



LEIDEN UNIVERSITY MEDICAL CENTER

Introduction to Linux

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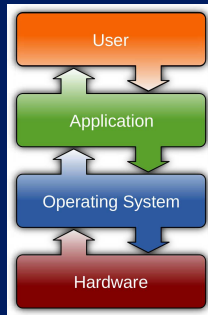
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Operating systems

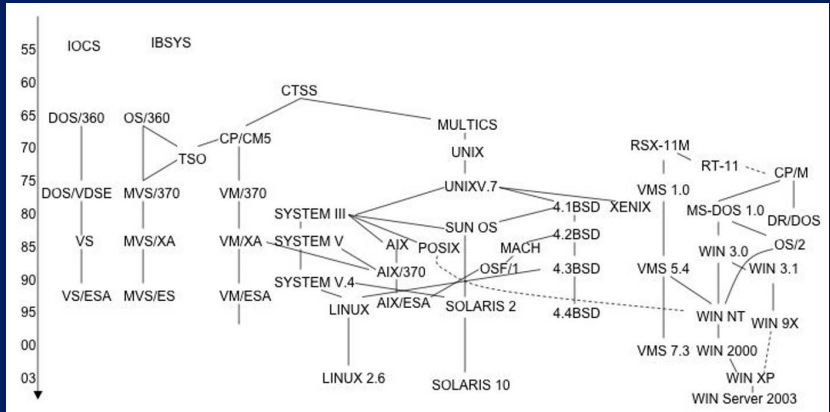
An operating system is a software layer between the hardware and the applications.



Applications can be the same on different operating systems (Skype, Firefox, World of Warcraft, ...).

Operating systems

There's more than Windows and MacOS.



Linux

Several types and many versions are available.

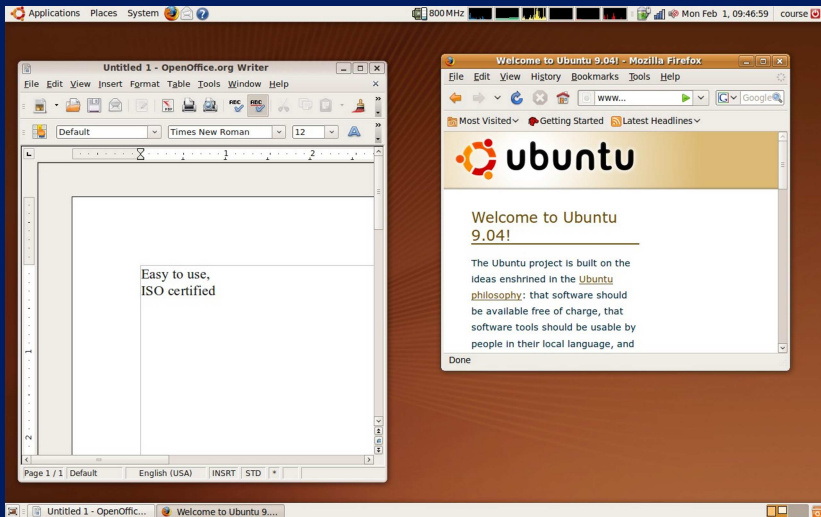
- Choice between at least 99 distributions.
 - A distribution is nothing more than an installer and a way of maintaining software (installation / removal of parts).
 - In essence, the core is the same.
- For this practical: Debian.

Additional info:

- <http://www.ee.surrey.ac.uk/Teaching/Unix/>
- <http://ss64.com/bash/>

Why do people use it?

- Easy to use (point and click, just like in other operating systems).
- Better stability (if something goes wrong, no need to reinstall the whole operating system).
- Secure (originally designed for network servers).
- Practically no Spyware / Addware.
- Practically no viruses.
- Short start up time.
- Less system requirements.
- Free.

Easy to use

Why do we use it?

For large datasets:

- Better memory management.
- More flexible to handle larger files.
- Powerful command line tools (**grep**, **sed**, **awk**, ...).
- Program development in any language you like (Basic, C++, R, Perl, Prolog, ...).

Since many NGS applications are still in the development phase, we need to tweak a lot.

In short: it suits our needs for Next Generation Sequencing.

About this part of the course

- We are not going to cover the “easy” part (browsing the internet, sending mail, playing music, ...).
- We focus on the *command line*, since this is the most powerful interface to the tools we need.
- We introduce some frequently used NGS tools.
- We are going to connect to other machines (servers that have more memory or computing power).



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<https://humgenprojects.lumc.nl/trac/GAPSS3/wiki/course>