

# Exam Questions DP-201

Designing an Azure Data Solution

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### NEW QUESTION 1

- (Exam Topic 1)

STION NO: 5 HOTSPOT

You need to design the authentication and authorization methods for sensors.

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

NOTE: Each correct selection is worth one point.

Requirement	Method
Authentication	<div> <div>▼</div> <div> HMAC header Resource Token Azure Managed Identity Storage account connection string </div> </div>
Authorization	<div> <div>▼</div> <div> Custom RBAC role Cosmos DB user Azure Active Directory user IoT device identity </div> </div>

- A. Mastered
- B. Not Mastered

Answer: A

#### Explanation:

Sensor data must be stored in a Cosmos DB named treydata in a collection named SensorData Sensors must have permission only to add items to the SensorData collection

Box 1: Resource Token

Resource tokens provide access to the application resources within a Cosmos DB database.

Enable clients to read, write, and delete resources in the Cosmos DB account according to the permissions they've been granted.

Box 2: Cosmos DB user

You can use a resource token (by creating Cosmos DB users and permissions) when you want to provide access to resources in your Cosmos DB account to a client that cannot be trusted with the master key.

References:

<https://docs.microsoft.com/en-us/azure/cosmos-db/secure-access-to-data>

### NEW QUESTION 2

- (Exam Topic 1)

You need to design a sharding strategy for the Planning Assistance database. What should you recommend?

- A. a list mapping shard map on the binary representation of the License Plate column
- B. a range mapping shard map on the binary representation of the speed column
- C. a list mapping shard map on the location column
- D. a range mapping shard map on the time column

Answer: A

#### Explanation:

Data used for Planning Assistance must be stored in a sharded Azure SQL Database.

A shard typically contains items that fall within a specified range determined by one or more attributes of the data. These attributes form the shard key (sometimes referred to as the partition key). The shard key should be static. It shouldn't be based on data that might change.

References:

<https://docs.microsoft.com/en-us/azure/architecture/patterns/sharding>

### NEW QUESTION 3

- (Exam Topic 2)

You need to design the image processing solution to meet the optimization requirements for image tag data. What should you configure? To answer, drag the appropriate setting to the correct drop targets.

Each source 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.

	Location	Configuration
Configurations	New York	<input type="text"/>
	Manchester	<input type="text"/>
	Singapore	<input type="text"/>
	Melbourne	<input type="text"/>

Write region

Read region

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Tagging data must be uploaded to the cloud from the New York office location.

Tagging data must be replicated to regions that are geographically close to company office locations.

**NEW QUESTION 4**

- (Exam Topic 2)

You need to design the solution for analyzing customer data. What should you recommend?

- A. Azure Databricks
- B. Azure Data Lake Storage
- C. Azure SQL Data Warehouse
- D. Azure Cognitive Services
- E. Azure Batch

**Answer:** A

**Explanation:**

Customer data must be analyzed using managed Spark clusters. You create spark clusters through Azure Databricks. References:

<https://docs.microsoft.com/en-us/azure/azure-databricks/quickstart-create-databricks-workspace-portal>

**NEW QUESTION 5**

- (Exam Topic 3)

You need to optimize storage for CONT\_SQL3. What should you recommend?

- A. AlwaysOn
- B. Transactional processing
- C. General
- D. Data warehousing

**Answer:** B

**Explanation:**

CONT\_SQL3 with the SQL Server role, 100 GB database size, Hyper-VM to be migrated to Azure VM. The storage should be configured to optimized storage for database OLTP workloads.

Azure SQL Database provides three basic in-memory based capabilities (built into the underlying database engine) that can contribute in a meaningful way to performance improvements:

In-Memory Online Transactional Processing (OLTP)

Clustered columnstore indexes intended primarily for Online Analytical Processing (OLAP) workloads Nonclustered columnstore indexes geared towards Hybrid

Transactional/Analytical Processing (HTAP) workloads

References:

<https://www.databasejournal.com/features/mssql/overview-of-in-memory-technologies-of-azure-sqldatabase.htm>

**NEW QUESTION 6**

- (Exam Topic 3)

You are designing an Azure SQL Data Warehouse for a financial services company. Azure Active Directory will be used to authenticate the users.

