

TRILHA JAVA SCRIPT E NODE



IoT com NodeJS: do Node-Red ao Hardware

Daniele Nazaré

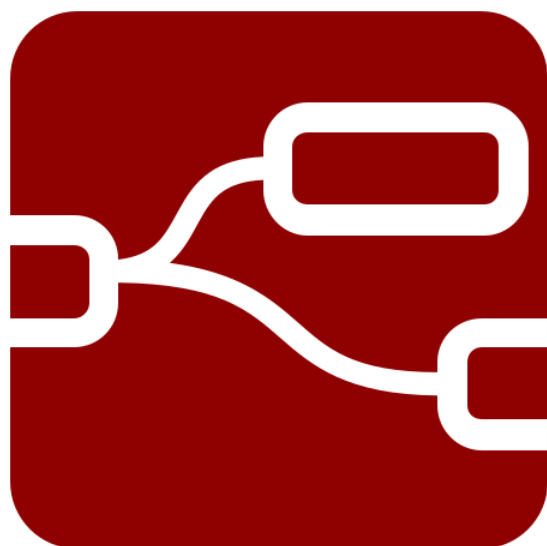
Desenvolvedora web Nest Digital



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Introdução

```
npm install -g --unsafe-perm node-  
red
```




Mark Weiser

Mark Wise



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The Computer for the 21st Century

*Specialized elements of hardware and software,
connected by wires, radio waves and infrared, will be
so ubiquitous that no one will notice their presence*

by Mark Weiser

The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.

Consider writing, perhaps the first information technology. The ability to represent spoken language symbolically for long-term storage freed information from the limits of individual memory. Today this technology is ubiquitous in industrialized countries. Not only do books, magazines and newspapers convey written information, but so do street signs, billboards, shop signs and even graffiti. Candy wrappers are covered in writing. The constant background presence of these products of "literacy technology" does not require

active attention, but the information to is approachable only through complex jargon that has nothing to do with the tasks for which people use computers. The state of the art is perhaps analogous to the period when scribes had to know as much about making ink or baking clay as they did about writing.

The arcane aura that surrounds personal computers is not just a "user interface" problem. My colleagues and I at the Xerox Palo Alto Research Center think that the idea of a "personal" computer itself is misplaced and that the vision of laptop machines, dynabooks and "knowledge navigators" is only a transitional step toward achieving the real potential of information technology. Such machines cannot truly make computing an integral, invisible part of people's lives. We are therefore trying to

The idea of integrating computers seamlessly into the world at large runs counter to a number of present-day trends. "Ubiquitous computing" in this context does not mean just computers that can be carried to the beach, jungle or airport. Even the most powerful notebook computer, with access to a worldwide information network, still focuses attention on a single box. By analogy with writing, carrying a superlaptop is like owning just one very important book. Customizing this book, even writing millions of other books, does not begin to capture the real power of literacy.

Furthermore, although ubiquitous computers may use sound and video in addition to text and graphics, that does not make them "multimedia com-

Ubíqua




O que é IoT?



*"The Internet of Things" where the web
and the physical world will meet.*

[Dr John Barrett](#)



 Node-RED

common

inject

debug

complete

catch

status

link in

link out

comment

function

function

switch

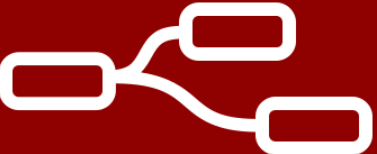
change

range

template

delay

trigger



I'm

Node-RED


- Escrita em Java Script
- Orientada a Eventos
- A lógica é Encapsulada em Nós
- Licença Apache 2.0
- Linguagem estrutural dos nodos é JSON
 - ❖ Portabilidade dos Nós

info

Information

Flow	"87cbf546.13e278"
Name	Flow 1
Status	Enabled

Description

 Node-RED

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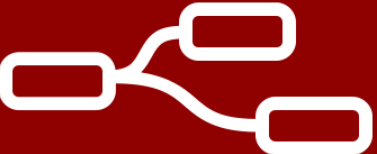
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I'm


Node-RED

- Linguagem padrão por trás do funcionamento dos Nodos: Java Script ^
- É escalável
- Mais de 225,000 módulos
- Integra:
 - ❖ API's
 - ❖ Hardware
 - ❖ Serviços Online

