Using configuration scripts to setup CSB502SSD

Downloading

Some features of the csb502ssd are completely plug and play with many operating systems. Other features, such as the realtime clock and temperature sensor require modifying several files. We have created a script to edit these files for you so that you won't have go through the process manually.

In order to get the script files from the internet you will need to have the Ethernet plugged in or have the WiFi pre-configured.

On many Raspberry Pi operating systems, git is installed by default. If git is not installed, you will have to install it with:

```
sudo apt-get install git
```

Once git is installed, clone the Pi2Design csb502setup repository from github with this command:

```
git clone --depth=1 https://github.com/Pi2Design/csb502setup
```

This will copy two scripts to your machine, csb502setupJESSIE.sh and csb502setupWHEEZY.sh.

Running the script

You only need to run one setup script. Use csb502setupJESSIE.sh if you are running Raspbian Jessie and use csb502setupWHEEZY.sh if you are running Raspbian Wheezy. Run the script with the following commands:

```
cd csb502setup

sudo ./csb502setupJESSIE.sh
```

Or:

```
sudo ./csb502setupWHEEZY.sh
```

The script will start editing files and then ask if you would like to setup your wireless network ID and password. Type Y if you have not setup Wifi on your Pi yet, or N if Wifi is already setup or you would like to do this through other means.

After the script has completed, reboot the Pi via the desktop or type:

```
sudo reboot
```

Setting the Realtime Clock

Check that the system time has been correctly set via Wifi or Ethernet with the date command:

```
date
```

Then, set the hwclock to the system time with the following command:

```
sudo hwclock –w
```

You can read the realtime clock with this command:

```
sudo hwclock –r
```

The configuration script has made it so that the system time will be set from the RTC on each boot. If you do not have Wifi or Ethernet access on subsequent boots, your Pi will still have the correct time from the realtime clock.

Checking the Temperature

The DS18B20temperature sensor on the csb502ssd is located under the SSD. After running the configuration script as described above, you can check the temperature with the following command:

```
cat /sys/bus/w1/devices/28-[unique-ID-number]/w1_slave
```

The unique-ID-number is different for every sensor, and provides a unique ID for you csb502ssd. When you are typing the command use tab-complete when you get to that part in the path. Do this by typing “cat /sys/bus/w1/devices/28-“ and then pressing the TAB key, and then adding “/w1_slave”. The output of this command will look something like this:

```
91 02 4b 46 7f ff 0f 10 62 : crc=62 YES

91 02 4b 46 7f ff 0f 10 62 t=41062
```

The “crc=xxx YES” part means that the data should be valid. Here “t=41062” means that the temp sensor is 41.062 Celsius.

Checking the Wifi link:

You can check that the Wifi module is associated with your network with this command:

