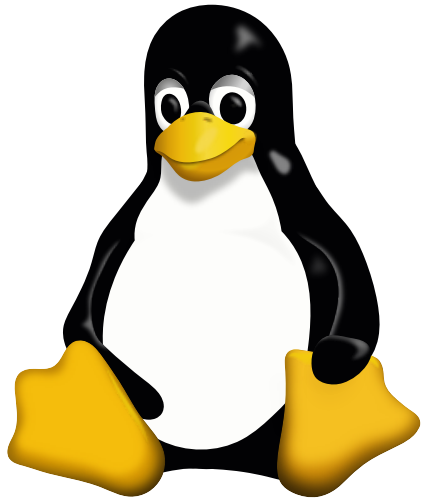
Leiden University
Medical Center

Practical Linux

Introduction

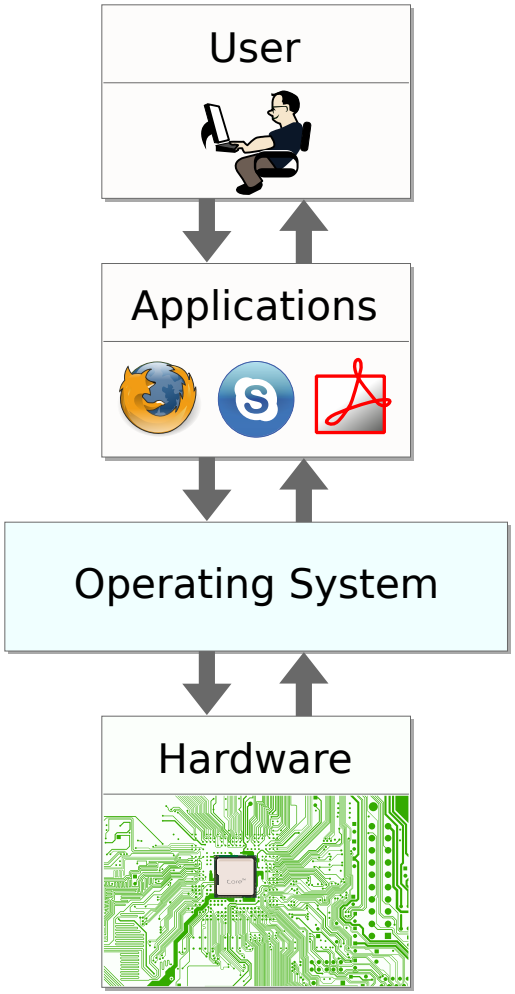


Department of Human Genetics
Center for Human and Clinical Genetics

Course Outline

- Introduction.
- Connecting to other machines.
- Practical session.
- Core 1.
- Practical session.
- Break
- Core 2.
- Practical session.
- Break
- User Environment.
- Practical session.

