Create the necessary framework for successfully creating the course

Instructions

In this assignment we want to make sure that every student has successfully setup the runtime environment in order to successfully complete the course.

This involved the following steps:

1. Create an account on IBM Bluemix

2. Deploy the Watson IoT Starter Boilerplate

3. Export the sample flow to a file and submit it to the grader

4. Setup the ApacheSpark and Jupyter based Data Science Experience Workbench

5. Export the sample notebook to a file and submit it to the grader

Create an account on IBM Bluemix

IBM Bluemix is the name for all IBM Cloud offerings. In this course we will concentrate on IBM's Platform as a Service (PaaS) cloud offering. The following components will be used:

• Cloudfoundry – a flexible, open standard, open source runtime environment for PaaS

• NodeRED – the open source data flow editor and runtime running on top of Node.js

• Cloudant – the IBM NoSQL database as a service (DBaaS) offering based on open source ApacheCouchDB

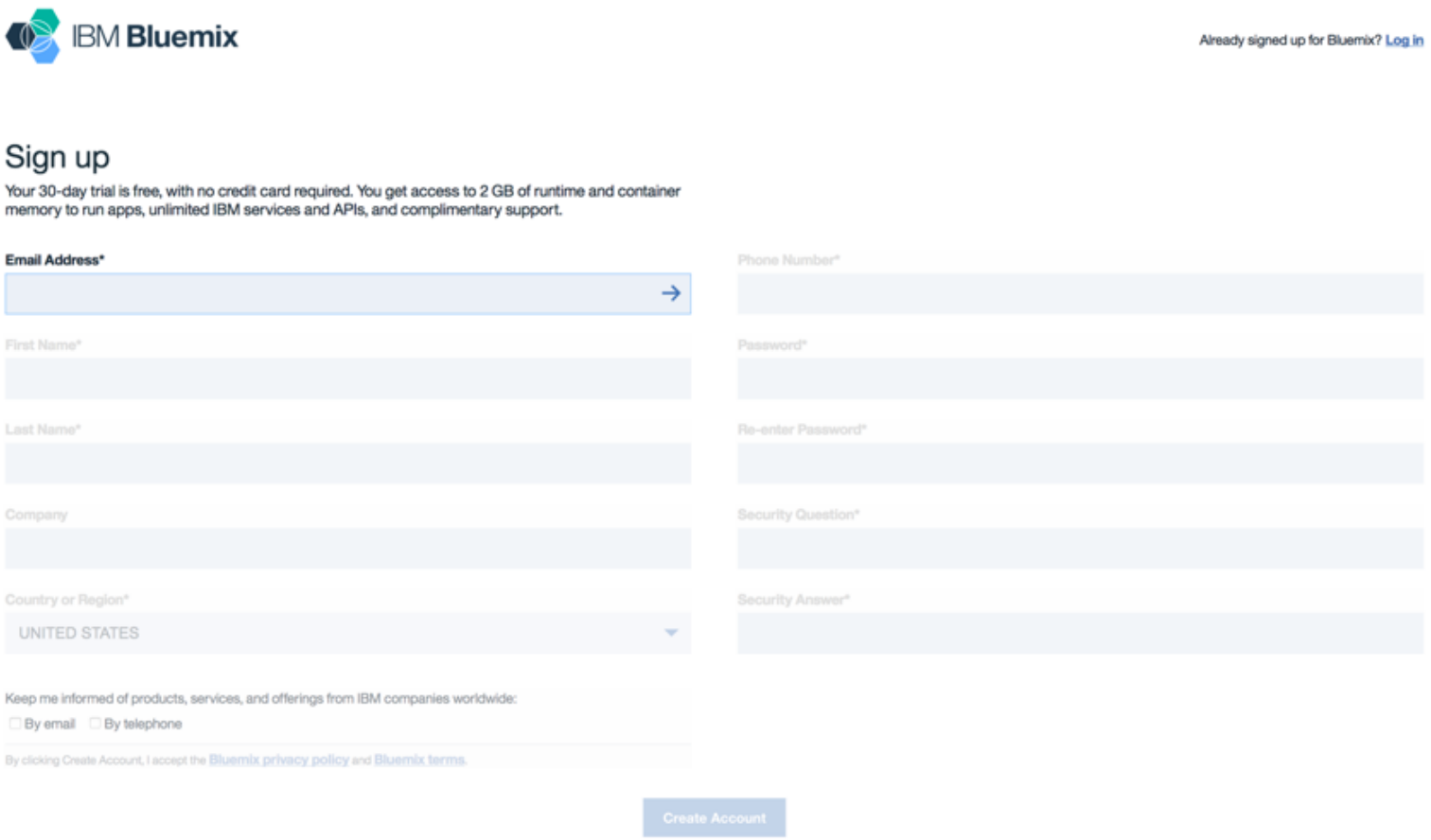
• ApacheSpark as a service

• Watson IoT Platform – among other functionalities it provides a scalable, open standard (MQTT) based publish-subscribe messaging hub for integration of IoT devices

Please follow these instructions:

1. Open the following URL to create a free IBM Bluemix account (not needed if you already have one)

http://ibm.biz/joinIBMCloud



2. Open the following URL and login with you newly created account

http://bluemix.net/

and please accept the T&Cs

Terms and conditions

1 — 2 — 3 — 4

To continue, read and agree to the Terms and Conditions for your unified account.

