

# Open source software

**History, background, current status:** We discuss the emergence of Free Software and Open Source Software movements, using examples and practical issues,.



Computer science department third year cs

Lecturer : yasmin maki

- **Open-source software (OSS)** is computer software with its source code made available with a license in which the copyright holder provides the rights to study, change, and distribute the software to anyone and for any purpose.
- Open-source software may be developed in a collaborative public manner.
- According to scientists who studied it, open-source software is a prominent example of open collaboration  
التعاون المفتوح.
- The open-source software development, or collaborative development from multiple independent sources, generates an increasingly more diverse scope of design perspective than any one company is capable of developing and sustaining long term.
- A 2008 report by the Standish Group states that adoption of open-source software models has resulted in savings of about \$60 billion (£48 billion) per year to consumers.

# Open Source History

3

- The term Open Source gained popularity with the rise of the Internet, which provided access to diverse production models, communication paths, and, last but not least interactive communities Open-source software development
- The decision by some people in the free software movement to use the label “open source” came out of a strategy session held at Palo Alto, California, in reaction to Netscape's **January 1998** announcement of a source code release for Navigator.

They used the chance before the release of Navigator's source code to free themselves of the philosophical and challenging meanings of the term free software.

Netscape licensed and released its code as open source under the Netscape Public License and subsequently under the Mozilla Public License

- In 1997, [Eric Raymond](#) published [The Cathedral and the Bazaar](#), a reflective analysis of the hacker community and free software principles.
- The paper received significant attention in early 1998, and was one factor in motivating [Netscape Communications Corporation](#) to release their popular [Netscape Communicator](#) Internet suite as [free software](#).

(Netscape Communications) هي شركة خدمات حاسوب أمريكية اشتهرت على خلفية [مستعرض الويب](#) الذي طورته تحت اسم ( Netscape Navigator) والذي سيطر لفترة من الزمن على سوق مستعرضات الويب، لكنه فقد معظم حصته في السوق لاحقاً لصالح مستعرض [إنترنت إكسبلورر](#) الذي أطلقته شركة [ميكروسوفت](#). وقد انحسرت نسبة انتشار مستعرض نتسكيب نافيجيتور بنهاية 2006 إلى أقل من 1% بعد أن كانت نسبة انتشاره في أواسط تسعينات القرن العشرين أكثر من 90% . بالنسبة لشركة نتسكيب فقد أنشئت عام 1994، ثم اشترتها شركة (AOL) عام 1998 والتي أعلنت أنها ستوقف دعمها لمنتجات نتسكيب عام 2008.

This source code subsequently became the basis behind , [Mozilla Firefox](#).

- Netscape's act prompted Raymond and others to look into how to bring the [Free Software Foundation](#)'s free software ideas and supposed benefits to the commercial software industry.

They decided that FSF's social direct action was not interesting to companies like Netscape, and looked for a way to rebrand the [free software movement](#) to emphasize the business potential of sharing and collaborating on software source code.

- The new term they chose was "**open source**", which was soon adopted by [Bruce Perens](#), publisher [Tim O'Reilly](#), [Linus Torvalds](#), and others. The [Open Source Initiative](#) was founded in February 1998 to encourage use of the new term and open-source principles.

While the Open Source Initiative sought to encourage the use of the new term and the principles it followed to, commercial software vendors found themselves increasingly threatened by the concept of freely distributed software and universal access to an application's source code.

A Microsoft executive publicly stated in 2001 that "open source is an intellectual property destroyer.

companies as large as Microsoft have begun to develop official open-source presences on the Internet.

IBM, Oracle, Google and State Farm are just a few of the companies with a serious public stake in today's competitive open-source market.

There has been a significant shift in the corporate philosophy concerning the development of FOSS.

7

• The free software movement was launched in 1983. In 1998, a group of individuals advocated that the term free software should be replaced by open-source software (OSS) as an expression which is less ambiguous and more comfortable for the corporate world. Software developers may want to publish their software with an open-source license, so that anybody may also develop the same software or understand its internal functioning.

With open-source software, generally anyone is allowed to create modifications of it, port it to new operating systems and processor architectures, share it with others or, in some cases, market it.

- several policy-based reasons for adoption of open source – in particular, the heightened value proposition from open source (when compared to most proprietary formats) in the following categories:

- Security
- Affordability القدرة على تحمل التكاليف
- Transparency شفافية
- Perpetuity (infinity) أبدية
- Interoperability العمل المشترك
- Flexibility

- Many people claimed that the birth of the Internet, since 1969, started the open source movement, while others do not distinguish between open-source and free software movements.
- The Free Software Foundation (FSF), started in 1985, intended the word "free" to mean *freedom to distribute* (or "free as in free speech") and not *freedom from cost*
- Since a great deal of free software already was (and still is) free of charge, such free software became associated with zero cost, which seemed anti-commercial

- Unix-like operating system, based on a kernel written by Linus Benedict Torvald
  - Inspired by the Minix operating system
  - The GNU "guh-NEW" project started in 1983 by Richard Stallman at the Massachusetts Institute of Technology
  - A UNIX-compatible software system developed by the Free Software Foundation (FSF)

## ➤ Philosophy of GNU

- To produce software that is non-proprietary
- Anyone can download, modify and redistribute GNU software
- The only restriction is that they cannot limit further redistribution
- Given away for free.

