Exam Questions AZ-220

Microsoft Azure IoT Developer

https://www.2passeasy.com/dumps/AZ-220/

NEW QUESTION 1
- (Exam Topic 1)
You need to enable telemetry message tracing through the entire IoT solution. What should you do?

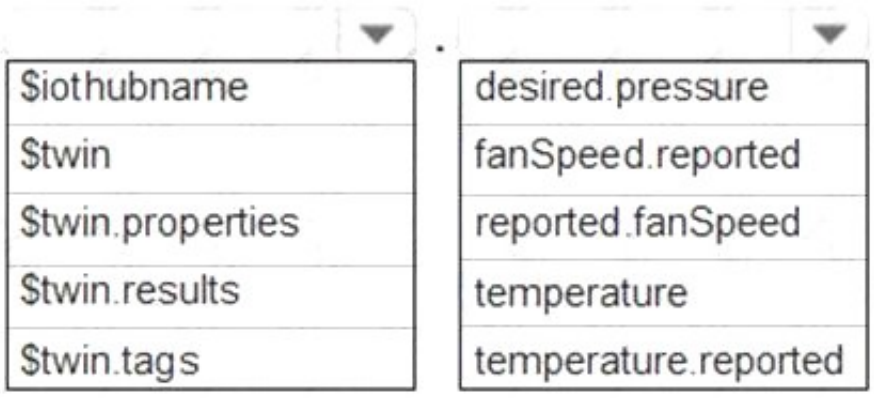
A. Monitor device lifecycle events.
B. Upload IoT device logs by using the File upload feature.
C. Enable the DeviceTelemetry diagnostic log and stream the log data to an Azure event hub.
D. Implement distributed tracing.

Answer: D

Explanation:
IoT Hub is one of the first Azure services to support distributed tracing. As more Azure services support distributed tracing, you'll be able trace IoT messages throughout the Azure services involved in your solution.
Note:
Enabling distributed tracing for IoT Hub gives you the ability to:
Precisely monitor the flow of each message through IoT Hub using trace context. This trace context includes correlation IDs that allow you to correlate events from one component with events from another component. It can be applied for a subset or all IoT device messages using device twin.
Automatically log the trace context to Azure Monitor diagnostic logs.
Measure and understand message flow and latency from devices to IoT Hub and routing endpoints. Start considering how you want to implement distributed tracing for the non-Azure services in your IoT solution.
Reference:
https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-distributed-tracing

NEW QUESTION 2
- (Exam Topic 1)
You need to use message enrichment to add additional device information to messages sent from the IoT gateway devices when the reported temperature exceeds a critical threshold.
How should you configure the enrich message values? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

