Different ways to connect to Raspberry Pi

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Contents

In order to connect to a Raspberry Pi one can use one of the following methods:

1 HDMI to TV/PC monitor

This is by far the simplest way to use the Raspberry Pi. The setup

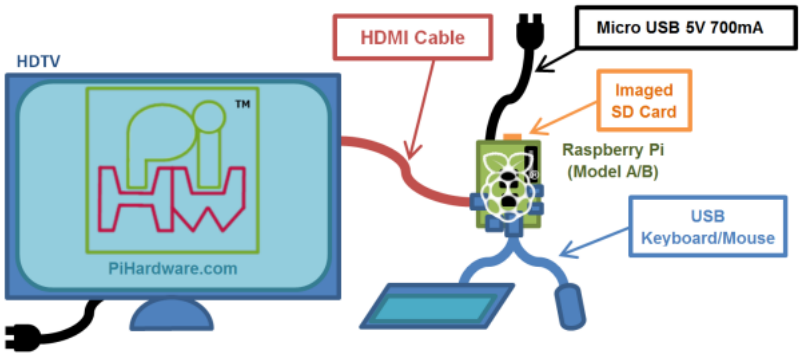

Figure 1: [1]

includes connecting a digital TV/PC monitor to Raspberry Pi using HDMI cable (version 1.3a or above).

Advantages

- Simple quick setup
- Works directly out of the box
- Digital audio is provided as part of the HDMI connection
- High resolution display (up to 1080p)

Disadvantages

- Requires a suitable screen to be available
- Not portable

2 HDMI to DVI/VGA to PC monitor

The HDMI connection can also be used to connect via a DVI connection, commonly available on newer monitors and digital TVs.

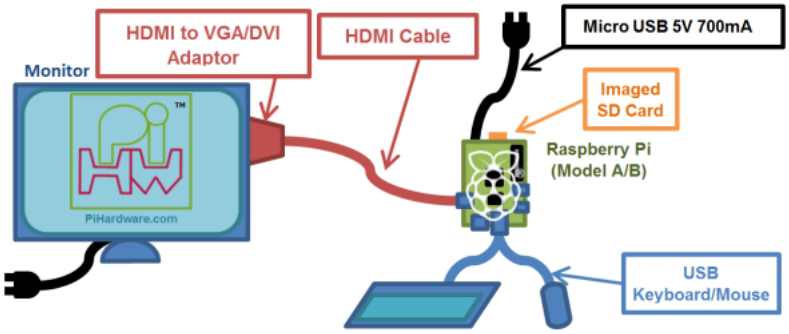

Figure 2: [1]

The setup includes a TV (or screen) which has a DVI (or VGA) connection available and an HDMI to DVI adaptor (or HDMI to VGA adaptor). In this way we can connect a R-Pi to VGA monitor using a HDMI cable (version 1.3a or above). **Advantages**

- Simple quick setup
- Works directly out of the box
- HDMI to DVI adaptors are cheap
- High resolution display (up to 1080p)

Disadvantages

- Requires a suitable screen to be available
- Not portable
- Only supports analogue audio connection.

3 Network cable to Laptop

In this method we connect the Pi to a laptop using a network cable(creating a localhost)

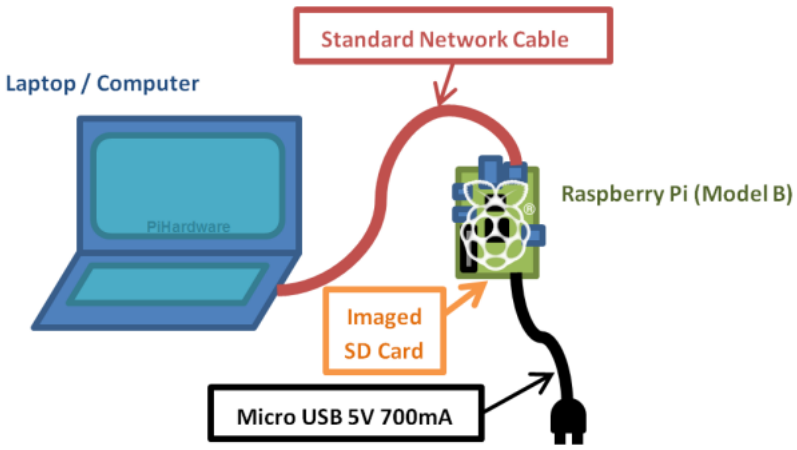

Figure 3: [1]

In order to proceed to access R-Pi using this method follow these steps:

1. Find your laptop's(Windows 8 laptop) network settings in the following way:
    - From the Start Menu, run the Control Panel.
    - Open "Network and Internet" , then Network and Sharing Center and click on Change adapter settings on the left side.
    - Find the item which relates to your Wired network adaptor (by default this is usually called Local Area Connection).
    - Right-click on it and open Properties.
    - Select the item which is called Internet Protocol (TCP/IP) or Internet Protocol Version 4 (TCP/IPv4) if there are two (the other is Version 6), and open the Properties.
    - Hopefully, the IP Address will be set to Obtain an IP address automatically. If not dont worry, just take a note of the IP address and Subnet Mask set here.
2. Setting up Raspberry Pi's IP address
    - Ensure the Raspberry Pi is powered off, and remove the SD-Card.
    - Insert the SD-Card into a card reader and plug it into your laptop.

- Find the drive and you should find several files on the Card (note it a lot smaller than youd expect since it is only the boot section of the Card (the rest is hidden)).
- Make a copy of cmdline.txt and rename it cmdline.normal
- Edit cmdline.txt and add the IP address at the end (be sure you dont add any extra lines).
- For network settings where the IP address is obtained automatically, use an address in the range 169.254.X.X (169.254.0.0 169.254.255.255) say 169.254.0.2. For network settings where the IP address is fixed, use an address which matches the laptop/computers address except the last digit say 192.168.0.2
- Ensure you take note of this IP address (you will need it every time you want to directly connect to the Raspberry Pi).
- Make new copy of cmdline.txt and rename it cmdline.direct
- To swap between configurations, just replace cmdline.txt with either cmdline.normal or cmdline.direct
- Return the card to the Raspberry Pi. Attach the network cable attached to both the computer and Raspberry Pi and power up.

Now u can start using the Pi directly.

4 USB Wifi Dongle to Router

For more information regarding this method kindly refer
`https://github.com/eyantrainternship/eYSIP_2015_RaspberryPi-Development-Board/tree/master/Task%202`

5 References

1. https://pihw.wordpress.com/guides/guide-to-ways-to-connect-to-a-raspberry-pi/