

Web of Things Mashups

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Mashup (aplicação web)



Origem: Wikipédia, a enciclopédia livre.

Um **mashup** é um site personalizado ou uma aplicação web que usa conteúdo de mais de uma fonte para criar um novo serviço completo.^[1]


O conteúdo usado em *mashups* é tipicamente código de terceiros através de uma interface pública ou de uma **API**. Outros métodos de codificação de conteúdo para mashups incluem **Web feeds**  (exemplo: **RSS** ou **Atom**), **Javascript** e **widgets** que podem ser entendidas como mini aplicações web, disponíveis para serem incorporadas a outros sites.


www.programmableweb.com






 ProgrammableWeb

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ANDROID O APIS




Android O Packs New APIs Galore

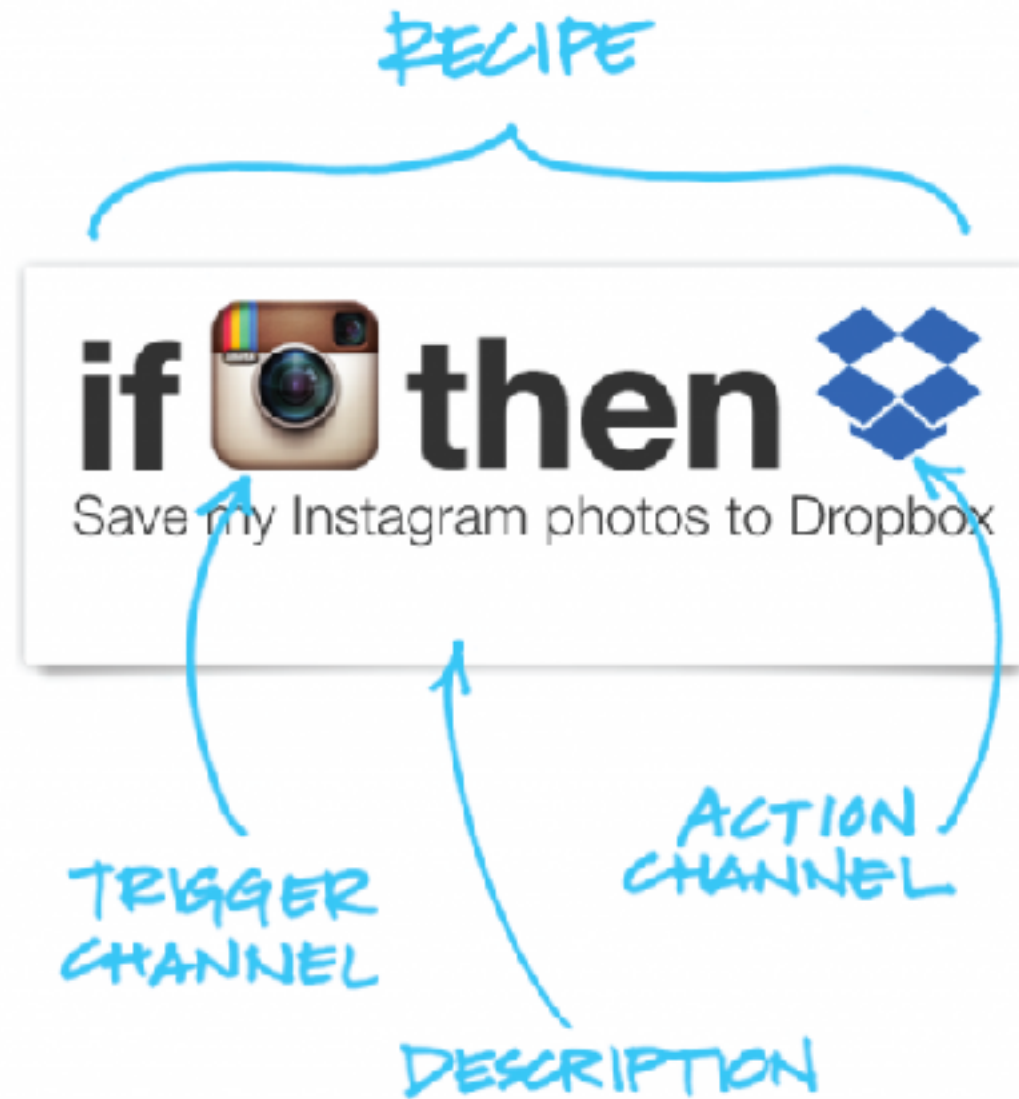
Smartphone · Eric Zeman

[API](#) [SDK](#) [SAMPLE SOURCE CODE](#) [LIBRARY](#) [FRAMEWORK](#) [APP OR MASHUP](#)