Answer Area

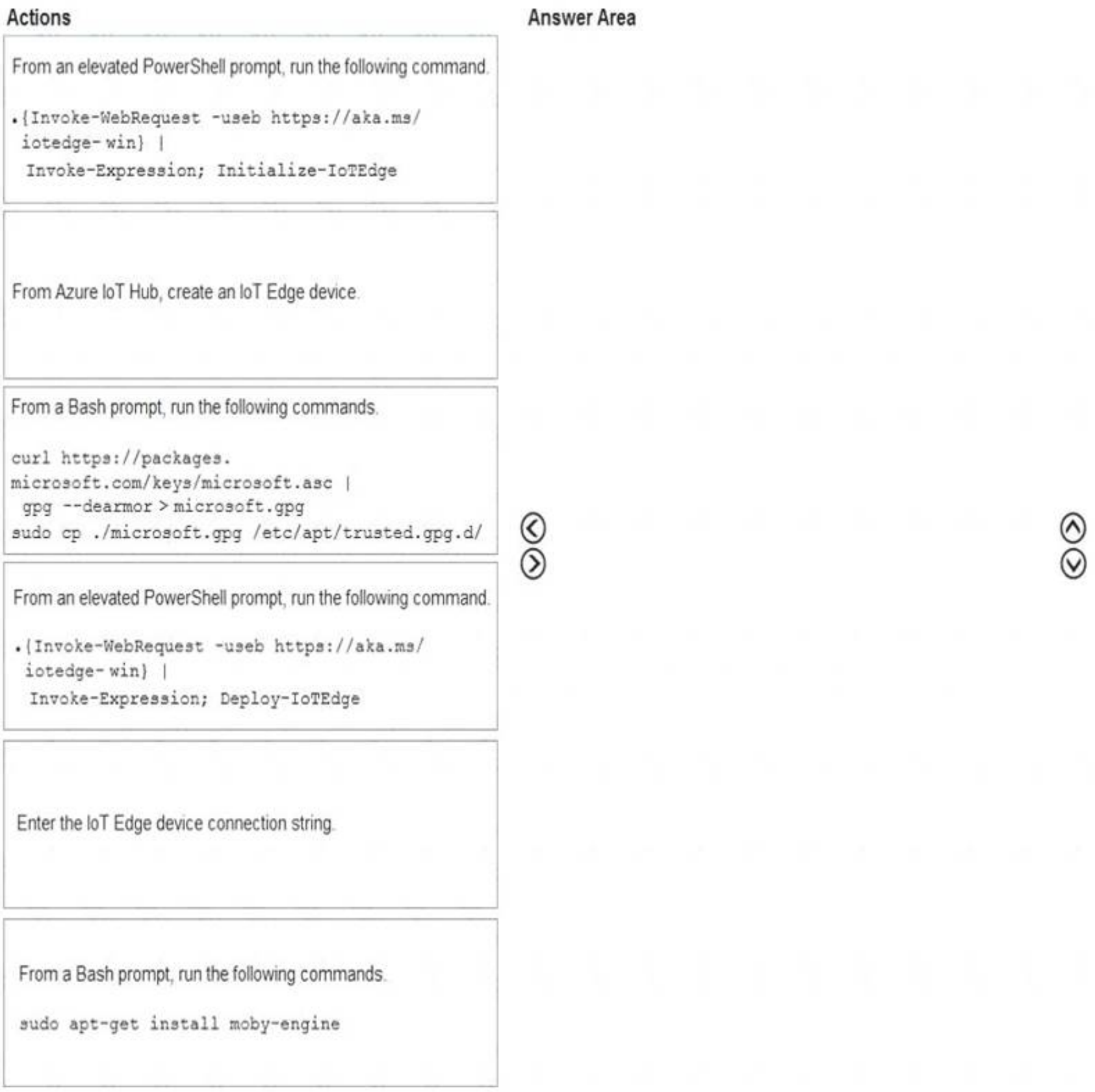


A. Mastered
B. Not Mastered

Answer: A

Explanation:
Reference:
https://docs.microsoft.com/bs-cyrl-ba/azure/iot-hub/iot-hub-message-enrichments-overview

NEW QUESTION 3
- (Exam Topic 3)
You need to install the Azure IoT Edge runtime on a new device that runs Windows 10 IoT Enterprise. Which four 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: From Azure IoT Hub, create an IoT Edge Device
Step 2: Deploy-IoTEdge
The Deploy-IoTEdge command checks that your Windows machine is on a supported version, turns on the containers feature, and then downloads the moby runtime and the IoT Edge runtime. The command defaults to using Windows containers.
{Invoke-WebRequest -useb https://aka.ms/iotedge-win} | Invoke-Expression; ` Deploy-IoTEdge
Step 3: Initialize-IoTEdge
The Initialize-IoTEdge command configures the IoT Edge runtime on your machine. The command defaults to manual provisioning with Windows containers.
{Invoke-WebRequest -useb https://aka.ms/iotedge Step 4: Enter the IoT Edge device connection string.
When prompted, provide the device connection string that you retrieved in step 1. The device connection string associates the physical device with a device ID in IoT Hub.
Reference:
https://docs.microsoft.com/en-us/azure/iot-edge/module-composition

NEW QUESTION 4
- (Exam Topic 3)
You have the devices shown in the following table.

Name	Type	Hardware configuration
Device1	Azure Sphere microcontroller unit (MCU)	4 MB of RAM ARM processor
Device2	Raspberry Pi single board computer (SBC)	1 GB of RAM ARM processor
Device3	Desktop computer	8 GB of RAM x64 processor
Device4	Apple iPhone	4 GB of RAM ARM processor

You are implementing a proof of concept (POC) for an Azure IoT solution. You need to deploy an Azure IoT Edge device as part of the POC.
On which two devices can you deploy IOT Edge? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

A. Device1
B. Device2
C. Device3
D. Device4

Answer: BC

Explanation:
Azure IoT Edge runs great on devices as small as a Raspberry Pi3 to server grade hardware. Tier 1.
The systems listed in the following table are supported by Microsoft, either generally available or in public preview, and are tested with each new release.

Operating System	AMD64	ARM32v7	ARM64
Raspbian Stretch		✓	
Ubuntu Server 16.04	✓		Public preview
Ubuntu Server 18.04	✓		Public preview
Windows 10 IoT Core, build 17763	✓		
Windows 10 IoT Enterprise, build 17763	✓		
Windows Server 2019, build 17763	✓		
Windows Server IoT 2019, build 17763	✓		

Reference:
https://docs.microsoft.com/en-us/azure/iot-edge/support

NEW QUESTION 5
- (Exam Topic 3)
You have an Azure IoT solution that includes an Azure IoT hub, 100 Azure IoT Edge devices, and 500 leaf devices.
You need to perform a key rotation across the devices.
Which three types of entities should you update? Each Answer presents part of the solution. NOTE: Each correct selection is worth one point.

