Tutorial Link https://course.testpad.chitkara.edu.in/tutorials/Disk Management in Linux 1/62d82a1ecde4603aa597bc92

TUTORIAL

Disk Management in Linux 1

Topics

"df" for Disk Management

The '**df**' command stands for "**disk filesystem**", it is used to get a full summary of available and used disk space usage of the file system on the Linux system.

Using '-h' parameter with (**df -h**) will show the file system disk space statistics in "**human-readable**" format, means it gives the details in bytes, megabytes, and gigabyte.

Check File System Disk Space Usage: The "**df**" command displays the information of device name, total blocks, total disk space, used disk space, available disk space, and mount points on a file system.

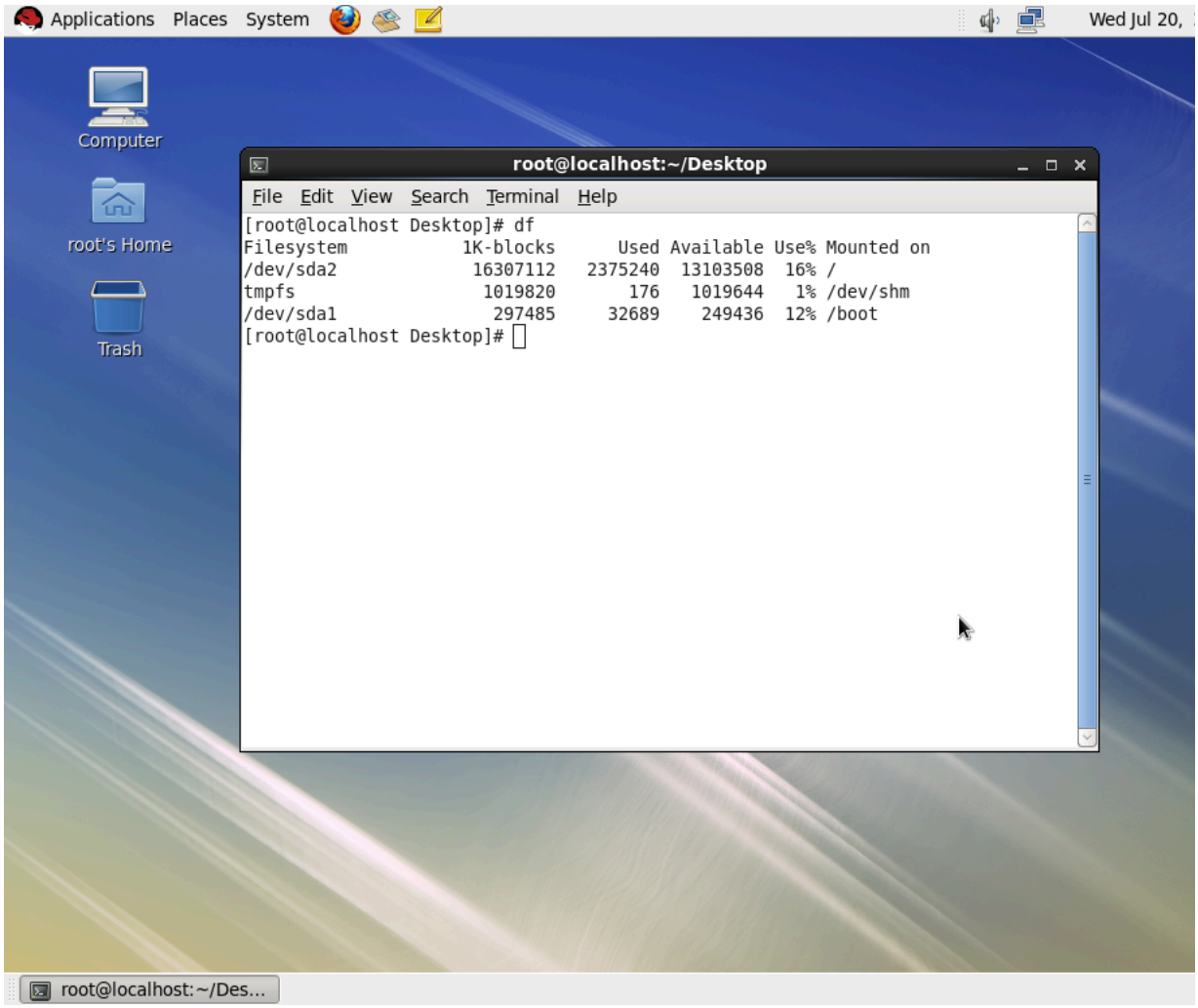


Fig 4.1 File System Disk Usage with df

Display Information of all File System Disk Space Usage

The same as above, but it also displays information of dummy file systems along with all the file system disk usage and their memory utilization.

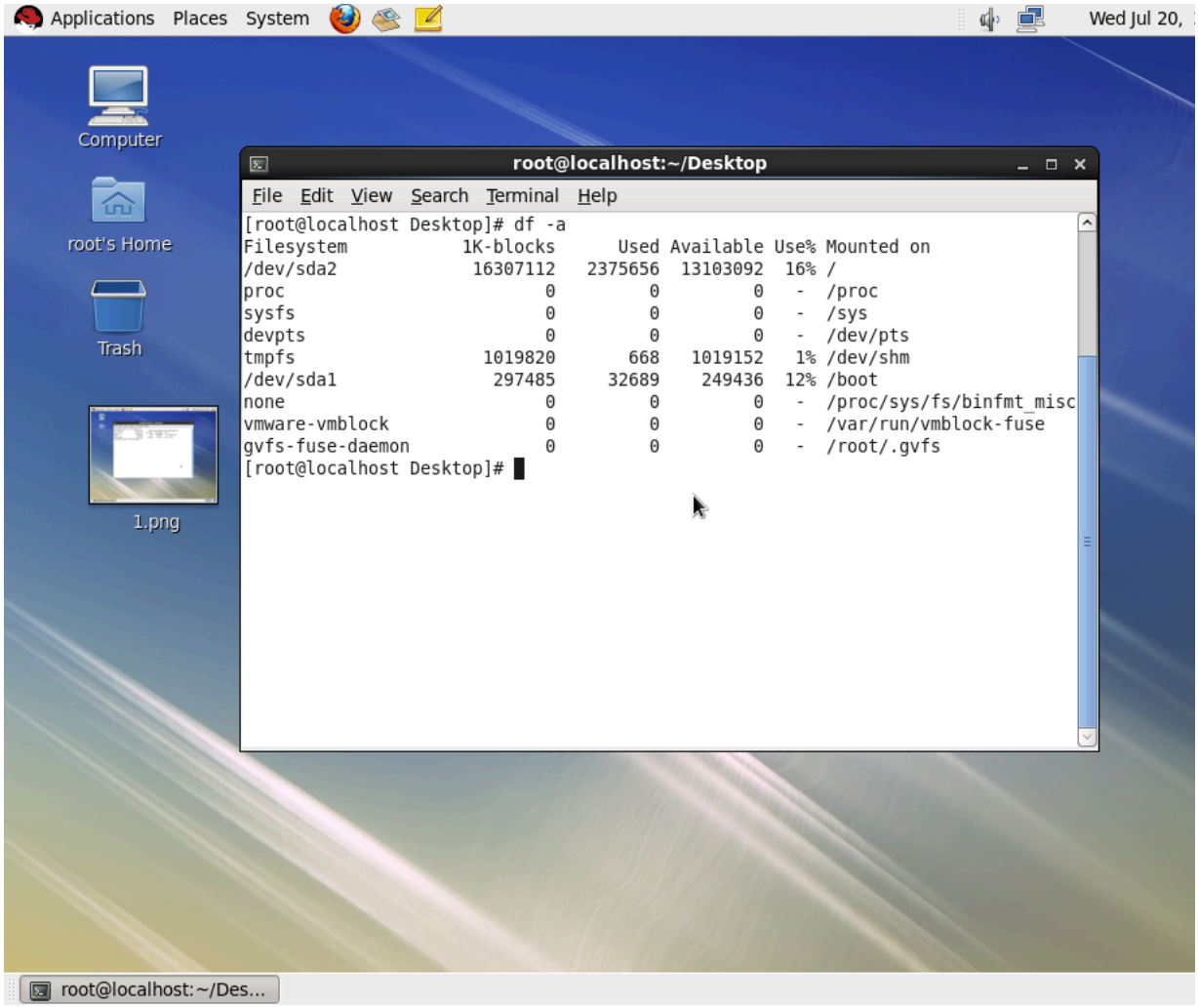


Fig 4.2 All File System Disk Usage with df

Show Disk Space Usage in Human Readable Format

Have you noticed that the above commands display information in bytes, which is not readable at all because we are in a habit of reading the sizes in megabytes, gigabytes, etc. as it makes it very easy to understand and remember.

The **df** command provides an option to display sizes in **Human Readable** formats by using `'-h'` (prints the results in human-readable format (e.g., **1K 2M 3G**)).