Some example Recipes



if  **then** 

Nearly home? Direct message
the person who should know

if  **then** 

Email your new iPhone photos
to yourself

if  **then** 

Backup your contacts to a Google
Spreadsheet

www.ifttt.com



If the game is starting, turn on my TV and alert me

by HomeSeer

12

works with



Automatically turn your Android device's WiFi on when you get home

by Android Device

180k

works with



Automatically turn your Hue lights blue whenever it starts to rain

by Philips Hue

58k

works with



Post your Instagram photos as native Twitter photos when #twitter is in the caption

by djbentley

58k

works with



Back up photos you're tagged in on Facebook to an iOS Photos album

by devin

150k

works with



Tell Alexa to find your phone

by Amazon Alexa

200k

works with



Arm Scout Alarm when you leave home

by Scout Alarm

560

works with

LIGHT

Turn all lights red on Valentine's Day

by iLight

works with



Real-time Rain Notification

by venethefifth

59k

works with

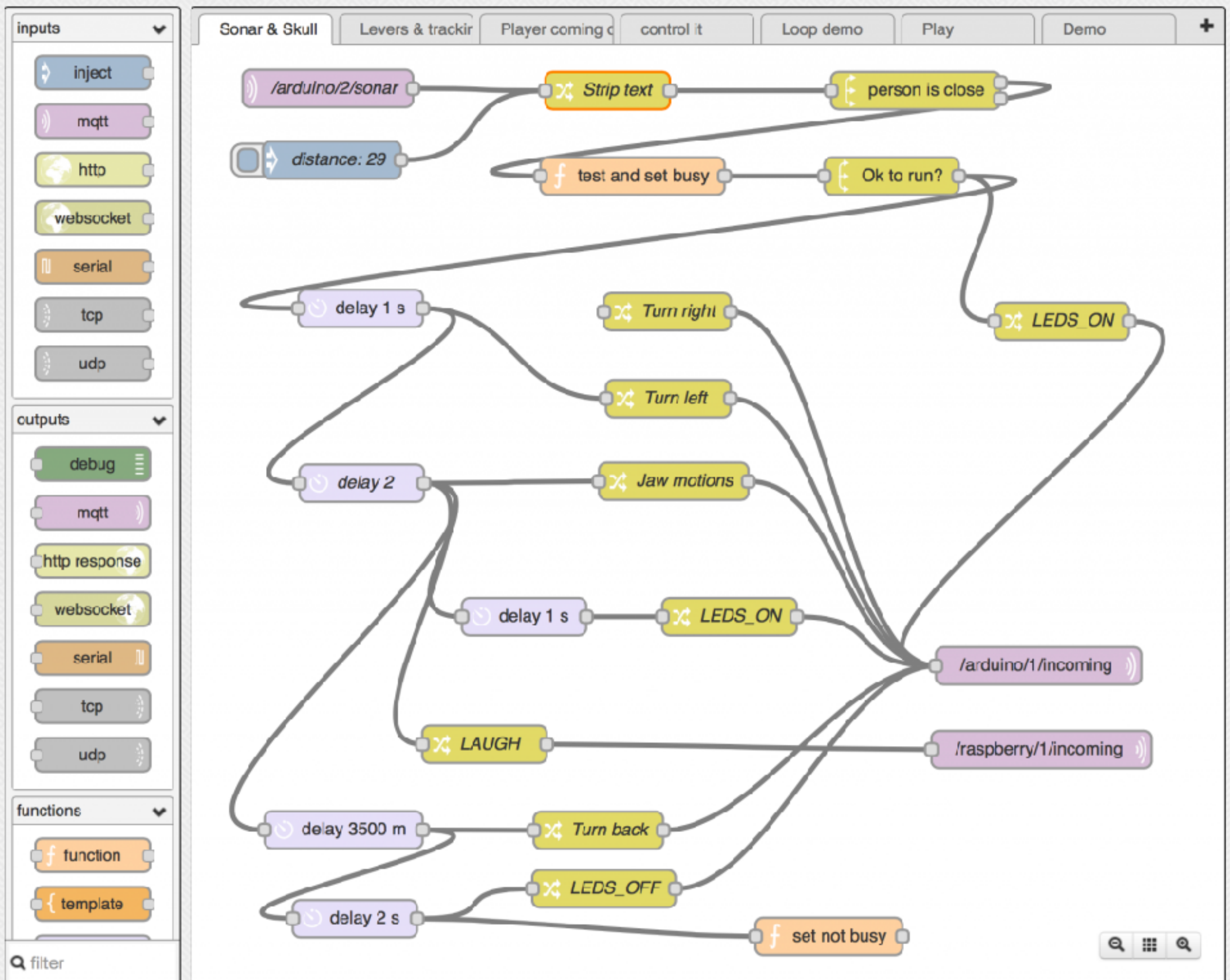
e algo focado na IoT?


```
var websocket;  
var messages = document.getElementById("messages");  
  
function openSocket(){  
    // Ensures only one connection is open at a time  
    if(websocket !== undefined && websocket.readyState !== WebSocket.CLOSED){  
        writeResponse("WebSocket is already opened.");  
        return;  
    }  
    // Create a new instance of the websocket  
    websocket = new WebSocket("ws://localhost:8080/EchoChamber/echo");  
    websocket.onopen = function(event){
```

um grande problema na IoT:
ainda é necessário muito código
para integrar "coisas" diferentes e
seus dados com outras aplicações

```
        if(event.data !== undefined)  
            return;  
        writeResponse(event.data);  
    };  
    websocket.onmessage = function(event){  
        writeResponse(event.data);  
    };  
    websocket.onclose = function(event){  
        writeResponse("Connection closed");  
    };  
  
function send(){  
    var text = document.getElementById("messageinput").value;  
    websocket.send(text);  
}  
function closeSocket(){  
    websocket.close();  
}  
function writeResponse(text){  
    messages.innerHTML += "<br/>" + text;  
}
```

