Practical no: 2

Title: Study of different operating systems for Raspberry-Pi /Beagle board. Understanding the process of OS installation on Raspberry-Pi /Beagle board

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Practical 2

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Aim:

Study of different o.s. for Raspberry-Pi. Understanding the process of OS installation on Raspberry-Pi

Theory:

Introduction

The Raspberry Pi is a wonderful but poweeful little computer that fits the palm of your hand. Despite of its size it has enough power to run your o.s. smoothly, home media centre, a VPN & a lot more. The Raspberry Pi has a SD card slot for mass storage & will attempt to boot off that device from SD card when the board is powered on by 5V micro USB supply.

This Raspberry Pi has an Integrated 802.11n wifi adaptor & Bluetooth 4.1. wifi & Bluetooth to make it more user friendly. It also provide Rj 45 to use Ethernet connection.

Brief Discussion of O.S.

No matter how good and powerfull the hw of Raspberry Pi is, without an o.s. it is just a piece of silicon, fibreglass. There are different o.s. for Raspberry Pi, including RISC, Os, Pidora, etc.

1. Raspbian:

Currently, Raspbian is the most popular Linux based o.s. for the Raspberry Pi. Raspbian is an open source o.s. based on Debian, which has been modified specifically for the Raspberry Pi.

Raspbian is a official o.s. of Raspberry Pi foundation. It is a version of Debian which is specifully designed & optimized for the Raspberry Pi hardware and the build consist of more than 35,000 Raspbian packages.

2. Pidora.

After waiting for long, Raspberry Pi users are finally getting an optimized version of Fedora, the Pidora, to replace the current Rasbian OS.

The current Rasbian OS, which was a remix of open source Debian OS chip based on ARMv6 would make way for Pidora, currently available for download on the CDOT website.

3. Arch Linux.

Arch Linux is an excellent choice for many reasons. One of the greatest advantage of Arch Linux distributio is its simplicity in approach and attitude. Arch gives you the ability to build your system from the ground up, including only the software you actually need.

4. OSMC

OSMC is a free and open source media player based on Linux. Founded in 2014, OSMC lets you play back media player based on Linux.

5. Retro PIE

Retro PIE allow you to your Raspberry Pi into a retro gaming machine. Its platform developed on the base of Raspbian, Emwation station, Retro pie enable you to play your favorite Arcade, home-console, & classic PC games with minimum setup.

6. RISC OS.

RISC was specifically designed to run on the ARM chipset. It is fast, compact and efficient. It includes browser called Netsurf, a simple text editor, a scientific calculator, & it also has two software managers, paxman and a store.

7. Firefox OS

Firefox OS is an OS which is more associated with being a Linux kernel-based open-source O.S. primarily designed for smart phones & tablet computers.