Deploy

info

Information

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Description

Plataformas

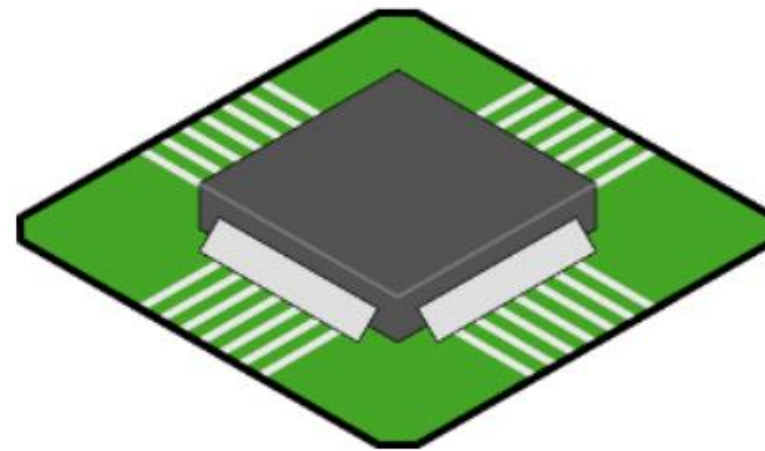


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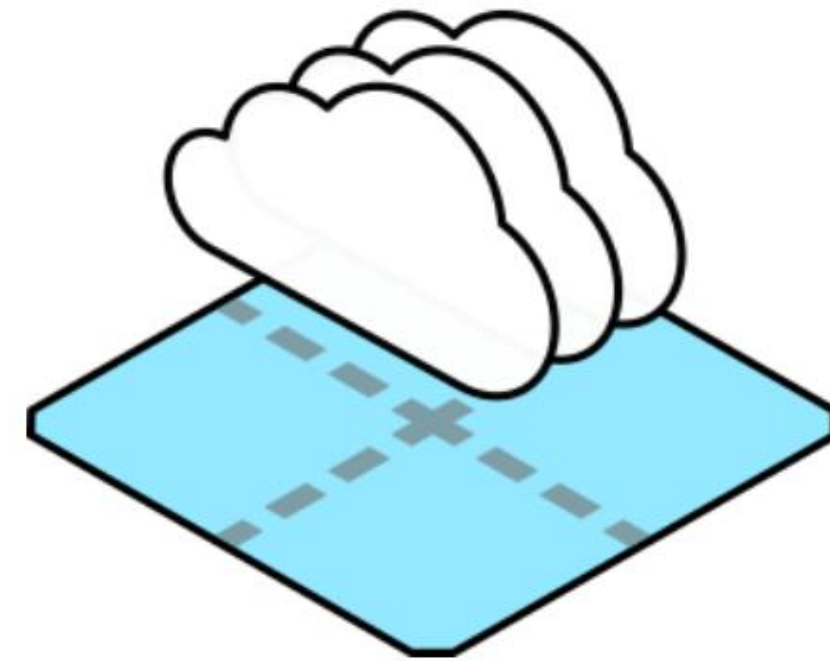
Run locally

- Getting started
- Docker



On a device

- Raspberry Pi
- BeagleBone Black
- Interacting with Arduino
- Android



In the cloud

- IBM Cloud
- SenseTecnica FRED
- Amazon Web Services
- Microsoft Azure



Node-RED

filter nodes

function

function

switch

change

range

template

delay

trigger

exec

javafunction

python3 function

rbe

Logger

network

Flow 1

Flow 6

timestamp

RandomNumber

msg.payload

Código do Nó *RandomNumber*

Deploy

Edit function node

Delete

Cancel

Done

Properties

Name

RandomNumber

Function

1

msg.payload = Math.round(Math.random() *100)

2

return msg;

