Pixsys®
ELECTRONICS

Podman Guide

Software

User manual / Manuale d'uso

PODMAN

1 Creating a Node-RED container

This guide covers the installation of a Node-RED container on Pixsys WebPanel *"WP"* and TouchController *"TC"* series.
Displaying the Node-RED dashboard on the screen is possible only WP - WebPanel devices and on TC - TouchController panels with the *"WebVisu"* license only.
On TouchController – TC panels with a *"TargetVisu"* or *"TargetVisu + WebVisu"* license, it is not possible to display the Node-RED dashboard.

2 Login

Access the device in configuration mode by holding down the STOP button that appears at startup.
Access the configuration console by entering the following credentials:

Username: user
Password: 123456

If the device IP is known, it is also possible, and recommended, to access the configuration console from a browser on the user PC by accessing the address:

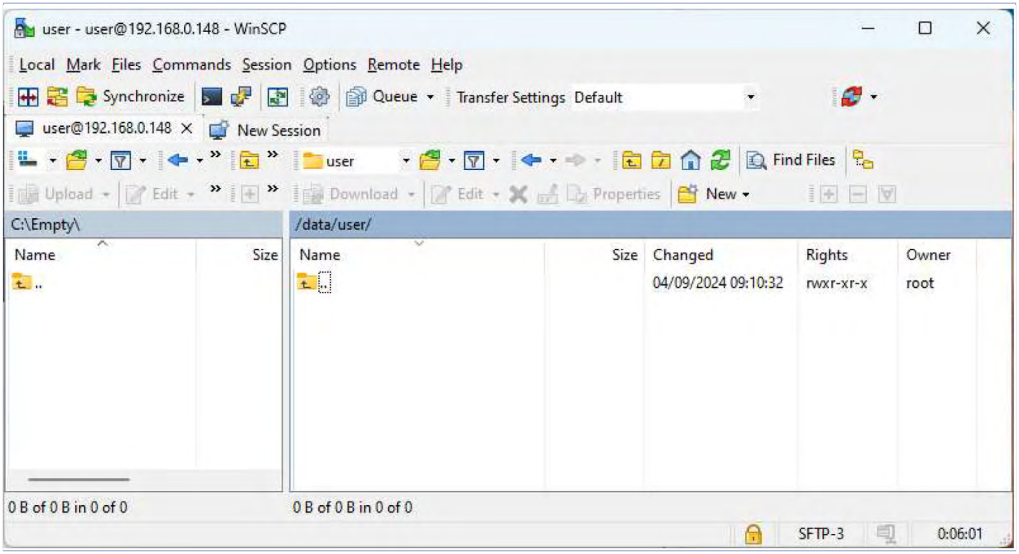
https://device-IP-:9443/

and using the above credentials.

3 Creating the folder for Node-RED

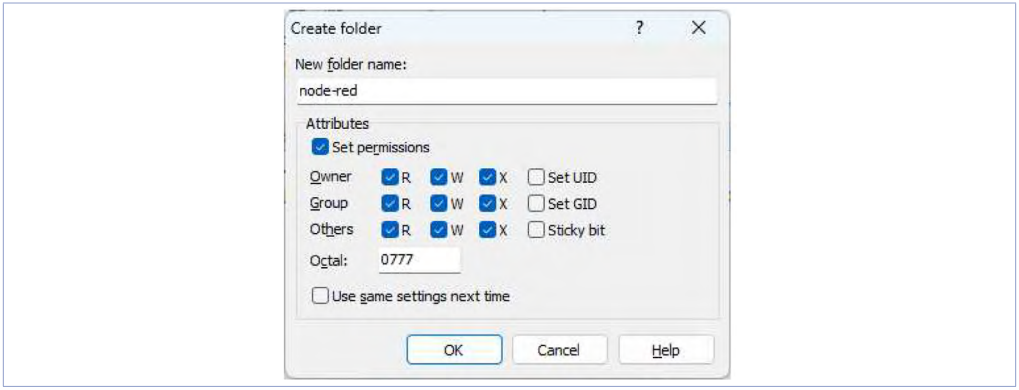
The container that is going to be activated requires a space to store user data.
For this purpose in the devices there is a folder **/data/user**.
Using WinScp or another sFTP access software, create a folder **node-red** within the path **/data/user**, following the steps below:

- Open WinSCP, connect to the device using the IP and credentials already used to access the configuration console and choose **/data/user**

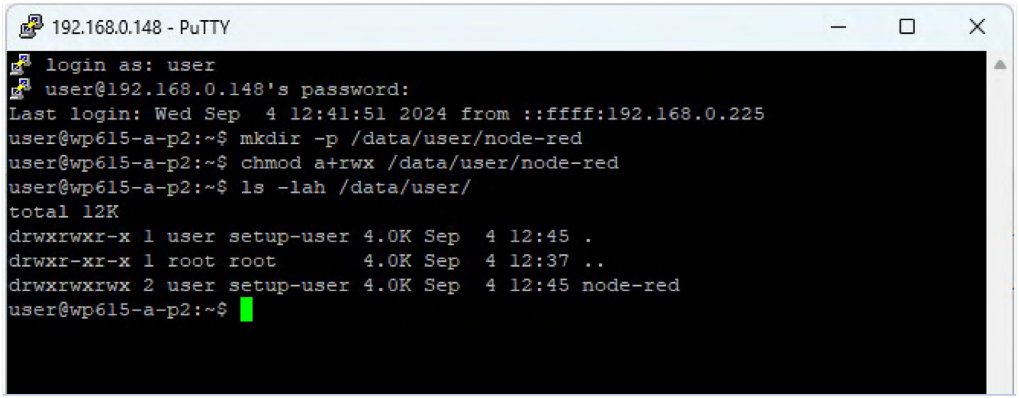


- From Menu *"New"* select option "Directory…".