You need to ensure that the following security requirements are met:

- ▶ Department managers must be able to create new database.
- ▶ The IT department must assign users to databases.
- ▶ Permissions granted must be minimized.

Which role memberships should you recommend? To answer, drag the appropriate roles to the correct groups. Each role 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.

Roles	Group	Role
dbmanager		
loginmanager		
dc_admin	Department managers	
db_securityadmin	IT	
db_owner		
db_accessadmin		

- A. Mastered
- B. Not Mastered

**Answer:** A

#### Explanation:

Box 1: dbmanager

Members of the dbmanager role can create new databases. Box 2: db\_accessadmin

Members of the db\_accessadmin fixed database role can add or remove access to the database for Windows logins, Windows groups, and SQL Server logins.

References:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-manage-logins>

#### NEW QUESTION 7

- (Exam Topic 4)

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.

A company is developing a solution to manage inventory data for a group of automotive repair shops. The solution will use Azure SQL Data Warehouse as the data store.

Shops will upload data every 10 days.

Data corruption checks must run each time data is uploaded. If corruption is detected, the corrupted data must be removed.

You need to ensure that upload processes and data corruption checks do not impact reporting and analytics processes that use the data warehouse.

Proposed solution: Create a user-defined restore point before data is uploaded. Delete the restore point after data corruption checks complete.

Does the solution meet the goal?

A. Yes

B. No

Answer: A

#### Explanation:

User-Defined Restore Points

This feature enables you to manually trigger snapshots to create restore points of your data warehouse before and after large modifications. This capability ensures that restore points are logically consistent, which provides additional data protection in case of any workload interruptions or user errors for quick recovery time.

Note: A data warehouse restore is a new data warehouse that is created from a restore point of an existing or deleted data warehouse. Restoring your data warehouse is an essential part of any business continuity and disaster recovery strategy because it re-creates your data after accidental corruption or deletion.

References:

<https://docs.microsoft.com/en-us/azure/sql-data-warehouse/backup-and-restore>

#### NEW QUESTION 8

- (Exam Topic 4)

You are designing a recovery strategy for your Azure SQL Databases.

The recovery strategy must use default automated backup settings. The solution must include a Point-in time restore recovery strategy.

You need to recommend which backups to use and the order in which to restore backups.

What should you recommend? To answer, select the appropriate configuration in the answer area.

NOTE: Each correct selection is worth one point.

Restore order	Backup type
first	<div> <div> </div> <div> full weekly backup  full daily backup  differential weekly backup  differential daily backup </div> </div>
second	<div> <div> </div> <div> full daily backup  differential backup from the last 12 hours  all differential backups since the last full backup  all log backups since the last full backup </div> </div>
third	<div> <div> </div> <div> all log backups since the last differential backup  differential backup from the last 12 hours  all differential backups since the last full backup  all log backups since the last full backup </div> </div>

A. Mastered

B. Not Mastered

Answer: A

#### Explanation:

All Basic, Standard, and Premium databases are protected by automatic backups. Full backups are taken every week, differential backups every day, and log backups every 5 minutes.

References:

<https://azure.microsoft.com/sv-se/blog/azure-sql-database-point-in-time-restore/>

#### NEW QUESTION 9

- (Exam Topic 4)

You plan to deploy an Azure SQL Database instance to support an application. You plan to use the DTUbased purchasing model.

Backups of the database must be available for 30 days and point-in-time restoration must be possible. You need to recommend a backup and recovery policy.

What are two possible ways to achieve the goal? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Use the Premium tier and the default backup retention policy.
- B. Use the Basic tier and the default backup retention policy.
- C. Use the Standard tier and the default backup retention policy.
- D. Use the Standard tier and configure a long-term backup retention policy.
- E. Use the Premium tier and configure a long-term backup retention policy.