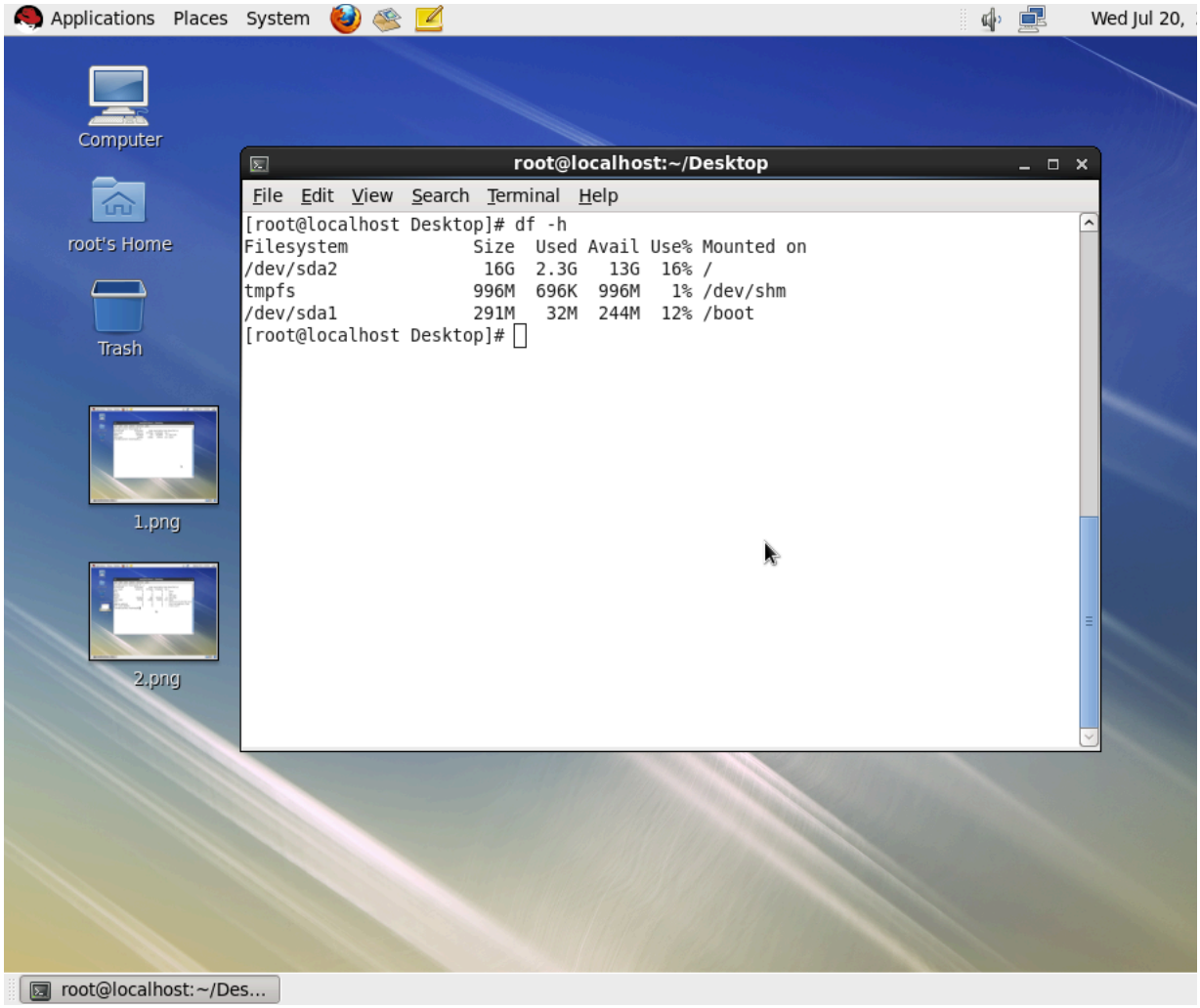


Fig 4.3 All File System Disk Usage in Human Readable format with df

Display Information of /home File System

To see the information of only device **/home** file systems in human-readable format use the following command.

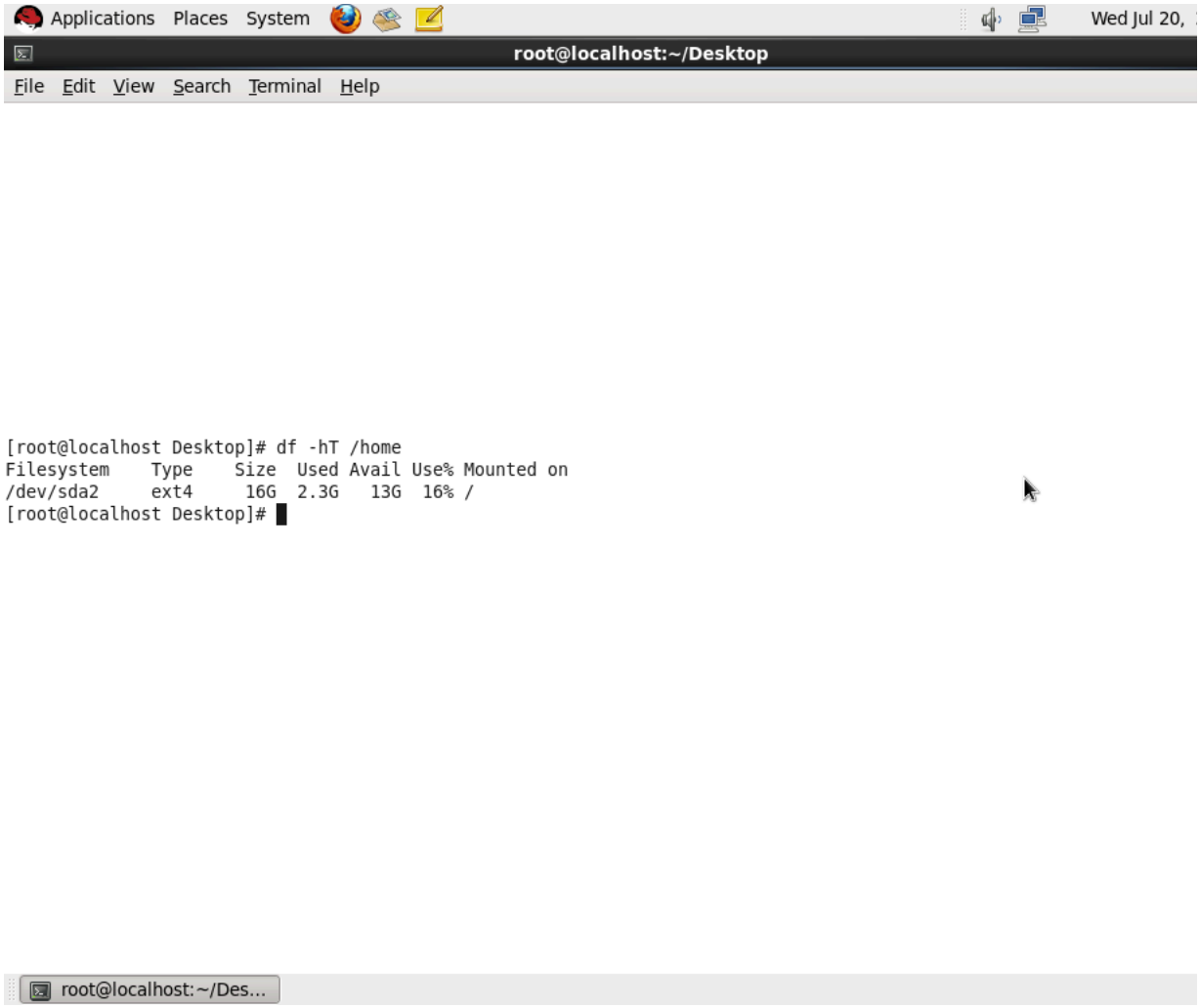


Fig 4.4 Display info of /home with df

Display Information of File System in Bytes

To display all file system information and usage in **1024-byte** blocks, use the option '`-k`' (e.g. `--block-size=1K`) as follows.

