

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 plan to deploy a standard tier Azure IoT hub.

You need to perform an over-the-air (OTA) update on devices that will connect to the IoT hub by using scheduled jobs.

What should you use?

- A. a device-to-cloud message
- B. the device twin reported properties
- C. a cloud-to-device message
- D. a direct method

Answer: D

Explanation:

Releases via the REST API.

All of the operations that can be performed from the Console can also be automated using the REST API. You might do this to automate your build and release process, for example.

You can build firmware using the Particle CLI or directly using the compile source code API.

Note: Over-the-air (OTA) firmware updates are a vital component of any IoT system. Over-the-air firmware updates refers to the practice of remotely updating the code on an embedded device.

Reference:

<https://docs.particle.io/tutorials/device-cloud/ota-updates/>

NEW QUESTION 3

- (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.

Return the reported power consumption:

Configure the desired fan speed:

Read the fan serial number:

Run the device reset routine:

- 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 4

- (Exam Topic 3)

You have an Azure IoT Central application.

You need to connect an IoT device to the application.

Which two settings do you require in IoT Central to configure the device? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Group SAS Primary Key
- B. the IoT hub name
- C. Scope ID
- D. Application Name
- E. Device ID

Answer: CE

Explanation:

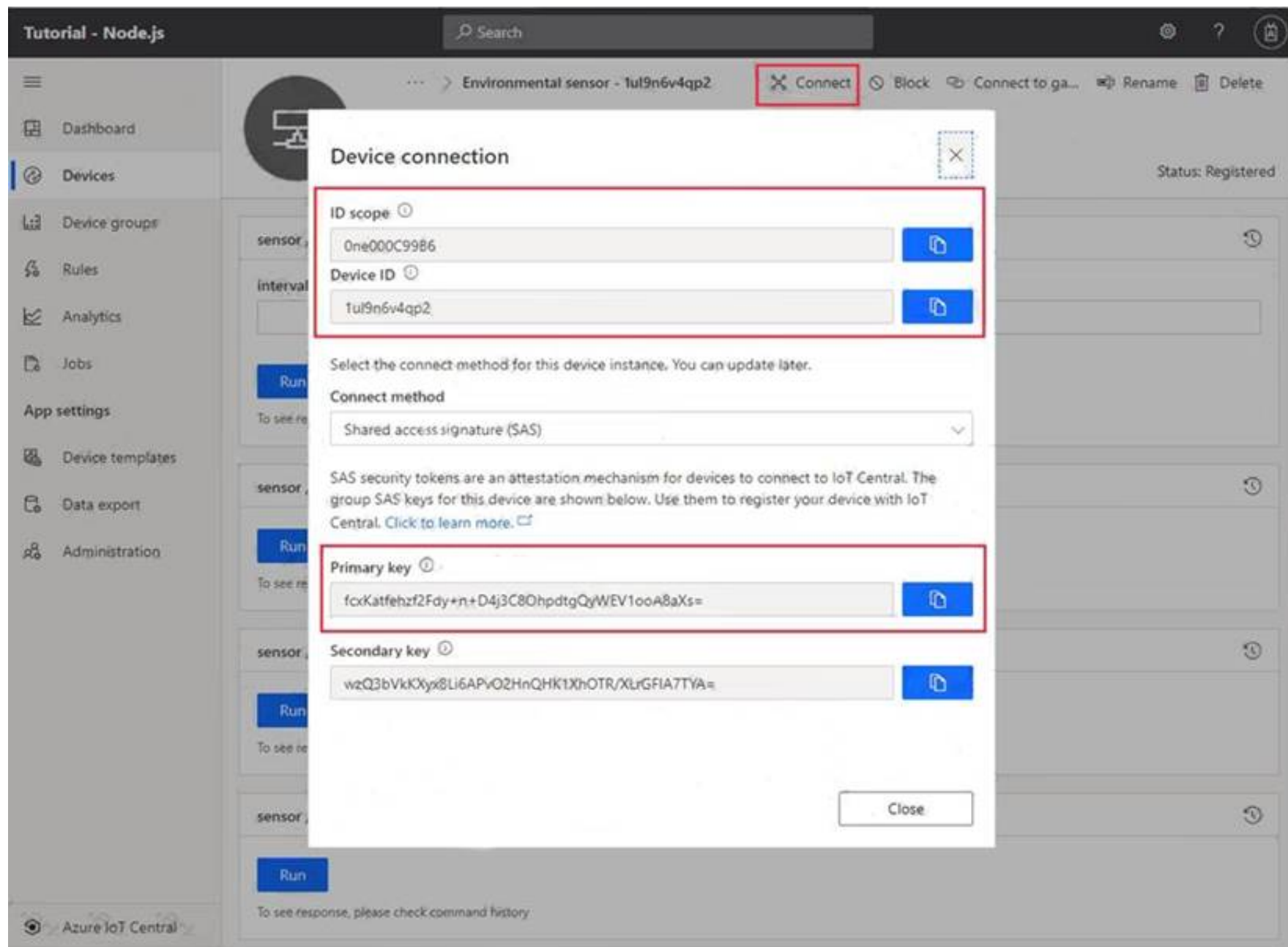
In your Azure IoT Central application, add a real device to the device template

