



**Microsoft**

**Exam Questions DP-201**

Designing an Azure Data Solution

### NEW QUESTION 1

- (Exam Topic 1)

You need to design the vehicle images storage solution. What should you recommend?

- A. Azure Media Services
- B. Azure Premium Storage account
- C. Azure Redis Cache
- D. Azure Cosmos DB

**Answer: B**

#### Explanation:

Premium Storage stores data on the latest technology Solid State Drives (SSDs) whereas Standard Storage stores data on Hard Disk Drives (HDDs). Premium Storage is designed for Azure Virtual Machine workloads which require consistent high IO performance and low latency in order to host IO intensive workloads like OLTP, Big Data, and Data Warehousing on platforms like SQL Server, MongoDB, Cassandra, and others. With Premium Storage, more customers will be able to lift-and-shift demanding enterprise applications to the cloud.

Scenario: Traffic sensors will occasionally capture an image of a vehicle for debugging purposes. You must optimize performance of saving/storing vehicle images. The impact of vehicle images on sensor data throughout must be minimized. References:

<https://azure.microsoft.com/es-es/blog/introducing-premium-storage-high-performance-storage-for-azure-virtual>

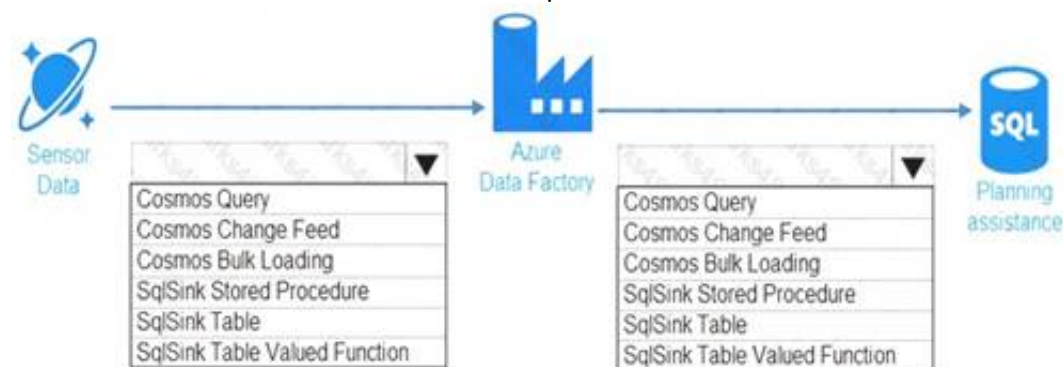
### NEW QUESTION 2

- (Exam Topic 1)

You need to design the data loading pipeline for Planning Assistance.

What should you recommend? To answer, drag the appropriate technologies to the correct locations. Each technology 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.



- A. Mastered
- B. Not Mastered

**Answer: A**

#### Explanation:

Box 1: SqlSink Table

Sensor data must be stored in a Cosmos DB named treydata in a collection named SensorData Box 2: Cosmos Bulk Loading

Use Copy Activity in Azure Data Factory to copy data from and to Azure Cosmos DB (SQL API).

Scenario: Data from the Sensor Data collection will automatically be loaded into the Planning Assistance database once a week by using Azure Data Factory. You must be able to manually trigger the data load process.

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

<https://docs.microsoft.com/en-us/azure/data-factory/connector-azure-cosmos-db>

### NEW QUESTION 3

- (Exam Topic 2)

You need to recommend a solution for storing the image tagging data. What should you recommend?

- A. Azure File Storage
- B. Azure Cosmos DB
- C. Azure Blob Storage
- D. Azure SQL Database
- E. Azure SQL Data Warehouse

**Answer: C**

#### Explanation:

Image data must be stored in a single data store at minimum cost.

Note: Azure Blob storage is Microsoft's object storage solution for the cloud. Blob storage is optimized for storing massive amounts of unstructured data.

Unstructured data is data that does not adhere to a particular data model or definition, such as text or binary data.

Blob storage is designed for:

- ▶ Serving images or documents directly to a browser.
- ▶ Storing files for distributed access.
- ▶ Streaming video and audio.
- ▶ Writing to log files.
- ▶ Storing data for backup and restore, disaster recovery, and archiving.
- ▶ Storing data for analysis by an on-premises or Azure-hosted service.

