**PRACTICAL NO.1**

**OPEN SOURCE SOFTWARES**

**FreeBSD**

**IDEA:**

FreeBSD's roots go back to the [University of California, Berkeley](https://en.wikipedia.org/wiki/University_of_California,_Berkeley). The university acquired a UNIX source license from [AT&T](https://en.wikipedia.org/wiki/AT%26T). Students of the university started to modify and improve the AT&T Unix and called this modified version [Berkeley Unix](https://en.wikipedia.org/wiki/Berkeley_Unix) or BSD, implementing features such as [TCP/IP](https://en.wikipedia.org/wiki/TCP/IP), [virtual memory](https://en.wikipedia.org/wiki/Virtual_memory) and the [Unix File System](https://en.wikipedia.org/wiki/Unix_File_System). The BSD project was founded in 1976 by [Bill Joy](https://en.wikipedia.org/wiki/Bill_Joy). But since BSD contained code from AT&T Unix, all recipients had to get a license from AT&T first in order to use BSD.

**PROBLEMS SOLVED BY FreeBSD:**

**1.SERVERS:** FreeBSD contains a significant collection of server-related software in the base system and the ports collection, it is possible to configure and use FreeBSD as a [mail server](https://en.wikipedia.org/wiki/Mail_server), [web server](https://en.wikipedia.org/wiki/Web_server), [Firewall](https://en.wikipedia.org/wiki/Firewall_%28computing%29), [FTP server](https://en.wikipedia.org/wiki/FTP_server), [DNS server](https://en.wikipedia.org/wiki/DNS_server) and a [router](https://en.wikipedia.org/wiki/Router_%28computing%29), among other applications.

**2.DESKTOP:**  The [X Window System](https://en.wikipedia.org/wiki/X_Window_System) is not installed by default, but is available in the [FreeBSD ports collection](https://en.wikipedia.org/wiki/FreeBSD_Ports). A number of [Desktop environments](https://en.wikipedia.org/wiki/Desktop_environments) such as [GNOME](https://en.wikipedia.org/wiki/GNOME), [KDE](https://en.wikipedia.org/wiki/KDE) and [Xfce](https://en.wikipedia.org/wiki/Xfce), and lightweight window managers such as [Openbox](https://en.wikipedia.org/wiki/Openbox), [Fluxbox](https://en.wikipedia.org/wiki/Fluxbox) and [dwm](https://en.wikipedia.org/wiki/Dwm) are also available to FreeBSD.

**3.SECURITY:** FreeBSD provides several security-related features including [access control lists](https://en.wikipedia.org/wiki/Access_control_list) (ACLs),[[38]](https://en.wikipedia.org/wiki/FreeBSD#cite_note-onlamp-acls-38) security event auditing, extended file system attributes, [mandatory access controls](https://en.wikipedia.org/wiki/Mandatory_access_control) (MAC)[[39]](https://en.wikipedia.org/wiki/FreeBSD#cite_note-watson-mac-framework-39) and fine-grained [capabilities](https://en.wikipedia.org/wiki/Capability_%28computers%29).

**4.** FreeBSD also supports [IPv6](https://en.wikipedia.org/wiki/IPv6),[[27]](https://en.wikipedia.org/wiki/FreeBSD#cite_note-packt-ipv6-27) [SCTP](https://en.wikipedia.org/wiki/Stream_Control_Transmission_Protocol), [IPSec](https://en.wikipedia.org/wiki/IPsec), and wireless networking ([Wi-Fi](https://en.wikipedia.org/wiki/Wi-Fi)).[[28]](https://en.wikipedia.org/wiki/FreeBSD#cite_note-bsdcan-wireless-28) The IPv6 and IPSec stacks were taken from the [KAME project](https://en.wikipedia.org/wiki/KAME_project).[[29]](https://en.wikipedia.org/wiki/FreeBSD#cite_note-kame-project-29) Also, FreeBSD supports [IPX](https://en.wikipedia.org/wiki/Internetwork_Packet_Exchange) and [AppleTalk](https://en.wikipedia.org/wiki/AppleTalk) protocols, but they are considered old and it is planned to drop support of them in the upcoming FreeBSD 11.0.

