

CAA 1

General Comments

This assignment will be performed by working on the configuration files and commands available to configure and manage the corresponding services, avoiding as much as possible the use of automated tools and graphical user interfaces. These graphical tools can be used to verify the configuration and / or manage the application wherever possible, but not directly to solve the proposed exercises.

*Each question must specify **in detail** the steps taken and configuration changes performed, showing the results (wherever possible) through listings and other outputs **commented** by you and that may be reproduced so that they can be evaluated. Remember that assignments can only be assessed by the information contained in them.*

*This **assignment** is an **individual work**. It will not be evaluated if parts of it are copied (from any source) or are too similar to other students' assignments.*

Assignment 1, consisting of three parts.

1. Search information on a GNU/Linux distribution. You, the learner, will make a critical analysis by obtaining information about the system and its possible advantages and disadvantages for these two configurations:

I. Internet Services server. Service provider (ISP), web, mail, warehousing, corporate accounts, identification, etc.

II. Desktop machine: Basic office work (office tools, printing and network drives, etc..) and entertainment (video, music, web browsing, etc.).

You should look at the essential aspects of the chosen distribution and its main purpose, and analyse it based on the available information (documentation, forums, personal experiences, etc.).

NOTE: this analysis should be useful for a systems engineer before deciding on the installation of one or other distribution regardless of personal (subjective) tastes.

2. Perform a thorough analysis of the installation, configuration and adaptation of GNU/Linux to a concrete machine (netbook, laptop or desktop). Given the specific machine, begin with an analysis of its hardware, and continue with the choice of the most suitable distribution based on that analysis and on the intended use of the machine.

Consider that you must coordinate a migration process in a company that offers printing services and photo album creation and processing (and associated services) on the Internet, according to the criteria described in the Chapter 2 of the materials.

Clients must have the following services available: disk space to upload photos and video, an email address, an online space to publish their albums, print service, streaming service (for video on demand) and any other service necessary to provide a service similar to *Hofmann* (<http://www.hofmann.es/>).

This company wants to move from a *proprietary software infrastructure* to *free software* with the following features:

- Attention to 500 external customers
- A set of new services (email accounts, websites, streaming service, ftp service, etc.)
- Data integration with current computer system (machines that can't be migrated)
- The solution should be based on free software

Current situation:

- 10 computers running Windows (9 Vista licenses for 2.3Ghz Intel dual cores with 1Gb Ram, 1 server with W2003, PIV 2Ghz, 2GByte Ram).
- File and printer sharing service, website in IIS, office-based version of MSOffice 2003.

Migration project:

- The company has 15 employees and each must have a desktop computer.
- The new system must integrate an existing Windows computer that will contain data that can not be migrated and must be visible from the other computers on the new network.

Prepare a project for the migration, including an estimate of the cost of the new system using real data for both the proposed free software solution and an update of the current infrastructure based on proprietary software.

Note: The instructions for this exercise are left deliberately open. You must make the assumptions you consider necessary to focus the problem and suggest the most appropriate solution.

3. In this exercise you will develop a series of shell scripts, which are essential tools for systems administrators. The command interpreter of choice is up to the user, nonetheless bash or csh are recommended. Bash is comprehensive but also complex, while csh is simpler and although it is limited on some issues has a syntax similar to C that can guide users who do not know programming in shell script (other interpreters are not excluded but are only recommended for experienced users).
 - i. First, create a local repository from Debian Lenny discs. Then write a shell script that would enable an interactive installation of the distribution from the files/images installed in the repository created in the first place. This script will ask the user about each package and install it or not according to the user's input.
 - ii. Write a script to search the directory tree, starting from the directory given as first parameter, for files with names that match a pattern given as second parameter and a size greater than or equal to the value passed as the third parameter. For example,

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$ mish /home *mov 1000k
```

would return all files from the /home directory that end with " mov" (movie mpeg4) and are larger than or equal to 1 MB. As indicated, it should be possible to use * as a wildcard in the file name. The shell script will save a log in /tmp/size.txt with information (accumulated and sorted by file size) of the files found including at least (one line per file) name, path, size, ownership, date.

From the files found, the script will move to a directory (protected from reading, writing and execution, except for "root") those belonging to local users (except "root") and that exceed in 3 KByte the size indicated in the third parameter. These files will be stored under /tmp/username for each user individually (e.g. all files belonging to the user "john" will be stored in the directory /tmp/john/). The script will send an email to each user informing of the files that have been moved by the administrator.

Finally, the script will schedule a task to be executed 48 hours later. This task will delete all the files that were moved to /tmp/username (see description above). Note that if the script is run in two consecutive days, on the *third day* it should *only delete* the files from the *first run*, but NOT from the second one (which will be deleted on the fourth day).

Accepted formats of your work.

You can use an OpenOffice- or MSWord -document for the completed assignment, PDF will also be accepted.

When finished, send your document by **email** to jan.timmerman@ou.nl. Use:

FTA: module 2, assignment-1

in the subject-field of your message; note the space after FTA: .