*BSD Is Dying?

»BSD is dying« is an old troll. Anyone who heard and doesn't know what it is may check slashdot.org/bsd for more information. Above figure shows quite another picture however. As Netcraft (www.netcraft.com) found out, around 2.5 million active pages were served by FreeBSD in May 2004.
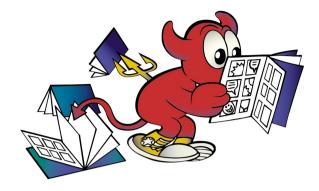
That's more served pages than the Linux-distributions Debian, RedHat and SuSE Linux together. Data from previous years could not be found at Netcraft.

*BSD Is Alive!

More than 16'000 ported applications (so-called Ports) in FreeBSD, a rapidly growing user group, more than 2.5 million active pages served by FreeBSD, innovations like PF, CARP, pfsync, OpenNTP, OpenSSH from the OpenBSD project and the speed record set by NetBSD (http://proj.sunet.se/LSR3-s/), speak for itself.

*BSD is like good wine, the older, the better.

Microsoft - where do you want to go today?

GNU/Linux -where to you want to go tomorrow?

*BSD 2006 - are you guys coming or what?

More information

Important websites:

http://www.FreeBSD.org/

http://www.NetBSD.org/

http://www.OpenBSD.org/

http://www.DragonFlyBSD.org/

Other BSD-projects:

MirOS BSD: http://MirBSD.de/

FreeSBIE: http://www.FreesBIE.org/

DesktopBSD: http://DesktopBSD.net/

PC-BSD: http://www.PCBSD.org/

Miscellanious links:

http://www.levenez.com/unix/

http://www.freebsd.org/cgi/cvsweb.cgi/~checkout~/src/share/misc/bsd-family-tree?rev=HEAD

http://en.wikipedia.org/wiki/Comparison_of_BSD_operating_systems

http://www.bsdcertification.org/index.php

*BSD

Over 30 years of success

What ist BSD?

The **Berkeley Software Distribution** (**BSD**) is a free open source version of the operating system Unix, which evolved at the University of Berkely starting 1975. BSD is based on AT&Ts Unix Sixth Edition (V6). The name BSD is now used collectively for the modern descendants of these distributions.

Most notable among these today is perhaps the major open source BSDs (FreeBSD, NetBSD, OpenBSD, DragonFly BSD) which have themselves spawned a number of children. They are targeted at an array of systems for different purposes and are common in government facilities, universities and in commercial use.

A number of commercial operating systems are also partly or wholly based on BSD or its descendants, including Apple Computer's Mac OS X.

The Early Beginning

In the 1960s, the Massachusetts Institue of Technology, AT&T Bell Labs, and General Electric worked on an experimental operating system called Multics (**Mult**iplexed **I**nformation and **C**omputing **S**ervice). Multics was an interactive operating system with many new capabilities, including enhanced security. The project did develop production releases, but initially these releases performed poorly. AT&T Bell Labs pulled out and deployed its resources elsewhere.

One of the developers on the Bell Labs team, **Ken Thompson**, started to develop a new operating system for Digital Equipment Corporation's PDP-7. Thompson and **Dennis Ritchie** led a team of developers, including Rudd Canaday, at Bell Labs developing a file system as well as the new multi-tasking operating system itself. They included a command line interpreter and some small utility programs.

The earliest distributions of Unix from Bell Labs in the 1970s included the source code to the operating system, allowing researchers at universities to modify and extend Unix. In 1974 the first Unix system at Berkeley was installed on a PDP-11, and the computer science department used it for extensive research thereafter.

In 1975 UNIX was brought to the University of Berkeley by Ken Thompson. At that time, although AT&T had a monopoly on it and there existed special licensing terms regarding the sale of software, the lawyers at AT&T didn't see any danger in opening the source code to a university and thus UNIX came to be the first portable operating system that was developed in a community.

Since the University of Berkeley shipped BSD (Berkeley Software Distribution) as source code, the feedback in form of bugfixes and enhancements that were integrated into BSD was enormous. The idea of Open Source first bloomed here. So the second Berkeley Distribution, 2BSD, was quickly completed and with it came the editor **vi**, written by **Bill Joy**. Bill Joy's first editor **em** was the first external code contribution to UNIX.