References:

<https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blobs-introduction>

NEW QUESTION 4

- (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
<b>Configurations</b>  <div>Write region</div> <div>Read region</div>	New York	
	Manchester	
	Singapore	
	Melbourne	

- 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 5

- (Exam Topic 2)

You need to design the encryption strategy for the tagging data and customer data.

What should you recommend? 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.

Answer Area		
Encryption methods	Solution component	Encryption method
<div>Encryption at rest</div> <div>Transparent data encryption</div> <div>Azure Key Vault</div>	Tagging data	
	Processed customer data	

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

All cloud data must be encrypted at rest and in transit. Box 1: Transparent data encryption  
Encryption of the database file is performed at the page level. The pages in an encrypted database are encrypted before they are written to disk and decrypted when read into memory.  
Box 2: Encryption at rest  
Encryption at Rest is the encoding (encryption) of data when it is persisted. References:  
<https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/transparent-data-encryption?view=> <https://docs.microsoft.com/en-us/azure/security/azure-security-encryption-atrest>

NEW QUESTION 6

- (Exam Topic 2)

You need to design a backup solution for the processed customer data. What should you include in the design?

- A. AzCopy
- B. AdlCopy
- C. Geo-Redundancy
- D. Geo-Replication

Answer: C

Explanation:

Scenario: All data must be backed up in case disaster recovery is required.  
Geo-redundant storage (GRS) is designed to provide at least 99.99999999999999% (16 9's) durability of objects over a given year by replicating your data to a

secondary region that is hundreds of miles away from the primary region. If your storage account has GRS enabled, then your data is durable even in the case of a complete regional outage or a disaster in which the primary region isn't recoverable. References:  
<https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy-grs>

#### NEW QUESTION 7

- (Exam Topic 2)

You need to design the image processing and storage solutions.

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

**Answer Area**

Solution component	Tool
Image processing	<div> <div>Azure HDInsight</div> <div>Azure Databricks</div> <div>Azure Batch</div> <div>Azure Cognitive Services</div> </div>
data storage for tagging data	<div> <div>Azure Blob Storage</div> <div>Azure Table Storage</div> <div>Azure Cosmos DB</div> <div>Azure SQL Database</div> </div>

- A. Mastered
- B. Not Mastered

**Answer:** A

#### Explanation:

References:

<https://docs.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/batch-processing> <https://docs.microsoft.com/en-us/azure/sql-database/sql-database-service-tier-hyperscale>

#### NEW QUESTION 8

- (Exam Topic 3)

You need to design the disaster recovery solution for customer sales data analytics.

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

NOTE: Each correct selection is worth one point.

- A. Provision multiple Azure Databricks workspaces in separate Azure regions.
- B. Migrate users, notebooks, and cluster configurations from one workspace to another in the same region.
- C. Use zone redundant storage.
- D. Migrate users, notebooks, and cluster configurations from one region to another.
- E. Use Geo-redundant storage.
- F. Provision a second Azure Databricks workspace in the same region.

**Answer:** ADE

#### Explanation:

Scenario: The analytics solution for customer sales data must be available during a regional outage. To create your own regional disaster recovery topology for databricks, follow these requirements:

1. Provision multiple Azure Databricks workspaces in separate Azure regions
2. Use Geo-redundant storage.
3. Once the secondary region is created, you must migrate the users, user folders, notebooks, cluster configuration, jobs configuration, libraries, storage, init scripts, and reconfigure access control.

Note: Geo-redundant storage (GRS) is designed to provide at least 99.99999999999999% (16 9's) durability of objects over a given year by replicating your data to a secondary region that is hundreds of miles away from the primary region. If your storage account has GRS enabled, then your data is durable even in the case of a complete regional outage or a disaster in which the primary region isn't recoverable.

References:

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

#### NEW QUESTION 9

- (Exam Topic 3)

A company stores sensitive information about customers and employees in Azure SQL Database. You need to ensure that the sensitive data remains encrypted in transit and at rest.

What should you recommend?

