

Exam Questions AZ-220

Microsoft Azure IoT Developer

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NEW QUESTION 1

- (Exam Topic 1)

What should you do to identify the cause of the connectivity issues?

- A. Send cloud-to-device messages to the IoT devices.
- B. Use the heartbeat pattern to send messages from the IoT devices to iotHub1.
- C. Monitor the connection status of the device twin by using an Azure function.
- D. Enable the collection of the Connections diagnostics logs and set up alerts for the connected devices count metric.

Answer: D

Explanation:

Scenario: You discover connectivity issues between the IoT gateway devices and iotHub1, which cause IoT devices to lose connectivity and messages.

To log device connection events and errors, turn on diagnostics for IoT Hub. We recommend turning on these logs as early as possible, because if diagnostic logs aren't enabled, when device disconnects occur, you won't have any information to troubleshoot the problem with.

Step 1:

- *1. Sign in to the Azure portal.
- *2. Browse to your IoT hub.
- *3. Select Diagnostics settings.
- *4. Select Turn on diagnostics.
- *5. Enable Connections logs to be collected.
- *6. For easier analysis, turn on Send to Log Analytics (see pricing).

Step 2:

Set up alerts for device disconnect at scale

To get alerts when devices disconnect, configure alerts on the Connected devices (preview) metric. Reference:

<https://docs.microsoft.com/bs-cyrl-ba/azure/iot-hub/iot-hub-troubleshoot-connectivity>

NEW QUESTION 2

- (Exam Topic 3)

You have the devices shown in the following table.

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.

Reference:

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

NEW QUESTION 3

- (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 4

- (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 5

- (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 6

- (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 7

- (Exam Topic 3)

You have an Azure IoT hub that uses a Device Provisioning Service instance to automate the deployment of Azure IoT Edge devices.

The IoT Edge devices have a Trusted Platform Module (TPM) 2.0 chip.

From the Azure portal, you plan to add an individual enrollment to the Device Provisioning Service that will use the TPM of the IoT Edge devices as the attestation mechanism.

Which detail should you obtain before you can create the enrollment.

- A. the scope ID and the Device Provisioning Service endpoint
- B. the primary key of the Device Provisioning Service shared access policy and the global device endpoint
- C. the X.509 device certificate and the certificate chain
- D. the endorsement key and the registration ID

Answer: D

Explanation:

The TPM simulator's Registration ID and the Endorsement key, are used when you create an individual enrollment for your device.

Reference:

<https://docs.microsoft.com/en-us/azure/iot-edge/how-to-auto-provision-simulated-device-linux>

NEW QUESTION 8

- (Exam Topic 3)

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/iotedge-dev:2.0
- D. mycr.azurecr.io/temperature-module:latest
- E. mcr.microsoft.com/azureiotedge-hub:1.0

Answer: BDE

Explanation:

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>

NEW QUESTION 9

- (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 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 10

- (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 11

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