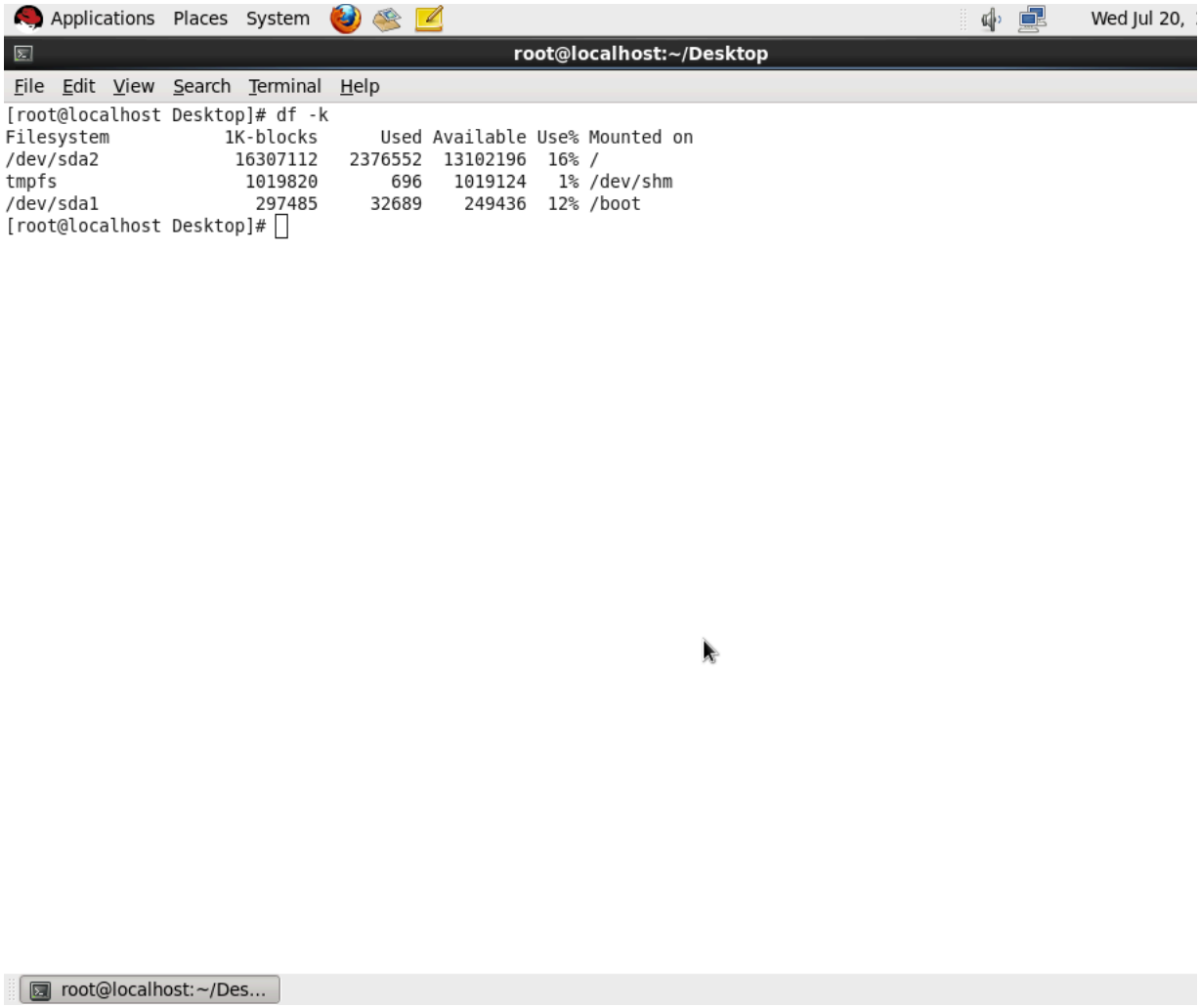


Fig 4.5 File System Disk Usage in Bytes with df

Display Information of File System in MB

To display information of all file system usage in **MB** (**MegaByte**) use the option '`-m`'.

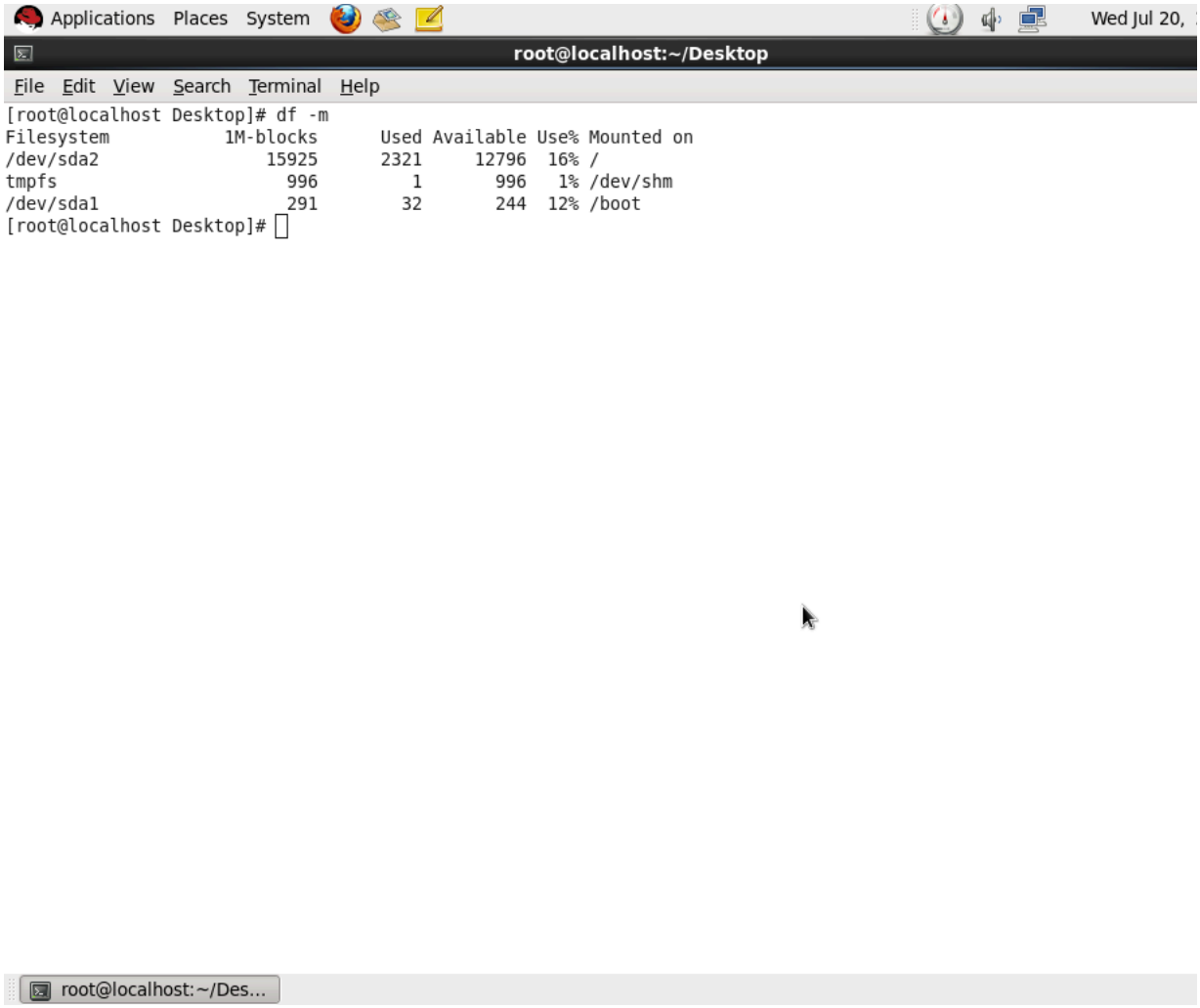


Fig 4.6 File System Disk Usage in MB with df

Display Information of File System in GB

To display information of all file system statistics in **GB** (**Gigabyte**) use the option as '**df -h**'.

