

Reactor Lunch Time

Building an End to End Secure, Scalable IoT
Serverless Solution

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Cloud Advocate

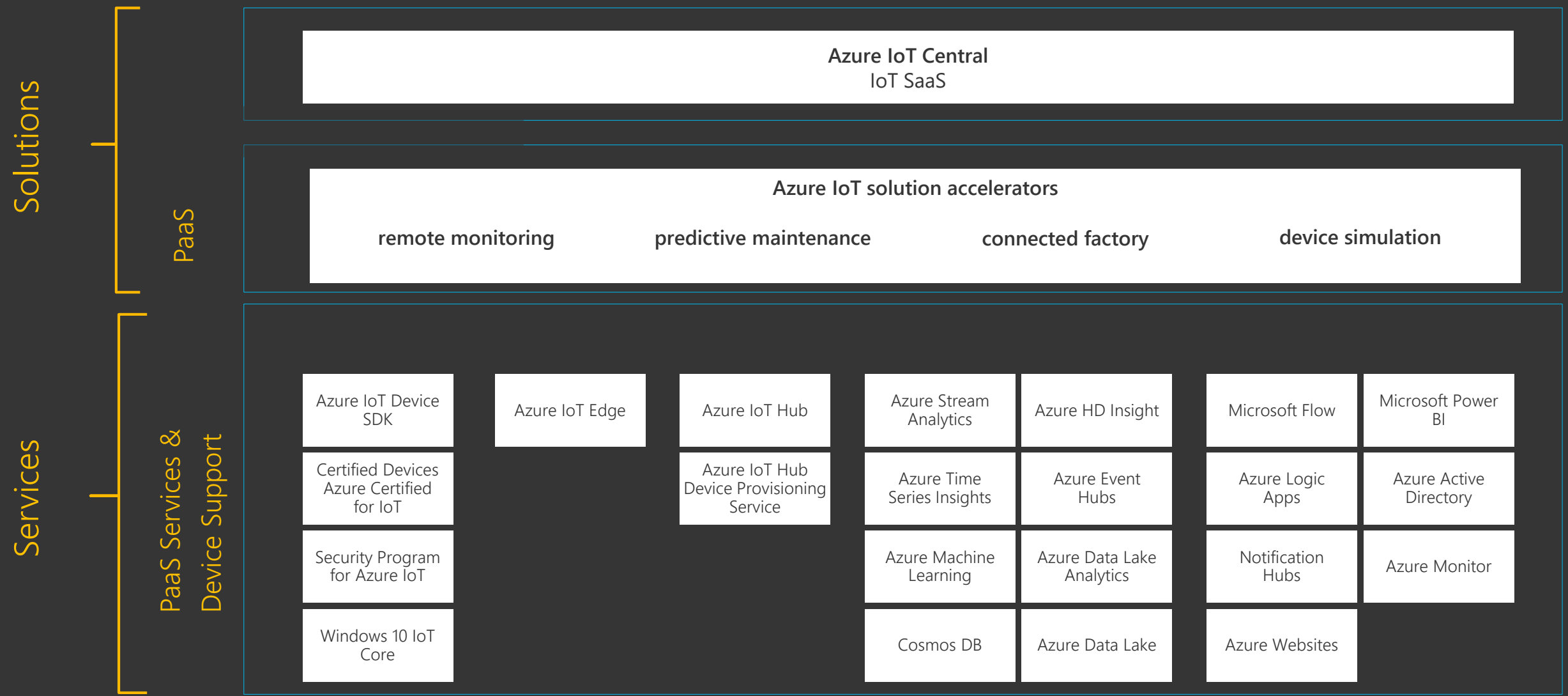
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<https://github.com/gloveboxes/Integrate-IoT-Edge-Classifier-with-Python-Azure-Functions-and-Azure-SignalR>



Comprehensive Set of Capabilities for IoT Solutions

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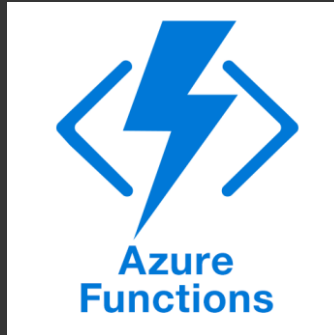


