Cheatography

Azure IoT Edge & IoT Hub Cheat Sheet

by Meri D. via cheatography.com/128484/cs/25158/

Azure IoT Edge comprises three components:

1. IoT Edge modules

The units of execution are implemented as Docker compatible containers. IoT Edge modules can run Azure services, third-party services, or user's own code and it can also run business logic in IoT Edge devices. The execution can run offline if needed by the users; can configure modules to communicate with each other to create a pipeline for data processing locally.

2. IoT Edge runtime

It manages the runtime and communication for the modules deployed to each device and ensures that the modules are always running and report module health to the cloud.

3. IoT Edge cloud interface

It enables users to monitor and manage IoT Edge devices remotely. Its cloud interface allows you to manage this overall lifecycle at scale for a diverse set of devices, which could be geographically scattered.

Azure IoT Hub

Azure IoT Hub enables secure and reliable communication between your IoT solution and the devices it manages. IoT Hub provides a cloud-hosted solution backend to connect devices with per-device authentication, device management, and scaled provisioning.

When to use IoT Edge?

Decision criteria

Near real-time response to local changes

Does your application need to react quickly to local changes in near real time? IoT Edge can run modules locally on IoT Edge devices to enable faster response to local changes.

Deploy and manage using Containers to IoT Edge devices

Does your application need to be deployed in docker compatible containers to IoT Edge devices? IoT Edge enables you to use containers to run your logic at the IoT Edge. Containers help to manage software dependencies such as runtimes and libraries, ensuring that the application runs consistently wherever it's deployed.

Security for IoT Edge deployments

The lack of security for IoT devices is a significant barrier to entry for many enterprises. IoT Edge provides security in several ways. These include integrating with Azure Security Center and by making use of any hardware security modules to provide strong authenticated connections for confidential computing.

Offline or intermittent mode operation

When to use IoT Edge? (cont)

Does your application need to operate with intermittent of offline connectivity? IoT Edge devices automatically synchronize the latest state of your devices once they've reconnected to the cloud to ensure seamless operations.

Do you need to run machine learning algorithms on IoT Edge devices? IoT Edge enables you to deploy models built and trained in the cloud and run them on IoT Edge devices.

AI and analytics workloads to the IoT Edge

Optimize data costs

Management of costs in the deployment of Cloud resources is essential. You can design your system in such a way that data sent to the cloud is reduced by pre-processing on the IoT Edge devices.

Privacy for IoT Edge deployments

Do you need to ensure compliance for Privacy regulations? IoT Edge can protect personally identifiable data and keep data on-premises in that way improving compliance.

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