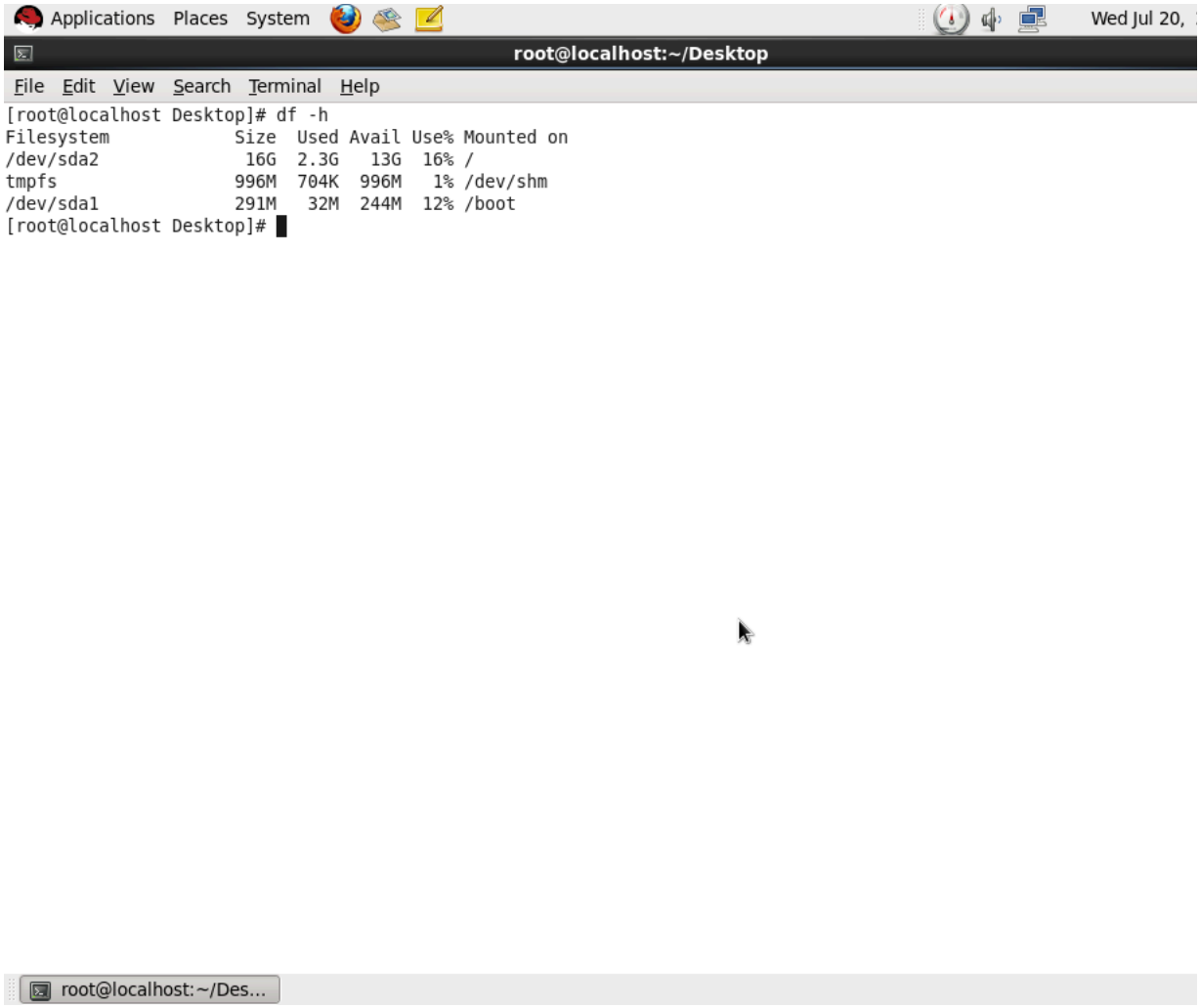


Fig 4.7 File System Disk Usage in GB with df

Display File System Inodes

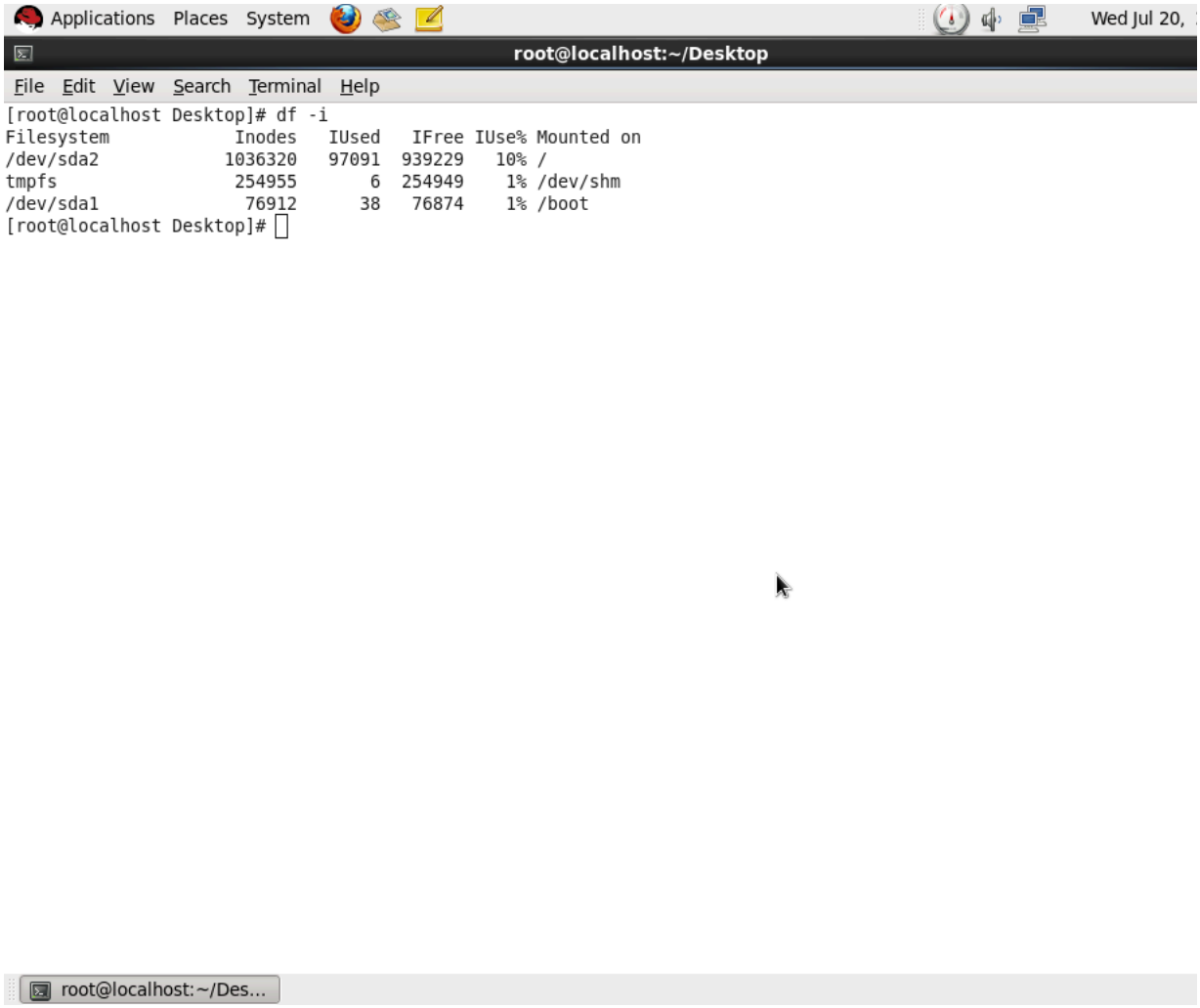


Fig 4.8 Display File System inode with df

Display File System Type

If you notice all the above commands output, you will see there is no Linux file system type mentioned in the results. To check the file system type of your system use the option 'T'. It will display file system type along with other information.

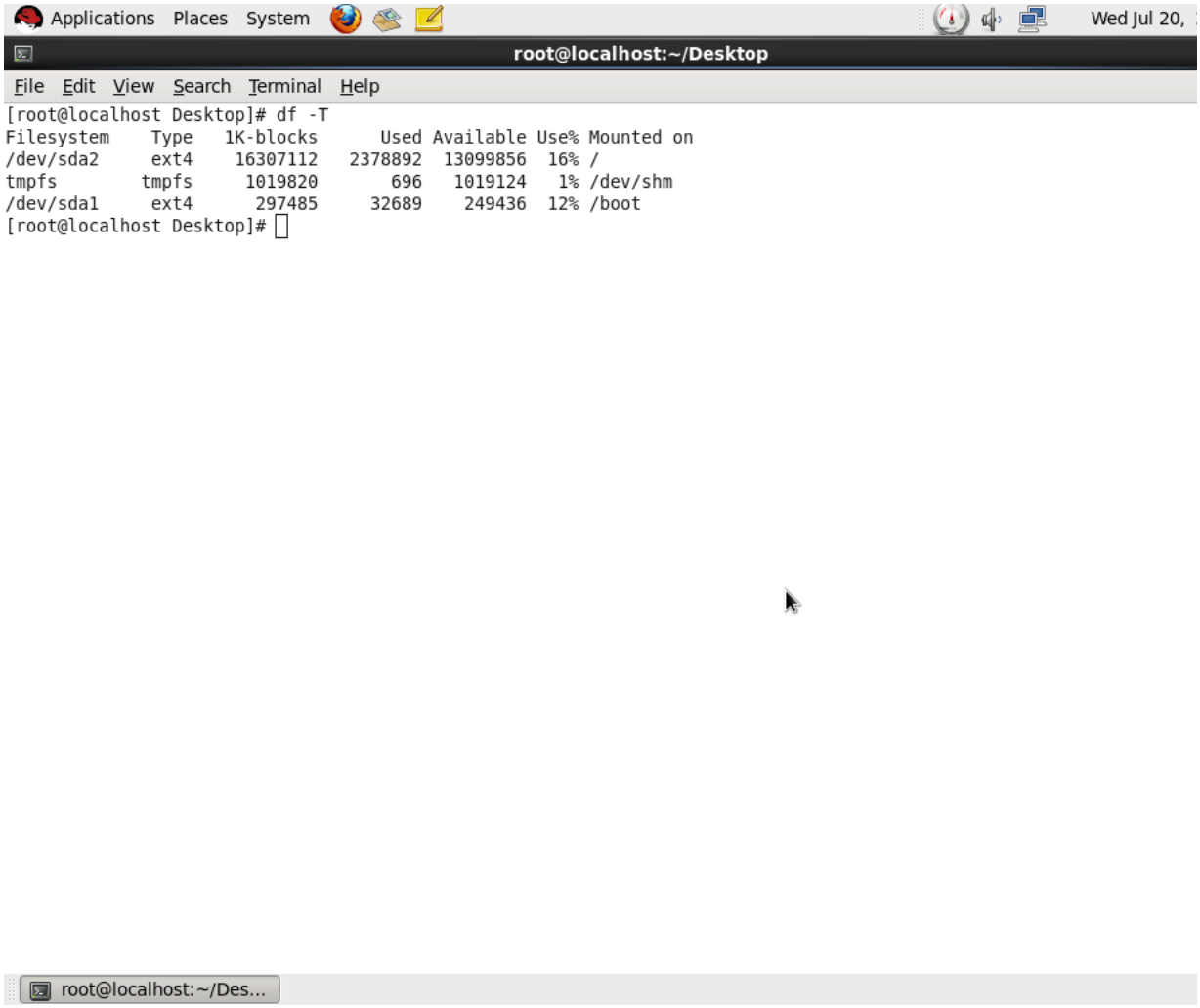


Fig 4.9 Display File System Type with df

Include Certain File System Type

If you want to display a certain file system type use the '`-t`' option. For example, the following command will only display the **ext4** file system.