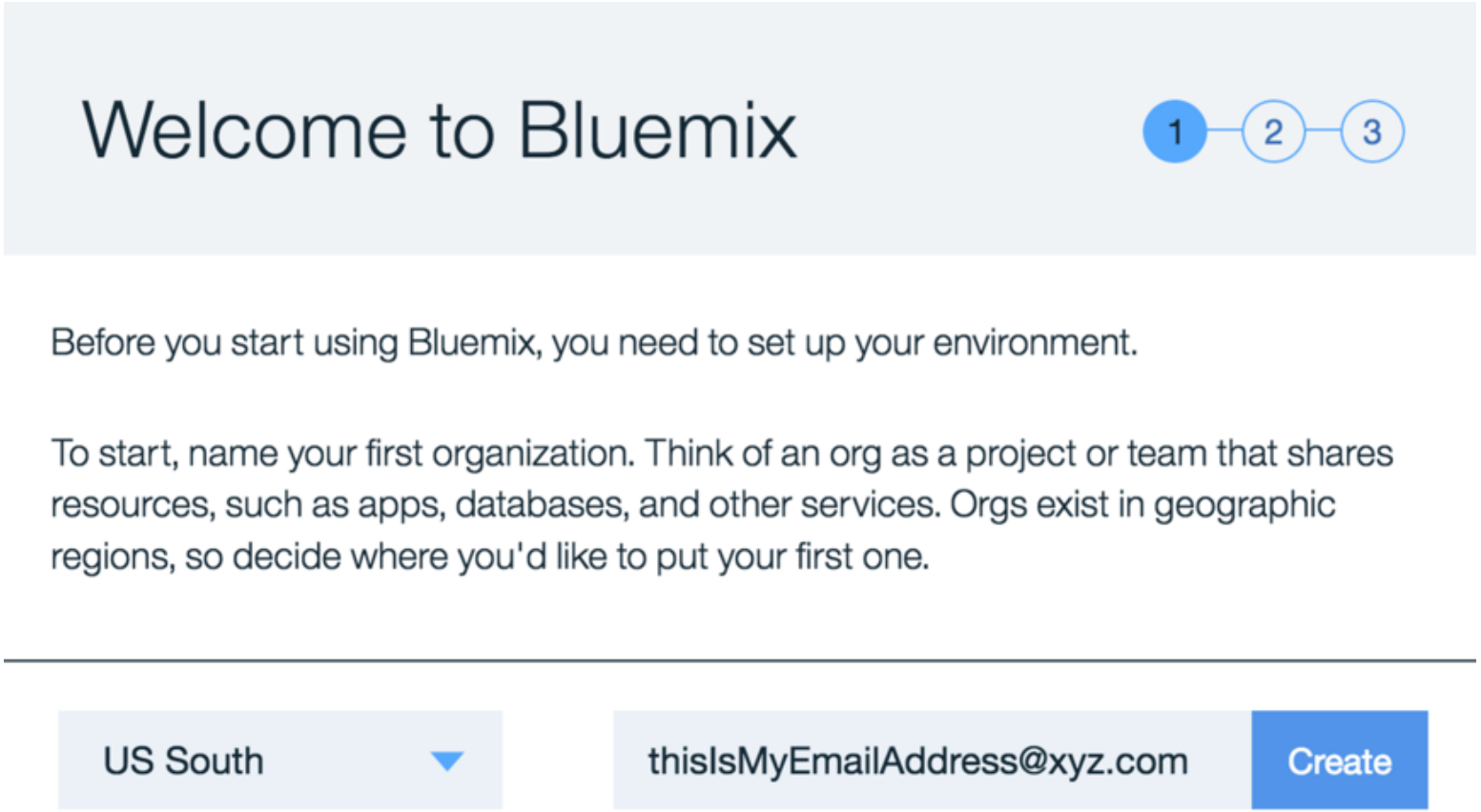
☑ I understand and agree to the terms and conditions

Cancel | Continue

LOG OUT | SUPPORT

3. When logging in for the first time you are asked to create an organization (we'll explain next week what this means)

!!! PLEASE MAKE SURE YOU'RE USING US South or United Kingdom as region since the Watson IoT Platform is not yet available in the other regions !!!



Choose US South and enter your email id (e.g. thisIsMyEmailAddress@xyz.com, then click on create

4. When logging in for the first time you are also asked to create an virtual space (we'll explain next week what this means as well)

Create Space

1 — 2 — 3

Now, let's get you set up with a space.

Spaces help you manage access and permissions for a set of resources, and map nicely to development stages like dev, test, and prod. Name your first space now—you can add more spaces later.

Org name: thisIsMyEmailAddress@xyz.com

dev

Create

NEED SOME SUGGESTIONS? TRY THESE

Choose US South and enter dev, then click on create and you should see the last screen

Summary

1 — 2 — 3 — 4

Good to Go!

You're up and running with your first org and space. Are you ready to get started with Bluemix?

