Microsoft

Exam Questions DP-420

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

NEW QUESTION 1
- (Exam Topic 1)
You are troubleshooting the current issues caused by the application updates.
Which action can address the application updates issue without affecting the functionality of the application?

A. Enable time to live for the con-product container.
B. Set the default consistency level of account1 to strong.
C. Set the default consistency level of account1 to bounded staleness.
D. Add a custom indexing policy to the con-product container.

Answer: C

Explanation:
Bounded staleness is frequently chosen by globally distributed applications that expect low write latencies but require total global order guarantee. Bounded staleness is great for applications featuring group collaboration and sharing, stock ticker, publish-subscribe/queueing etc.
Scenario: Application updates in con-product frequently cause HTTP status code 429 "Too many requests". You discover that the 429 status code relates to excessive request unit (RU) consumption during the updates.
Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/consistency-levels

NEW QUESTION 2
- (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 leaseCollectionNair.e
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 3
- (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 4
- (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 5
- (Exam Topic 2)
You maintain a relational database for a book publisher. The database contains the following tables.

The most common query lists the books for a given authorId.
You need to develop a non-relational data model for Azure Cosmos DB Core (SQL) API that will replace the relational database. The solution must minimize latency and read operation costs.
What should you include in the solution?

A. Create a container for Author and a container for Boo
B. In each Author document, embed bookId for each book by the autho
C. In each Book document embed authorId of each author.
D. Create Author, Book, and Bookauthorlnk documents in the same container.
E. Create a container that contains a document for each Author and a document for each Boo
F. In each Book document, embed authorId.
G. Create a container for Author and a container for Boo
H. In each Author document and Book document embed the data from Bookauthorlnk.

Answer: A

Explanation:
Store multiple entity types in the same container.

NEW QUESTION 6
- (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 the function to have an Azure CosmosDB trigger. 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 7
- (Exam Topic 2)
You have a database in an Azure Cosmos DB Core (SQL) API account.
You plan to create a container that will store employee data for 5,000 small businesses. Each business will have up to 25 employees. Each employee item will have an emailAddress value.
You need to ensure that the emailAddress value for each employee within the same company is unique.
To what should you set the partition key and the unique key? 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: CompanyID
After you create a container with a unique key policy, the creation of a new or an update of an existing item resulting in a duplicate within a logical partition is prevented, as specified by the unique key constraint. The partition key combined with the unique key guarantees the uniqueness of an item within the scope of the container.
For example, consider an Azure Cosmos container with Email address as the unique key constraint and CompanyID as the partition key. When you configure the user's email address with a unique key, each item has a unique email address within a given CompanyID. Two items can't be created with duplicate email addresses and with the same partition key value.
Box 2: emailAddress
Reference: https://docs.microsoft.com/en-us/azure/cosmos-db/unique-keys

NEW QUESTION 8
- (Exam Topic 2)
You provision Azure resources by using the following Azure Resource Manager (ARM) template.

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
An alert is triggered when the DB key is regenerated, not when it is used.
Note: The az cosmosdb keys regenerate command regenerates an access key for a Azure Cosmos DB database account.
Box 2: No
Only an SMS action will be taken.
Emailreceivers is empty so no email action is taken.
Box 3: Yes
Yes, an alert is triggered when the DB key is regenerated.
Reference: https://docs.microsoft.com/en-us/cli/azure/cosmosdb/keys

NEW QUESTION 9
- (Exam Topic 2)
You have a container in an Azure Cosmos DB Core (SQL) API account. The container stores telemetry data from IoT devices. The container uses telemetryId as the partition key and has a throughput of 1,000 request units per second (RU/s). Approximately 5,000 IoT devices submit data every five minutes by using the same telemetryId value.
You have an application that performs analytics on the data and frequently reads telemetry data for a single IoT device to perform trend analysis.
The following is a sample of a document in the container.

You need to reduce the amount of request units (RUs) consumed by the analytics application. What should you do?

A. Decrease the offerThroughput value for the container.
B. Increase the offerThroughput value for the container.
C. Move the data to a new container that has a partition key of deviceId.
D. Move the data to a new container that uses a partition key of date.

Answer: C

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

NEW QUESTION 10
- (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)
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 Data Factory pipeline that uses Azure Cosmos DB Core (SQL) API as the input and Azure Blob Storage as the output.
Does this meet the goal?

A. Yes
B. No

Answer: B

Explanation:
Instead create an Azure function that uses Azure Cosmos DB Core (SQL) API change feed as a trigger and Azure event hub as the output.
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 14
- (Exam Topic 2)
You are developing an application that will use an Azure Cosmos DB Core (SQL) API account as a data source.
You need to create a report that displays the top five most ordered fruits as shown in the following table.

A collection that contains aggregated data already exists. The following is a sample document:
{
"name": "apple",
"type": ["fruit", "exotic"], "orders": 10000
}
Which two queries can you use to retrieve data for the report? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.
A)

B)

C)

D)

A. Option A
B. Option B
C. Option C
D. Option D

Answer: BD

Explanation:
ARRAY_CONTAINS returns a Boolean indicating whether the array contains the specified value. You can check for a partial or full match of an object by using a boolean expression within the command.
Reference: https://docs.microsoft.com/en-us/azure/cosmos-db/sql/sql-query-array-contains

NEW QUESTION 17
- (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.
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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 19
- (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 23
- (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 25
- (Exam Topic 2)
You have an app that stores data in an Azure Cosmos DB Core (SQL) API account The app performs queries that return large result sets.

