

Node-RED Overview



The problem

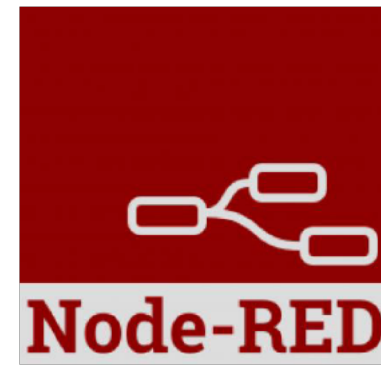
We need tools that make it easier for developers at all levels to bring together the different streams of events, both Physical and Digital that make up the Internet of Things



Why Node-RED?

The Internet does not have a one-size-fits-all solution

- Every new “thing” has a new API that must be understood
- Solutions often require pulling together several different device API's and online services in new and interesting ways
- Time spent pondering how to access a serial port, or complete an OAuth flow to Twitter is not time spent on creating the real time of a solution




Node-RED is

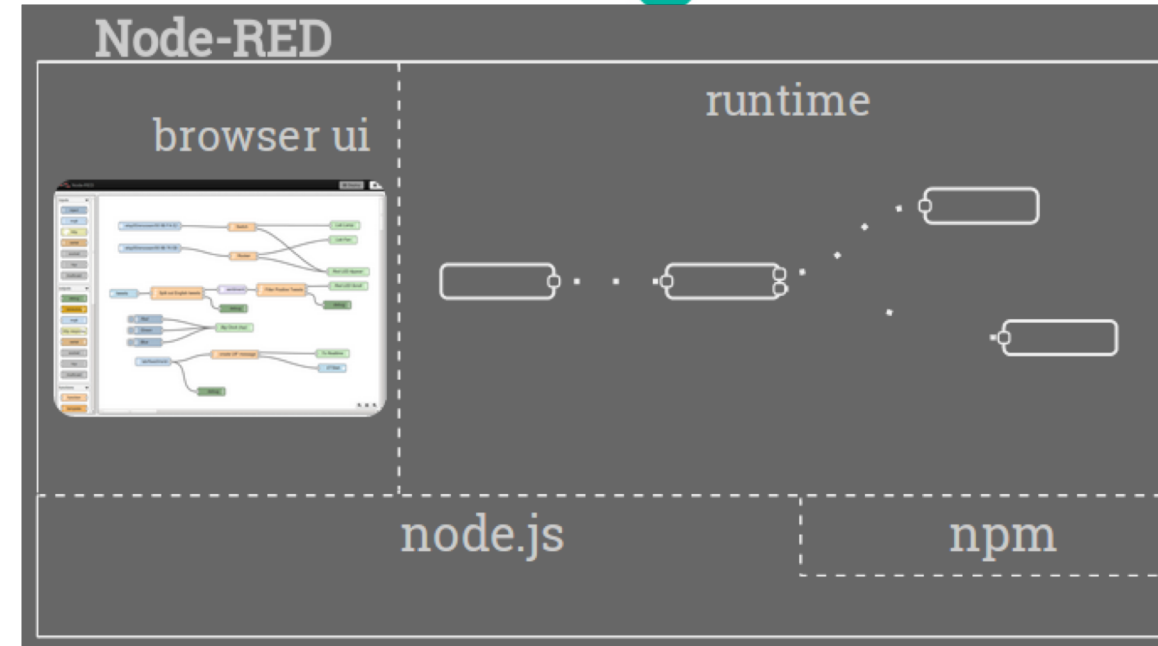
A **Visual Tool** for **Wiring** functions / services

- Flow based programming tool
- An application composition tool experience
- A lightweight proof of concept runtime
- Easy to use for simple tasks
- Simple to extend to add new capabilities and types of integration
- Capable of creating the backend glue between social applications
- A great way to try...
 - “Can I just get this data from here to there?”
 - “and maybe change it just slightly along the way...”