What we will cover

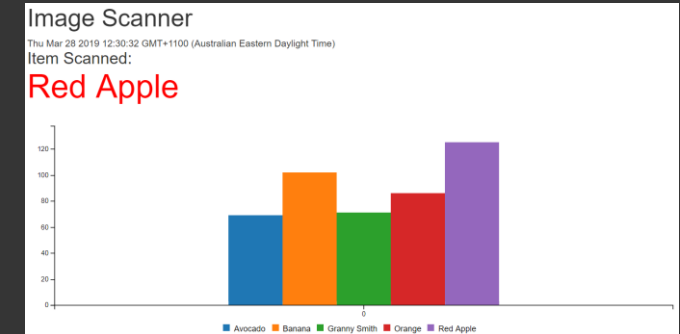
Python Image
Recognition
(Azure IoT Edge)



Serverless &
Azure
Functions

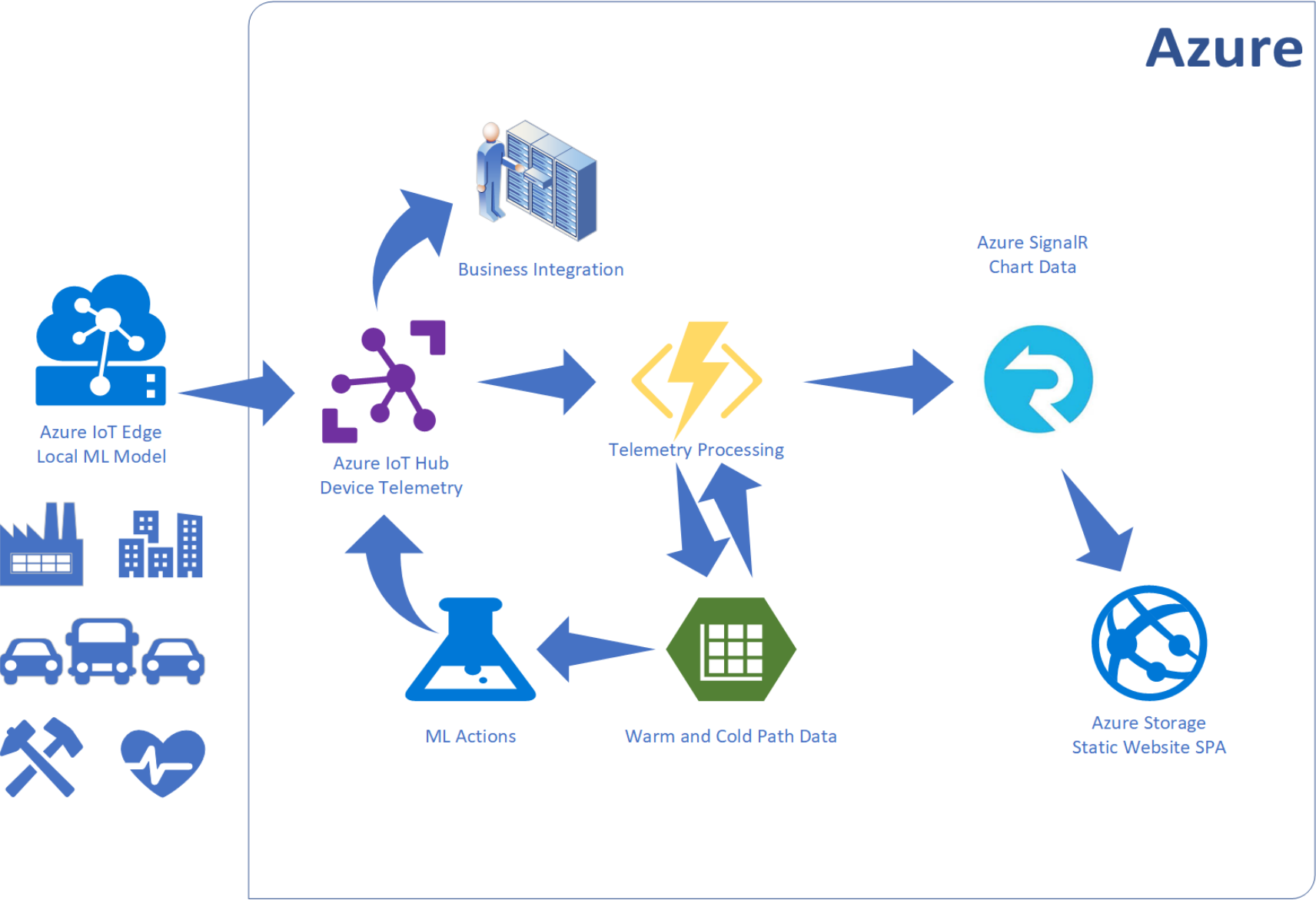


Serverless Websites
(Azure Storage Static
Websites)



