

IoT Workshop

A dark blue, hand-drawn sketch of a bicycle is located in the bottom left corner of the slide. It is partially obscured by the text "IoT Workshop" and "6/10/2018".

IoT Workshop

6/10/2018



Changing how the
world connects.

Together.

**At OST, we help our customers
bridge the distance between
insights, technology, and strategy—
in smart, meaningful ways that
yield transformative results.**

Schedule



BEFORE LUNCH

9:00-10:00

Intro
Product Strategy

10:00-11:00

Architecture
Hardware
Tools

11:00-12:00

Cloud Connection
D2C Telemetry

AFTER LUNCH

1:00-2:00

C2D Messages/Direct Method Invoke
Device Twins
Alerts (if there's time)

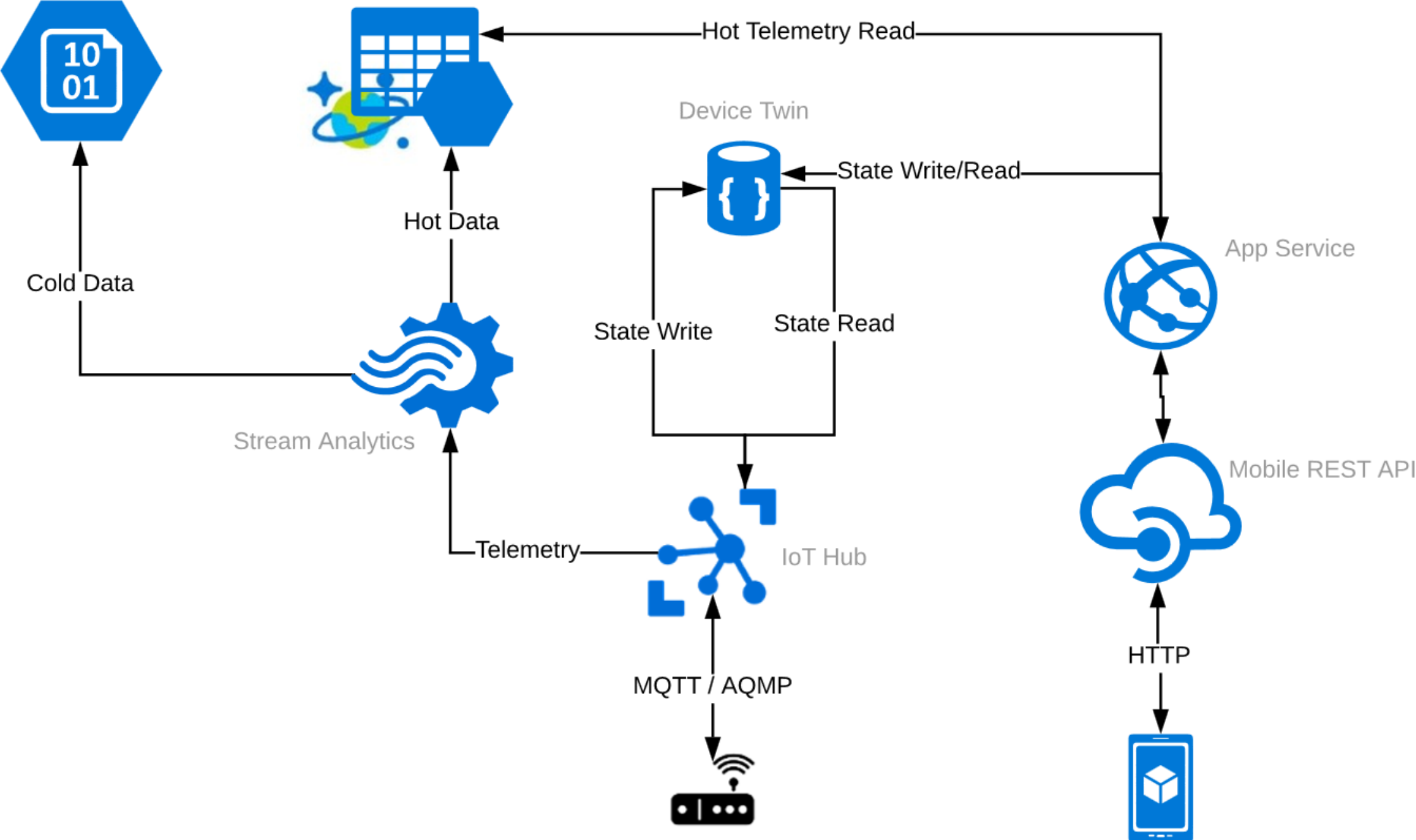
2:00-3:30ish

Data Principles
Streaming Analytics
Power BI

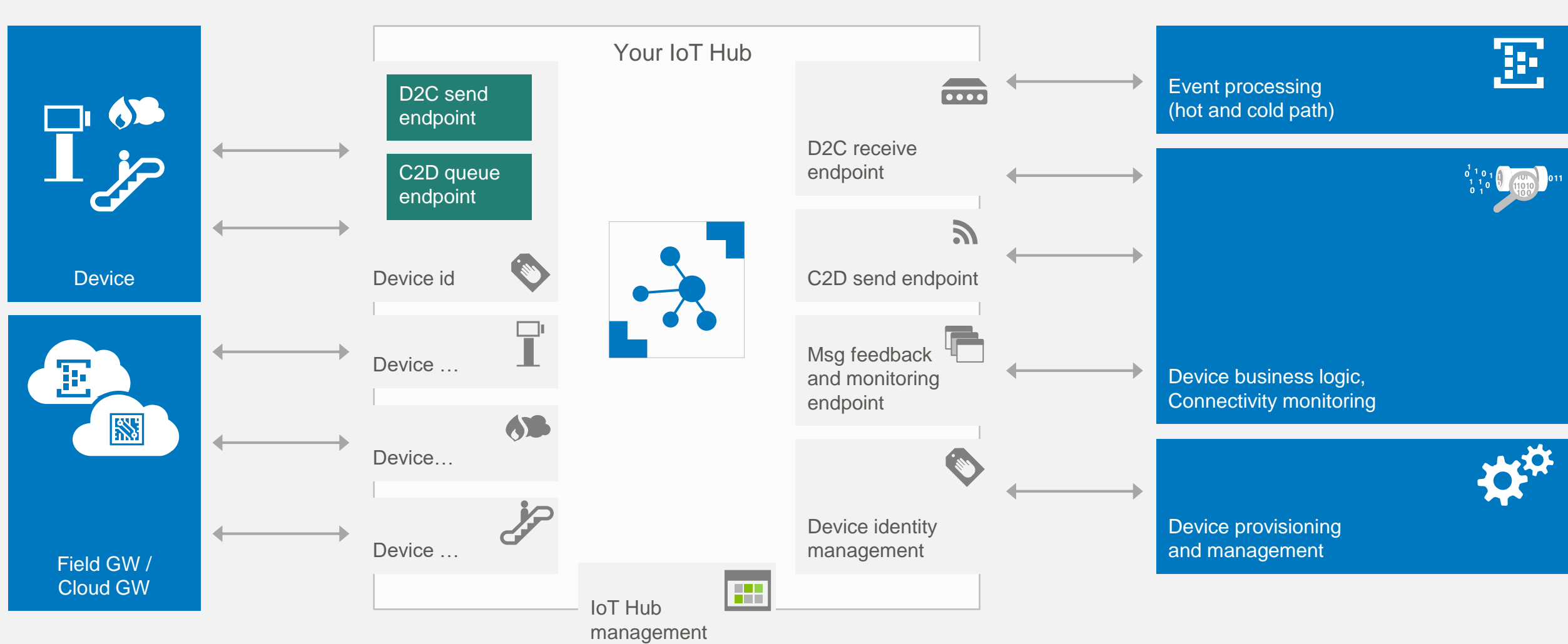


Architecture... via Patterns

1. Scalable Message Broker
2. Stream-based Routing
3. Hot vs. Cold storage paths
4. Desired / Reported state machine
5. Encapsulated consumer APIs



