AZ-220 Q&As

Microsoft Azure IoT Developer

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QUESTION 1

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 question, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have devices that connect to an Azure IoT hub. Each device has a fixed GPS location that includes latitude and longitude.

You discover that a device entry in the identity registry of the IoT hub is missing the GPS location.

You need to configure the GPS location for the device entry. The solution must prevent the changes from being propagated to the physical device.

Solution: You add tags to the device twin.

Does the solution meet the goal?

A. Yes

B. No

Correct Answer: B

Instead add the desired properties to the device twin.

Note: Device Twins are used to synchronize state between an IoT solution\\'s cloud service and its devices. Each device\\'s twin exposes a set of desired properties and reported properties. The cloud service populates the desired properties with values it wishes to send to the device. When a device connects it requests and/or subscribes for its desired properties and acts on them.

Reference: https://azure.microsoft.com/sv-se/blog/deep-dive-into-azure-iot-hub-notifications-and-device-twin/

QUESTION 2

HOTSPOT

You have an Azure 10T hub and an I0T device.

You are developing an IoT solution that will generate an alert when the IoT device leaves a geofenced area. The device sends telemetry in the following format.

```
{
    "location": {
        "type":"Point",
        "coordinates": [76.6, 10.1]
    }
}
```

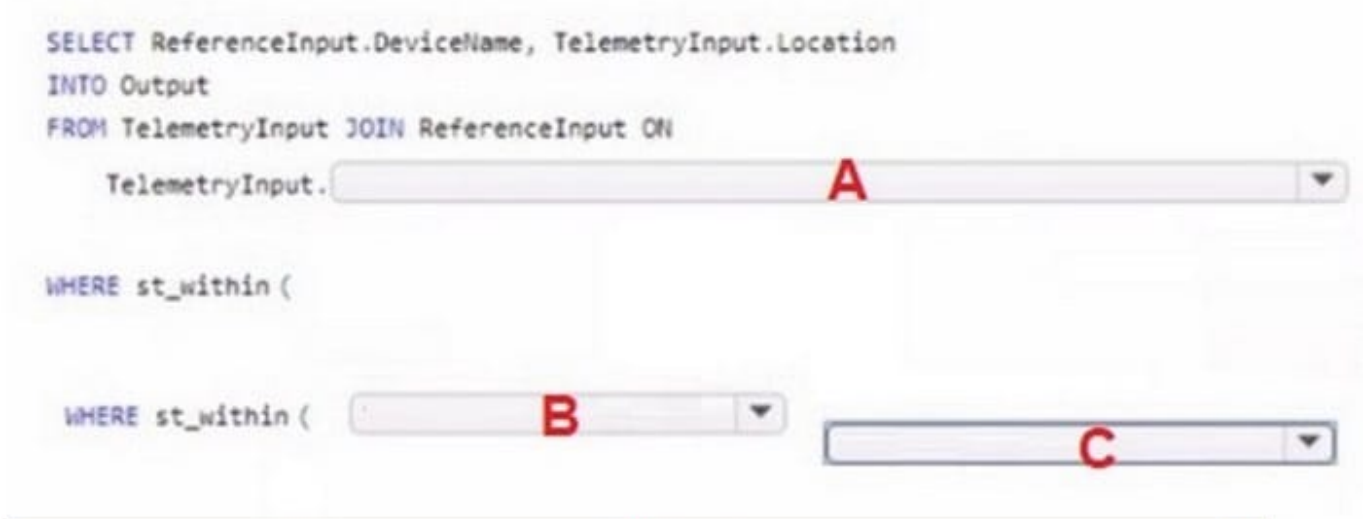
You create an Azure Stream Analytics job that uses telemetry input from the IoT hub and a reference input that contains the data shown in the following table.

DeviceID	DeviceName	Geofence
“Device1”	“Device1”	“POLYGON((-122.13301696018573 47.63764925180358, -122.13272728161212 47.63764925180358, -122.1327487392842447.63784082716388,-122.13373579220172 47.63782998329432))”

How should you complete the Stream Analytics query? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area



A
DeviceID = ReferenceInput.DeviceID
ConnectionDeviceID = Referenceinput.DeviceID
loTHub.ConnectionDeviceid = Referenceinput.DeviceID
loTHub.ConnectionDeviceGenerationid = Referenceinput.DeviceID

B
TelemetryInput.Location.
Referenceinput.Geofence.
TelemetryInput.Partitonid.
ReferenceInput.DeviceID

C
TelemetryInput.Location)!=0
ReferenceInput.Geofence)!=0
TelemetryInput.PartitionID)!=0
ReferenceInput.DeviceID)!=0

Correct Answer:

Answer Area

```
SELECT ReferenceInput.DeviceName, TelemetryInput.Location
INTO Output
FROM TelemetryInput JOIN ReferenceInput ON
    TelemetryInput.  [A]

WHERE st_within (

  WHERE st_within (  [B]  [C]
```

A
DeviceID = ReferenceInput.DeviceID
ConnectionDeviceID = Referenceinput.DeviceID
loTHub.ConnectionDeviceid = Referenceinput.DeviceID
loTHub.ConnectionDeviceGenerationid = Referenceinput.DeviceID

B
TelemetryInput.Location.
Referenceinput.Geofence.
TelemetryInput.Partitonid.
ReferenceInput.DeviceID

C
TelemetryInput.Location)!=0
ReferenceInput.Geofence)!=0
TelemetryInput.PartitionID)!=0
ReferenceInput.DeviceID)!=0

QUESTION 3

You have an Azure IoT hub that receives messages from an IoT device. The messages are serialized as Protobuf.

