**Hardware**

1. Raspberry Pi Model B Project Board

[http://www.amazon.com/Raspberry-Pi-Model-Project-Board/dp/B00T2U7R7I/ref=dp\_ob\_title\_ce](http://www.amazon.com/Raspberry-Pi-Model-Project-Board/dp/B00T2U7R7I/ref%3Ddp_ob_title_ce)

1. Case for Raspberry Pi

[http://www.amazon.com/JBtek%C2%AE-Black-Case-Raspberry-Model/dp/B00ONOKPHC/ref=pd\_sim\_147\_4?ie=UTF8&dpID=418ljoYyhIL&dpSrc=sims&preST=\_AC\_UL160\_SR160%2C160\_&refRID=16XTBJJ7VX94QAVPQ9DD](http://www.amazon.com/JBtek%C2%AE-Black-Case-Raspberry-Model/dp/B00ONOKPHC/ref%3Dpd_sim_147_4?ie=UTF8&dpID=418ljoYyhIL&dpSrc=sims&preST=_AC_UL160_SR160%2C160_&refRID=16XTBJJ7VX94QAVPQ9DD)

1. Power Supply for Raspberry Pi

[http://www.amazon.com/CanaKit-Raspberry-Supply-Adapter-Charger/dp/B00MARDJZ4/ref=pd\_sim\_147\_2?ie=UTF8&dpID=51KgJwxynLL&dpSrc=sims&preST=\_AC\_UL160\_SR160%2C160\_&refRID=1PRBMX30YXZVBNPBCMG6](http://www.amazon.com/CanaKit-Raspberry-Supply-Adapter-Charger/dp/B00MARDJZ4/ref%3Dpd_sim_147_2?ie=UTF8&dpID=51KgJwxynLL&dpSrc=sims&preST=_AC_UL160_SR160%2C160_&refRID=1PRBMX30YXZVBNPBCMG6)

1. USB Bluetooth Adapter. Ensure Raspberry Pi/Linux compatible, Range requirements and PAN support.
2. 16 or 32 GB micro-SDHC card. Recommended with standard SD adapter for use with computer.

1. For setup you will need a USB keyboard and HDMI monitor
2. Optional USB battery if power will not be available.

**Raspbian OS Setup**

1. Insert the SD card into your SD card reader of your computer and check which drive letter was assigned. You can easily see the drive letter (for example G:) by looking in the left column of Windows Explorer. You can use the SD Card slot (if you have one) or a cheap SD adaptor in a USB port.
2. Download the Win32DiskImager utility from the [Sourceforge Project page](http://sourceforge.net/projects/win32diskimager/) (it is also a zip file); you can run this from a USB drive.
3. Download the Raspbian Wheezy OS (zip file) from https://www.raspberrypi.org/downloads/raspbian/
4. Extract the executable from the zip file (2015-05-05-raspbian-wheezy.zip) and run the Win32DiskImager utility; you may need to run the utility as administrator. Right-click on the Win32DiskImager file, and select **Run as administrator**.
5. Select the image Raspbian Wheezy file you extracted above.
6. Select the drive letter of the SD card in the device box. Be careful to select the correct drive; if you get the wrong one you can destroy your data on the computer's hard disk! If you are using an SD card slot in your computer and can't see the drive in the Win32DiskImager window, try using a cheap SD adaptor in a USB port.
7. Click Write and wait for the write to complete.
8. Exit the imager and eject the SD card.
9. Insert the SD card into the Raspberry Pi, attach monitor (HDMI) and keyboard (USB), network adapter and power to the Raspberry Pi
10. Do initial configuration
	* Expand Filesystem
	* Change User Password
	* Internationalisation Options
		+ Verify Locale
		+ Change Timezone
	* Advanced Options
		+ Hostname (to identify the name on the network)
		+ Enable SSH (will allow configuration remotely)
		+ <Back> to main Configuration Menu
	* Finish (will reboot)
11. Perform update (drivers, os, etc.)

sudo apt-get update

sudo apt-get upgrade

sudo apt-get dist-upgrade

sudo shutdown –r now

**Pinaple Setup**

Raspberry Pi scripts for Bluetooth NAP service

**Installation**

Install the needed dependencies:

sudo apt-get install bluez bluez-utils bridge-utils

Verify with hciconfig:

hciconfig

hci0: Type: BR/EDR Bus: USB

 BD Address: 00:15:83:0C:BF:EB ACL MTU: 339:8 SCO MTU: 128:2

 UP RUNNING PSCAN

 RX bytes:1346 acl:0 sco:0 events:44 errors:0

 TX bytes:422 acl:0 sco:0 commands:37 errors:0

Install the Pinaple scripts and make executable:

wget <https://github.com/Douglas6/pinaple/archive/master.zip>

unzip master.zip

cd pinaple-master

sudo mv pinaple-agent /usr/local/bin

sudo chmod 755 /usr/local/bin/pinaple-agent

sudo mv pinapled /usr/local/bin

sudo chmod 755 /usr/local/bin/pinapled

sudo mv pinaple /etc/init.d/

sudo chmod 755 /etc/init.d/pinaple

sudo update-rc.d pinaple defaults

**Setup the Network**

Set up network bridging; edit /etc/network/interfaces:

sudo nano /etc/network/interfaces

Modify to suit your network. A minimal configuration is given here. Do NOT assign an IP address to your eth0 device; only the bridge (br0) should have an address.

auto lo

iface lo inet loopback

auto br0

iface br0 inet dhcp

bridge-ports eth0

bridge\_fd 5

Save the file with Ctrl-O (the letter “O”) the Enter

Exit the editor with Ctrl-X then Enter

Allow IP packet forwarding:

 sudo nano /etc/sysctl.conf

And un-comment (remove the leading '#') the following line:

net.ipv4.ip\_forward = 1

Save the file with Ctrl-O (the letter “O”) the Enter

Exit the editor with Ctrl-X then Enter

Reboot the Raspberry Pi

sudo shutdown –r now

To retrieve the current ip address of the Raspberry type

 ifconfig

**Connect with your Tablet/Phone**

After rebooting to make sure all changes have taken effect, you should be able to connect your device to the Raspberry Pi via Bluetooth.

Turn off the device’s Wifi. Some tablets/phones will not connect to a Bluetooth NAP network if wireless is available.

As an alternative to working directly on the Raspberry Pi you may now connect remotely via SSH from a computer. Download a SSH Telnet client called PuTTY found at:

<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>

Start PuTTY and type in the ip address found above. Log in.

Start the pinaple agent on the Raspberry Pi. You may specify a pairing PIN code, or use the default of "0000".

sudo pinaple-agent --pin 1234

This will make the Raspberry Pi discoverable by your tablet/phone, and will accept the PIN code and trust the device. After pairing, press ctrl-C to end the agent and make the Raspberry Pi undiscoverable again. You will only need to perform this step once for each device, or until you un-pair the tablet/phone.

1. Turn on Bluetooth on your tablet/phone, and search for devices. Select the Raspberry Pi and pair to it with the pin code you specified when starting pinaple-agent.
2. Click the 'settings' icon next to the Raspberry Pi, then click to check the 'Internet access' check box. If all goes well, after several seconds you should see a small '3G' appear above the 'bars' icon of the phone's status bar.
3. Some tablets require an additional step to select this connection to “Use for Internet Access”

You are now connected to the Raspberry Pi's network via Bluetooth