Outputs

1

Enabled

filter nodes

Flow 1

Flow 6

function

function

switch

change

range

template

delay

trigger

exec

javascript

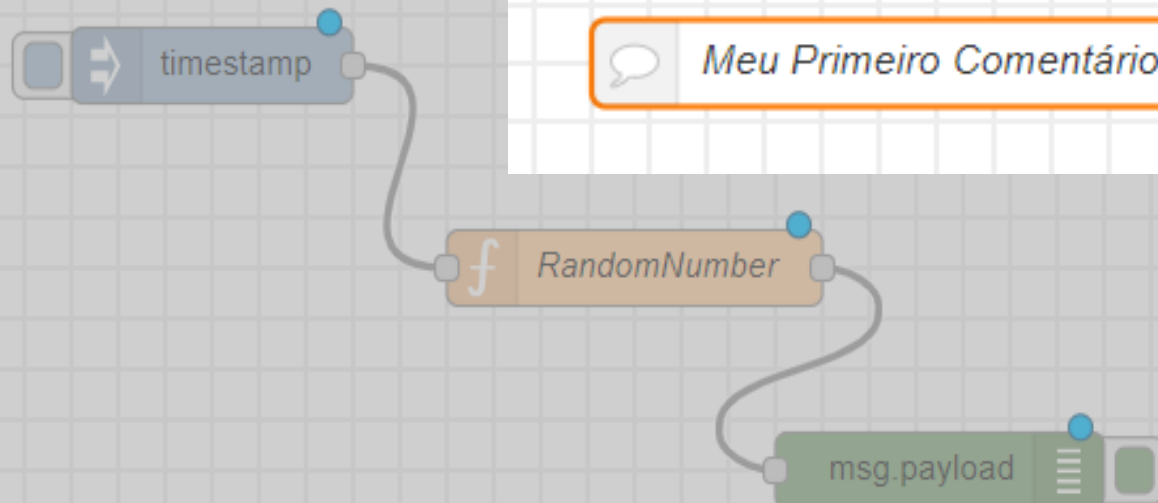
python3

function

rbe

Logger

network



Nó de Comentário

Edit comment node

Delete

Cancel

Done

Properties

Name

Meu Primeiro Comentário

h1

h2

h3

B

I

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≡

≡

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-

🔗

↗

1 # Informações do meu Node ^^

2

3 ### Markdown

4

5 ##

6 ###

☐ Enabled



ThingsBoard.io

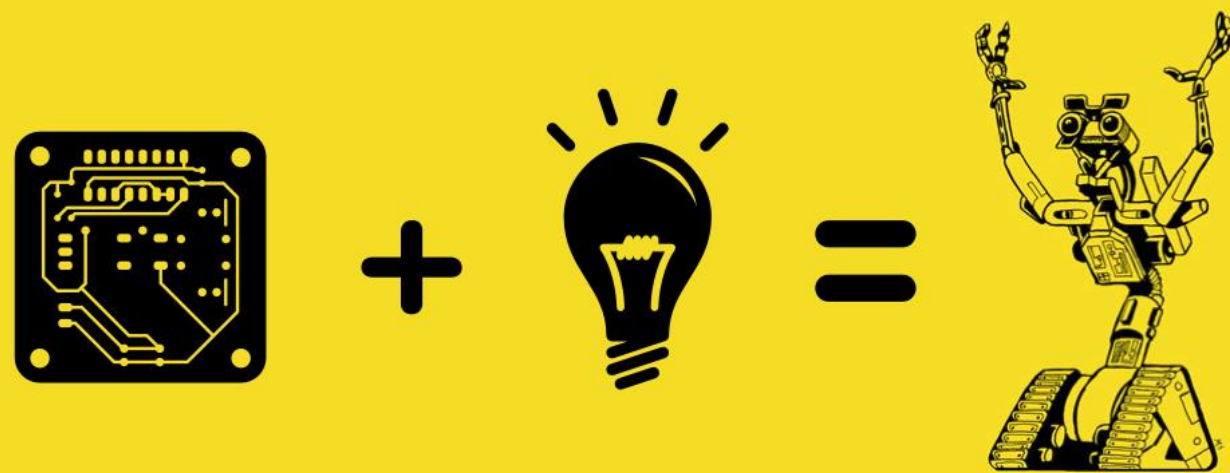


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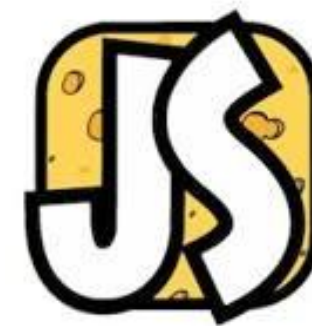


CONCORRENTES
OPEN-SOURCE
(NODOS)





