

Lab 1

Installation of Linux on an external USB-HD

Week 46

Last submission date 25 Nov

Try the steps described below with installation of Ubuntu operating system from a USB stick memory to external hard drive.

Make a complete report of your experiment plus the snap shots of your work.

Submit your report before the deadline.

This lab must be done in campus under your instructor supervision to prevent damages to device memories!

The next labs are dependent to this lab, since they will be running on the operating system you will build to boot from External hard drive on this lab.

So make sure you are not missing the lab session in Campus!

Goals

- To boot from a USB-stick or a CD with a live Linux installation
- To perform a USB-HD installation
- To boot from this USB installation
- To check if this installation is performing as expected

You may need later to redo this process if for some reasons you break your installation.

Take care to follow instructions. You may risk damaging the current installation on the internal Hard drive.

Hardware needed: A USB key (2G at least), an external HD (at least 5 GB).

We will use the Ubuntu Distribution for this process but we can do the same with other distributions too.

Preparing the USB Stick memory

1. Download Unetbootin (<http://unetbootin.sourceforge.net>) and install it.
2. Download ubuntu-12.10-desktop from www.ubuntu.com .
3. Format the Usb stick with FAT32 before start with installation.
4. Using Unetbootin Install the iso image of ubuntu on the USB key (click Diskavbildning).
Use 200 MB for preserving the user files.

Booting a live OS

1. Shutdown the computer
2. Plug the USB stick
3. Start the computer
4. During the boot, press f12 to choose the USB to boot
5. Choose USB device.
6. At the boot prompt, choose install Ubuntu (you will see a blue page with different options. Choose the Install Ubuntu. Or you can boot with USB stick and use Ubuntu and use the installation file to start the installation. In this case you have access to terminal for commanding too)

Starting the installation

It's easy, just follow the instruction. Plug the USB HD to the computer.

1. Choose the language you want.
2. You can choose to update softwares now.
3. You must choose Specify partitions manually by the option: Something else, to create or resize partitions for Ubuntu)
 - a. Your device will look like /dev/sdc WD 1200GBExternal (120.0 GB) (indicating the size)

This step should be handled with care. Errors may destroy data, file systems, partition tables and MBR (Master Boot Record) on a hard-drive. There are several possibilities and ways to do a Linux installation.

In our case, we assume the Hard-Drive contains no data at all. We will use a part of it (and therefore left some free space for future use) to install Linux. For this, we will create three partitions, one for the system itself, one as swap and one for storing user's data. This will allow us to be able to change the system completely without losing user's data. You must work on the external drive (should be sdc, since it's the last connected to your box). **Ask your instructor if you are not sure.**

- b. delete all partitions on your external drive
 - c. Create a partition. Choose a primary partition, and the size can be around 20 G.
You can use ext3 as file system. This partition will host the operating system itself and therefore you should use / as mount point.
 - d. create second partition (primary, 1-2G, used as swap)
 - e. Create a third partition. (Primary can be formatted as ext3). This partition will be used to store user's data, and therefore the mount point should be /home. You can let extra free space if later you want to add more partitions.
 - f. **Choose the same hard drive (sdc) to install the boot loader run.**
- 4. The keyboard layout is Sweden – Sweden
 - 5. Enter information regarding user's name, password, . . .
 - 6. Then restart after installation finished.

Finalizing the installation and testing it

- 1. Unplug the USB drive and check if the computer is starting well under windows
- 2. Stop it
- 3. Plug your USB hard-drive
- 4. Start the computer
- 5. Press F12 and boot from the USB device
- 6. Choose the first menu
- 7. Log as user

8. Go to System-Administration and launch the update manager
9. Install updates
10. Discover your new environment you can take a tour here:
<http://www.ubuntu.com/ubuntu/take-the-tour>
11. Shutdown the computer

Read the page below to learn why and how to start and use the Terminal.

<https://help.ubuntu.com/community/UsingTheTerminal>

And a free Linux book include everything is in below link. You may use the search in Pdf file to find your information you are looking for.

<http://freefr.dl.sourceforge.net/project/linuxcommand/TLCL/09.12/TLCL-09.12.pdf>

Then answer the questions below.

1. First go to update manager and check whether there are some updates for your Linux to be installed. Make sure you are connected to internet.
2. On the up left corner find the dash home and look for “terminal”. Open the terminal and try the different commands: “whoami” and “ls” reflect the results. You may refer to the book from above link to find out exactly what those 2 commands stand for.
 - i. What the command “man intro” is used for.
 - ii. Try the command “mkdir” and reflect the result.
3. Use the commands “df -h”, “mount” and “top” on both USB and External hard Ubuntu’s. Show the results.
4. What is the command to run a file within a directory?
5. What is command to check the permissions of current directories? Then what the two command “chmod” and “chown” are doing?

6. See differences between user and super users (administrator). How can we get into the super user level (command)? What is the character at the end to know we are at the super user level?
7. What is the command history and how can you have access to the previous written commands?
8. Go to the /etc/init.d using command “cd”. Run a service with “sudo” command. Like “sudo reboot” or “sudo hostname” and reflect the result. (You should be in super user level to do this).