- Create the folder node-red enabling all "R/W/X"permits :



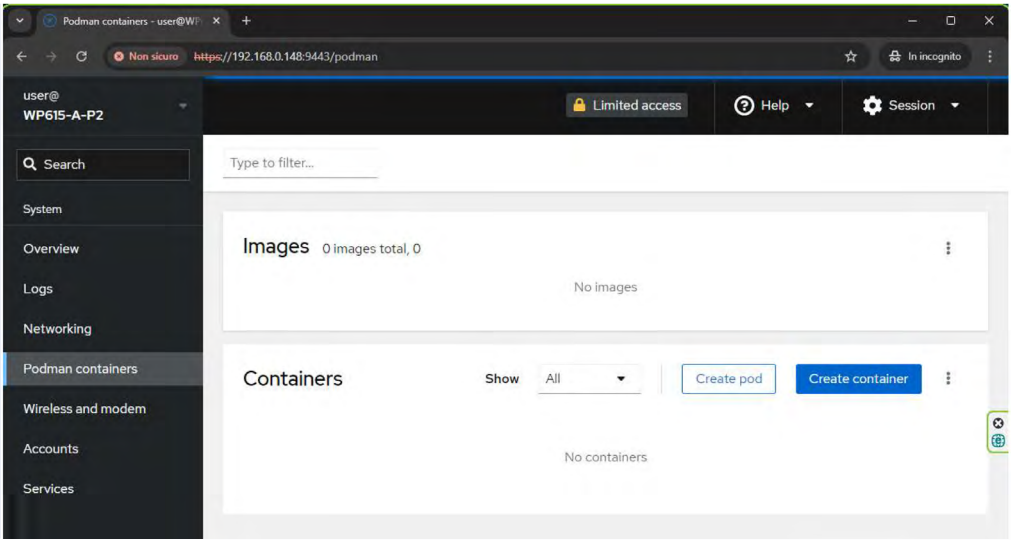
Same process is possible also by SSH access and using following prompts:
mkdir -p /data/user/node-red
chmod a+rwx /data/user/node-red



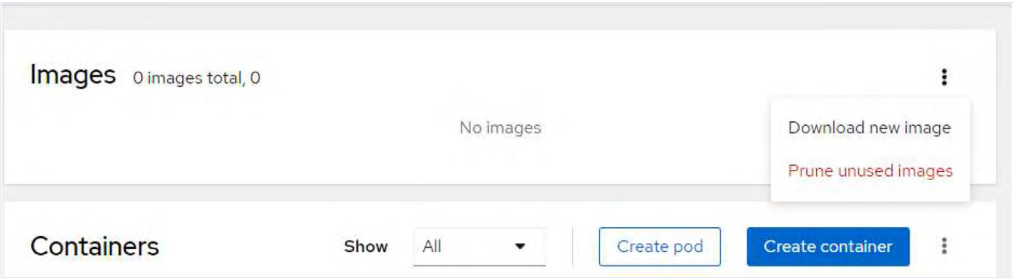
NB: be careful that the name of folders and/or files in Linux is case-sensitive, it is recommended to use only lower case letters!

4 Download of container

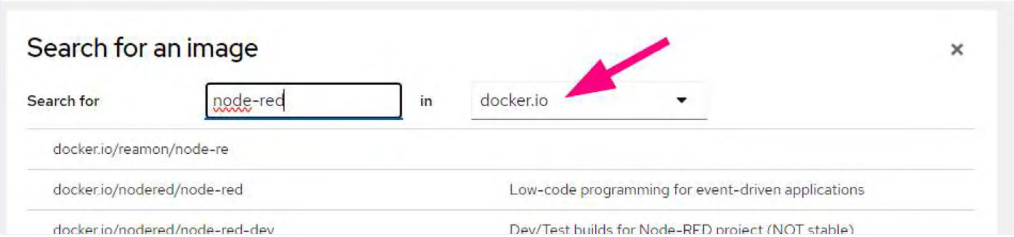
Access *"Podman containers"* on the Menu bar:



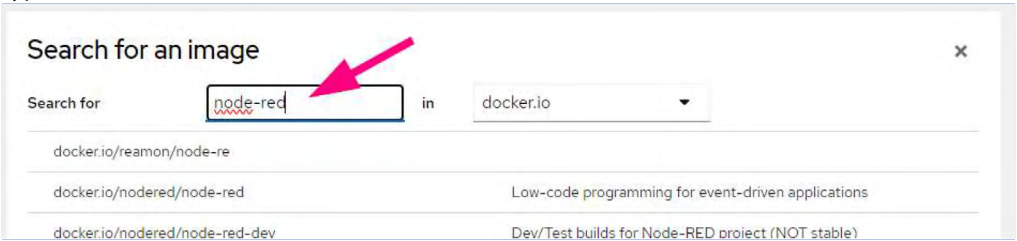
Select option*"Download new image"* in the menu to the right with the three-dot icon



