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Partitioning sdb:

1. First, call fdisk with sdb using the following command:
   fdisk /dev/sdb
2. Type the **n** command to add a new partition
3. Choose the partition type as primary by typing: **p**
4. When prompted for the partition number type: **1**
5. Use the default value for the First Sector by pushing enter
6. Use the default value for the Last Sector by pushing enter
7. Type: **w** to write table to disk and exit

Creating a physical volume in sdb1:

1. To create a physical volume in sdb1 type the following:
   pvcreate /dev/sdb1

Creating a new volume group:

1. To create a new volume group named "vg_new", type the following:
   vgcreate vg_new /dev/sdb1

Creating two logical volumes(lv_home and lv_tmp):

1. To create the logical volume "lv_home" of size 5GB inside volume group "vg_new" you type the following command:
   lvcreate –L 5000000000b –n lv_home vg_new
2. To create the logical volume "lv_tmp" of size 1GB inside volume group "vg_new" you type the following command:
   lvcreate –L 1000000000b –n lv_tmp vg_new

Creating a filesystem for both "lv_home" and "lv_tmp":

1. To create an xfs filesystem for lv_home type the following:
   mkfs.xfs /dev/vg_new/lv_home
2. To create an xfs filesystem for lv_tmp type the following:
   mkfs.xfs /dev/vg_new/lv_tmp

To copy the home directory's contents into lv_home:

1. First mount lv_home by running:
   mount /dev/vg_new/lv_home /mnt
2. Then run the copy command with the flag –a to preserve the timestamps and ownerships:
   cp –ar /home/* /mnt/
3. Lastly, unmount lv_home with the following command:
   umount /mnt

To copy the tmp directory's contents into lv_tmp:

1. First you need to create a tmp folder inside of mount, this is so when you mount lv_tmp, you can copy the hidden contents of tmp into it.
2. Next mount lv_tmp by running:
   mount /dev/vg_new/lv_tmp /mnt/tmp
3. Then run the copy command with the flag –a to preserve the timestamps and ownerships:
   cp –ar /tmp /mnt
4. Lastly, unmount lv_tmp with the following command:
   umount /mnt/tmp

To remove the files in the home and tmp directories:

1. To remove the files in the home directory run the following command:
   rm –rf /home/*
2. To remove the files in the tmp directory first go into the tmp directory:
   cd /tmp
3. Next, to see all of the hidden files, run:
   ls -a
4. Remove all of the individual hidden files (except "." and "..") by running the following command once for each hidden file:
   rm –rf <filename>

To mount the logical volumes lv_home and lv_tmp where they belong and update /etc/fstab:

1. First mount lv_home to the home directory, run:
   mount /dev/vg_new/lv_home /home
2. Next mount lv_tmp to the tmp directory, run:
   mount /dev/vg_new/lv_tmp /tmp
3. To update /etc/fstab first run:
   vim etc/fstab
4. Next press "i" for insert and add the following two lines to the end of the file:

```
/dev/vg_new/lv_home /home           xfs  nodev0 0
/dev/vg_new/lv_tmp /tmp       xfs    nodev,nosuid,noexec 0 0
```

5. Press "esc" and type "**:wq**" to save the file and quit.