

Microsoft

Exam Questions DP-420

Designing and Implementing Cloud-Native Applications Using Microsoft Azure Cosmos DB



NEW QUESTION 1

- (Exam Topic 1)

You need to select the partition key for con-iot1. The solution must meet the IoT telemetry requirements. What should you select?

- A. the timestamp
- B. the humidity
- C. the temperature
- D. the device ID

Answer: D

Explanation:

The partition key is what will determine how data is routed in the various partitions by Cosmos DB and needs to make sense in the context of your specific scenario. The IoT Device ID is generally the "natural" partition key for IoT applications.

Scenario: The iotdb database will contain two containers named con-iot1 and con-iot2. Ensure that Azure Cosmos DB costs for IoT-related processing are predictable. Reference:

<https://docs.microsoft.com/en-us/azure/architecture/solution-ideas/articles/iot-using-cosmos-db>

NEW QUESTION 2

- (Exam Topic 1)

You configure multi-region writes for account1.

You need to ensure that App1 supports the new configuration for account1. The solution must meet the business requirements and the product catalog requirements.

What should you do?

- A. Set the default consistency level of account1 to bounded staleness.
- B. Create a private endpoint connection.
- C. Modify the connection policy of App1.
- D. Increase the number of request units per second (RU/s) allocated to the con-product and con-productVendor containers.

Answer: D

Explanation:

App1 queries the con-product and con-productVendor containers.

Note: Request unit is a performance currency abstracting the system resources such as CPU, IOPS, and memory that are required to perform the database operations supported by Azure Cosmos DB.

Scenario:

Develop an app named App1 that will run from all locations and query the data in account1.

Once multi-region writes are configured, maximize the performance of App1 queries against the data in account1.

Whenever there are multiple solutions for a requirement, select the solution that provides the best performance, as long as there are no additional costs associated.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/consistency-levels>

NEW QUESTION 3

- (Exam Topic 1)

You need to provide a solution for the Azure Functions notifications following updates to con-product. The solution must meet the business requirements and the product catalog requirements.

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

NOTE: Each correct selection is worth one point.

- A. Configure the trigger for each function to use a different leaseCollectionPrefix
- B. Configure the trigger for each function to use the same leaseCollectionName
- C. Configure the trigger for each function to use a different leaseCollectionName
- D. Configure the trigger for each function to use the same leaseCollectionPrefix

Answer: AB

Explanation:

leaseCollectionPrefix: when set, the value is added as a prefix to the leases created in the Lease collection for this Function. Using a prefix allows two separate Azure Functions to share the same Lease collection by using different prefixes.

Scenario: Use Azure Functions to send notifications about product updates to different recipients. Trigger the execution of two Azure functions following every update to any document in the con-product container.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-functions/functions-bindings-cosmosdb-v2-trigger>

NEW QUESTION 4

- (Exam Topic 2)

You have a container named container1 in an Azure Cosmos DB Core (SQL) API account. The container1 container has 120 GB of data.

The following is a sample of a document in container1.

The orderId property is used as the partition key.

For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Yes
Records with different OrderIDs will match.
Box 2: Yes
Records with different OrderIDs will match.
Box 3: No
Only records with one specific OrderId will match

NEW QUESTION 5

- (Exam Topic 2)

You have an Azure Cosmos DB Core (SQL) API account named account1.

In account1, you run the following query in a container that contains 100GB of data. SELECT *
FROM c

WHERE LOWER(c.categoryid) = "hockey"

You view the following metrics while performing the query.

For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: No
Each physical partition should have its own index, but since no index is used, the query is not cross-partition.
Box 2: No
Index utilization is 0% and Index Look up time is also zero.
Box 3: Yes
A partition key index will be created, and the query will perform across the partitions. Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/sql/how-to-query-container>

NEW QUESTION 6

- (Exam Topic 2)

You have an Azure Cosmos DB Core (SQL) API account.

You run the following query against a container in the account. SELECT
IS_NUMBER("1234") AS A, IS_NUMBER(1234) AS B, IS_NUMBER({prop: 1234}) AS C
What is the output of the query?