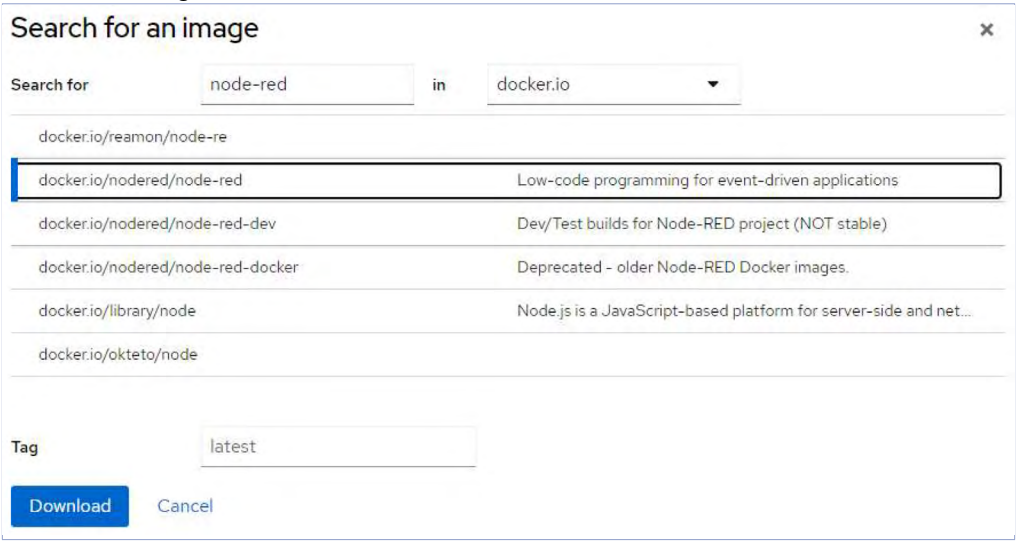
Select the search area "docker.io"



Type “node-red” in *“Search for”*



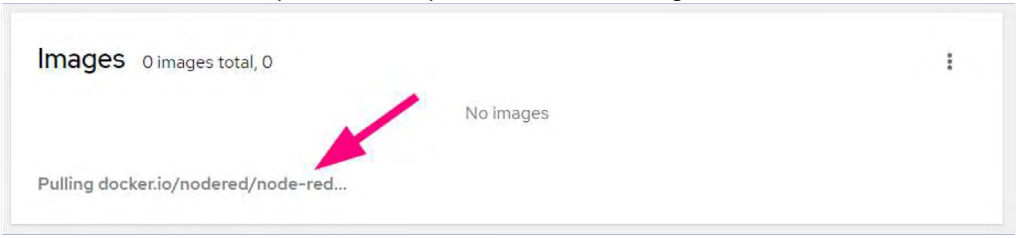
Select official image “docker.io/nodered/node-red”:



Then press *“Download”* and download of image will start.

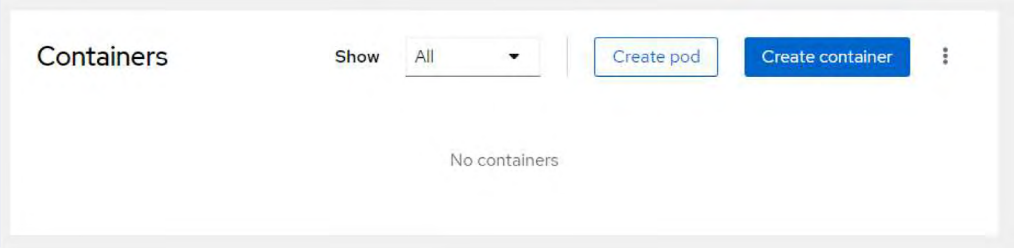
This is a several hundred Mb file, depending on the internet connection it may take several minutes.

When the download is complete, it will be possible to view the image on the device:



5 Container creation

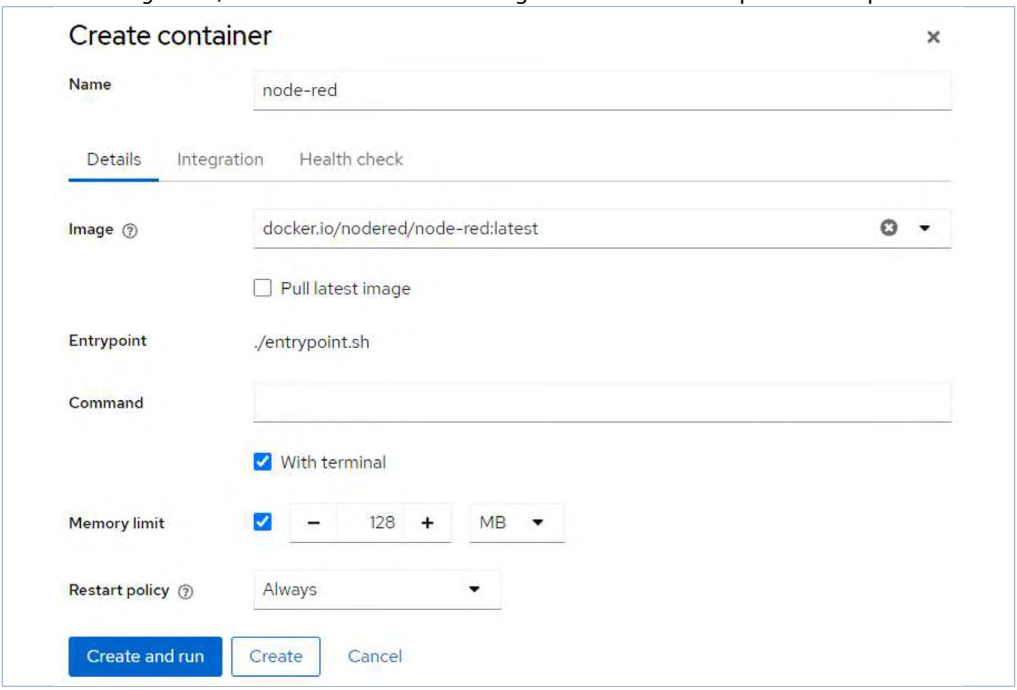
In the *"Containers"* Tab press the *"Create container"* button, a menu will open to configure the container you want to create.



Fill in the *"Name"* field with a name of your choice replacing the automatically generated random one.

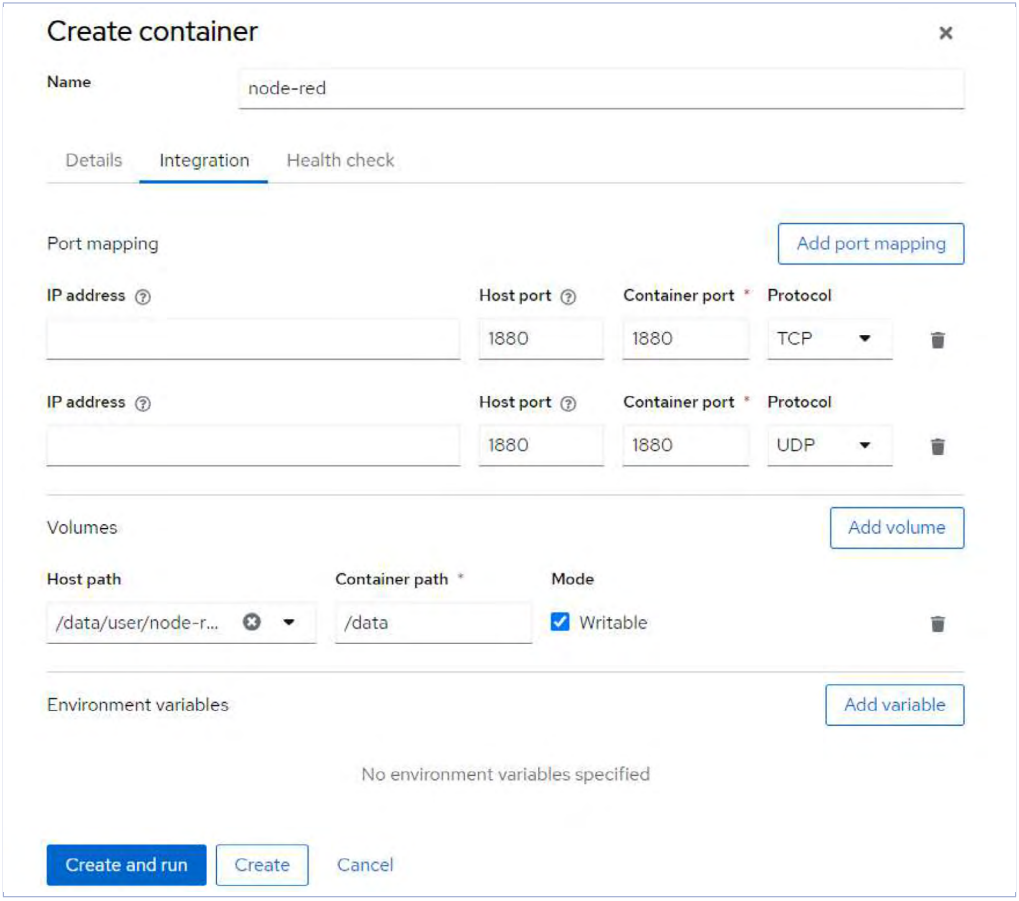
Tab Details:

From the *"Image"* box, choose the downloaded image as described in the previous chapter:

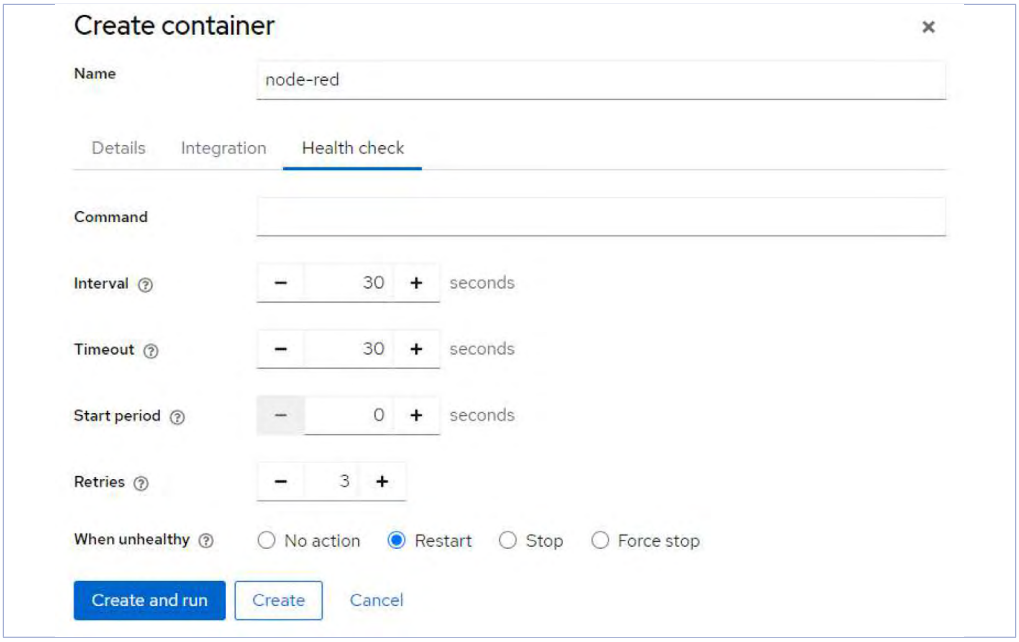


Configure *"Memory limit"* to 128 or 256 MB .
"Restart Policy" set to *"Always"* sets the container to start automatically and be restarted even in the event of a user-commanded shutdown.

Tab Integration:
Configure port mapping to expose port 1880 in both TCP and UDP and map the Container Path **/data**, visible from node-red, in Host Path **/data/user/node-red**



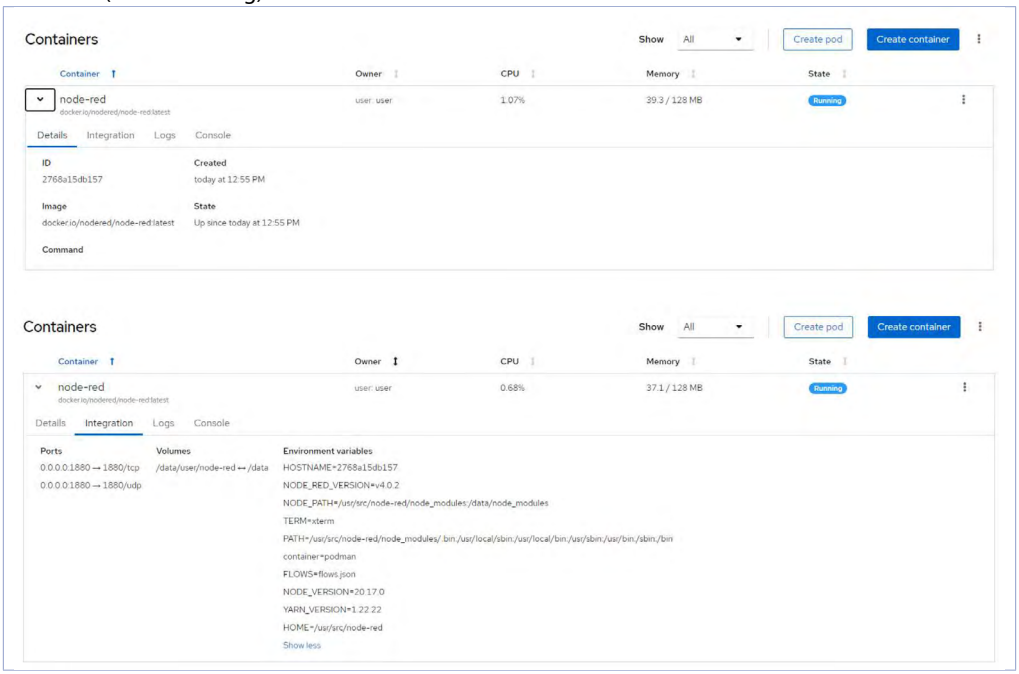
Tab Health check:
This Tab defines the control checks on the correct operation of the container and how it will behave in case of an error.
The image below shows the default parameters:



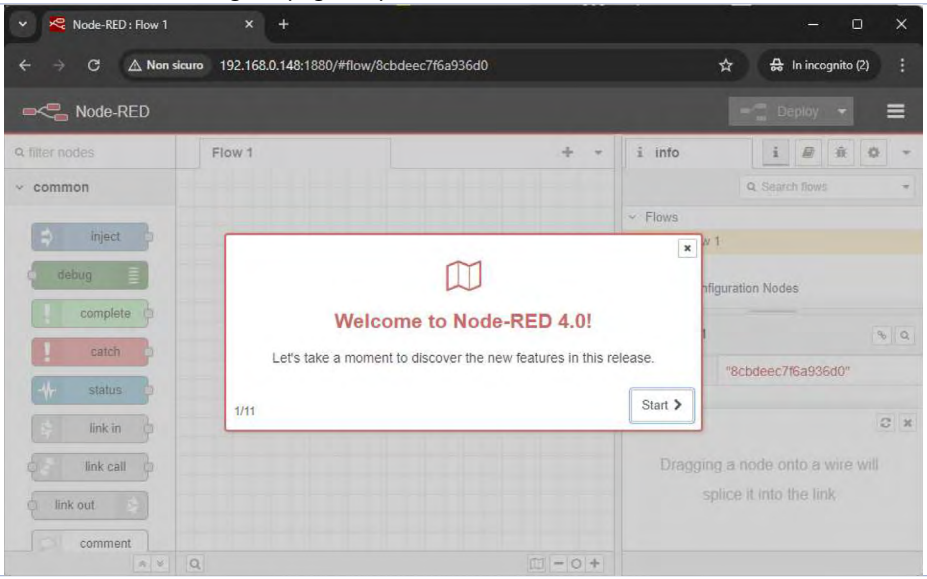
At this stage press *"Create and run"* and wait for the creation of the container.

6 Testing the container

When the container creation procedure is finished, the *"Containers"* list will display the new running container (State: Running):

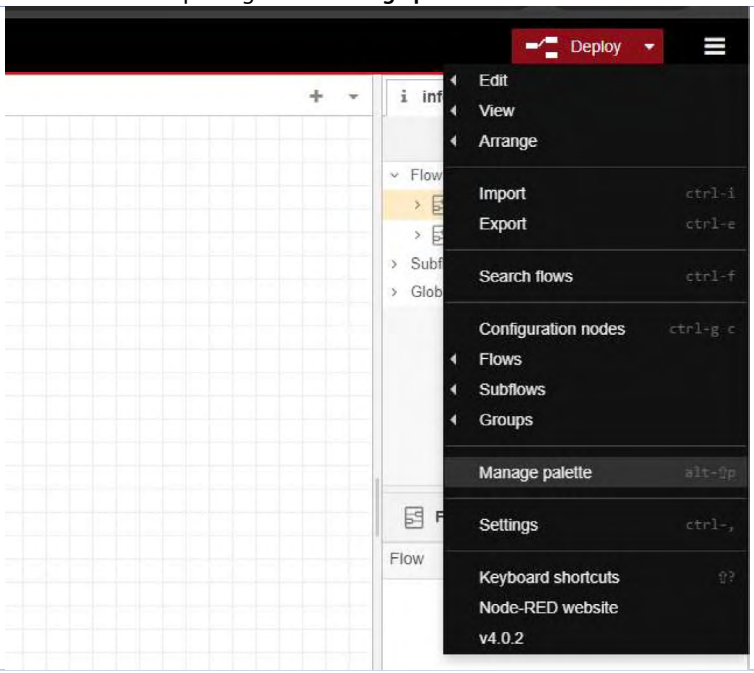


Open a browser on PC and go to page: http://device-IP:1880



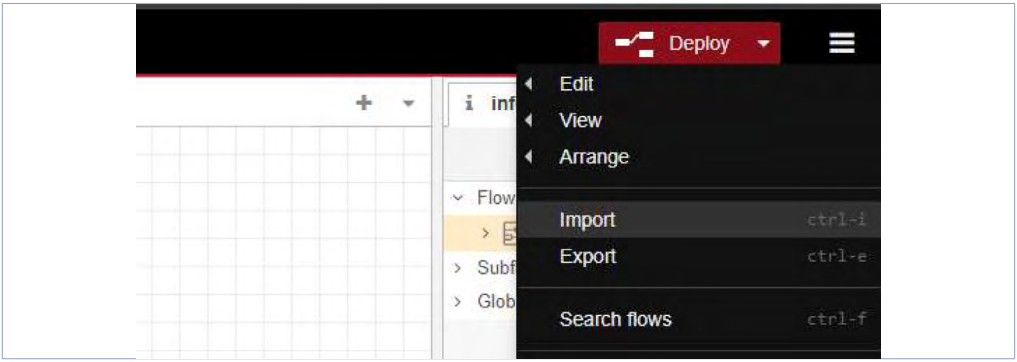
7 Creating a dashboard

Dashboard allows Node-RED to present/publish a dynamic web page.
Install "node-red-dashboard" opening Menu **Manage palette**:

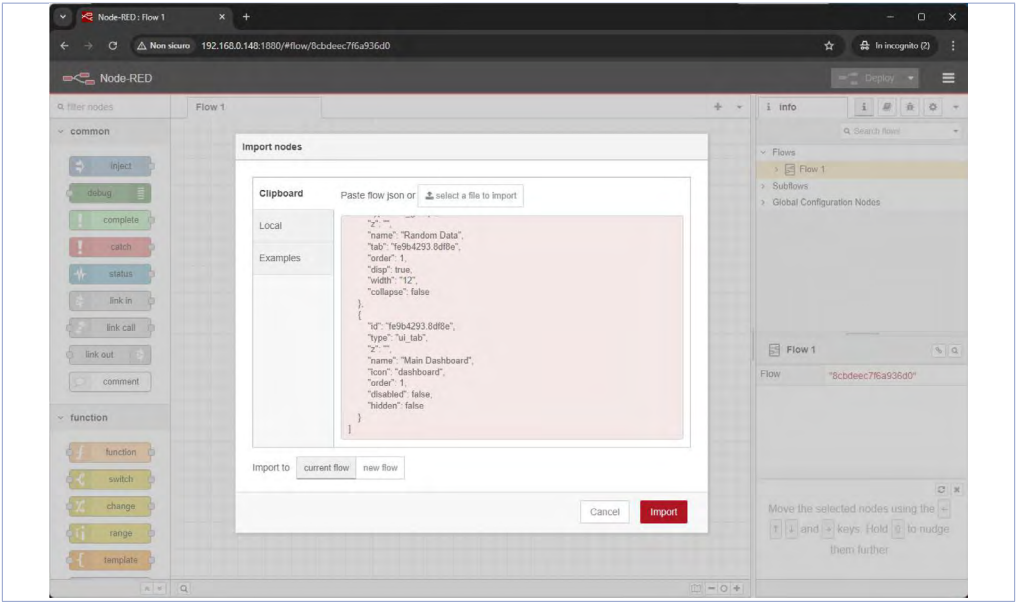


Search for node-red-dashboard within tab **Install**

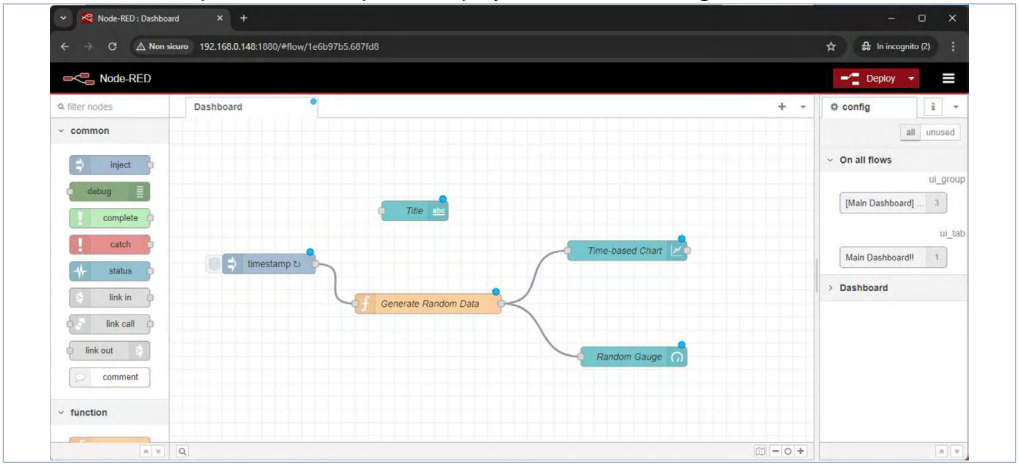
Wait for the installation to be completed and then log in to the console and import the Flow entered at the end of the guide from the menu **Import**:

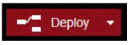


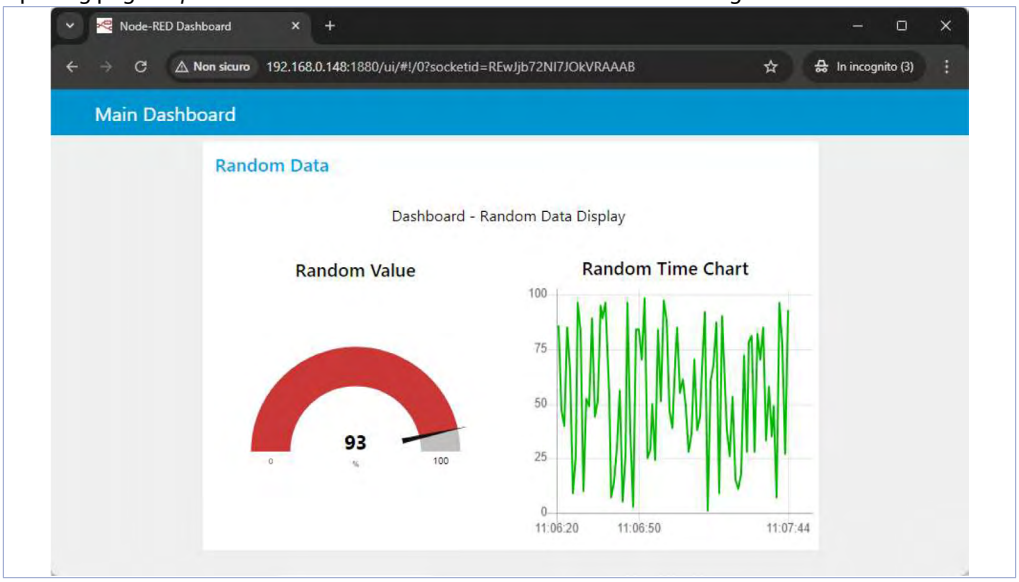
**This is example code with no real use purpose.
NB for the use of Node-RED and the Dashboard, please refer to the documentation available online.



