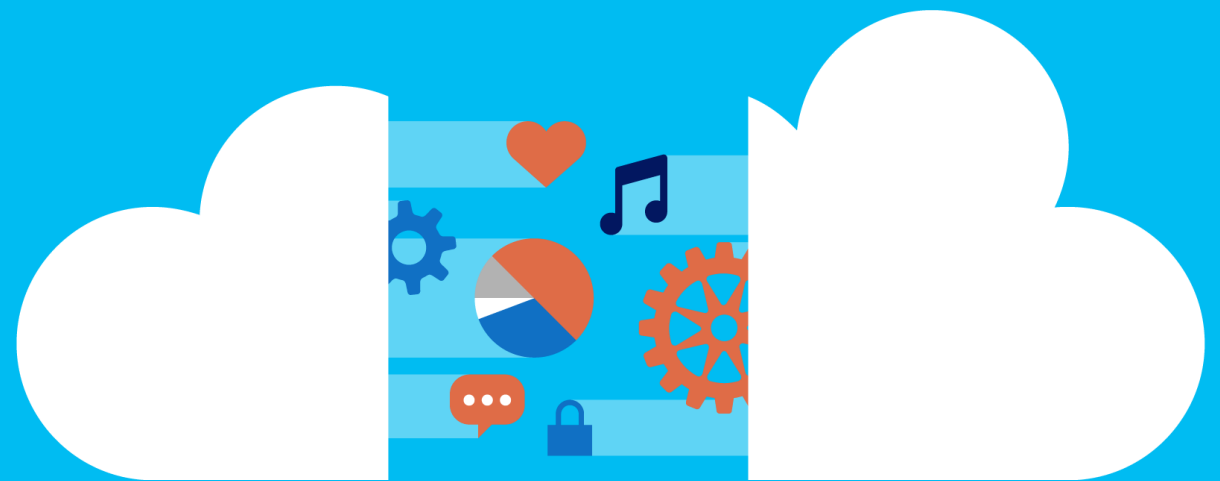


Hands-on Lab

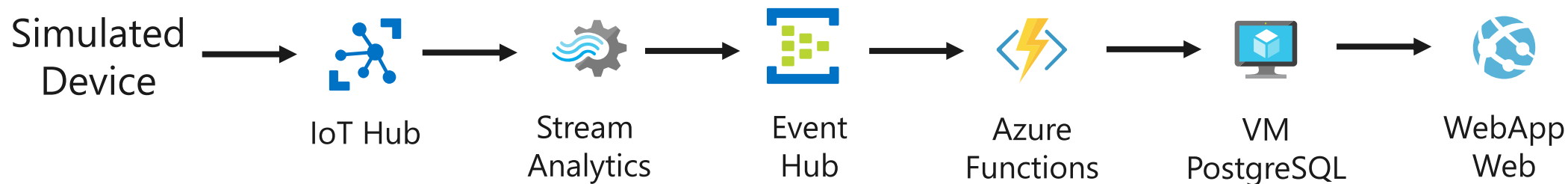


Hands on list

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

Session #1 – IoT Hub

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

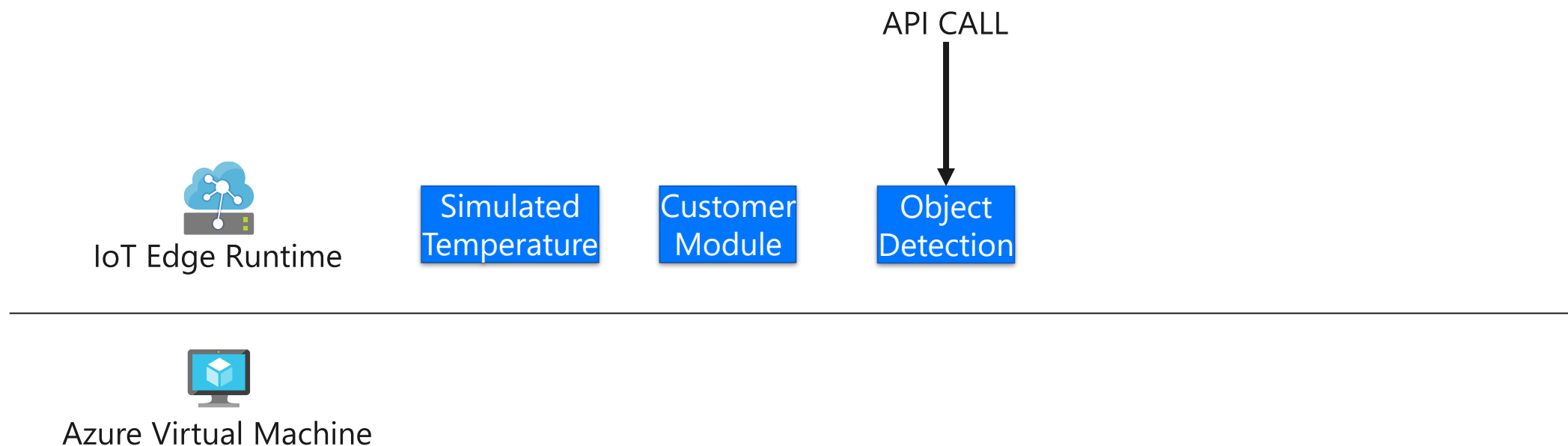


Azure Container Service

Reference

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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>

