Microsoft

Exam Questions DP-420

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

NEW QUESTION 1
- (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 accountl 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 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 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 4
- (Exam Topic 2)
You provision Azure resources by using the following Azure Resource Manager (ARM) template.

```
{
    "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
    "contentVersion": "1.0.0.0",
    "parameters": {
        "db": {
            "defaultValue": "[resourceId('Microsoft.DocumentDB/databaseAccounts', 'prod1')]",
            "type": "String"
        },
        "sms": {
            "defaultValue": "[resourceId(microsoft.insights/actionGroups','sms')]",
            "type": "String"
        }
    },
    "variables": {},
    "resources": [
        {
            "type": "microsoft.insights/actionGroups",
            "apiVersion": "2019-06-01",
            "name": "sms",
            "location": "Global",
            "properties": {
                "groupShortName": "Send message",
                "enabled": true,
                "emailReceivers": [],
                "smsReceivers": [
                    {
                        "name": "Action-SMS",
                        "countryCode": "44",
                        "phoneNumber": "7111111111"
                    }
                ]
            }
        },
        {
            "type": "microsoft.insights/activityLogAlerts",
            "apiVersion": "2020-10-01",
            "name": "Alert1",
            "location": "Global",
            "dependsOn": ["sms"],
            "properties": {
                "scopes": [ "[parameters('db')]" ],
                "condition": {
                    "allOf": [
                        {
                            "field": "category",
                            "equals": "Administrative"
                        },
                        {
                            "field": "operationName",
                            "equals": "Microsoft.DocumentDB/databaseAccounts/regenerateKey/action"
                        }
                    ]
                },
                "actions": {
                    "actionGroups": [
                        {
                            "actionGroupId": "[parameters('sms')]",
                            "webhookProperties": {}
                        }
                    ]
                },
                "enabled": true
            }
        }
    ]
}
```

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

Answer Area

Statements	Yes	No
The alert will be triggered when an Azure Cosmos DB key is used	○	○
Two alert actions will be performed when the alert is triggered	○	○
The alert will be triggered when an item that has a new partition key value is created	○	○

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 5
- (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.
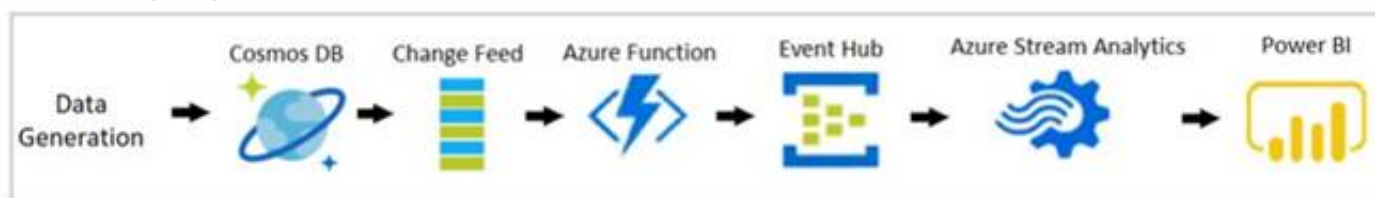Does this meet the goal?

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 6
- (Exam Topic 2)
You need to configure an Apache Kafka instance to ingest data from an Azure Cosmos DB Core (SQL) API account. The data from a container named telemetry must be added to a Kafka topic named iot. The solution must store the data in a compact binary format.
Which three configuration items should you include in the solution? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. "connector.class": "com.azure.cosmos.kafka.connect.source.CosmosDBSourceConnector"
B. "key.converter": "org.apache.kafka.connect.json.JsonConverter"
C. "key.converter": "io.confluent.connect.avro.AvroConverter"
D. "connect.cosmos.containers.topicmap": "iot#telemetry"
E. "connect.cosmos.containers.topicmap": "iot"
F. "connector.class": "com.azure.cosmos.kafka.connect.source.CosmosDBSinkConnector"

Answer: CDF

Explanation:
C: Avro is binary format, while JSON is text.
F: Kafka Connect for Azure Cosmos DB is a connector to read from and write data to Azure Cosmos DB. The Azure Cosmos DB sink connector allows you to export data from Apache Kafka topics to an Azure Cosmos DB database. The connector polls data from Kafka to write to containers in the database based on the topics subscription.
D: Create the Azure Cosmos DB sink connector in Kafka Connect. The following JSON body defines config for the sink connector.
Extract:
"connector.class": "com.azure.cosmos.kafka.connect.sink.CosmosDBSinkConnector", "key.converter": "org.apache.kafka.connect.json.AvroConverter"
"connect.cosmos.containers.topicmap": "hotels#kafka"
Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/sql/kafka-connector-sink https://www.confluent.io/blog/kafka-connect-deep-dive-converters-serialization-explained/

NEW QUESTION 7
- (Exam Topic 2)
You have an Azure Cosmos DB Core (SQL) API account that uses a custom conflict resolution policy. The account has a registered merge procedure that throws a runtime exception.
The runtime exception prevents conflicts from being resolved. You need to use an Azure function to resolve the conflicts. What should you use?