Once the code is imported, this will provide a project like the following one:

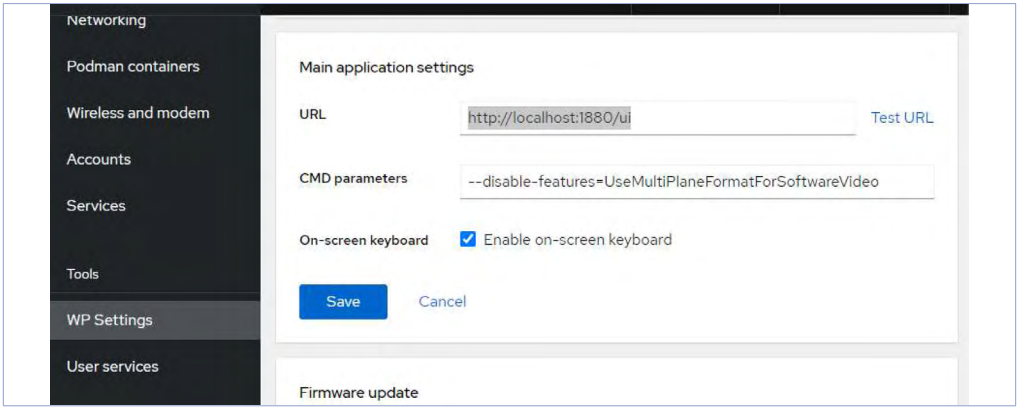


Press  to compile and start the project.
Opening page *http://device-IP:1880/ui* the result will look like the following:



8 Configuring the panel to display the dashboard

At this point, for panels that allow it, access the menu **WP Settings** , then **Main application settings** and enter URL *http://localhost:1880/ui*
Use term *localhost* or IP *127.0.0.1* to make the browser access the device itself regardless of its actual IP.



Upon reboot, the device will show full screen the Node-RED Dashboard.

9 Example flow

The following code is the text to be imported as Flow in Node-RED:

```
[
        {
                "id": "1e6b97b5.687fd8",
                "type": "tab",
                "label": "Dashboard",
                "disabled": false,
                "info": ""
        },
        {
                "id": "7c8f99d9.196b98",
                "type": "ui_text",
                "z": "1e6b97b5.687fd8",
                "group": "dd4567b9.6a4c18",
                "order": 1,
                "width": "12",
                "height": "1",
                "name": "Title",
                "label": "Dashboard - Random Data Display",
                "format": "{{msg.payload}}",
                "layout": "col-center",
                "x": 330,
                "y": 120,
                "wires": []
        },
        {
                "id": "2e4a56f8.cfa23a",
                "type": "ui_gauge",
                "z": "1e6b97b5.687fd8",
                "name": "Random Gauge",
                "group": "dd4567b9.6a4c18",
                "order": 2,
                "width": "6",
                "height": "6",
                "gtype": "gage",
```

```
        "title": "Random Value",
        "label": "%",
        "format": "{{value}}",
        "min": "0",
        "max": "100",
        "colors": ["#00b500","#e6e600","#ca3838"],
        "seg1": "30",
        "seg2": "70",
        "x": 320,
        "y": 240,
        "wires": []
    },
    {
        "id": "3b9ddefd.32b9d",
        "type": "ui_chart",
        "z": "1e6b97b5.687fd8",
        "name": "Time-based Chart",
        "group": "dd4567b9.6a4c18",
        "order": 3,
        "width": "6",
        "height": "6",
        "label": "Random Time Chart",
        "chartType": "line",
        "legend": "false",
        "xformat": "HH:mm:ss",
        "interpolate": "linear",
        "nodata": "",
        "ymin": "0",
        "ymax": "100",
        "removeOlder": 1,
        "removeOlderPoints": "",
        "removeOlderUnit": "3600",
        "cutout": 0,
        "useOneColor": false,
        "colors": ["#00b500","#e6e600","#ca3838"],
        "outputs": 1,
        "useDifferentColor": false,
        "x": 600,
        "y": 240,
        "wires": []
    },
    {
        "id": "74b1aef8.e7e0d8",
        "type": "function",
        "z": "1e6b97b5.687fd8",
        "name": "Generate Random Data",
        "func": "msg.payload = Math.floor(Math.random() * 100);\nreturn msg;",
        "outputs": 1,
        "noerr": 0,
        "initialize": "",
        "finalize": "",
        "libs": [],
        "x": 130,
        "y": 240,
        "wires": [
            [
                "2e4a56f8.cfa23a",
                "3b9ddefd.32b9d"
            ]
        ]
    },
    {
        "id": "e0e9bd3c.a8ae2",
        "type": "inject",
        "z": "1e6b97b5.687fd8",
        "name": "",
        "props": [
            {
```

```
                        "p": "payload"
                    }
                ],
                "repeat": "1",
                "crontab": "",
                "once": true,
                "onceDelay": 0.1,
                "topic": "",
                "payloadType": "date",
                "x": 130,
                "y": 160,
                "wires": [
                    [
                        "74b1aef8.e7e0d8"
                    ]
                ]
            },
            {
                "id": "dd4567b9.6a4c18",
                "type": "ui_group",
                "z": "",
                "name": "Random Data",
                "tab": "fe9b4293.8df8e",
                "order": 1,
                "disp": true,
                "width": "12",
                "collapse": false
            },
            {
                "id": "fe9b4293.8df8e",
                "type": "ui_tab",
                "z": "",
                "name": "Main Dashboard",
                "icon": "dashboard",
                "order": 1,
                "disabled": false,
                "hidden": false
            }
]
```

Notes / Updates

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