## ➤ Symbol of Linux

- Linux doesn't have a difficult serious looking symbol
- Rather Tux, as the penguin is lovingly called
- Symbolizes the care-free attitude of the total movement

- ▶ Began work in 1991
  - ▶ August 25, 1991 the historic post was sent to the MINIX news group by Linus .....
  - ▶ September, 1991 - Linux version 0.01 is released
  - ▶ October, 1992 - The first standalone Linux installed
  - ▶ Dec 1993 - a stable 'beta' version (0.99 patchlevel 14) was available.
  - ▶ March 1994 - Version 1.0 released
  - ▶ First ``Linux virus'' discovered - Bliss
  - ▶ Today, there are an estimated 5 million Linux users worldwide

# About Linux...

## The Open Source Operating System



Richard Stallman,  
founder of the  
GNU project.



Linus Torvalds,  
creator of the  
Linux kernel

The name "Linux" comes from the Linux kernel, originally written in 1991 by Linus Torvalds. The system's utilities and libraries usually come from the GNU operating system, announced in 1983 by Richard Stallman. The GNU contribution is the basis for the alternative name **GNU/Linux**

# About Linux...

## The Open Source Operating System



- The primary difference between Linux and many other popular contemporary operating systems is that the Linux kernel and other components are free and open source software.
- Linux is not the only such operating system, although it is the best-known and most widely used.
- As an operating system underdog competing with mainstream operating systems, Linux cannot rely on a monopoly advantage; in order for Linux to be convenient for users, Linux aims for interoperability with other operating systems and established computing standards.

## EVENTS LEADING TO CREATION OF LINUX

- The Unix operating system was conceived and implemented by Dennis, Ritchie, Ken Thompson, Brian W. Kerrington Of Bell Labs in 1969.
- The name UNIX was initially written as UNICS (Uniplex Information and Computing System)
- Anyone could get UNIX from the Bell Labs on a tape For a nominal fee, source code of the OS too had been Provided !!!
- 1970: University of California, Berkeley made further Improvement to UNIX source – included TCP/IP Networking in it. This is known as the BSD (Berkeley Systems Distribution) and initially released in 1977.It became yet another popular flavour of UNIX.
- Source code was publicly made available: the license permitted redistribution, with source Or without source provided that Berkeley was credited.
- Modern versions of BSD: NetBSD, OpenBSD and Mac OS X.

## FREE SOFTWARE MOVEMENT

- The tape of the Bell labs produced for its UNIX became the basis for a commercialization of UNIX in 1984. By then AT & T had become a telecommunication giant in the world. Since then UNIX became expensive and a trademark of AT & T. Its product ( AT & T) UNIX .....!
- No source code made available for folks to play with .....!
- By the early 1980s proprietary software development (by profit making companies) has been becoming popular.
- Source codes of the software had been kept secret and Hidden (as with DOS, MX Windows XXP, Vixta)
- 1983: comes the Richard Stallman of MIT in Cambridge, USA to initiate a battle against proprietary software.
- This marks the birth of the Free Software Foundation and Subsequently the huge collection of the GNU (Gnu is Not Unix) software.
- Licensing: give everyone the right to copy, distribute, and Modify the work, though under strict terms and conditions.

# History of Linux

- The [Linux kernel](#), started by [Linus Torvalds](#), was released as freely modifiable source code in 1991.
- The licence wasn't a [free software](#) licence, but with version 0.12 in February 1992, Torvalds relicensed the project under the [GNU General Public License](#).
- Much like Unix, Torvalds' kernel attracted attention from volunteer programmers.
- Until this point, the GNU project's lack of a kernel meant that no complete free software operating systems existed.
- The development of Torvalds' kernel closed that last gap.
- The combination of the almost-finished [GNU operating system](#) and the Linux kernel made the **first complete free software operating system**.
- Among [Linux distributions](#), [Debian GNU/Linux](#), begun by [Ian Murdock](#) in 1993, is noteworthy for being explicitly committed to the GNU and FSF principles of free software.
- The Debian developers' principles are expressed in the [Debian Social Contract](#).
- In 1997, former Debian project leader [Bruce Perens](#) also helped found [Software in the Public Interest](#), a non-profit funding and support organization for various [free software](#) projects.
- Since 1996, the Linux kernel has included proprietary licensed components, so that it was no longer entirely [free software](#).
- Therefore, the [Free Software Foundation Latin America](#) released in 2008 a modified version of the Linux-kernel called [Linux-libre](#), where all proprietary and non-free components were removed.
- Many businesses offer customized Linux-based products, or distributions, with commercial support.
- The naming remains [controversial](#). Referring to the complete system as simply "Linux" is common usage. However, the [Free Software Foundation](#), and many others, advocate the use of the term "GNU/Linux", saying that it is a more accurate name for the whole operating system.
- [Linux adoption](#) grew among businesses and governments in the 1990s and 2000s. In the English-speaking world at least, [Ubuntu](#) and its derivatives became a relatively popular group of [Linux distributions](#).

- **The dot-com years (late 1990s)** In the mid to late 90s, when many website-based companies were starting up, free software became a popular choice for web servers.
- Apache HTTP Server became the most-used web-server software, a title that still holds as of 2015.
- Systems based on a common "stack" of software with the Linux kernel at the base, Apache providing web services, the MySQL database engine for data storage, and the PHP programming language for providing dynamic pages, came to be termed LAMP systems. In actuality, the programming language that predated PHP and dominated the web in the mid and late 90's was Perl. Web forms were processed on the server side

# some dates from the history of open source

19

- ▶ 1970s: UNIX operating system developed at Bell Labs and by a diverse group of contributors outside of Bell Labs; later AT&T enforces intellectual property rights and “closes” the code
- ▶ 1983: Richard Stallman founds the Free Software Foundation
- ▶ 1993: Linus Torvalds releases first version of Linux built
- ▶ 1997: Debian Free Software Guidelines released
- ▶ 1998: Netscape releases Navigator in source