Johnny-Five



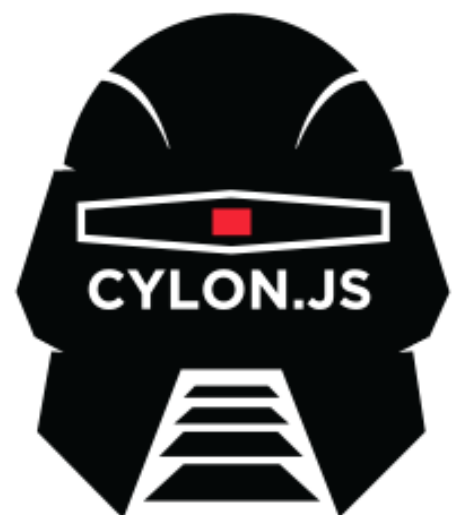
Jerry Script



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IoT.js

OUTRAS
ALTERNATIVAS



IBM Watson IoT Platform

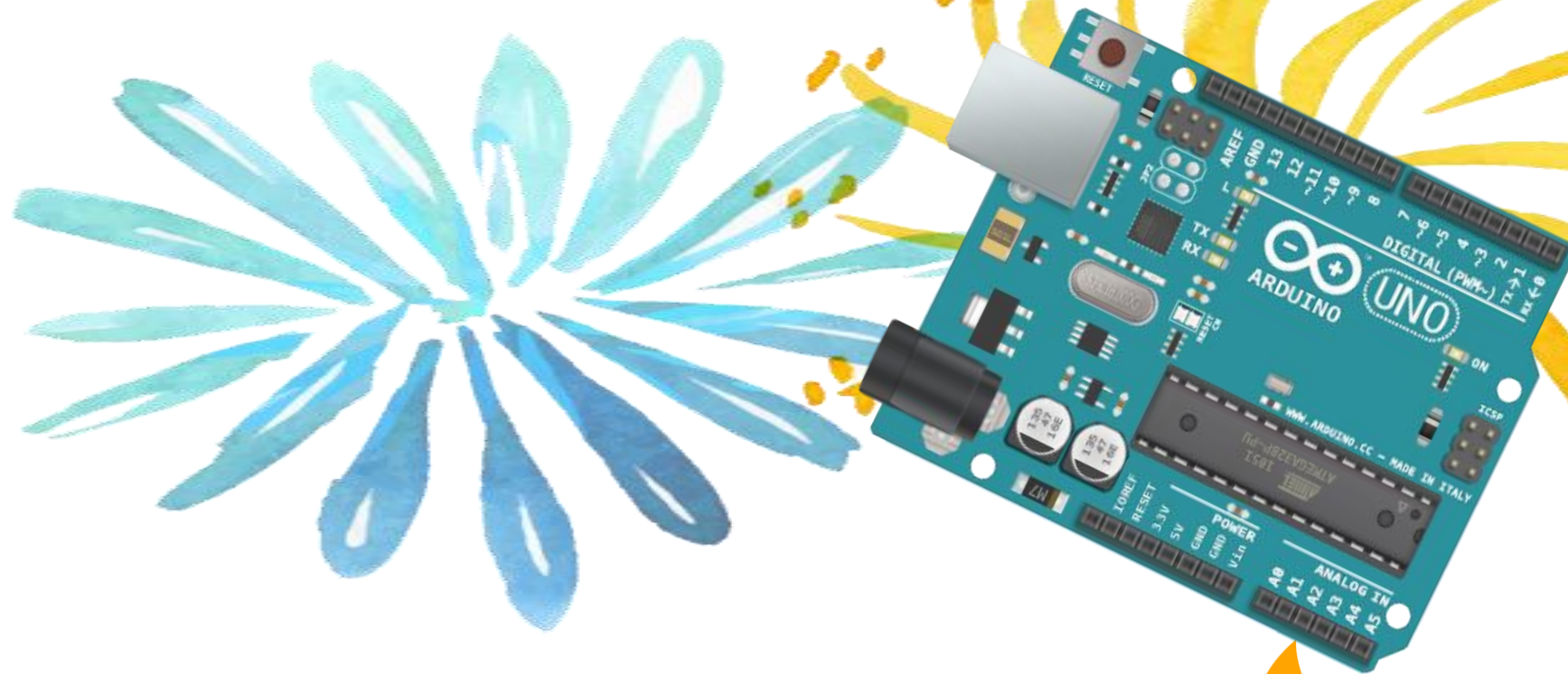
IoT.js



Node SerialPort



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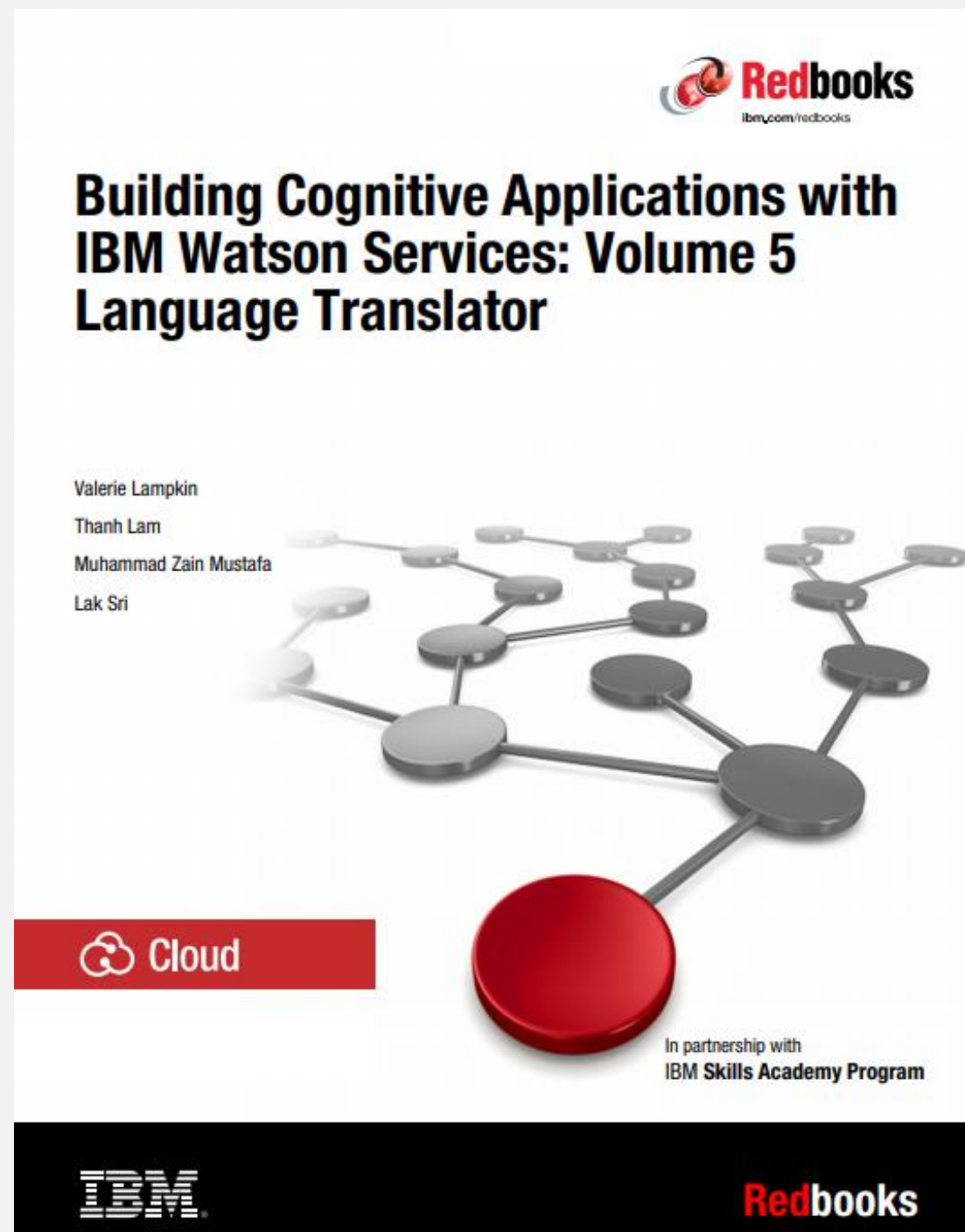
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Node-Red

info

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✖

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Referências

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- [2] NodeRed. Disponível em: <https://nodered.org/>. Acesso em: 20 de junho de 2020.
- [3] Fortune Business Insights. Disponível em: <https://www.fortunebusinessinsights.com/industry-reports/internet-of-things-iot-market-100307>. Acesso em: 20 de junho de 2020.
- [4] Stanford. Disponível em: <https://www.lri.fr/~mbl/Stanford/CS477/papers/Weiser-SciAm.pdf>. Acesso em: 20 de junho de 2020.
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Thank's