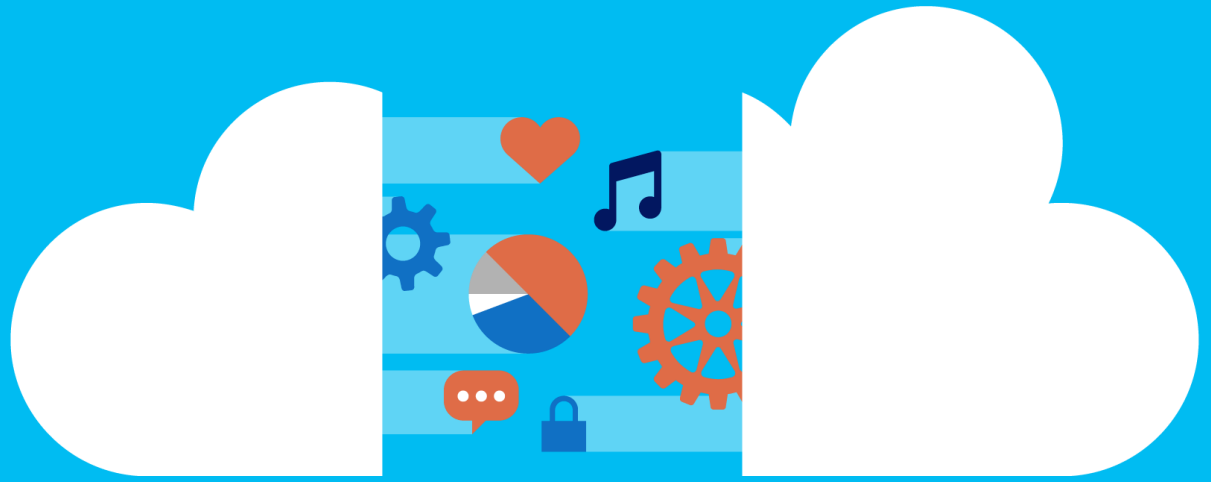
Microsoft

Hands-on Lab

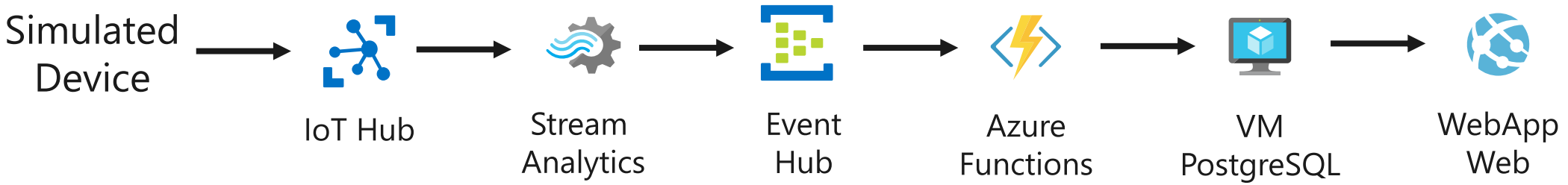


Hands on list

1. Simulated Device send to Hub and display on Web
2. Develop IoT Edge module and call API
3. Extra: Train Model using Azure Machine Learning and build Devops Pipeline

Experiment #1

Overall Architecture



利用Azure IoT构建简易的IoT应用程序

1. 创建模拟设备并连接至IoT Hub
2. 利用Stream Analytics对数据进行预处理
3. 利用Azure Function将获取的数据写入对应数据库
4. 将容器化应用部署至Azure App Service

Azure Container Service

Reference

1. https://docs.microsoft.com/zh-cn/azure/iot-hub/
2. https://docs.microsoft.com/zh-cn/azure/iot-hub/quickstart-send-telemetry-python
3. https://docs.microsoft.com/zh-cn/azure/iot-hub/tutorial-routing

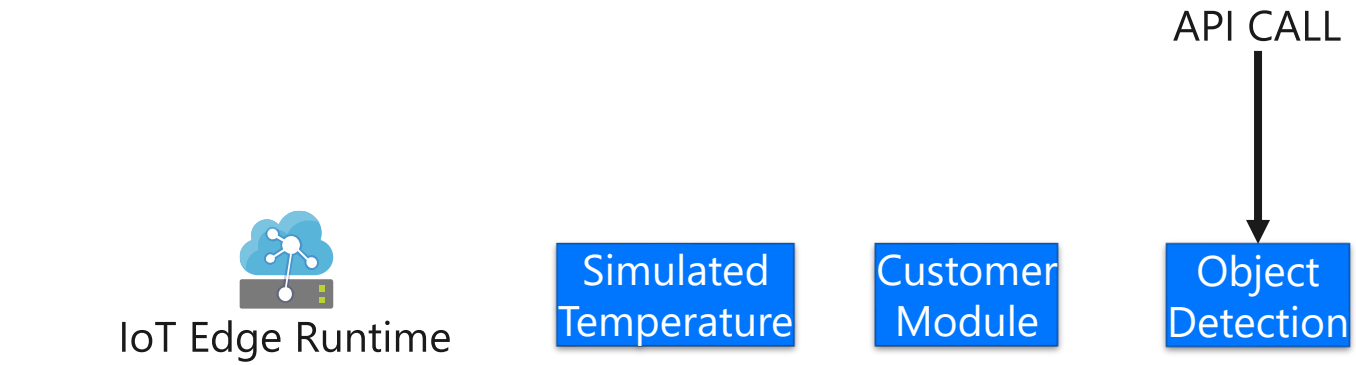
4. https://docs.microsoft.com/zh-cn/azure/stream-analytics/stream-analytics-quick-create-portal
5. https://docs.microsoft.com/zh-cn/azure/stream-analytics/stream-analytics-stream-analytics-query-patterns