- A. [{"A": false, "B": true, "C": false}]
- B. [{"A": true, "B": false, "C": true}]
- C. [{"A": true, "B": true, "C": false}]
- D. [{"A": true, "B": true, "C": true}]

Answer: A

Explanation:

IS_NUMBER returns a Boolean value indicating if the type of the specified expression is a number. "1234" is a string, not a number.
Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/sql/sql-query-is-number>

NEW QUESTION 7

- (Exam Topic 2)

You have an Azure Cosmos DB Core (SQL) API account.

You configure the diagnostic settings to send all log information to a Log Analytics workspace.

You need to identify when the provisioned request units per second (RU/s) for resources within the account were modified.

You write the following query. AzureDiagnostics

| where Category == "ControlPlaneRequests" What should you include in the query?

- A. | where OperationName startswith "AccountUpdateStart"

- B. | where OperationName startswith "SqlContainersDelete"
- C. | where OperationName startswith "MongoCollectionsThroughputUpdate"
- D. | where OperationName startswith "SqlContainersThroughputUpdate"

Answer: A

Explanation:

The following are the operation names in diagnostic logs for different operations: RegionAddStart, RegionAddComplete
RegionRemoveStart, RegionRemoveComplete AccountDeleteStart, AccountDeleteComplete RegionFailoverStart, RegionFailoverComplete AccountCreateStart, AccountCreateComplete
AccountUpdateStart, AccountUpdateComplete VirtualNetworkDeleteStart, VirtualNetworkDeleteComplete DiagnosticLogUpdateStart, DiagnosticLogUpdateComplete
Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/audit-control-plane-logs>

NEW QUESTION 8

- (Exam Topic 2)

You have three containers in an Azure Cosmos DB Core (SQL) API account as shown in the following table.

You have the following Azure functions:

A function named Fn1 that reads the change feed of cn1 A function named Fn2 that reads the change feed of cn2 A function named Fn3 that reads the change feed of cn3

You perform the following actions: Delete an item named item1 from cn1. Update an item named item2 in cn2.

For an item named item3 in cn3, update the item time to live to 3,600 seconds.

For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: No

Azure Cosmos DB's change feed is a great choice as a central data store in event sourcing architectures where all data ingestion is modeled as writes (no updates or deletes).

Note: The change feed does not capture deletes. If you delete an item from your container, it is also removed from the change feed. The most common method of handling this is adding a soft marker on the items that are being deleted. You can add a property called "deleted" and set it to "true" at the time of deletion. This document update will show up in the change feed. You can set a TTL on this item so that it can be automatically deleted later.

Box 2: No

The _etag format is internal and you should not take dependency on it, because it can change anytime.

Box 3: Yes

Change feed support in Azure Cosmos DB works by listening to an Azure Cosmos container for any changes. Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/sql/change-feed-design-patterns> <https://docs.microsoft.com/en-us/azure/cosmos-db/change-feed>

NEW QUESTION 9

- (Exam Topic 2)

You have a container in an Azure Cosmos DB Core (SQL) API account.

You need to use the Azure Cosmos DB SDK to replace a document by using optimistic concurrency. What should you include in the code? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: ConsistencyLevel

The ItemRequestOptions Class ConsistencyLevel property gets or sets the consistency level required for the request in the Azure Cosmos DB service.

Azure Cosmos DB offers 5 different consistency levels. Strong, Bounded Staleness, Session, Consistent Prefix and Eventual - in order of strongest to weakest consistency.

Box 2: _etag

The ItemRequestOptions class helped us implement optimistic concurrency by specifying that we wanted the SDK to use the If-Match header to allow the server to decide whether a resource should be updated. The If-Match value is the ETag value to be checked against. If the ETag value matches the server ETag value, the resource is updated.

Reference:

<https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.cosmos.itemrequestoptions> <https://cosmosdb.github.io/labs/dotnet/labs/10-concurrency-control.html>

NEW QUESTION 10

- (Exam Topic 2)

You have an Azure Cosmos DB Core (SQL) API account used by an application named App1. You open the Insights pane for the account and see the following chart.

Use the drop-down menus to select the answer choice that answers each question based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: incorrect connection URLs

400 Bad Request: Returned when there is an error in the request URI, headers, or body. The response body will contain an error message explaining what the specific problem is.