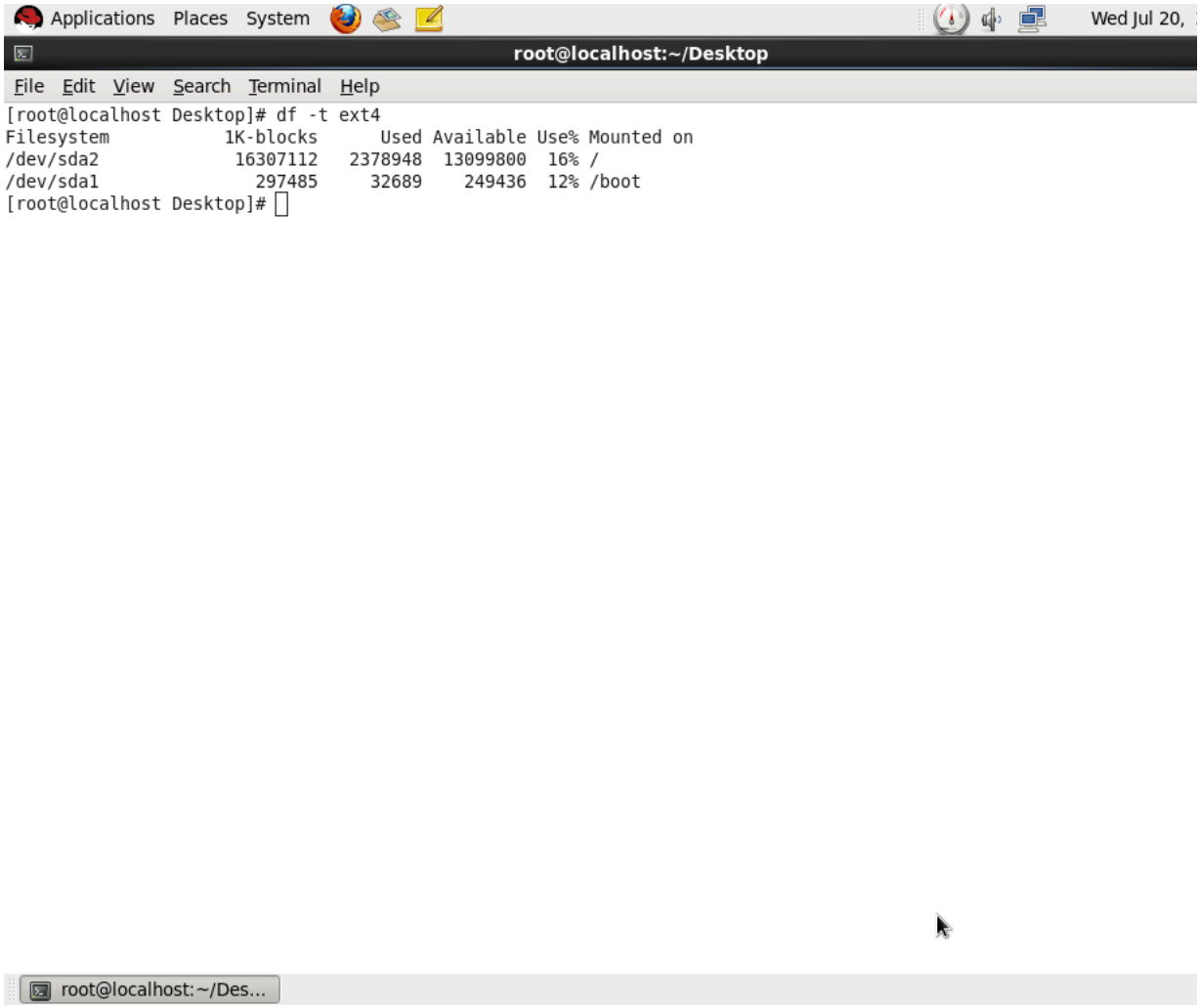


Fig 4.10 Display certain File System type with df

Exclude Certain File System Type

If you want to display a file system type that doesn't belongs to the **ext4** type use the option '`-x`'. For example, the following command will only display other file systems types other than **ext4**.

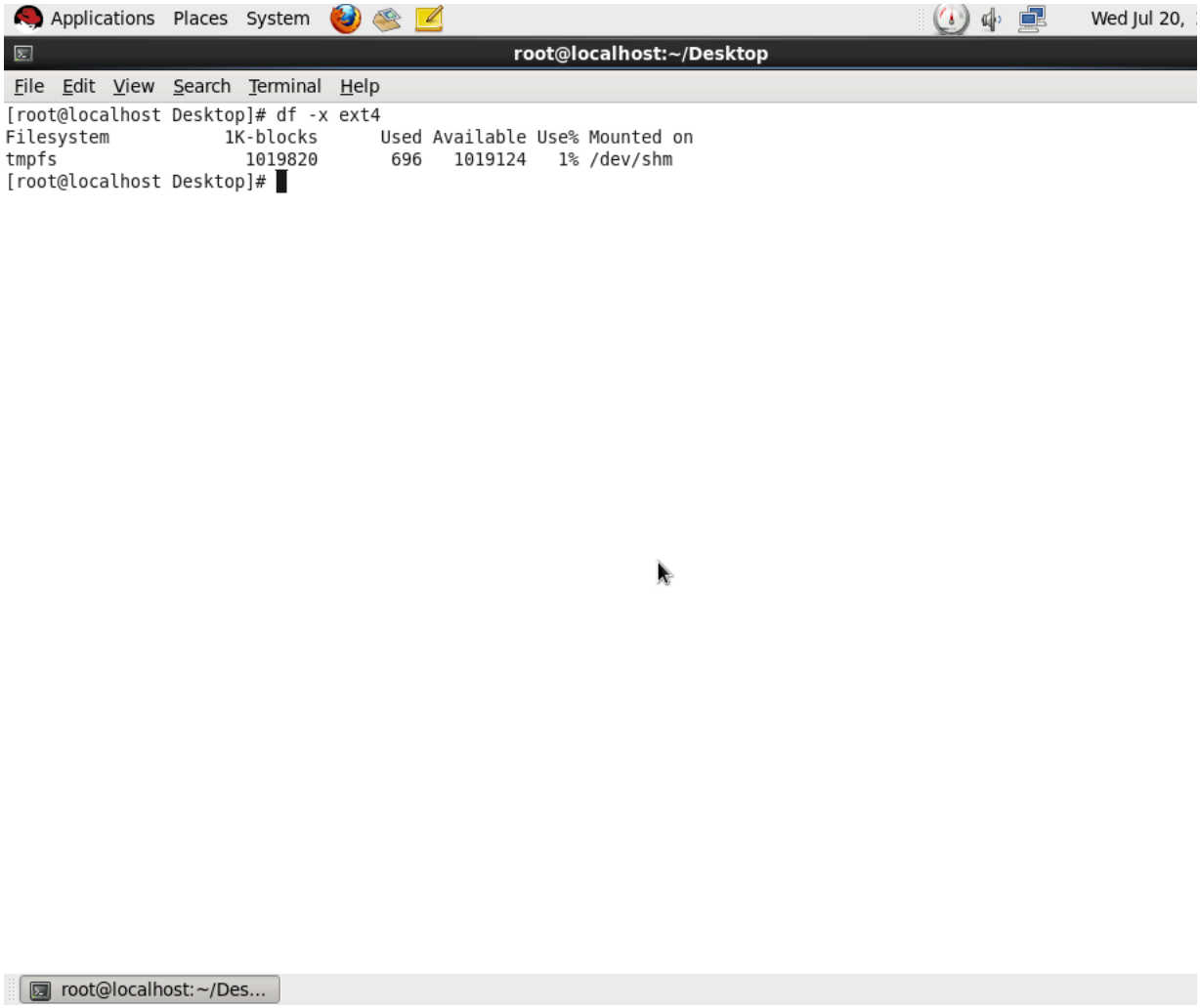


Fig 4.11 Exclude certain File System type with df

Display Information of df Command.

Using '`--help`' switch will display a list of available option that is used with **df** command.

