



## **Microsoft**

### **Exam Questions AZ-220**

Microsoft Azure IoT Developer

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### NEW QUESTION 1

- (Exam Topic 1)

You plan to deploy Azure Time Series Insights.

What should you create on iothub1 before you deploy Time Series Insights?

- A. a new message route
- B. a new consumer group
- C. a new shared access policy
- D. an IP filter rule

**Answer:** B

#### **Explanation:**

Create a dedicated consumer group in the IoT hub for the Time Series Insights environment to consume from. Each Time Series Insights event source must have its own dedicated consumer group that isn't shared with any other consumer. If multiple readers consume events from the same consumer group, all readers are likely to exhibit failures.

Reference:

<https://docs.microsoft.com/en-us/azure/time-series-insights/time-series-insights-how-to-add-an-event-source- iothub>

### 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.

- 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 1)

You create a new IoT device named device1 on iothub1. Device1 has a primary key of Uihuih76hbHb. How should you complete the device connection string? 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: iothub1

The Azure IoT hub is named iothub1.

Box 2: azure-devices.net

The format of the device connection string looks like:

HostName={YourIoTHubName}.azure-devices.net;DeviceId=MyNodeDevice;SharedAccessKey={YourShared Box 1: device1

Device1 has a primary key of Uihuih76hbHb. Reference:

<https://docs.microsoft.com/en-us/azure/iot-hub/quickstart-control-device-dotnet>

**NEW QUESTION 4**

- (Exam Topic 3)

You have an Azure IoT Central application that has a custom device template. You need to configure the device template to support the following activities:

Return the reported power consumption.

Configure the desired fan speed.

Run the device reset routine.

Read the fan serial number.

Which option should you use for each activity? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Box 1: Measurement

Telemetry/measurement is a stream of values sent from the device, typically from a sensor. For example, a sensor might report the ambient temperature.

Box 2: Property

The template can provide a writeable fan speed property

Properties represent point-in-time values. For example, a device can use a property to report the target temperature it's trying to reach. You can set writeable properties from IoT Central.

Box 3: Settings

Box 4: Command

You can call device commands from IoT Central. Commands optionally pass parameters to the device and receive a response from the device. For example, you can call a command to reboot a device in 10 seconds.

Reference:

<https://docs.microsoft.com/en-us/azure/iot-central/core/howto-set-up-template>

**NEW QUESTION 5**

- (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 6**

- (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 7**

- (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 tags to the device twin. Does the solution meet the goal?

- A. Yes
- B. No

**Answer:** B

**Explanation:**

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/>

**NEW QUESTION 8**

- (Exam Topic 3)

You have an Azure IoT hub that is being taken from prototype to production.

You plan to connect IoT devices to the IoT hub. The devices have hardware security modules (HSMs). You need to use the most secure authentication method

between the devices and the IoT hub. Company

policy prohibits the use of internally generated certificates. Which authentication method should you use?

- A. an X.509 self-signed certificate
- B. a certificate thumbprint
- C. a symmetric key
- D. An X.509 certificate signed by a root certification authority (CA).

**Answer:** D

**Explanation:**

Purchase X.509 certificates from a root certificate authority (CA). This method is recommended for production environments.

The hardware security module, or HSM, is used for secure, hardware-based storage of device secrets, and is the most secure form of secret storage. Both X.509 certificates and SAS tokens can be stored in the HSM

Reference:

<https://docs.microsoft.com/en-us/azure/iot-dps/concepts-security>

**NEW QUESTION 9**

- (Exam Topic 3)

Your company is creating a new camera security system that will use Azure IoT Hub. You plan to use an Azure IoT Edge device that will run Ubuntu Server 18.04.

You need to configure the IoT Edge device.

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: Run the following commands Install the container runtime.

Azure IoT Edge relies on an OCI-compatible container runtime. For production scenarios, we recommended that you use the Moby-based engine provided below. The Moby engine is the only container engine officially supported with Azure IoT Edge. Docker CE/EE container images are compatible with the Moby runtime. Install the Moby engine.

```
sudo apt-get install moby-engine
```

Install the Moby command-line interface (CLI). The CLI is useful for development but optional for production deployments.

```
sudo apt-get install moby-cli
```

Install the security daemon. The package is installed at /etc/iotedge/. `sudo apt-get install iotedge`

Step 2: From IoT Hub, create an IoT Edge device registry entry.

Note: In your IoT Hub in the Azure portal, IoT Edge devices are created and managed separately from IOT devices that are not edge enabled.

Sign in to the Azure portal and navigate to your IoT hub.

In the left pane, select IoT Edge from the menu.

Select Add an IoT Edge device.

Provide a descriptive device ID. Use the default settings to auto-generate authentication keys and connect the new device to your hub.

Select Save.

Retrieve the connection string in the Azure portal

\*1. When you're ready to set up your device, you need the connection string that links your physical device with its identity in the IoT hub.

\*2. From the IoT Edge page in the portal, click on the device ID from the list of IoT Edge devices.

\*3. Copy the value of either Primary Connection String or Secondary Connection String.

Step 3: Add the connection string to..

To manually provision a device, you need to provide it with a device connection string that you can create by registering a new device in your IoT hub.

Open the configuration file.

```
sudo nano /etc/iotedge/config.yaml
```

Find the provisioning configurations of the file and uncomment the Manual provisioning configuration section. Update the value of `device_connection_string` with the connection string from your IoT Edge device.

Save and close the file.

After entering the provisioning information in the configuration file, restart the daemon: `sudo systemctl restart iotedge`

Reference:

<https://docs.microsoft.com/en-us/azure/iot-edge/how-to-install-iot-edge-linux>

**NEW QUESTION 10**

- (Exam Topic 3)

You deploy an Azure IoT hub.

You need to demonstrate that the IoT hub can receive messages from a device.

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: Register a device in IoT Hub

Before you can use your IoT devices with Azure IoT Edge, you must register them with your IoT hub. Once a device is registered, you can retrieve a connection string to set up your device for IoT Edge workloads.

Step 2: Configure the device connection string on a device client.

When you're ready to set up your device, you need the connection string that links your physical device with its identity in the IoT hub.

Step 3: Trigger a new send event from a device client. Reference:

<https://docs.microsoft.com/en-us/azure/iot-edge/how-to-register-device>

#### NEW QUESTION 10

- (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 12

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## Relate Links

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