The Linux File System （Part2）

Due date

- End of the day of Week 9 (Oct.31 to Nov.4) lab class

Evaluation

- 3% of final grade.

Submission

Submit completed lab using **Assignment link** (make sure you choose the right **section number**) on BlackBoard before due date.

Materials

1) Student laptop computer
2) Ubuntu 14.04.5 installed in VMWare Workstation

Procedure

Root privilege is needed for executing most of the commands in this lab.

Exercise #1: Creating a linux filesystem

Use the **mkfs** command to format your newly created two primary partitions (/dev/sdb1 and /dev/sdb2) in **Lab5**.

Record the command you use:

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Note: If no filesystem type is specified with mkfs, mkfs will default to ext2.

Exercise #2: Creating a swap filesystem

When working with swap space we use two commands. One command is used to create a swap filesystem, which is used by the virtual memory system to temporarily store data. The command is **mkswap** and the syntax is:

- **`mkswap` *`device_name`***

  Record the command you use to create a swap filesystem on the swap partition (/dev/sdb6) you created in **Lab5**:

  _____

The second command is used to activate the swap space, so that the virtual memory system can use the swap space. The command is **swapon** and the syntax is:

- **`swapon` *`device_name`***

  Record the command you use to activate the swap partition:

  _____

To verify the swap partitions that are currently active, use the following command:

- **`swapon -s`**

  Note: No argument is required.

- Record the output of the above command

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Exercise #3: Mount & unmount a Linux filesystem

<u>Create a log file:</u>

Redirect the output of **`fdisk -l`** to the log file named ~/**fslab6** *(if you login as root, ~/fslab6 means /root/fslab6)* using the following command:

- **fdisk –l > ~/fslab6**

Append an empty line into the log file using

- **echo "" >> ~/fslab6**

A newly created filesystem is not recorded in the **/etc/fstab** file. Therefore, we need to mount the filesystem manually. In this exercise we mount the Linux partition that we created in lab5.

The syntax of the mount command is: **mount –t *type device mount-point***

To mount the newly created Linux partition:

- **mkdir /mnt/new**
  - Create a mount point
- **mount -t ext4 /dev/sdb1 /mnt/new**
  - /dev/sdb1 is the newly created primary partition in lab5 part I
- **ls /mnt/new**
  - List the directory contents. Since this a new partition you will see only one directory that is created by mkfs: lost+found.

Add to log file:

- **mount >> ~/fslab6**
  - Append the output of the mount command to **~/fslab6**
- **echo "" >> ~/fslab6**
  - Append an empty line.
- **umount /mnt/new**
  - Unmount the filesystem located on the partition

Exercise #4: Mount & unmount a CDROM disk

Put a CD-ROM or DVD disk in the CDROM drive and follow the steps below (Use the Ubuntu installation ISO image if you don't have a physical disk):

1) **mkdir /mnt/cdrom**

- Create mount point for mounting cdrom

2) **mount –t iso9660 /dev/cdrom /mnt/cdrom**

- Mount a CDROM filesystem and makes the files on it available in the **/mnt/cdrom** directory

3) **ls –l /mnt/cdrom**

- List the contents of the **/mnt/cdrom** directory

Add to log file:

- Append the output of the **mount** command to **~/fslab6**
- Append an empty line

4) **umount /mnt/cdrom**

- Unmount the CDROM filesystem

Exercise #5: Mount a partition automatically during startup

Use **vim** to insert a new line at the end of the **/etc/fstab** file to automatically mount the first primary partition (/dev/sdb1) you created in lab5 at the mount point **/mnt/blank** when the system boots up. Be very careful when editing this file.

Add to log file:

- **cat /etc/fstab >> ~/fslab6**
  - Append the new **/etc/fstab** file to **~/fslab6**

Print a copy of the log file, *~/fslab6:*

- **cat ~/fslab6**

Record the output of the above command: