

OPERATING SYSTEM LABORATORY WORK

5th PRACTICUM



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1. Explain the current Linux distributions (at least 5)!

- **Red Hat**

Red Hat is a distribution that is quite popular among Linux developers and companies. Technical support, training, certification, application development, and the joining of kernel and free-software hackers such as Alan Cox, Michael Johnson, Stephen Tweedie made Red Hat grow fast and were used by companies. The biggest point of this distribution is Red Hat Package Manager (RPM). RPM is a software for managing packages on our Linux system and is considered a de-facto standard in packaging for its distros and that supports this distribution widely.

- **Suse**

SUSE Linux is one of the major Linux distributions made in Germany. SUSE Linux was originally a translation in German from Slackware. The company is currently owned by Novell, Inc. S.u.S.E is an abbreviation of the German sentence "Software- und System-Entwicklung" ("Software & system development"), but there is unofficial information that says that S.u.S.E is connected with German computer scientist Konrad Zuse. SUSE LINUX is one of the most respected distributions as a provider of solutions and superior technology in the world of open source operating systems. This German distro has the largest developer team in the world that has been credited with raising the name SUSE as the most complete Linux solution at the moment. In 2003, SUSE LINUX was officially acquired by Novell, Inc.

SUSE Linux Professional (SLP) 9.3 is a desktop operating system distribution that invites admiration when tested. This distribution has all the Linux applications that are likely to be needed by everyone. The various applications are then presented with the latest KDE or GNOME interface options. The thing to remember is that from the beginning, SUSE LINUX has a reputation as a distribution that is not intended for ordinary users. So, don't expect this distribution to be as easy as Xandros or Linspire. No need to be afraid to try it given the complete documentation available for this distribution, it's just that this distribution might be more appropriate for a developer, a power user, or someone who is interested in trying to what extent the Linux desktop can be used. As a high-end Linux distribution, SLP 9.3 can run on a low-speed Pentium with a minimum of 128MB of memory and 500MB of hard disk space. Of course what is recommended is a minimum 1GHz Pentium processor, 256MB memory, and a 2.5GB hard drive.

- **Ubuntu**

Ubuntu takes its name from the Old African language. According to the Ubuntu website (www.ubuntulinux.org), the name Ubuntu means "humanity for others". This distro was born from the desire of Linux developers to present a Linux distribution that is easy to use, reliable, quality, and free. Ubuntu can be used both for machines

that function as servers and as desktop computers. This distribution also supports various processors on the market such as Intel x86, AMD64, and PowerPC.

The Ubuntu Project is sponsored by Canonical Ltd. Ubuntu enthusiasts can order Ubuntu CDs in the amount they want for free by visiting the Ubuntu website.

However, Ubuntu enthusiasts can also download the Ubuntu image file (in the form of an .iso file) by visiting the address www.ubuntulinux.org/download/. Since Ubuntu is distributed on two CDs, make sure you get or download an image file that suits your needs. For information, the install CD version is an Ubuntu distro that is specific to being installed on a hard disk. While the Live CD version is a Ubuntu distro that is specific to run directly via CD-ROM without the need to be installed again on the hard disk.

Ubuntu 5.04 Hoary Hedgehog is the latest version of this operating system. This operating system requires a computer with processor specifications from the x86 family (Intel 486, Pentium, Pentium II, III, and 4), AMD, or VIA (formerly Cyrix), VGA graphics card with 256 colors depth or higher, 128MB RAM or more height, a CD-ROM drive, and hard disk space of about 1 gigabyte or higher (if installed on a hard drive). This specification is a basic requirement for running graphics mode in Ubuntu. If the user prefers text mode, the required computer specifications may be even lower than the specifications. The purpose of the Ubuntu Linux distribution is to bring the spirit contained in Ubuntu into the software world. Ubuntu currently supports various computer architectures such as PC (Intel x86), 64-bit PC (AMD64).

- **Debian**

Debian is a non-commercial distribution produced by volunteers from around the world who work together on the internet. This distribution wants an open-source spirit that must remain in Debian. This distribution's dynamism makes every release of its packages updated all the time and can be accessed through the apt-get utility. Apt-get is a command-line utility that can be used dynamically to upgrade the Debian system through the extensive Debian archive apt-repository network. Debian mailing lists and forums are always full of good messages about bugs, problems, sharing, etc. With this communication system, bugs and security problems on each package can be reported by Debian users and developers quickly. The advantages of Debian are upgradability, dependency between packages and well-defined open development.

- **Fedora**

Fedora is a distribution made by Red Hat Project after joining the Fedora Project, a community project that specializes in making various application packages to run on Red Hat Linux. Looking at its history, Fedora Core is clearly the result of evolution of Red Hat Linux, which stopped in version 9. Because of its evolution, Fedora Core has the appearance, "feel", and functionality typical of Red Hat Linux. Fedora Core 4,

released June 13, 2005, is the latest release of the Fedora Project which offers many improvements and new features compared to its predecessor version. Fedora Core 4 contains all the latest software updates, including GNOME 2.10 and KDE 3.4 which are more beautiful and support performance.

