

DP-203 Dumps

Data Engineering on Microsoft Azure

<https://www.certleader.com/DP-203-dumps.html>



NEW QUESTION 1

- (Exam Topic 1)

You need to integrate the on-premises data sources and Azure Synapse Analytics. The solution must meet the data integration requirements. Which type of integration runtime should you use?

- A. Azure-SSIS integration runtime
- B. self-hosted integration runtime
- C. Azure integration runtime

Answer: C

NEW QUESTION 2

- (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.

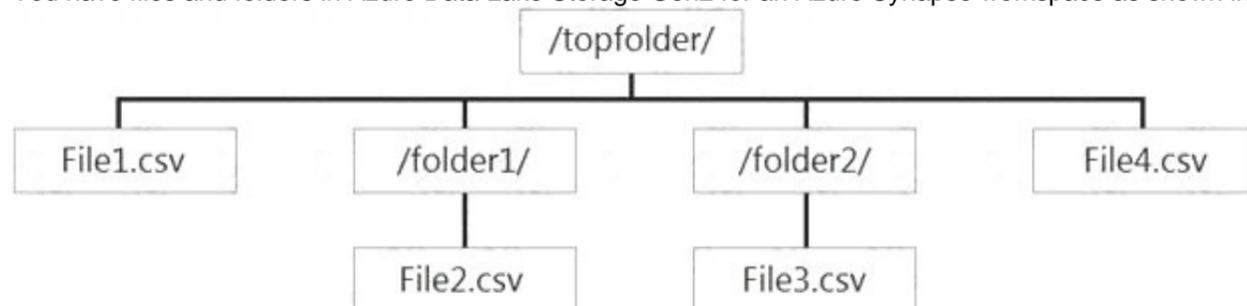
- A. Azure HDInsight
- B. Azure Databricks
- C. Azure Machine Learning
- D. Azure Data Factory
- E. Azure Synapse Analytics

Answer: CE

NEW QUESTION 3

- (Exam Topic 3)

You have files and folders in Azure Data Lake Storage Gen2 for an Azure Synapse workspace as shown in the following exhibit.



You create an external table named ExtTable that has LOCATION='/topfolder/'.

When you query ExtTable by using an Azure Synapse Analytics serverless SQL pool, which files are returned?

- A. File2.csv and File3.csv only
- B. File1.csv and File4.csv only
- C. File1.csv, File2.csv, File3.csv, and File4.csv
- D. File1.csv only

Answer: C

Explanation:

To run a T-SQL query over a set of files within a folder or set of folders while treating them as a single entity or rowset, provide a path to a folder or a pattern (using wildcards) over a set of files or folders. Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/sql/query-data-storage#query-multiple-files-or-folders>

NEW QUESTION 4

- (Exam Topic 3)

You need to create an Azure Data Factory pipeline to process data for the following three departments at your company: Ecommerce, retail, and wholesale. The solution must ensure that data can also be processed for the entire company.

How should you complete the Data Factory data flow script? To answer, drag the appropriate values to the correct targets. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Values

all, ecommerce, retail, wholesale
dept=='ecommerce', dept=='retail', dept=='wholesale'
dept=='ecommerce', dept=='wholesale', dept=='retail'
disjoint: false
disjoint: true
ecommerce, retail, wholesale, all

Answer Area

```
CleanData
split(
    [ ]
    [ ]
) ~> SplitByDept@([ ])
```

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

The conditional split transformation routes data rows to different streams based on matching conditions. The conditional split transformation is similar to a CASE decision structure in a programming language. The transformation evaluates expressions, and based on the results, directs the data row to the specified stream.

Box 1: dept=='ecommerce', dept=='retail', dept=='wholesale'

First we put the condition. The order must match the stream labeling we define in Box 3. Syntax:

```
<incomingStream> split(
<conditionalExpression1>
<conditionalExpression2>
disjoint: {true | false}
) ~> <splitTx>@(stream1, stream2, ..., <defaultStream>)
```

Box 2: discount : false

disjoint is false because the data goes to the first matching condition. All remaining rows matching the third condition go to output stream all.

Box 3: ecommerce, retail, wholesale, all Label the streams

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/data-flow-conditional-split>

NEW QUESTION 5

- (Exam Topic 3)

You use Azure Data Factory to prepare data to be queried by Azure Synapse Analytics serverless SQL pools. Files are initially ingested into an Azure Data Lake Storage Gen2 account as 10 small JSON files. Each file contains the same data attributes and data from a subsidiary of your company.

You need to move the files to a different folder and transform the data to meet the following requirements: ➤ Provide the fastest possible query times.

➤ Automatically infer the schema from the underlying files.

