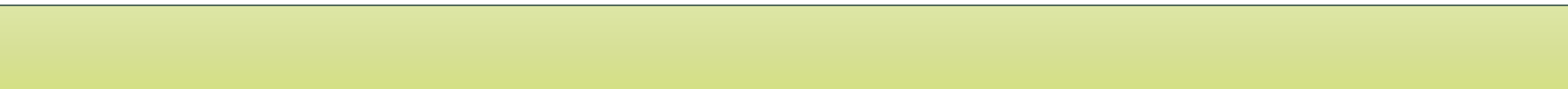


Microsoft Azure Internet of things (IoT)



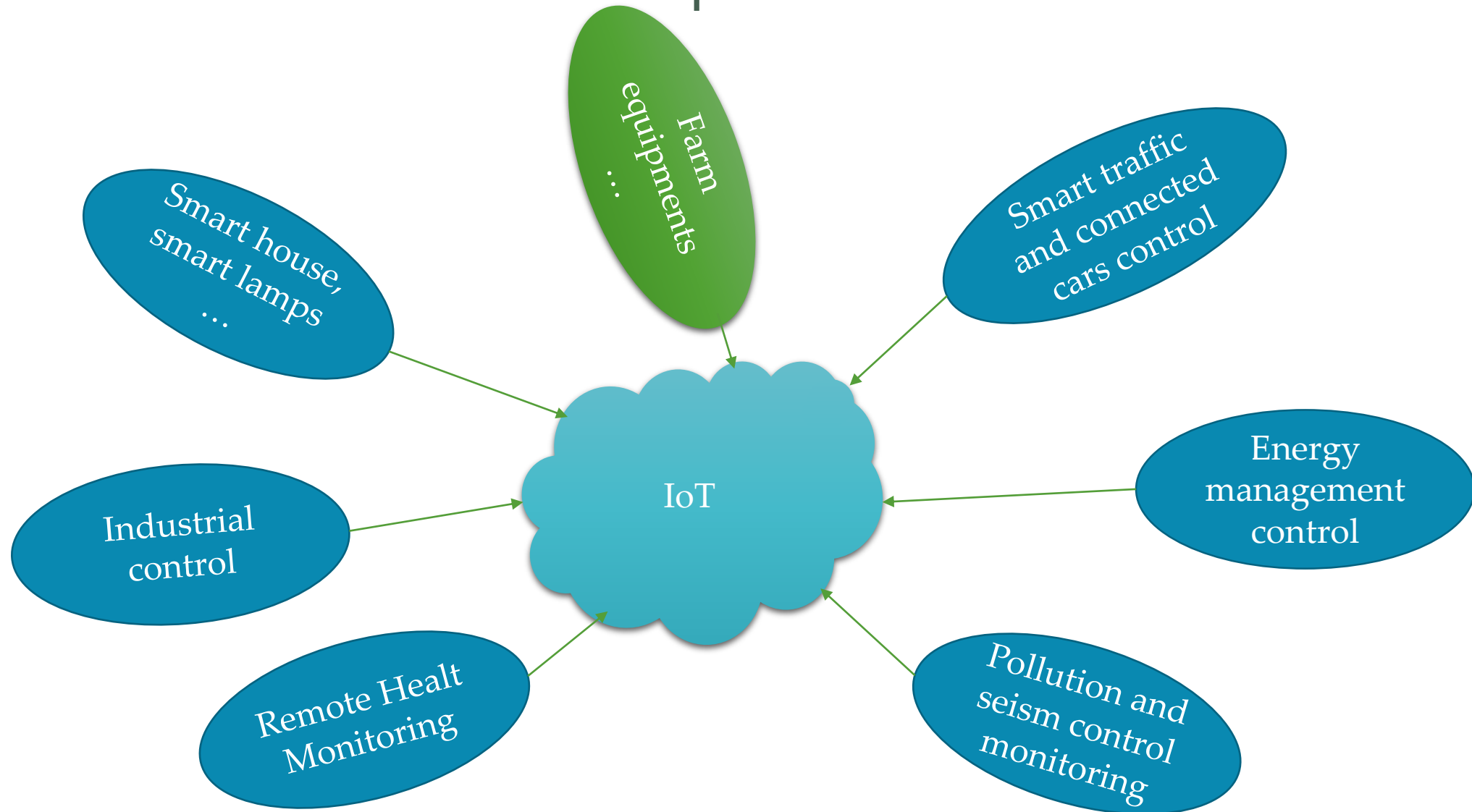
Outlines

- Brief Overview of Microsoft Azure
- Internet of Things
 - Microsoft Azure Architecture of IoT
 - IoT Hub
 - IoT Suite
- Case study: Connecting Beaglebone to Microsoft Azure iot
 - Remote Monitoring Solution
- Brief Overview of IoT machine learning
- Demo