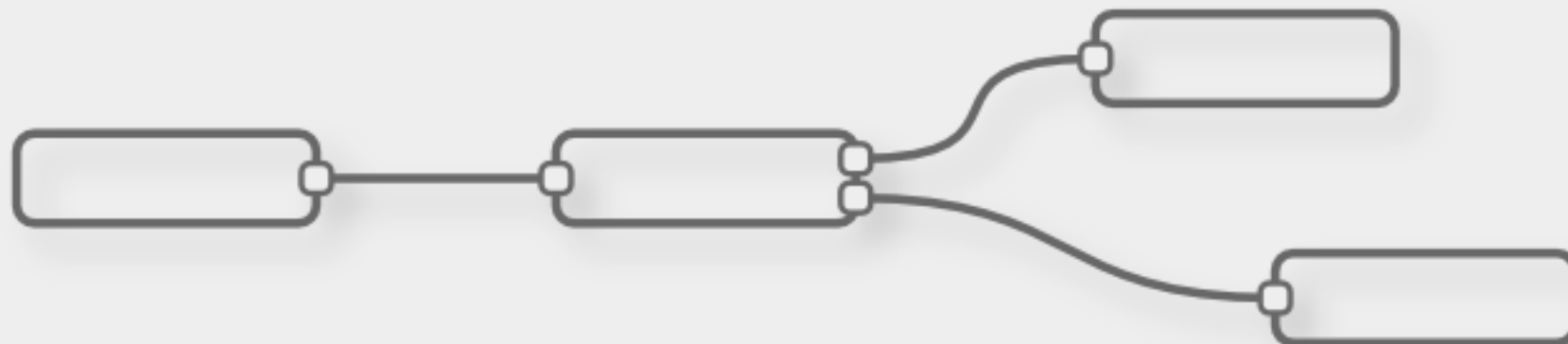
e se fosse (quase) tudo feito com
uma ferramenta visual?