How should you configure the Data Factory copy activity? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Copy behavior:

▼
Flatten hierarchy
Merge files
Preserve hierarchy

Sink file type:

▼
CSV
JSON
Parquet
TXT

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Preserver herarchy

Compared to the flat namespace on Blob storage, the hierarchical namespace greatly improves the performance of directory management operations, which improves overall job performance.

Box 2: Parquet

Azure Data Factory parquet format is supported for Azure Data Lake Storage Gen2. Parquet supports the schema property.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-introduction> <https://docs.microsoft.com/en-us/azure/data-factory/format-parquet>

NEW QUESTION 6

- (Exam Topic 3)

You have a self-hosted integration runtime in Azure Data Factory.

The current status of the integration runtime has the following configurations:

- > Status: Running
- > Type: Self-Hosted
- > Version: 4.4.7292.1
- > Running / Registered Node(s): 1/1
- > High Availability Enabled: False
- > Linked Count: 0
- > Queue Length: 0
- > Average Queue Duration: 0.00s

The integration runtime has the following node details:

- > Name: X-M
- > Status: Running
- > Version: 4.4.7292.1
- > Available Memory: 7697MB
- > CPU Utilization: 6%
- > Network (In/Out): 1.21KBps/0.83KBps
- > Concurrent Jobs (Running/Limit): 2/14
- > Role: Dispatcher/Worker
- > Credential Status: In Sync

Use the drop-down menus to select the answer choice that completes each statement based on the information presented.

NOTE: Each correct selection is worth one point.

If the X-M node becomes unavailable, all executed pipelines will:

▼

fail until the node comes back online

switch to another integration runtime

exceed the CPU limit

The number of concurrent jobs and the CPU usage indicate that the Concurrent Jobs (Running/Limit) value should be:

▼

raised

lowered

left as is

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: fail until the node comes back online We see: High Availability Enabled: False

Note: Higher availability of the self-hosted integration runtime so that it's no longer the single point of failure in your big data solution or cloud data integration with Data Factory.

Box 2: lowered We see:

Concurrent Jobs (Running/Limit): 2/14 CPU Utilization: 6%

Note: When the processor and available RAM aren't well utilized, but the execution of concurrent jobs reaches a node's limits, scale up by increasing the number of concurrent jobs that a node can run

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/create-self-hosted-integration-runtime>

NEW QUESTION 7

- (Exam Topic 3)

You are designing a statistical analysis solution that will use custom proprietary Python functions on near real-time data from Azure Event Hubs. You need to recommend which Azure service to use to perform the statistical analysis. The solution must minimize latency. What should you recommend?

- A. Azure Stream Analytics
- B. Azure SQL Database
- C. Azure Databricks
- D. Azure Synapse Analytics

Answer: A

NEW QUESTION 8

- (Exam Topic 3)

You have an Apache Spark DataFrame named temperatures. A sample of the data is shown in the following table.

Date	Temp
...	...
18-01-2021	3
19-01-2021	4
20-01-2021	2
21-01-2021	2
...	...

You need to produce the following table by using a Spark SQL query.

Year	JAN	FEB	MAR	APR	MAY
2019	2.3	4.1	5.2	7.6	9.2
2020	2.4	4.2	4.9	7.8	9.1
2021	2.6	5.3	3.4	7.9	9.5

How should you complete the query? To answer, drag the appropriate values to the correct targets. Each value may be used once more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Values

- CAST
- COLLATE
- CONVERT
- FLATTEN
- PIVOT
- UNPIVOT

Answer Area

```
SELECT * FROM (
    SELECT YEAR(Date) Year, MONTH(Date)
    FROM temperatures
    WHERE date BETWEEN DATE '2019-01-01' AND DATE
    '2021-08-31'
    Value (
        AVG (
            Value (Temp AS DECIMAL(4, 1)))
        FOR Month in (
            1 JAN, 2 FEB, 3 MAR, 4 APR, 5 MAY, 6
            JUN, 7 JUL, 8 AUG, 9 SEP, 10 OCT, 11 NOV,
            12 DEC
        )
    )
)
ORDER BY Year ASC
```

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Values

- CAST
- COLLATE
- CONVERT
- FLATTEN
- PIVOT
- UNPIVOT

Answer Area

```

SELECT * FROM (
    SELECT YEAR(Date) Year, MONTH(Date)
    FROM Temperatures
    WHERE date BETWEEN DATE '2019-01-01' AND DATE
    '2021-08-31'
    CONVERT (
        COLLATE (Temp AS DECIMAL(4, 1)))
    AVG (
        FOR Month in (
            1 JAN, 2 FEB, 3 MAR, 4 APR, 5 MAY, 6
            JUN, 7 JUL, 8 AUG, 9 SEP, 10 OCT, 11 NOV,
            12 DEC
        )
    )
ORDER BY Year ASC
    
```

NEW QUESTION 9

- (Exam Topic 3)

What should you recommend to prevent users outside the Litware on-premises network from accessing the analytical data store?