**LICENSING MODEL:**

The [Open Source Initiative](https://en.wikipedia.org/wiki/Open_Source_Initiative) defines a permissive software license as a "non-[copyleft](https://en.wikipedia.org/wiki/Copyleft) license".[[5]](https://en.wikipedia.org/wiki/Permissive_software_licence#cite_note-5) [GitHub](https://en.wikipedia.org/wiki/GitHub)'s *choosealicense* website described the MIT permissive license as, "lets people do anything they want with your code as long as they provide [attribution](https://en.wikipedia.org/wiki/Attribution_%28copyright%29) back to you and don’t hold you [liable](https://en.wikipedia.org/wiki/Product_liability)."[[6]](https://en.wikipedia.org/wiki/Permissive_software_licence#cite_note-6) [California Western School of Law](https://en.wikipedia.org/wiki/California_Western_School_of_Law)'s newmediarights.com defined them as follows: "The ‘BSD-like’ licenses such as the BSD, MIT, and Apache licenses are extremely permissive, requiring little more than attributing the original portions of the licensed code to the original developers in your own code and/or documentation.

**INTENT TO MAKE FreeBSD OPEN SOURCE:**

**1.**InJune 1989, "Networking Release 1" or simply Net-1 – the first public version of BSD – was released. After releasing Net-1, [Keith Bostic](https://en.wikipedia.org/wiki/Keith_Bostic), a developer of BSD, suggested replacing all AT&T code with freely-redistributable code under the original [BSD license](https://en.wikipedia.org/wiki/BSD_license). Work on replacing AT&T code began and, after 18 months, much of the AT&T code was replaced. However, six files containing AT&T code remained in the kernel. The BSD developers decided to release the "Networking Release 2" (Net-2) without those six files. Net-2 was released in 1991.[[9]](https://en.wikipedia.org/wiki/FreeBSD#cite_note-kirkmck-9)

**2.**In 1992, several months after the release of Net-2, [William Jolitz](https://en.wikipedia.org/wiki/William_Jolitz) and [Lynne Jolitz](https://en.wikipedia.org/wiki/Lynne_Jolitz) wrote replacements for those six missing files, ported BSD to the [Intel 80386](https://en.wikipedia.org/wiki/Intel_80386)-based microprocessors, and called their new operating system [386BSD](https://en.wikipedia.org/wiki/386BSD). They released 386BSD via an anonymous FTP server.[[9]](https://en.wikipedia.org/wiki/FreeBSD#cite_note-kirkmck-9) The development flow of 386BSD was slow and after a period of neglect, a group of 386BSD users decided to branch out on their own and create FreeBSD so that they could keep the operating system up to date. The first version of **FreeBSD was released on November 1993**.

**MONETIZATION MODELS:**

**MONEY, HARDWARE OR INTERNET ACCESS:**

**DONATING FUNDS:**

The FreeBSD Foundation is a non-profit, tax-exempt foundation established to further the goals of the FreeBSD Project. As a 501(c)3 entity, the Foundation is generally exempt from US federal income tax as well as Colorado State income tax. Donations to a tax-exempt entity are often deductible from taxable federal income.

**DONATING HARDWARE:**

FreeBSD Project happily accepts donations of hardware that it can find good use for.

**DONATING INTERNET ACCESS:** The

The FreeBSD project happily accepts donations of internet access.

**POPULARITY:**

**1.**In September 2005, the BSD Certification Group, after advertising on a number of mailing lists, surveyed 4,330 BSD users, 3,958 of whom took the survey in English, to assess the relative popularity of the various BSD operating systems. About 77% of respondents used FreeBSD.

**2.**As of 4 September 2016, using a data span of the last six months it placed FreeBSD in 21st place with 479 hits per day.

**IMPACT:**

**1.**FreeBSD is used to teach operating system concepts in universities. Companies also develop products on FreeBSD, and universities use it as a research platform.

**2.** In fact, there’s a good chance you’re already using at least some code derived from FreeBSD in your everyday life. For example, if you stream movies via Netflix, chat with friends on WhatsApp, or play the latest PlayStation 4 game sensation, you’re already using FreeBSD.