You need to return a complete result set to the app by using pagination. Each page of results must return 80 items.
Which three 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.

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Step 1: Configure the MaxItemCount in QueryRequestOptions
You can specify the maximum number of items returned by a query by setting the MaxItemCount. The MaxItemCount is specified per request and tells the query engine to return that number of items or fewer.
Box 2: Run the query and provide a continuation token
In the .NET SDK and Java SDK you can optionally use continuation tokens as a bookmark for your query's progress. Azure Cosmos DB query executions are stateless at the server side and can be resumed at any time using the continuation token.
If the query returns a continuation token, then there are additional query results.
Step 3: Append the results to a variable
Reference: https://docs.microsoft.com/en-us/azure/cosmos-db/sql/sql-query-pagination

NEW QUESTION 29
- (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 30
- (Exam Topic 2)
You have a container named container1 in an Azure Cosmos DB Core (SQL) API account.
You need to provide a user named User1 with the ability to insert items into container1 by using role-based access control (RBAC). The solution must use the principle of least privilege.
Which roles should you assign to User1?

A. CosmosDB Operator only
B. DocumentDB Account Contributor and Cosmos DB Built-in Data Contributor
C. DocumentDB Account Contributor only
D. Cosmos DB Built-in Data Contributor only

Answer: A

Explanation:
Cosmos DB Operator: Can provision Azure Cosmos accounts, databases, and containers. Cannot access any data or use Data Explorer.
Reference: https://docs.microsoft.com/en-us/azure/cosmos-db/role-based-access-control

NEW QUESTION 34
- (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 37
- (Exam Topic 2)
You need to implement a trigger in Azure Cosmos DB Core (SQL) API that will run before an item is inserted into a container.
Which two actions should you perform to ensure that the trigger runs? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. Append pre to the name of the JavaScript function trigger.
B. For each create request, set the access condition in RequestOptions.
C. Register the trigger as a pre-trigger.
D. For each create request, set the consistency level to session in RequestOptions.
E. For each create request, set the trigger name in RequestOptions.

Answer: C

Explanation:
C: When triggers are registered, you can specify the operations that it can run with.
F: When executing, pre-triggers are passed in the RequestOptions object by specifying PreTriggerInclude and then passing the name of the trigger in a List object.
Reference: https://docs.microsoft.com/en-us/azure/cosmos-db/sql/how-to-use-stored-procedures-triggers-udfs

NEW QUESTION 38
- (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 42
- (Exam Topic 2)
You have an Azure Cosmos DB Core (SQL) account that has a single write region in West Europe. You run the following Azure CLI script.

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
The Automatic failover option allows Azure Cosmos DB to failover to the region with the highest failover priority with no user action should a region become unavailable.
Box 2: No
West Europe is used for failover. Only North Europe is writable. To Configure multi-region set UseMultipleWriteLocations to true.
Box 3: Yes
Provisioned throughput with single write region costs $0.008/hour per 100 RU/s and provisioned throughput with multiple writable regions costs $0.016/per hour per 100 RU/s.
Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/sql/how-to-multi-master https://docs.microsoft.com/en-us/azure/cosmos-db/optimize-cost-regions

NEW QUESTION 45
- (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 50
- (Exam Topic 2)
You have a container named container1 in an Azure Cosmos DB Core (SQL) API account. Upserts of items in container1 occur every three seconds.
You have an Azure Functions app named function1 that is supposed to run whenever items are inserted or replaced in container1.
You discover that function1 runs, but not on every upsert.
You need to ensure that function1 processes each upsert within one second of the upsert. Which property should you change in the Function.json file of function1?

A. checkpointInterval
B. leaseCollectionsThroughput
C. maxItemsPerInvocation
D. feedPollDelay

Answer: D

Explanation:
With an upsert operation we can either insert or update an existing record at the same time.
FeedPollDelay: The time (in milliseconds) for the delay between polling a partition for new changes on the feed, after all current changes are drained. Default is 5,000 milliseconds, or 5 seconds.
Reference: https://docs.microsoft.com/en-us/azure/azure-functions/functions-bindings-cosmosdb-v2-trigger

NEW QUESTION 53
- (Exam Topic 2)
You have a database in an Azure Cosmos DB Core (SQL) API account.
You need to create an Azure function that will access the database to retrieve records based on a variable named accountnumber. The solution must protect against SQL injection attacks.
How should you define the command statement in the function?

A. cmd = "SELECT * FROM Persons pWHERE p.accountnumber = 'accountnumber'"
B. cmd = "SELECT * FROM Persons pWHERE p.accountnumber = LIKE @accountnumber"
C. cmd = "SELECT * FROM Persons pWHERE p.accountnumber = @accountnumber"
D. cmd = "SELECT * FROM Persons pWHERE p.accountnumber = '" + accountnumber + "'"

Answer: C

Explanation:
Azure Cosmos DB supports queries with parameters expressed by the familiar @ notation. Parameterized SQL provides robust handling and escaping of user input, and prevents accidental exposure of data through SQL injection.
For example, you can write a query that takes lastName and address.state as parameters, and execute it for various values of lastName and address.state based on user input.
SELECT *
FROM Families f
WHERE f.lastName = @lastName AND f.address.state = @addressState
Reference: https://docs.microsoft.com/en-us/azure/cosmos-db/sql/sql-query-parameterized-queries

NEW QUESTION 54
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