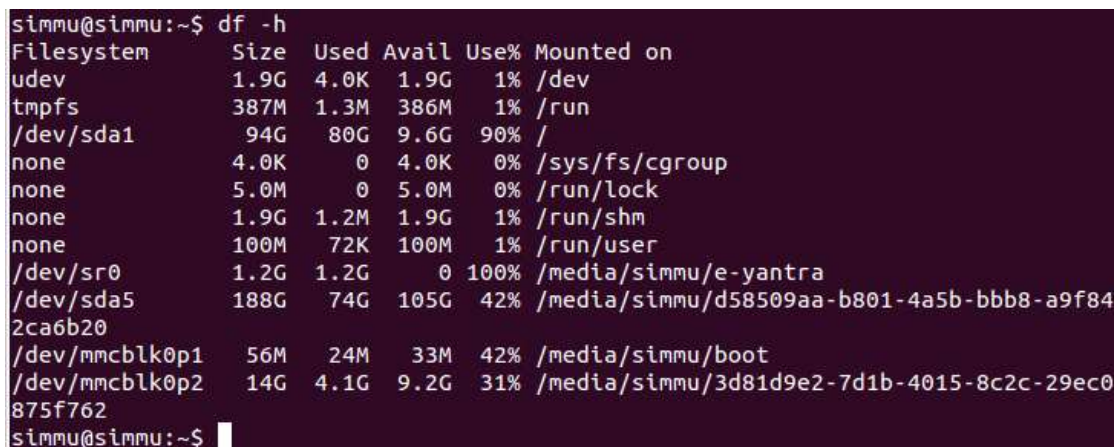


Creating Bootable SD card for Raspberry Pi

In this tutorial, you will learn how to install Operating system on Raspberry Pi. We will provide you the customize **operating system image** with **ROS**.

Follow the given procedure to install the operating system for R-PI

1. Get a micro SD card (16GB) provided in kit. Insert it in card slot or use **USB card reader**.
2. Copy the content (ros-berry_customize.zip) of SD card to **desktop** and extract it. After extracting you will find an image file- "**ros_berry_customize.img**" on desktop.
3. Use ctrl+alt+T to open terminal in Linux.
4. Type **df -h** in terminal. It will list all file system and drives usage as shown in Figure-1



```
simmu@simmu:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            1.9G   4.0K   1.9G   1% /dev
tmpfs           387M   1.3M   386M   1% /run
/dev/sda1        94G    80G   9.6G  90% /
none            4.0K     0   4.0K   0% /sys/fs/cgroup
none            5.0M     0   5.0M   0% /run/lock
none            1.9G   1.2M   1.9G   1% /run/shm
none            100M    72K   100M   1% /run/user
/dev/sr0         1.2G   1.2G     0 100% /media/simmu/e-yantra
/dev/sda5        188G    74G   105G  42% /media/simmu/d58509aa-b801-4a5b-bbb8-a9f842ca6b20
/dev/mmcblk0p1   56M    24M    33M  42% /media/simmu/boot
/dev/mmcblk0p2   14G    4.1G   9.2G  31% /media/simmu/3d81d9e2-7d1b-4015-8c2c-29ec0875f762
simmu@simmu:~$
```

Figure-1: Output of **df -h** (note space between **df** and **-h**)