Session #2 – IoT Edge



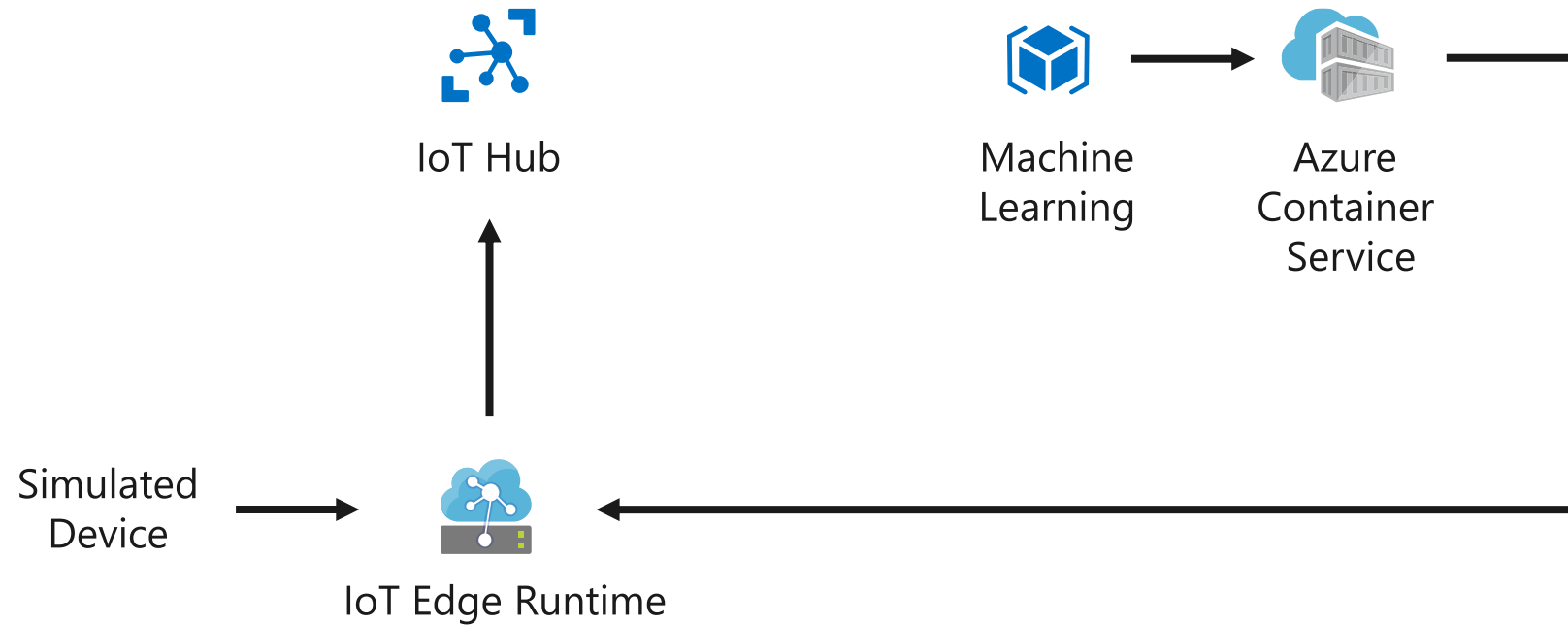
利用Azure IoT Edge 构建简易边缘模块

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>

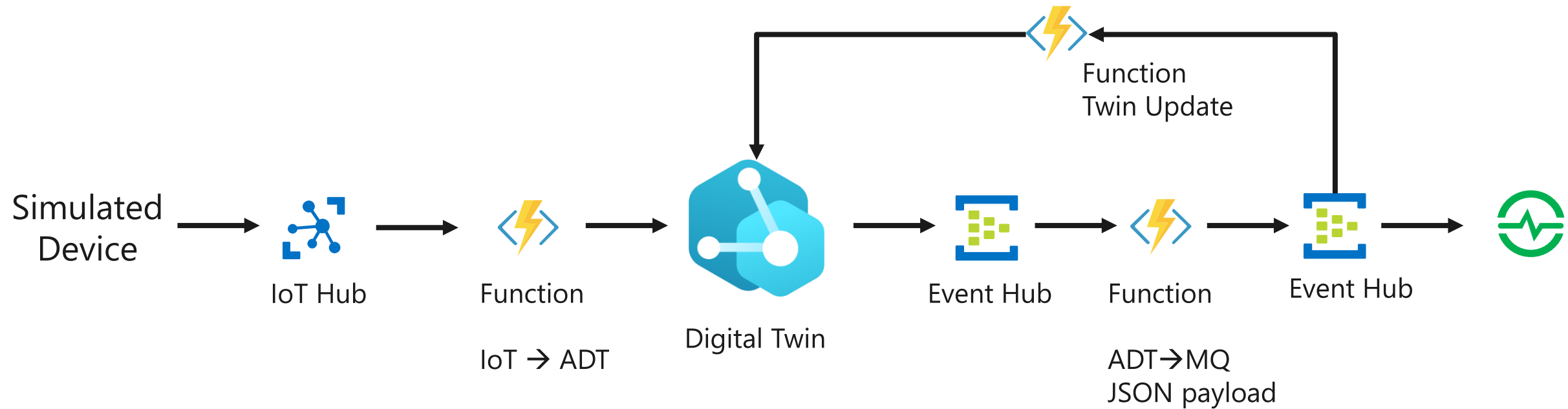
Session #3 – Azure Machine Learning



Reference

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

Session #4 – Azure Digital Twin



Reference

<https://docs.microsoft.com/zh-cn/azure/digital-twins/overview>

<https://docs.microsoft.com/zh-cn/azure/digital-twins/concepts-route-events>

<https://docs.microsoft.com/zh-cn/azure/digital-twins/how-to-manage-model>

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