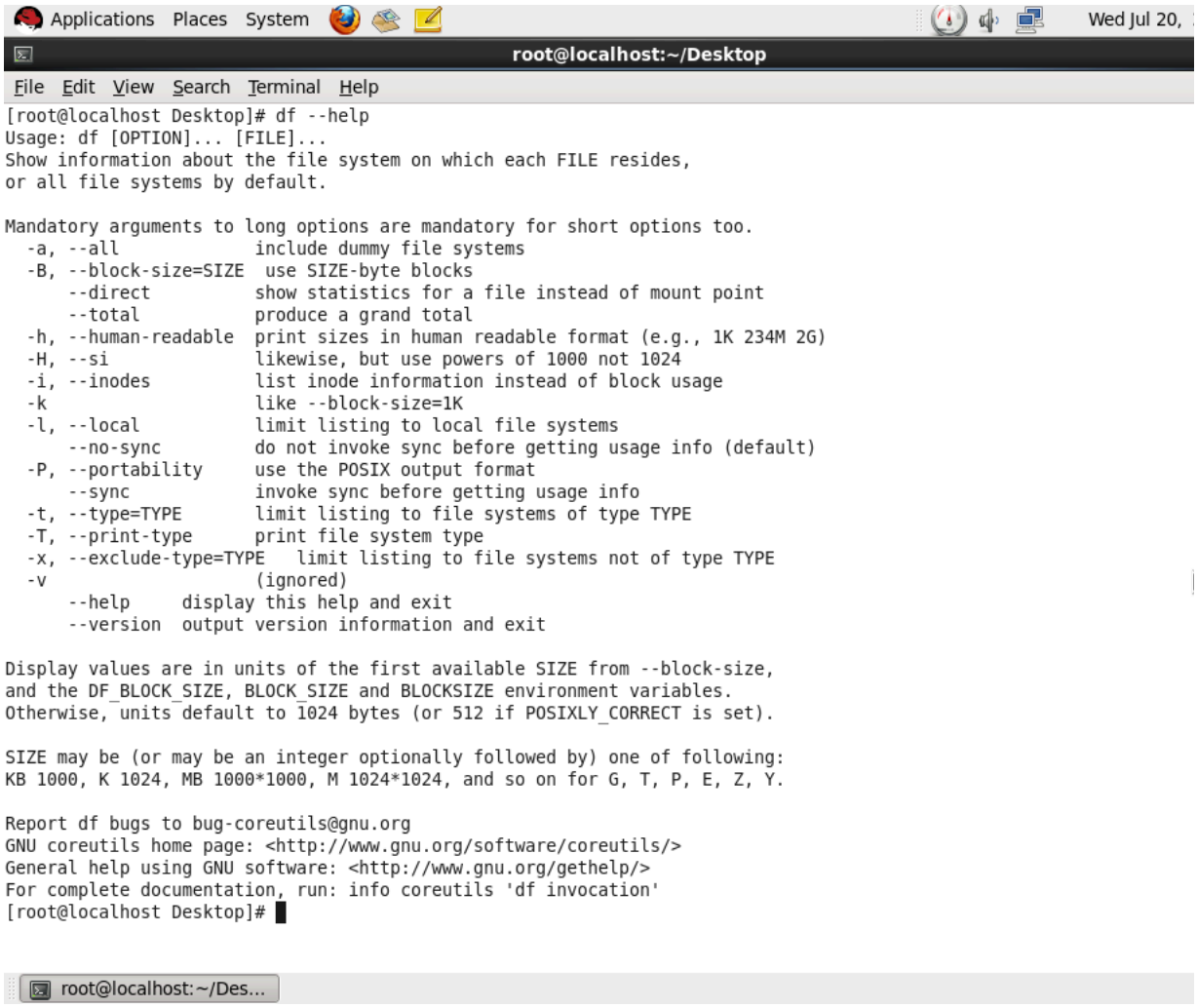


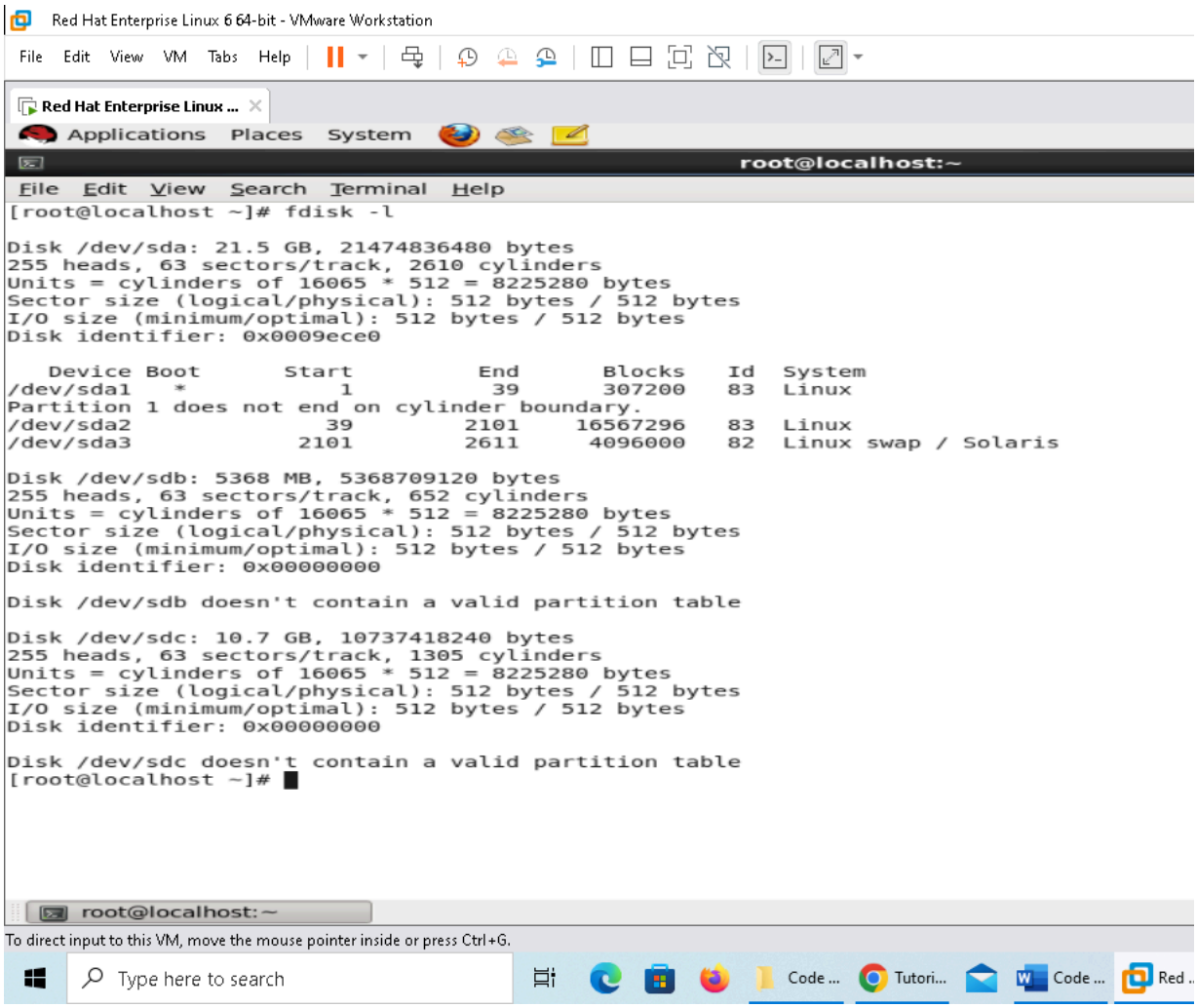
Fig 4.12 Help for df

Commands to Manage Linux Disk Partitions

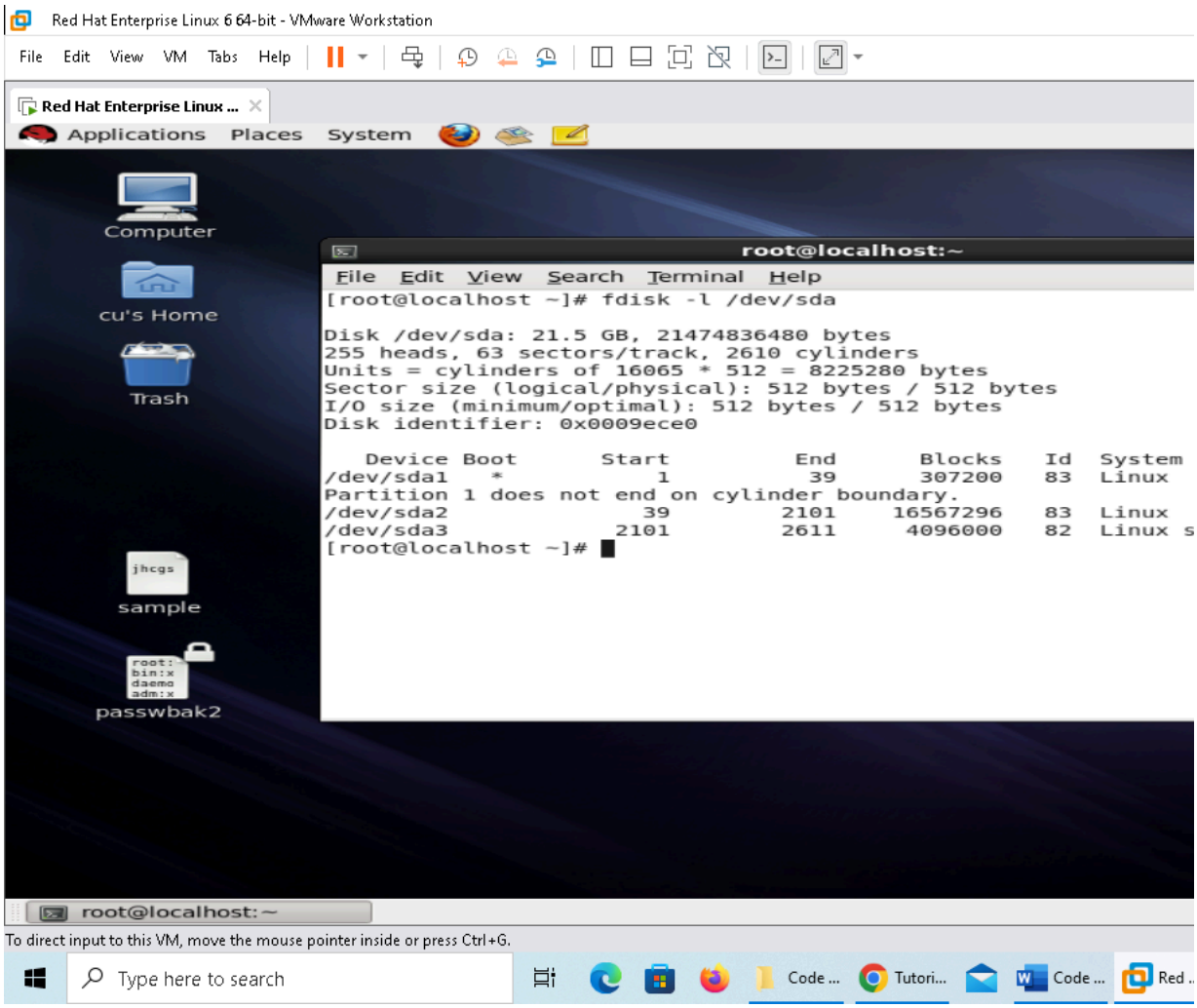
fdisk stands (for "**fixed disk** or **format disk**") is an most commonly used command-line based disk manipulation utility for a **Linux/Unix** systems. With the help of fdisk command you can view, create, resize, delete, change, copy and move partitions on a hard drive using its own user-friendly text based menu driven interface.

This tool is very useful in terms of creating space for new partitions, organising space for new drives, re-organising an old drive and copying or moving data to new disks. It allows you to create a maximum of four new **primary** partition and number of logical (**extended**) partitions, based on size of the hard disk you have in your system.