Going Serverless with Azure IoT Edge, Functions & SignalR

Azure



Integration IoT and Business

DEMO



Python & Custom Vision AI and Azure IoT Edge

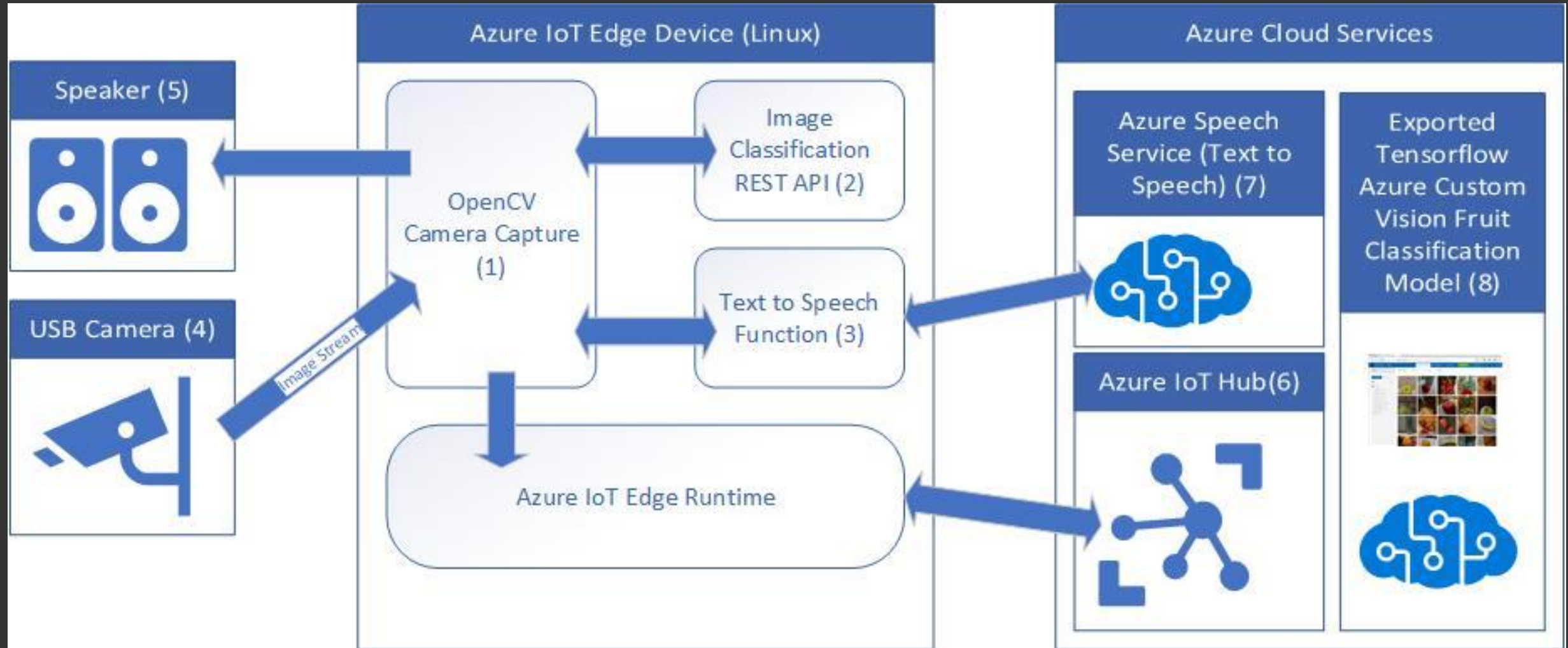


Python Image Recognition

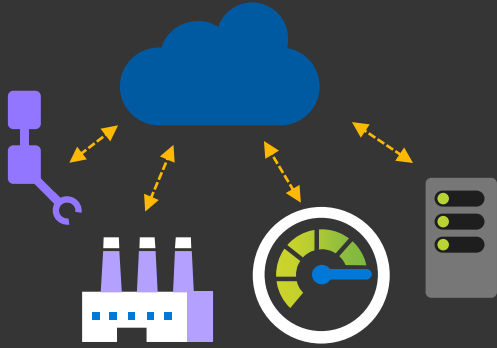
- Azure Custom Vision AI
 - Exported Python Container
 - Free Tier
 - <https://www.customvision.ai/>
- Azure IoT Edge (IoT Hub)
 - Manages Deployment, Health, Updates
 - Docker Based
 - Open Source
 - Free Tier
 - [Azure IoT Certified HW](#)



Visually Impaired Shopping Scenario

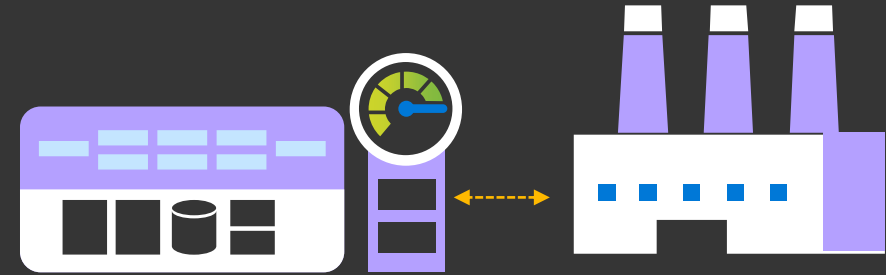


Azure IoT Hub in the Cloud and on the Edge



Azure IoT Hub in the Cloud

- Internet Scale Device Support
- Remote monitoring and management
- Infinite Compute and Storage for Workloads such as Machine Learning & LOB

