Activity 5

IoT Platfoms Activity

AWS, IBM, Microsoft

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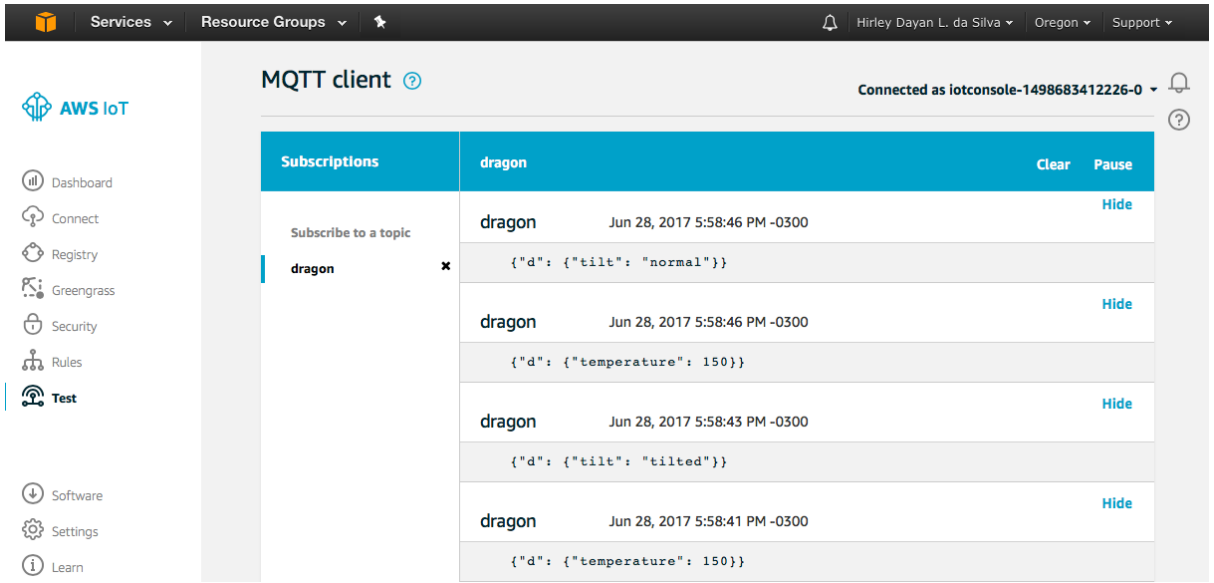
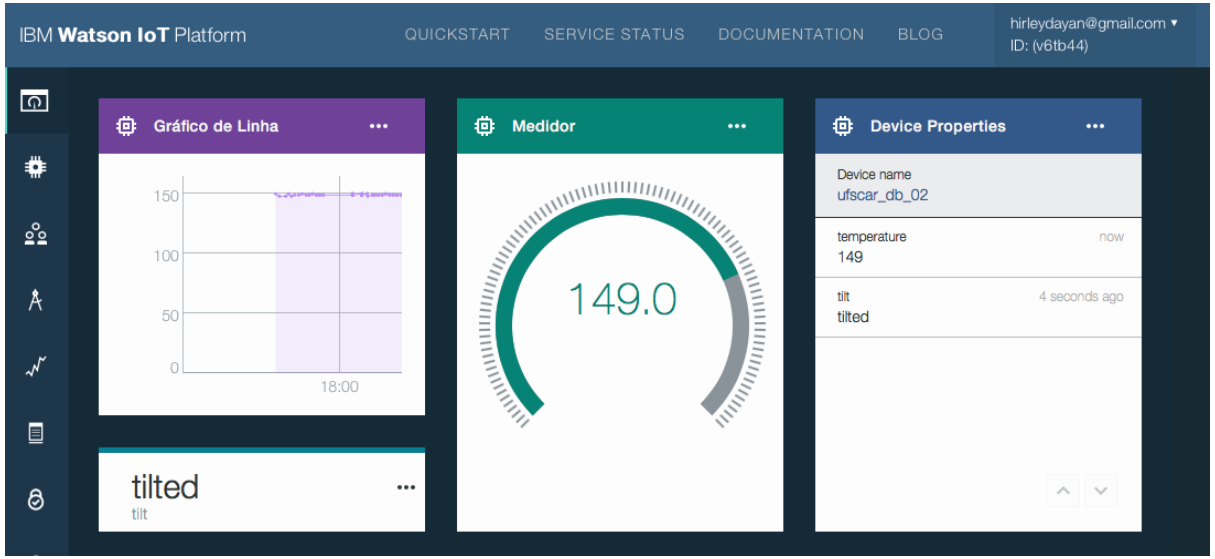
Exercise 1 and Exercise 3