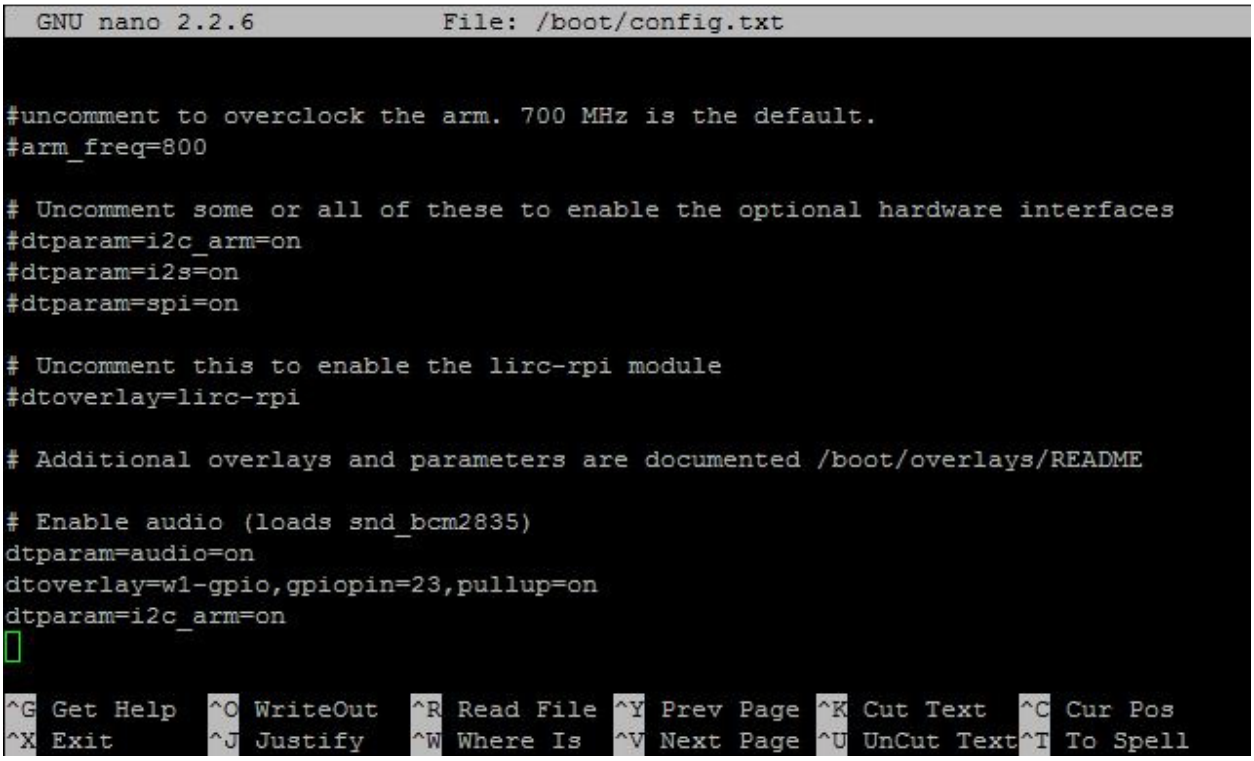
```
iwconfig
```

If the link is associated then you will see your Network name in the output.

What the Configuration Script Does

The configuration script edits /boot/config.txt, /etc/modules, /etc/rc.local, and if Wifi setup is selected, /etc/wpa_supplicant/wpa_supplicant.conf.

/boot/config.txt is first backed up to /boot/config.bk. After editing, /boot/config.txt should look something like this:

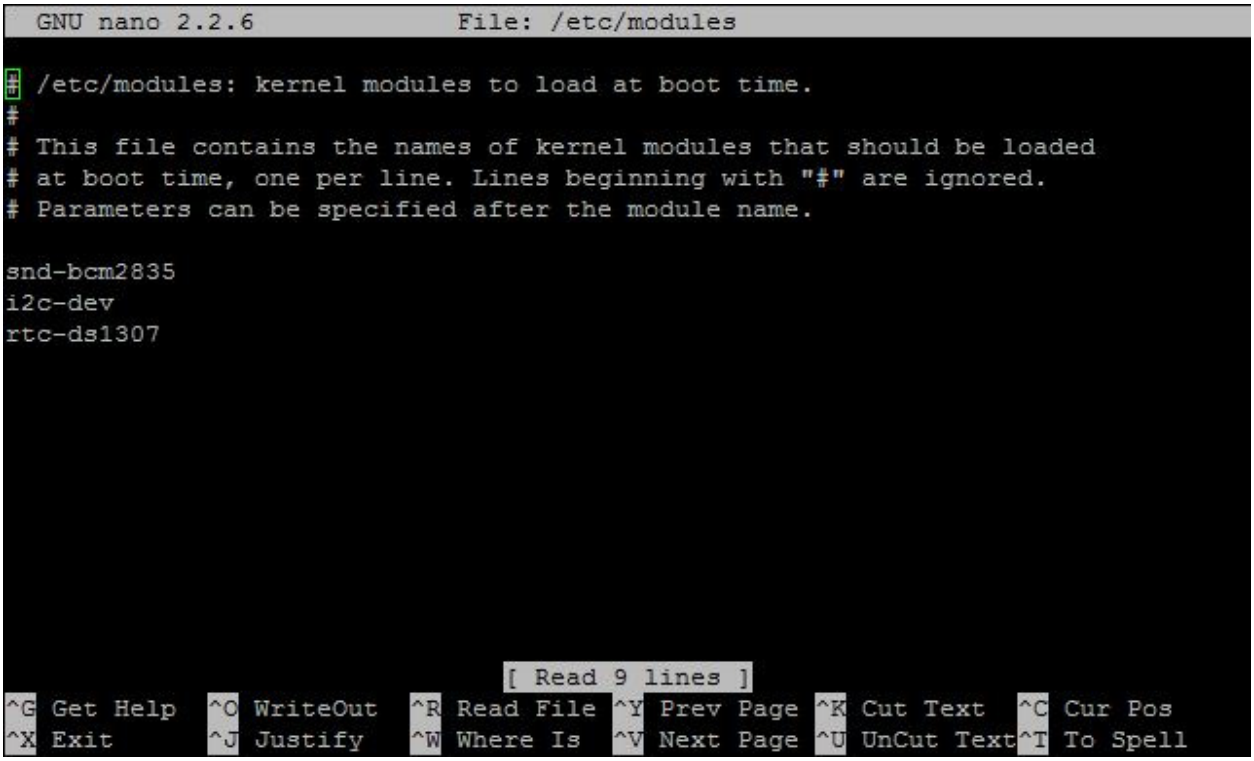


The script has added dtoverlay=w1-gpio,gpiopin23,pullup=on. This properly configures the device tree to load the 1wire interface with parasitic power mode support on gpio23, which is where the Dallas temp sensor is connected.

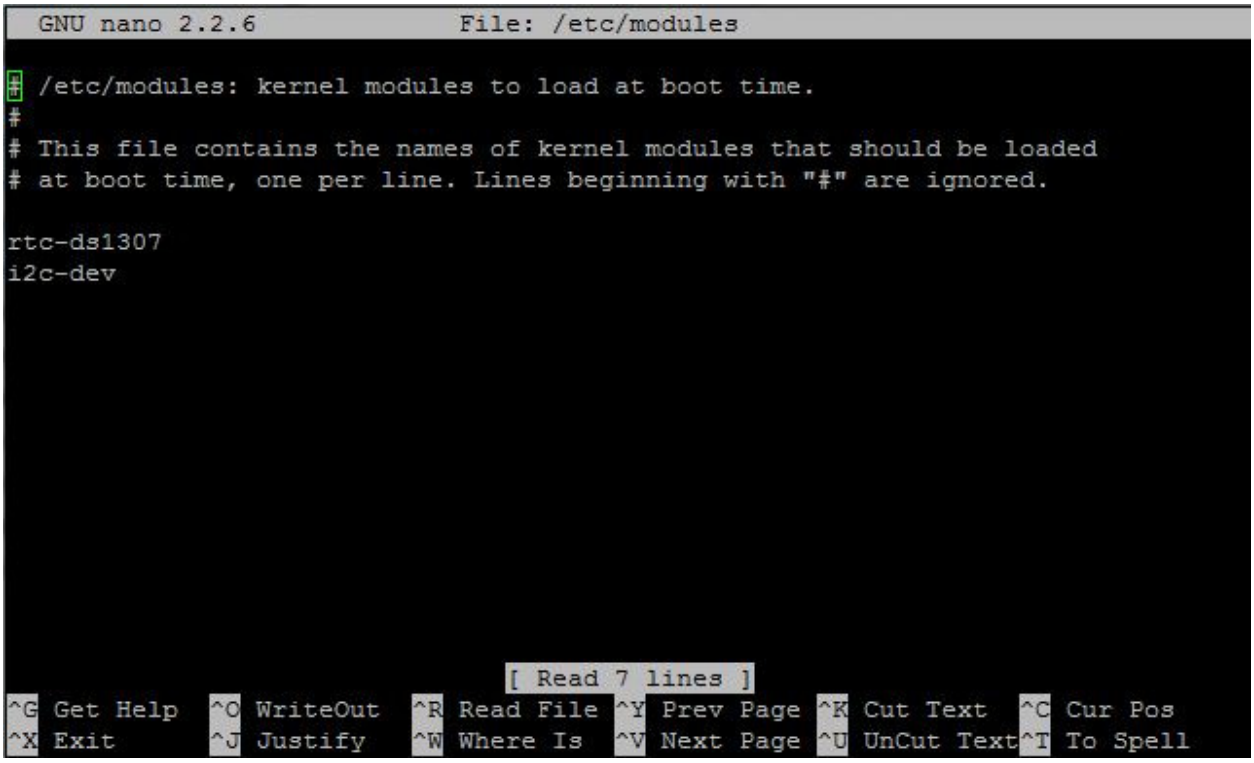
The script has also added dtparam=i2c_arm=on. This sets up the pins for 12c bus number 1 (0 on much older Pis). The i2c interface is needed for the realtime clock.