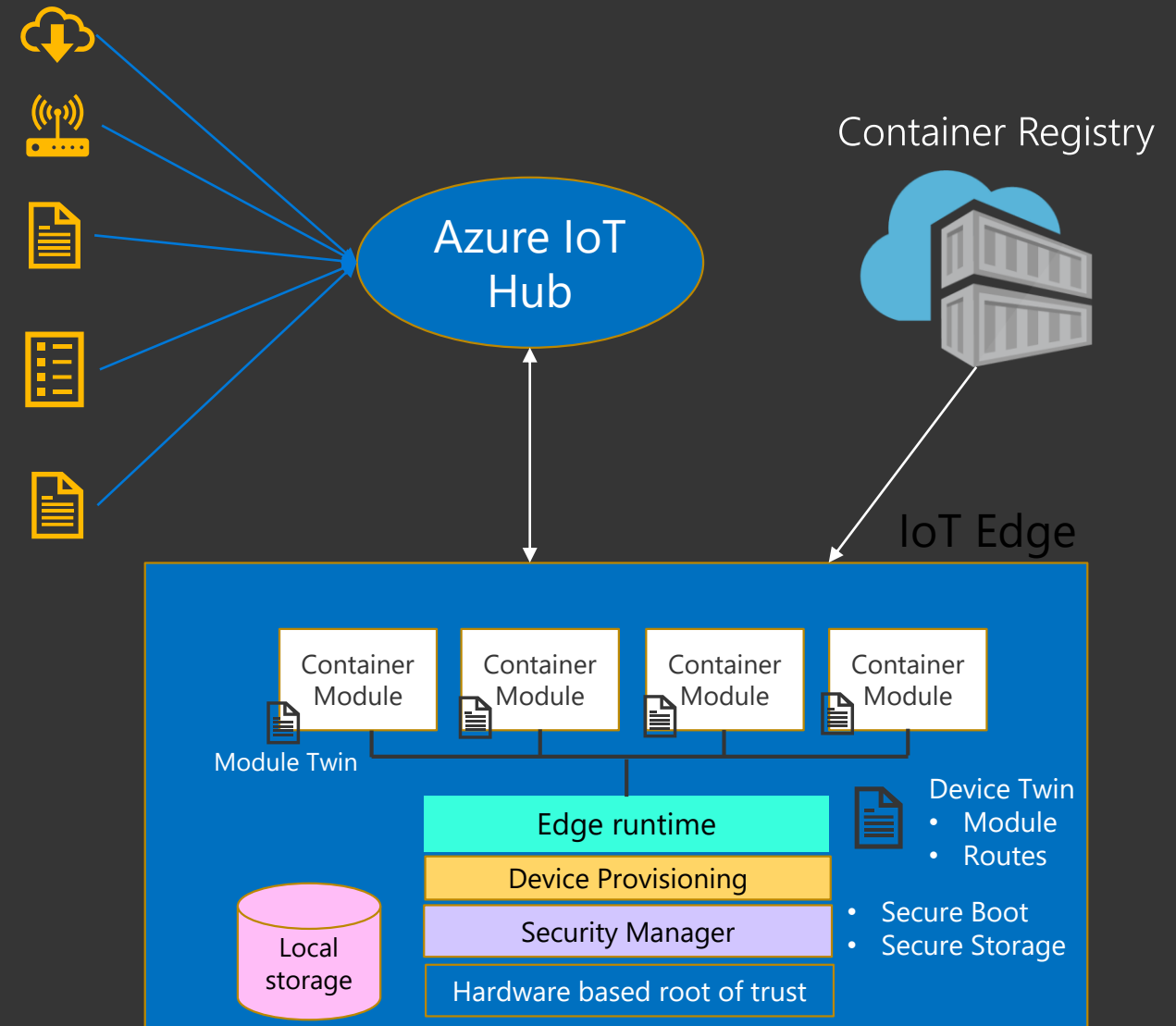


Azure IoT Edge

- Low latency requiring near real-time response
- Large quantities of data eg Image processing
- Protocol translation & data normalization

Azure IoT Edge in Action

1. Develop your Container Workloads
2. Upload Modules to a Container Registry
3. Provision IoT Edge Device Agents
4. Select Device/Deployment Set
5. Define Modules
6. Define Message Routes
7. Define Module Parameters



DEMO



Serverless with Azure Functions



What is Serverless?



No
infrastructure