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

Windows

macOS

There is more than Windows and macOS

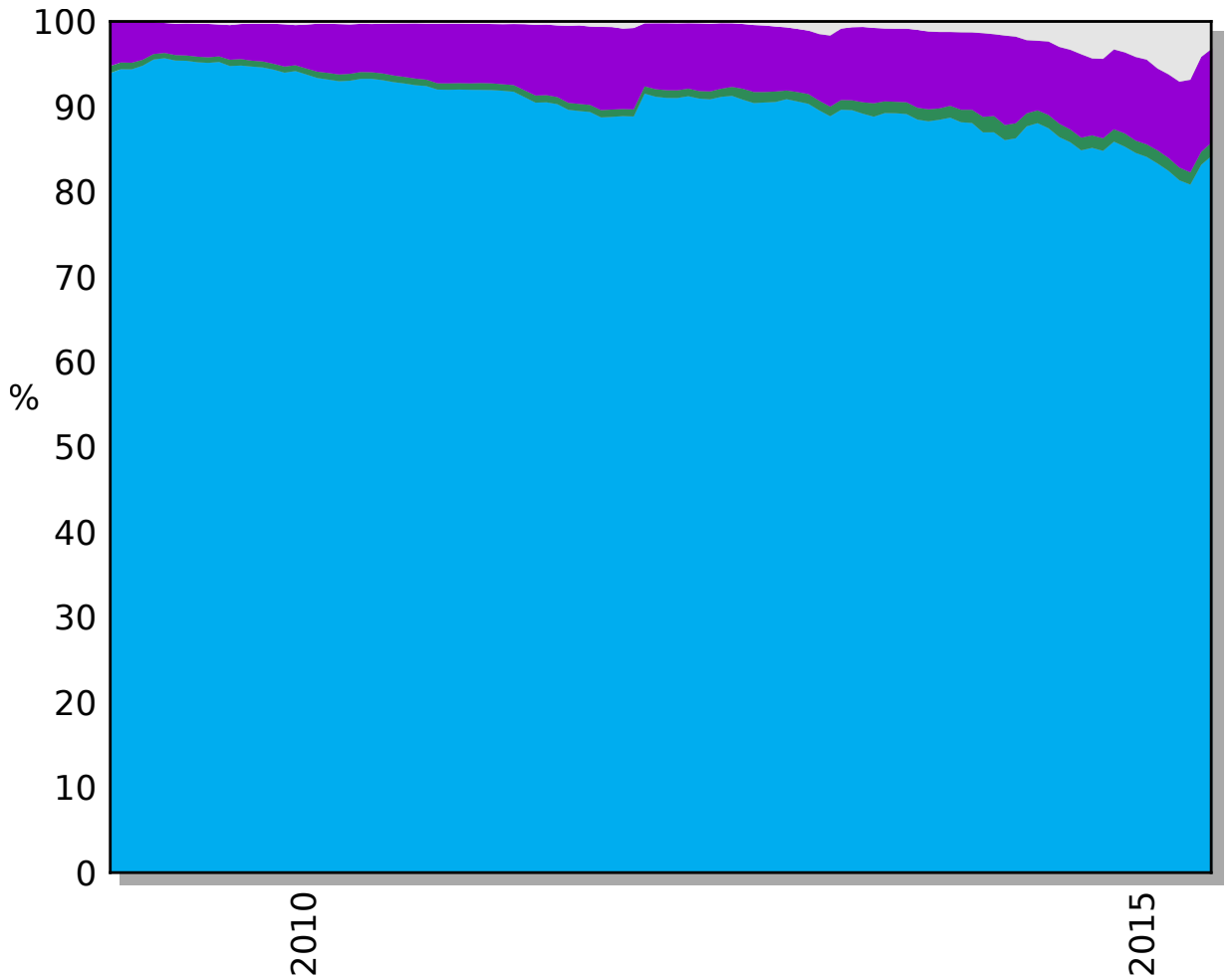
Currently, there are two main classes:

- Microsoft Windows.
- Unix-like operating systems.
  - **Linux**.
  - BSD.
    - macOS.
  - HP-UX.
  - Solaris.

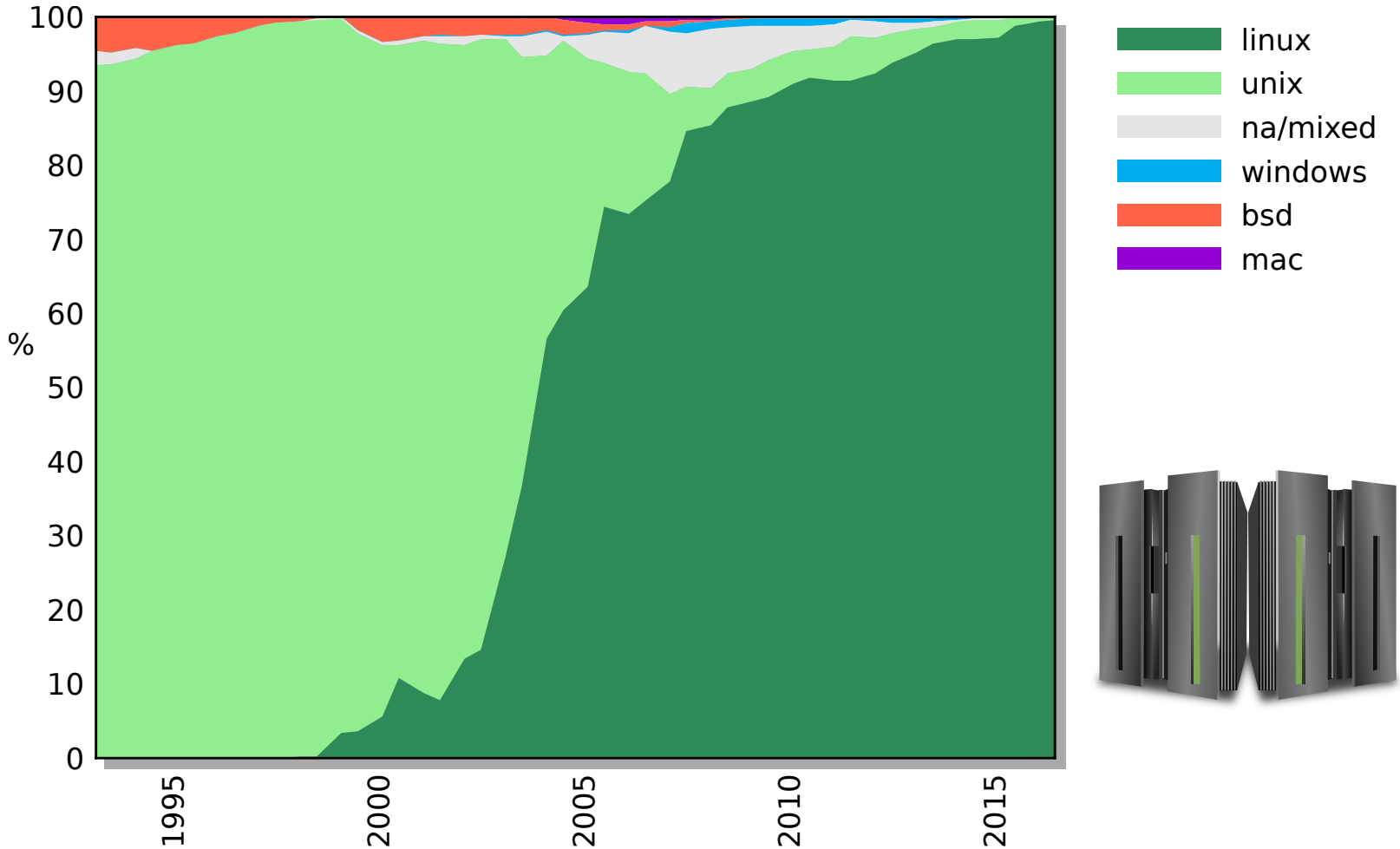
Note that:

- You can run Windows or Linux on an Apple computer.
- You can run macOS on an HP, Dell, etc. computer.

Operating systems family share - personal computers

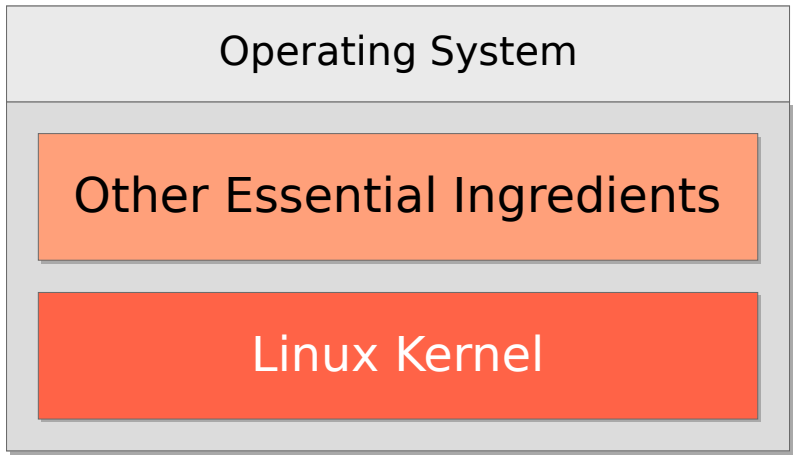


Operating systems family share - supercomputers



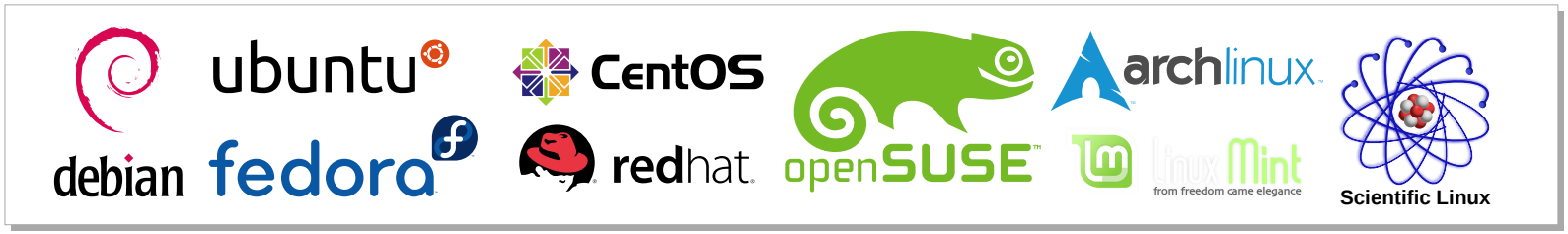
History

- In 1991 Linus Torvalds started developing the **Linux kernel**.
- He also put together **other essential ingredients** required to construct an entire **operating system** around his **kernel**.



