Node-RED: Introduction

Introduction to Node-RED, all you need to know about it

> 👋**Welcome on Stackhero's documentation!**
> Stackhero provides Node-RED instances that are ready for production in just 2 minutes!
> Including TLS encryption (aka HTTPS), customizable domain name, MQTT server, unlimited emails server, backups and updates in just a click.
> Try our managed Node-RED cloud in just 2 minutes

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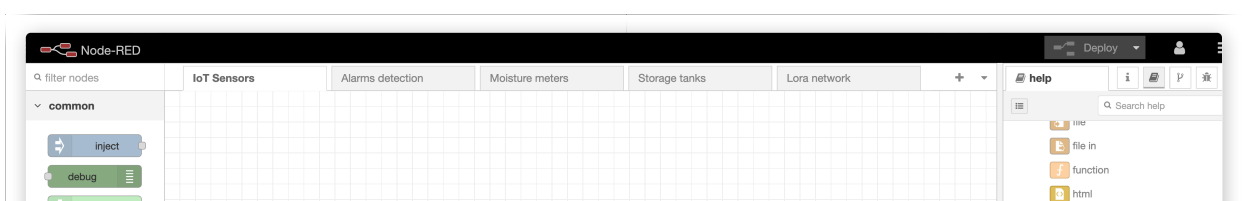
- How to start Node-RED

What is Node-RED

Node-RED is a visual tool allowing to create programs or APIs directly into the browser.
Basically, Node-RED can be seen as a back-end replacement, or even a serverless provider.
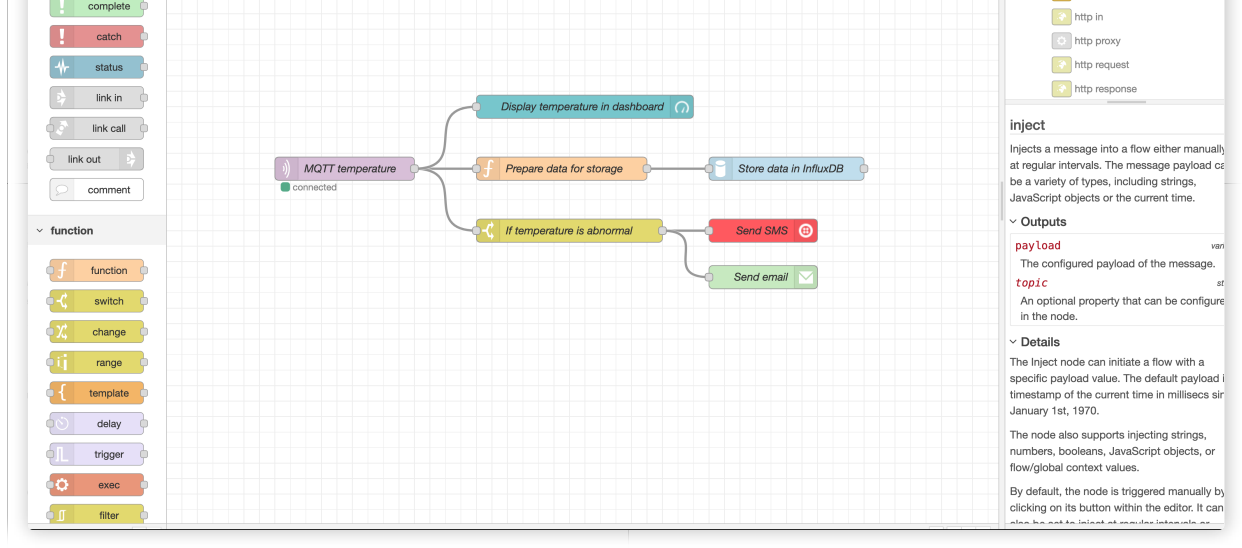It is also officially called a "low-code" programming system.

It permits to interact with a lot of different online services, hardware devices and databases with just few clicks.
It has been worldwide known in IoT world and in many industries but is not limited to these areas.

The interface is easy to understand and directly accessible in a browser.
A lot of functionnal blocks are ready to use without having to program anything.
They can be linked together to create complex systems in just few minutes.

For advanced users or usages, JavaScript code can be added, also directly in the browser, opening infinite possibilities.

Node-RED is written in Node.js (JavaScript).

Node-RED project example

What can be done with Node-RED

Node-RED has infinite possibilites.
But here are some examples of what people did with it:

- IoT sensors gateway (using MQTT)

- API services creation

- Emails automation

- Twitter bots creation

- Webpages scrapping

- Gateway between services like APIs and databases

Who has created Node-RED

Node-RED has been originaly developed in 2013 by two IBM employees, Nick O'Leary and Dave Conway-Jones.
The project has been open sourced in September 2013 and added to the OpenJS Foundation in October 2016.

Nick O'Leary and Dave Conway-Jones are still ones of the biggest contributors to the project.

