HSMM-MESH firmware Installation Instructions - Updated by Chuck Killian, WB6YOK – 5/16/2012

Here's how to make your own mesh node:

Assumptions.

1. Obtain a Linksys WRT54 wireless access point/router per the following table.

VERSION	S/N PREFIX	
WRT54G		**Firmware Version (current as of 5/16/2012)**
1.0	CDF0, CDF1	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54g.bin
1.1	CDF2, CDF3, CDF4	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54g.bin
2.0	CDF5	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54g.bin
2.2	CDF7	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54g.bin
3.0	CDF8	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54g.bin
4.0	CDF9	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54g.bin
WRT54GL		
1	CL7A	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54g.bin
1.1	CL7B, CL7C	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54g.bin
WRT54GS		
1.1	CGN2	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54gs.bin
2.0	CGN3	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54gs.bin
2.1	CGN4	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54gs.bin
3.0	CGN5	http://hsmm-mesh.org/download/firmware/hsmm-mesh-0.4.2-wrt54gs.bin

2. You have an out of the box WRT54 that has not had the HSMM-MESH software installed previously.

Initial Firmware Installation Process

1. Go to http://hsmm-mesh.org/software-download.html
   and download the version of firmware suitable for your model of the WRT54G (see table above)

2. Upload the firmware to the router

   a. These instructions assume your computer is connected to the LAN port of your WRT54G.
   b. Perform a factory reset by depressing the reset button at the rear of the WRT54 until the power light begins to flash. Continue the firmware load procedure after the power light and/or DMZ lights stop flashing.
   c. Open a browser and go to http://192.168.1.1
   d. Authenticate using
      i. user = admin
      ii. password = admin (or the password you set)
   e. Click Administration->Firmware Upgrade->Browse
      i. Select the firmware version appropriate to you WRT54G model and version.
      ii. Click Upgrade. Wait for the power and DMZ LEDs to start and stop flashing. This takes about two minutes or so.
   f. Ensure that your computer is connected to the LAN port of the WRT54.
      i. Open a command window (Start->Run, enter cmd)
      ii. Issue the command ipconfig /release
      iii. Issue the command ipconfig /renew
      iv. Issue the command ipconfig. Note the IP address assigned to your computer by the WRT54G. It should be 172.27.0.x (most likely 172.27.0.5).

DO NOT SKIP THE FOLLOWING STEP!!!

3. Configure the mesh node - this is required every time the firmware is installed

   a. In a browser go to http://localnode:8080/ or http://172.27.0.1:8080/

NOTE

Note that at this point the node is acting as an access point. You can connect to the WRT54G by a cable to the LAN port or by Wi-Fi (SSID=MeshNode).
This guarantees that after a full firmware install there is wireless access back in to the node if it is located in a restricted access area and connecting to the LAN port is not convenient.

b. Click Setup and authenticate using

   i. user = root
   ii. password = hsmm
   iii. Enter a Node Name
   (Node names can contain only numbers, letters, and dashes.
   Underscores and other punctuation are not allowed.
   It is a condition of your Amateur Radio license and of HSMM-MESH that the node name must contain your call sign.
   The node name is beaconed (via UDP port 4919) every five minutes t o meet FCC Part 97 identification requirements.

   Recommendation: (callsign)-(name) example:wb6yok-mobile or wb6yok-100

   iv. Enter a Password (twice) Use a strong password. The password "password" is a non-starter.

c. Save Changes, even if you didn't make any changes, and wait for the node to reboot.

Congratulations. You now have a mesh node, but only if you did step 4!

Here is what just happened to your router:

a. The WRT54G is now running a custom build of OpenWrt kamikaze 7.09.
b. The wireless ssid is HSMM-MESH and is broadcast.
c. The wireless mode is ad-hoc.
d. The wireless channel is 1.
e. The wireless speed is automatic.
f. The wireless encryption is disabled.
g. The wireless and lan ports are no longer bridged - they are independent interfaces.
h. The wireless address is 10.x.y.z/8
   (x,y,and z are the last three bytes of the WRT54G mac address.
i. The lan address is 172.27.0.1/24.
j. The lan port is running a dhcp server.