Node-RED Architecture

- Node.js  engine driven: **so fast**
- Event-driven, asynchronous IO. **It's all about the events**
- Single-threaded event-queue: **built for fairness**
- JavaScript front and back: only one language runtime to deal with
- Built using express, d3, jQuery and ws
- Node-RED is available on IBM Cloud
 - Easy install and usage
- Can be installed locally



Nodes Palette

Deploy

Node-RED

Deploy

Filter nodes

input

inject

catch

status

link

mqtt

http

websocket

tcp

mqtt

ibmiot

output

debug

link

mqtt

http response

Flow 1

My First Flow

Dashboard

Device Simulator

Send Data

2. Click to send data

Device payload

1. Configure target

Send to IBM IoT Platform

connected

Debug output payload

Temperature Monitor

Configure source

IBM IoT App In

connected

temp

temp thresh

safe

danger

cpu status

device data

info

debug

dashboard

Flow

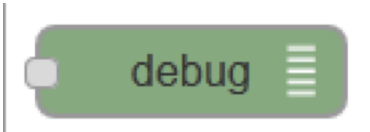
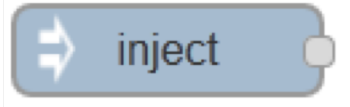
Name	Flow 1
ID	"deb0d57.1c46528"
Status	Enabled

