Node RED Program

Installation Guide
Release: 1.0.3
February 2020

This document describes how to install and configure the Node RED package version **1.0.3** using NodeJS **12.2.0** that comes with npm version **6.9.0.** It includes the following sections:

- Installation Resources
- Preinstallation considerations
- Installation Process

Installation Resources

Zack's Node-RED Package:

https://github.com/imZack/pkg-node-red

Travis CI of Zack's package:

https://www.travis-ci.com/imZack/pkg-node-red/builds/111784956#L3757

Package fetch used automatically in our process for uploaded-v2.6-node-v12.2.0-linux-armv7 (Notice that the 10.17.0 Nodejs version is not available):

https://github.com/zeit/pkg-fetch/releases

Preinstallation considerations

In order to install the versions listed before of Nodejs and Node-RED, some changes are needed to be done through Zack's package as follow:

.travis.yml

sudo: false

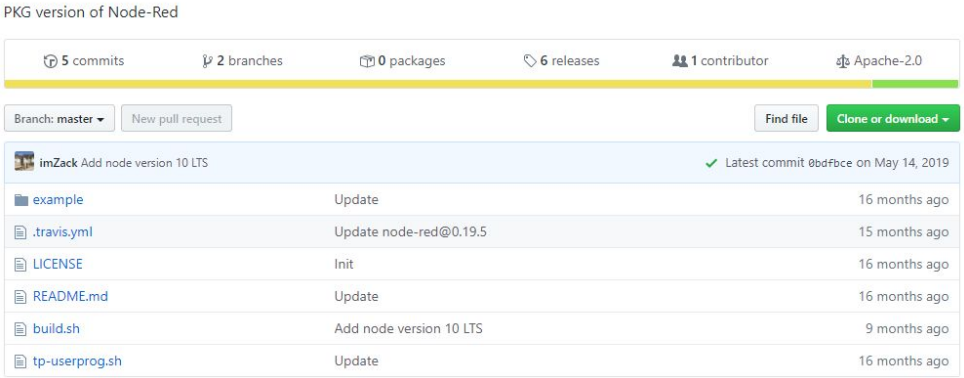
language: node_js

node_js:

- '**12**'

install:

- npm install -g pkg



```
script:
- bash build.sh
- bash tp-userprog.sh
- ls -alh ./release
env:
- NODERED_VERSION=1.0.3
deploy:
  provider: releases
  api_key:
    secure:
                OXj7RI5SXSWpAtS1FHiN0/BcYl6376t5+Jn51Te4XhU2O0DYtSITpm23zfhFGw
                cyi173Pjg6S1v9GEublMKyAFGwdtn848d0z9xwH4Qwzsp3FpGiel1n4K/tOG+cx
                7K1Ub/cFGE8xbziE9YiI0wkFI+h7K1oOe0dIxvvPCLIST1/4a/H/mEhL9IXynTUg
                VdwR8m/AP40FMRN74ZpQ182nA/ZwgVP1z/n75dH0xds9iTo+GKnXkveSFgl7
                1BWPEGhCBrAJzeFarVVRUKjK27RzC8zpDSVzBZAP9NAFeLuCkLnKt1EkXT
                zNM6/EDUWRrXdY38QXdBxvvWMgjeOJ4YYiYnaNvXegczqsQdmUURe8Mcfc
                F16KEZaC0FpCDIeDeokideEoxrSrh5nmqcYb6NYlcwnCDicX+RGQhYT6HPhp
                N8eO8RI5NbyA28DfzWyv89MbtnLOcUm+NgRGbt971o9yjjYfM2vezUDYz9Fu9
                /V4yOfDP8LPftFVHXccl3eBKsYPhU2H9L0OQ7Kl8mBd4oK9HXqLCAAvgMp1f
                alUFJO5yvYldcnJhuFMHYYfx9ysIeQI/I6RNvcmQO5sFtEyDs4h/i2chxfpxRAe41
                +OSrS/Je2RnvJIsC0MCQ23hsRvdDe3i3qMpL/crddUn2CsGxmGv/mn0e/W0qF
                yPbVyw6MOuA=
  file_glob: true
  file: release/*
  skip_cleanup: true
  on:
    repo: imZack/pkg-node-red
    tags: true
```

Build.sh

```
#!/bin/bash
set -x
npm install "node-red@$NODERED_VERSION"
```

```
node -e "const data = require('./node_modules/node-red/package.json'); data.pkg = { assets:
                ['./**/*'] }; require('fs').writeFileSync('new-package.json', JSON.stringify(data,
                null, ' '));"

cp new-package.json node_modules/node-red/package.json

(
  cd node_modules/node-red || exit 1
  npm install --production
  pkg \
    --targets
                node12.2.0-linux-armv7,node12.2.0-linux-x64,node12.2.0-win-x64,node12.
                2.0-macos-x64 \
    --out-path ../../release --public .
)
```

tp-userprog.sh

no changes so far in this bash script

```
#!/bin/bash
set -x
## Create armv7
(
  mkdir userprog-armv7
  cp -r example/* userprog-armv7
  cp release/node-red-linux-armv7 userprog-armv7/node-red
  chmod +x userprog-armv7/node-red
  cd userprog-armv7 || exit 1;
  tar czvf ../release/tp-node-red-armv7.tar.gz .
)
## Create x64
(
  mkdir userprog-x64
  cp -r example/* userprog-x64
  cp release/node-red-linux-x64 userprog-x64/node-red
```

```
  chmod +x userprog-x64/node-red
  cd userprog-x64 || exit 1;
  tar czvf ../release/tp-node-red-x64.tar.gz .
)
```

Once all the changes made in this package, we can create all the files on our gateway to /Home/Moxa.