Org name: xxy.1.ormium@spamgourmet.com

Space name: dev

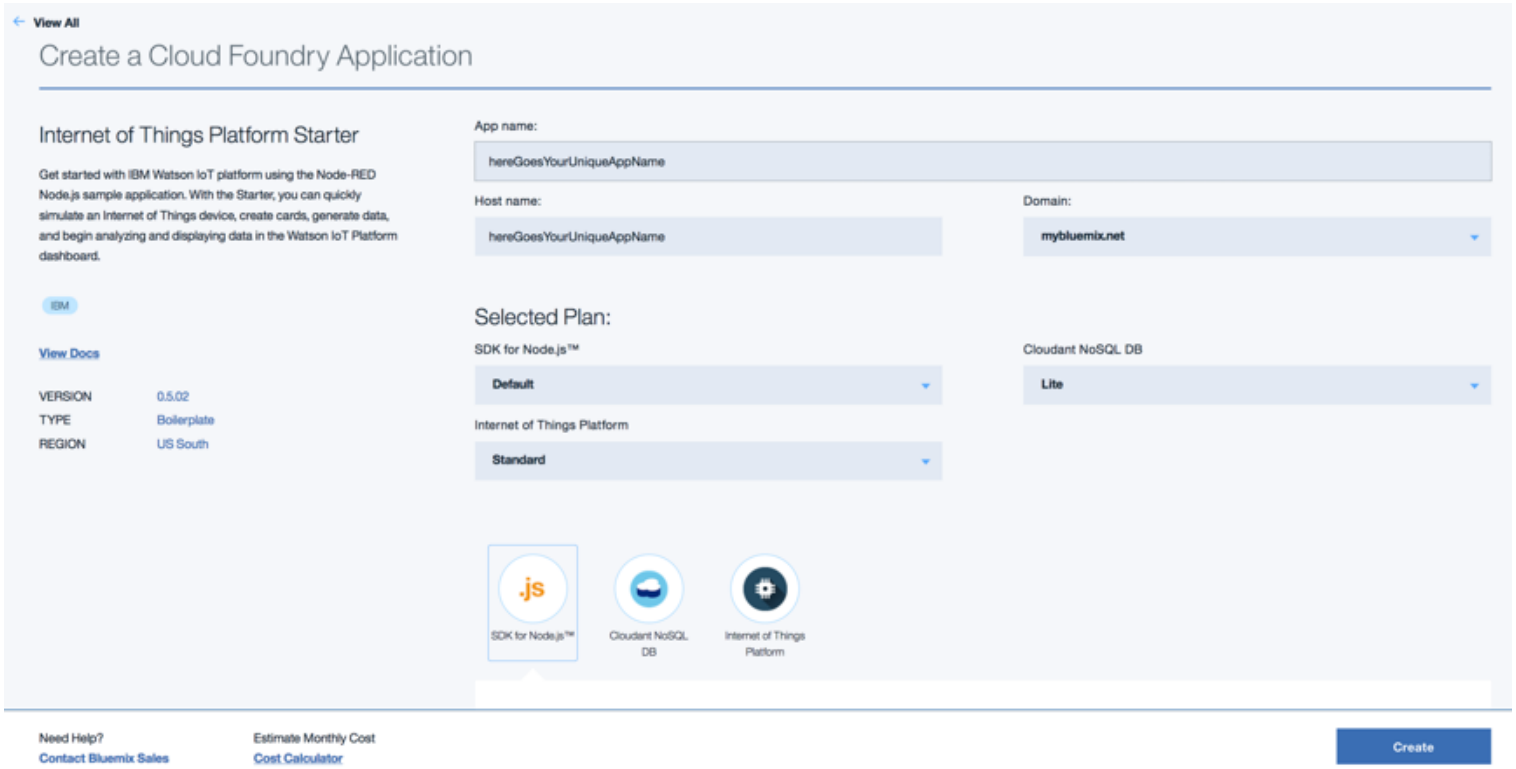
I'm Ready

Click on "I'm Ready"

5. Click on I’m ready, congratulations, you are done with the first part

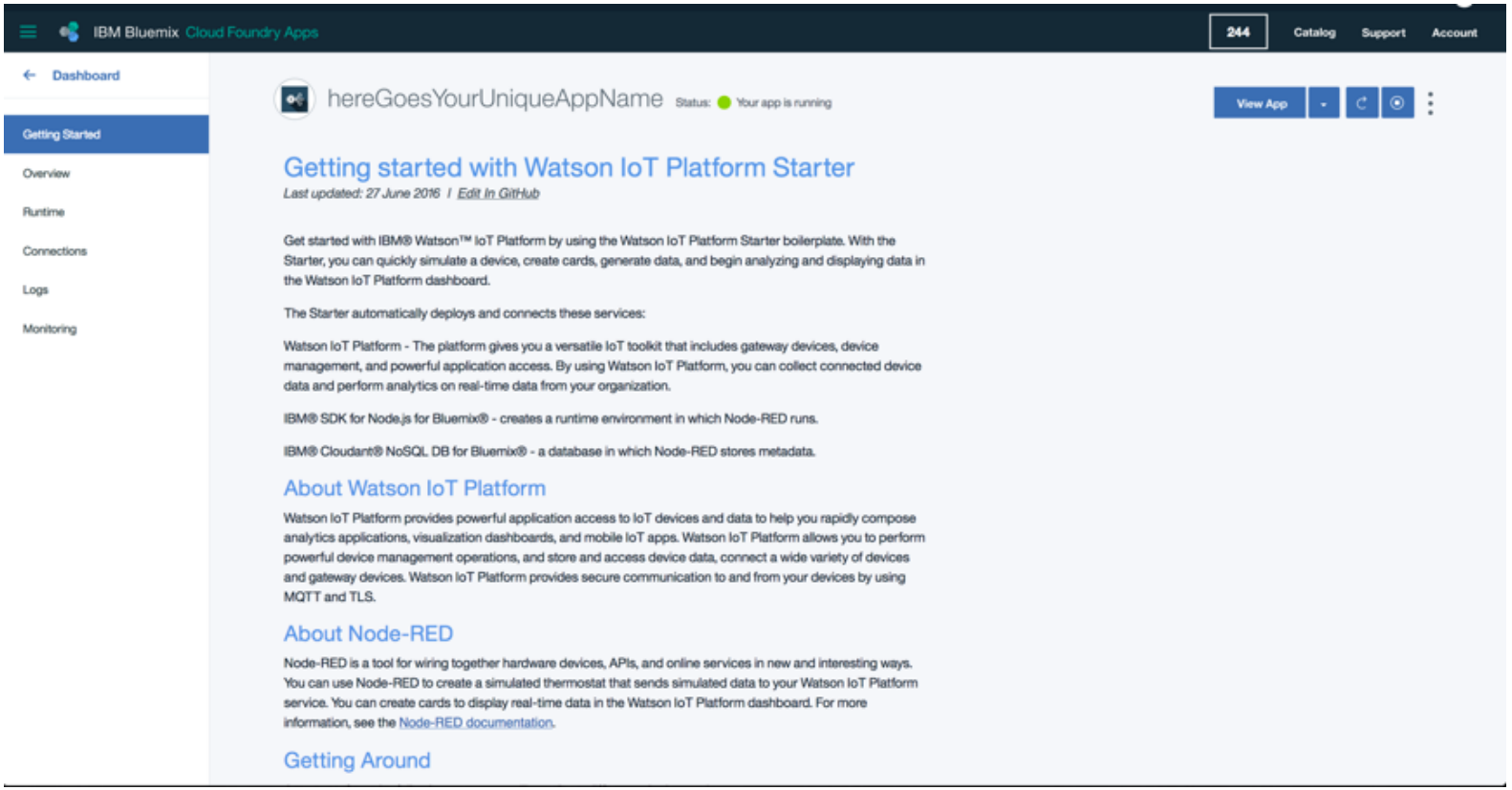
Deploy the Watson IoT Starter Boilerplate

1. Deploy the IBM IoT Starter Boilderplate by opening this link https://console.ng.bluemix.net/catalog/starters/internet-of-things-platform-starter



Enter a name for your app – take a name you can remember, as it becomes part of the URL your app is deployed. Note: Since all apps per default are sharing the same top level domain you name might have already been taken. In this case simply choose another name. Then click on create

