#### NEW QUESTION 38

- (Exam Topic 3)

You are designing a sales transactions table in an Azure Synapse Analytics dedicated SQL pool. The table will contains approximately 60 million rows per month and will be partitioned by month. The table will use a clustered column store index and round-robin distribution.

Approximately how many rows will there be for each combination of distribution and partition?

- A. 1 million
- B. 5 million
- C. 20 million
- D. 60 million

**Answer: D**

#### Explanation:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql-data-warehouse/sql-data-warehouse-tables-partitio>

#### NEW QUESTION 42

- (Exam Topic 3)

You have an Azure Synapse Analytics dedicated SQL pool that contains a table named Table1. You have files that are ingested and loaded into an Azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and transform the data. Each row of data in the files will produce one row in the serving layer of Table1.

You need to ensure that when the source data files are loaded to container1, the DateTime is stored as an additional column in Table1.

Solution: In an Azure Synapse Analytics pipeline, you use a data flow that contains a Derived Column transformation.

- A. Yes
- B. No

**Answer: B**

#### NEW QUESTION 43

- (Exam Topic 3)

You have an enterprise data warehouse in Azure Synapse Analytics named DW1 on a server named Server1. You need to verify whether the size of the transaction log file for each distribution of DW1 is smaller than 160 GB.

What should you do?

- A. On the master database, execute a query against the sys.dm\_pdw\_nodes\_os\_performance\_counters dynamic management view.
- B. From Azure Monitor in the Azure portal, execute a query against the logs of DW1.
- C. On DW1, execute a query against the sys.database\_files dynamic management view.
- D. Execute a query against the logs of DW1 by using theGet-AzOperationalInsightSearchResult PowerShell cmdlet.

**Answer: A**

#### Explanation:

The following query returns the transaction log size on each distribution. If one of the log files is reaching 160 GB, you should consider scaling up your instance or

limiting your transaction size.  
-- Transaction log size SELECT  
instance\_name as distribution\_db, cntr\_value\*1.0/1048576 as log\_file\_size\_used\_GB, pdw\_node\_id  
FROM sys.dm\_pdw\_nodes\_os\_performance\_counters WHERE  
instance\_name like 'Distribution\_%'  
AND counter\_name = 'Log File(s) Used Size (KB)' References:  
<https://docs.microsoft.com/en-us/azure/sql-data-warehouse/sql-data-warehouse-manage-monitor>

#### NEW QUESTION 46

- (Exam Topic 3)

You have an Azure Data Lake Storage Gen2 container that contains 100 TB of data.

You need to ensure that the data in the container is available for read workloads in a secondary region if an outage occurs in the primary region. The solution must minimize costs.

Which type of data redundancy should you use?

- A. zone-redundant storage (ZRS)
- B. read-access geo-redundant storage (RA-GRS)
- C. locally-redundant storage (LRS)
- D. geo-redundant storage (GRS)

**Answer:** C

#### NEW QUESTION 50

- (Exam Topic 3)

You plan to implement an Azure Data Lake Storage Gen2 container that will contain CSV files. The size of the files will vary based on the number of events that occur per hour.

File sizes range from 4.KB to 5 GB.

You need to ensure that the files stored in the container are optimized for batch processing. What should you do?

- A. Compress the files.
- B. Merge the files.
- C. Convert the files to JSON
- D. Convert the files to Avro.

**Answer:** D

#### NEW QUESTION 55

- (Exam Topic 3)

You are building an Azure Analytics query that will receive input data from Azure IoT Hub and write the results to Azure Blob storage.

You need to calculate the difference in readings per sensor per hour.

How should you complete the query? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

```
SELECT sensorId,  
       growth = reading -  
           (reading) OVER (PARTITION BY sensorId  


LAG



LAST



LEAD


LIMIT DURATION



OFFSET



WHEN

  
           (hour, 1))  
FROM input
```

- A. Mastered
- B. Not Mastered

**Answer:** A

#### Explanation:

Box 1: LAG

The LAG analytic operator allows one to look up a “previous” event in an event stream, within certain constraints. It is very useful for computing the rate of growth of a variable, detecting when a variable crosses a threshold, or when a condition starts or stops being true.

Box 2: LIMIT DURATION

Example: Compute the rate of growth, per sensor: SELECT sensorId,

growth = reading

LAG(reading) OVER (PARTITION BY sensorId LIMIT DURATION(hour, 1)) FROM input

Reference:

<https://docs.microsoft.com/en-us/stream-analytics-query/lag-azure-stream-analytics>

#### NEW QUESTION 59

- (Exam Topic 3)

You need to design an Azure Synapse Analytics dedicated SQL pool that meets the following requirements:

- Can return an employee record from a given point in time.
- Maintains the latest employee information.



➤ Minimizes query complexity.

How should you model the employee data?

- A. as a temporal table
- B. as a SQL graph table
- C. as a degenerate dimension table
- D. as a Type 2 slowly changing dimension (SCD) table

**Answer:** D

**Explanation:**

A Type 2 SCD supports versioning of dimension members. Often the source system doesn't store versions, so the data warehouse load process detects and manages changes in a dimension table. In this case, the dimension table must use a surrogate key to provide a unique reference to a version of the dimension member. It also includes columns that define the date range validity of the version (for example, StartDate and EndDate) and possibly a flag column (for example, IsCurrent) to easily filter by current dimension members.

