The History/Filesystem of UNIX and Linux (Abridged)

—

and also Ryan Geary

By: Devon (Dev) P.

But first...

I'd just like to interject for a moment. What you're referring to as Linux, is in fact, GNU/Linux, or as I've recently taken to calling it, GNU plus Linux. Linux is not an operating system unto itself, but rather another free component of a fully functioning GNU system made useful by the GNU corelibs, shell utilities and vital system components comprising a full OS as defined by POSIX.

Many computer users run a modified version of the GNU system every day, without realizing it. Through a peculiar turn of events, the version of GNU which is widely used today is often called "Linux", and many of its users are not aware that it is basically the GNU system, developed by the GNU Project. There really is a Linux, and these people are using it, but it is just a part of the system they use.

Linux is the kernel: the program in the system that allocates the machine to the other programs that you run. The kernel is an essential part of an system, but useless by itself; it can only function in the context of a operating system. Linux is normally used in combination with the GNU ope the whole system is basically GNU with Linux added, or GNU/Linux. All th "Linux" distributions are really distributions of GNU/Linux.

Actually...

No, Richard, it's 'Linux', not 'GNU/Linux'. The most important contributions that the FSF made to Linux were the creation of the GPL and the GCC compiler. Those are fine and inspired products. GCC is a monumental achievement and has earned you, RMS, and the Free Software Foundation countless kudos and much appreciation.

Following are some reasons for you to mull over, including some already answered in your FAQ.

One guy, Linus Torvalds, used GCC to make his operating system (yes, Linux is an OS -- more on this later). He named it 'Linux' with a little help from his friends. Why doesn't he call it GNU/Linux? Because he wrote it, with more help from his friends, not you. You named your stuff, I named my stuff -- including the software I wrote using GCC -- and Linus named his stuff. The proper name is Linux because Linus Torvalds says so. Linus has spoken. Accept his authority. To do otherwise is to become a nag. You don't want to be known as a nag, do you?

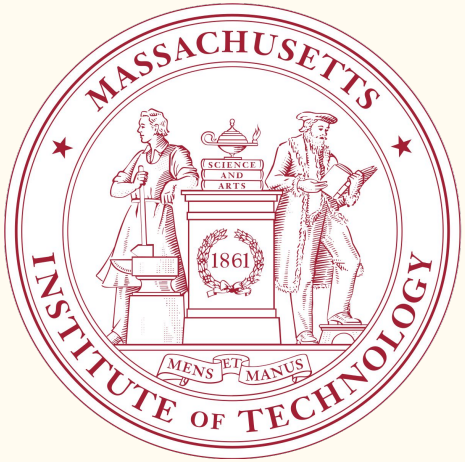
(An operating system) != (a distribution). Linux is an operating system. By my definition, an operating system is that software which provides and limits access to hardware resources on a computer. That definition applies whereever you see Linux in use. However, Linux is usually distributed with a collection of utilities and applications to make it easily conf desktop system, a server, a development box, or a graphics workstation, or whatever the user needs. In s n, we have a Linux (based) distribution. Therein lies your strongest argument for the unwieldy title id bundled software is largely from the FSF). Go bug the distribution makers on that one. Take your drake, and Slackware. At least there you have an argument. Linux alone is an operating system that s applications without any GNU software whatsoever. Embedded applications come to mind as an obvious

mit the GNU/Linux title to the GNU-based Linux distributions, we run into another obvious problem. X more important to a particular Linux installation than the sum of all the GNU contributions. More t the distribution be called XFree86/Linux? Or, at a minimum, XFree86/GNU/Linux? Of course, it would be to draw the line there when many other fine contributions go unlisted. Yes, I know you've heard this one to it. You'll keep hearing it until you can cleanly counter it.

lines-of-code metric. There are many lines of GNU code in a typical Linux distribution. You seem to

Mid 1960's

- MIT, Bell Labs, and General Electric **collaborated** to develop an operating system called "**Multics**"
- Developers became frustrated at the **size** and **complexity** and started to quit
- **Dennis Ritchie** and **Ken Thompson** were among them and decided to make a **smaller scale** version by themselves



Uniplexed Information and Computing Service?

Originally it was named “Unics”, as a play on the word “Multics”

- None of the founding members can remember where the “**Unix**” spelling came from, but most credit **Brian Kernighan**
- In the beginning, **Unix** was written in **Assembly**, but was rewritten in **C** in 1973 which made porting easier