A. the $edgeHub module identity
B. the $edgeAgent module identity
C. the leaf module identities
D. the IoT Edge device identities
E. the iothubowner policy credentials
F. the leaf device identities

Answer: ADF

Explanation:
To get authorization to connect to IoT Hub, devices and services must send security tokens signed with either a shared access or symmetric key. These keys are stored with a device identity in the identity registry.
An IoT Hub identity registry can be accessed like a dictionary, by using the deviceId or moduleId as the key. Reference:
https://docs.microsoft.com/bs-latn-ba/azure/iot-dps/how-to-control-access https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-devguide-identity-registry

NEW QUESTION 6
- (Exam Topic 3)
You have an Azure IoT solution that includes several Azure IoT hubs.
A new alerting feature was recently added to the IoT devices. The feature uses a new device twin reported property named alertCondition.
You need to send alerts to an Azure Service Bus queue named MessageAlerts. The alerts must include alertCondition and the name of the IoT hub.
Which two actions should you perform? Each Answer presents part of the solution. NOTE: Each correct selection is worth one point.

A. Configure File upload for each IoT hu
B. Configure the device to send a file to an Azure Storage container that contains the device name and status message.
C. Add the following message enrichments: Name = iotHubNameValue = $twin.tag.location Endpoint = MessageAlert
D. Create an IoT Hub routing rule that has a data source of Device Twin Change Events and select the endpoint for MessageAlerts.
E. Add the following message enrichments: Name = iotHubName Value = $iothubnameEndpoint = MessageAlert
F. Create an IoT Hub routing rule that has a data source of Device Telemetry Messages and select the endpoint for MessageAlerts.

Answer: BD

Explanation:
B: Message enrichments is the ability of the 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. For example, enriching device telemetry messages with
a device twin tag can reduce load on customers to make device twin API calls for this information. D: Applying enrichments
The messages can come from any data source supported by IoT Hub message routing, including the following examples:
-->device twin change notifications -- changes in the device twin device telemetry, such as temperature or pressure
device life-cycle events, such as when the device is created or deleted Reference:
https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-message-enrichments-overview

NEW QUESTION 7
- (Exam Topic 3)
You have an Azure IoT solution that includes an Azure IoT hub and 100 Azure IoT Edge devices.
You plan to deploy the IoT Edge devices to external networks. The firewalls of the external networks only allow traffic on port 80 and port 443.
You need to ensure that the devices can connect to the IoT hub. The solution must minimize costs. What should you do?

A. Configure the devices for extended offline operations.
B. Configure the upstream protocol of the devices to use MQTT over WebSocket.
C. Connect the external networks to the IoT solution by using ExpressRoute.
D. Configure the devices to use an HTTPS proxy.

Answer: B

Explanation:
MQTT over WebSockets uses port 443. Reference:
https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-devguide-protocols

NEW QUESTION 8
- (Exam Topic 3)
You have 10 IoT devices that connect to an Azure IoT hub named Hub1.
From Azure Cloud Shell, you run az iot hub monitor-events --hub-name Hub1 and receive the following error message: "az iot hub: 'monitor-events' is not in the 'az iot hub' command group. See 'az iot hub
--help'."
You need to ensure that you can run the command successfully. What should you run first?

A. az iot hub monitor-feedback --hub-name Hub1
B. az iot hub generate-sas-token --hub-name Hub1
C. az iot hub configuration list --hub-name Hub1
D. az extension add -name azure-cli-iot-ext

Answer: D

Explanation:
Execute az extension add --name azure-cli-iot-ext once and try again.
In order to read the telemetry from your hub by CLI, you have to enable IoT Extension with the following commands:
Add: az extension add --name azure-cli-iot-ext Reference:
https://github.com/MicrosoftDocs/azure-docs/issues/20843

NEW QUESTION 9
- (Exam Topic 3)
You have an Azure IoT hub.
You plan to attach three types of IoT devices as shown in the following table.

Name	Specification	Note
Transparent Field Gateway Device	High-power device with a fast processor and 4 GB of RAM	Will connect to multiple devices, each with its own credentials, by using the same TLS connection.
Low Resource Device	Low resource specifications, battery-operated, and 512 KB of RAM	Will connect directly to an IoT hub and will **NOT** connect to any other devices. Will use cloud-to-device messages.
Limited Sensor Device	Extremely low-power device with a limited microcontroller (MCU) and 256 KB of RAM	Will **NOT** support the Azure SDK. Messages must be as small as possible.

