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ECE 2524

Future of Unix

In the “Art of Unix Programming” Chapter 20, the future of Unix is discussed, and the authors talk about how Unix might develop and change as the future progresses. The first element discussed about the possible future of Unix was Plan 9. This was a plan by Bell Labs, the initial creators of Unix, to completely redo Unix to make it better. Plan 9 however, failed to replace Unix, and this is most likely because of the reluctance of most programmers to accept it. Many programmers took the ideal, don’t fix what isn’t broken, and were uninterested in learning a new Unix when the old Unix did what was necessary. In this way, Plan 9 died out, but some of its more innovative ideas were adopted into Unix. The authors believed that “over time, much more of Plan 9 [would] work its way into Unix”, considering this was written about nine years ago, it will be interesting to see how much, if any, of Plan 9 has been assimilated into Unix.

It appears that the authors were spot on with the ideas that have been absorbed into Unix; however, it doesn’t appear that any other main ideas of Plan 9 have been incorporated into Unix. As mentioned in the chapter, the /proc file system, rfork(), and private namespaces were in some way implemented into various versions of Unix. It is also mentioned that Unixes are moving towards UTF-8 encoding which appears to be the case as Ubuntu Linux now uses UTF-8 as its default encoding. Besides these things Plan 9 and Unix have evolved rather independently of one another, with Unix failing to adopt any other developments of Plan 9.

After discussion of Plan 9, the chapter continues with problems in the design of Unix. Some of these problems appear to be subjective such as the listed problem that “file deletion is forever”. Some people believe that the operating system should prevent the user from deleting files that he/she may not have intended to delete; others may see this as something to be handled by a GUI or application. Both have their justifications, but it is difficult to jump shift from the file deletion that has been the norm since its invention. Other issues such as Unix’s weak support for GUI’s, does not actually seem to be a problem. Unlike Windows or Mac which won’t run without a GUI, Unix has the ability to run without a GUI, and this is part of the genius of Unix. Based upon which version of Unix is used, a GUI may be included such as GNOME with Ubuntu, others may not present the need for a GUI. The ability to add a GUI when necessary and leave it off when not is part of the reason why there are so many different versions of Unix for so many different situations.

Also discussed is the need to change the Unix environment which is under the strain of powerful software companies such as Microsoft who want to get rid of open-sourced software movements. Fearful predictions of the Government and big businesses monopolizing software thankfully have not come to pass yet, although, it appears they might be scratching the surface with the rather recent

release of the SOPA and PIPA bills. These bills would essentially censor the internet from certain sites pertaining to online piracy. Certain sites have already been removed such as the popular Megavideo. The bills could ultimately require search engines such as Google or Bing to remove websites from their searches which contain pirated material. This could only be the beginning of a long fight for a free and open internet. In this situation, the Government is attempting to protect the rights of the giant media conglomerates, and it does not seem far off that the Government could begin protecting big software companies like Microsoft from the open-sourced software world. As of right now this prediction has not come to pass, but could be very likely to happen in the near future based on the current direction.

One big step for the open source community against the software giants was Android. Android has proved to be a huge success being the most popular operating system of choice for big companies like Samsung, HTC, and LG on phones. It has greatly surpassed the Windows phone, and is in a tight rivalry with Apple's iPhone. Android is proof that open source software can be just as big a competitor as the major software companies.

Most likely the biggest problem mentioned in the chapter that Unix faces is the issues of poor and ugly interfaces. The design philosophies of Macintosh and Unix are compared, and, with the great success of Macintosh and Apple, it is clear they are headed in the right direction. Where Macintosh focuses on pretty user interfaces, Unix focuses on the infrastructure of the code. If Unix would keep their strong infrastructure, and also take the time to develop the exterior that users want, it could be a much greater rival. Since "[m]ost of the computers in the world don't live in server rooms, but rather in the hands of those end users", it is crucial for Unix to develop some of the ideals of Macintosh in order to enter the household and not just the server rooms. The GNOME GUI used in Ubuntu has been a good start to this challenge, but it still needs more work to compete with the Macintosh and Windows that everyone is used to.

In ten years, if Unix still hopes to be around, it will need to adapt more so than it has in the past ten years, in order to stay alive. Besides, working towards a better GUI for the personal computer, Unix has done little in the way of adapting to new technologies. Smartphones and tablets are the technologies of the future, and Android (being built on the Linux kernel) is about the closest operating system to Unix that has tackled this task. In a world now run by Android, iOS, and Windows, it would be difficult for Unix to enter this race. However, there may still be hope for Unix in the personal computer world if it pulls together its user interface issues. Unix needs to come up with some beautiful designs for GUIs if it ever hopes to grow. Without this, Unix will probably shrink away from the majority of computing devices, and remain only in the servers. Ubuntu and GNOME are well on their way, but they are not there yet. In ten years, if all goes well, they could very well be. Lastly, Unix really needs some advertising; ask anyone on the street what Unix is and at least nine out of ten people would probably not know. If Unix could get its

name and a new design out there, it may stand a chance in the world.

Sadly I do not think Unix will be able to pull all of this off. This is a world where people do not like change, and when everyone is used to Windows and Macintosh, it will be hard for Unix to ever attract the main population. The new open source king appears to be Android. Google seems to be sticking its nose into everything these days, and if any software has a chance to dethrone Windows and Macintosh it would be Android. Android is dominating the smartphone and tablet marketplace, and it is only a matter of time before it hits the personal computer. Android got in at the right time when smartphones were just coming out, and it became the norm; had Unix jumped in on this opportunity, perhaps it would be in a much more promising situation.

Unix has survived through thick and thin, and it will continue to live on in the next ten years. It is unlikely it will ever have a market on smartphones, but it is a real possibility for it to gain a larger grasp in the world of personal computers. It will need to pull out the stops for a GUI so intuitive that everyone will be willing to make the transition to a new operating system. Advertising is a must if it ever hopes to reach the non-technical population. And Unix will have to continue to fight alongside Android for the open-sourced world threatened by the Government and big business. Unix's success, as always, is in its own hands, if it wants to persist, it will.

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