- A. a server-level virtual network rule
- B. a database-level virtual network rule
- C. a database-level firewall IP rule
- D. a server-level firewall IP rule

Answer: A

Explanation:

Virtual network rules are one firewall security feature that controls whether the database server for your single databases and elastic pool in Azure SQL Database or for your databases in SQL Data Warehouse accepts communications that are sent from particular subnets in virtual networks.

Server-level, not database-level: Each virtual network rule applies to your whole Azure SQL Database server, not just to one particular database on the server. In other words, virtual network rule applies at the serverlevel, not at the database-level.

References:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-vnet-service-endpoint-rule-overview>

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.

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 more than 1 MB. Does this meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Instead modify the files to ensure that each row is less than 1 MB. References:

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

NEW QUESTION 10

- (Exam Topic 3)

You have an Azure subscription that contains the following resources:

- * An Azure Active Directory (Azure AD) tenant that contains a security group named Group1.
- * An Azure Synapse Analytics SQL pool named Pool1.

You need to control the access of Group1 to specific columns and rows in a table in Pool1

Which Transact-SQL commands should you use? To answer, select the appropriate options in the answer area. NOTE: Each appropriate options in the answer area.

Answer Area

To control access to the columns:

CREATE CRYPTOGRAPHIC PROVIDER
 CREATE PARTITION FUNCTION
 CREATE SECURITY POLICY
 GRANT

To control access to the rows:

CREATE CRYPTOGRAPHIC PROVIDER
 CREATE PARTITION FUNCTION
 CREATE SECURITY POLICY
 GRANT

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Answer Area

To control access to the columns:

CREATE CRYPTOGRAPHIC PROVIDER
 CREATE PARTITION FUNCTION
 CREATE SECURITY POLICY
 GRANT

To control access to the rows:

CREATE CRYPTOGRAPHIC PROVIDER
 CREATE PARTITION FUNCTION
 CREATE SECURITY POLICY
 GRANT

NEW QUESTION 14

- (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 16

- (Exam Topic 3)

You have an Azure subscription that contains a logical Microsoft SQL server named Server1. Server1 hosts an Azure Synapse Analytics SQL dedicated pool named Pool1.

You need to recommend a Transparent Data Encryption (TDE) solution for Server1. The solution must meet the following requirements:

- > Track the usage of encryption keys.
- > Maintain the access of client apps to Pool1 in the event of an Azure datacenter outage that affects the availability of the encryption keys.

What should you include in the recommendation? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

To track encryption key usage:

▼

Always Encrypted

TDE with customer-managed keys

TDE with platform-managed keys

To maintain client app access in the event of a datacenter outage:

▼

Create and configure Azure key vaults in two Azure regions.

Enable Advanced Data Security on Server1.

Implement the client apps by using a Microsoft .NET Framework data provider.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: TDE with customer-managed keys

Customer-managed keys are stored in the Azure Key Vault. You can monitor how and when your key vaults are accessed, and by whom. You can do this by enabling logging for Azure Key Vault, which saves information in an Azure storage account that you provide.

Box 2: Create and configure Azure key vaults in two Azure regions

The contents of your key vault are replicated within the region and to a secondary region at least 150 miles away, but within the same geography to maintain high durability of your keys and secrets.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/security/workspaces-encryption> <https://docs.microsoft.com/en-us/azure/key-vault/general/logging>

NEW QUESTION 21

- (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 SOL.
- > 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 High Concurrency cluster for the jobs.

Does this meet the goal?

- A. Yes
- B. No

Answer: A

Explanation:

We need a High Concurrency cluster for the data engineers and 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 25

- (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 27

- (Exam Topic 3)

You have an Azure Stream Analytics job that is a Stream Analytics project solution in Microsoft Visual Studio. The job accepts data generated by IoT devices in the JSON format.

You need to modify the job to accept data generated by the IoT devices in the Protobuf format.

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

Actions

Answer Area

Change the Event Serialization Format to Protobuf in the input.json file of the job and reference the DLL.

Add an Azure Stream Analytics Custom Deserializer Project (.NET) project to the solution.

Add .NET deserializer code for Protobuf to the custom deserializer project.

Add .NET deserializer code for Protobuf to the Stream Analytics project.

Add an Azure Stream Analytics Application project to the solution.

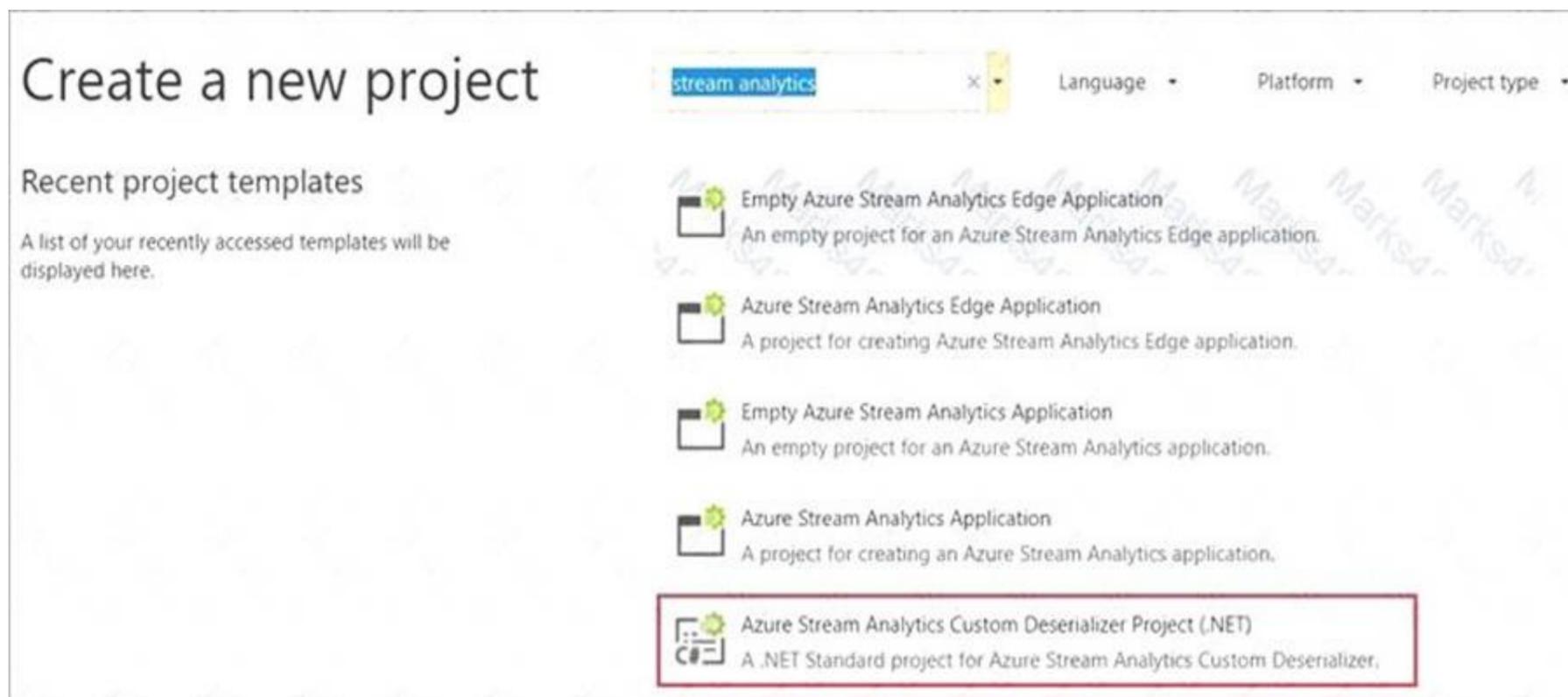
- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Step 1: Add an Azure Stream Analytics Custom Deserializer Project (.NET) project to the solution. Create a custom deserializer

* 1. Open Visual Studio and select File > New > Project. Search for Stream Analytics and select Azure Stream Analytics Custom Deserializer Project (.NET). Give the project a name, like Protobuf Deserializer.



* 2. In Solution Explorer, right-click your Protobuf Deserializer project and select Manage NuGet Packages from the menu. Then install the Microsoft.Azure.StreamAnalytics and Google.Protobuf NuGet packages.

* 3. Add the MessageBodyProto class and the MessageBodyDeserializer class to your project.

* 4. Build the Protobuf Deserializer project.

Step 2: Add .NET deserializer code for Protobuf to the custom deserializer project

Azure Stream Analytics has built-in support for three data formats: JSON, CSV, and Avro. With custom .NET deserializers, you can read data from other formats such as Protocol Buffer, Bond and other user defined formats for both cloud and edge jobs.

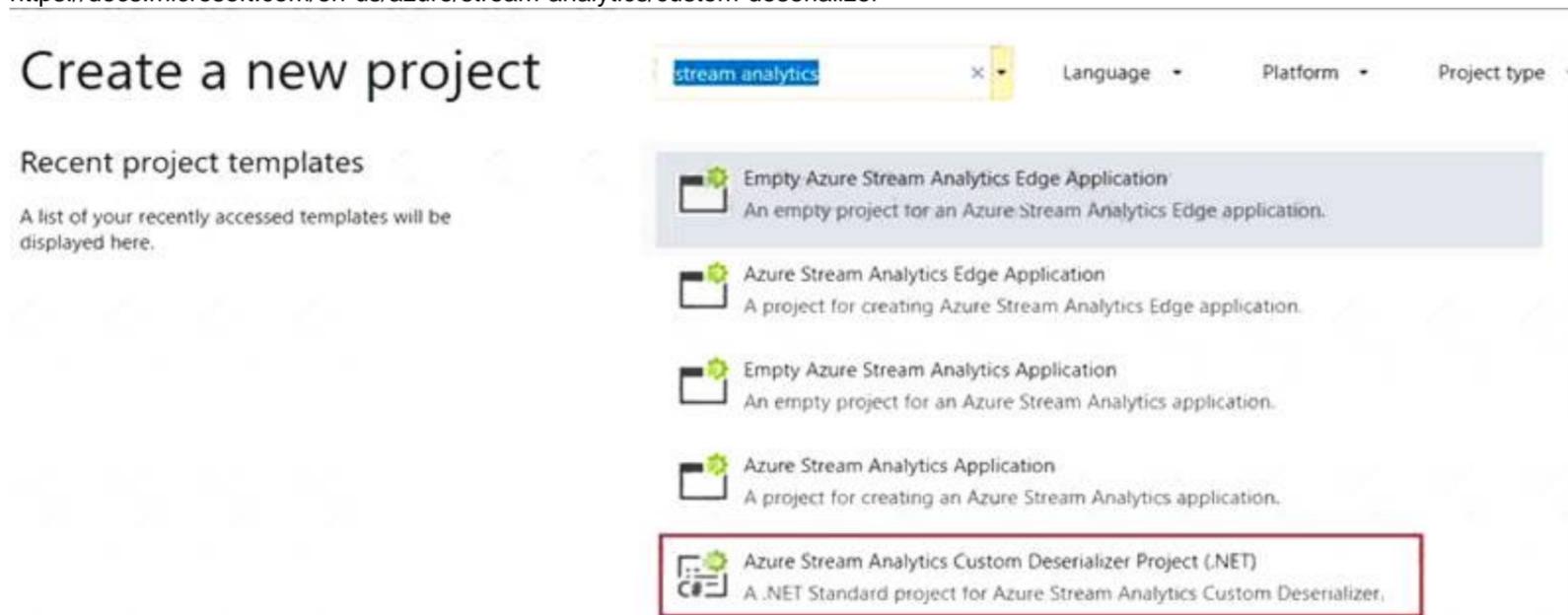
Step 3: Add an Azure Stream Analytics Application project to the solution Add an Azure Stream Analytics project

> In Solution Explorer, right-click the Protobuf Deserializer solution and select Add > New Project. Under Azure Stream Analytics > Stream Analytics, choose Azure Stream Analytics Application. Name it ProtobufCloudDeserializer and select OK.

> Right-click References under the ProtobufCloudDeserializer Azure Stream Analytics project. Under Projects, add Protobuf Deserializer. It should be automatically populated for you.

Reference:

<https://docs.microsoft.com/en-us/azure/stream-analytics/custom-deserializer>



NEW QUESTION 29

- (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 32

- (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 35

- (Exam Topic 3)

You have a SQL pool in Azure Synapse.

A user reports that queries against the pool take longer than expected to complete. You need to add monitoring to the underlying storage to help diagnose the

issue.

Which two metrics should you monitor? Each correct answer presents part of the solution. NOTE: Each correct selection is worth one point.

- A. Cache used percentage
- B. DWU Limit
- C. Snapshot Storage Size
- D. Active queries
- E. Cache hit percentage

Answer: AE

Explanation:

A: Cache used is the sum of all bytes in the local SSD cache across all nodes and cache capacity is the sum of the storage capacity of the local SSD cache across all nodes.

E: Cache hits is the sum of all columnstore segments hits in the local SSD cache and cache miss is the columnstore segments misses in the local SSD cache summed across all nodes

Reference:

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

NEW QUESTION 37

- (Exam Topic 3)

You are planning a streaming data solution that will use Azure Databricks. The solution will stream sales transaction data from an online store. The solution has the following specifications:

- * The output data will contain items purchased, quantity, line total sales amount, and line total tax amount.
- * Line total sales amount and line total tax amount will be aggregated in Databricks.
- * Sales transactions will never be updated. Instead, new rows will be added to adjust a sale.

You need to recommend an output mode for the dataset that will be processed by using Structured Streaming. The solution must minimize duplicate data. What should you recommend?

- A. Append
- B. Update
- C. Complete

Answer: C

NEW QUESTION 39

- (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 44

- (Exam Topic 3)

You have the following table named Employees.

first_name	last_name	hire_date	employee_type
Jane	Doe	2019-08-23	new
Ben	Smith	2017-12-15	Standard

You need to calculate the employee _type value based on the hire date value.

How should you complete the Transact-SQL statement? To answer, drag the appropriate values to the correct targets. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content

NOTE: Each correct selection is worth one point.