The HyperText Transfer Protocol (HTTP) 400 Bad Request response status code indicates that the server cannot or will not process the request due to something that is perceived to be a client error (for example, malformed request syntax, invalid request message framing, or deceptive request routing).

Box 2: 6 thousand

201 Created: Success on PUT or POST. Object created or updated successfully. Note:

200 OK: Success on GET, PUT, or POST. Returned for a successful response.

404 Not Found: Returned when a resource does not exist on the server. If you are managing or querying an index, check the syntax and verify the index name is specified correctly.

Reference: <https://docs.microsoft.com/en-us/rest/api/searchservice/http-status-codes>

NEW QUESTION 10

- (Exam Topic 2)

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 have a container named container1 in an Azure Cosmos DB Core (SQL) API account.

You need to make the contents of container1 available as reference data for an Azure Stream Analytics job. Solution: You create an Azure function that uses Azure Cosmos DB Core (SQL) API change feed as a trigger and Azure event hub as the output.

Does this meet the goal?

- A. Yes
- B. No

Answer: A

Explanation:

The Azure Cosmos DB change feed is a mechanism to get a continuous and incremental feed of records from an Azure Cosmos container as those records are being created or modified. Change feed support works by listening to container for any changes. It then outputs the sorted list of documents that were changed in the order in which they were modified.

The following diagram represents the data flow and components involved in the solution:

C:\Users\Admin\Desktop\Data\Odt data\Untitled.jpg

Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/sql/changefeed-ecommerce-solution>

NEW QUESTION 15

- (Exam Topic 2)

The settings for a container in an Azure Cosmos DB Core (SQL) API account are configured as shown in the following exhibit.

Which statement describes the configuration of the container?

- A. All items will be deleted after one year.
- B. Items stored in the collection will be retained always, regardless of the items time to live value.
- C. Items stored in the collection will expire only if the item has a time to live value.
- D. All items will be deleted after one hour.

Answer: C

Explanation:

When DefaultTimeToLive is -1 then your Time to Live setting is On (No default)

Time to Live on a container, if present and the value is set to "-1", it is equal to infinity, and items don't expire by default.

Time to Live on an item:

This Property is applicable only if DefaultTimeToLive is present and it is not set to null for the parent container.

If present, it overrides the DefaultTimeToLive value of the parent container. Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/sql/time-to-live>

NEW QUESTION 16

- (Exam Topic 2)

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 have an Azure Cosmos DB Core (SQL) API account named account 1 that uses autoscale throughput. You need to run an Azure function when the normalized request units per second for a container in account1 exceeds a specific value.

Solution: You configure an application to use the change feed processor to read the change feed and you configure the application to trigger the function.

Does this meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Instead configure an Azure Monitor alert to trigger the function.

You can set up alerts from the Azure Cosmos DB pane or the Azure Monitor service in the Azure portal. Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/create-alerts>

NEW QUESTION 20

- (Exam Topic 2)

You plan to create an Azure Cosmos DB Core (SQL) API account that will use customer-managed keys stored in Azure Key Vault.

You need to configure an access policy in Key Vault to allow Azure Cosmos DB access to the keys. Which three permissions should you enable in the access policy? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Wrap Key
- B. Get
- C. List
- D. Update
- E. Sign
- F. Verify
- G. Unwrap Key

Answer: ABG

Explanation:

Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/how-to-setup-cmk>

NEW QUESTION 21

- (Exam Topic 2)

You have a database in an Azure Cosmos DB SQL API Core (SQL) account that is used for development. The database is modified once per day in a batch process.

You need to ensure that you can restore the database if the last batch process fails. The solution must minimize costs.

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

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

NEW QUESTION 22

- (Exam Topic 2)

You have an application named App1 that reads the data in an Azure Cosmos DB Core (SQL) API account. App1 runs the same read queries every minute. The default consistency level for the account is set to eventual.

You discover that every query consumes request units (RUs) instead of using the cache.

You verify the IntegratedCacheItemHitRate metric and the IntegratedCacheQueryHitRate metric. Both metrics have values of 0.

You verify that the dedicated gateway cluster is provisioned and used in the connection string. You need to ensure that App1 uses the Azure Cosmos DB integrated cache.

