Initial os configuration

Install raspbian OS

sudo apt-get update | sudo apt-get upgrade -y

chmod -R 777 /home/pi

update-nodejs-and-nodered

update-nodejs-and-nodered

Reboot pi

sudo systemctl enable nodered.service <--- Bootup node red with PI

Reboot Pi and try to get to web page to make sure it works

Reboot pi a second time to verify….

Install node red packages

Npm install 'package name here'

Node-red-contrib-bigtimer

Node-red-dashboard

Node-red-contrib-mqtt-broker

Node-red-contrib-camerapi

Node-red-contrib-usbcamera

Node-red-node-mysql

Reboot pi to verify installs worked and did not mess up loading of node-red

The below process of changing the config file and changing / creating the admin account took around an two hours to do with much trial and error....

Process to generate admin password hash for Node red master login

cd /usr/lib/node\_modules/node-red/node\_modules

node -e "console.log(require('bcryptjs').hashSync(process.argv[1], 8));" password hash want to generate goes here

Adding the Password hash to the config file via nano. This also includes some modifications to the defualt config file.

Cd /home/pi/.node-red

Sudo nano settings.js

adminAuth: {

type: "credentials",

users: [{

username: "admin",

password: "$2a$08$zZWtXTja0fB1pzD4sHCMyOCMYz2Z6dNbM6tl8sJogENOMcxWV9DN.", >>>>>> THIS IS NOT THE REAL HASH!!!! <<<<<<<<

permissions: "\*"

}]

},

Additional config file changes to change the information storage path

userDir: '/home/pi/.node-red/',

nodesDir: '/home/pi/.node-red/nodes',

After config file changes are made reboot and test…..

Back up initial configuration to flash drive before continuing further…

Installation of MySQL

sudo apt-get install mysql-server python-mysqldb

sudo su

mysql -u root -p

CREATE DATABASE nodered;

USE nodered;

CREATE USER 'nodered'@'localhost' IDENTIFIED BY '\*\*\*\*';

GRANT ALL PRIVILEGES ON nodered.\* TO 'nodered'@'localhost';

FLUSH PRIVILEGES;

CREATE TABLE mqtt (id int(11) NOT NULL AUTO\_INCREMENT, timestamp datetime NOT NULL, topic text COLLATE utf8\_unicode\_ci NOT NULL, data text COLLATE utf8\_unicode\_ci NOT NULL, UNIQUE KEY id (id)) ENGINE=MyISAM DEFAULT CHARSET=utf8 COLLATE=utf8\_unicode\_ci;

quit;

The above section creates a database of nodered and a user of nodered and the password for the user and grants access to the database. The above commands proceed to create a table of mqtt and columns of id; timestamp; topic; data

Collation of utf8\_unicode\_ci was used to help with compatibility of MQTT

sudo /etc/init.d/mysql restart <--- resetarts mysql

Grant access to external computers…..

sudo su

mysql -u root -p

GRANT ALL ON \*.\* TO 'nodered' @'192.168.1.%' IDENTIFIED BY 'passwordhere' with grant option;

Exit

Exit

Sudo nano /etc/mysql/my.cnf

Added the below line to the config file…

Bind-address = 0.0.0.0

………………End config

Ctrl x

Y

Enter

Sudo /etc/init.d/mysql restart

Added login table for user logins….

CREATE TABLE `nodered`.`login` (

`idlogin` INT NOT NULL AUTO\_INCREMENT,

`UserName` VARCHAR(45) NOT NULL,

`Password` VARCHAR(45) NOT NULL,

PRIMARY KEY (`idlogin`));

Install LAMP

## Install Apache2

Sudo su

apt-get install apache2 -y

a2enmod rewrite

systemctl restart apache2

nano /etc/apache2/apache2.conf

<Directory /var/www/>

Options Indexes

FollowSymLinks

AllowOverride All

Require all granted

</Directory>

systemctl restart apache2

## Install PHP

apt-get install php libapache2-mod-php -y

systemctl restart apache2

### Install phpMyAdmin

apt-get install phpmyadmin -y

Verify it works….

http://192.168.1.105/phpmyadmin/

Grant full access to database…

Sudo nano /etc/mysql/my.cnf

Remove….

Bind-address=0.0.0.0

Sudo /etc/init.d/mysql restart

Mysql -u root -p

Grant all privileges on \*.\* to phpmyadmin@192.168.1.% identivied by '\*\*\*\*' with grant option;

Exit

Sudo nano /etc/mysql/my.cnf

Add….

Bind-address=0.0.0.0

Sudo /etc/init.d/mysql restart