# Question4 Design relational cloud data stores

Case Study

Complete the Case Study

* Solution Evaluation
* Question 1
* Question 2
* Question 3

**Instructions**  
  
This case study contains 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.  
  
Note: You cannot go back or review questions of this type on the actual certification exam.

## Question 4.1

You are migrating an application and its on-premises SQL Server Enterprise Edition database to the cloud. Application and database changes should be kept to a minimum during migration. You want to choose the exact amount of compute resources dedicated to the workload. Management overhead should be kept to a minimum.  
  
You need to choose an appropriate deployment and purchase model to meet your needs.  
  
Solution: You choose an elastic pool deployment and eDTU pricing model.  
  
Does this solution meet the goal?

Complete the Case Study

* Solution Evaluation
* Question 1
* Question 2
* Question 3

No

Yes

## Question 4.2

You are migrating an application and its on-premises SQL Server Enterprise Edition database to the cloud. Application and database changes should be kept to a minimum during migration. You want to choose the exact amount of compute resources dedicated to the workload. Management overhead should be kept to a minimum.  
  
You need to choose an appropriate deployment and purchase model to meet your needs.  
  
Solution: You choose a managed instance deployment and vCore pricing model.  
  
Does this solution meet the goal?

Complete the Case Study

* Solution Evaluation
* Question 1
* Question 2
* Question 3

No

Yes

## Question 4.3

You are migrating an application and its on-premises SQL Server Enterprise Edition database to the cloud. Application and database changes should be kept to a minimum during migration. You want to choose the exact amount of compute resources dedicated to the workload. Management overhead should be kept to a minimum.  
  
You need to choose an appropriate deployment and purchase model to meet your needs.  
  
Solution: You choose a single database deployment and vCore pricing model.  
  
Does this solution meet the goal?

Complete the Case Study

* Solution Evaluation
* Question 1
* Question 2
* Question 3

Yes

No

# Question42 Design relational cloud data stores

Case Study

Complete the Case Study

* Solution Evaluation
* Question 1
* Question 2
* Question 3

**Instructions**  
  
This case study contains 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.  
  
Note: You cannot go back or review questions of this type on the actual certification exam.

## Question 42.1

You are a data architect for your company. You plan to import data into Azure SQL Data Warehouse. You want to import a dimension table named Manufacturer that has about 200 rows. The size of the table is about 100 kilobytes (KB). 90 percent of the manufacturers are located in the same postal code. This table will be used in joins for most queries.  
  
You need to recommend the partitioning strategy for the table.  
  
Solution: You use a replicated table.   
  
Does this solution meet the goal?

Complete the Case Study

* Solution Evaluation
* Question 1
* Question 2
* Question 3

Yes

No

## Question 42.2

You are a data architect for your company. You plan to import data into Azure SQL Data Warehouse. You want to import a dimension table named Manufacturer that has about 200 rows. The size of the table is about 100 kilobytes (KB). 90 percent of the manufacturers are located in the same postal code. This table will be used in joins for most queries.  
  
You need to recommend the partitioning strategy for the table.  
  
Solution: You use a hash-distributed table with the column that represents the postal code.  
  
Does this solution meet the goal?

Complete the Case Study

* Solution Evaluation
* Question 1
* Question 2
* Question 3

No

Yes

## Question 42.3

You are a data architect for your company. You plan to import data into Azure SQL Data Warehouse. You want to import a dimension table named Manufacturer that has about 200 rows. The size of the table is about 100 kilobytes (KB). 90 percent of the manufacturers are located in the same postal code. This table will be used in joins for most queries.  
  
You need to recommend the partitioning strategy for the table.  
  
Solution: You use round-robin distribution.  
  
Does this solution meet the goal?

Complete the Case Study

* Solution Evaluation
* Question 1
* Question 2
* Question 3

No

Yes

# Question45 Design relational cloud data stores

Case Study

Complete the Case Study

* Overview

Company1 partners with other organizations and government entities to develop, test, and deploy data collection and analysis solutions.  
  
Company1 is working with a large metropolitan area to gather detailed statistics on both public transportation and private vehicular traffic. Immediate goals include improving public transit performance, improving customer satisfaction, and reducing management expenses. Long-term goals include planning for a gradual change-over to self-driving vehicles.  
  
Data is collected from sensors installed on buses and railway transport systems. Each public vehicle is given a unique identifying number for tracking purposes. Ground-level sensors are used at locations throughout the city to capture license plate numbers and vehicle images. All items receive a date/time stamp.  
  
Much of the data is maintained in separate databases targeted at the data contained. General and reference information about buses and transit trains is partially denormalized, with information grouped into a column family and references by identifying number.