Values

- CASE
- ELSE
- OVER
- PARTITION
- ROW_NUMBER

Answer Area

```

SELECT
    *,
    Value
    WHEN hire_date >= '2019-01-01' THEN
    'New' Value 'Standard'
    END AS employee_type
FROM
    employees;
                
```

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Values

- CASE
- ELSE
- OVER
- PARTITION
- ROW_NUMBER

Answer Area

```

SELECT
    *,
    CASE
    WHEN hire_date >= '2019-01-01' THEN
    'New' PARTITION 'Standard'
    END AS employee_type
FROM
    employees;
                
```

NEW QUESTION 48

- (Exam Topic 3)

You have two Azure Data Factory instances named ADFdev and ADFprod. ADFdev connects to an Azure DevOps Git repository. You publish changes from the main branch of the Git repository to ADFdev. You need to deploy the artifacts from ADFdev to ADFprod. What should you do first?

- A. From ADFdev, modify the Git configuration.
- B. From ADFdev, create a linked service.
- C. From Azure DevOps, create a release pipeline.
- D. From Azure DevOps, update the main branch.

Answer: C

Explanation:

In Azure Data Factory, continuous integration and delivery (CI/CD) means moving Data Factory pipelines from one environment (development, test, production) to another.

Note:
The following is a guide for setting up an Azure Pipelines release that automates the deployment of a data factory to multiple environments.

- In Azure DevOps, open the project that's configured with your data factory.
 - On the left side of the page, select Pipelines, and then select Releases.
 - Select New pipeline, or, if you have existing pipelines, select New and then New release pipeline.
 - In the Stage name box, enter the name of your environment.
 - Select Add artifact, and then select the git repository configured with your development data factory.
- Select the publish branch of the repository for the Default branch. By default, this publish branch is adf_publish.
- Select the Empty job template. Reference:
<https://docs.microsoft.com/en-us/azure/data-factory/continuous-integration-deployment>

NEW QUESTION 52

- (Exam Topic 3)

Which Azure Data Factory components should you recommend using together to import the daily inventory data from the SQL server to Azure Data Lake Storage?

To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area:

Integration runtime type:	<input type="checkbox"/> Azure integration runtime <input type="checkbox"/> Azure-SSIS integration runtime <input type="checkbox"/> Self-hosted integration runtime
Trigger type:	<input type="checkbox"/> Event-based trigger <input type="checkbox"/> Schedule trigger <input type="checkbox"/> Tumbling window trigger
Activity type:	<input type="checkbox"/> Copy activity <input type="checkbox"/> Lookup activity <input type="checkbox"/> Stored procedure activity

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Answer Area:

Integration runtime type:	<input checked="" type="checkbox"/> Azure integration runtime <input checked="" type="checkbox"/> Azure-SSIS integration runtime <input type="checkbox"/> Self-hosted integration runtime
Trigger type:	<input checked="" type="checkbox"/> Event-based trigger <input checked="" type="checkbox"/> Schedule trigger <input type="checkbox"/> Tumbling window trigger
Activity type:	<input checked="" type="checkbox"/> Copy activity <input checked="" type="checkbox"/> Lookup activity <input type="checkbox"/> Stored procedure activity

NEW QUESTION 53

- (Exam Topic 3)

You are implementing Azure Stream Analytics windowing functions.

Which windowing function should you use for each requirement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Segment the data stream into distinct time segments that repeat but do not overlap:

- Hopping
- Sliding
- Tumbling

Segment the data stream into distinct time segments that repeat and can overlap:

- Hopping
- Sliding
- Tumbling

Segment the data stream to produce an output only when an event occurs:

- Hopping
- Sliding
- Tumbling

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Answer Area

Segment the data stream into distinct time segments that repeat but do not overlap:

- Hopping
- Sliding
- Tumbling

Segment the data stream into distinct time segments that repeat and can overlap:

- Hopping
- Sliding
- Tumbling

Segment the data stream to produce an output only when an event occurs:

- Hopping
- Sliding
- Tumbling

NEW QUESTION 54

- (Exam Topic 3)

You have an Azure Stream Analytics query. The query returns a result set that contains 10,000 distinct values for a column named clusterID. You monitor the Stream Analytics job and discover high latency. You need to reduce the latency.

Which two actions should you perform? Each correct answer presents a complete solution. NOTE: Each correct selection is worth one point.

- A. Add a pass-through query.
- B. Add a temporal analytic function.
- C. Scale out the query by using PARTITION BY.
- D. Convert the query to a reference query.
- E. Increase the number of streaming units.

Answer: CE

Explanation:

C: Scaling a Stream Analytics job takes advantage of partitions in the input or output. Partitioning lets you divide data into subsets based on a partition key. A process that consumes the data (such as a Streaming Analytics job) can consume and write different partitions in parallel, which increases throughput.