2. You should see a screen like this:



Click on “View App” (after deployment has been finished)

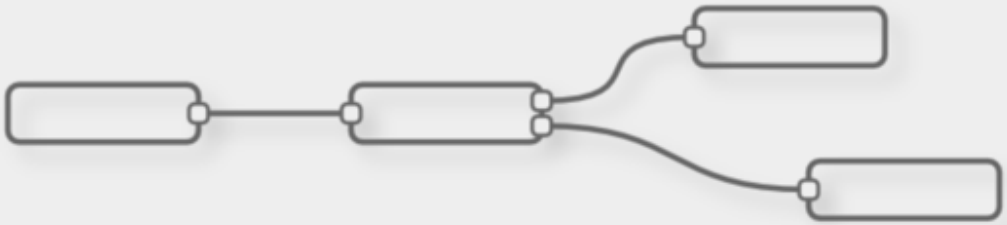
3. You now should see the welcome screen of NodeRED, the open source data flow editor, click on “Go to your Node-RED flow editor”

Node-RED in Bluemix for IBM Watson IoT Platform

Node-RED in Bluemix

A visual tool for wiring the Internet of Things

IBM Watson IoT Platform



Node-RED provides a browser-based editor that makes it easy to wire together flows that can be deployed to the runtime in a single click.

The version running here has been customized for the IBM Watson IoT Platform.

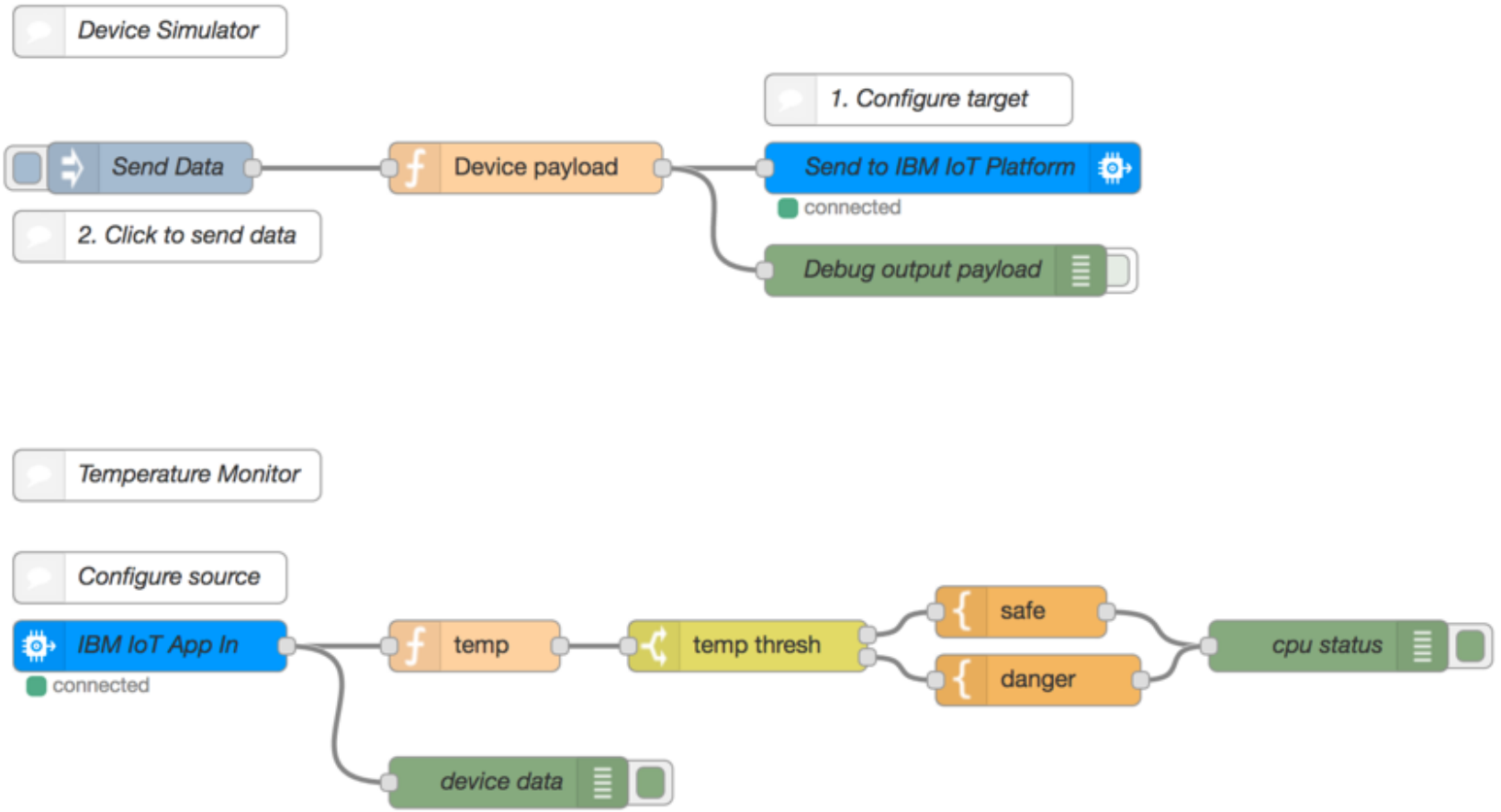
We strongly suggest you secure your Node-RED flow editor with a username and password, as otherwise anyone who can guess the URL of this application will be able to launch the flow editor and access your IoT device data.