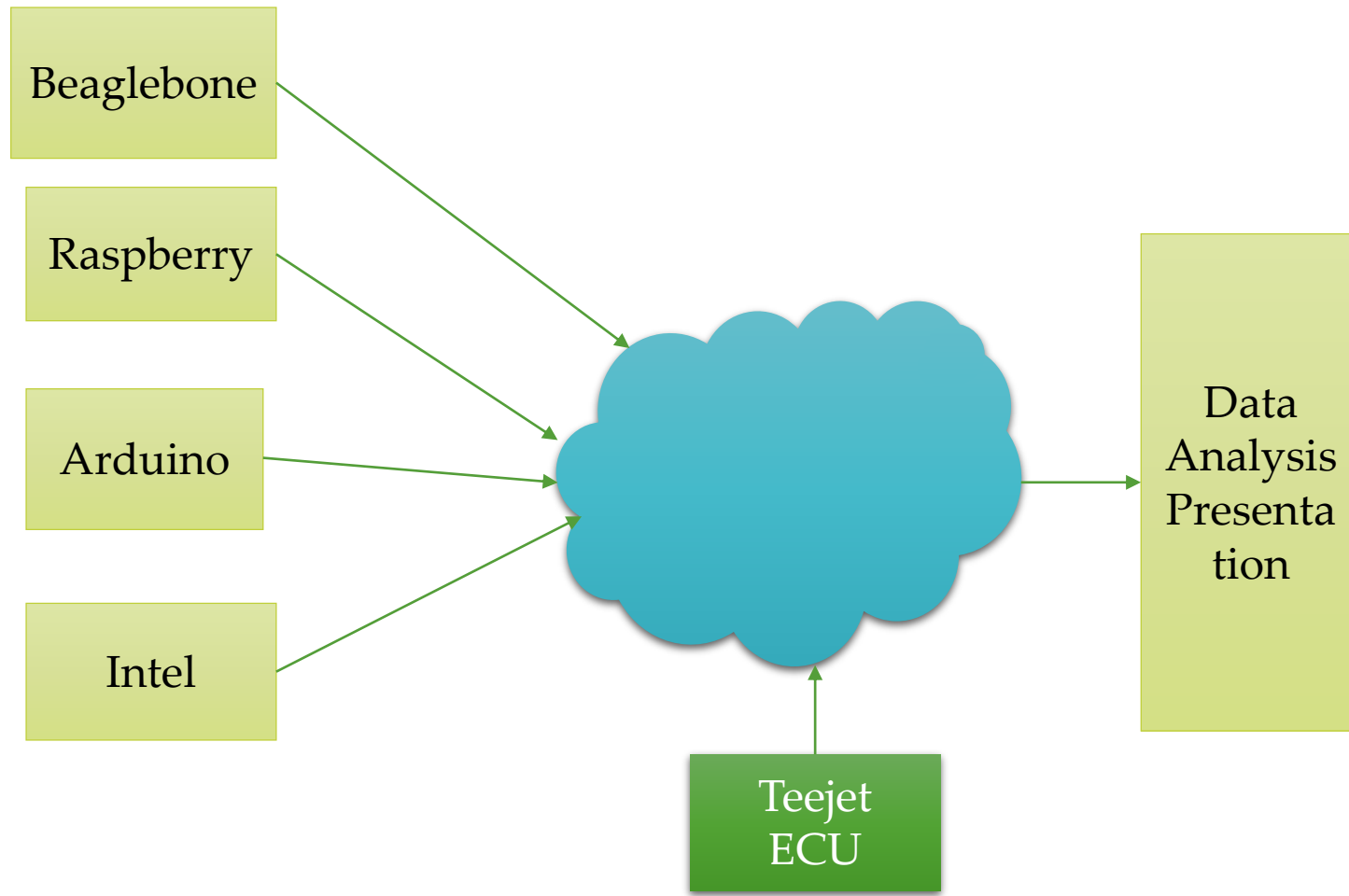
Internet Of Things (IoT)

- Internet of Things -> Network of things (Network of everything)
- Communication between devices without human interaction
- Internet Of Things -> Unsupervised System (Machine learning system)
- Cloud-device Communications network.