Installation Process

1. **Install NodeJS 12.2.0, npm 6.9.0 and nvm 0.35.2**

Make sure you are connected in order to update the gateway packages before any install and start running the following commands:

```
moxa@Moxa:~$ sudo apt-get update
```

```
moxa@Moxa:~$ sudo apt-get install curl software-properties-common
```

MUST BE ROOT TO EXECUTE THIS FOLLOWING COMMAND ONLY

```
moxa@Moxa:~$ sudo su
```

```
root@Moxa:/home/moxa# sudo npm install -g n
```

```
root@Moxa:/home/moxa# curl -L https://raw.githubusercontent.com/tj/n/master/bin/n -o n
bash n 12.2.0
```

GO BACK TO /HOME/MOXA (Ctrl-D) AND RUN GCC INSTALL AS RECOMMENDED RIGHT AFTER NODEJS INSTALLATION

```
moxa@Moxa:~$ sudo apt-get install gcc g++ make
```

NVM INSTALL

```
moxa@Moxa:~$ curl -o- https://raw.githubusercontent.com/nvm-sh/nvm/v0.35.2/install.sh | bash
```

IF NVM WAS INSTALLED THE FOLLOWING LINES SHOULD BE OUTPUT IN THE TERMINAL

COPY THE THESE LINES IN THE TERMINAL AND EXECUTE THEM AS A COMMAND

```
export NVM_DIR="$HOME/.nvm"
```

```
[ -s "$NVM_DIR/nvm.sh" ] && \. "$NVM_DIR/nvm.sh"  # This loads nvm
```

```
[ -s "$NVM_DIR/bash_completion" ] && \. "$NVM_DIR/bash_completion"  # This loads nvm
bash_completion
```

CHECK THE VERSION OF NVM TO VERIFY SUCCESSFUL INSTALLATION

moxa@Moxa:~$ nvm –version

2. **Create Zack's node RED package files**

moxa@Moxa:~$ nano .travis.yml (copy and paste changes highlighted in the previous section)

moxa@Moxa:~$ nano build.sh (copy and paste changes highlighted in the previous section)

moxa@Moxa:~$ nano tp-userprog.sh (copy and paste code)

3. **Install a Package using npm**

moxa@Moxa:~$ sudo npm install -g pkg

npm WARN deprecated request@2.88.2: request has been deprecated, see
https://github.com/request/request/issues/3142

/usr/local/bin/pkg -> /usr/local/lib/node_modules/pkg/lib-es5/bin.js

+ pkg@4.4.3

added 123 packages from 152 contributors in 100.115s

4. **Install Node-RED**

In this step we are installing node-RED by executing build.sh first to build our package that will include Node-RED and Nodejs and then we can proceed to create a tar.gz file of our package to upload on Thingspro.

moxa@Moxa:~$ export NODERED_VERSION=1.0.3

moxa@Moxa:~$ bash build.sh (this command should take 20-30 minutes)

IGNORE THE WARNINGS: >Warning Failed to make bytecode node12.2.0-x64 for file…

moxa@Moxa:~$ bash tp-userprog.sh

BECAUSE SOME OF ZACK's CODE FAILED IN OUR CASE CREATING THE CERTS AND DATA FOLDERS IN BUILD.SH SCRIPT, AND END UP CREATING A TAR.GZ FILE IN TP-USERPROG.SH SCRIPT WITHOUT CERTAIN REQUIRED TYPES OF FOLDERS AND FILES, WE ARE GOING TO CREATE OUR PROGRAM TAR.GZ FILE MANUALLY USING THE FOLLOWING STEP:

5. **Create a tar.gz file of our program**

Use some of Zack's Node-RED package resources in folder /example to download or copy paste the following folders and files in /Home/Moxa/userprog-armv7:

- **/certs**
  - cert.pem
  - key.pem

- **/data**,
  - **/lib/flows/**EMPTY
  - **package.json** originally named new-package.json that was created through our installation process in /home/moxa.
  - **package-lock.json** that was also created through our installation process in /home/moxa.
  - **/node_modules**

And the two files:

- **exec** this file needs executable permissions
  - moxa@Moxa:~$ sudo chmod +x exec
- **settings.js**

Now our program is ready to be compiled using the following command:

```
moxa@Moxa:~$ tar -cvf - exec node-red settings.js data/ certs/ | gzip >
nodered-pro-settings.tar.gz
```

Once completed the zipped .tar file should be located in the directory in which the command was run… in this case /home/moxa/userprog-arm7/