IoT Hub Endpoints



HARDWARE

Raspberry Pi 3

<https://www.raspberrypi.org/>

Grove Kit – sensor adapter

<https://www.dexterindustries.com/grovepi/>

TOOLS

Windows 10 IoT Core

IoT Dashboard

Service Bus Explorer

Device Explorer

Hardware Setup

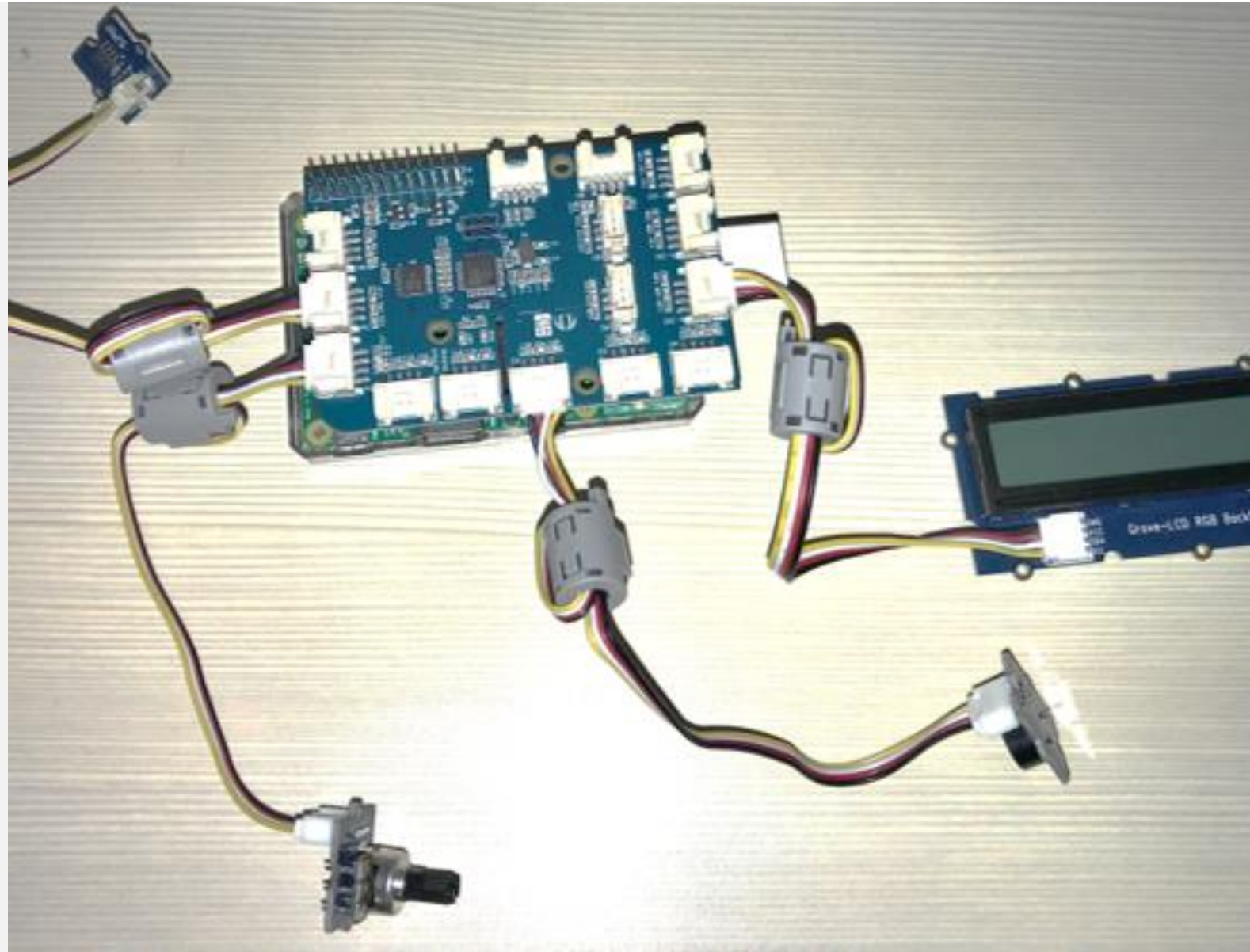
SENSOR CONFIG

Temperature: A1

Rotary Angle: A2

Buzzer: D2

LCD Screen: I2C-3



Connect & D2C

- Pull device id and key from Azure portal (1)
- Add credentials to startup code (1)
- Open DeviceClient (1)
- Register telemetry tick handler (2)

Direct Message & C2D

- Register direct message handler (3)
- Register cloud to device handler (4)
- Enable alert stream (global)
- Send >80 temp (4)

Device Twin

- Init Twin State
- Register Desired Handler
- Register Reported Update

WORKSHOP CODE

Device

<https://github.com/OSTUSA/iot-workshop-device>

Alerts

<https://github.com/OSTUSA/iot-workshop-alerts>

Simulator

<https://github.com/OSTUSA/iot-workshop-sim>

DOING MORE

OST Connected Products

<https://www.ostusa.com/expertise/connected-products/>

Windows 10 IoT Core Series

<https://youtu.be/A-kazyOiBvs>



Thank You!

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Together.