Bill Joy left Berkeley in 1982 and became one of the founders of SUN.

Peter Kessler and **Marshall Kirk McKusick** ported the Pascal system to the VAX in 1979, while Bill Joy ported the editors ex and vi.

At the same time also the C-Shell (csh) was ported to the VAX and well over a hundred 3BSD distributions were sold.

BSD and TCP/IP

1979 was to be a pivotal year for UNIX, networks and later the Internet. Bob Fabry asked DARPA in autumn 1979 about their interest in UNIX.

He got an 18-month contract for his troubles and founded the Computer Systems Research Group (CSRG), who's project leader was to be Bill Joy. Bill Joy added the auto reboot feature and a 1K block file system to BSD and so in October 1980 4BSD was released.

4.1BSD and 4.1aBSD appeared in short succession and the latter was to be a mile stone in the development of UNIX. Bill Joy added the **TCP/IP** implementation of Rob Gurwitz to the base system and massively improved performance. At the same time appeared **rcp, rsh, rlogin** and **rwho**.

Marshall Kirk McKusick and UFS

In June 1982 the new file system was completed by Marshall Kirk McKusick, well known as the UNIX File System (**UFS**) and integrated in 4.1BSD.

In the meantime there's UFS2 for FreeBSD, with Softupdates, snapshots and automatic background file system checking (bgfschk).

More BSD than AT&T

In August 1983 4.2BSD was completed and within 18 months more than 1000 licenses were issued. At that time there were more 4.2BSD installations than of the commercial AT&T Version V. That was due to UFS, also known as the Berkeley Fast File System and the outstanding network capability. This advantage didn't last long though, AT&T implemented all the advantages of the free BSD in it's UNIX. In 1985 4.3BSD came out.

Since everyone who bought a BSD set also needed a license from AT&T the calls for an independent BSD UNIX became louder and in 1989, with Networking Release 1 (**NET/1**) the first free code, without foreign license costs, was presented. The first running system under the BSD license was born.

In 4.2BSD the virtual memory (VM) system (also used by SunOS) from the MACH operating system was integrated. Rick Macklem then contributed free code for NFS. NET/2 was released in June 1991, with all the UNIX utilities rewritten from scratch so they could also be licensed under the BSD license. Up to that point still a large part of the system was under the AT&T license.

Except for 6 files, the whole system was rewritten and six months after the NET/2 release **Bill Jolitz** had also rewritten these files and 386BSD came out for the x86 CPU. By way of many improvements to 386/BSD in 1992 the FreeBSD and NetBSD projects were founded.

BSD vs AT&T (vs SCO?)

The commercial entity BSDI began selling it's BSD UNIX in 1992, and you could order it over the phone number 1-800-ITS-UNIX. For AT&T this was a provocation and so AT&T sued BSD. The University of Berkeley and AT&T settled in the beginning of 1994 when it became clear that AT&T had removed copyright notices from BSD-code while integrating them into their UNIX and that Berkeley had prepared counter suits.

In the settlement it was agreed that 3 out of more than 18'000 files of NET/2 (and it's descendants) had to be removed. At that time of legal troubles a lot of developers turned to the system of the Finn Linus Torvalds that had no AT&T code.

The new release 4.4BSD was published in June 1994 and in the version 4.4BSD-Lite, was free of any AT&T code, for holders of an AT&T license there was a version 4.4BSD-Encumbered.

Since there was a contractual agreement that AT&T (and it's legal successors) could not sue anyone using 4.4BSD-Lite, all BSDs changed their code base to 4.4BSD-Lite. 1995 the DARPA project ended, the CSRG closed it's doors and 4.4BSDLite2 was the final release. The two BSDs of that time, 386BSD and BSD/386 changed their code base one last time.

From these projects evolved FreeBSD and NetBSD. Because of the settlement and the contract signed at that time the SCO allegations are seen as inconsequential.

The war has been won already.

The BSDs Today

Since 1993 there have been growing user bases for FreeBSD and NetBSD. In 1996 OpenBSD forked from NetBSD, in 2002 MirBSD emerged as a hybrid between OpenBSD and NetBSD, and in 2004 DragonFlyBSD was developed on the basis of FreeBSD 4.8.

Despite the five unique BSDs there's no distribution chaos and the strong band uniting them helps along with an active exchange of code and drives the BSDs along.