HSMM-Mesh on Raspberry Pi2

The HSMM-MESH or Broadband-Hamnet is a Ham Radio network of linked WiFi repeaters.

The Raspberry Pi2 can be configured to become a Node on the HSMM-Mesh. The Raspberry Pi2 is capable of providing server functions while being a HSMM-Mesh node. For example the Raspberry Pi2 could run an Asterisk PBX which is directly addressable across the Mesh network, or it could run a NAS, or both.

The HSMM-Pi nodes lack the more robust router features of the WRT54Gx series of routers or the Ubiquity routers, but they do provide a great way to consolidate servers on the network and are quite useful for mobile connections to HSMM-MESH networks.

To setup a Raspberry Pi2 for this HSMM-Mesh service follow the directions at:
https://github.com/urlgrey/hsmm-pi

Depending on the type of service you intend for your Raspberry Pi node, will indicate what type of antenna you will want to use. The new Pi3 that just came out has a built in WiFi but the Pi2 does not and you will need a USB to WiFi adapter. The Raspberry Pi2 has a limited current capability through the USB ports and therefore you might need a powered USB Hub to power the WiFi and/or other USB devices connected to it. A list of supported WiFi adapters and discussion on the problems and attributes of each one is located here:
http://elinux.org/RPi_USB_Wi-Fi_Adapters .

I have been using the ALFA AWUS036H v5 802.11 b/g Long Range USB Adapter with my PI node. It does a good job, but it did

require some setup in the operating system to make it work reliably in this service. I added a file containing the following to the folder “/etc/init.d”.

```
#!/bin/bash
#/etc/init.d
#
iwconfig wlan0 rate auto
iwconfig wlan0 frag 512
iwconfig wlan0 rts 512
iwconfig wlan0 retry short 11
iwconfig wlan0 retry long 11
iwconfig wlan0 power off
```

The permissions for this file would be set by “chmod 755” and the owner and group are root:root. The file is added to the system with this command:
sudo update-rc.d <*yourfilename*> defaults

After a reboot IWCONFIG wlan0 gives this report:

```
pi@KA7U-2 / $ sudo iwconfig wlan0
wlan0 IEEE 802.11bg ESSID:"BroadbandHamnet-20-v3"
 Mode:Ad-Hoc Frequency:2.412 GHz Cell: 86:E9:B7:56:2F:EF
 Tx-Power=20 dBm
 Retry short long limit:11 RTS thr=512 B Fragment thr=512 B
 Encryption key:off
 Power Management:on

pi@KA7U-2 / $
```

A different WiFi adapter may or may not need this instruction to stay on and operate correctly with the RPI, but I have included the information in case you have a challenge and need to know where to look.

There is a Google Community for the HSMM-Pi here:
https://plus.google.com/u/0/communities/109339235992496491942

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