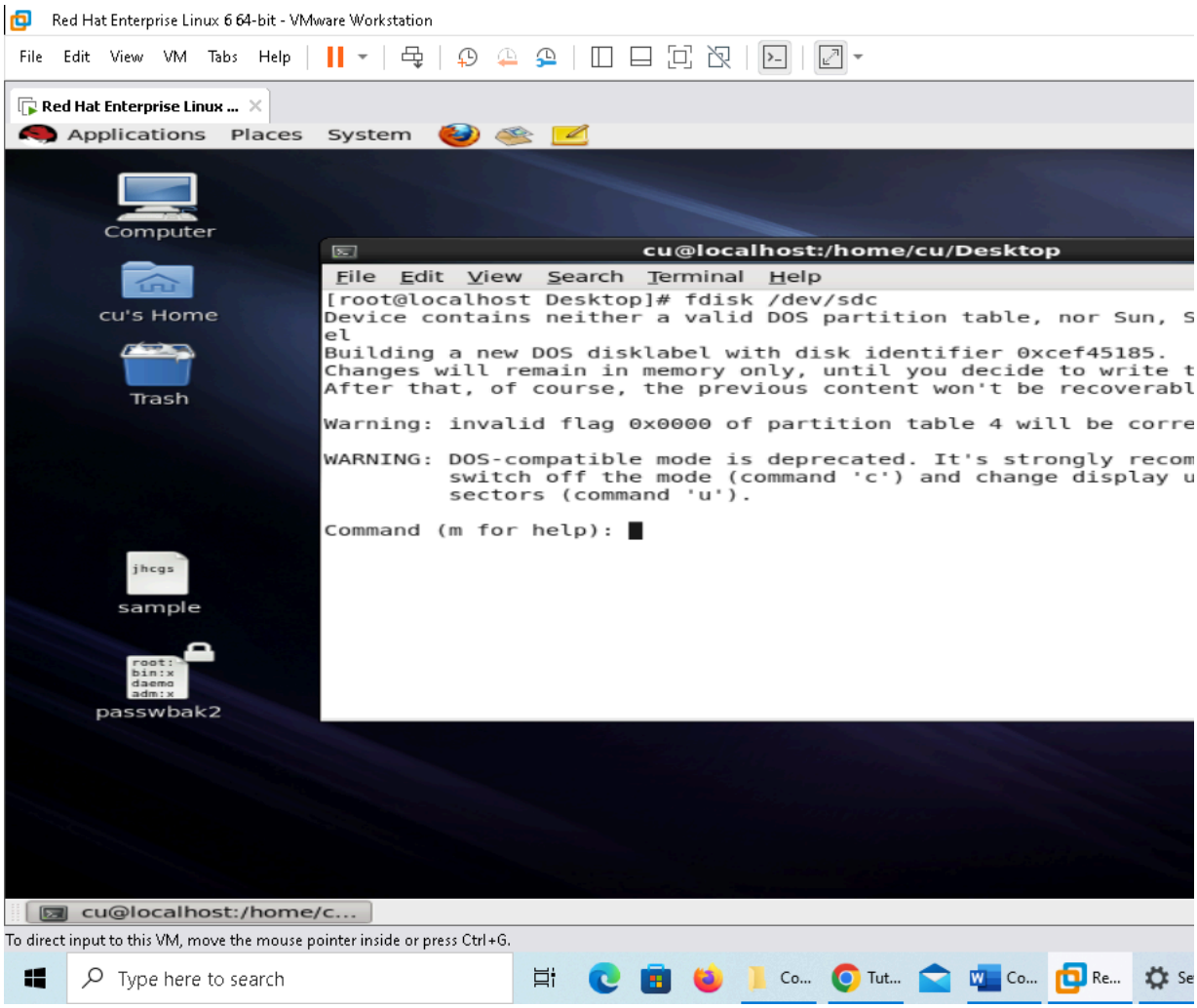
To see list of all the available partitions use "fdisk -l"



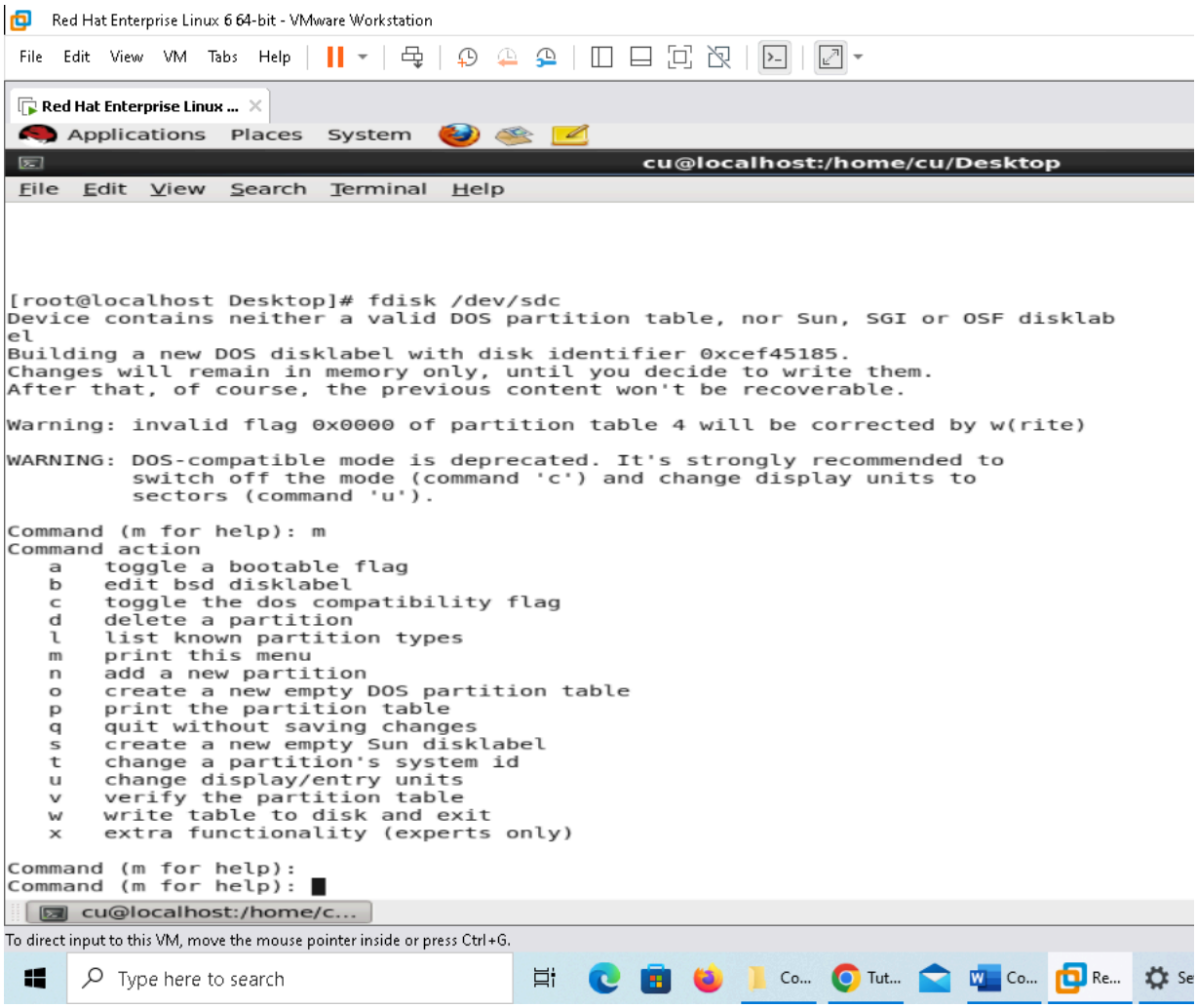
To see specific disk partition just specify the partition