- A. Transparent Data Encryption
- B. Always Encrypted with secure enclaves
- C. Azure Disk Encryption
- D. SQL Server AlwaysOn

**Answer:** B

#### Explanation:

References:

<https://cloudblogs.microsoft.com/sqlserver/2018/12/17/confidential-computing-using-always-encrypted-withsec>

#### NEW QUESTION 10

- (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	Department managers	
loginmanager		
dc_admin	IT	
db_securityadmin		
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 10

- (Exam Topic 4)

A company manufactures automobile parts. The company installs IoT sensors on manufacturing machinery. You must design a solution that analyzes data from the sensors.

You need to recommend a solution that meets the following requirements: Data must be analyzed in real-time.

Data queries must be deployed using continuous integration. Data must be visualized by using charts and graphs.

Data must be available for ETL operations in the future. The solution must support high-volume data ingestion.

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

NOTE: Each correct selection is worth one point.

- A. Use Azure Analysis Services to query the dat
- B. Output query results to Power BI.
- C. Configure an Azure Event Hub to capture data to Azure Data Lake Storage.
- D. Develop an Azure Stream Analytics application that queries the data and outputs to Power B
- E. Use AzureData Factory to deploy the Azure Stream Analytics application.
- F. Develop an application that sends the IoT data to an Azure Event Hub.
- G. Develop an Azure Stream Analytics application that queries the data and outputs to Power B
- H. Use AzurePipelines to deploy the Azure Stream Analytics application.
- I. Develop an application that sends the IoT data to an Azure Data Lake Storage container.

**Answer:** BCD

#### NEW QUESTION 14

- (Exam Topic 4)

A company purchases IoT devices to monitor manufacturing machinery. The company uses an IoT appliance to communicate with the IoT devices.

The company must be able to monitor the devices in real-time. You need to design the solution.

What should you recommend?

- A. Azure Stream Analytics cloud job using Azure PowerShell
- B. Azure Analysis Services using Azure Portal
- C. Azure Data Factory instance using Azure Portal
- D. Azure Analysis Services using Azure PowerShell

**Answer:** D

#### NEW QUESTION 19

- (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: Configure database-level auditing in Azure SQL Data Warehouse and set retention to 10 days.

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 22**

- (Exam Topic 4)

You plan to migrate data to Azure SQL Database.

The database must remain synchronized with updates to Microsoft Azure and SQL Server. You need to set up the database as a subscriber.

What should you recommend?

A. Azure Data Factory

B. SQL Server Data Tools

C. Data Migration Assistant

D. SQL Server Agent for SQL Server 2017 or later

E. SQL Server Management Studio 17.9.1 or later

**Answer: E**

**Explanation:**

To set up the database as a subscriber we need to configure database replication. You can use SQL Server Management Studio to configure replication. Use the latest versions of SQL Server Management Studio in order to be able to use all the features of Azure SQL Database.

References:

<https://www.sqlshack.com/sql-server-database-migration-to-azure-sql-database-using-sql-server-transactionalrep>

**NEW QUESTION 26**

- (Exam Topic 4)

A company installs IoT devices to monitor its fleet of delivery vehicles. Data from devices is collected from Azure Event Hub.

The data must be transmitted to Power BI for real-time data visualizations. You need to recommend a solution.

What should you recommend?

A. Azure HDInsight with Spark Streaming

B. Apache Spark in Azure Databricks

C. Azure Stream Analytics

D. Azure HDInsight with Storm

**Answer: C**

**Explanation:**

Step 1: Get your IoT hub ready for data access by adding a consumer group.

Step 2: Create, configure, and run a Stream Analytics job for data transfer from your IoT hub to your Power BI account.

Step 3: Create and publish a Power BI report to visualize the data. References:

<https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-live-data-visualization-in-power-bi>

**NEW QUESTION 29**

- (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.



- (Exam Topic 4)

You are designing an Azure Databricks interactive cluster.

You need to ensure that the cluster meets the following requirements: Enable auto-termination

Retain cluster configuration indefinitely after cluster termination. What should you recommend?

- A. Start the cluster after it is terminated.
- B. Pin the cluster
- C. Clone the cluster after it is terminated.
- D. Terminate the cluster manually at process completion.