You need the IoT hub to route the messages.

What should you do first?

A. From the Azure portal, add desired properties to the device twin.

B. Configure the IoT device to add application properties to the messages.

C. From the Azure portal, configure the IoT hub to add message enrichments.

D. Configure the IoT device to add ASCII-encoded properties to the body of the messages.

Correct Answer: A

Device twins store device-related information that:

Device and back ends can use to synchronize device conditions and configuration.

The solution back end can use to query and target long-running operations.

Desired properties. Used along with reported properties to synchronize device configuration or conditions. The solution back end can set desired properties, and the device app can read them. The device app can also receive notifications of

changes in the desired properties.

Incorrect Answers:

C: Message enrichments describes the ability of Azure IoT Hub to stamp messages with additional information before the messages are sent to the designated endpoint. One reason to use message enrichments is to include data that can be used to simplify downstream processing

Reference: https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-devguide-device-twins

QUESTION 4

HOTSPOT

You have an Azure IoT hub.

You plan to deploy 1,000 IoT devices by using automatic device management.

The device twin is shown below.

```
{
  "deviceId": "ContosoHyperDriveEngine1",
  "etag": "AAAAAAAAAAw=",
  "deviceEtag": "MTYyNDk20kw",
  "status": "enabled",
  "statusUpdateTime": "0001-01-01t00:00:00Z",
  "connectionTime": "Disconnected",
  "lastActivityTime": "0001-01-01T00:00:00Z",
  "cloudToDeviceMessageCount": 0,
  "authenticationType": "sas",
  "x509Thumbprint": {
    "primaryThumbprint": null,
    "secondaryThumbprint": null
  },
  "version": 13,
  "tags": {
    "engine": {
      "warpCorVersion": "1.2.65b",
      "warpDriveType": "WM105a"
    }
  },
  "properties": {
    "desired": {
      "$metadata": {
        "$lastUpdated": "2019-10-17T18:43:33.7599556Z"
      },
      "$version": 1
    },
    "reported": {
      "$metadata": {
        "$lastUpdated": "2019-10-17T18:43:33.7599556Z"
      },
      "$version": 1
    }
  }
}
```

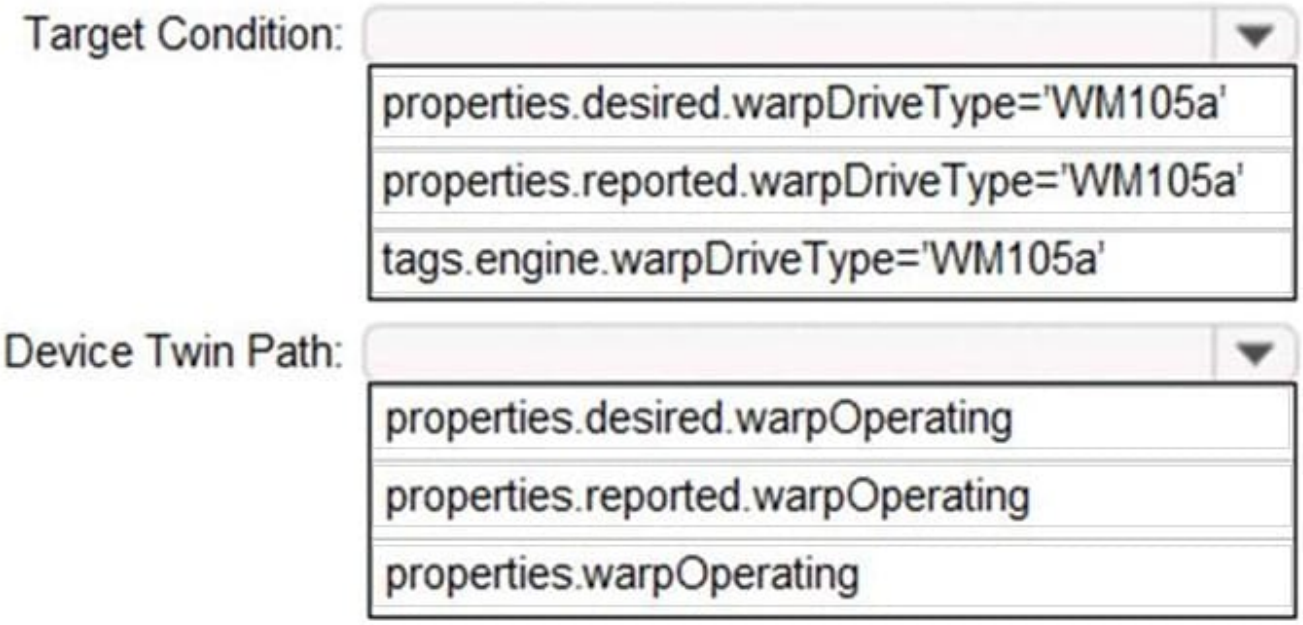

You need to configure automatic device management for the deployment.

