AZ-220 Q&As

Microsoft Azure IoT Developer

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QUESTION 1

You have an Azure IoT solution that includes an Azure IoT hub.

You plan to deploy 10,000 IoT devices.

You need to validate the performance of the IoT solution while 10,000 concurrently connected devices stream telemetry. The solution must minimize effort.

What should you deploy?

A. an Azure IoT Device Simulation from Azure IoT Solution Accelerator

B. an Azure function, an IoT Hub device SDK, and a timer trigger

C. Azure IoT Central application and a template for the retail industry

D. an Azure IoT Edge gateway configured as a protocol translation gateway

Correct Answer: A

The IoT solution accelerators are complete, ready-to-deploy IoT solutions that implement common IoT scenarios. The scenarios include connected factory and device simulation.

Use the Device Simulation solution accelerator to run simulated devices that generate realistic telemetry. You can use this solution accelerator to test the behavior of the other solution accelerators or to test your own custom IoT solutions.

Reference:

https://docs.microsoft.com/en-us/azure/iot-accelerators/about-iot-accelerators

QUESTION 2

DRAG DROP

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.

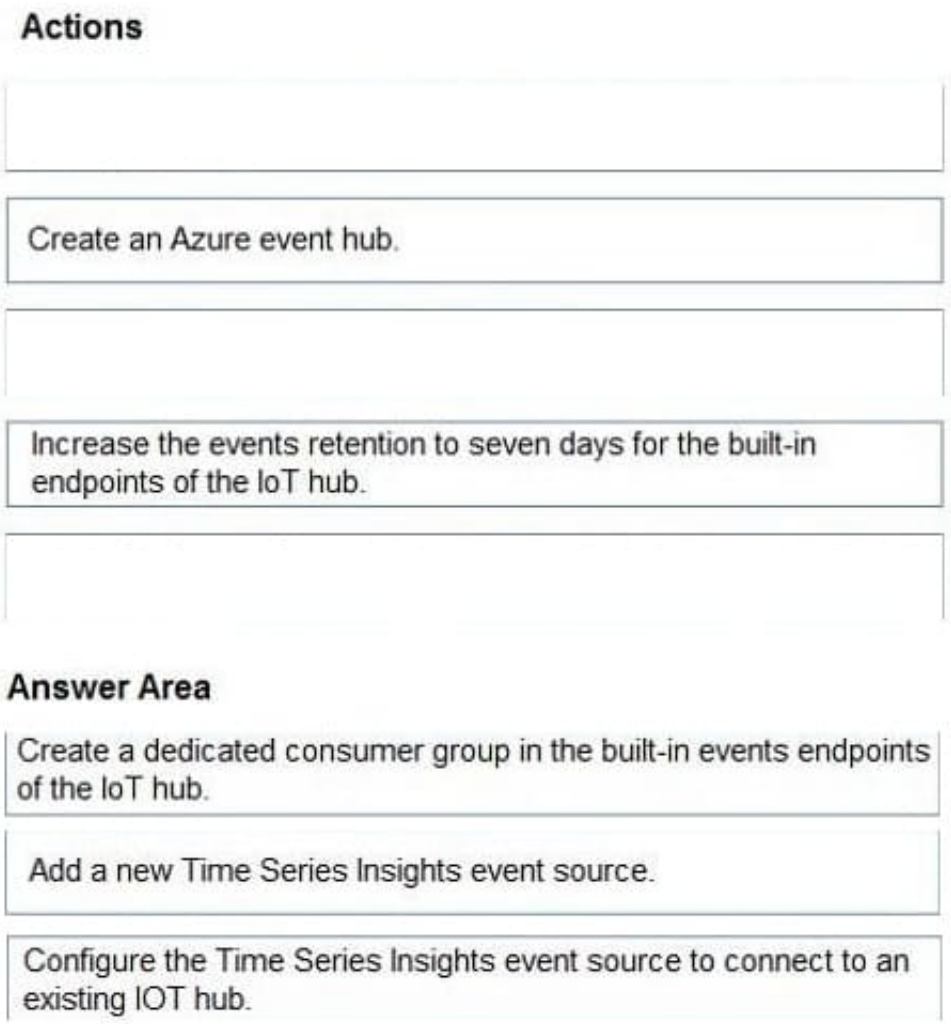
Select and Place:

Actions

- Configure the Time Series Insights event source to connect to an existing IOT hub.
- Create an Azure event hub.
- Add a new Time Series Insights event source.
- Increase the events retention to seven days for the built-in endpoints of the IoT hub.
- Create a dedicated consumer group in the built-in events endpoints of the IoT hub.

