

## Xeon - Action Item #556

### Enable Pi Zero W / RPi 3 Wifi

23 Oct 2016 18:48 - Hammel

<b>Status:</b>	Closed	<b>Start date:</b>	23 Oct 2016
<b>Priority:</b>	Urgent	<b>Due date:</b>	
<b>Assignee:</b>	Hammel	<b>% Done:</b>	100%
<b>Category:</b>		<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>			
<b>Severity:</b>	01 - Critical		
<b>Description</b>			
Details on the toolchain are here: <a href="http://www.jaredwolff.com/blog/cross-compiling-on-mac-osx-for-raspberry-pi/">http://www.jaredwolff.com/blog/cross-compiling-on-mac-osx-for-raspberry-pi/</a>			
Kernel defconfig is <a href="#">bcm2709_defconfig</a> .			

#### Associated revisions

##### Revision c951ae12 - 27 May 2018 18:41 - Hammel

RM #556: Add brcmfmac firmware to build. Make it possible to specify install directories for both kernel firmware and downloaded firmware objects like brcmfmac's txt file.

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##### Revision 59207ec1 - 17 Mar 2019 17:47 - Hammel

RM #556: Pull brcmfmac43430-sdio.txt from RAW github url so we get the proper configuration text instead of a GitHub HTML response. This is what was keeping the Pi Zero W from making the wifi interface available.

#### History

##### #1 - 23 Oct 2016 18:48 - Hammel

- Target version changed from 0.13.0 to 0.12.0

##### #2 - 10 Jan 2017 16:32 - Hammel

- Status changed from New to In Progress

- % Done changed from 0 to 10

Note that it may be possible to run RPi2 code on the RPi3, but the port would allow for optimization of the toolchain for that processor.

##### #3 - 15 Jan 2017 17:56 - Hammel

- % Done changed from 10 to 30

Pi2 build boots fine on the Pi3, however it doesn't support the on-board wifi. Digging around it seems the wifi is custom and the module driver to load is the [brcmfmac](#). This module is available in my RPi2 build.

Also, there are [firmware files](#) that need to be installed under /lib/firmware/brcm. This firmware is not included in my RPi2 build.

Might get some additional help from the [RPi Distro](#) repo on github.

Note that it seems that the Pi3 wifi [may have some issues](#). It may not have good range without an antenna.

The Bluetooth appears to be loaded but I'm not really positive of that yet.

#### **#4 - 25 Feb 2017 11:58 - Hammel**

- Severity changed from 01 - Critical to 05 - Very Low

#### **#5 - 27 May 2018 18:43 - Hammel**

I added the brcmfmac firmware (a .bin and a .txt) to the firmware handling in the core builds. However, I wasn't able to get the wifi working on a Model 3 yet. For now, at least the firmware is present and appears to allow the driver module to load.

#### **#6 - 15 Aug 2018 10:44 - Hammel**

- Priority changed from Immediate to Urgent

- Severity changed from 05 - Very Low to 02 - High

#### **#7 - 25 Feb 2019 15:21 - Hammel**

- Project changed from PiBox to Xeon

- Category deleted (01 - Cross Toolchain)

- Target version deleted (0.12.0)

- Severity changed from 02 - High to 01 - Critical

Moving to project Xeon because the Pi Zero W is being used there.

#### **#8 - 17 Mar 2019 10:37 - Hammel**

- Subject changed from Port to RPi 3 to Enable Pi Zero W / RPi 3 Wifi

#### **#9 - 17 Mar 2019 17:46 - Hammel**

- % Done changed from 30 to 70

Finally figured this one out. I'm downloading a config file for the brcmfmac firmware called brcmfmac43430-sdio.txt, but I was doing it from a direct link out of github. This got me an HTML page instead of the configuration file. So the driver loaded and pretended to load the firmware but the wlan0 device never became available.

The fix is to use the correct RAW url: <https://raw.githubusercontent.com/RPi-Distro/firmware-nonfree/master/brcm/brcmfmac43430-sdio.txt>

The reason we need to copy this from the RPi-Distro repo instead of the upstream kernel.org firmware repo is that this file is not included in the upstream. It's only available from the RPi-Distro repo for some reason.

Putting that config file in with the actual firmware brought the wifi device up, ready to be configured for use. Now I just need to add the MAC address to my local network.

As long as the RPi-Distro repo remains available this will work. It's arguable that I should put this firmware in the PiBox repo but it probably belongs in a local mirror that PiBox can pull from. Still the file is very tiny so adding it to the PiBox source tree is not really a big deal. I may do that later. For now, I pull from RPi-Distro.

**#10 - 17 Mar 2019 17:51 - Hammel**

- *Status changed from In Progress to Closed*

- *% Done changed from 70 to 100*

Changes tested, committed and pushed.

Closing issue.