# Homework M6: FHS, Disks, Filesystems, and Archives

For the successful completion of the tasks, it is enough to use just one machine. Perhaps, a new one.

**The only special requirement is to have an additional (second) disk of 2GB.**

Let's assume that the following list of tasks will be performed on a new stand-alone machine:

1. Create archive of **/etc** with **xz** utility and **measure** the **time** needed. Name the archive **etc.tar.xz**
2. Create archive of **/etc** with **bzip** utility and **measure** the **time** needed. Name the archive **etc.tar.bzip**
3. Create archive of **/etc** with **gzip** utility and **measure** the **time** needed. Name the archive **etc.tar.gzip**
4. Compare the **size** of the **three** archive files created earlier. **List** their **names** and **sizes** (using the **ls** command) ordered from smallest to the largest and store them in a file **compression-test.txt**
5. Partition the disk using **GPT**:
   1. **First** partition of type **Linux** and **700MB** in size;
   2. **Second** partition if type **Linux Swap** and **200MB** in size;
   3. **Third** partition of type **Linux** and **300MB** in size;
   4. **Fourth** partition of type **LVM** and **100MB** in size;
   5. **Fifth** and **sixth** partitions of type **LVM** and **300MB** in size;
6. **Create** folder **/addon** and subfolders (check bellow) to mount the new filesystems
7. Create **xfs** filesystem on the **first** partition, mount it at **/addon/xfs**, and include it in the **/etc/fstab**
8. Initialize the **swap** partition, **turn it on**, and include it in the **/etc/fstab** file
9. Create **ext4** filesystem on the **third** partition, mount it at **/addon/ext4**, and include it in the **/etc/fstab**
10. Create **PVs** on the **fourth**, **fifth**, and **sixth** partitions
11. Create new **VG** named **vg\_addon** and include all **three PVs** created earlier
12. Create new **LV** named **lv\_addon** with size **400MB**
13. Create **ext4** filesystem on the new **LV**, mount it at **/addon/lvm**, and include it in the **/etc/fstab**
14. Extend the **LV** to include all the space available on the **VG**
15. Extend the **LV's filesystem** to include all the available space
16. **Reboot** the system and **check** if everything with the new filesystems is okay (**list them**).

*\* Please note that all resulting files should be in the home folder of the user used for the homework solving process*

## Proof

After you are done with the tasks, you can check how well you did them

In a terminal session execute one of the following commands (depending on which executable you have)

* Option 1 (**wget** installed, usually for **Debian**-based distributions)

**wget -q https://courses.zahariev.pro/m6.sh -O - | sudo bash**

* Option 2 (**curl** installed, most of the distributions)

**curl -s https://courses.zahariev.pro/m6.sh | sudo bash**

Repeat the procedure until you get as many **PASS** marks as possible. This may include adjustments on what you did or even start from the beginning

Once, satisfied by what you accomplished, use the homework template document (available in the section for the module – ***Домашно – M6 – Шаблон за решение***) and paste the link you received as a result

Include the commands you used for every step. Also include the output if you like (either as pictures or as text)