Fedora Core 4 can be burned to four CDs or a DVD. This distribution does not use a live CD and must be installed on the hard disk. Installing Fedora Core 4 is easy, and has not changed much from the previous release. Fedora uses the Anaconda installer which is graphical so it is easy to follow. This distribution can also work well in various system specifications without needing to copy in the command line. Good news for Apple computer users, Fedora Core 4 now fully supports the PowerPC CPU architecture, so it can run on Apple G3, G4, and even G5 processors. That way, now Apple users have a stable alternative operating system besides Mac OS X.

2. Explain the same 20 commands between each distro!

- **sudo su**
Function to log in as the highest root / user
syntax: sudo su
- **root**
Function to login as root
syntax: root
- **login**
It functions to log in as another user, but must first be rooted to be able to run this command.
Syntax: login username_user
- **pwd**
Serves to show the directory where we are
syntax: pwd
- **ls (list)**
The ls crosser functions to display the contents of a folder by using the command line interface. When you are in a specific folder or directory, you can see the contents of that folder or directory by using the ls command.
syntax: ls
- **cd (change directory)**
cd is a short change of directory. This command works to move from the directory where you are currently. You can exit a folder or enter a specific folder using this command.
syntax: cddir_directory
for example: cd / etc / network

- **mkdir (make directory)**

The mkdir command functions to create a new folder or directory using the command line interface. By using the mkdir command, not only can you create a new directory, you can also create a new directory structure with a certain structure. In other words, you can create multiple folders using only one command line on Linux using the mkdir command.

syntax: mkdir name_folder

example: mkdir folder1

- **touch**

The touch command functions to create a new file using the command line interface. This command can create files with any extension.

syntax: touch name_file

- **rm (remove)**

The rm command works to delete a file using the command line interface. In use, using certain parameters the rm command is also used to delete a folder that still has contents in it.

syntax: rm file1.txt

- **rmdir (remove directory)**

Almost similar to the rm command, the rmdir command functions to delete an empty folder.

syntax: rmdir name_folder

example: rmdir folder1

- **mv (move)**

The mv command functions to move a file using the command line. In use, you can also use this command to change the name of a file.

syntax: mv / directory / filename / original / filename

example: mv /etc/file1.txt file2.txt >>> rename file

mv /etc/file1.txt / var / www >>> cut file

- **cat**

The cat command functions to display the contents of a file by printing it as output from the command.

syntax: cat name_file

- **reboot**

The reboot command functions to restart or restart the system of a computer that is on or running.

syntax: reboot

- **halt**

The halt command serves to instruct the machine to stop all functions on the CPU. By using the halt command you can also shut down a Linux system.

syntax: halt

- **tar**
Tar command serves to compress a file into an archive format that has the format ".tar".
syntax: tar [parameter] filename
- **history**
The history command functions to display the history of commands that have just been used before.
syntax: history
- **more**
Function to display the contents of a file
syntax: more name_file
- **echo**
Function to write something word or sentence to a file
syntax: echo "message body" name_file
- **addgroup**
Function to add a new group
syntax: addgroup nama_group
- **lsusb**
Serves to see USB devices that are connected to a computer
syntax: lsusb

3. Explain the purpose of the commands' init 0 ', 'init 1 ', 'init 2', 'init 3', 'init 4', 'init 5', and 'init 6'!

The meaning of init 0 - init 6

Init and run level are used for shutdown, poweroff, or reboot.

Runlevel Types:

a. init 0 => Used for maintenance, diagnostic hardware, booting other than disk for example from cdroom.

command: init 0, shutdown -i0

b. init 1 => Single user mode, used to add patches, backup / restore system. at this level we can run / access all files but other users cannot log into our system.

command: init 1, shutdown -i1

c. init 2 => multiuser mode, usually for use in networks. but here there are no resources shared.

command: init2, shutdown -i2

d. init 3 ==> expanding multiuser mode, we can make local resources share on our network. so we can share this level of data on the network.

command: init 3, shutdown -i3

e. init 4 ==> for alternative multiuser mode but currently cannot be used.

command: init4, shutdown -i4

f. init 5 ==> for shutdown / power off.

command: init5, shutdown -i5

g. init 6 ==> stop the operating system then reboot and return to the initdefault in / etc / inittab

command: init 6, shutdown -i6

- To find out our current runlevel use the command

#who -r

Shutdown method that we can use:

#shutdown -i5 -go -y

that is: Shutdown -i5 ==> enter init 5 for runlevel shutdown

-g0 ==> grace 0 second (0 indicates the length of time before we shutdown the unit in second)

-y ==> for a confirmation that is asked (answer y).

4. Explain the purpose of the 'quota' command!

The quota command functions to display disk usage statistics, the limit of free space available for a user or group.

Usage: quota [OPTION]

Example: quota v