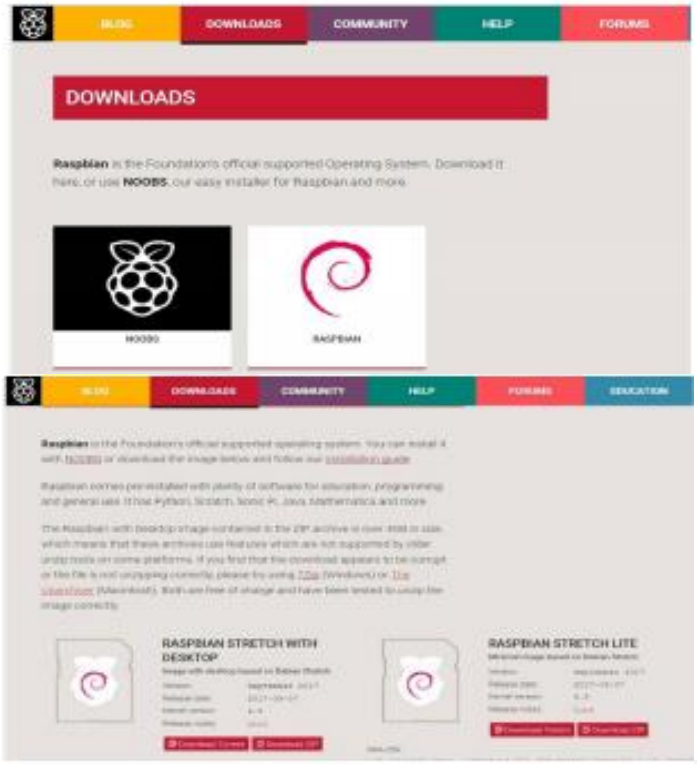
8. Kali Linux. KAL

Kali Linux is a Debian-based security auditing Linux distribution. It is specially designed for digital forensics & penetration testing.

* Installation of Raspberry Pi-3.

Process of OS Installation on Raspberry Pi-3 Board.

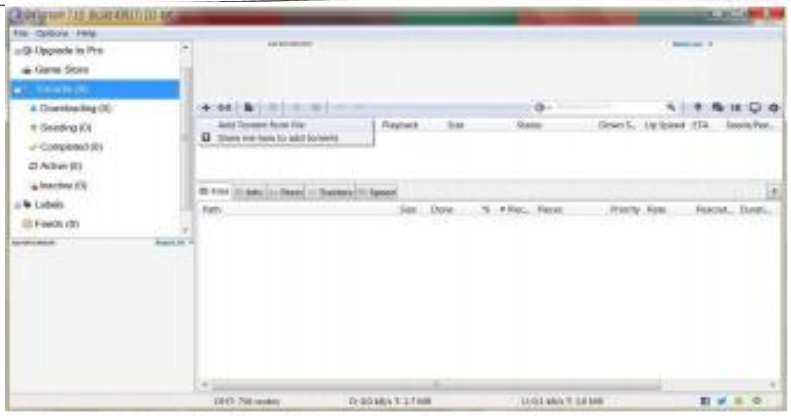
1. Open website: www.raspberrypi.org.
2. Click on 'Downloads' tab
3. Click on 'RASPBIAN' option.



4. We require 'RASPBIAN STRETCH WITH DESKTOP', so under this heading, click on 'Download Torrent' option.
5. A 'Torrent file' is downloaded.
6. But actual OS present in ZIP file of torrent.
7. Using this 'Torrent file' & 'Bit Torrent' software, we download the ZIP file of Raspbian OS.
8. Download 'BIT TORRENT' s/w & install it.
9. Open 'Bit Torrent' s/w.
10. Click on opt, 'Add Torrent' under this click on

11. Here select path of downloaded 'Torrent file'.

12. After selecting the torrent file, foll° window appears. Click 'OK'.



the torrent file, following window appears. Here click on OK

13. Using this 7zip software, unzip file 'raspbian-strethc.zip'. After this we get requiced disk img of Raspbian OS.

14. Now we have to write this img on SD card.

15. To write the OS on SD card, we requice the s/w 'win32 disk imager', so download this software & install it.

16. After completion, following window appears.

17. Open unzipped file in the 'Img file' opt. by selecting the path from blue icon.
18. Now plug in SD card reader having SD card inside it, in the USB port of PC.
19. After Ensuring, that the 'Image File' & Device are selected correctly, now click 'Write button to write image on SD card.
20. After this following window appears.

21. Click 'Yes' & confirm overwrite.
22. Image file will be return on SD card.
23. After proceduce is completed, it gives 'WRITE SUCCESSFUL' msg.
24. Congrats! Your SD card is ready with your OS to work in Raspberry Pi-3 board.
25. Insert SD card in Raspberry Pi-3.

26. Do the necessary connections & make the power ON. Your Raspberry Pi-3 starts & Desktop of OS is shown on screen.

Conclusion: Thus, we have studied installation for various OS in Raspberry Pi.