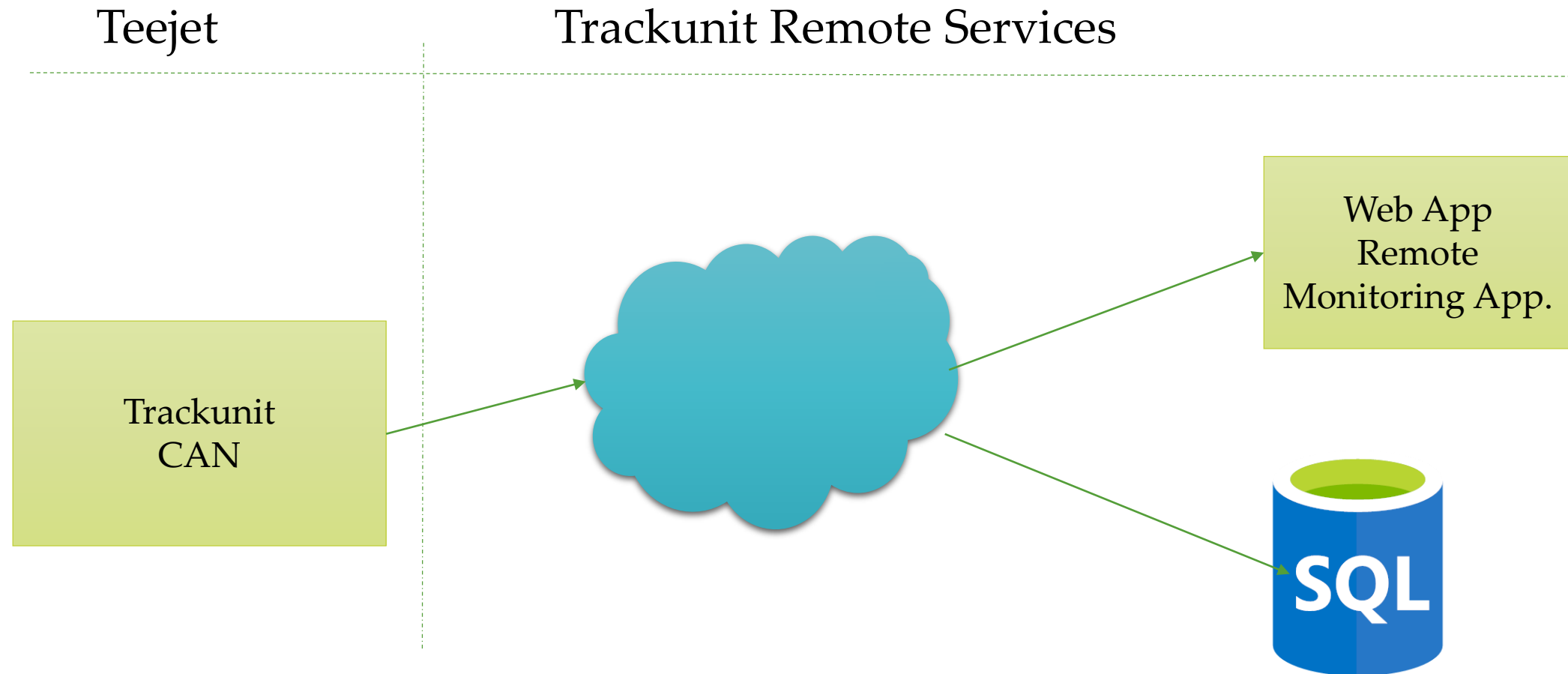
Examples of IoT



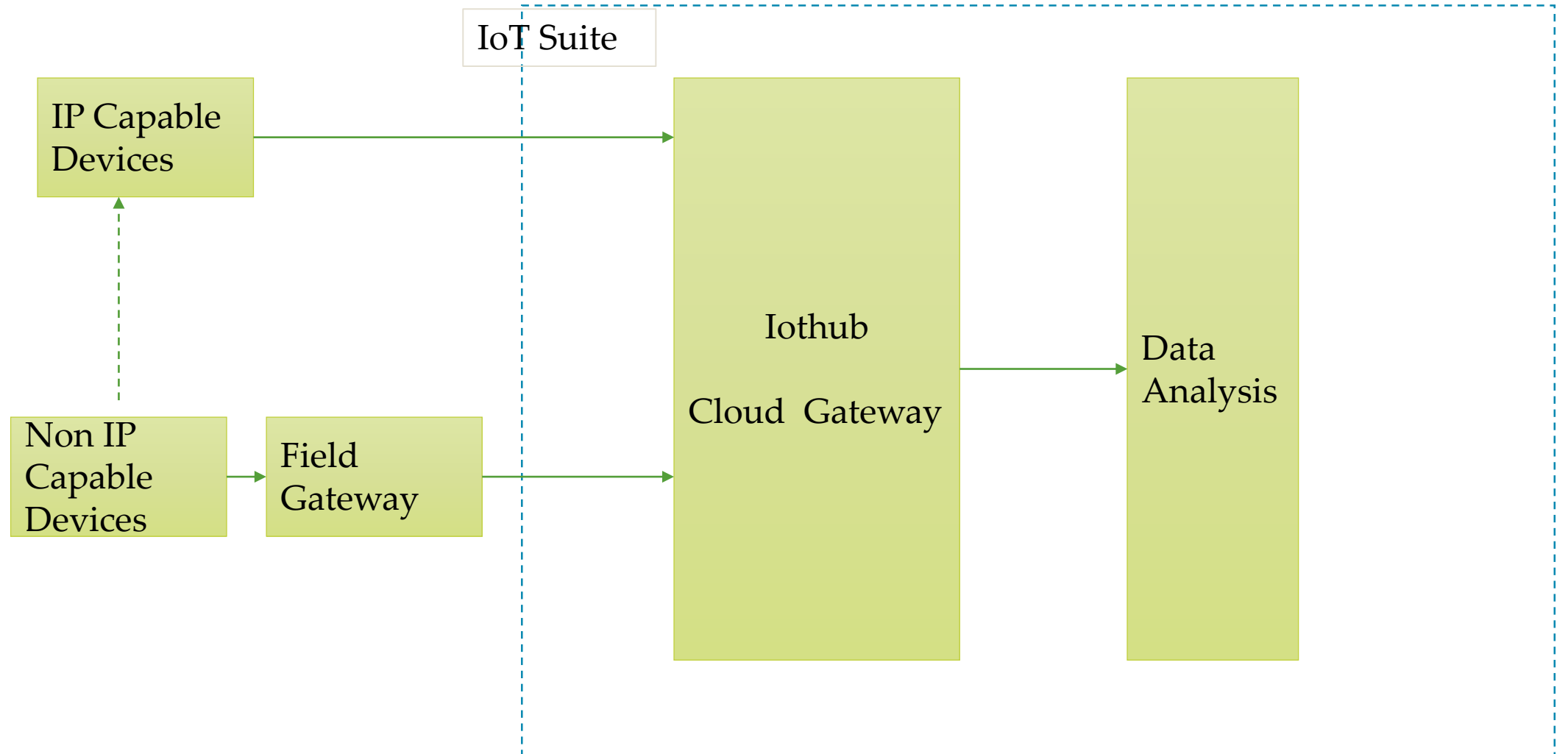
Examples of IoT (suite)



Example of IoT (suite)



Architecture of IoT



IoThub

- IoThub is a requirement of internet of things
- There is no cloud-to-device communication without iothub.
- IoThub is a kind of a gateway between devices and cloud.
- IoThub contains all the key parameters of the devices

Connecting Beaglebone IoT

- This step includes:
 - Set up of Beaglebone
 - Setup of programming environment for beaglebone (Linux Platform in our case)
 - Setup Azure Device and Client SDKs
 - Microsoft azure account
 - Creating and configuring an iot hub
 - Creating and configuring of a device on iot hub instance.
 - This process will be shown in the demo.

Microsoft iot suite

- Iot suite includes Iothub and is an end-to-end implementation of a specific scenario of iot solution.
- Iot Suite has three types of solutions:
 - Remote monitoring solutions
 - Connected factory solution
 - Predictive maintenance solution
- Creating and configuring of iot suite will be showing in demo.