Which target Condition and Device Twin Path should you use? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

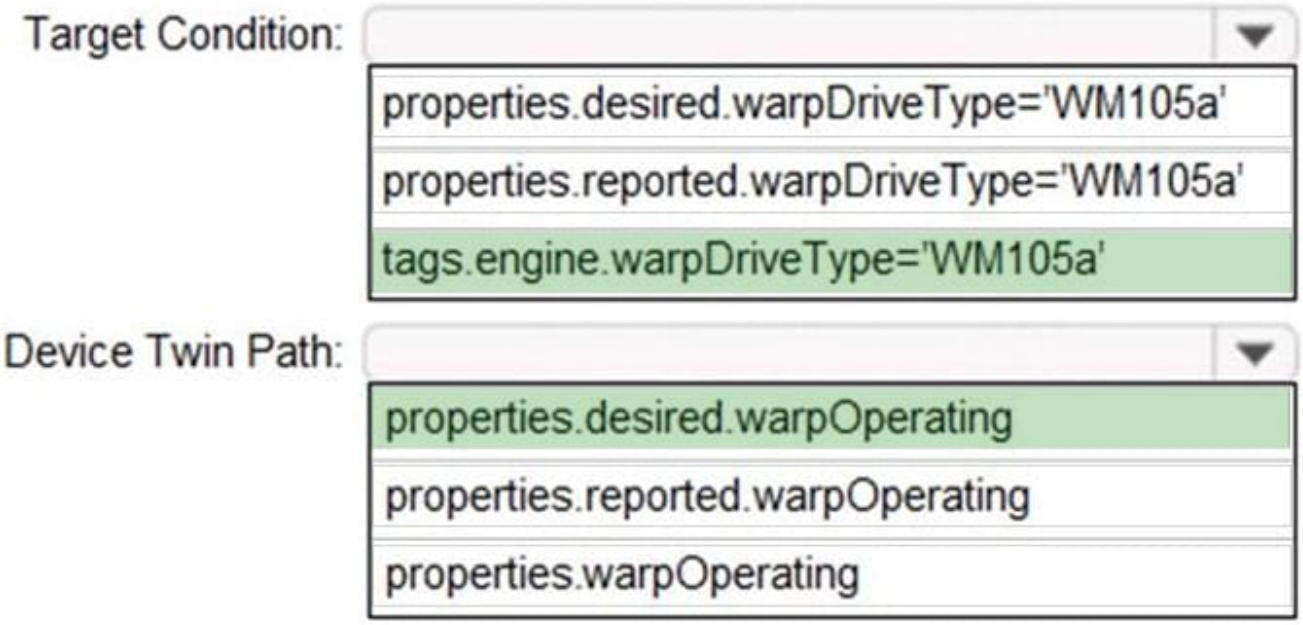
Hot Area:

Answer Area



Correct Answer:

Answer Area



Box 1: tags.engine.warpDriveType=\\'VM105a\\'

Use tags to target twins. Before you create a configuration, you must specify which devices or modules you want to affect. Azure IoT Hub identifies devices and using tags in the device twin, and identifies modules using tags in the

module

twin.

Box 2: properties.desired.warpOperating

The twin path, which is the path to the JSON section within the twin desired properties that will be set.

For example, you could set the twin path to properties.desired.chiller-water and then provide the following JSON content:

{ "temperature": 66, "pressure": 28

}

Reference: https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-automatic-device-management

QUESTION 5

DRAG DROP

You are troubleshooting device connections to and disconnections from an Azure IoT hub.

You configure diagnostic logging for the IoT hub to send to Log Analytics.

You need to generate a report that displays the device connection and disconnection events.

How should you complete the query? To answer, drag the appropriate values to the correct targets. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

Values

- Category ==
- ObjectName ==
- Operation ==
- ResourceProvider ==
- ResourceType ==

Answer Area

```
AzureDiagnostics
| where [ ] "MICROSOFT.DEVICES" and [ ]
"IOTHUBS"
| where [ ] "Connections" and OperationName == "deviceConnect"
```

Correct Answer:

Values

- ObjectName ==
- Operation ==

Answer Area

```
AzureDiagnostics
| where ResourceProvider == "MICROSOFT.DEVICES" and ResourceType ==
"IOTHUBS"
| where Category == "Connections" and OperationName == "deviceConnect"
```

Box 1: ResourceProvider ==

Query to monitor your IoT hub connectivity Errors: Identify device connection errors.

AzureDiagnostics

| where ResourceProvider == "MICROSOFT.DEVICES" and ResourceType == "IOTHUBS"

| where Category == "Connections" and Level == "Error"

Box 2: ResourceType ==

Box 3: Category ==

Reference:

https://docs.microsoft.com/en-us/azure/iot-hub/monitor-iot-hub