* Data Collection and Analysis

Company1 has not determined which data will be required by the final solution and is collecting more data than will probably be needed. A large amount of the data is being written to large Azure Tables maintained in a premium tier general-purpose v2 (GPv2) storage account. During initial development, the highest possible levels of reliability and immediate availability of this data are key concerns, including in case of regional failures.  
  
Rider data is collected in an Azure SQL Database. The city wants to receive reports related to public transit includes ridership, time to load and unload, and so forth. Data is highly normalized. Individual file sizes, transaction query time, and reporting time for each transit vehicle should be minimized.  
  
An Azure SQL Database is used as a reference database to support both real-time and batch processing activities. The data in some columns is proprietary to Company1 and considered confidential. Direct access to this data should be limited to applications accessing the data. Other database columns do not require the same protection.

* Technical Requirements

You have the following technical requirements:

* You need to optimize processing rider data by vehicle.
* Backups for rider data should be maintained for 90 days.
* You need to choose an appropriate storage type for general vehicle data.
* You need to ensure that the availability and reliability requirements for Azure Table data are met.

## Question 45.1

You need to select a data store option best suited to general vehicle data for buses and transit trains.  
  
What should you choose?

Complete the Case Study

* Overview
* Data Collection and Analysis
* Technical Requirements
* Question 1
* Question 2
* Question 3
* Question 4

HBase in HDInsight

Azure SQL Database

Azure Storage blobs

Cosmos DB

## Question 45.2

You need to choose an Azure Table storage redundancy option that meets Company1's requirements.  
  
What should you choose?

Complete the Case Study

* Overview
* Data Collection and Analysis
* Technical Requirements
* Question 1
* Question 2
* Question 3
* Question 4

locally redundant storage (LRS)

read-access geo-redundant storage (RA-GRS)

zone-redundant storage (ZRS)

read-access geo-zone-redundant storage (RA-GZRS)

## Question 45.3

You need to ensure that rider data is structured to meet file size and processing requirements.  
  
What should you use?

Complete the Case Study

* Overview
* Data Collection and Analysis
* Technical Requirements
* Question 1
* Question 2
* Question 3
* Question 4

Active geo-replication

Memory-optimized clustered columnstore indexing

Nonclustered columnstore indexing

Sharding

## Question 45.4

You need to ensure that retention requirements are met for the rider data. Management effort to implement the solution should be minimized.  
  
What should you recommend?

Complete the Case Study

* Overview
* Data Collection and Analysis
* Technical Requirements
* Question 1
* Question 2
* Question 3
* Question 4

Geo-redundant storage (GRS)

Long-term backup retention (LTR)

AzCopy

Automated backups

# Question89 Design relational cloud data stores

You plan to use Azure Blob Storage to store recent backups. Your company policy specifies that backups should remain available for at least 60 days. Data availability should be 99% or better. Backups are accessed only if needed for recovery and should be quickly and readily available. Solution costs should be kept to a minimum.  
  
You need to recommend a blob storage tier solution.  
  
Which solution should you recommend?

Choose the correct answer

Archive

Cool

Hot

Premium

# Question90 Design relational cloud data stores

Your company deploys an Azure SQL single database to support cloud-based applications. You need to recommend a disaster recovery solution that meets the following requirements:

* Supports ongoing operations after a regional failure.
* Secondary instances support read-only queries.
* All solution components are cloud-based.

Which solution should you recommend?

Choose the correct answer

SQL Server replication

Geo-replication

Geo-redundant storage (GRS)

Locally redundant storage (LRS)

# Question91 Design relational cloud data stores

You implement an Azure SQL Database managed instance to support a business-critical application. Your must design and implement a disaster recovery strategy to ensure operations in case of a regional failure in the primary region. Your solution must support automatic failover configured through user-defined policy.  
  
You need to identify the best solution to meet your requirements.  
  
What should you recommend?

Choose the correct answer

SQL Server replication

Geo-replication

Geo-redundant storage (GRS)

Failover group

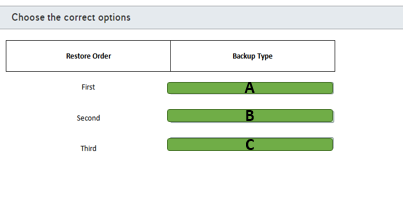
# Question93 Design relational cloud data stores

You are a data architect for your company. You are designing the disaster recover strategy for an Azure SQL Database. Data in the database changes approximately every four hours. You want to use point-in-time recovery so that in the event of failure, you can restore the database as quickly as possible. You also want to use the least amount of disk space required for the backup solution. You consider the following backup solutions:

* Differential backups every day
* Differential backups every 12 hours
* Differential backups every week
* Full backups every day
* Full backups every 12 hours
* Full backups every week
* Transaction log backups

You need to recommend the type of backups to use and the order in which they should be restored.  
  