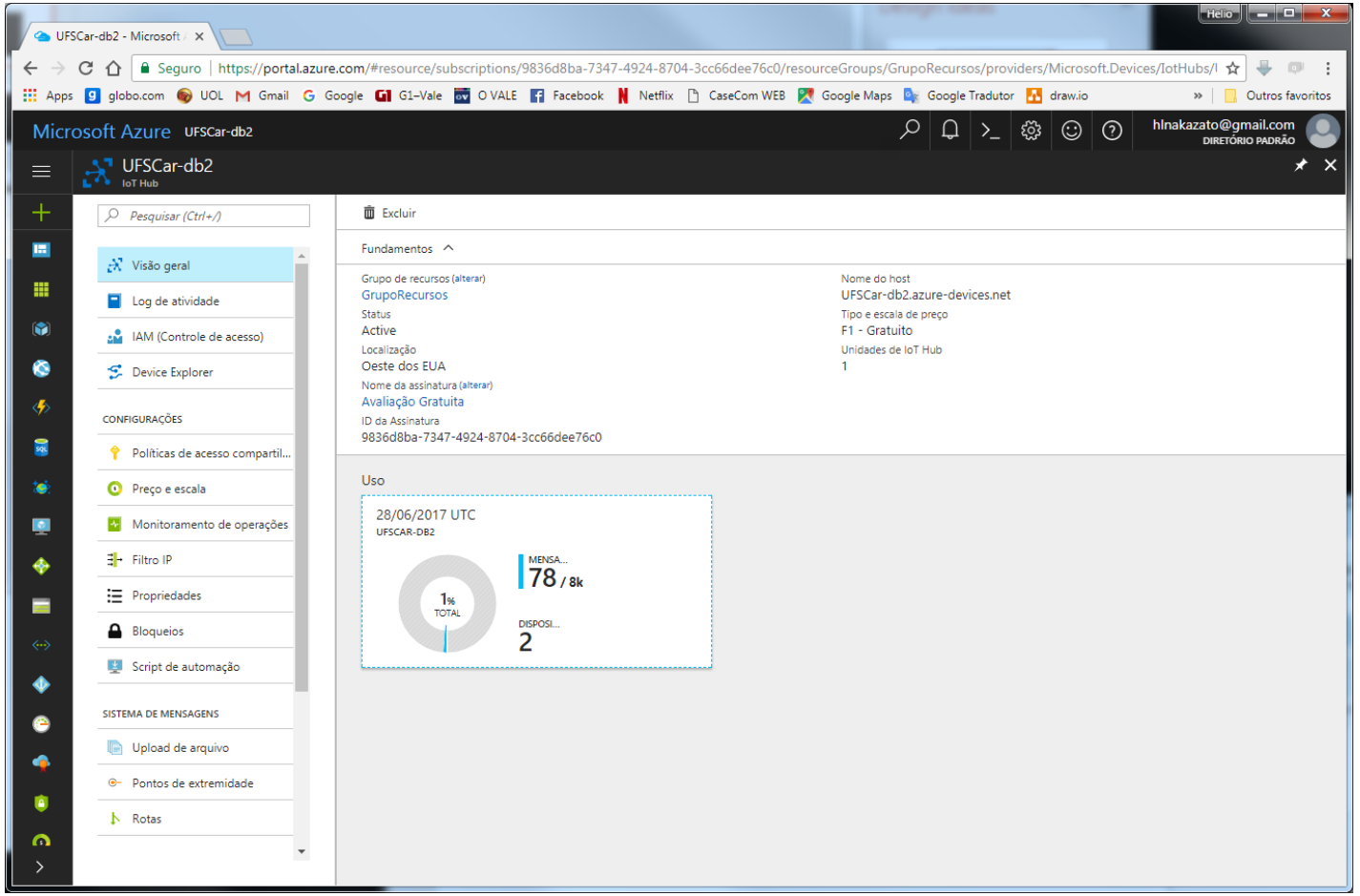
- Two sensors, one for temperature and another for tilt, had the status collected and published, using MQTT, to AWS IoT Platform and IBM IoT Platforms.
- Instead of using AWS and IBM SDKs, it was chosen to use *paho* library so that code could be reused for both AWS and IBM platforms.