**Answer: B**

**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/user-guide/clusters/terminate.html>

**NEW QUESTION 45**

- (Exam Topic 4)

You are designing a data processing solution that will run as a Spark job on an HDInsight cluster. The solution will be used to provide near real-time information about online ordering for a retailer.

The solution must include a page on the company intranet that displays summary information. The summary information page must meet the following requirements:

- ▶ Display a summary of sales to date grouped by product categories, price range, and review scope.
- ▶ Display sales summary information including total sales, sales as compared to one day ago and sales as compared to one year ago.
- ▶ Reflect information for new orders as quickly as possible. You need to recommend a design for the solution.

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

Use case	Technology
Data abstraction	<div><div>Resilient Distributed Dataset (RDD)</div><div>Dataset</div><div>DataFrame</div></div>
Data format	<div><div>Avro</div><div>parquet</div></div>

- A. Mastered
- B. Not Mastered

**Answer: A**

**Explanation:**

Box 1: DataFrame

DataFrames

Best choice in most situations.

Provides query optimization through Catalyst. Whole-stage code generation.

Direct memory access.

Low garbage collection (GC) overhead.

Not as developer-friendly as DataSets, as there are no compile-time checks or domain object programming. Box 2: parquet

The best format for performance is parquet with snappy compression, which is the default in Spark 2.x. Parquet stores data in columnar format, and is highly optimized in Spark.

**NEW QUESTION 50**

- (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 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 53

- (Exam Topic 4)

You need to design the storage for the telemetry capture system. What storage solution should you use in the design?

- A. Azure Databricks
- B. Azure SQL Data Warehouse
- C. Azure Cosmos DB

**Answer: C**

#### NEW QUESTION 54

- (Exam Topic 4)

You are evaluating data storage solutions to support a new application.

You need to recommend a data storage solution that represents data by using nodes and relationships in graph structures.

Which data storage solution should you recommend?

- A. Blob Storage
- B. Cosmos DB
- C. Data Lake Store
- D. HDInsight

**Answer: B**

#### Explanation:

For large graphs with lots of entities and relationships, you can perform very complex analyses very quickly. Many graph databases provide a query language that you can use to traverse a network of relationships efficiently.

Relevant Azure service: Cosmos DB

References:

<https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/data-store-overview>

#### NEW QUESTION 57

- (Exam Topic 4)

You are designing an application. You plan to use Azure SQL Database to support the application.

The application will extract data from the Azure SQL Database and create text documents. The text documents will be placed into a cloud-based storage solution.

The text storage solution must be accessible from an SMB network share.

You need to recommend a data storage solution for the text documents. Which Azure data storage type should you recommend?

- A. Queue
- B. Files
- C. Blob
- D. Table

**Answer: B**

#### Explanation:

Azure Files enables you to set up highly available network file shares that can be accessed by using the standard Server Message Block (SMB) protocol.

References:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-introduction> <https://docs.microsoft.com/en-us/azure/storage/tables/table-storage-overview>

#### NEW QUESTION 62

- (Exam Topic 4)

You are designing an Azure Data Factory pipeline for processing data. The pipeline will process data that is stored in general-purpose standard Azure storage.

You need to ensure that the compute environment is created on-demand and removed when the process is completed.

Which type of activity should you recommend?

- A. Databricks Python activity
- B. Data Lake Analytics U-SQL activity
- C. HDInsight Pig activity
- D. Databricks Jar activity

**Answer: C**

#### Explanation:

The HDInsight Pig activity in a Data Factory pipeline executes Pig queries on your own or on-demand HDInsight cluster.

References:

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

#### NEW QUESTION 66

- (Exam Topic 4)

A company stores large datasets in Azure, including sales transactions and customer account information. You must design a solution to analyze the data. You plan to create the following HDInsight clusters:

You need to ensure that the clusters support the query requirements.

Which cluster types should you recommend? To answer, select the appropriate configuration in the answer area.

NOTE: Each correct selection is worth one point.



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 customer regions by using vertical partitioning. Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** B

**Explanation:**

Vertical partitioning is used for cross-database queries. Instead we should use Horizontal Partitioning, which also is called charding.

References:

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

**NEW QUESTION 80**

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