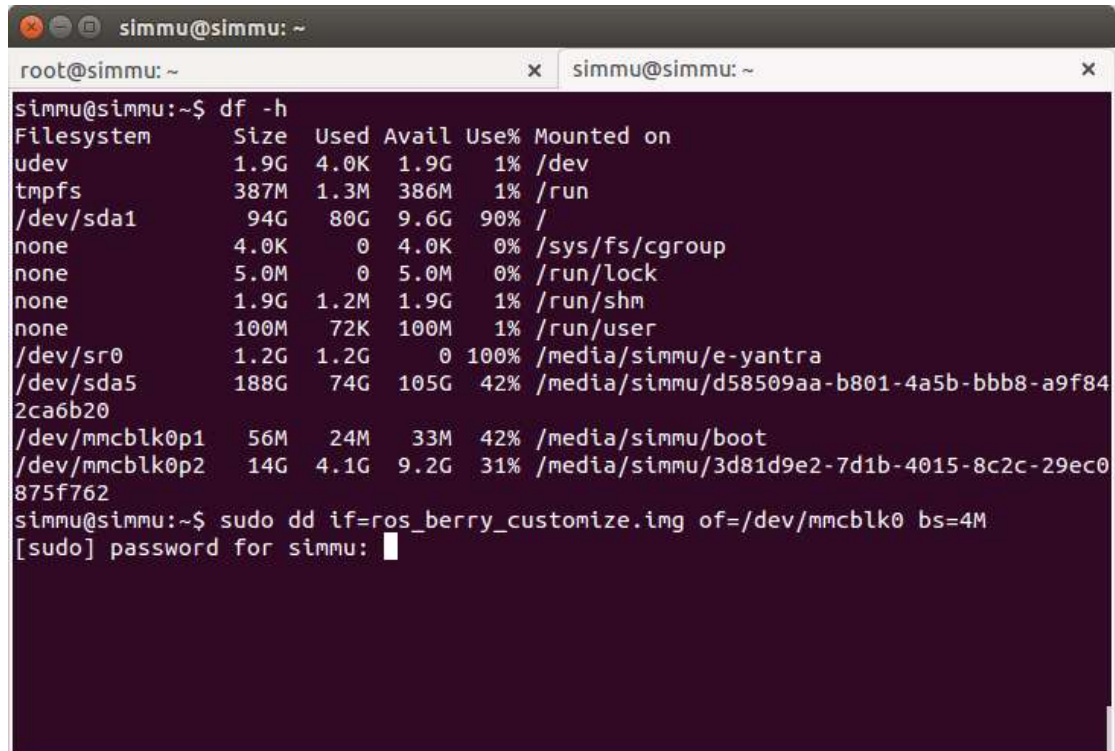
5. Note the *File system* of SD card. You can easily distinguish from your PC file system using *Size* column.
6. Use "**dd**" command to install image to SD card. Refer Figure-2

dd if=name_of_image_with_extension of=file_system_without_number

Example:

sudo dd if= ros_berry_customize.img of=/dev/mmcblk0 bs=4M

7. The "**dd**" command does not give any information of its process and so it may appear screen is frozen; it could take 10 to 20 minute to complete the process.

A terminal window titled 'simmu@simmu: ~' with a sub-window 'root@simmu: ~'. The user runs 'df -h' showing disk usage for various filesystems. Then, the user runs 'sudo dd if=ros_berry_customize.img of=/dev/mmcblk0 bs=4M'. The prompt '[sudo] password for simmu:' is shown with a cursor.

```
simmu@simmu:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            1.9G   4.0K   1.9G   1% /dev
tmpfs           387M   1.3M   386M   1% /run
/dev/sda1        94G    80G   9.6G  90% /
none            4.0K     0   4.0K   0% /sys/fs/cgroup
none            5.0M     0   5.0M   0% /run/lock
none            1.9G   1.2M   1.9G   1% /run/shm
none            100M    72K   100M   1% /run/user
/dev/sr0         1.2G   1.2G     0 100% /media/simmu/e-yantra
/dev/sda5        188G    74G   105G  42% /media/simmu/d58509aa-b801-4a5b-bbb8-a9f84
2ca6b20
/dev/mmcblk0p1   56M    24M    33M  42% /media/simmu/boot
/dev/mmcblk0p2   14G    4.1G    9.2G  31% /media/simmu/3d81d9e2-7d1b-4015-8c2c-29ec0
875f762
simmu@simmu:~$ sudo dd if=ros_berry_customize.img of=/dev/mmcblk0 bs=4M
[sudo] password for simmu: 
```

Figure-2: Using dd command

Note:

1. **“if”** stands for input file - It is image file of linux distribution. In case image file is not in your present working directory, specify complete directory path of image file.
2. **“of”** stands for output file - It is file system for your SD card. While installing image in SD card, we want to install OS to whole SD card so use SD card file system without partition number.