Go to your Node-RED flow editor

Learn how to password-protect your instance

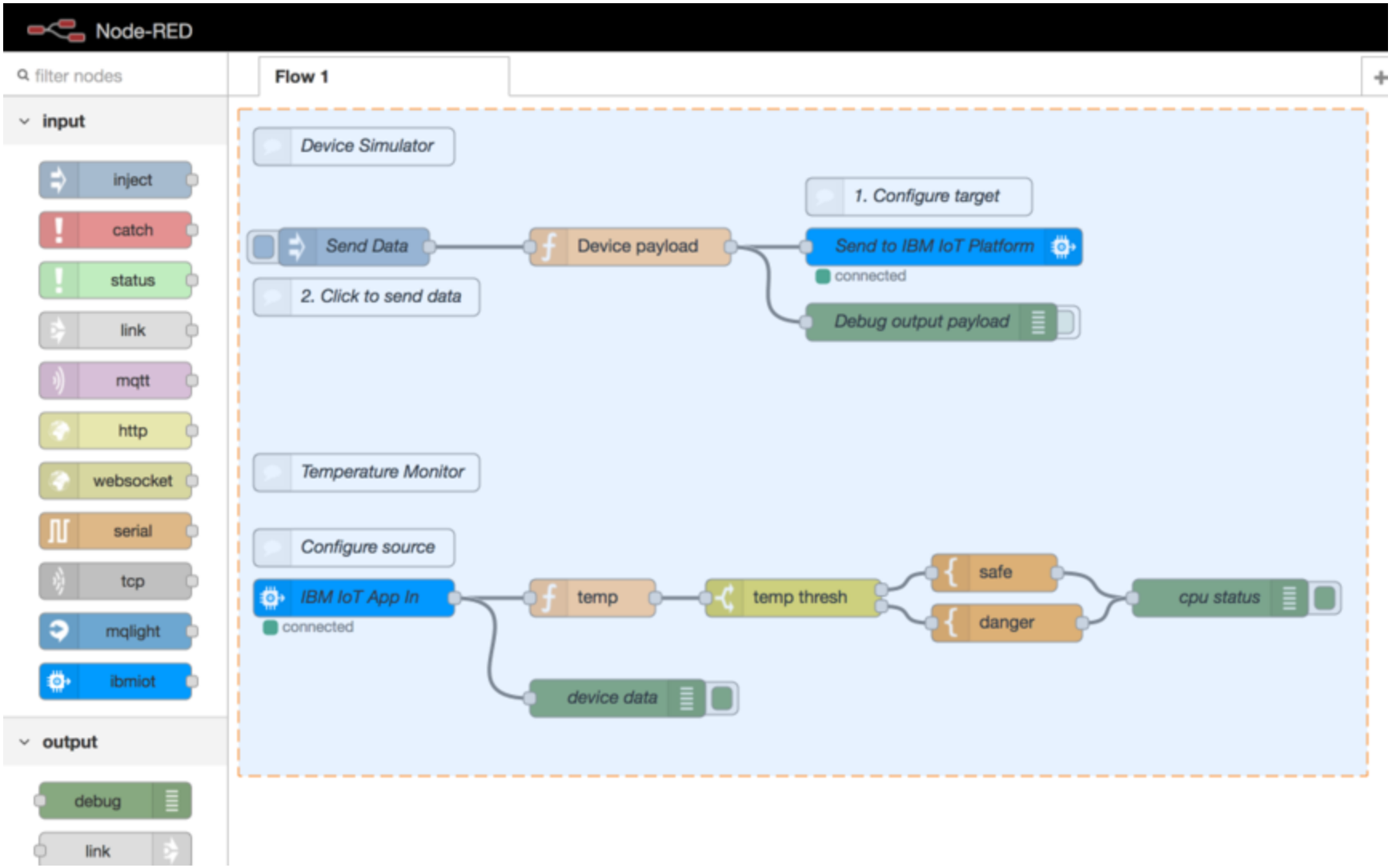
Learn how to customise Node-RED

4. Now you can see the a sample flow – no worries – we won't ask any questions about this at this time

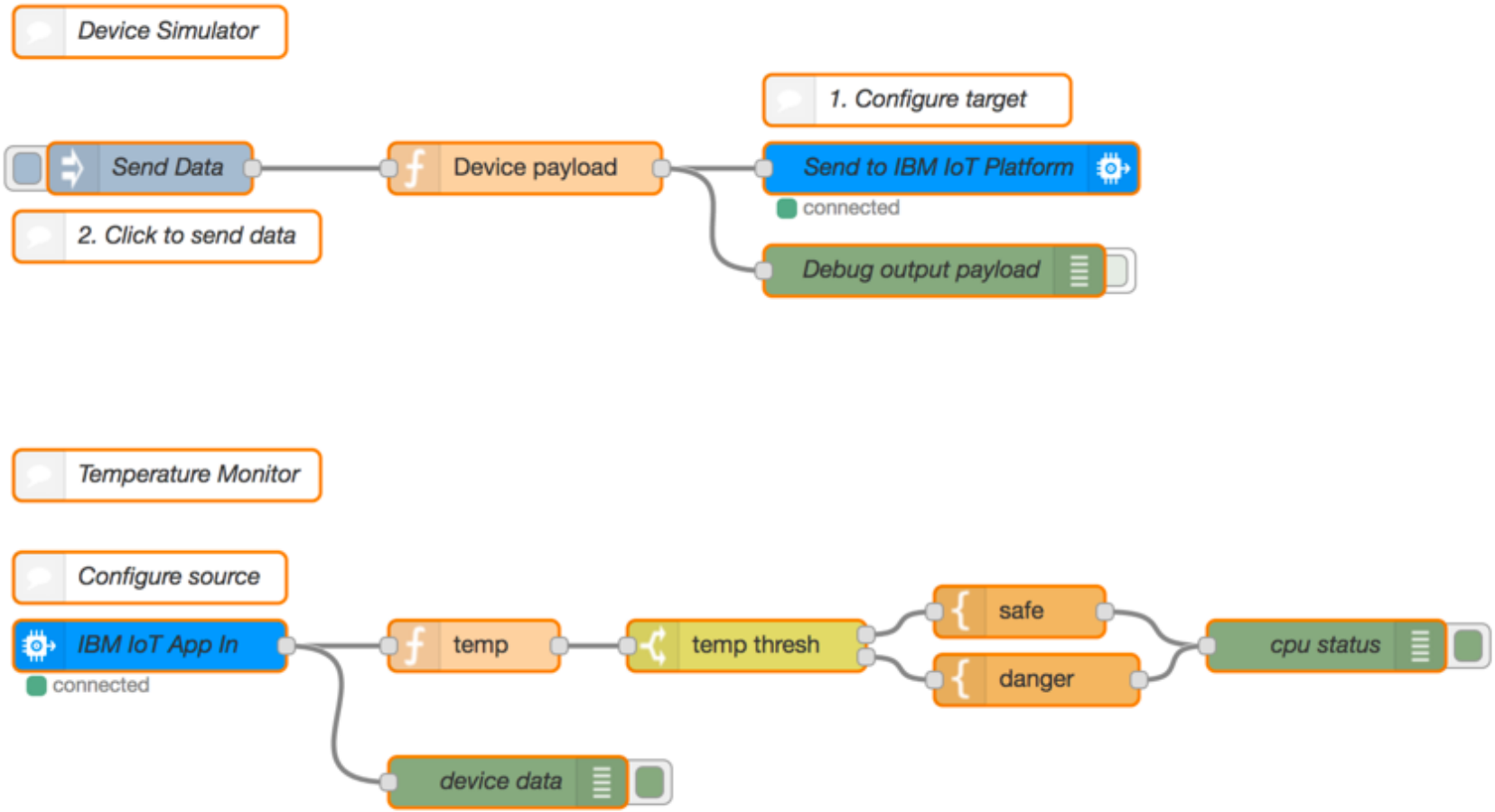