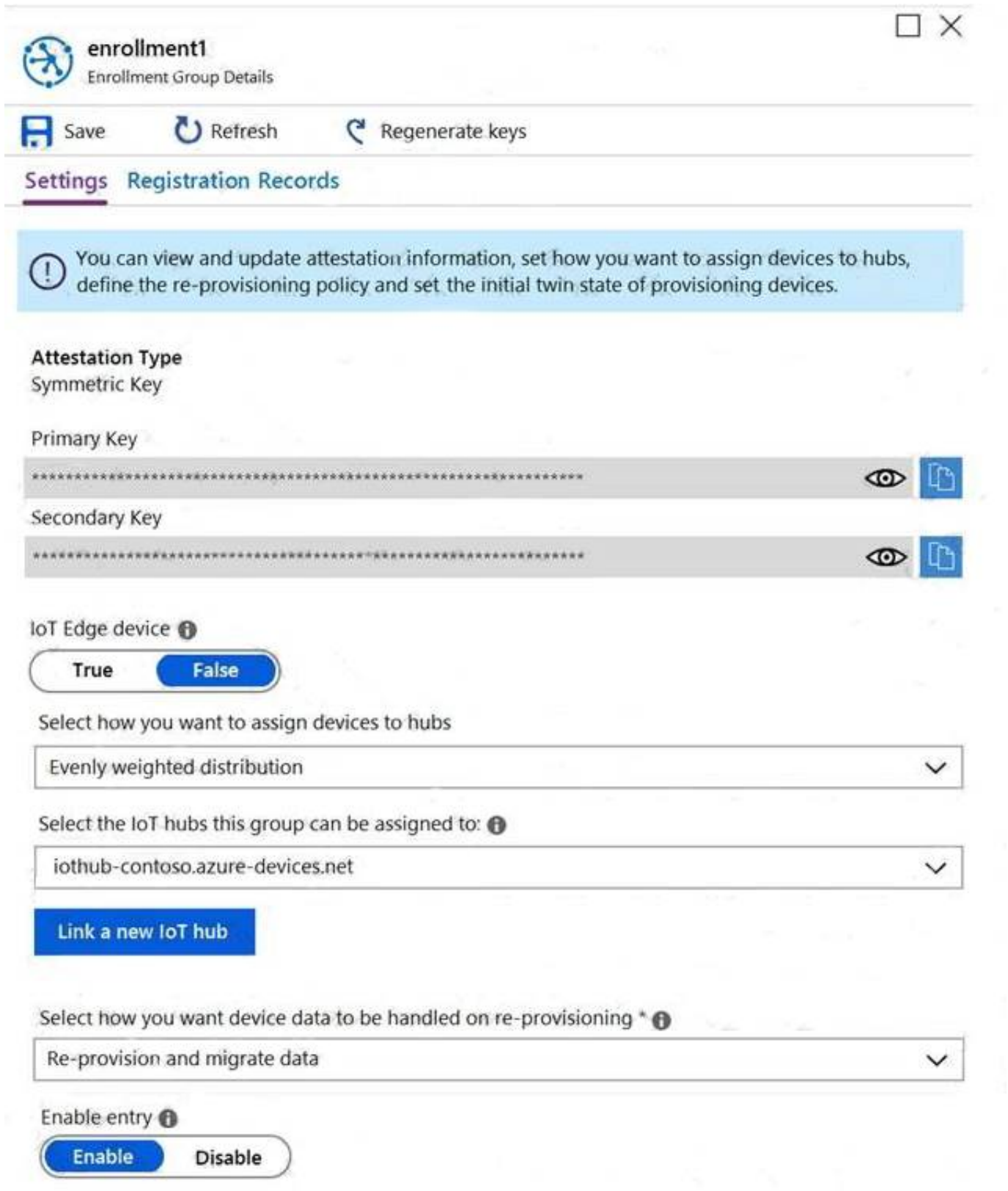
You need to select the appropriate communication protocol for each device.
What should you select? To answer, drag the appropriate protocols to the correct devices. Each protocol may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.
NOTE: Each correct selection is worth one point.

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Box 1: AMQP
Use AMQP on field and cloud gateways to take advantage of connection multiplexing across devices. Box 2: MQTT
MQTT is used on all devices that do not require to connect multiple devices (each with its own per-device credentials) over the same TLS connection.
Box 3: HTTPS
Use HTTPS for devices that cannot support other protocols.
https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-devguide-protocols

NEW QUESTION 10
- (Exam Topic 3)
From the Device Provisioning Service, you create an enrollment as shown in the exhibit. (Click the Exhibit tab.)