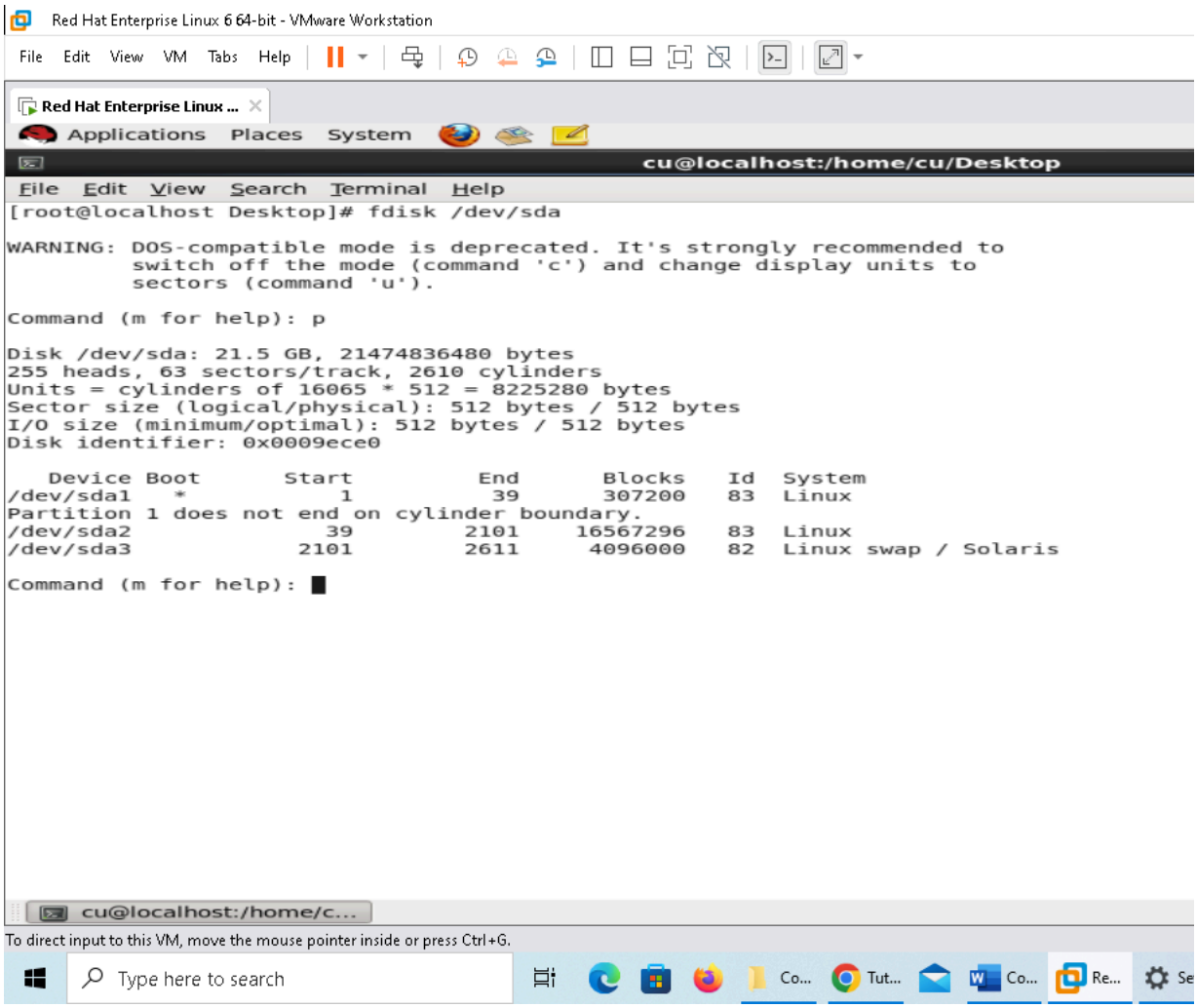
Check all Available fdisk Commands



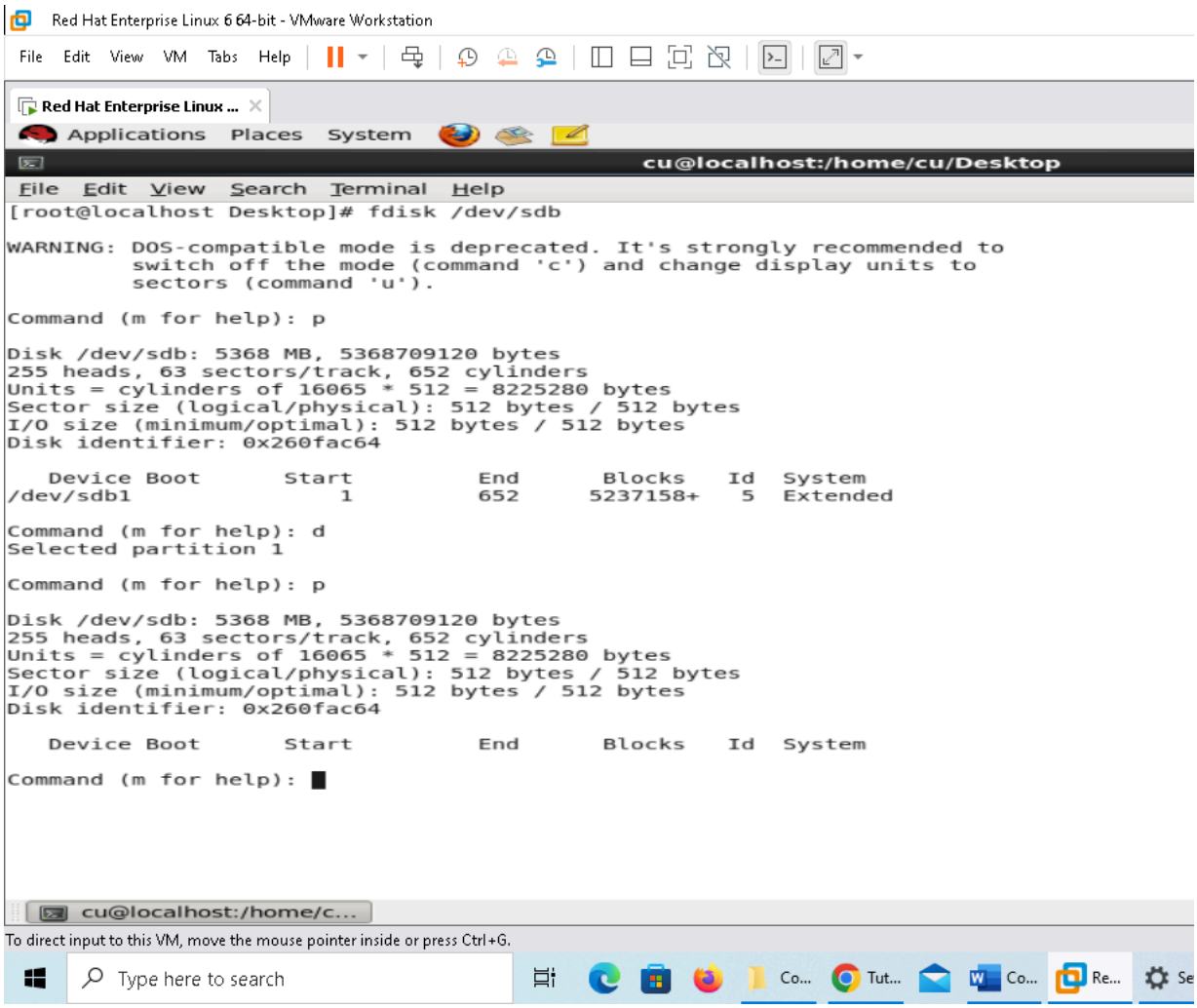
Now Press m for help and you will see below screen



How to Print a Partition in Linux



How to Delete a Partition in Linux



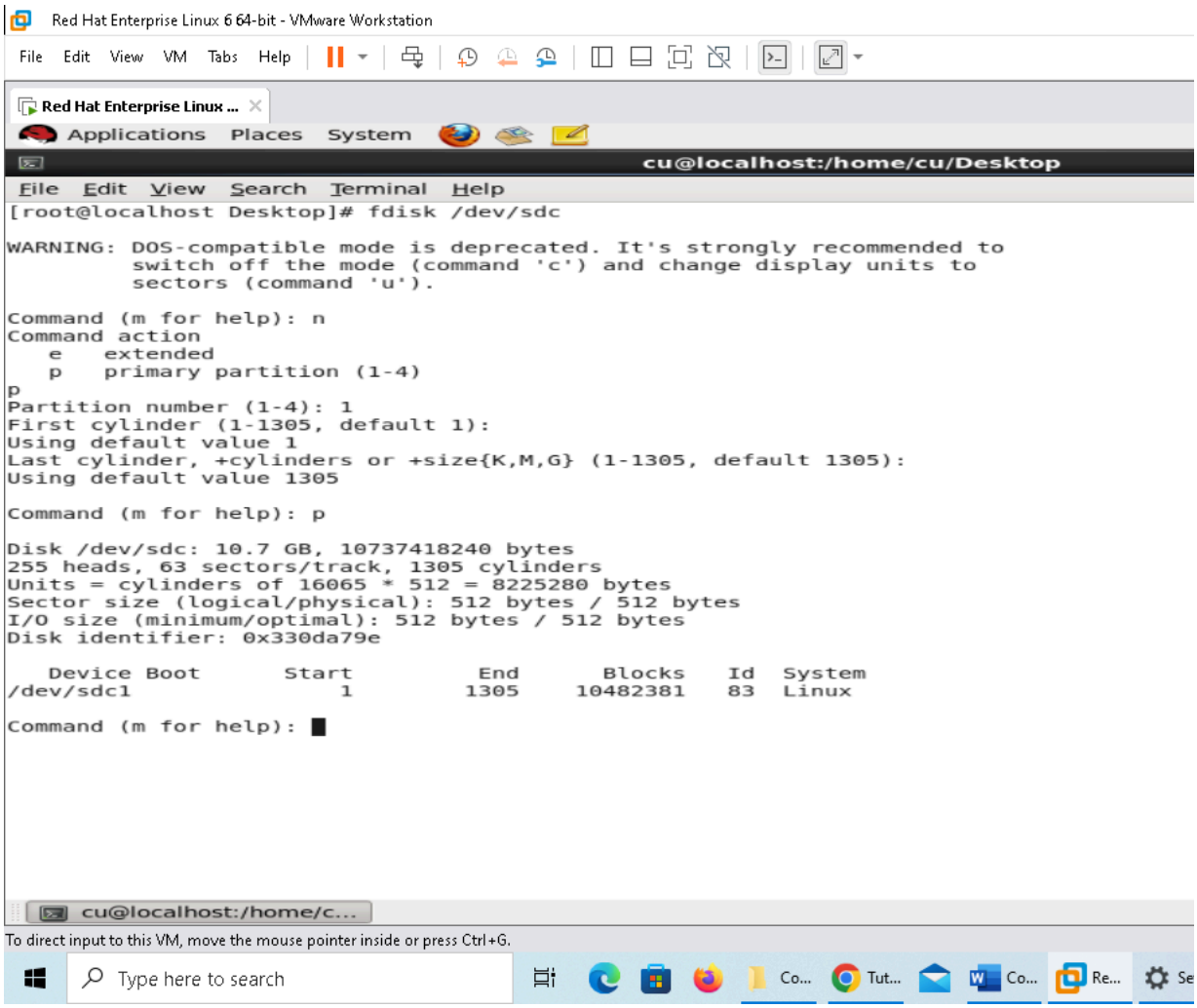
Warning : Be careful, while performing this step, because using option '**d**' will completely delete partition from system and may lost all data in partition

How to Create a New Partition in Linux

While creating a new partition, it will ask you two options '**extended**' or '**primary**' partition creation. Press '**e**' for extended partition and '**p**' for primary partition. Then it will ask you to enter following two inputs.

- First cylinder number of the partition to be create.
- Last cylinder number of the partition to be created (Last cylinder, +cylinders or +size).

You can enter the size of cylinder by adding "**+5000M**" in last cylinder. Here, '**+**' means addition and **5000M** means size of new partition (i.e **5000MB**). Please keep in mind that after creating a new partition, you should run '**w**' command to alter and save new changes to partition table and finally reboot your system to verify newly created partition.



How to Check Size of a Partition in Linux

After formatting new partition, check the size of that partition using flag '**s**' (displays size in blocks) with fdisk command. This way you can check size of any specific device.