

IT301 μ From IoT Devices to the Cloud with the IBM Node-RED Tool

Coding 3: Deploying a dynamic dashboard with Node-RED

This assessment evaluates the following competencies:

- *IT102 – Write and launch a program with the Node-RED tool* (+1)
- *IT301 – Design a dashboard showing the value of a hardware sensor* (+2)
- *WP501 – Define, launch and test an HTTP server* (+1)

You may also be assessed on the following competencies:

- *IT501 – Debug and test a Node-RED program* (+1)

In this coding assessment, you have to create a dynamic dashboard to display data that are sent to an HTTP endpoint you have to define. To simulate data coming from a hardware device, you have to use a Python program that sends data from three sensors (temperature, humidity and tank level) on a regular basis to an URL you can configure¹. The Python program sends a JSON document to the `POST /api/measures` route and it should only be taken into account if the `valid` field is set to `true`.

To succeed the assessment, you have to:

1. Define an HTTP endpoint for the `POST /api/measures` route that just send all the received messages to a `debug` node.
2. Run the Python program and examine what is printed on the debug window.
3. Design your dashboard, with the output widget you think are the most relevant to display the temperature, the humidity and the tank level.
4. Explain to the teacher how you designed your Node-RED program and your dashboard and show him/her how it is working.

You may want to have several output widget for a single value. Also, you may want to additionally backup the data received, in one or several text files, for example.

¹The code can be found here: <https://github.com/ukonline/uCourse/blob/master/IT301%C2%B5/code/sensorsim.py>