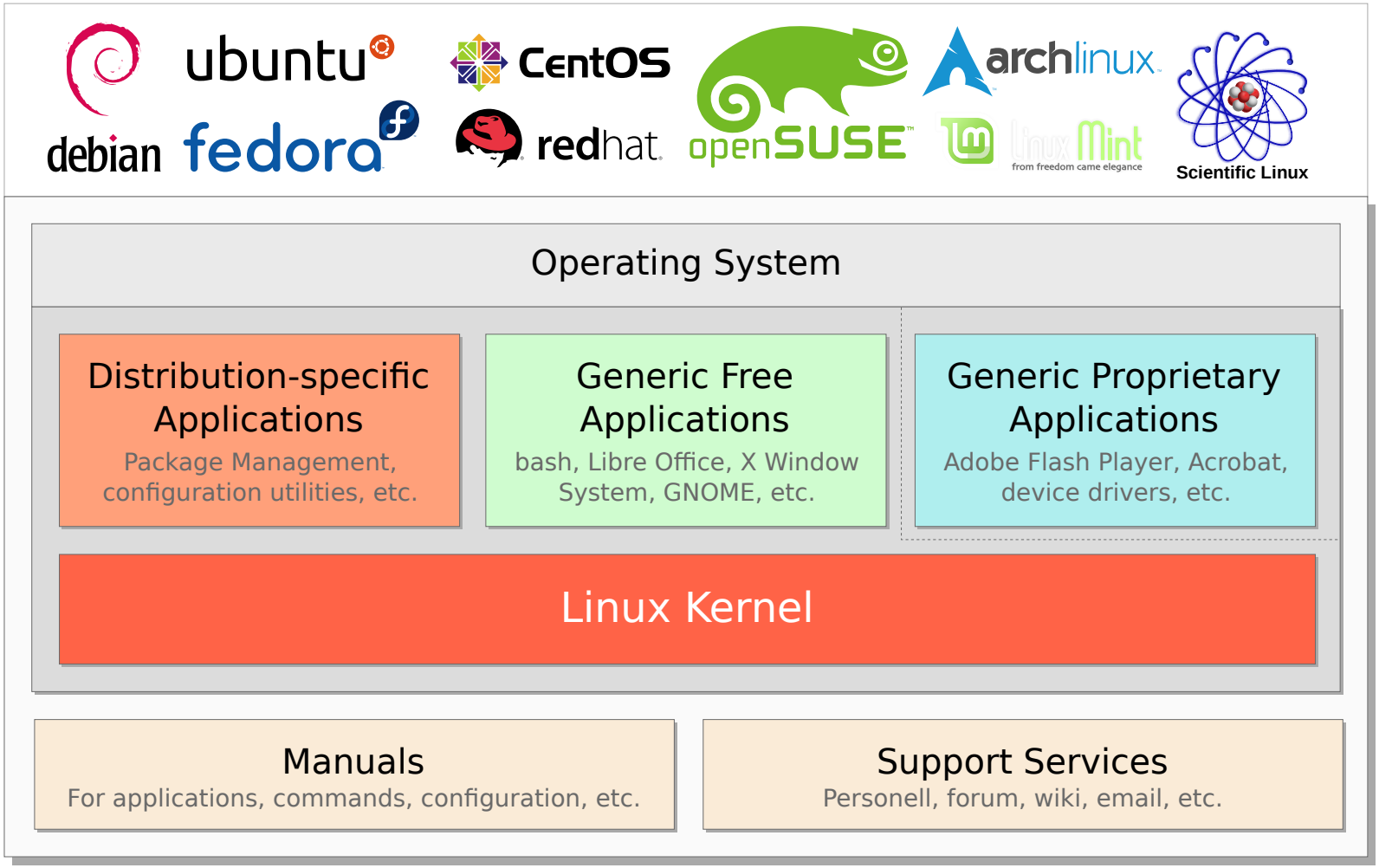
History

- Linux distributions were created by combining the **Linux kernel** with other system components.



- Driving force in the open source software movement.
  - Provided the basis for fully free computing.
  - In 1998 IBM and Oracle began sustaining development efforts.
- The Android system is built on top of Linux.

Distributions



Distributions Popularity

- Large commercial organizations:
  - Commercially supported Red Hat, SUSE, and Ubuntu.
  - CentOS is a popular free alternative.
- Educational realm:
  - Ubuntu and Fedora.
- Scientific research community:
  - Ubuntu and Scientific Linux.

Why do people use it?

- Powerful command line tools.
- A fully multitasking multiuser operating system.
- Designed for networking.
- An open source computer operating system.
- Free.

Other Courses

- Introduction to the Shark Cluster
  `https://git.lumc.nl/shark/SHARK/wikis/home`
- Code and Data Management with Git
  `https://git.lumc.nl/courses/gitcourse`
- Scripting for Life Science Researchers
  `https://git.lumc.nl/courses/scriptingcourse`
- Python Programming
  `https://git.lumc.nl/courses/programming-course`
- GitLab as a Collaborative Working Environment
  `https://git.lumc.nl/courses/gitlab-intro-course`

Course Material

https://git.lumc.nl/courses/practical-linux-course