You need to deploy a new IoT device.
What should you use as the device identity during attestation?

A. a self-signed X.509 certificate
B. the random string of alphanumeric characters
C. the HMACSHA256 hash of the device's registration ID
D. the endorsement key of the device's Trusted Platform Module (TPM)

Answer: C

Explanation:
Each device uses its derived device key with your unique registration ID to perform symmetric key attestation with the enrollment during provisioning. To generate the device key, use the key you copied from your DPS
enrollment to compute an HMAC-SHA256 of the unique registration ID for the device and convert the result into Base64 format.
Reference:
https://docs.microsoft.com/en-us/azure/iot-edge/how-to-auto-provision-symmetric-keys

NEW QUESTION 10
- (Exam Topic 3)
You have three Azure IoT hubs named Hub1, Hub2, and Hub3, a Device Provisioning Service instance, and an IoT device named Device1.
Each IoT hub is deployed to a separate Azure region. Device enrollment uses the Lowest latency allocation policy.
The Device Provisioning Service uses the Lowest latency allocation policy. Device1 is auto-provisioned to
Hub1 by using the Device Provisioning Service. Device1 regularly moves between regions.
You need to ensure that Device1 always connects to the IoT hub that has the lowest latency. What should you do?

A. Configure device attestation that uses X.509 certificates.
B. Implement device certificate rolling.
C. Disenroll and reenroll Device1.
D. Configure the re-provisioning policy.

Answer: D

Explanation:
Automated re-provisioning support.
Microsoft added first-class support for device re-provisioning which allows devices to be reassigned to a different IoT solution sometime after the initial solution

assignment. Re-provisioning support is available in two options:
Factory reset, in which the device twin data for the new IoT hub is populated from the enrollment list instead of the old IoT hub. This is common for factory reset scenarios as well as leased device scenarios. Migration, in which device twin data is moved from the old IoT hub to the new IoT hub. This is common for scenarios in which a device is moving between geographies.
Reference:
https://azure.microsoft.com/en-us/blog/new-year-newly-available-iot-hub-device-provisioning-service-features/

NEW QUESTION 12
- (Exam Topic 3)
You have an Azure IoT solution that includes a standard tier Azure IoT hub and an IoT device. The device sends one 100-KB device-to-cloud message every hour. You need to calculate the total daily message consumption of the device. What is the total daily message consumption of the device?

A. 24
B. 600
C. 2,400
D. 4,800

Answer: B

Explanation:
\\100 KB * 24 is around 2,400 bytes.
The 100 KB message is divided into 4 KB blocks, and it is billed for 25 messages. 25 times 24 is 600
Note: The maximum message size for messages sent from a device to the cloud is 256 KB. These messages are metered in 4 KB blocks for the paid tiers so for instance if the device sends a 16 KB message via the paid tiers it will be billed as 4 messages.
Reference:
https://azure.microsoft.com/en-us/pricing/details/iot-hub/

NEW QUESTION 15
- (Exam Topic 3)
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 an Azure IoT solution that includes an Azure IoT hub, a Device Provisioning Service instance, and 1,000 connected IoT devices.
All the IoT devices are provisioned automatically by using one enrollment group. You need to temporarily disable the IoT devices from the connecting to the IoT hub.
Solution: From the IoT hub, you change the credentials for the shared access policy of the IoT devices. Does the solution meet the goal?

A. Yes
B. No

Answer: B

Explanation:
Reference:
https://docs.microsoft.com/bs-latn-ba/azure/iot-dps/how-to-unprovision-devices

NEW QUESTION 18
- (Exam Topic 3)
You plan to deploy an Azure IoT hub. The IoT hub must support the following:
- Three Azure IoT Edge devices 2,500 IoT devices
- Each IoT device will spend a 6 KB message every five seconds.

You need to size the IoT hub to support the devices. The solution must minimize costs. What should you choose?

A. one unit of the S1 tier
B. one unit of the B2 tier
C. one unit of the B1 tier
D. one unit of the S3 tier

Answer: D

Explanation:
\\ 2500* 6 KB * 12 = 180,000 KB/minute = 180 MB/Minute.
B3, S3 can handle up to 814 MB/minute per unit. Incorrect Answers:
A, C: B1, S1 can only handle up to 1111 KB/minute per unit B: B2, S2 can only handle up to 16 MB/minute per unit.
Reference:
https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-scaling

NEW QUESTION 20
- (Exam Topic 3)
You have 100 devices that connect to an Azure IoT hub.
You need to be notified about failed local logins to a subnet of the devices.
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: Enable Azure Security Center for IoT
Security alerts, such as failed local IoT hub logins, are stored in AzureSecurityOfThings.SecurityAlert table in the Log Analytics workspace configured for the Azure Security Center for IoT solution.
Step 2: Select a device security group Update a device security group..
Step 3: Create a custom alert rule by creating a custom alert rule Reference:
https://docs.microsoft.com/bs-latn-ba/azure/asc-for-iot/how-to-security-data-access https://docs.microsoft.com/en-us/rest/api/securitycenter/devicesecuritygroups/createorupdate

NEW QUESTION 22
- (Exam Topic 3)
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 the desired properties to the device twin. Does the solution meet the goal?