6. https://docs.microsoft.com/zh-cn/azure/event-hubs/event-hubs-create

7. https://docs.microsoft.com/zh-cn/azure/azure-functions/functions-create-first-function-vs-code
8. https://docs.microsoft.com/zh-cn/azure/azure-functions/functions-bindings-event-hubs

9. https://docs.microsoft.com/zh-cn/azure/app-service/tutorial-custom-container

Experiment #2



利用Azure IoT Edge 构建简易边缘模块

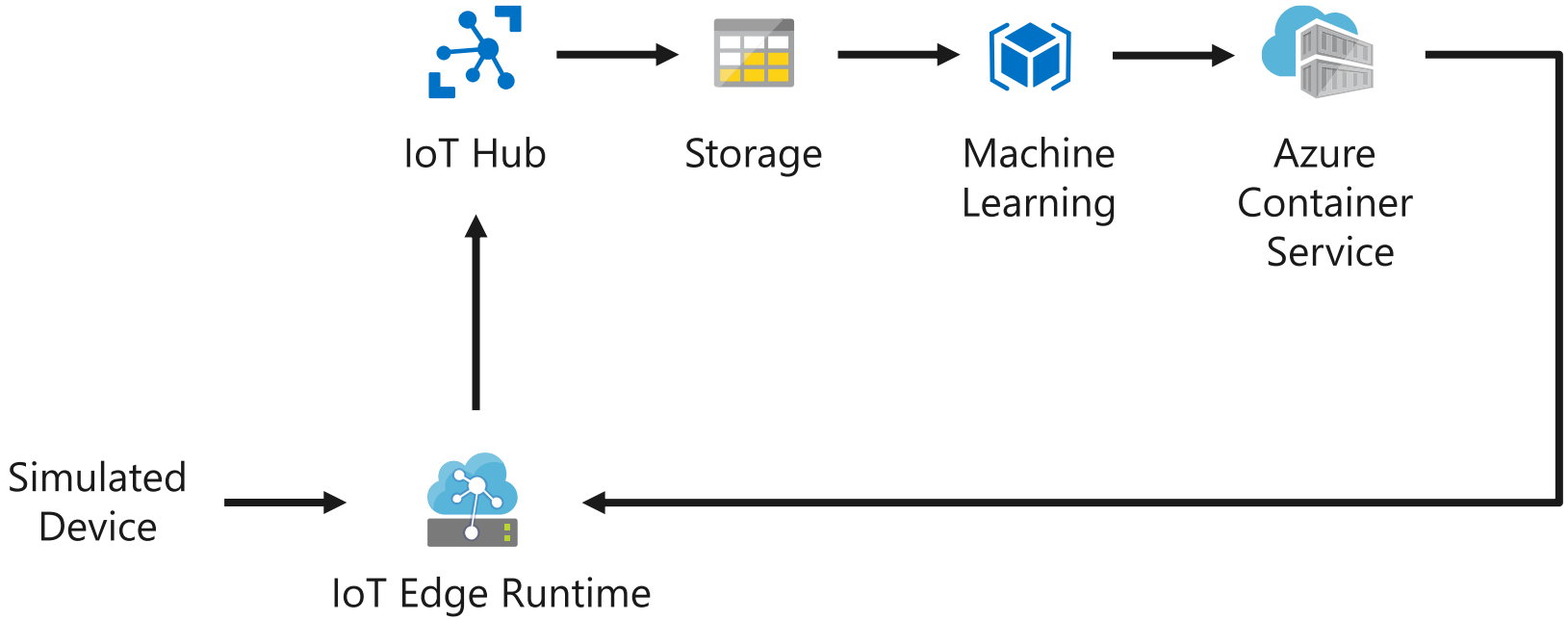
1. 创建IoT Edge 环境
2. 部署Device Simulator程序并查看
3. 利用Visual Studio Code开发自定义数据处理模块
4. 利用Azure AI / Customer Vision开发自定义AI模块

Reference

1. https://docs.microsoft.com/zh-cn/azure/iot-edge/how-to-install-iot-edge-linux
2. https://docs.microsoft.com/zh-cn/azure/cognitive-services/
3. https://docs.microsoft.com/zh-cn/azure/container-registry/

4. https://github.com/Azure/iotedge/blob/master/doc/BuiltInMetrics.md
5. https://labs.iotedge.dev/codelabs/monitor-iotedge/#0
6. https://grafana.com/grafana/plugins/grafana-azure-monitor-datasource

Experiment #3 - optional



Reference

1. https://docs.microsoft.com/zh-cn/azure/iot-edge/tutorial-machine-learning-edge-01-intro