40 - Disk Space and Formatting

ASCII Programs:

Check if a cdrom is connected to the right devicename

```
cat /dev/hdc
```

Partitionning of hard disk

`fdisk /dev/hdb`	Older but good partitioning program
`cfdisk /dev/hdb`	Menu oriented fdisk
`parted /dev/hdb`	Can create, erase, resize or move partitions. **Warning:** It executes command immediately
`gpart /dev/hdb`	Even retreives deleted partitions
`fdformat /dev/fd0`	Low-Level formatting of floppy disk

Prepares different Linux file systems (`ext2`, `ext3`, `reiserfs`)

`mkfs -t ext2 /dev/hda4`	Format an ext2 file system
`mkfs -t ext3 /dev/hda4`	Format an ext3 file system
`mkfs.msdos /dev/hdb3`	Format a VFAT16 file system
`mkfs.msdos -F 32 /dev/hdb3`	Format in VFAT32 file system
`mkreiserfs /dev/hdb1`	Format in reiserfs file system

Display used/free space on all mounted drives

`df -h` (human = better readable with **K**, **M**=megabytes and **G**

Display used space in a specific Directory

`du -sh /home` Reports only the used space (`-s`) of `/home` human format(`-h`)

Display all local storage devices and their properties

`fdisk -l` (only as root)

Checks ext2 file system on a partition

`e2fsck -f /dev/hda4`	Forces (`-f`) checks ext2 filesystem
`fsck -f ext3 /edv/hda3`	Forces (`-f`) checks ext3 filesystem
`reiserfsck /dev/hda4`	Checks a reiserfs file system

X-Windows Programs

Display used/free space on all drives in `/etc/fstab`

`kdf` Graphic representation of free space on each partition
And allows to mount devices by double-clicking on them
It's NOT any more Available on SuSE Distribution

List used space per Directories

`kdirstat` Scans recursively selected directory
`kdiskfree` Shows graphically the hard disks free space
or
`kwickdisk`

Displays recursively file/directory list and their size

`kdu` A bit like **`kdirstat`** but less elegant.

Display programs that use files in `/mnt` directory:

```
lsof | grep /mnt
```

To Kill all processes that uses a mounted filesystem to free it up before unmounting it.
`fuser -km /dev/hda5`

To convert an `ext2` partition to `ext3` Journaling filesystem.
The follwoing command can be issued for either mounted or unmounted partition:
eg. `/dev/hda5`

```
tune2fs -j /dev/hda5
```

After issuing this command:

1. If the partition was mounted then the `.journal` file will be created in the root directory of the partition. This file will be made hidden on next boot.
2. If the partition was not mounted then a hidden journalling file will be created.

Note: Remember to change the `/etc/fstab` to coincide with the new filesystem format for this partition.