5. Just select the complete flow by positioning your mouse pointer at the top left corner of the flow, press the left mouse button and drag it diagonally to the bottom right corner, then release it. Make sure all elements of this flow are selected

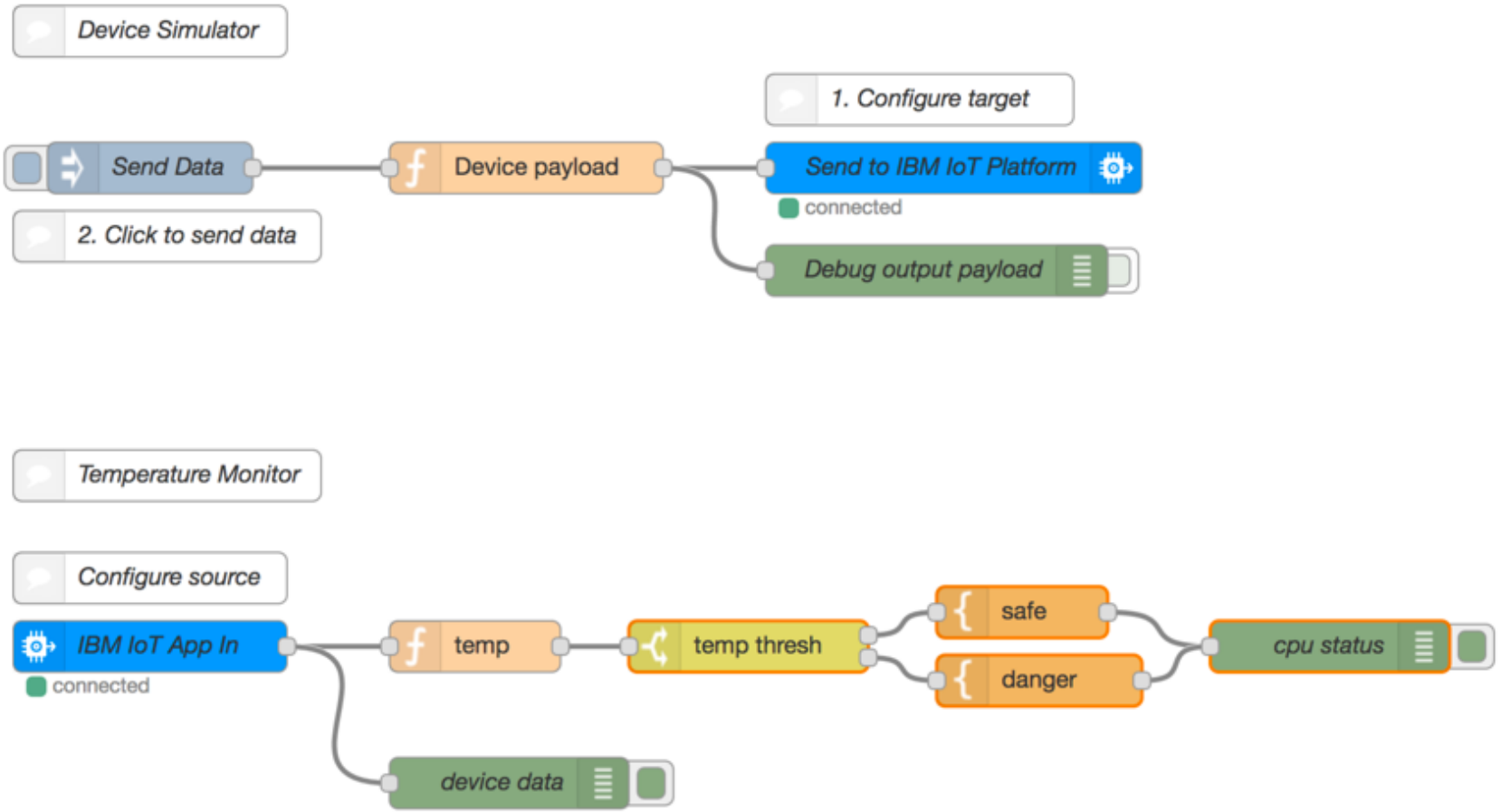
Important hint: DON'T USE CTRL-A for selection, it returns a different JSON !!!