Answer Area

Correct Answer:



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-iothub

QUESTION 3

DRAG DROP

You have an Azure IoT hub.

You plan to attach three types of IoT devices as shown in the following table.

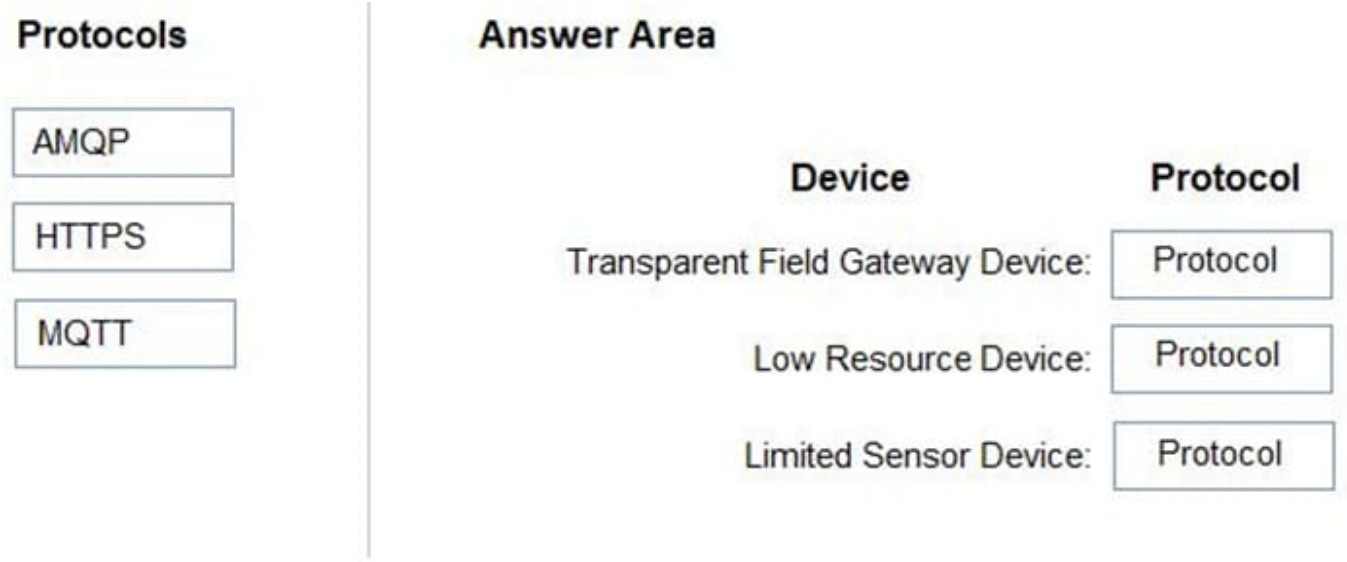
Name	Specification	Note
Transparent Field Gateway Device	High-power device with a fast processor and 4 GB of RAM	Will connect to multiple devices, each with its own credentials, by using the same TLS connection.
Low Resource Device	Low resource specifications, battery-operated, and 512 KB of RAM	Will 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.

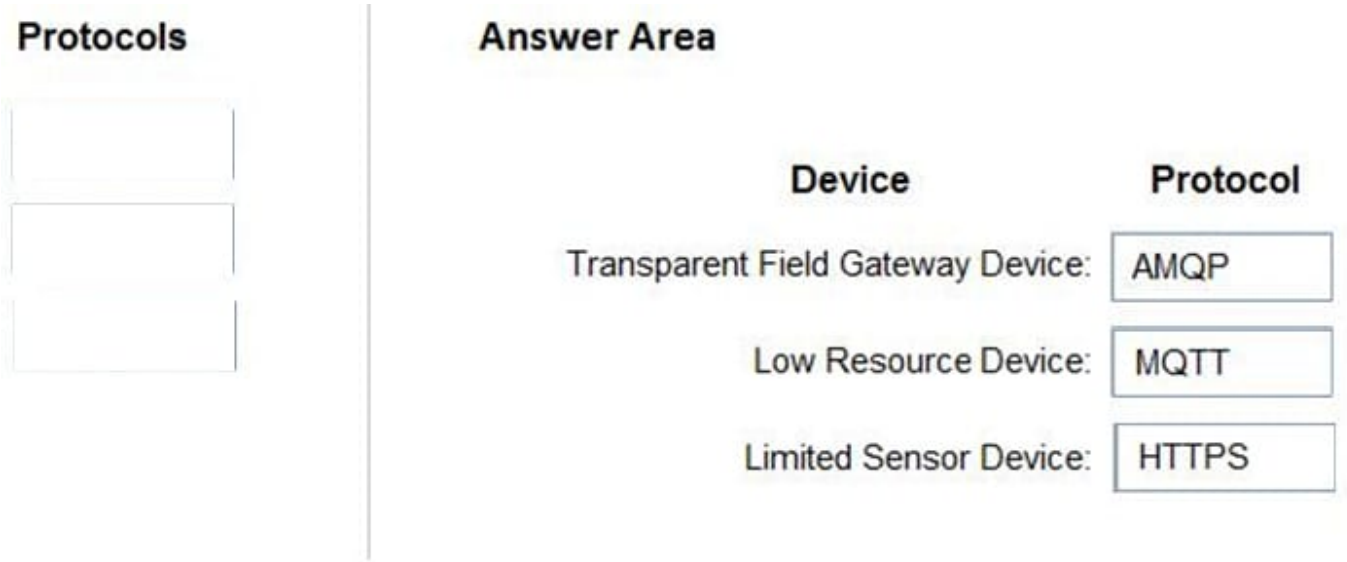
What should you select? To answer, drag the appropriate protocols to the correct devices. Each protocol may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:



Correct Answer:



QUESTION 4

You develop a custom Azure IoT Edge module named temperature-module.

You publish temperature-module to a private container registry named mycr.azurecr.io

You need to build a deployment manifest for the IoT Edge device that will run temperature-module.

Which three container images should you define in the manifest? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A. mcr.microsoft.com/azureiotedge-simulated-temperature-sensor:1.0

B. mcr.microsoft.com/azureiotedge-agent:1.0

C. mcr.microsoft.com/iotedgedev:2.0

D. mycr.azurecr.io/temperature-module:latest

E. mcr.microsoft.com/azureiotedge-hub:1.0

Correct Answer: BDE

Each IoT Edge device runs at least two modules: $edgeAgent and $edgeHub, which are part of the IoT Edge runtime. IoT Edge device can run multiple additional modules for any number of processes. Use a deployment manifest to tell your device which modules to install and how to configure them to work together.

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

QUESTION 5

HOTSPOT

You have an Azure solution that contains an Azure IoT Edge deployment.

You are configuring an Azure Stream Analytics Edge job as shown in the following exhibit.

How should you complete the query? To answer select the appropriate options m the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

```
WITH AnomalyDetectionStep AS
(
    SELECT
        MachineName,
        Compliance,
        System.Timestamp() AS time,
        CAST(ProbeTemperature AS float) AS temp,
        AnomalyDetection_ChangePoint(CAST(ProbeTemperature AS float), 80, 60)
         OVER(PARTITION BY MachineName, Compliance LIMIT DURATION(minute, 1)) AS ChangePointScores
    FROM PD-Data
    WHERE ProbeTemperature IS NOT NULL
)
SELECT
    MachineName,
    Compliance,
    time,
    temp,
    CAST(GetRecordPropertyValue(ChangePointScores, 'Score') AS float) AS
    ChangePointScore,
    CAST(GetRecordPropertyValue(ChangePointScores, 'IsAnomaly') AS bigint) AS
    IsChangePointAnomaly
```

INTO
PD-Data
PD-Anomalies
AnomalyDetectionStep
ProbeTemperature

FROM
PD-Data
PD-Anomalies
AnomalyDetectionStep
ProbeTemperature

Correct Answer:

```
WITH AnomalyDetectionStep AS
(
    SELECT
        MachineName,
        Compliance,
        System.Timestamp() AS time,
        CAST(ProbeTemperature AS float) AS temp,
        AnomalyDetection_ChangePoint(CAST(ProbeTemperature AS float), 80, 60)
         OVER(PARTITION BY MachineName, Compliance LIMIT DURATION(minute, 1)) AS ChangePointScores
    FROM PD-Data
    WHERE ProbeTemperature IS NOT NULL
)
SELECT
    MachineName,
    Compliance,
    time,
    temp,
    CAST(GetRecordPropertyValue(ChangePointScores, 'Score') AS float) AS
    ChangePointScore,
    CAST(GetRecordPropertyValue(ChangePointScores, 'IsAnomaly') AS bigint) AS
    IsChangePointAnomaly
```

INTO
PD-Data
PD-Anomalies
AnomalyDetectionStep
ProbeTemperature

FROM
PD-Data
PD-Anomalies
AnomalyDetectionStep
ProbeTemperature