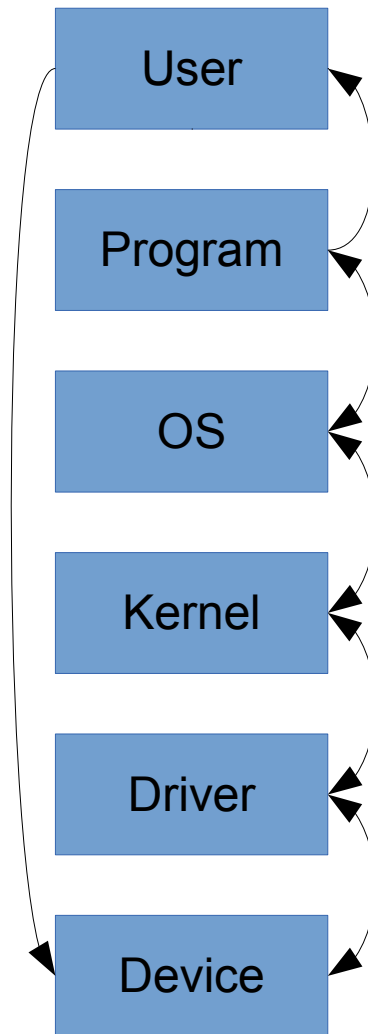


What is Linux?

- OS?
- At first Linux was a kernel

What is a kernel?

- interface between hardware and software



What is Linux?

- OS?
 - At first Linux was a kernel
- When we talk about a Linux system we actually refer to an OS using a kernel based on the Linux kernel developed by Linus Torvalds.

What are the leading Linux distributions?

- Top ten distros sorted by hits per day on distrowatch.com over the last six months

1	Mint	3902
2	Mageia	2177
3	Ubuntu	1989
4	Fedora	1587
5	Debian	1468
6	openSUSE	1396
7	Arch	1193
8	PCLinuxOS	1177
9	Puppy	908
10	Manjaro	832

What is free software?

- Free software is not simply software you don't have to pay for
- Free software can actually be sold, a more proper term is "open source software"
- Open source software is usually under a license, like GNU General Public License, Artistic License or BSD style-Licence
- Common things of these licenses:
 - Don't limit distribution or usage in any way
 - Don't limit modification (except for giving credit to the original author)

Example Licence (WTFPL)

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14 rue de Plaisance, 75014 Paris, France

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How is Debian related to Ubuntu?

- Ubuntu is a Debian derivative (based on Debian distribution, uses packages from Debian)
- Difference:
 - basic Debian distribution only contains free software
 - quality assessment for packages:
 - Debian Package unstable -> testing after 10 days w/o adding release critical bug
 - Debian Package testing -> stable after ~ 2 years
 - Ubuntu Package beta -> release after 6 months
 - Ubuntu Package release -> long term support after 2 years

What are the Debian releases?

- Debian releases are divided in
 - Stable (currently 6.07 "squeeze")
 - Testing
 - Unstable

What is in a (server) computer in terms of hardware?

- CPU (Central Processing Unit)
- Mainboard (aka Motherboard)
- PSU (Power Supply Unit)
- HDD (Hard Disk Drive) or SSD (Solid State Drive)
- CD/DVD/BluRay-Drive
- RAM (Random-Access Memory)
- Cooling (Fans, Water, Nitrogen, Oil)
- Extension Cards (GPU, Network, Sound,...)

What happens when you install an operating system?

- language/region/keyboard specific settings
- disk partitioning
- OS files are (downloaded and) installed
- Bootloader is set up in Master Boot Record

How to distribute 24 disks between 6 independent projects?

- Just give everyone 4 disks?
- RAID – Redundant array of independent disks (0 - striping, 1 – mirroring, 10 striping with mirroring)
- JBOD – Just a bunch of disks
- NAS – Network-attached Storage

How do you define specifications for new hardware?

- All hardware has specified power consumption (except for the PSU, which has energy efficiency)
- CPU: Clock rate, Cache sizes (L1,L2,L3), Supported Operations (MME, SSE, AVE)
- HDD/SSD/CD/DVD/BluRay: capacity, cache, interface (SATA/IDE), access time
- RAM: capacity, interface (DDR1/2/3), ECC, low voltage