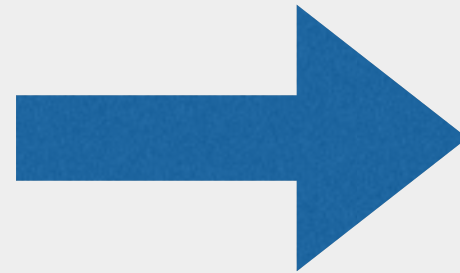


www.nodered.org

Node-RED

A visual tool for wiring the Internet of Things



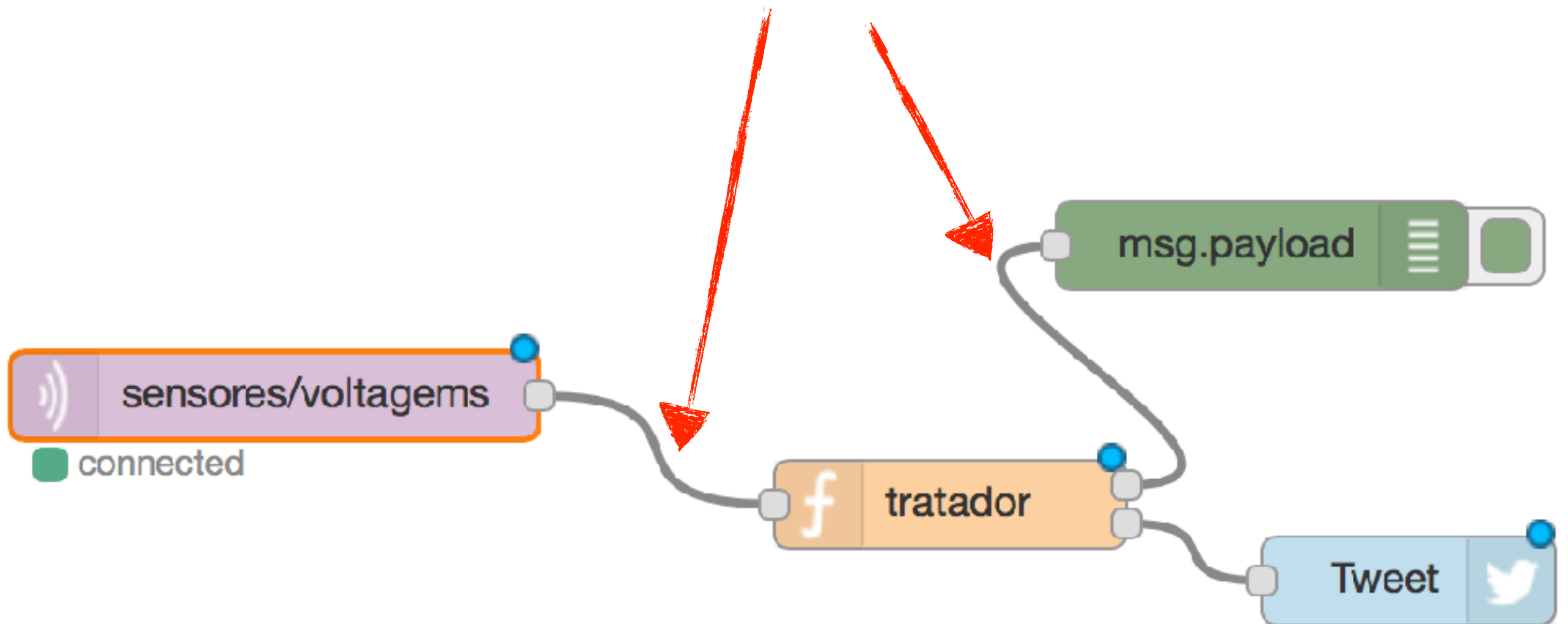


conceito de fluxos e nós

Nós básicos



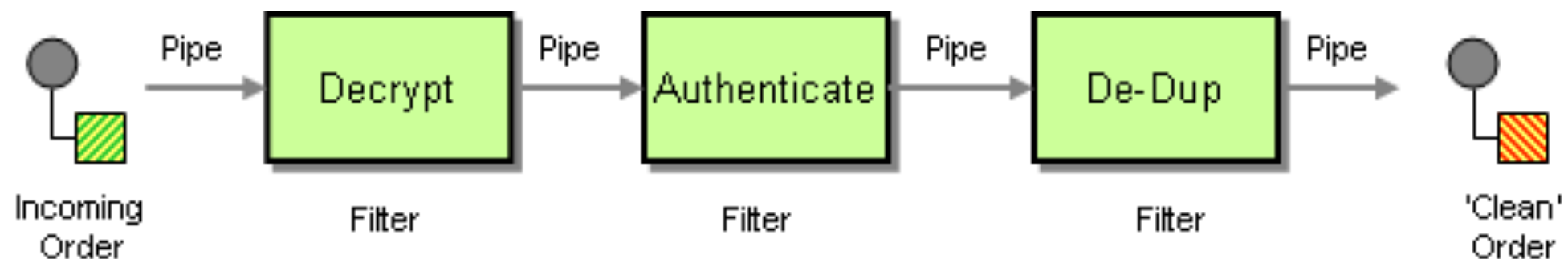
Fluxos



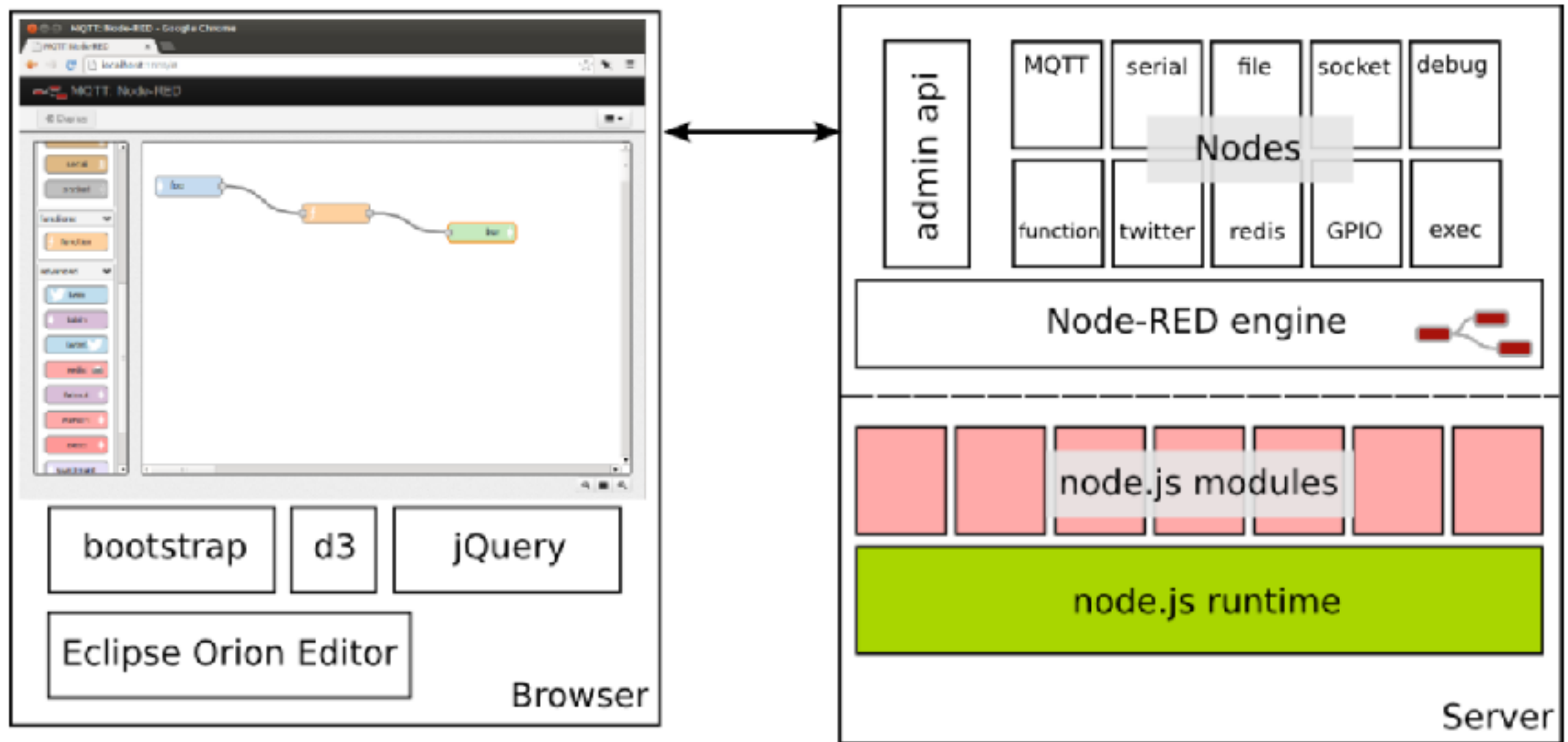
Princípio arquitetural de Pipes e Filtros

Permite inserir etapas (filtros) adicionais no processamento sem alterar os componentes existentes


Sequência de passos menores e independentes (filtros) conectados através de canais (pipes).