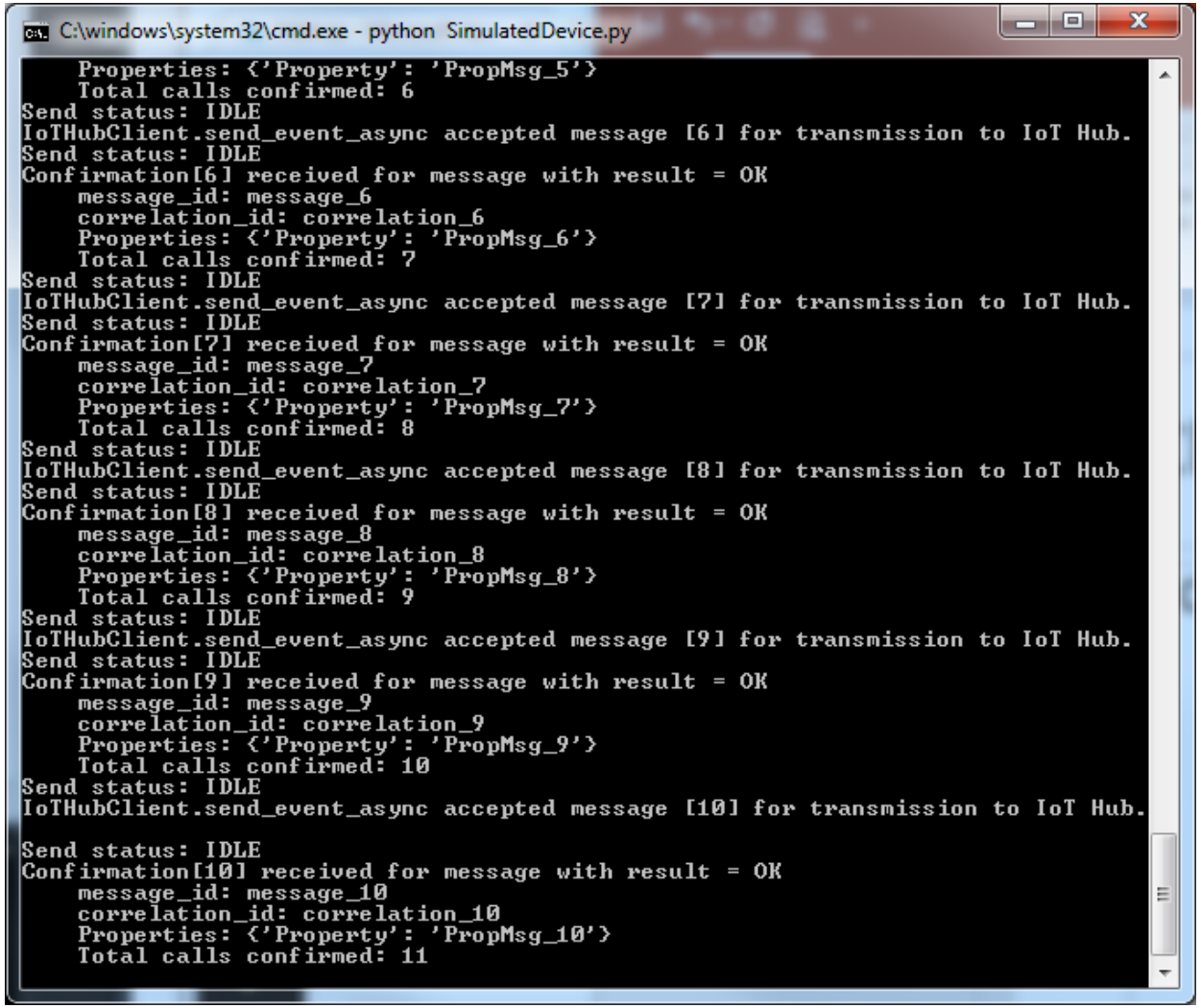
Exercise 2 - Microsoft IoT Hub

- Account created
- Host created (UFSCar-db2.azure-devices.net)
- New device (TemperatureDevice) created
- Primary key: xRQV5mqMaBU46rSoB2X8PS4/D98dIED1wJSFjvlM6Wo=