Node-RED
filter nodes
Flow 1
input
inject
catch
status
link
mqtt
http
websocket
serial
tcp
mqlight
ibmiot
output
debug
link
Device Simulator
1. Configure target
Send Data
Device payload
Send to IBM IoT Platform
connected
2. Click to send data
Debug output payload
Temperature Monitor
Configure source
IBM IoT App In
connected
temp
temp thresh
safe
danger
cpu status
device data

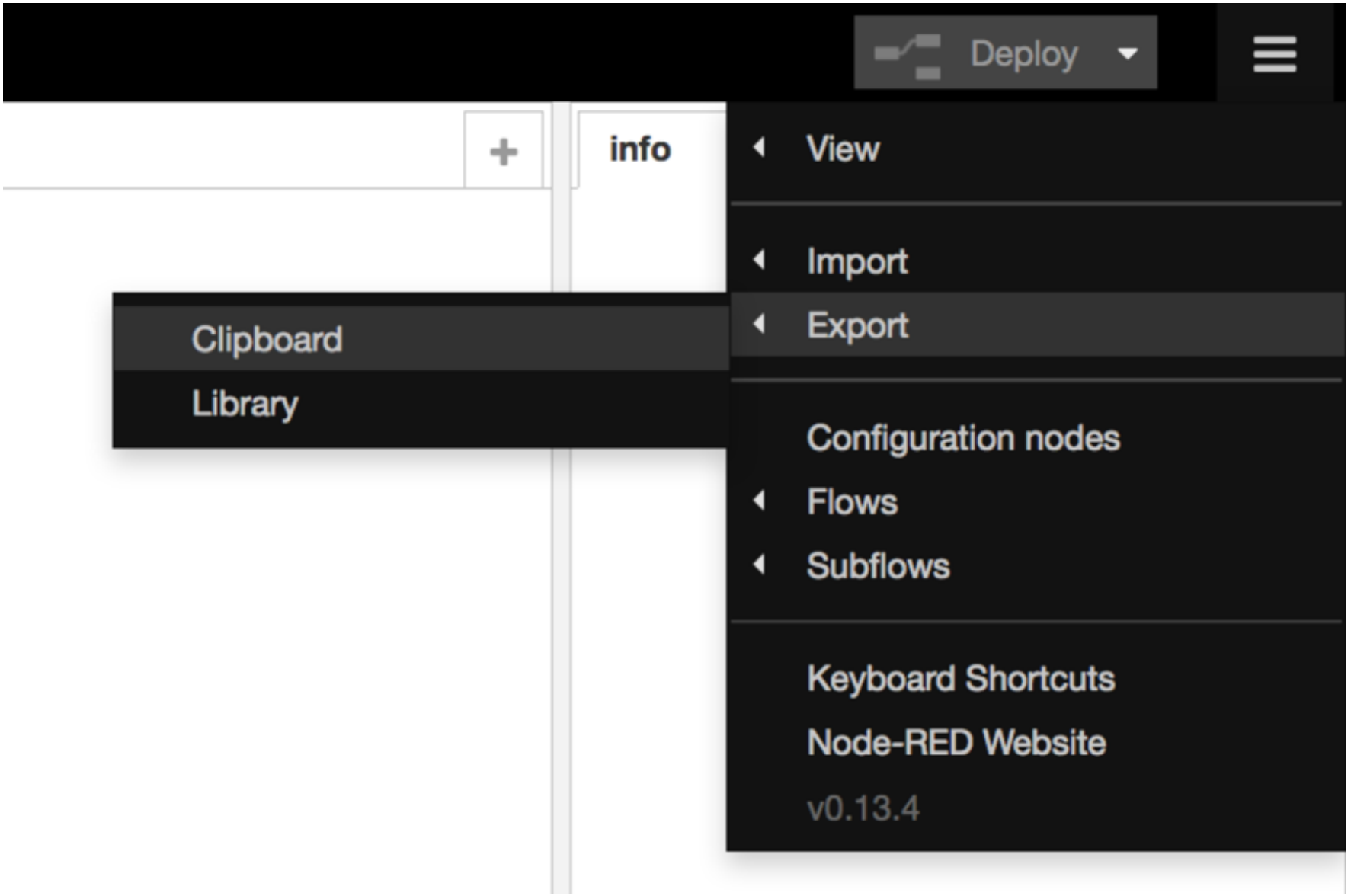
This is an example for a correct selection:



This is a wrong selection, not all nodes have been selected:



6. Now click on the menu symbol at the top right corner, then on Export->Clipboard


Deploy
info
View
Import
Export
Clipboard
Library
Configuration nodes
Flows
Subflows
Keyboard Shortcuts
Node-RED Website
v0.13.4

7. Select all the text you are seeing (maybe you have to scroll up and down), copy it and paste it to a text file in your favorite text editor

Export nodes to clipboard

Nodes:

action=\"distributeTransaction\" method=\"get\"> Transaction:
<input\n\t\ttype=\"text\" name=\"transaction\">\n\t<p>\n\t\tNonce:
<input type=\"text\" name=\"nonce\">\n\t<p>\n\t\t<input
type=\"submit\">\n\t</form>\n</body>
\n</html>","x":338,"y":488.5,"wires":[["543fecce.4b422c"]]}]

Select the text above and copy to the clipboard.

