

Accessing 1-wire device over owfs from Node-RED

In this article 1-wire devices, e.g. DS18B20, could be accessed from Node-RED and its values displayed on dashboard if needed.

This application note is based on **Debian Buster**, **Node.js v12.x** and depends on **owfs** and **node-red-contrib-owfs**¹ package.

1 Installation prerequisites

Install packages **ca-certificates** and **wget**; usually these are already installed.

```
$ apt-get install -y ca-certificates wget
```

2 Prepare owfs

First install **owserver**. You can install **owhttpd** and **owftpd**, but they aren't needed.

```
$ apt-get install -y owserver
```

Then connect an 1-wire bus master or a USB thermometer to a USB port. Once the device is connected, a device file is created, e.g. `/dev/ttyUSB0`. A corresponding device file could be seen in the kernel message buffer or in realtime with `dmesg -w` when the device is being plugged in.

Open **owserver** configuration file `/etc/owfs.conf` and comment out **server** line including **FAKE** word to get rid of simulated (unreal) device and then add a line

```
server: passive = /dev/ttyUSB0 # for DS9097E
```

or

```
server: device = /dev/ttyUSB0 # for DS9097U
```

Restart service **owserver**.

```
$ /etc/init.d/owserver restart # for sysvinit  
$ systemctl restart owserver # for systemd init
```

3 Install Node.js

Since **node-RED** recommends² version 12, this version is going to be installed³.

```
$ wget -qO- https://deb.nodesource.com/setup_12.x | bash -  
$ apt-get install -y nodejs
```

¹<https://flows.nodered.org/node/node-red-contrib-owfs>

²<https://nodered.org/docs/faq/node-versions>

³<https://github.com/nodesource/distributions/blob/master/README.md>

4 Install Node-RED

This is a quick setup routine to get Node-RED up and running, not usable for production, e.g. no authentication, automatical start at boot is missing etc.

It is recommended that services run under user account, so create a user *nodered*.

```
$ mkdir -p /home/nodered
$ useradd --gid users --home-dir /home/nodered --system --shell /bin/bash nodered
$ chown nodered -R /home/nodered
```

Enter user nodered.

```
$ su - nodered
```

Then install **node-red** and **node-red-contrib-owfs**.

```
# npm install node-red
# npm install node-red-contrib-owfs
```

There could be errors when installing *node-red-contrib-owfs* with *bcrypt* package resulting in errors like *gyp ERR! configure error* or *ImportError: No module named ast*. In this case exit user nodered and install some packages as root and log in back to user.

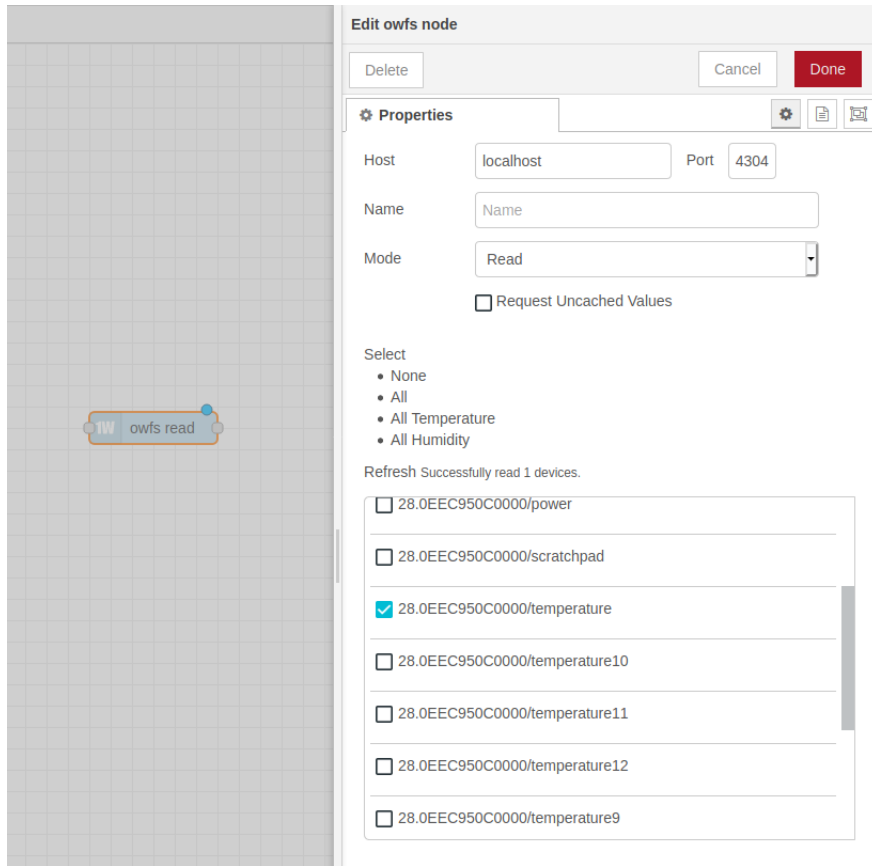
```
# exit
$ apt-get install -y g++ make python2.7
$ su - nodered
```

As Node-RED was installed with npm without *global* flag, package was installed under user directory `node_modules`. Run it from then.

```
# ./node_modules/node-red/red.js
```

5 Accessing Node-RED

Open browser and navigate to `[x]:1880`, where `[x]` is IP address or a domain name of the computer running Node-RED. There will be 1-wire node on the bottom of node list and after adding it to a flow it needs some configuration, e.g. select some interesting values like temperature.



Device list is automatically populated by detected 1-wire devices.

Create and deploy a simple flow to check working.