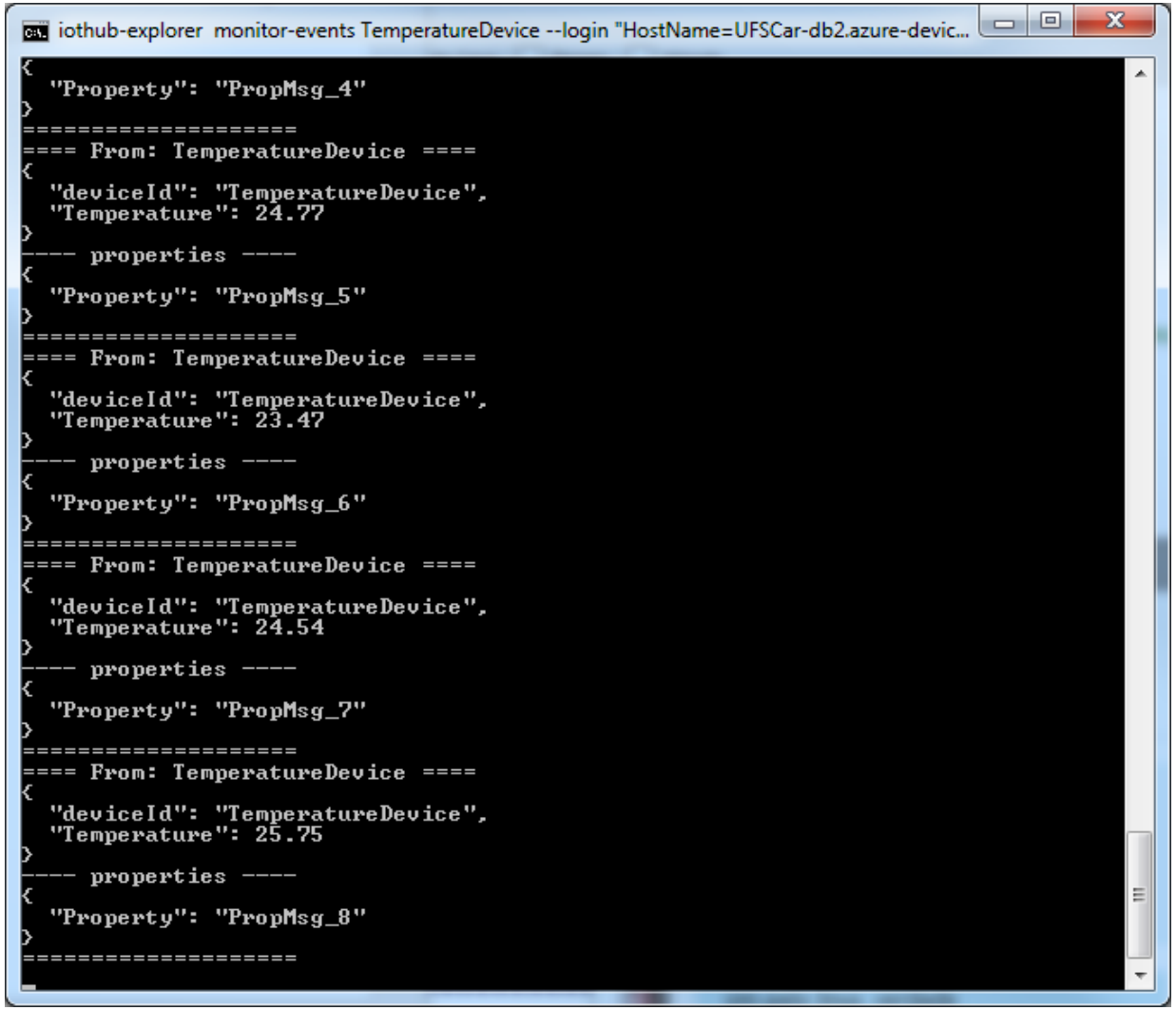
Exercise 2 - Microsoft IoT Hub (Simulated)

- Python code created (SimulatedDevice.py) to simulate AMQP messages being sent to Microsoft IoT Hub Based on the tutorial: https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/iot-hub/iot-hub-python-getstarted.md