**Answer:** DE

**Explanation:**

The default retention period for a database created using the DTU-based purchasing model depends on the service tier:

- ▶ Basic service tier is 1 week.
- ▶ Standard service tier is 5 weeks.
- ▶ Premium service tier is 5 weeks.

References:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-long-term-retention>

**NEW QUESTION 10**

- (Exam Topic 4)

You are designing a solution for a company. The solution will use model training for objective classification. You need to design the solution. What should you recommend?

- A. an Azure Cognitive Services application
- B. a Spark Streaming job
- C. interactive Spark queries
- D. Power BI models
- E. a Spark application that uses Spark MLlib.

**Answer:** E

**Explanation:**

Spark in SQL Server big data cluster enables AI and machine learning.

You can use Apache Spark MLlib to create a machine learning application to do simple predictive analysis on an open dataset.

MLlib is a core Spark library that provides many utilities useful for machine learning tasks, including utilities that are suitable for:

- ▶ Classification
- ▶ Regression
- ▶ Clustering
- ▶ Topic modeling
- ▶ Singular value decomposition (SVD) and principal component analysis (PCA)
- ▶ Hypothesis testing and calculating sample statistics

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/spark/apache-spark-machine-learning-mllib-ipynb>

**NEW QUESTION 10**

- (Exam Topic 4)

You are designing an Azure Databricks cluster that runs user-defined local processes. You need to recommend a cluster configuration that meets the following requirements:

- Minimize query latency.
- Reduce overall costs.
- Maximize the number of users that can run queries on the cluster at the same time. Which cluster type should you recommend?

- A. Standard with Autoscaling
- B. High Concurrency with Auto Termination
- C. High Concurrency with Autoscaling
- D. Standard with Auto Termination

**Answer:** C

**Explanation:**

High Concurrency clusters allow multiple users to run queries on the cluster at the same time, while minimizing query latency. Autoscaling clusters can reduce overall costs compared to a statically-sized cluster.

References:

<https://docs.azuredatabricks.net/user-guide/clusters/create.html> <https://docs.azuredatabricks.net/user-guide/clusters/high-concurrency.html#high-concurrency>

<https://docs.azuredatabricks.net/user-guide/clusters/terminate.html> <https://docs.azuredatabricks.net/user-guide/clusters/sizing.html#enable-and-configure-autoscaling>

**NEW QUESTION 14**

- (Exam Topic 4)

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You are designing an HDInsight/Hadoop cluster solution that uses Azure Data Lake Gen1 Storage. The solution requires POSIX permissions and enables diagnostics logging for auditing.

You need to recommend solutions that optimize storage.

Proposed Solution: Implement compaction jobs to combine small files into larger files. Does the solution meet the goal?

- A. Yes



B. No

**Answer:** A

**Explanation:**

Depending on what services and workloads are using the data, a good size to consider for files is 256 MB or greater. If the file sizes cannot be batched when landing in Data Lake Storage Gen1, you can have a separate compaction job that combines these files into larger ones.

Note: POSIX permissions and auditing in Data Lake Storage Gen1 comes with an overhead that becomes apparent when working with numerous small files. As a best practice, you must batch your data into larger files versus writing thousands or millions of small files to Data Lake Storage Gen1. Avoiding small file sizes can have multiple benefits, such as:

Lowering the authentication checks across multiple files  
 Reduced open file connections

Faster copying/replication

Fewer files to process when updating Data Lake Storage Gen1 POSIX permissions

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

**NEW QUESTION 19**

- (Exam Topic 4)

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A company is developing a solution to manage inventory data for a group of automotive repair shops. The solution will use Azure SQL Data Warehouse as the data store. Shops will upload data every 10 days.

Data corruption checks must run each time data is uploaded. If corruption is detected, the corrupted data must be removed.