To answer, select the appropriate backup types from the drop-down menus.

Choose the correct options



A)

1. Differential backup
2. Differential weekly backup
3. Full daily backup
4. Full weekly backup

B)

1. Differential backup from last 12 hours
2. Full backup from last 12 hours

C)

1. Transaction log backup backs ups since last differential backup
2. Transaction log backup since last full backup

# Question95 Design relational cloud data stores

You plan to use Azure SQL Database to store data in the cloud. You are creating a backup and restore strategy. You use the backup plan scenario in the exhibit. Assuming that the scenario in the exhibit occurs, you want to determine how to restore the database to its corruption point by using the quickest process and the fewest number of restores.  
  
You need to perform the restore.  
  
Which five actions should you perform in sequence? To answer, move the appropriate actions from the list of possible actions to the answer area and arrange them in the correct order.

Create a list in the correct order

Restore Tasks

Restore Tasks in Order

* Restore the first transaction log backup from Monday.
* Restore the last transaction log backup from Monday.
* Create a tail-log backup of the current transaction log.
* Restore the full backup from Sunday.
* Restore the differential backup from Monday.
* Restore the transaction log backup from Tuesday.
* Restore the tail-log backup.

# Question96 Design relational cloud data stores

You plan to use Azure SQL Database to store data in the cloud. You are creating a backup and restore strategy. You use the backup plan scenario in the exhibit. Assuming that the scenario in the exhibit occurs, you want to determine how to restore the database to its corruption point by using the quickest process and the fewest number of restores.  
  
You need to perform the restore.  
  
Which five actions should you perform in sequence? To answer, move the appropriate actions from the list of possible actions to the answer area and arrange them in the correct order.

Create a list in the correct order

Possible actions

Actions in order

* Create a differential backup.
* Create a tail-log backup of the current transaction log.
* Restore the full backup.
* Restore the 11:00 AM transaction log backup.
* Restore the 2:00 PM transaction log backup.
* Restore the tail-log backup.

# Question97 Design relational cloud data stores

You are a data architect for your company. You are designing distributions for an Azure SQL Data Warehouse. You plan to import data into two tables.  
  
You need to determine the partitioning method to use for each table.  
  
To answer, drag the appropriate partitioning method to each table. A partitioning method may be used once, more than once, or not at all.

Drag and drop the answers

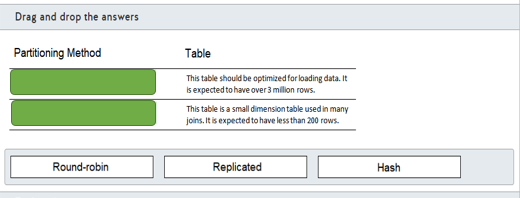
https://pts.measureup.com/web/instances/MUP/assets/images/DP-201/DP-201_64031/RoundRobin.png

https://pts.measureup.com/web/instances/MUP/assets/images/DP-201/DP-201_64031/Replicate(4).png

https://pts.measureup.com/web/instances/MUP/assets/images/DP-201/DP-201_64031/RoundRobin.png

https://pts.measureup.com/web/instances/MUP/assets/images/DP-201/DP-201_64031/Replicate(4).png

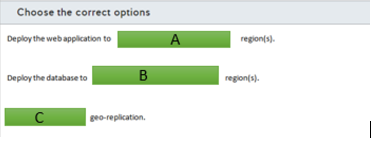
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# Question98 Design relational cloud data stores

Your company is building a web application that accesses a database. Data in the database changes frequently, and it should be consistent for all users. Data must also be immediately available to be read after it is written. You want to deploy the web application and database to Azure. You want to use the Azure SQL Database service to host the database. The application must be deployed so that it has minimal downtime and latency. 90 percent of the application's users are in the US West region, and 10 percent are in the US East region. You plan to use DNS-based load balancing for the web application.  
  
You need to design the deployment.  
  
To answer, select the appropriate configurations from the drop-down menus.

Choose the correct options



A)

1. The US East
2. The US West
3. both

B)

1. The US East
2. The US West
3. both

C)

1. Enable
2. Disable

# Question99 Design relational cloud data stores

You are a data architect for your company. You plan to deploy Azure SQL Data Warehouse. A large file exists in Azure blob storage.  
  
You need to design a table that allows you to reference the data from blob storage.  
  
Which type of table should you use?