What are Node-RED nodes

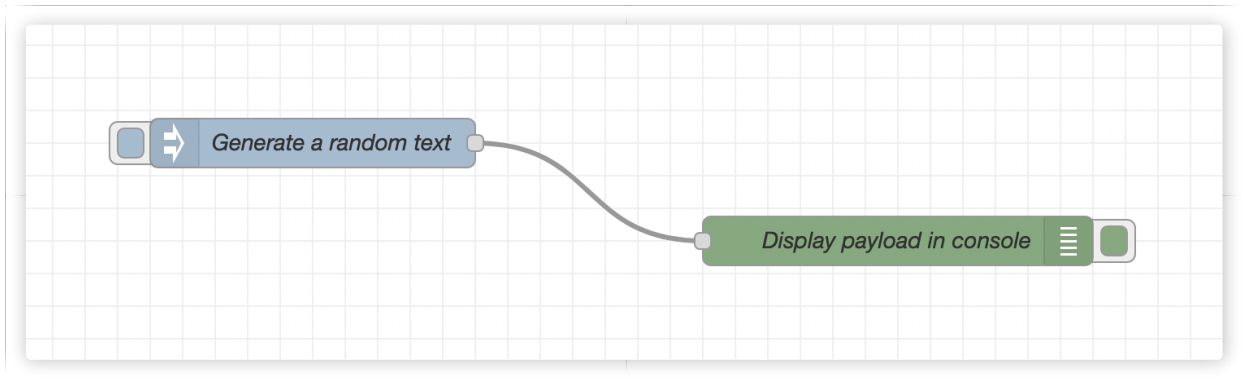In Node-RED, a "node" is a block that can receive data, transform it and then transmit it.

These data can be received or transmitted from or to others nodes, external APIs (Google, Stripe, Twitter etc...), databases (MySQL, MongoDB, Elasticsearch, OpenSearch etc...) or others systems (MQTT, email server, S3 object storage etc...).

Nodes are connected together using wires that are pulled in a visual way directly in the browser.

Node-RED contains around 40 pre installed nodes.
Some of them are basics, like Switch conditions, some can connect to the outside world, like HTTP, MQTT or Email nodes and some can contain complex code, like Function which can contain JavaScript code or Template to create advanced text documents or HTML pages.

With the Node-RED "palette", you can add external nodes, created by companies or users all around the world. Today there is almost 4,000 external nodes available for free.
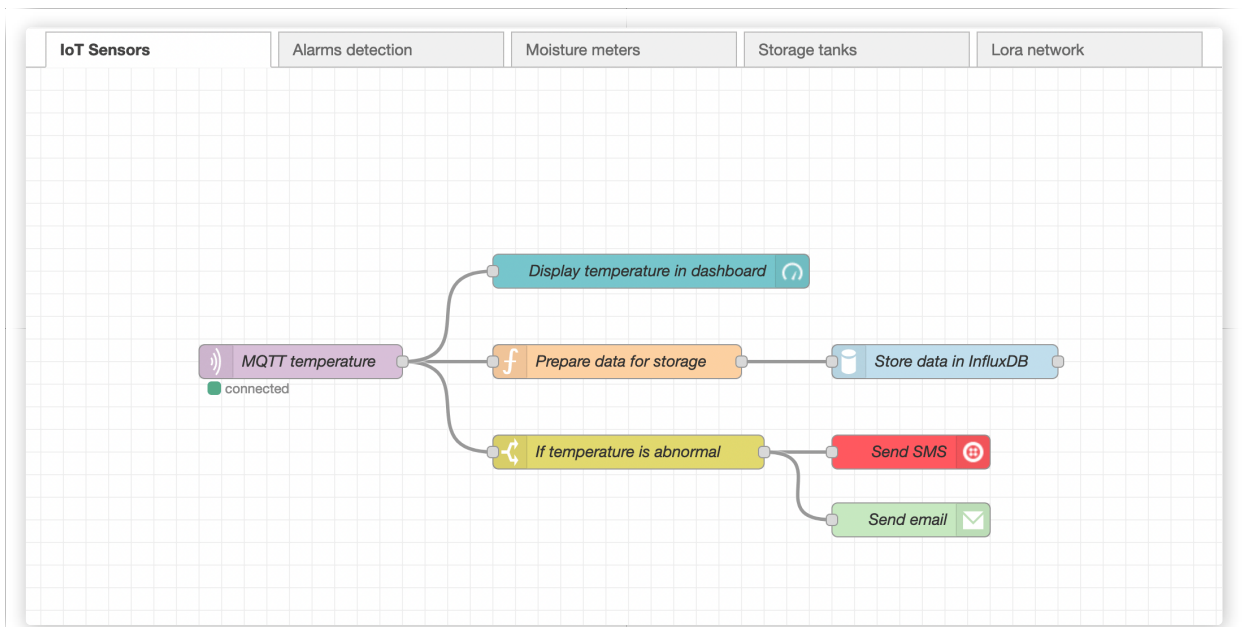

Node-RED nodes example

What are Node-RED flows

Node-RED flows are tabs that contain nodes.
Flows goal is to separate subprojects logic in multiple pages.