Arquitetura do Node-RED

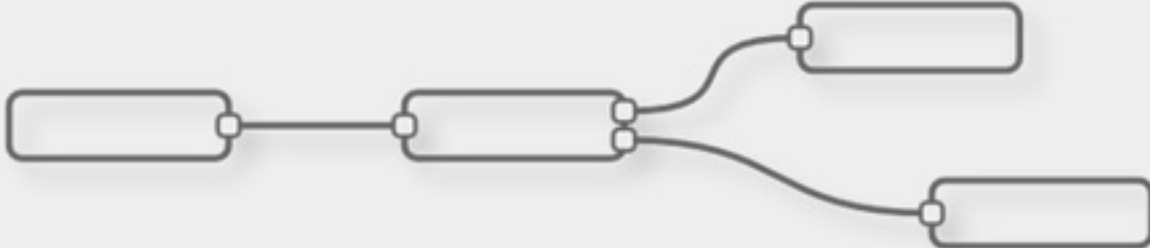


Execução local ou na nuvem

 Node-RED in BlueMix

Node-RED in BlueMix

A visual tool for wiring the Internet of Things



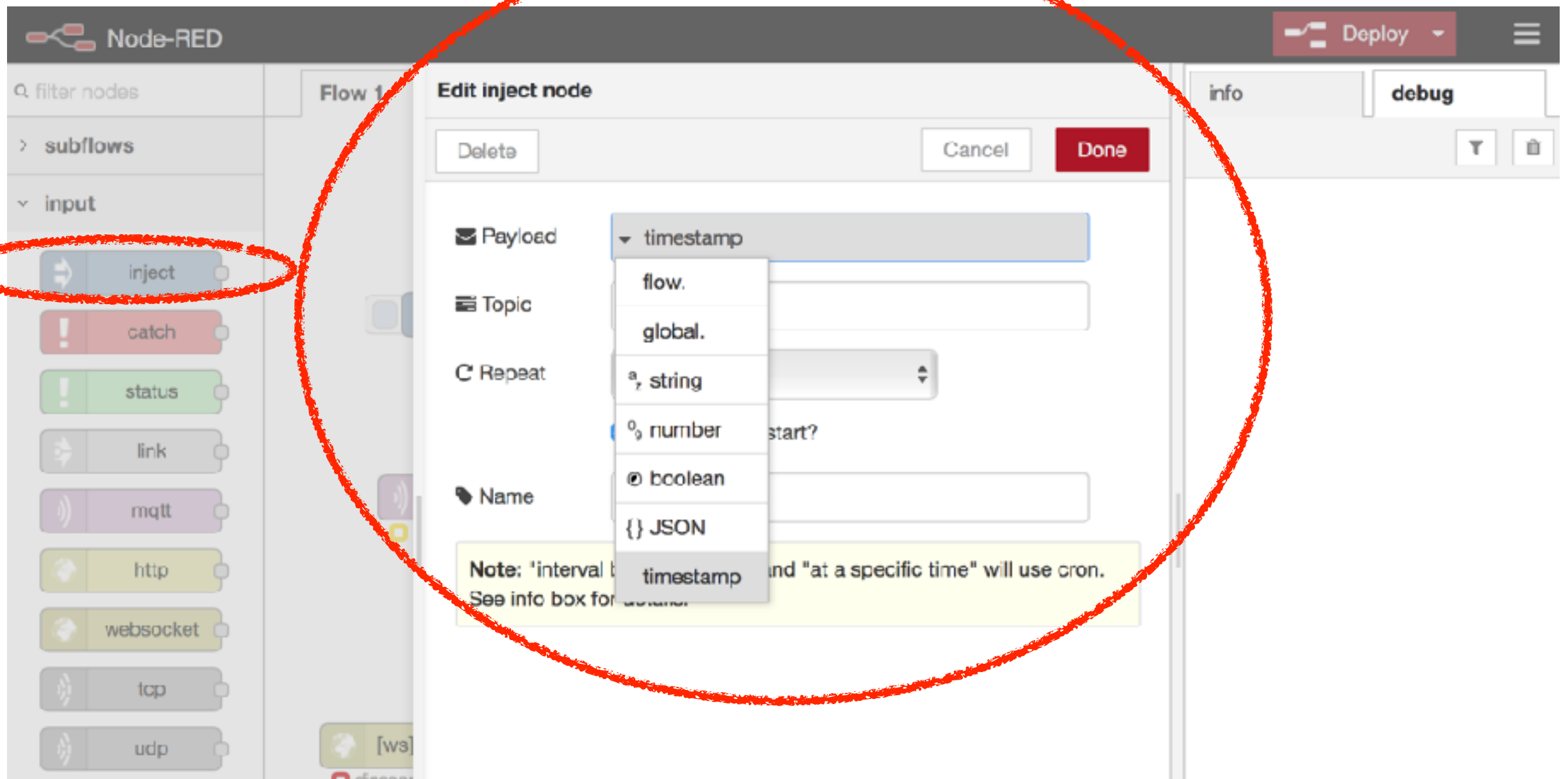
Node-RED provides a browser-based editor that makes it easy to wire together flows that can be deployed to the runtime in a single-click.