What should you configure?

- A. the indexing policy of the Azure Cosmos DB container
- B. the consistency level of the requests from App1
- C. the connectivity mode of the App1 CosmosClient
- D. the default consistency level of the Azure Cosmos DB account

Answer: C

Explanation:

Because the integrated cache is specific to your Azure Cosmos DB account and requires significant CPU and memory, it requires a dedicated gateway node. Connect to Azure Cosmos DB using gateway mode.

Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/integrated-cache-faq>

NEW QUESTION 25

- (Exam Topic 2)

You are implementing an Azure Data Factory data flow that will use an Azure Cosmos DB (SQL API) sink to write a dataset. The data flow will use 2,000 Apache Spark partitions.

You need to ensure that the ingestion from each Spark partition is balanced to optimize throughput. Which sink setting should you configure?

- A. Throughput
- B. Write throughput budget
- C. Batch size
- D. Collection action

Answer: C

Explanation:

Batch size: An integer that represents how many objects are being written to Cosmos DB collection in each batch. Usually, starting with the default batch size is sufficient. To further tune this value, note:

Cosmos DB limits single request's size to 2MB. The formula is "Request Size = Single Document Size * Batch Size". If you hit error saying "Request size is too large", reduce the batch size value.

The larger the batch size, the better throughput the service can achieve, while make sure you allocate enough RUs to empower your workload.

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

NEW QUESTION 28

- (Exam Topic 2)

HOTSPOT

You configure Azure Cognitive Search to index a container in an Azure Cosmos DB Core (SQL) API account as shown in the following exhibit.

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

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: country

The country field is filterable.

Note: filterable: Indicates whether to enable the field to be referenced in \$filter queries. Filterable differs from searchable in how strings are handled. Fields of type Edm.String or Collection(Edm.String) that are filterable do not undergo lexical analysis, so comparisons are for exact matches only.

Box 2: name

The name field is not Retrievable.

Retrievable: Indicates whether the field can be returned in a search result. Set this attribute to false if you want to use a field (for example, margin) as a filter, sorting, or scoring mechanism but do not want the field to be visible to the end user.

Note: searchable: Indicates whether the field is full-text searchable and can be referenced in search queries. Reference: <https://docs.microsoft.com/en-us/rest/api/searchservice/create-index>

NEW QUESTION 29

- (Exam Topic 2)

You have a database in an Azure Cosmos DB Core (SQL) API account. The database is backed up every two hours.

You need to implement a solution that supports point-in-time restore. What should you do first?

- A. Enable Continuous Backup for the account.
- B. Configure the Backup & Restore settings for the account.
- C. Create a new account that has a periodic backup policy.
- D. Configure the Point In Time Restore settings for the account.

Answer: A

Explanation:

Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/provision-account-continuous-backup>

NEW QUESTION 34

- (Exam Topic 2)

You have a database named telemetry in an Azure Cosmos DB Core (SQL) API account that stores IoT data. The database contains two containers named readings and devices.

Documents in readings have the following structure.

id

deviceid

timestamp
ownerid
measures (array)
- type
- value
- metricid

Documents in devices have the following structure.

id
deviceid
owner
- ownerid
- emailaddress
- name brand model

For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Yes

Need to join readings and devices.

Box 2: No

Only readings is required. All required fields are in readings.

Box 3: No

Only devices is required. All required fields are in devices.

NEW QUESTION 38

- (Exam Topic 2)

You are creating a database in an Azure Cosmos DB Core (SQL) API account. The database will be used by an application that will provide users with the ability to share online posts. Users will also be able to submit comments on other users' posts.

You need to store the data shown in the following table.

The application has the following characteristics: Users can submit an unlimited number of posts.

The average number of posts submitted by a user will be more than 1,000. Posts can have an unlimited number of comments from different users.

The average number of comments per post will be 100, but many posts will exceed 1,000 comments. Users will be limited to having a maximum of 20 interests.

For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Box 1: Yes

Non-relational data increases write costs, but can decrease read costs.

Box 2: Yes

Non-relational data increases write costs, but can decrease read costs.

Box 3: No

Non-relational data increases write costs, but can decrease read costs.

NEW QUESTION 40

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