

# Written test

GNU/Linux System Administration  
Info et Réseaux en Apprentissage, Sup Galilée, Paris Nord

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*Answer the following questions, writing with a clear handwriting, in English or French language. Available time is 1 hour. Access to any other document and communications are forbidden.*

## A Access control

- A.1 List all the conditions needed by the user john to play the movie stored in `/usr/share/movies/BluesBrother.avi` using the media player binary `/usr/bin/mpplayer`.
- A.2 What do `su` and `sudo` commands do, how do they do it, and where do they differ?
- A.3 What is the `umask`?
- A.4 What are the extended ACLs? How do they differ from the standard? Provide an explanatory example.
- A.5 Several services are reported to being slowed down. On the server you find you find a critical and uninterruptable job which is eating all the CPU. Explain a procedure to solve the problem.

## B Data and execution control

- B.1 What is a software package of a GNU/Linux system? What does it contain?
- B.2 What is a Linux kernel module?
- B.3 How does Linux represent processes? Name and describe at least three of the attributes it uses in doing so.
- B.4 Explain the purpose of logging and some of the features of `syslog`.

- B.5** Your server is reported to have the /var the free space amount critically low. Explain a procedure to analyze and isolate the problem.

## **C Hardware and network control**

- C.1** What hardware is typical mapped in /dev/sdb2?
- C.2** What is the swap space? Can we run a system without it?
- C.3** Name one of configuration file related to host naming and explain its role.
- C.4** Compare two RAID configurations in term of performance, resistance to degradation, space wasted: 4 disks in level 5 vs 4 disks in level 10.
- C.5** Describe a typical boot process from the BIOS to the login window.