Reference:

<https://docs.microsoft.com/en-us/learn/modules/populate-slowly-changing-dimensions-azure-synapse-analytics>

**NEW QUESTION 61**

- (Exam Topic 3)

You have an Azure Synapse Analytics dedicated SQL Pool1. Pool1 contains a partitioned fact table named dbo.Sales and a staging table named stg.Sales that has the matching table and partition definitions.

You need to overwrite the content of the first partition in dbo.Sales with the content of the same partition in stg.Sales. The solution must minimize load times. What should you do?

- A. Switch the first partition from dbo.Sales to stg.Sales.
- B. Switch the first partition from stg.Sales to db
- C. Sales.
- D. Update dbo.Sales from stg.Sales.
- E. Insert the data from stg.Sales into dbo.Sales.

**Answer:** D

**NEW QUESTION 63**

- (Exam Topic 3)

You are designing an Azure Databricks interactive cluster. The cluster will be used infrequently and will be configured for auto-termination.

You need to ensure that the cluster configuration is retained indefinitely after the cluster is terminated. The solution must minimize costs.

What should you do?

- A. Clone the cluster after it is terminated.
- B. Terminate the cluster manually when processing completes.
- C. Create an Azure runbook that starts the cluster every 90 days.
- D. Pin the cluster.

**Answer:** D

**Explanation:**

To keep an interactive cluster configuration even after it has been terminated for more than 30 days, an administrator can pin a cluster to the cluster list.

References:

<https://docs.azuredatabricks.net/clusters/clusters-manage.html#automatic-termination>

**NEW QUESTION 67**

- (Exam Topic 3)

You have an Azure Data Lake Storage Gen2 container.

Data is ingested into the container, and then transformed by a data integration application. The data is NOT modified after that. Users can read files in the container but cannot modify the files.

You need to design a data archiving solution that meets the following requirements: ➤ New data is accessed frequently and must be available as quickly as possible.

- Data that is older than five years is accessed infrequently but must be available within one second when requested.
- Data that is older than seven years is NOT accessed. After seven years, the data must be persisted at the lowest cost possible.
- Costs must be minimized while maintaining the required availability.

How should you manage the data? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point

Five-year-old data:

▼

Delete the blob.

Move to archive storage.

Move to cool storage.

Move to hot storage.

Seven-year-old data:

▼

Delete the blob.

Move to archive storage.

Move to cool storage.

Move to hot storage.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

:

Box 1: Replicated

Replicated tables are ideal for small star-schema dimension tables, because the fact table is often distributed on a column that is not compatible with the connected dimension tables. If this case applies to your schema, consider changing small dimension tables currently implemented as round-robin to replicated.

Box 2: Replicated

Box 3: Replicated

Box 4: Hash-distributed

For Fact tables use hash-distribution with clustered columnstore index. Performance improves when two hash tables are joined on the same distribution column.

Reference:

<https://azure.microsoft.com/en-us/updates/reduce-data-movement-and-make-your-queries-more-efficient-with-th> <https://azure.microsoft.com/en-us/blog/replicated-tables-now-generally-available-in-azure-sql-data-warehouse/>

#### NEW QUESTION 69

- (Exam Topic 3)

You have an Azure Synapse Analytics dedicated SQL pool that contains a table named Table1. You have files that are ingested and loaded into an Azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and azure Data Lake Storage Gen2 container named container1.

You plan to insert data from the files into Table1 and transform the data. Each row of data in the files will produce one row in the serving layer of Table1.

You need to ensure that when the source data files are loaded to container1, the DateTime is stored as an additional column in Table1.

Solution: In an Azure Synapse Analytics pipeline, you use a Get Metadata activity that retrieves the DateTime of the files.

Does this meet the goal?

- A. Yes
- B. No

Answer: B

#### NEW QUESTION 71

- (Exam Topic 3)

You have a table in an Azure Synapse Analytics dedicated SQL pool. The table was created by using the following Transact-SQL statement.

```
CREATE TABLE [dbo].[DimEmployee] (
    [EmployeeKey] [int] IDENTITY(1,1) NOT NULL,
    [EmployeeID] [int] NOT NULL,
    [FirstName] [varchar](100) NOT NULL,
    [LastName] [varchar](100) NOT NULL,
    [JobTitle] [varchar](100) NULL,
    [LastHireDate] [date] NULL,
    [StreetAddress] [varchar](500) NOT NULL,
    [City] [varchar](200) NOT NULL,
    [StateProvince] [varchar](50) NOT NULL,
    [Portalcode] [varchar](10) NOT NULL
)
```

You need to alter the table to meet the following requirements:

- Ensure that users can identify the current manager of employees.
- Support creating an employee reporting hierarchy for your entire company.
- Provide fast lookup of the managers' attributes such as name and job title.

Which column should you add to the table?

- A. [ManagerEmployeeID] [int] NULL
- B. [ManagerEmployeeID] [smallint] NULL
- C. [ManagerEmployeeKey] [int] NULL
- D. [ManagerName] [varchar](200) NULL

**Answer:** A

**Explanation:**

Use the same definition as the EmployeeID column. Reference:

<https://docs.microsoft.com/en-us/analysis-services/tabular-models/hierarchies-ssas-tabular>

**NEW QUESTION 75**

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