The version running here has been customised for the BlueMix cloud environment.

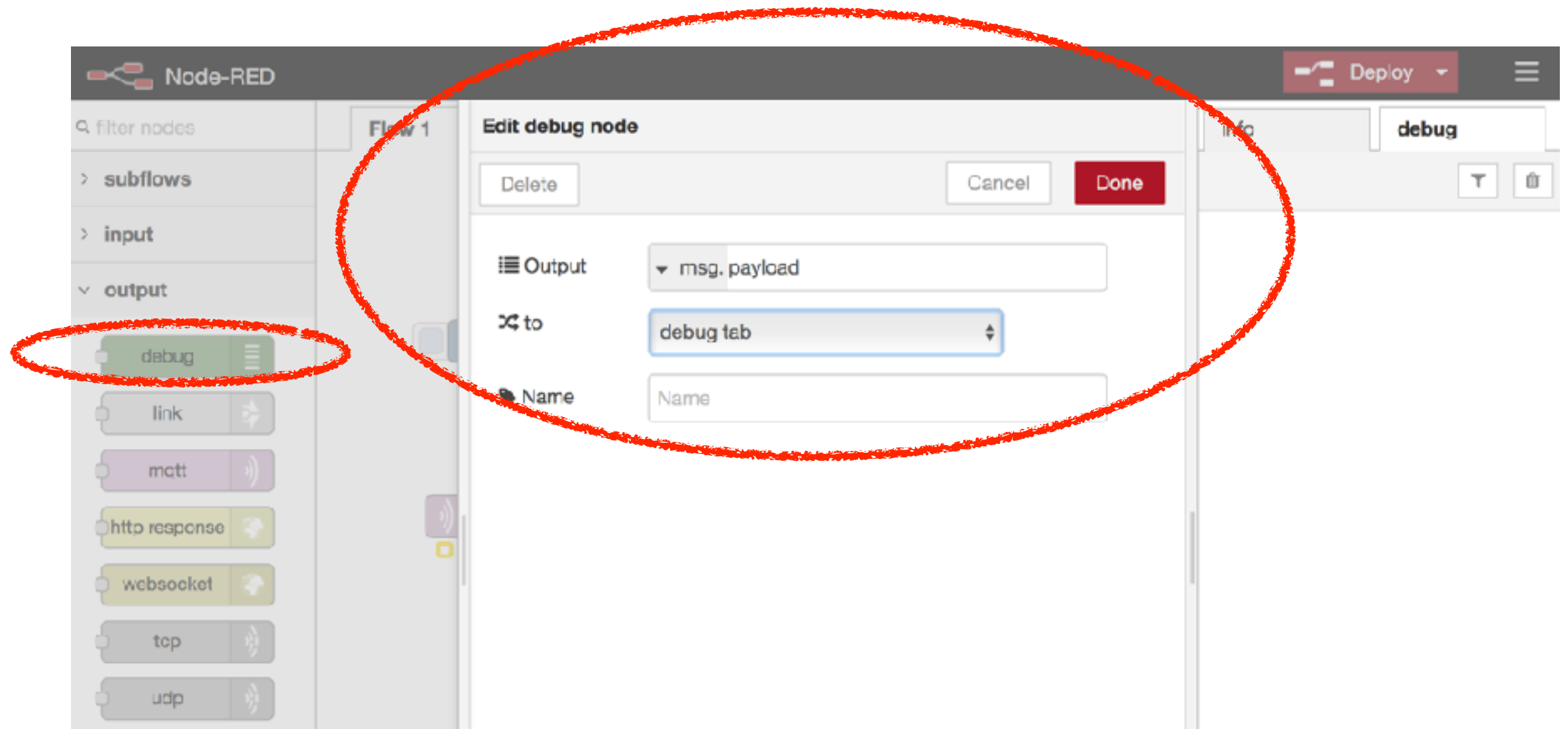
[Go to your Node-RED flow editor](#)

[Learn how to customise Node-RED](#)