A. a function that pulls items from the conflicts feed and is triggered by a timer trigger
B. a function that receives items pushed from the change feed and is triggered by an Azure Cosmos DB trigger
C. a function that pulls items from the change feed and is triggered by a timer trigger
D. a function that receives items pushed from the conflicts feed and is triggered by an Azure Cosmos DB trigger

Answer: D

Explanation:
The Azure Cosmos DB Trigger uses the Azure Cosmos DB Change Feed to listen for inserts and updates across partitions. The change feed publishes inserts and updates, not deletions.
Reference: https://docs.microsoft.com/en-us/azure/azure-functions/functions-bindings-cosmosdb

NEW QUESTION 8
- (Exam Topic 2)
You have an Azure Cosmos DB Core (SQL) API account named account1 that has the disableKeyBasedMetadataWriteAccess property enabled.
You are developing an app named App1 that will be used by a user named DevUser1 to create containers in account1. DevUser1 has a non-privileged user account in the Azure Active Directory (Azure AD) tenant.
You need to ensure that DevUser1 can use App1 to create containers in account1. What should you do? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

Answer Area

Grant permissions to create containers by using: [▼]
- Account keys
- Resource tokens
- Role-based access control (RBAC)

Create containers by using the: [▼]
- Azure AD Graph API
- Azure Resource Manager API
- SQL (Core) API

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Box 1: Resource tokens
Resource tokens provide access to the application resources within a database. Resource tokens:
Provide access to specific containers, partition keys, documents, attachments, stored procedures, triggers, and UDFs.
Box 2: Azure Resource Manager API
You can use Azure Resource Manager to help deploy and manage your Azure Cosmos DB accounts, databases, and containers.
Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/secure-access-to-data https://docs.microsoft.com/en-us/rest/api/resources/

NEW QUESTION 9
- (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 10
- (Exam Topic 2)
You plan to deploy two Azure Cosmos DB Core (SQL) API accounts that will each contain a single database. The accounts will be configured as shown in the following table.

Name	Description
development	• Supports the development of new application features • Used intermittently as needed during development
shipments	• Captures over 100,000 updates per second generated at unpredictable rimes throughout the business day • Used with Azure Synapse Link for analytics

How should you provision the containers within each account to minimize costs? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

development:
- Serverless capacity mode
- Provisioned throughput capacity mode and manual throughput
- Provisioned throughput capacity mode and autoscale throughput

shipments:
- Serverless capacity mode
- Provisioned throughput capacity mode and manual throughput
- Provisioned throughput capacity mode and autoscale throughput

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Box 1: Serverless capacity mode
Azure Cosmos DB serverless best fits scenarios where you expect intermittent and unpredictable traffic with long idle times. Because provisioning capacity in such situations isn't required and may be cost-prohibitive, Azure Cosmos DB serverless should be considered in the following use-cases:
Getting started with Azure Cosmos DB
Running applications with bursty, intermittent traffic that is hard to forecast, or low (<10%) average-to-peak traffic ratio
Developing, testing, prototyping and running in production new applications where the traffic pattern is unknown
Integrating with serverless compute services like Azure Functions
Box 2: Provisioned throughput capacity mode and autoscale throughput The use cases of autoscale include:
Variable or unpredictable workloads: When your workloads have variable or unpredictable spikes in usage, autoscale helps by automatically scaling up and down based on usage. Examples include retail websites that have different traffic patterns depending on seasonality; IOT workloads that have spikes at various times during the day; line of business applications that see peak usage a few times a month or year, and more. With autoscale, you no longer need to manually provision for peak or average capacity.
Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/serverless
https://docs.microsoft.com/en-us/azure/cosmos-db/provision-throughput-autoscale#use-cases-of-autoscale

NEW QUESTION 10
- (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.

```
az cosmosdb update -n $accountName -g $resourceGroupName \
    --locations regionName='West Europe' failoverPriority=0 isZoneRedundant-False \
    --locations regionName='North Europe' failoverPriority=1 isZoneRedundant-False

az cosmosdb failover-priority-change -n $accountName -g $resourceGroupName \
    --failover-policies 'North Europe=0' 'West Europe=1'
```

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

Answer Area

Statements	Yes	No
After running the script, there will be an instance of Azure Cosmos DB in North Europe that is writable	○	○
After running the script, the Azure Cosmos DB instance in West Europe will be writable	○	○
The cost of the Azure Cosmos DB account is unaffected by running the script	○	○

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 15
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