headaches



Scales on
demand



Very **cheap**
to run

Functions as a Service (FaaS)

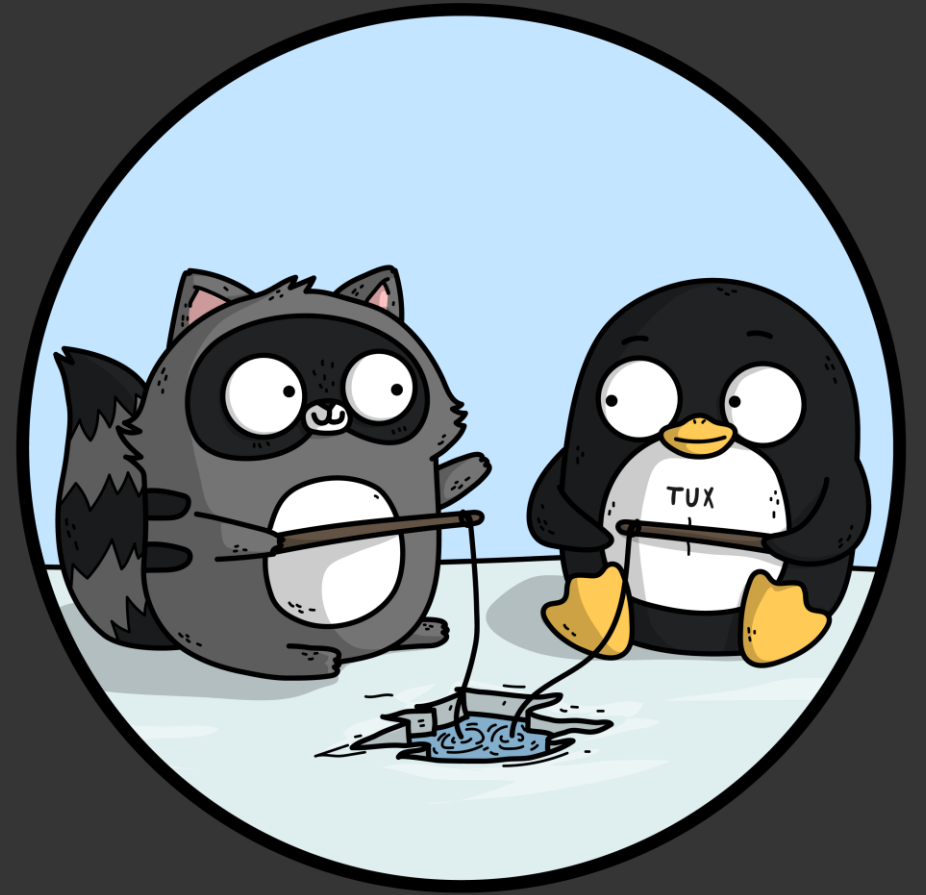
- Functions as a Service
 - Single Responsibility, Short Lived, Stateless, Event Driven & Scalable
- Azure Functions (Implementation of FaaS)
 - Great Local Developer Experience
 - Hosting Flexible
 - Consumption Plan, App Service Plan, Premium, and Container
 - Consumption plan
 - Free grant of 1 million requests and 400,000 GBs per month
 - Open Source <https://github.com/Azure/Azure-Functions>



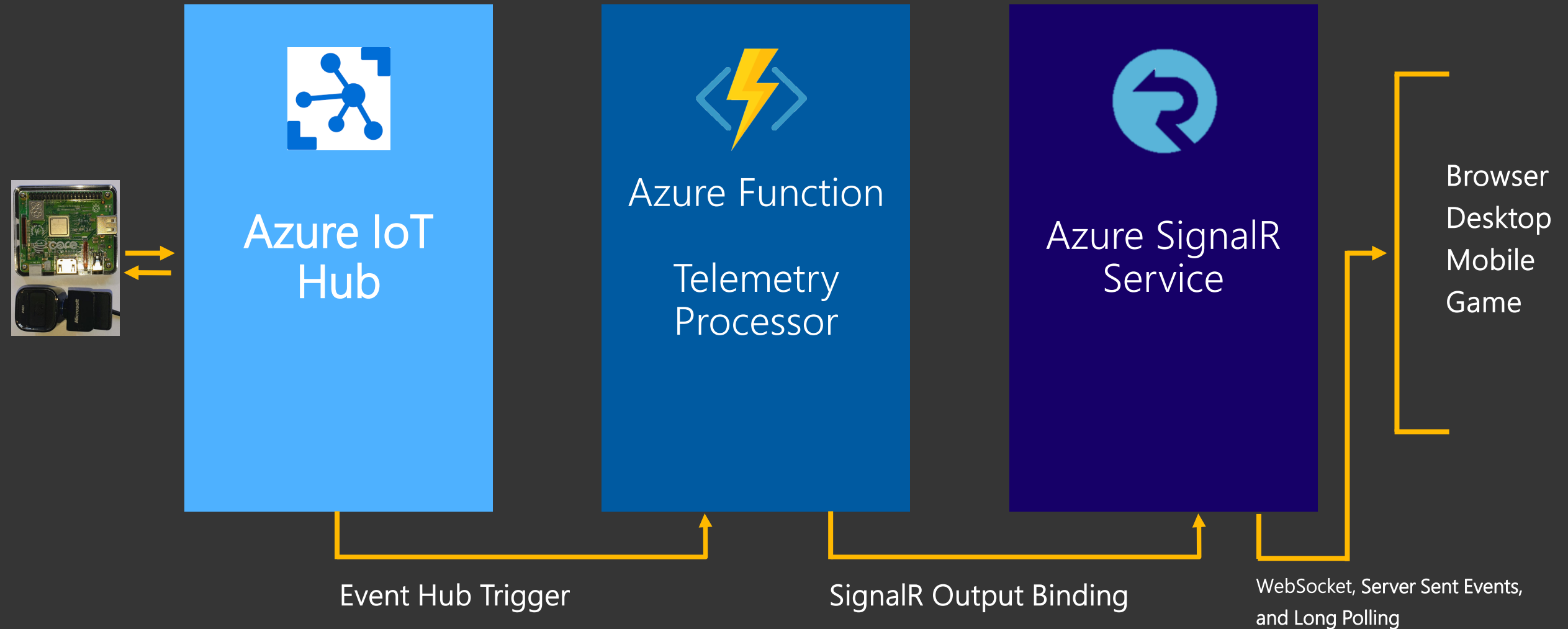
DEMO



Serverless Web Pages & Azure SignalR



SignalR in Action



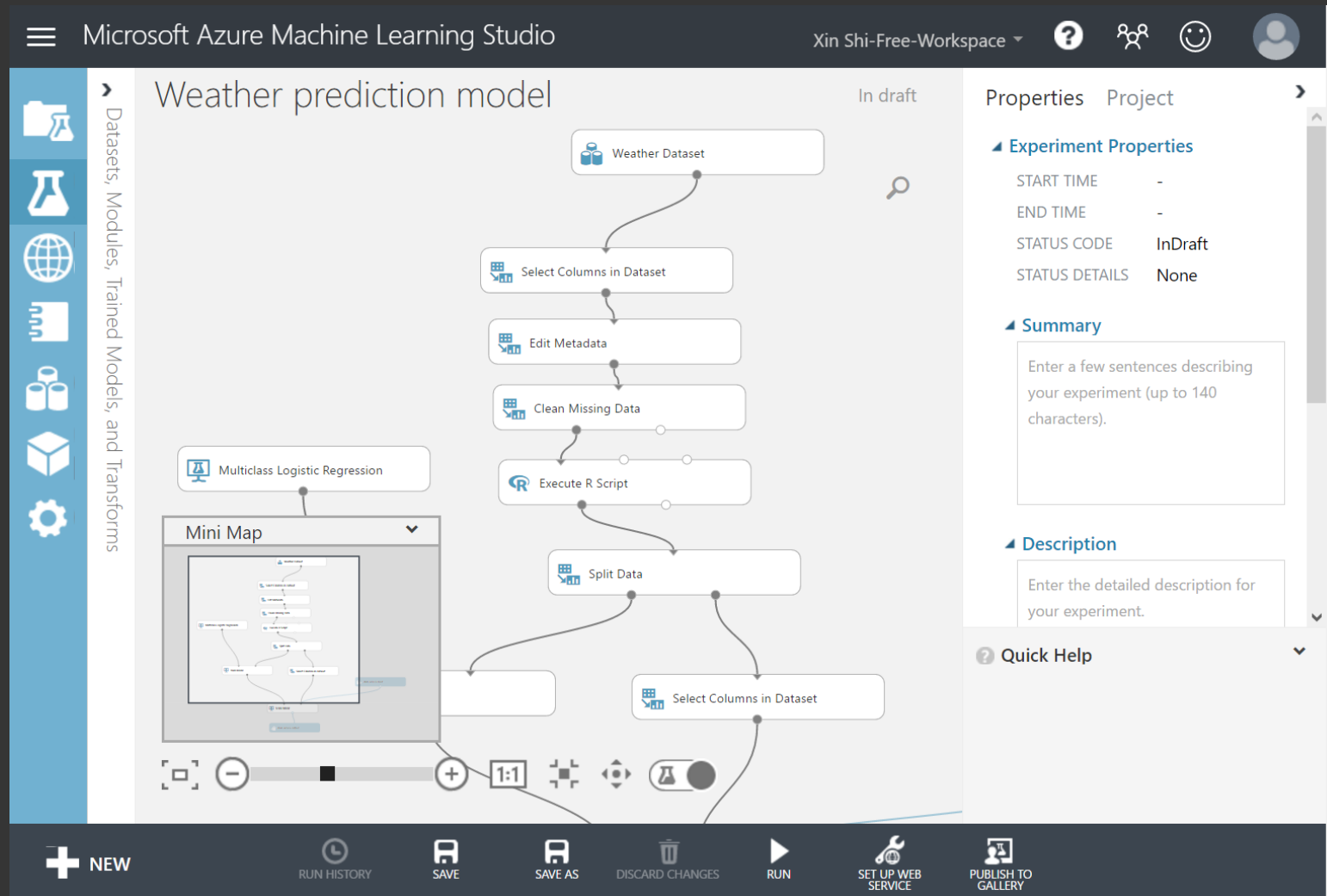
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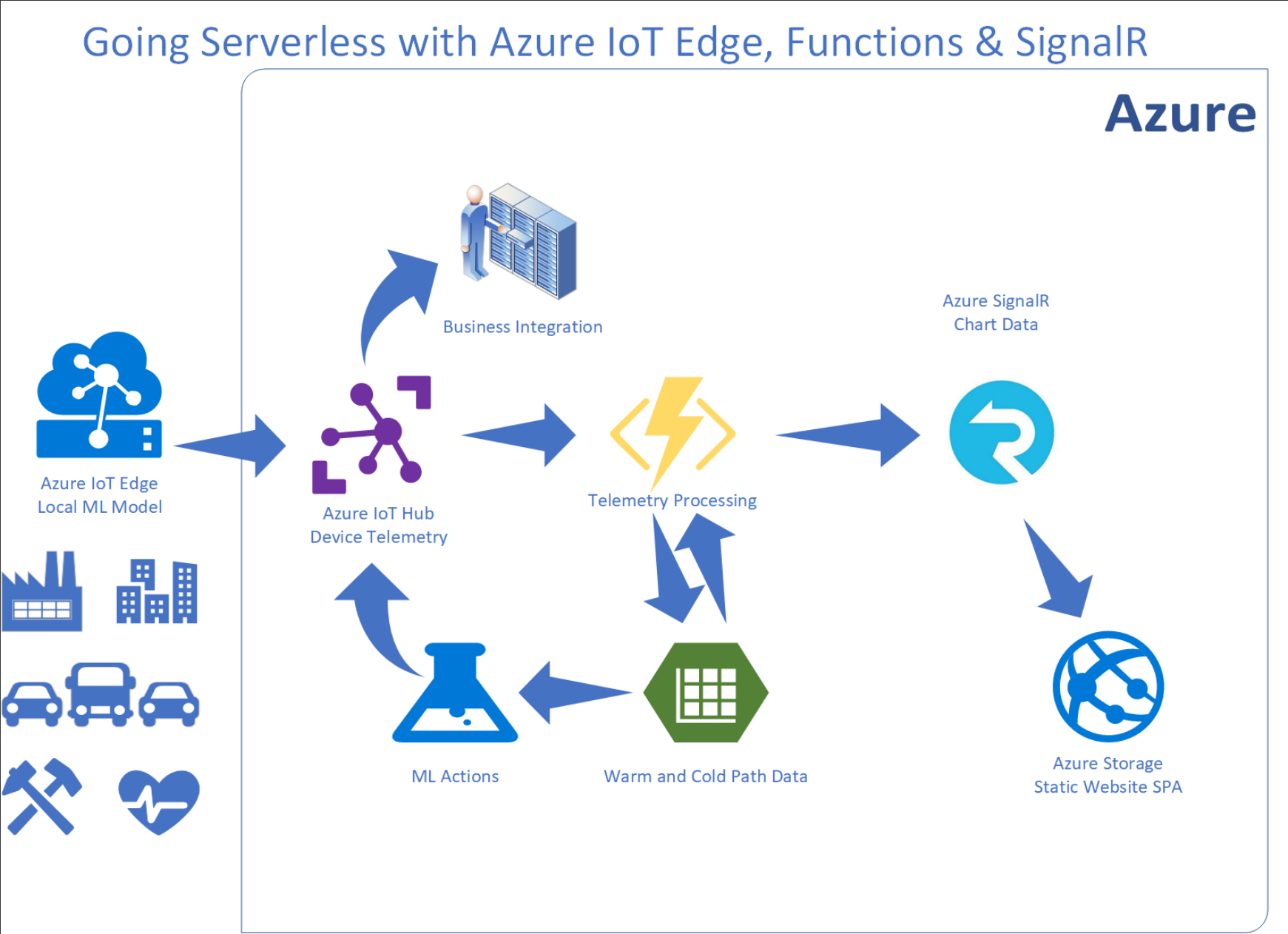
Azure Machine Learning Studio



Machine Learning Studio



[Weather forecast using the sensor data from your IoT hub in Azure Machine Learning](#)



Resources

- [Create your first Python function in Azure](#)
- [Azure Custom Vision AI](#)
- [Azure SignalR Service Documentation](#)
- [Static website hosting in Azure Storage](#)
- [Demoed Solution on GitHub](#) (gloveboxes)
- [Azure Functions Python Worker](#)
- [Deploy Azure IoT Edge modules with Azure CLI](#)
- [Weather forecast using the sensor data from your IoT hub in Azure Machine Learning](#)



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