A. Yes
B. No

Answer: A

Explanation:
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/

NEW QUESTION 25
- (Exam Topic 3)
You have an Azure IoT hub that uses a Device Provisioning Service instance.
You create a new individual device enrollment that uses symmetric key attestation.
Which detail from the enrollment is required to auto provision the device by using the Device Provisioning Service?

A. the registration ID of the enrollment
B. the primary key of the enrollment
C. the device identity of the IoT hub
D. the hostname of the IoT hub

Answer: C

Explanation:
An enrollment is the record of devices or groups of devices that may register through auto-provisioning. The enrollment record contains information about the device or group of devices, including:
the attestation mechanism used by the device
the optional initial desired configuration desired IoT hub the desired device ID
Note: Azure IoT auto-provisioning can be broken into three phases:
*1. Service configuration - a one-time configuration of the Azure IoT Hub and IoT Hub Device Provisioning Service instances, establishing them and creating linkage between them.

*2. Device enrollment - the process of making the Device Provisioning Service instance aware of the devices that will attempt to register in the future. Enrollment is accomplished by configuring device identity information in the provisioning service, as either an "individual enrollment" for a single device, or a "group enrollment" for multiple devices.
*3. Device registration and configuration Reference:
https://docs.microsoft.com/en-us/azure/iot-dps/concepts-service#enrollment

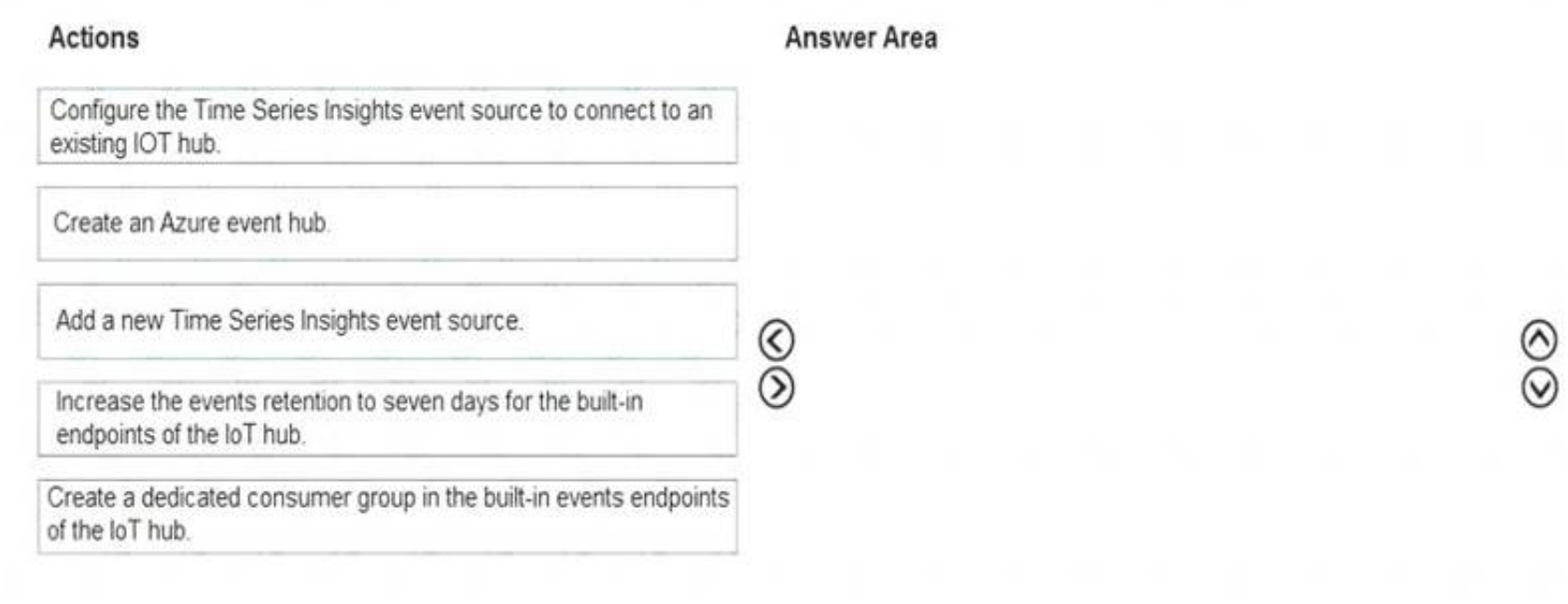
NEW QUESTION 30
- (Exam Topic 3)
You have an IoT device that gathers data in a CSV file named Sensors.csv.
You deploy an Azure IoT hub that is accessible at ContosoHub.azure-devices.net. You need to ensure that Sensors.csv is uploaded to the IoT hub.
Which two actions should you perform? Each correct answer presents part of the solution.