Commercial Adoption

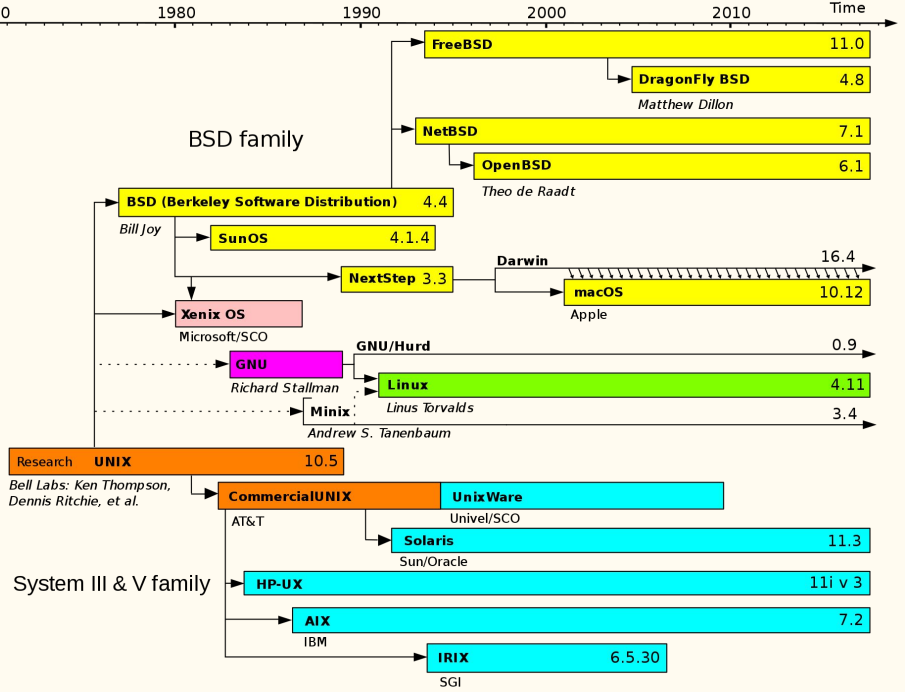
1977: Berkeley developed their own version based on the Unix source code called **BSD**

1983: AT&T and **Sun Microsystems** developed **System V**

- Both of these distributions became very popular among commercial vendors and people started taking sides
- Due to an antitrust case, AT&T couldn’t enter the computer business so it had to give the UNIX source code to anyone who asked

1990's and Beyond

- Unix grew in popularity and the **open-source** movement gave rise to **GNU + Linux** and **BSD** derivatives
- Apple developed the **Darwin** operating system in the year **2000** which eventually became **macOS**
- The availability and free-ness of **GNU + Linux** has allowed for countless **distributions** that appeal to the various needs of both enthusiasts and professionals alike



GNU’s Not Unix

- On January 5, 1984, **Richard Stallman** quit his job at the MIT Artificial Intelligence Lab to work on the **GNU Project**
- The goal of the project was to bring a **wholly free operating system** into existence
- At the time, **UNIX** dominated the market share but it was **proprietary** and Stallman didn’t like that

Penguin Time

- By the early 90’s, most of GNU was complete except the low level stuff like the **kernel** and drivers
- Development for the GNU kernel (called **GNU Hurd**) stalled and remained incomplete
- **Linus Torvalds** was frustrated with the licensing of the **Unix-like** OS his school used (MINIX) and decided to write his own kernel

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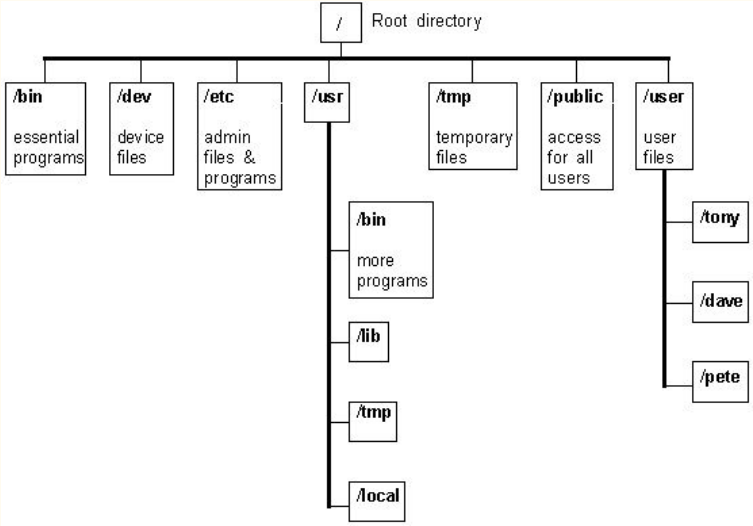
It was almost named “Freax”...

- Torvalds decided to use the already free and available GNU applications instead of writing new ones from scratch
- He coined the new invention “**Freax**” as a combination of **free + Unix**
- His coworker didn’t like it and renamed it “**Linux**” on the server and Torvalds just went with it
- **Enthusiasts** liked it and those enthusiasts worked for like NASA and stuff so now it’s **everywhere**. The end.

Filesystem real quick

- **/bin:** trash “bin”, acts as the recycle bin of your system
- **/boot:** files that “run” the computer, in faster systems it’s called /sneaker
- **/dev:** me, I’m in all of you computers
- **/home:** where your OS goes to when you turn it off, also where it’s wife and kids live
- **/net:** contains the internet(?)
- **/root:** where the OS eats healthy, named after Roots on Main St.
- **/sbin:** south bin, like /bin but on the bottom for Australians



The End

Source:

- Wikipedia

Oh wait, I forgot.

- Ryan Geary, what a cool guy.
- Here’s him outside of Perkins Student Center with a dinosaur on his head.
- Doesn’t he look happy?
- I wish I was happy.

The End, for real

Sources:

- Wikipedia
- Udel website