Information

You can manage your palette of nodes with

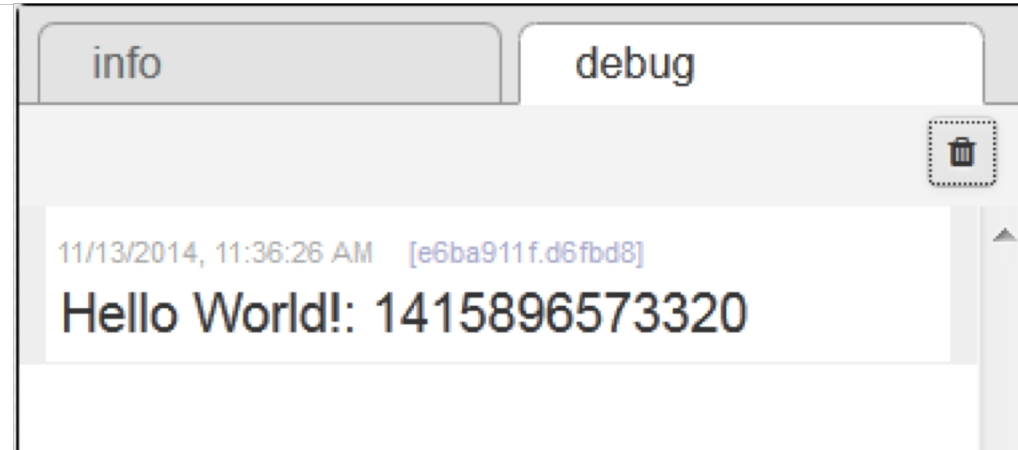
Workspace

Basic Node types



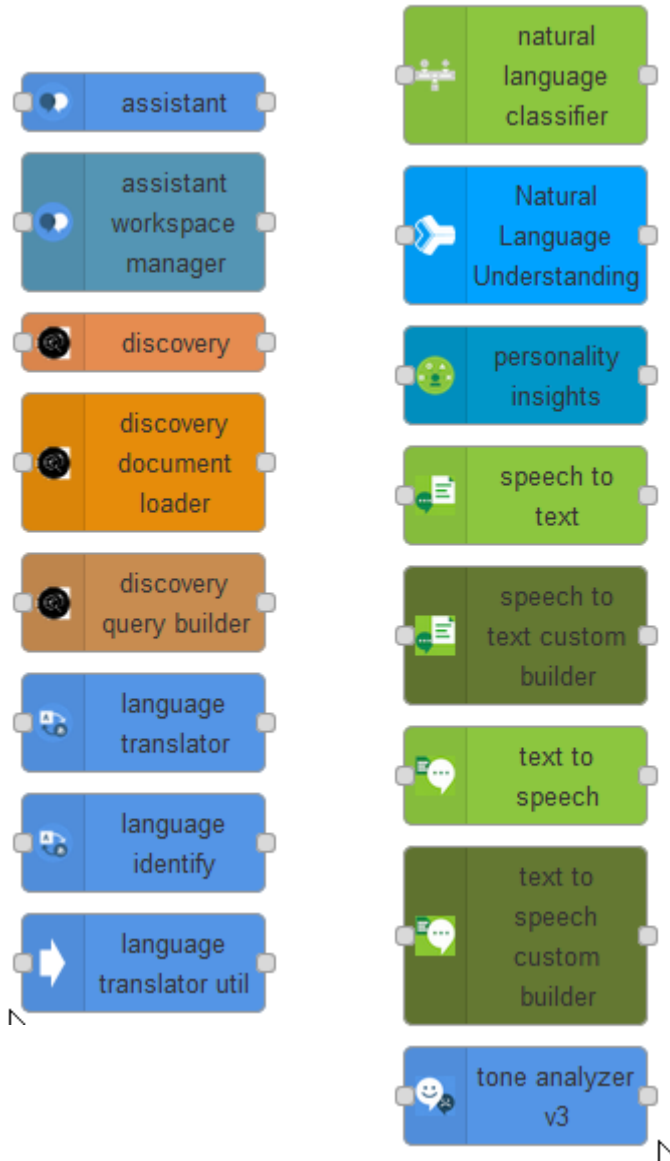
- **Inject Node**
 - Allows manual triggering of flows
 - Can inject events at scheduled intervals
- **Debug Node**
 - Show message content; either payload or entire object
- **Template Node**
 - Modifies the output based on a Mustache Template

Node-RED Hello World



- When you click on the **Inject Node**, it sends an event through the flow – triggering the **template node** and sending the result to the **Debug Node**

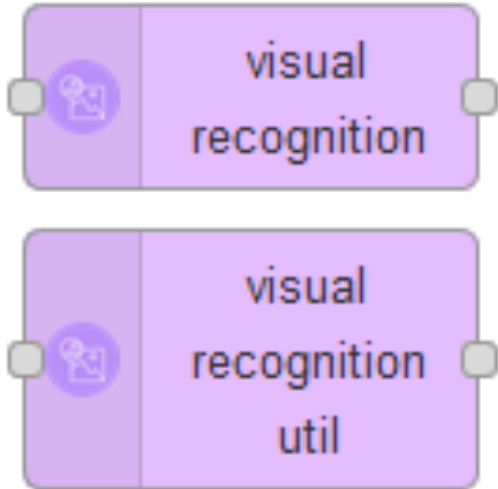
Watson Services Nodes



- Watson Node for Watson Service
 - For querying
 - For training / customizing
- Included in IBM Cloud Node-Red instance
 - Created / maintained by IBM
- Available on npm to be added to your local instances of Node-RED

Watson Visual Recognition Nodes

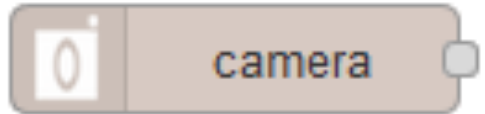
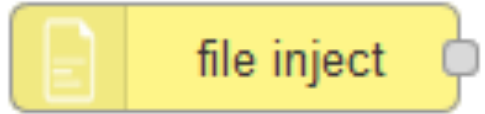
- 2 nodes for Visual Recognition



- 1 Node to query models
 - Specify parameters in editors
 - Pass the parameters in the flow
 - Result is provided in msg.result
- 1 Node to create / update / retrieve / delete custom models



Useful Nodes for Labs



- Useful nodes to interact with your application
- Load file
- Use Microphone
- Take picture with the WebCam



Thank You

