Lab Assignment 6	L6
Corresponding to Topics 8 & 9, "Resource and Log Management"	

Main goals

- To understand how to manage the system resources properly.
- To learn how to manage basic aspects of event monitoring.

Part 1: System resource management

1) **Get the number of process running in the system.**

2) **Now, get the number of process running which are owned by the root user.**

3) **Install the "Stress Debian" package and run it in two additional sessions, stressing only the CPU. Go back to the first session:**

   a) Stop the first 'stress' process and check its state.

   b) Resume it.

   c) Decrease the priority of the second as low as possible and detect what happens.

4) **Detect which process has the highest priority in the system. Now find out what its purpose is.**

5) **Restrict the max CPU time that all users can use to a maximum of 5:00 minutes.**

6) **Write a** `crontab` **file for the 'root' user to perform the following tasks:**
   a) Run the `date` command each minute and redirect (append mode) its standard output to the `/tmp/date.log` file.
   b) Clean the `/tmp` directory the first 5 days of each month at 5:00 PM.

7) **Check that the cron is working property (**`date` **output is ok).**

8) **Deny the use of** *cron* **services to 'test' user. Check it out trying to edit crontab with user test.**

9) **Double the swap space available on the system. Note that:**
   a) You may not use new attached disks.
   b) Make it permanent.

   Wait! Remember your *cron* from exercise 7? Check that it did its task b (only if it is later than 5:00 PM, if not come back here later ☺).

10) Create one new partition on a second disk and make an ext3 file system on it. Then, copy the /home **content in this partition and configure the system to mount it on the** /home **directory permanently.**

11) Enable the system file quota mounted on /home**.**

12) Limit the *test* user ($HOME**) quota to 100 MB. Grant 2 days and 50 MB of grace.**

13) Check this limit using *dd* command.

14) And now think, what could you do to check quotas periodically?

Part 2: System event monitoring

1) **Read the** `logger` **manual. On command line, send a message like "hello syslog …" to the log file in** `/var/log/syslog`**. Check that you did it correctly.**

2) **Send all the 'debug mode' messages generated by sshd service to the** `/var/log/ssh.log` **file.**
   Remember to create it previously (empty). Configure the sshd service for running in 'debug mode' and check the effect that this has on the `ssh.log`**.**

3) **Log in as 'test' user and execute the** `su` **command. Go back to the root user and look for the file where this login information is kept.**

4) **Configure syslog rotation (**`/var/log/syslog` **file) so that it is compressed monthly and all the logs generated in a year are stored in a directory named** `/var/log/syslog.old/`**. The system must send an email to root each time a rotation is made.**

Part 3: Shell scripting