E: Streaming Units (SUs) represents the computing resources that are allocated to execute a Stream Analytics job. The higher the number of SUs, the more CPU and memory resources are allocated for your job. This capacity lets you focus on the query logic and abstracts the need to manage the hardware to run your Stream Analytics job in a timely manner.

References:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-parallelization> <https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-streaming-unit-consumption>

NEW QUESTION 59

- (Exam Topic 3)

You need to create a partitioned table in an Azure Synapse Analytics dedicated SQL pool.

How should you complete the Transact-SQL statement? To answer, drag the appropriate values to the correct targets. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Values

- CLUSTERED INDEX
- COLLATE
- DISTRIBUTION
- PARTITION
- PARTITION FUNCTION
- PARTITION SCHEME

Answer Area

```
CREATE TABLE table1
(
  ID INTEGER,
  col1 VARCHAR(10),
  col2 VARCHAR(10)
) WITH
(
  [ ] = HASH(ID),
  [ ] (ID RANGE LEFT FOR VALUES (1, 1000000, 2000000))
);
```

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: DISTRIBUTION

Table distribution options include DISTRIBUTION = HASH (distribution_column_name), assigns each row to one distribution by hashing the value stored in distribution_column_name. Box 2: PARTITION

Table partition options. Syntax:

PARTITION (partition_column_name RANGE [LEFT | RIGHT] FOR VALUES ([boundary_value [...n]]))

Reference:

<https://docs.microsoft.com/en-us/sql/t-sql/statements/create-table-azure-sql-data-warehouse?>

NEW QUESTION 62

- (Exam Topic 3)

You build an Azure Data Factory pipeline to move data from an Azure Data Lake Storage Gen2 container to a database in an Azure Synapse Analytics dedicated SQL pool.

Data in the container is stored in the following folder structure.

/in/{YYYY}/{MM}/{DD}/{HH}/{mm}

The earliest folder is /in/2021/01/01/00/00. The latest folder is /in/2021/01/15/01/45. You need to configure a pipeline trigger to meet the following requirements:

- > Existing data must be loaded.
- > Data must be loaded every 30 minutes.
- > Late-arriving data of up to two minutes must be included in the load for the time at which the data should have arrived.

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

Type:

- Event
- On-demand
- Schedule
- Tumbling window

Additional properties:

- Prefix: /in/, Event: Blob created
- Recurrence: 30 minutes, Start time: 2021-01-01T00:00
- Recurrence: 30 minutes, Start time: 2021-01-01T00:00, Delay: 2 minutes
- Recurrence: 32 minutes, Start time: 2021-01-15T01:45

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Tumbling window

To be able to use the Delay parameter we select Tumbling window. Box 2:

Recurrence: 30 minutes, not 32 minutes

Delay: 2 minutes.

The amount of time to delay the start of data processing for the window. The pipeline run is started after the expected execution time plus the amount of delay. The delay defines how long the trigger waits past the due time before triggering a new run. The delay doesn't alter the window startTime.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/how-to-create-tumbling-window-trigger>

NEW QUESTION 65

- (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 67

- (Exam Topic 3)

You develop data engineering solutions for a company.

A project requires the deployment of data to Azure Data Lake Storage.

You need to implement role-based access control (RBAC) so that project members can manage the Azure Data Lake Storage resources.

Which three actions should you perform? Each correct answer presents part of the solution. NOTE: Each correct selection is worth one point.

- A. Assign Azure AD security groups to Azure Data Lake Storage.
- B. Configure end-user authentication for the Azure Data Lake Storage account.
- C. Configure service-to-service authentication for the Azure Data Lake Storage account.
- D. Create security groups in Azure Active Directory (Azure AD) and add project members.
- E. Configure access control lists (ACL) for the Azure Data Lake Storage account.

Answer: ADE

Explanation:

References:

<https://docs.microsoft.com/en-us/azure/data-lake-store/data-lake-store-secure-data>

