

Information technology – lecture 2

Overview of computer operating systems: MS Windows and UNIX

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Disclaimer

I am devoted Linux user and my opinions on operating systems can be strongly biased.

A very brief history of Windows

After <http://www.computerhope.com/history/windows.htm>

- ▶ 1983 Bill Gates announces Microsoft Windows November 10, 1983.
- ▶ 1985 MS Windows 1.0 is introduced in and is initially sold for \$100.00.
- ▶ 1987 MS Windows 2.0 was released and is initially sold for \$100.00.
- ▶ 1992 MS Windows 3.1 was released and sells more than 1 Million copies within the first two months of its release.
- ▶ 1993 The number of licensed users of Microsoft Windows now totals more than 25 Million.
- ▶ 1995 MS Windows 95 was released and sells more than 1 Million copies within 4 days.
- ▶ 1998 In October of 1998 Microsoft announced that future releases of Windows NT Windows 2000.
- ▶ 2001 Microsoft Windows XP is released October 25, 2001.
- ▶ 2009 Microsoft releases Windows 7 October 22, 2009.

Brief history of UNIX

After

http://www.unix.org/what_is_unix/history_timeline.html

- ▶ 1969 The Beginning The history of UNIX starts back in 1969, when Ken Thompson, Dennis Ritchie and others started working on the little-used PDP-7 in a corner at Bell Labs and what was to become UNIX.
- ▶ 1971 First Edition It had an assembler for a PDP-11/20, file system, fork(), roff and ed. It was used for text processing of patent documents.
- ▶ 1973 Fourth Edition It was rewritten in C. This made it portable and changed the history of OS's.
- ▶ 1975 Sixth Edition UNIX leaves home. Also widely known as Version 6, this is the first to be widely available outside of Bell Labs. The first BSD version (1.x) was derived from V6.
- ▶ 1979 Seventh Edition It had C, UUCP and the Bourne shell. It was ported to the VAX and the kernel was more than 40 Kilobytes (K).

Brief history of UNIX

- ▶ 1982 System III AT&T's UNIX System Group (USG) release System III, the first public release outside Bell Laboratories. SunOS 1.0 ships.
- ▶ 1984 4.2BSD University of California at Berkeley releases 4.2BSD, includes TCP/IP, new signals and much more. X/Open formed.
- ▶ 1984 SVR2 System V Release 2 introduced. At this time there are 100,000 UNIX installations around the world.
- ▶ 1987 SVR3 System V Release 3. At this time there are 750,000 UNIX installations around the world.
- ▶ 1988 POSIX.1 published. Open Software Foundation (OSF) and UNIX International (UI) formed.
- ▶ 1989 SVR4 UNIX System V Release 4 ships, unifying System V, BSD and Xenix. Installed base 1.2 million.

Brief history of UNIX

- ▶ 1999 UNIX at 30 The UNIX system reaches its 30th anniversary. Linux 2.2 kernel released. The Open Group and the IEEE commence joint development of a revision to POSIX and the Single UNIX Specification. First LinuxWorld conferences. Dot com fever on the stock markets. Tru64 UNIX ships.
- ▶ 2001 Single UNIX Specification, Version 3 Version 3 of the Single UNIX Specification unites IEEE POSIX, The Open Group and the industry efforts. Linux 2.4 kernel released.
- ▶ 2003 ISO/IEC 9945:2003 The core volumes of Version 3 of the Single UNIX Specification are approved as an international standard. The "Westwood" test suite ship for the UNIX 03 brand. Solaris 9.0 E ships. Linux 2.6 kernel released.
- ▶ 2007 Apple Mac OS X certified to UNIX 03.
- ▶ 2009 UNIX at 40 IDC on UNIX market – says UNIX \$69 billion in 2008, predicts UNIX \$74 billion in 2013

Brief history of Linux

After http://en.wikipedia.org/wiki/History_of_Linux

- ▶ 1983: Richard Stallman creates the GNU project with the goal of creating a free operating system.
- ▶ 1989: Richard Stallman writes the first version of the GNU General Public License.
- ▶ 1991: The Linux kernel is publicly announced on 25 August by the 21 year old Finnish student Linus Benedict Torvalds.[8]
- ▶ 1992: The Linux kernel is relicensed under the GNU GPL. The first so called Linux distributions are created.
- ▶ 1993: Over 100 developers work on the Linux kernel. With their assistance the kernel is adapted to the GNU environment, which creates a large spectrum of application types for Linux. The oldest currently existing Linux distribution, Slackware, is released for the first time. Later in the same year, the Debian project is established. Today it is the largest community distribution.

Brief history of Linux

- ▶ 1995: Linux is ported to the DEC Alpha and to the Sun SPARC. Over the following years it is ported to an ever greater number of platforms.
- ▶ 1996: Version 2.0 of the Linux kernel is released. The kernel can now serve several processors at the same time, and thereby becomes a serious alternative for many companies.
- ▶ 1998: Many major companies such as IBM, Compaq and Oracle announce their support for Linux. In addition a group of programmers begins developing the graphic user interface KDE.
- ▶ 1999: A group of developers begin work on the graphic environment GNOME, which should become a free replacement for KDE, which depended on the then proprietary Qt toolkit. During the year IBM announces an extensive project for the support of Linux.
- ▶ 2004: The XFree86 team splits up and joins with the existing X Window standards body to form the X.Org Foundation, which results in a substantially faster development of the X Window Server for Linux.

Brief history of Linux

- ▶ 2005: The project openSUSE begins a free distribution from Novell's community. Also the project OpenOffice.org introduces version 2.0 that now supports OASIS OpenDocument standards in October.
- ▶ 2006: Oracle releases its own distribution of Red Hat. Novell and Microsoft announce a cooperation for a better interoperability.
- ▶ 2007: Dell starts distributing laptops with Ubuntu pre-installed in them.

UNIX people

The most famous names:

- ▶ Stephen R. Bourne (author of the Bourne shell - sh)
- ▶ Bill Joy (co-founder of Sun Microsystems)
- ▶ Brian Kernighan (Unix creator)
- ▶ David Korn (author of the Korn shell - ksh)
- ▶ Douglas McIlroy (Unix pipeline, and many Unix tools)
- ▶ Rob Pike
- ▶ Dennis Ritchie (Unix creator, C language author)
- ▶ Ken Thompson (Unix creator)

Linux people

- ▶ Alan Cox (Linux kernel development)
- ▶ Eric Steven Raymond (Open Source advocate)
- ▶ Mark Richard Shuttleworth (Ubuntu leader)
- ▶ Richard Stallman (GNU Project, Free Software Foundation)
- ▶ Linus Torvalds

UNIX philosophy

Doug McIlroy:

"This is the Unix philosophy: Write programs that do one thing and do it well. Write programs to work together. Write programs to handle text streams, because that is a universal interface."

Linux versus Windows

The issues:

- ▶ Graphical User Interface
- ▶ Text Mode Interface
- ▶ Cost
- ▶ Security
- ▶ Supported Hardware Devices
- ▶ Hardware the OS Runs On
- ▶ Clustering,
- ▶ Multiple Users,
- ▶ Networking,
- ▶ Modems,
- ▶ Scripting,
- ▶ Multimedia

Why I am using Linux

- ▶ It is free, supports sharing and freedom
- ▶ Being programmer I can fix many things (well, if I had time...)
- ▶ Gives me the feeling of the control of the system.
- ▶ It helps me automate my work
- ▶ Large base of free software for my work
- ▶ I prefer CLI to GUI
- ▶ I am not watching movies on my computer