Choose the correct answer

Hash-distributed

Round-robin

Replicated

External

# Question100 Design relational cloud data stores

You deploy a single instance of Azure SQL Database. The database is configured for automated backup with the default configuration.  
  
You need to determine the point-in-time recovery procedures in case of failure. You must identify the backups from which you need to restore and in what order.  
  
Which three backups should you perform in sequence? To answer, move the appropriate backups from the list of possible backups to the answer area and arrange them in the correct order.

Create a list in the correct order

Possible backups

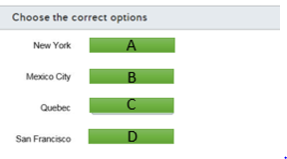
Backups in order

* Full daily backup
* All log backups since the last full backup
* All differential backups since the last full backup
* Full weekly backup
* Most recent differential backup
* All log backups since the last differential backup

# Question101 Design relational cloud data stores

A company has 3D fabrication plants in New York, Mexico City, Quebec, and San Francisco. Images are captured of projects in progress and tagged with the time and project number.  
  
Image information is maintained in an Azure storage blob in the region nearest to New York. Tagging data is collected from all sites to New York and uploaded to an Azure SQL Database. Tagging data should be replicated through geo-replication to locations near each of the fabrication plants. The storage solution must support failover for tagging information.  
  
How should you configure replication?  
  
To answer, select the appropriate setting from the drop-down menus.

Choose the correct options



A)

1. Write region
2. Read region

 B)

1. Write region
2. Read region

C)

1. Write region
2. Read region

D)

1. Write region
2. Read region

# Question102 Design relational cloud data stores

Your company is migrating several applications and their supporting independent SQL Server databases from on-premises to the cloud. Databases have different resource requirements and different peak usage periods. You want to set maximum resource limits on the databases as a group and provide the ability to scale to meet peak requirements.  
  
Which solution should you implement?

Choose the correct answer

Elastic pool

Single instances

Clustering

Managed instances

# Question103 Design relational cloud data stores

You deploy a new Azure SQL Database as a single instance under the vCore-based purchasing model. You closely monitor database activity during the initial deployment to determine resource requirements and peak usage periods.  
  
You need to manually adjust database resources or the service tier without downtime or performance impact.  
  
Which technology should you implement?

Choose the correct answer

Autoscaling

Database sharding

Dynamic scalability

Read scale-out

# Question104 Design relational cloud data stores

You are configuring an Azure SQL database to support a large online transaction processing (OLTP) application. The database must support a typical load of 25,000 input/output operations per second (IOPS) with a peak load of up to 35,000 IOPS. You want to minimize storage costs.  
  
You need to select the appropriate type of disk.  
  
What should you select?

Choose the correct answer

Standard SSD Managed Disk

Ultra SSD Managed Disk

Premium SSD Managed Disk

Standard HDD Managed Disk

# Question105 Design relational cloud data stores

You have a 900 GB MySQL database that supports your company's online retail operations. You need to migrate the database to an Azure MySQL database. Interruptions to applications that use the database must be kept to a minimum.  
  
What should you use to migrate the database?

Choose the correct answer

Azure Database Migration Service

Import and export

MySQL Workbench

Data Migration Assistant

# Question107 Design relational cloud data stores

You are designing the security elements of your company’s application that uses Azure SQL Database. As a part of the information security requirements, no data must be directly accessible from database backups or transaction log backups. All data is considered highly confidential and must accessible only through the application or via a trusted set of administrators.  
  
You need to choose a security design for the database that will meet the requirements.  
  
Which Azure SQL Database capability should you use?

Choose the correct answer

Transparent Database Encryption (TDE)

Transport Layer Security (TLS) encryption

Azure Information Protection (AIP)

Always Encrypted

# Question108 Design relational cloud data stores

You are setting up the storage requirements of your company's SQL Managed Instance dataset backups. Data is expected to be retained for a maximum of 30 days in the event of a restore, but there also a requirement for storage that could require immediate access when it is requested. The storage must use the most cost-effective storage pricing.  
  
You need to choose which type of blob storage you should use for the SQL Managed Instance dataset backups.  
  
Which storage type should you use?

Choose the correct answer

Premium

Hot

Archive

Cool

# Question109 Design relational cloud data stores

You are designing the data solution for your customer support database. The database runs on Azure SQL Database. The primary table structure needs to include columns for customer identity, product SKU, and customer location.  
  
You need to optimize the performance of queries against the database by product.  
  
Which partitioning strategy should you use?

Choose the correct answer

Vertical partitioning based on product SKU

Horizontal partitioning based on customer identity

Functional partitioning based on product SKU

Horizontal partitioning based on product SKU