NEW QUESTION 72

- (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 [ ] (hour, 1))
FROM input
```

▼

LAG

LAST

LEAD

▼

LIMIT DURATION

OFFSET

WHEN

- 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 74

- (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 78

- (Exam Topic 3)

You plan to ingest streaming social media data by using Azure Stream Analytics. The data will be stored in files in Azure Data Lake Storage, and then consumed by using Azure Databricks and PolyBase in Azure Synapse Analytics.

You need to recommend a Stream Analytics data output format to ensure that the queries from Databricks and PolyBase against the files encounter the fewest possible errors. The solution must ensure that the files can be queried quickly and that the data type information is retained.

What should you recommend?

- A. Parquet
- B. Avro
- C. CSV
- D. JSON

Answer: B

Explanation:

The Avro format is great for data and message preservation. Avro schema with its support for evolution is essential for making the data robust for streaming architectures like Kafka, and with the metadata that schema provides, you can reason on the data. Having a schema provides robustness in providing meta-data about the data stored in Avro records which are self- documenting the data. References: <http://cloudurable.com/blog/avro/index.html>

NEW QUESTION 79

- (Exam Topic 3)

You have an Azure Synapse workspace named MyWorkspace that contains an Apache Spark database named mytestdb.

You run the following command in an Azure Synapse Analytics Spark pool in MyWorkspace. CREATE TABLE mytestdb.myParquetTable(EmployeeID int, EmployeeName string, EmployeeStartDate date) USING Parquet

You then use Spark to insert a row into mytestdb.myParquetTable. The row contains the following data.

EmployeeName	EmployeeID	EmployeeStartDate
Alice	24	2020-01-25

One minute later, you execute the following query from a serverless SQL pool in MyWorkspace. SELECT EmployeeID FROM mytestdb.dbo.myParquetTable WHERE name = 'Alice';

What will be returned by the query?

- A. 24
- B. an error
- C. a null value

Answer: A

Explanation:

Once a database has been created by a Spark job, you can create tables in it with Spark that use Parquet as the storage format. Table names will be converted to lower case and need to be queried using the lower case name. These tables will immediately become available for querying by any of the Azure Synapse workspace Spark pools. They can also be used from any of the Spark jobs subject to permissions.

Note: For external tables, since they are synchronized to serverless SQL pool asynchronously, there will be a delay until they appear.

Reference:

<https://docs.microsoft.com/en-us/azure/synapse-analytics/metadata/table>

NEW QUESTION 84

- (Exam Topic 3)

You have an Azure event hub named retailhub that has 16 partitions. Transactions are posted to retailhub. Each transaction includes the transaction ID, the individual line items, and the payment details. The transaction ID is used as the partition key.

You are designing an Azure Stream Analytics job to identify potentially fraudulent transactions at a retail store. The job will use retailhub as the input. The job will output the transaction ID, the individual line items, the payment details, a fraud score, and a fraud indicator.

You plan to send the output to an Azure event hub named fraudhub.

You need to ensure that the fraud detection solution is highly scalable and processes transactions as quickly as possible.

How should you structure the output of the Stream Analytics job? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Number of partitions:

1
8
16
32

Partition key:

Fraud indicator
Fraud score
Individual line items
Payment details
Transaction ID

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: 16

For Event Hubs you need to set the partition key explicitly.

An embarrassingly parallel job is the most scalable scenario in Azure Stream Analytics. It connects one partition of the input to one instance of the query to one partition of the output.

Box 2: Transaction ID Reference:

<https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-features#partitions>

NEW QUESTION 87

- (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 90

- (Exam Topic 3)

You are designing a dimension table for a data warehouse. The table will track the value of the dimension attributes over time and preserve the history of the data by adding new rows as the data changes.

Which type of slowly changing dimension (SCD) should use?

- A. Type 0
- B. Type 1
- C. Type 2
- D. Type 3

Answer: C

Explanation:

Type 2 - Creating a new additional record. In this methodology all history of dimension changes is kept in the database. You capture attribute change by adding a new row with a new surrogate key to the dimension table. Both the prior and new rows contain as attributes the natural key(or other durable identifier). Also 'effective date' and 'current indicator' columns are used in this method. There could be only one record with current indicator set to 'Y'. For 'effective date' columns, i.e. start_date and end_date, the end_date for current record usually is set to value 9999-12-31. Introducing changes to the dimensional model in type 2 could be very expensive database operation so it is not recommended to use it in dimensions where a new attribute could be added in the future.

<https://www.datawarehouse4u.info/SCD-Slowly-Changing-Dimensions.html>

NEW QUESTION 93

- (Exam Topic 3)

You use Azure Stream Analytics to receive Twitter data from Azure Event Hubs and to output the data to an Azure Blob storage account. You need to output the count of tweets during the last five minutes every five minutes. Each tweet must only be counted once. Which windowing function should you use?

- A. a five-minute Session window
- B. a five-minute Sliding window
- C. a five-minute Tumbling window
- D. a five-minute Hopping window that has one-minute hop

Answer: C

Explanation:

Tumbling window functions are used to segment a data stream into distinct time segments and perform a function against them, such as the example below. The key differentiators of a Tumbling window are that they repeat, do not overlap, and an event cannot belong to more than one tumbling window.

References:

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

NEW QUESTION 98

- (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 100

- (Exam Topic 3)

You have an Azure Synapse Analytics dedicated SQL pool that contains a table named Contacts. Contacts contains a column named Phone.

You need to ensure that users in a specific role only see the last four digits of a phone number when querying the Phone column.

What should you include in the solution?

- A. a default value
- B. dynamic data masking
- C. row-level security (RLS)
- D. column encryption
- E. table partitions

Answer: C

NEW QUESTION 104

- (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,
    [Postalcode] [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 108

.....

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