Close

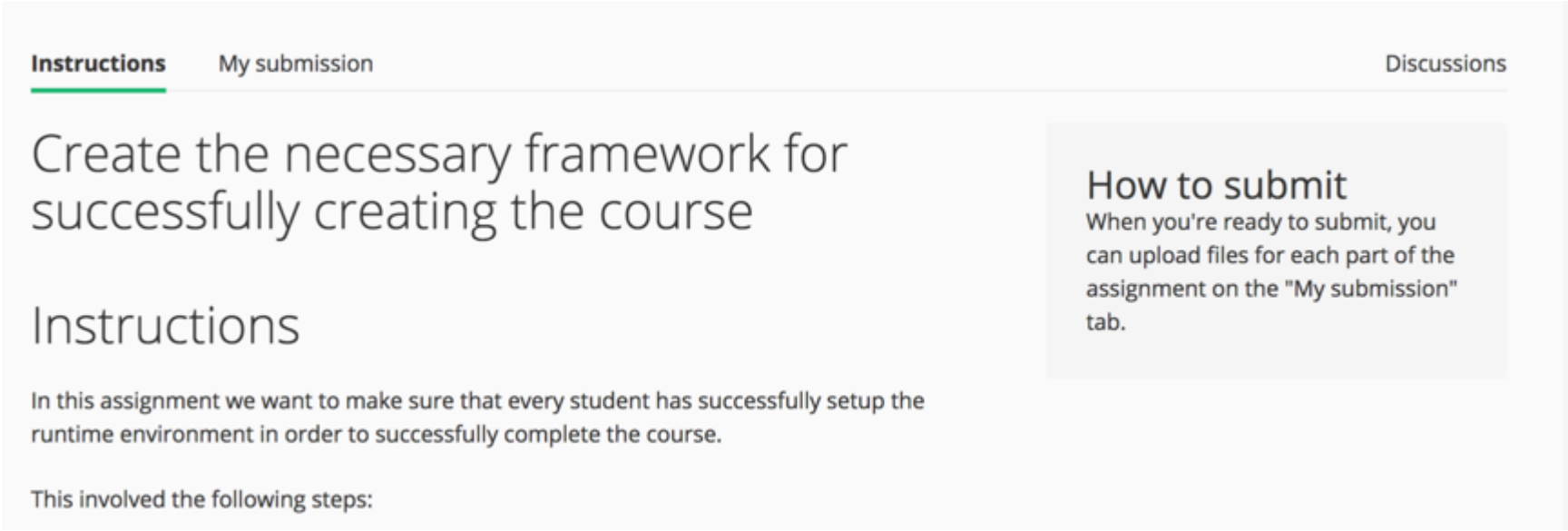
8. Save this file as assignment1.1.json

9. Submit it to the grader (see next section)

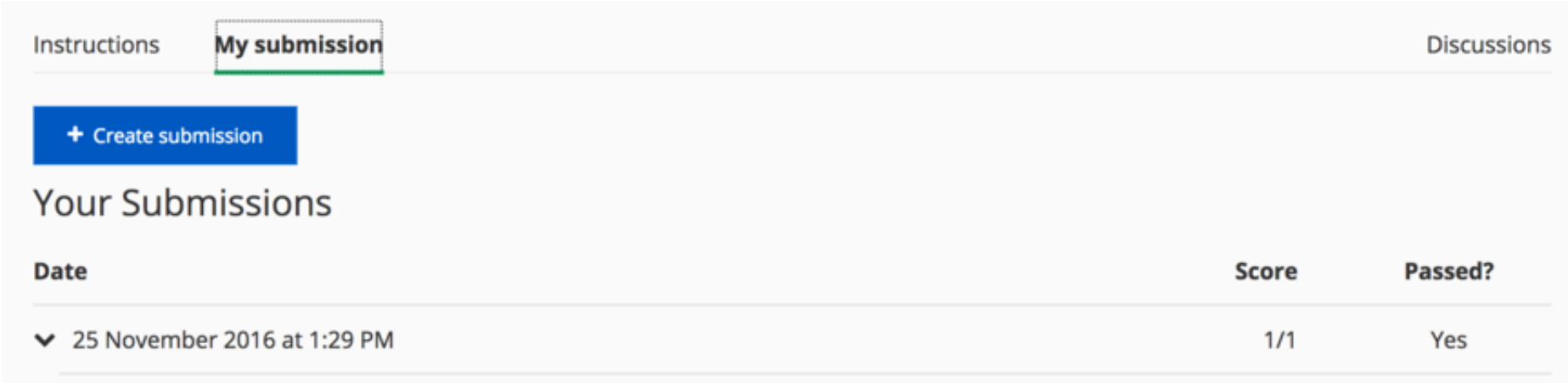
Export the sample flow to a file and submit it to the grader

1. Take the assingment1.1.json file from the previous step and submit it to the grader

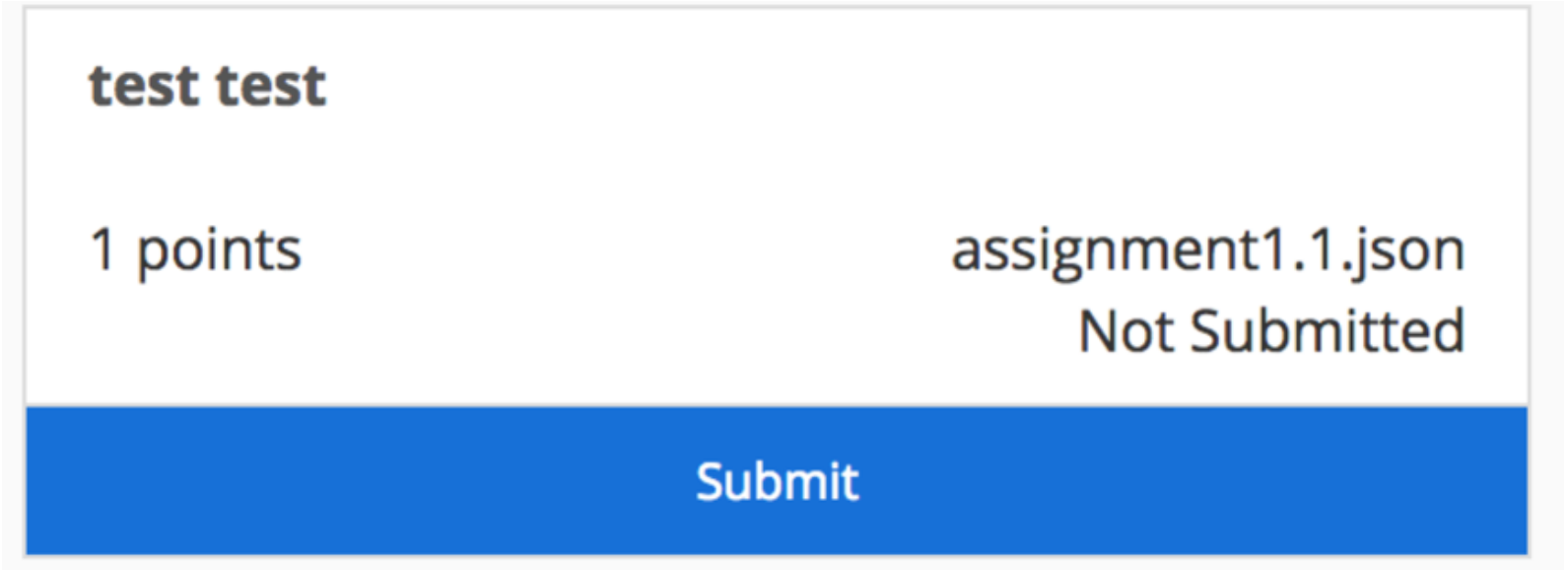
- Click on the “My submission" tab of this reading



- Click on “Create submission”



- Upload assignment1.1.json and click on “Submit”



You now have to wait for some time until the grader finishes the grading process.