input



output



objeto msg

msg.payload

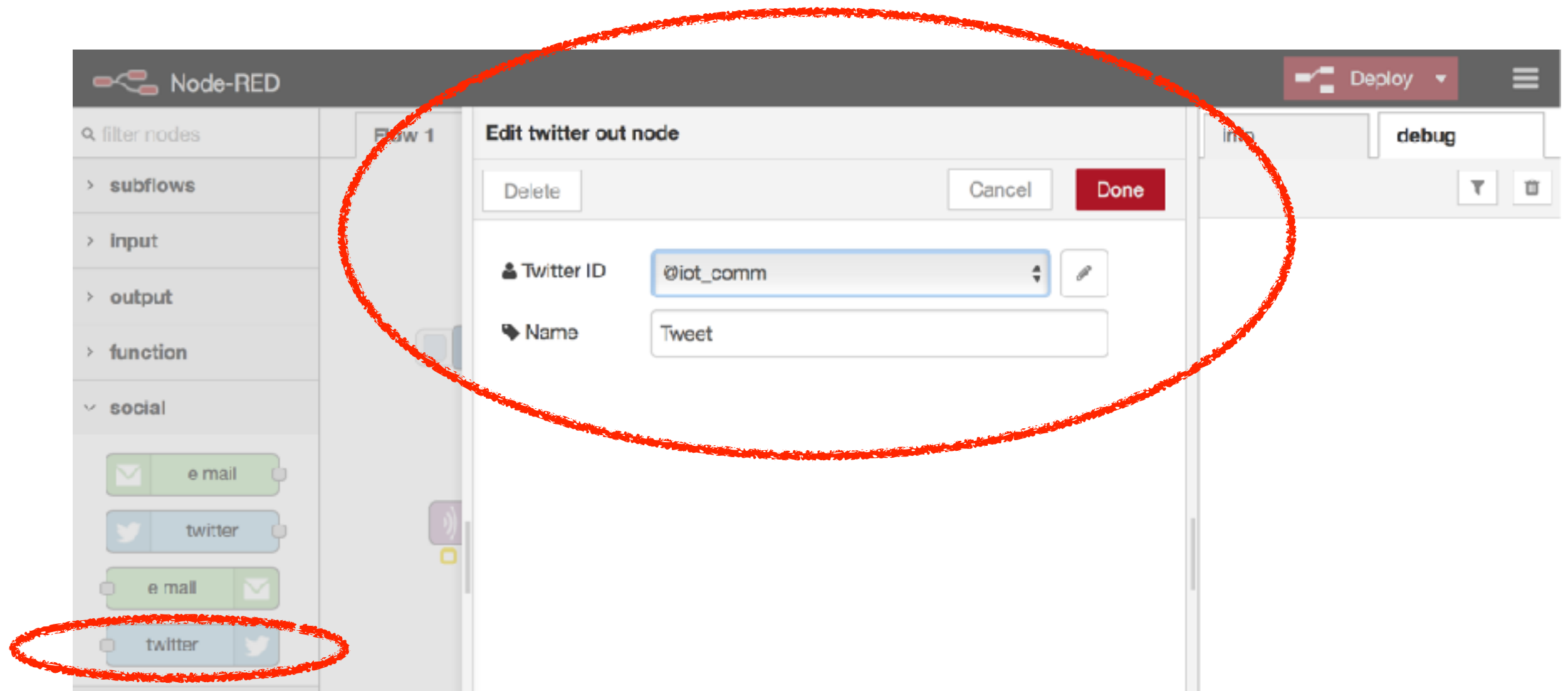
function

The image shows a workflow editor interface with two tabs: 'Flow 1' and 'Flow 3'. In 'Flow 3', a workflow is visible starting with an 'inject' node, followed by a 'Format timestamp' node (highlighted with a red oval), and then a 'msg.payload' output node. A red oval also highlights the 'Edit function node' dialog box on the right. This dialog box has a 'Name' field containing 'Format timestamp' and a 'Function' field containing the following code:

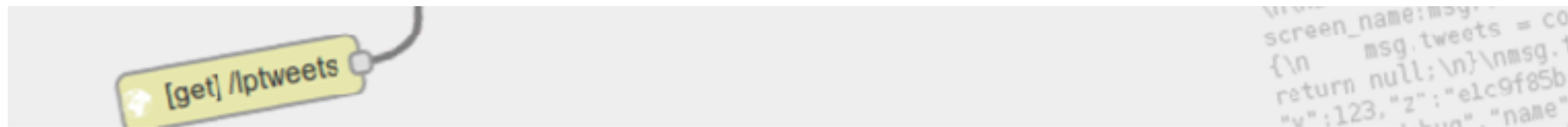
```
1 // Create a Date object from the payload
2 var date = new Date(msg.payload);
3 // Change the payload to be a formatted Date string
4 msg.payload = date.toString();
5 // Return the message so it can be sent on
6 return msg;
```

At the bottom of the dialog, there is an 'Outputs' section with a dropdown menu set to '1'. A yellow banner at the bottom of the dialog reads: 'See the Info tab for help writing functions.'

social



Reuso e extensibilidade



Node-RED Library

Add a flow

Find new nodes, share your flows and see what other people have done with Node-RED.

Sort by: ☒ recent

☐ downloads

☒ flows ☒ nodes

1377 things

node-red-contrib-dynamorse-audio-io

Dynamorse Audio IO nodes for Node-RED

v0.1.2

node

elevator

by spl23

flow

node-red-contrib-media-utils-plus

A collection of Node-RED media nodes that can be used with IBM

v0.0.3  0

node

node-red-contrib-vacation-timer

A node-red node that simulates a house being occupied, by turning

v2.1.2  850

node

node-red-contrib-thinkp-sofia2

A Node-RED node to interact with Indra's Sofia2 IoT platform.

v0.0.12  384

node

Security Pin Dialog UI Template for Node-Red-Dashboard

by robertsLando

flow

Node-RED

filter nodes

Flow 1

input

output

function

social

storage

analysis

advanced

timestamp

Hello world

Tweet

msg.payload

msg.payload

Show the Info tab with  or the Debug tab with 

instalação padrão

sense technic FRED - Cloud Hosted Node-RED

filter nodes

Sheet 1

input

output

function

social

storage

analysis

advanced

formats

Salesforce

sensetecnic

weather

location

Google

fitness

Hello World Flow

Add world!