*1. On the Devices page, select the Environmental sensor device template.

*2. Select + New.

*3. Make sure that Simulated is Off. Then select Create.

Click on the device name, and then select Connect. Make a note of the device connection information on the Device Connection page - ID scope, Device ID, and Primary key. You need these values when you create your device code:



Reference:

<https://docs.microsoft.com/bs-cyrl-ba/azure/iot-central/core/tutorial-connect-device-python>

NEW QUESTION 5

- (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 6

- (Exam Topic 3)

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

You receive a root certification authority (CA) certificate from the security department at your company. You need to configure the IoT hub to use the root CA certificate.

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.

Actions

Generate a verification code.

Upload the verification certificate.

Upload the root CA certificate to the IoT hub.

Copy the thumbprint from root CA certificate.

Generate a verification certificate.

Answer Area

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- A. Mastered
B. Not Mastered

Answer: A

Explanation:

Reference:
<https://docs.microsoft.com/bs-latn-ba/azure/iot-hub/iot-hub-security-x509-get-started>

NEW QUESTION 7

- (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.

Actions

Get a service primary key for the IoT hub.

Configure the Device Provisioning Service on the IoT hub.

Configure the device connection string on a device client.

Register a device in IoT Hub.

Trigger a new send event from a device client.

Answer Area

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- 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 8

- (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.

Actions	Answer Area
Create a custom alert rule.	
Enable Azure Security Center for IoT.	
Configure the Diagnostics settings of the IoT hub.	⬅️ ⬆️
Create a shared access policy.	➡️ ⬆️
Select a device security group.	
Create a message route.	

- 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 9

- (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.

Actions	Answer Area
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.	

- 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)
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 10

- (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.)

Hub1445 - Message routing

IoT Hub

Search (Ctrl+ /)

Failover

Properties

Locks

Export template

Explorers

Query explorer

IoT devices

Automatic Device Management

IoT Edge

IoT device configuration

Send data from your devices to endpoints that you choose.

Routes

Custom endpoints

Enrich messages - preview

Create an endpoint, and then add a route (you can add up to 100 routes from each IoT hub). Since routing is based on a matching query, a message can be sent to multiple endpoints. Messages that don't match a query are automatically sent to messages/events if you've enabled the fallback route. [Learn more](#)

Enable fallback route

+ Add

Test all routes

Delete

<input type="checkbox"/>	Name	Data Source	Routing Query	Endpoint	Enabled
<input type="checkbox"/>	Route3	DeviceMessages	true	events	false
<input type="checkbox"/>	Route2	DeviceMessages	true	BlobStorage	true
<input type="checkbox"/>	Route1	DeviceMessages	false	Telemetry	true

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 12

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