A. Upload Sensors.csv by using the IoT Hub REST API.
B. From the Azure subscription, select the IoT hub, select Message routing, and then configure a route to storage.
C. From the Azure subscription, select the IoT hub, select File upload, and then configure a storage container.
D. Configure the device to use a GET request to ContosoHub.azure-devices.net/devices/ContosoDevice1/ files/notifications.

Answer: AC

Explanation:
C: To use the file upload functionality in IoT Hub, you must first associate an Azure Storage account with your hub. Select File upload to display a list of file upload properties for the IoT hub that is being modified.
For Storage container: Use the Azure portal to select a blob container in an Azure Storage account in your current Azure subscription to associate with your IoT Hub. If necessary, you can create an Azure Storage account on the Storage accounts blade and blob container on the Containers
A: IoT Hub has an endpoint specifically for devices to request a SAS URI for storage to upload a file. To start the file upload process, the device sends a POST request to {iot hub}.azure-devices.net/devices/{deviceId}/ files with the following JSON body:
{
"blobName": "{name of the file for which a SAS URI will be generated}"
}
Reference:
https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/iot-hub/iot-hub-configure-file-upload.md

NEW QUESTION 32
- (Exam Topic 3)
You have an instance of Azure Time Series Insights and an Azure IoT hub that receives streaming telemetry from IoT devices.
You need to configure Time Series Insights to receive telemetry from the devices.
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: Create a dedicated consumer group.. Add a consumer group to your IoT hub.
Applications use consumer groups to pull data from Azure IoT Hub. To reliably read data from your IoT hub, provide a dedicated consumer group that's used only by this Time Series Insights environment.
Step 2: Add a new Time Series Insights event source. Add a new event source
- Sign in to the Azure portal.
- In the left menu, select All resources. Select your Time Series Insights environment.
- Under Settings, select Event Sources, and then select Add.
- In the New event source pane, for Event source name, enter a name that's unique to this Time Series Insights environment. For example, enter event-stream.

Step 3: Configure the Time Series event source to connect to an existing IOT hub Step 4: For Source, select IoT Hub.
Step 5: Select a value for Import option:
If you already have an IoT hub in one of your subscriptions, select Use IoT Hub from available subscriptions. This option is the easiest approach.
Reference:
https://docs.microsoft.com/en-us/azure/time-series-insights/time-series-insights-how-to-add-an-event-source-iot

NEW QUESTION 33
- (Exam Topic 3)
You have an Azure IoT Edge device.
You need to modify the credentials used to access the container registry. What should you modify?

A. the @edgeHub module twin
B. the IoT Edge module
C. the $edgeAgent module twin
D. the Azure IoT Hub device twin

Answer: C

Explanation:
The module twin for the IoT Edge agent is called $edgeAgent and coordinates the communications between the IoT Edge agent running on a device and IoT Hub.
The desired properties are set when applying a deployment manifest on a specific device as part of a single-device or at-scale deployment.
These properties include: runtime.settings.registryCredentials.{registryId}.username runtime.settings.registryCredentials.registryId}.password
Reference:
https://docs.microsoft.com/en-us/azure/iot-edge/module-edgeagent-edgehub