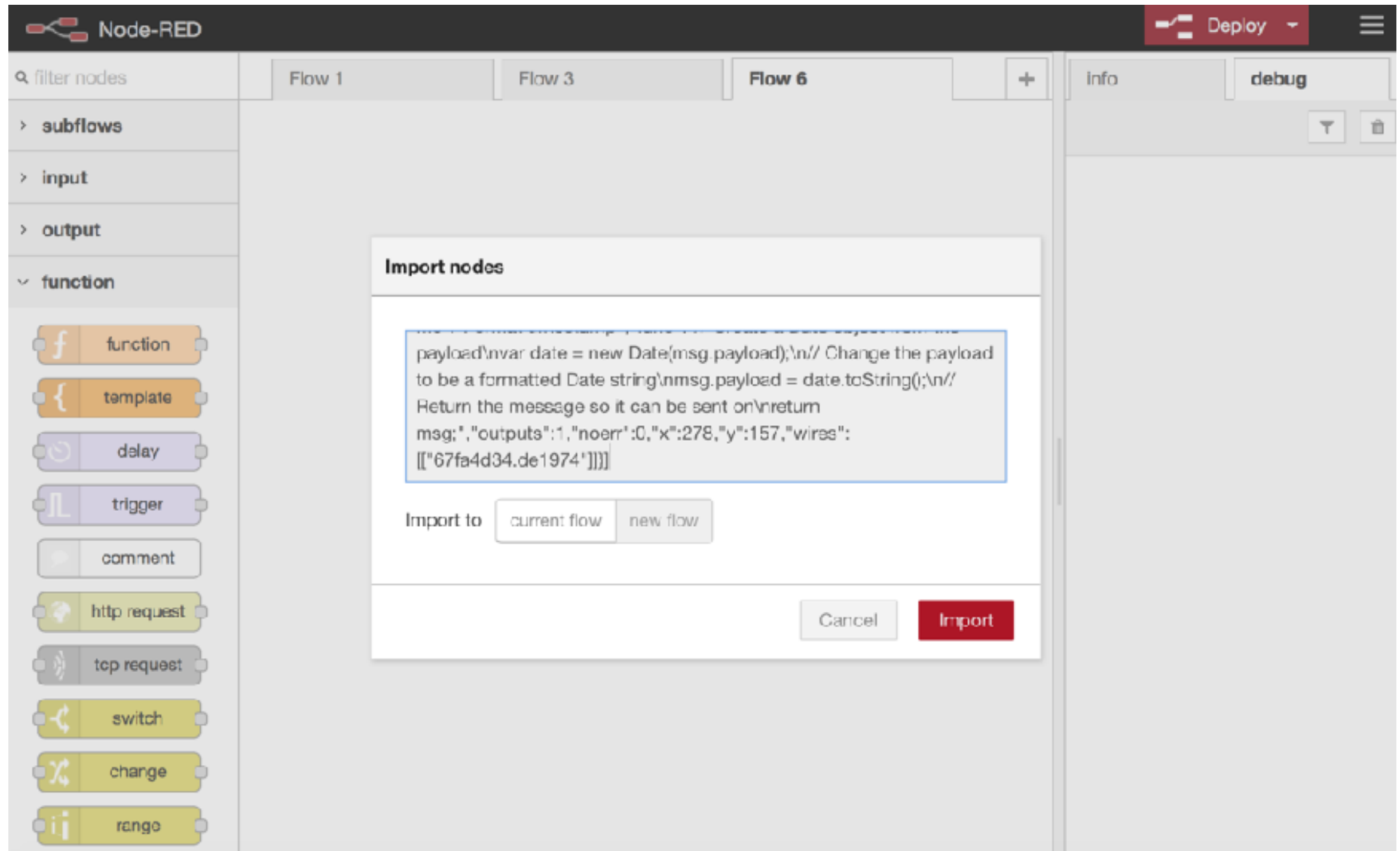
msg.payload

instalação customizada com extensões

exportar nós

The image shows the Node-RED web interface. At the top, there's a black header with the Node-RED logo and a 'Deploy' button. Below the header, there's a search bar labeled 'filter nodes' and two tabs labeled 'Flow 1' and 'Flow 3'. The main workspace contains a flow with three nodes connected in sequence: an 'inject' node (blue), a 'Format timestamp' node (orange), and a 'msg.payload' node (green). On the left side, there's a palette with various node categories: 'subflows', 'input', 'output', and 'function'. The 'function' category is expanded, showing a list of nodes: 'function', 'template', 'delay', 'trigger', 'comment', 'http request', 'tcp request', 'switch', 'change', and 'range'. On the right side, a menu is open, showing options: 'View', 'Import', 'Export', 'Search flows', 'Configuration nodes', 'Flows', 'Subflows', 'Manage palette', 'Keyboard shortcuts', 'Show tips', 'Node-RED website', and 'v0.16.2'. The 'Export' option is highlighted.

importar nós



Atividade Prática

Baseado nos exercícios anteriores, crie um fluxo que:

- 1) lê os dados de voltagem enviados por um WebSocket (consulte o código do Server Sent Events para o envio de um número randomico)
- 2) publica em um tópico MQTT

Use uma aplicação no console para ser subscriber do tópico MQTT e verifique se a publicação feita pelo Node RED está funcionando

Referências

[nodered.org](https://nodejs.org)

noderedguide.com