You need to ensure that upload processes and data corruption checks do not impact reporting and analytics processes that use the data warehouse.

Proposed solution: Insert data from shops and perform the data corruption check in a transaction. Rollback transfer if corruption is detected.

Does the solution meet the goal?

A. Yes

B. No

**Answer:** B

**Explanation:**

Instead, create a user-defined restore point before data is uploaded. Delete the restore point after data corruption checks complete.

References:

<https://docs.microsoft.com/en-us/azure/sql-data-warehouse/backup-and-restore>

**NEW QUESTION 24**

- (Exam Topic 4)

You design data engineering solutions for a company.

A project requires analytics and visualization of large set of data. The project has the following requirements:

• Notebook scheduling

• Cluster automation

• Power BI Visualization

You need to recommend the appropriate Azure service. Which Azure service should you recommend?

A. Azure Batch

B. Azure Stream Analytics

C. Azure ML Studio

D. Azure Databricks

E. Azure HDInsight

**Answer:** D

**Explanation:**

A databrick job is a way of running a notebook or JAR either immediately or on a scheduled basis.

Azure Databricks has two types of clusters: interactive and job. Interactive clusters are used to analyze data collaboratively with interactive notebooks. Job clusters are used to run fast and robust automated workloads using the UI or API.

You can visualize Data with Azure Databricks and Power BI Desktop.

References:

<https://docs.azuredatabricks.net/user-guide/clusters/index.html> <https://docs.azuredatabricks.net/user-guide/jobs.html>

**NEW QUESTION 27**

- (Exam Topic 4)

You manage an on-premises server named Server1 that has a database named Database1. The company purchases a new application that can access data from Azure SQL Database.

You recommend a solution to migrate Database1 to an Azure SQL Database instance.

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

Option	Value
File type for exporting the on-premises database	<div>BACPAC</div> <div>DACPAC</div> <div>VHDX</div>
Azure storage type for exported data	<div>Blob</div> <div>Disk</div> <div>Table</div> <div>File</div>

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

References:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-import>

**NEW QUESTION 28**

- (Exam Topic 4)

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 are designing an Azure SQL Database that will use elastic pools. You plan to store data about customers in a table. Each record uses a value for CustomerID.

You need to recommend a strategy to partition data based on values in CustomerID. Proposed Solution: Separate data into shards by using horizontal partitioning.

Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** A

**Explanation:**

Horizontal Partitioning - Sharding: Data is partitioned horizontally to distribute rows across a scaled out data

tier. With this approach, the schema is identical on all participating databases. This approach is also called “sharding”. Sharding can be performed and managed using (1) the elastic database tools libraries or (2) selfsharding.

An elastic query is used to query or compile reports across many shards. References:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-elastic-query-overview>

**NEW QUESTION 30**

- (Exam Topic 4)

You are developing a solution that performs real-time analysis of IoT data in the cloud. The solution must remain available during Azure service updates.

You need to recommend a solution.

Which two actions should you recommend? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Deploy an Azure Stream Analytics job to two separate regions that are not in a pair.
- B. Deploy an Azure Stream Analytics job to each region in a paired region.
- C. Monitor jobs in both regions for failure.
- D. Monitor jobs in the primary region for failure.
- E. Deploy an Azure Stream Analytics job to one region in a paired region.

**Answer:** BC

**Explanation:**

Stream Analytics guarantees jobs in paired regions are updated in separate batches. As a result there is a sufficient time gap between the updates to identify potential breaking bugs and remediate them.

Customers are advised to deploy identical jobs to both paired regions.

In addition to Stream Analytics internal monitoring capabilities, customers are also advised to monitor the jobs as if both are production jobs. If a break is identified to be a result of the Stream Analytics service update, escalate appropriately and fail over any downstream consumers to the healthy job output. Escalation to support will prevent the paired region from being affected by the new deployment and maintain the integrity of the paired jobs.

References:

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-job-reliability>

**NEW QUESTION 32**

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