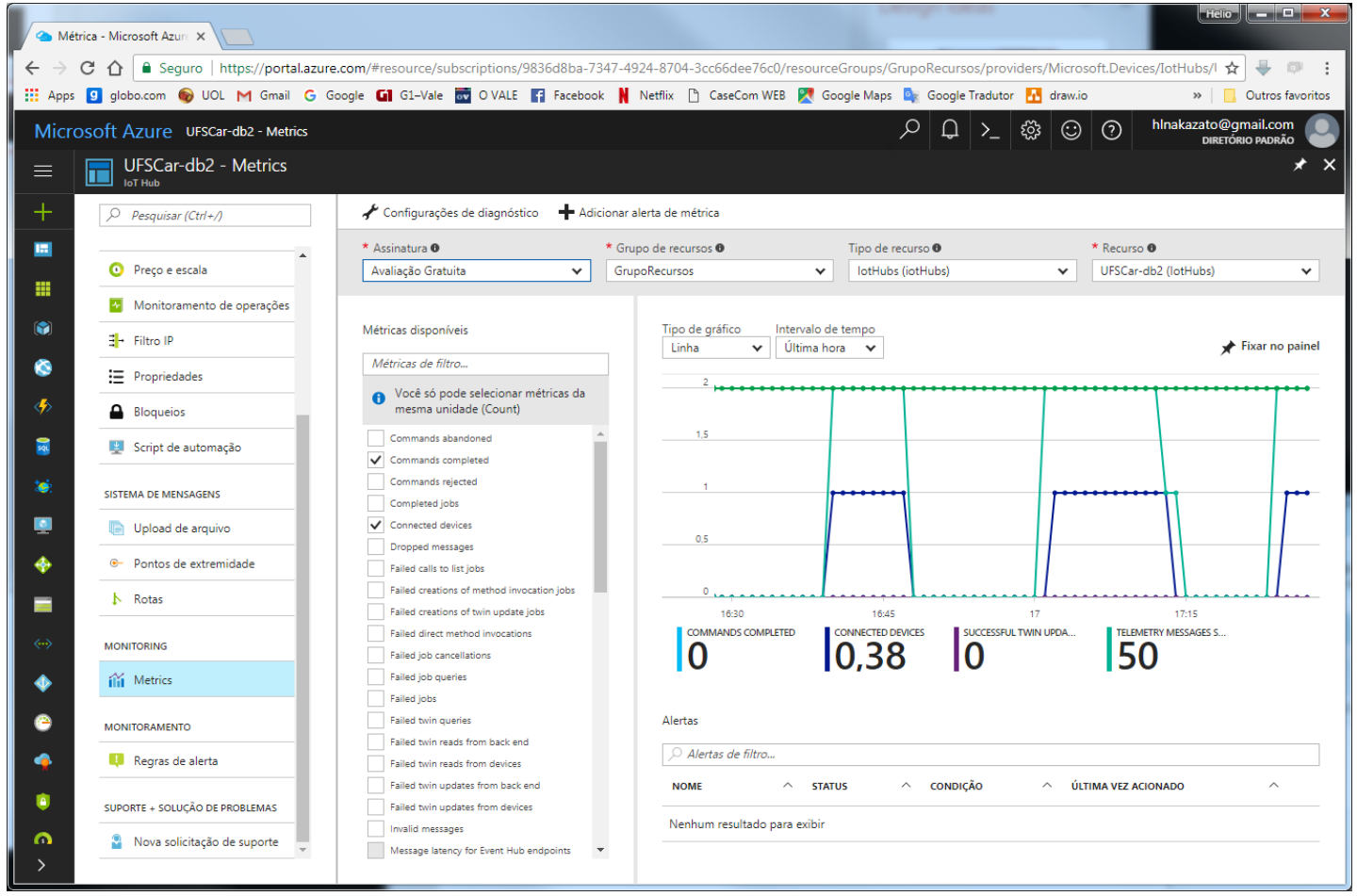
Exercise 2 - Microsoft IoT Hub (Simulated)

- Install IoT Hub Explorer to receive messages from IoT Hub
  npm install –g iothub-explorer
- Run the following command to start monitoring
  iothub-explorer monitor-events TemperatureDevice –login “[IoTHub connection string
- Messages can be seen in the screen



Exercise 2 - Microsoft IoT Hub (Simulated)

- In Microsoft IoT Hub it is possible to check the messages received/sent



Exercise 2 - Microsoft IoT Hub (Simulated)

- Our impressions after working with Microsoft IoT Hub
  - Not easy to setup
  - Works better (to not say only) on Windows environment since Python libraries “azure-iothub-service-client” and “azure-iothub-device-client” are currently available only for Windows (ref https://docs.microsoft.com/en-us/azure/iot-hub/iot-hub-python-getstarted). **That is the reason to not run it on Dragon Board**.
  - An attempt was tried to compile the libraries for Linux, following the guideline in https://github.com/Azure/azure-iot-sdk-python/blob/master/doc/python-devbox-setup.md, however **“memory unavailable” error was raised even working with 4GB RAM**.
  - Poor dashboard compared to other tools, like IBM and Amazon. For instance, there is no dashboard to see the data coming from the devices.