Node-RED flows example

What makes Node-RED so interesting

Node-RED is great because it is very easy to access at the beginning. Then, once you're past the beginner stage and need advanced features, Node-RED offers expert solutions that make it unlimited.

You can create a simple POC in few minutes for a demonstration. Or you can fully automate an industrial process with dozens of dependencies.
All of this with Node-RED and few clicks.

When to use Node-RED

There is not a typical Node-RED use-case as its possibilities are infinite.

But here are some examples of projects that can be build quickly with Node-RED:

- Interconnect devices (like IoT sensors) to databases.

- Retrieve data from APIs, process these data and save it.

- Create automations between services (MQTT, APIs, databases)

- Build an API to connect to databases

What is Node-RED cloud

Node-RED cloud is the fact that Node-RED runs at a cloud provider, as opposed to on-premises solutions.

There is mutliple Node-RED cloud providers. Stackhero is one of them.

With Stackhero, you will get a dedicated Node-RED starting in just 2 minutes, including out-of-the-box:

- ➡️A private Node-RED server

- ➡️An unlimited email server

- ➡️A dedicated MQTT server (Mosquitto) with TLS encryption and users authentication

- ➡️A dedicated IPv4

- ➡️Automatic backups every 24 hours

- ➡️TLS certificates (aka SSL/HTTPS) handled automatically

- ➡️The possibility of starting up in the USA or in Europe

How to start Node-RED

So you think Node-RED is the good choice for your project and you want to try it easily.
Good news, we propose managed Node-RED instances, pre configured, and ready to use with just a click.

You can start a demo instance for free in 2 minutes and test Node-RED with no headache.
Once your tests are over, you will be able to use the instance in production and upgrade it with just a click!
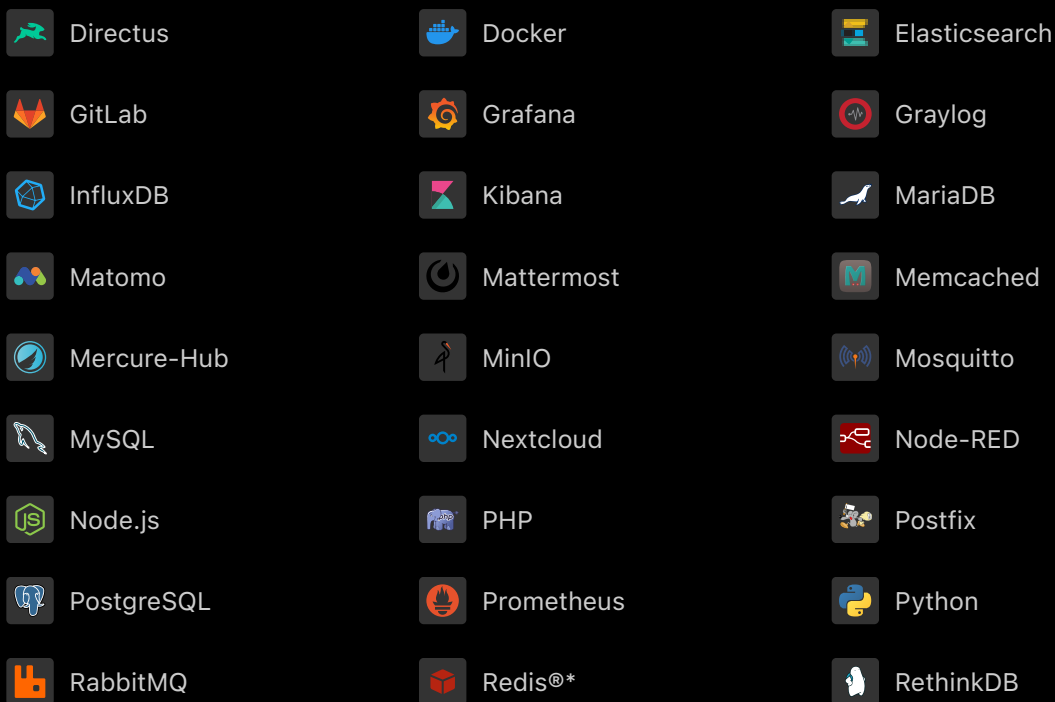
Click here to know more about Node-RED cloud and start it for free.

Other articles about Node-RED that might interest you

○ Getting started
How to start using Node-RED

○ Use case: Connect mailboxes
Connect hundreds mailboxes in a post office

○ MQTT server
How to connect Node-RED to Mosquitto MQTT server

○ Handle projects
How to use "Projects" in Node-RED

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