

Linux Administrator:

Lab 2 Partitioning and Formatting

Part I Lab Purpose:

Learn how to install a new disk into a VM running Ubuntu system, and then create new partition scheme and format this disk as required in Ubuntu command line environment using “fdisk” and “mkfs” commands

Part II Lab Operations:

1. Add a new disk to your VM

Requirements:
Disk size: 20G VM
Disk Format: vmdk

2. Create a new partition table in your disk, based on below scheme:

Partition Name	Size	Filesystem ID	Mount Point
/dev/sdb1	200M	83 Linux/bootable	/boot
/dev/sdb2	10G	7 NTFS	/windows
/dev/sdb3	Extended (all remaining disk space)	5 Extended	NA
/dev/sdb5	5G	83 Linux	/
/dev/sdb6	(remaining disk space)	82 Swap	NA

(***Hint:** You will need super user privilege to use fdisk command:

\$sudo passwd root

Enter your current user’s password, and then enter root’s password

su

if you see your command prompt changes to #, congratulations! You’ve switched to root user account!

***Note:** Mount point info can’t be set in fdisk, you can just ignore it at this moment)

3. Formatting above partitions as required:

- ✓ Formatting /dev/sdb1 to EXT2 file system
- ✓ Formatting /dev/sdb2 to NTFS file system
- ✓ Formatting /dev/sdb5 to EXT4 file system

4. Verify your partition scheme and formatting are workable

- i. Remove your new disk (20G, /dev/sdb) from VM (Be careful don't remove your vmdk file in host)
- ii. Create a new VM using your new disk as its only hard disk
- iii. Install a Ubuntu OS into your new disk, using /dev/sda1 as its boot partition: /boot, /dev/sda2 as windows partition: /windows, /dev/sda5 as its root partition: / and /dev/sda6 as its swap area.

Part III Lab Requirement:

5. Write a lab report and submit it to 411052908@qq.com with below title: id#_name_class_course_lab#, including below items:

- a) Record problems you encountered during your lab operations, how you managed to solve them and your comments or confusions about these problems.
- b) Summarize things you've learned in this lab.
- c) Your answers to questions in the next section.

Part IV Lab Thinking and Discussion:

6. Please answer below question based on your lab result and your comprehension, and submit your answers along with your lab report.

- a) Why in Part II-Step 2 the new 20G hard disk is referred as /dev/sdb while in Part II-Step4 it is referred as /dev/sda? (what's the hard disk naming convention in Linux world?)
- b) What is a swap partition? Why there is no mount point required by a swap

partition?

- c) What's the minimum requirement for a hard disk to be able to install a Linux distribution into it? (hint: there are two basic requirements, one is about root partition and another is about boot partition)
- d) How to toggle a bootable flag? What's the partition type requirement to a bootable partition?