Homework: Linux. LINUX FILE SYSTEM and PERMISSIONS

1. Create new volume in VirtualBox, attach it to VM

We can use CLI-interface:

```
[ls@jscp4e ~]$ vboxmanage list vms|grep testvm
"testvm" {738bbb11-51f1-4801-9a94-32a8c1ea5f44}
[ls@jscp4e vbox-testvm]$ vboxmanage createhd --filename testvm_volume.vdi --size 4000 --
format VDI
0%...10%...20%...30%...40%...50%...60%...70%...80%...90%...100%
Medium created. UUID: adb846e9-6774-4ca7-8c98-cb9e49082c07
[ls@jscp4e vbox-testvm]$ vboxmanage storageattach testvm --storagectl "SATA" --port 1 --
device 0 --type hdd --medium  testvm_volume.vdi
```

Logging in via ssh to testvm, our device is the 2nd hard drive:

```
[testvmadmin@testvm ~]$ sudo fdisk -l|grep sdb
Disk /dev/sdb: 3.9 GiB, 4194304000 bytes, 8192000 sectors
```

2. Create two partitions. One of it should be formatted in ext3, second in BTRFS

Using fdisk in non-interactive mode with sending single-char commands via pipe:
(new primary MBR #1 <default start position> +1G
new primary MBR #2 <default start position> +1G write quit)

```
[testvmadmin@testvm ~]$ echo -e "n\np\n1\n\n+1G\nn\np\n2\n\n+1G\nw\nq\n" | sudo fdisk
/dev/sdb
[testvmadmin@testvm ~]$ sudo fdisk -l|grep sdb[12]
/dev/sdb1          2048 2099199 2097152   1G 83 Linux
/dev/sdb2       2099200 4196351 2097152   1G 83 Linux
```

Unfortunately, CentOS 8 doesn’t support BTRFS, so we need to a little extra actions:

```
[testvmadmin@testvm ~]$ sudo dnf -y install https://www.elrepo.org/elrepo-release-
8.el8.elrepo.noarch.rpm
[testvmadmin@testvm ~]$ sudo dnf -y install 'dnf-command(config-manager)'
[testvmadmin@testvm ~]$ sudo dnf -y config-manager --set-enabled elrepo-kernel
[testvmadmin@testvm ~]$ sudo dnf -y install kernel-ml
[testvmadmin@testvm ~]$ sudo reboot

[testvmadmin@testvm ~]$ sudo dnf --enablerepo=elrepo-testing install btrfs-progs
```

After that, we can return to task:

3. Mount into your system as /homework/ext & /homework/btrfs

```
[testvmadmin@testvm ~] sudo mkfs.ext3 -Fq /dev/sdb1; sudo mkfs.btrfs -fq /dev/sdb2
[testvmadmin@testvm ~] sudo mkdir -p /homework/{ext,btrfs}
[testvmadmin@testvm ~]$ sudo mount /dev/sdb1 /homework/ext/
[testvmadmin@testvm ~]$ sudo mount /dev/sdb2 /homework/btrfs/
[testvmadmin@testvm ~]$ mount|grep sdb
/dev/sdb1 on /homework/ext type ext3 (rw,relatime,seclabel)
/dev/sdb2 on /homework/btrfs type btrfs
(rw,relatime,seclabel,space_cache,subvolid=5,subvol=/)
```

4. They should be mounted after reboot

```
[testvmadmin@testvm ~]$ sudo sh -c 'grep sdb /etc/mtab >> /etc/fstab'
[testvmadmin@testvm ~]$ sudo reboot
[testvmadmin@testvm ~]$ mount|grep sdb
/dev/sdb2 on /homework/btrfs type btrfs
(rw,relatime,seclabel,space_cache,subvolid=5,subvol=/)
/dev/sdb1 on /homework/ext type ext3 (rw,relatime,seclabel)
```