IoT Suite Remote solution Types



Remote monitoring

Connect and monitor your devices to analyze untapped data and improve business outcomes by automating processes.

Select



Connected factory

Accelerate your journey to Industrie 4.0 – connect, monitor and control industrial devices for insights using OPC UA to drive operational productivity and profitability.

Select

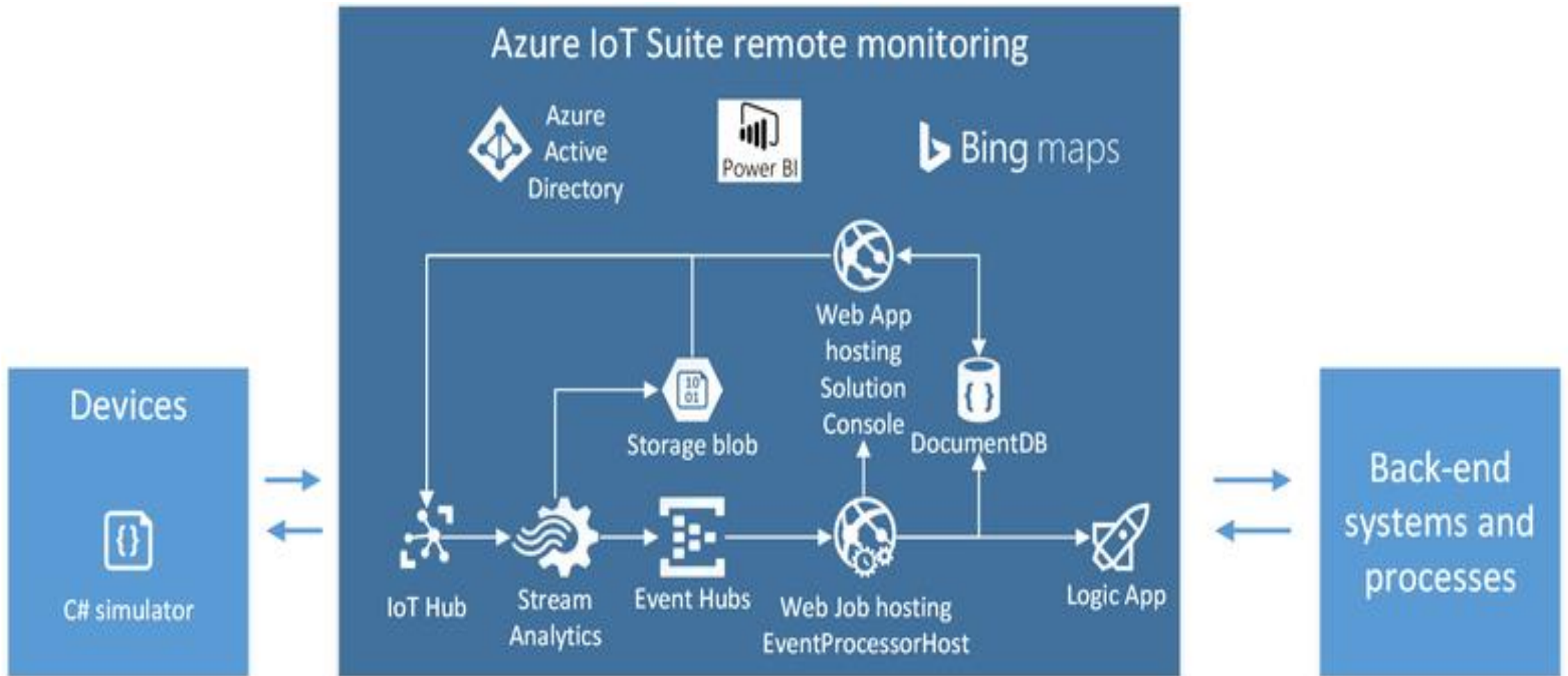


Predictive maintenance

Anticipate maintenance needs and avoid unscheduled downtime by connecting and monitoring your devices for predictive maintenance.

Select

IoT Suite Architecture



Remote monitoring solution

- Preconfigured Solution
- Remote monitoring with physical device.
 - Remote monitoring solution with Beaglebone Black Rev C.

IoT solution Deployment

- Local Deployment
- Cloud Deployment

Link and repositories on IoT

- References
 - Azure IoT Github repositories
 - Teejet Wiki Page



DEMO