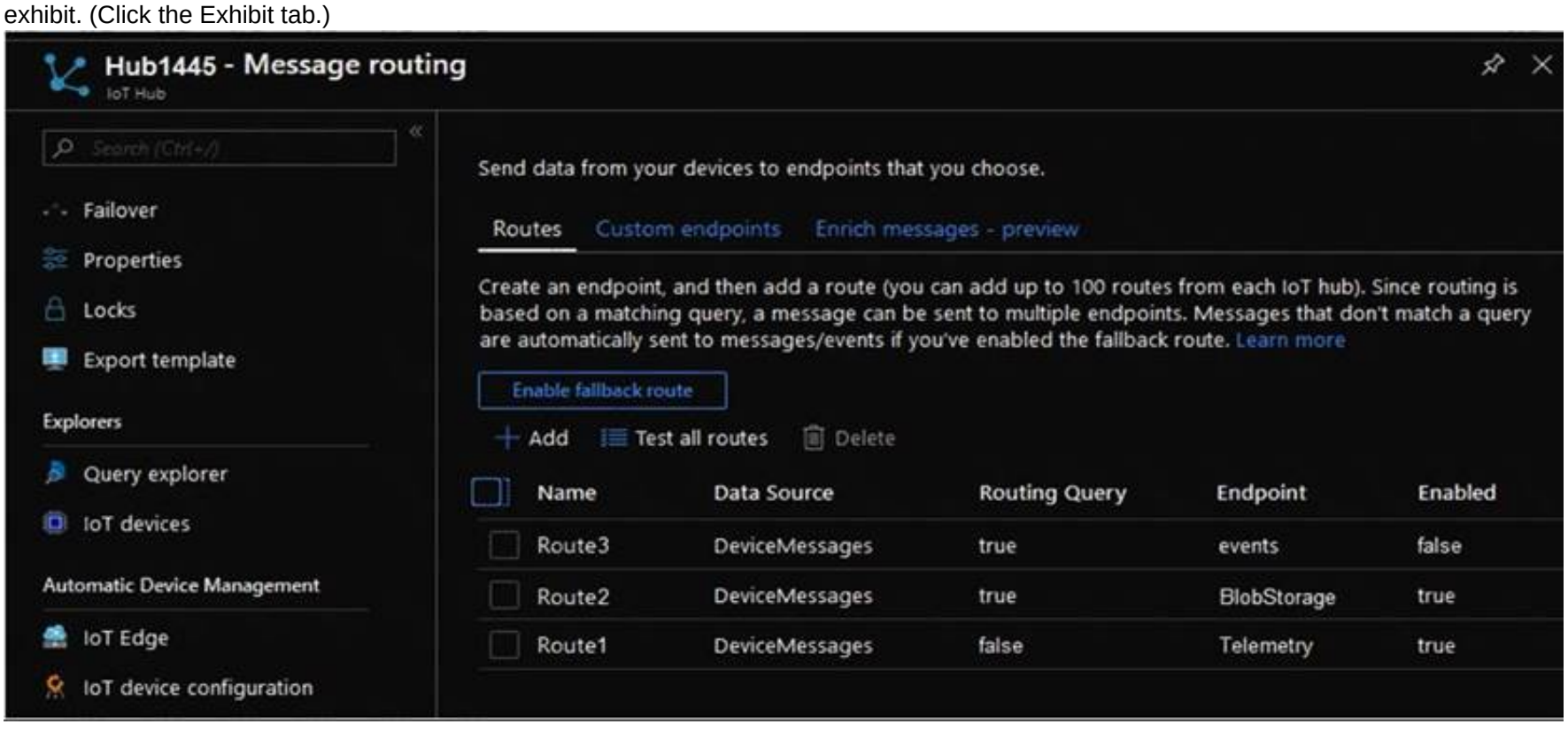
NEW QUESTION 34
- (Exam Topic 3)
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct 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 an Azure IoT solution that includes an Azure IoT hub, a Device Provisioning Service instance, and 1,000 connected IoT devices.
All the IoT devices are provisioned automatically by using one enrollment group. You need to temporarily disable the IoT devices from the connecting to the IoT hub. Solution: You delete the enrollment group from the Device Provisioning Service. Does the solution meet the goal?

A. Yes
B. No

Answer: B

Explanation:
Instead, from the Device Provisioning Service, you disable the enrollment group, and you disable device entries in the identity registry of the IoT hub to which the IoT devices are provisioned.
Reference:
https://docs.microsoft.com/bs-latn-ba/azure/iot-dps/how-to-unprovision-devices

NEW QUESTION 38
- (Exam Topic 3)
You have an Azure Stream Analytics job that connects to an Azure IoT hub named Hub1445 as a streaming data source. Hub1445 is configured as shown in the exhibit. (Click the Exhibit tab.)



The Stream Analytics job fails to receive any messages from the IoT hub. What should you do to resolve the issue?

A. Change the Route1 route query to true.
B. Enable the Route3 route.
C. Disable the Route2 route.
D. Enable the fallback route.

Answer: A

Explanation:
The device telemetry is usually passed as JSON from the device through the IoT Hub - this is handled nicely by Azure Streaming Analytics queries.
The IoT Hub message routing should be configured as follows: Data source: Device Telemetry Messages Routing query: true (as the routing query is an expression that evaluates to true or false for each received message, the simplest way to send all messages to the endpoint is to just supply true as the query).
Reference:
https://darenmay.com/blog/azure-iot-streaming-analytics-data-lake-analytics-and-json/

NEW QUESTION 40

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