

# 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 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 3

- (Exam Topic 1)

You need to identify which connectivity mode to use when implementing App2. The solution must support the planned changes and meet the business requirements.

Which connectivity mode should you identify?

- A. Direct mode over HTTPS
- B. Gateway mode (using HTTPS)
- C. Direct mode over TCP

**Answer: C**

#### Explanation:

Scenario: Develop an app named App2 that will run from the retail stores and query the data in account2. App2 must be limited to a single DNS endpoint when accessing account2.

By using Azure Private Link, you can connect to an Azure Cosmos account via a private endpoint. The private endpoint is a set of private IP addresses in a subnet within your virtual network.

When you're using Private Link with an Azure Cosmos account through a direct mode connection, you can use only the TCP protocol. The HTTP protocol is not currently supported.

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/how-to-configure-private-endpoints>

### NEW QUESTION 4

- (Exam Topic 2)

You maintain a relational database for a book publisher. The database contains the following tables.

Name	Column
Author	authorId (primary key)
	fullname
	address
	contactinfo
Book	bookId (primary key)
	isbn
	title
	genre
Bookauthorlnk	authorId (foreign key)
	bookId (foreign key)

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 5  
- (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	<input type="radio"/>	<input type="radio"/>
Two alert actions will be performed when the alert is triggered	<input type="radio"/>	<input type="radio"/>
The alert will be triggered when an item that has a new partition key value is created	<input type="radio"/>	<input type="radio"/>

- 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 6

- (Exam Topic 2)  
You have three containers in an Azure Cosmos DB Core (SQL) API account as shown in the following table.

Name	Database	Time to Live
cn1	db1	On (no default)
cn2	db1	Off
cn3	db1	On (no default)

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.

Answer Area

Statements	Yes	No
Fn1 will receive item1 from the change feed	<input type="radio"/>	<input type="radio"/>
Fn2 can check the _etag of item2 to see whether the item is an update or an insert	<input type="radio"/>	<input type="radio"/>
Fn3 will receive item3 from the change feed	<input type="radio"/>	<input type="radio"/>

- A. Mastered
- B. Not Mastered

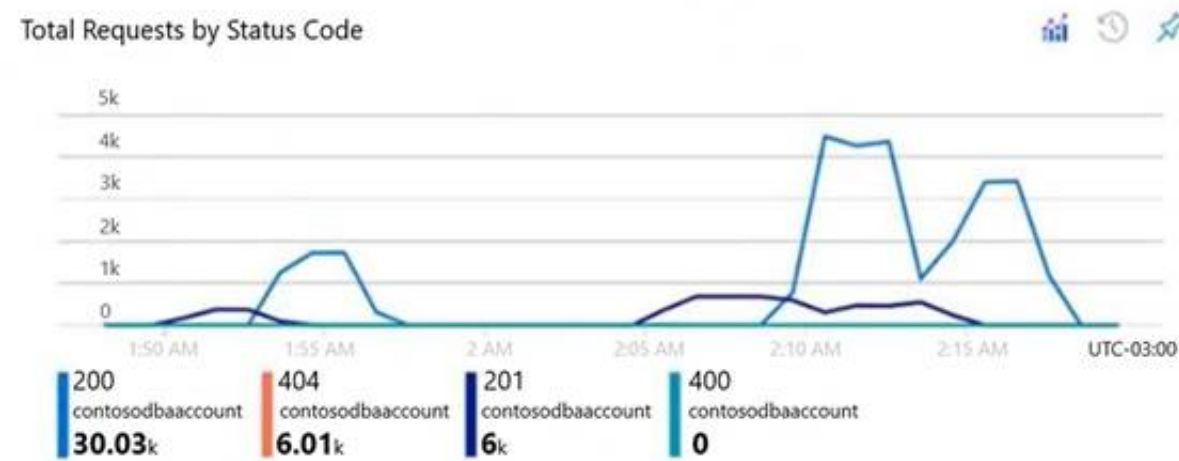
Answer: A

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 7

- (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.



## Answer Area

The HTTP 404 status code is caused by [answer choice]

	▼
incorrect connection URLs	
an intermittent firewall issue	
incorrectly formatted partition keys	
requesting resources that do not exist	

There are [answer choice] successful resource creations in the account during the time period of the chart

	▼
zero	
6 thousand	
6.01 thousand	
30.03 thousand	
36.03 thousand	

- 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 8

- (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.

Name	Type	Orders
apple	fruit	1,000
orange	fruit	600
banana	fruit, exotic	400
plum	fruit.	300
mango	fruit, exotic	200

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)

```
SELECT TOP 5 i.name, i.types, i.orders
FROM items i
WHERE EXISTS(SELECT VALUE t FROM t IN i.types WHERE t.name = 'fruit')
ORDER BY i.orders,i.types
```

B)

```
SELECT TOP 5 i.name, i.types, i.orders
FROM items i
WHERE EXISTS(SELECT VALUE t FROM t IN i.types WHERE t.name = 'fruit')
ORDER BY i.orders DESC
```

C)

```
SELECT TOP 5 i.name, i.types, i.orders
FROM items i
WHERE EXISTS(SELECT VALUE t FROM t IN i.types WHERE t.name = 'fruit')
ORDER BY i.types DESC
```

D)

```
SELECT TOP i.name, i.types, i.orders
FROM items i
WHERE ARRAY_CONTAINS(i.types, {name: 'fruit'})
ORDER BY i.orders DESC
```

- 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 9

- (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.

Actions

Configure MaxItemCount in QueryRequestOptions

Run the query and provide a continuation token

Configure MaxBufferedItemCount in QueryRequestOptions

Append the results to a variable

Run the query and increment MaxItemCount

Answer Area

>

<

- 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 10

- (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.

+ Add field + Add subfield Delete								
Field Name	Type	Retrievable	Filterable	Sortable	Facetable	Searchable	Analyzer	Suggester
id	Edm.String	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		...
name	Edm.String	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Standard - Lucene	...
▼ headquarters	Edm.ComplexType							...
country	Edm.String	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		...
iso	Edm.String	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		...
employees	Edm.Int32	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			...
...	Edm.String	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		...

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.

Answer Area

The [answer choice] field is limited to exact match comparisons

country

id

name

The [answer choice] field is hidden form the search results

country

id

name

- 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 10

- (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 15

- (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.

Answer Area

Statements	Yes	No
To return for all devices owned by a specific emailaddress, multiple queries must be performed	<input type="radio"/>	<input type="radio"/>
To return deviceid, ownerid, timestamp, and value for a specific metricid, a join must be performed	<input type="radio"/>	<input type="radio"/>
To return deviceid, ownerid, emailaddress, and model, a join must be performed	<input type="radio"/>	<input type="radio"/>



- 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 19**

- (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 Azure Monitor alert to trigger the function. Does this meet the goal?

- A. Yes
- B. No

**Answer:** A

**Explanation:**

You can set up alerts from the Azure Cosmos DB pane or the Azure Monitor service in the Azure portal. Note: Alerts are used to set up recurring tests to monitor the availability and responsiveness of your Azure

Cosmos DB resources. Alerts can send you a notification in the form of an email, or execute an Azure Function when one of your metrics reaches the threshold or if a specific event is logged in the activity log.

Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/create-alerts>

**NEW QUESTION 24**

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