/etc/modules is edited to add the realtime clock module. Note that w1-gpio and w1-therm are not needed here and will be loaded automatically via device tree.

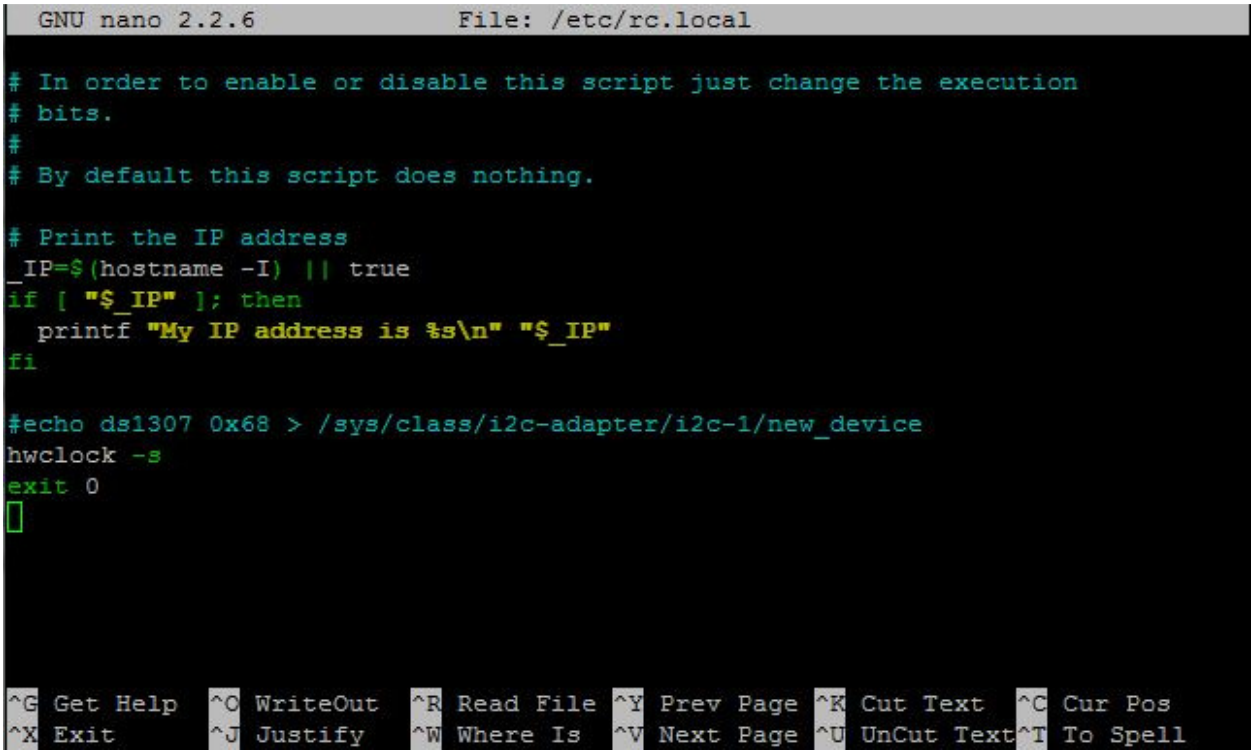
After editing, the files should look like this for WHEEZY:



And like the below for JESSIE:

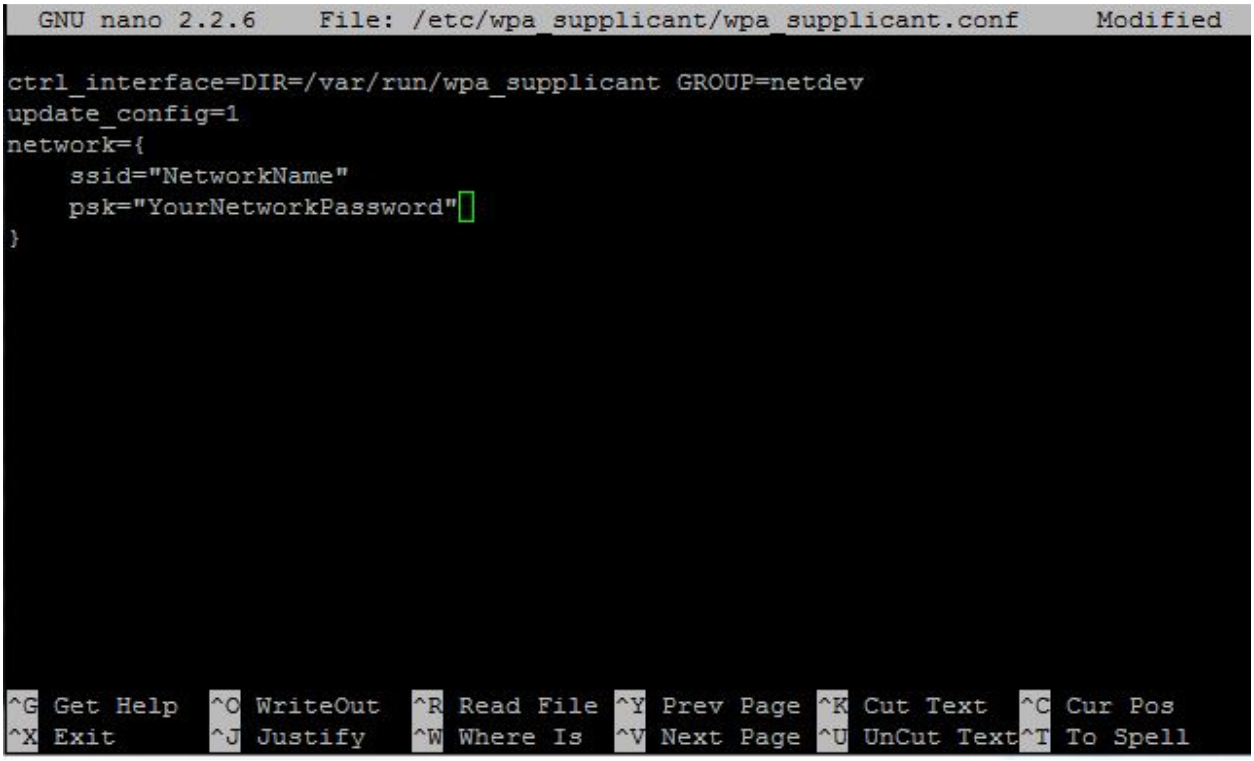


/etc/rc.local is modified to add support for the realtime clock. This script is run automatically on every boot.



The line “echo ds1307 0x68 > /sys/class/i2c-adapter/i2c-1/new_device” is needed (uncommented) for Wheezy but not for Jessie. The line “sudo hwclock –s” sets the sytem time from the hardware clock. The system time may be reset afterwards from the WiFi or Ethernet if attached.

The script will edit /etc/wpa_supplicant/wpa-supplicant.conf with your wireless network name and password if you type Y when prompted. Here is what that file may look like afterwards.



Precautions have been taken so that it should be safe to run the configuration script multiple times. However in some cases, such as if your wireless network or password has the "}" character, the script will not edit the file properly.

If you are experiencing problems, check the files on your machine against this guide with

```
sudo nano filename
```

and make the proper corrections.