

What is Open Source Software?

Software is distributed in a variety of formats, and under a variety of conditions. Standard commercial software is distributed in binary format (i.e. an .exe file), with very limited rights to use or distribute it. Then there is the more permissive "shareware model", where the software is again distributed in binary format, but you have the option of trying it out first, or having a free reduced capability version. Open Source is the freest of all, as it permits copies of the original source that anyone can use it and can contribute to its source code so:

- Software can be examined for bugs much more easily;
- As more people are testing and modifying, more bugs can be found and fixed;
- The software is easily adapted for uses beyond the original authors conception; and,
- Authors achieve recognition by making their code available.

Open Source operating systems

There has been much discussion over recent years of whether it is better for school systems to use open source software (OSS) or commercial software products for client and server operating systems. This is no easy question to answer, as it involves financial, policy, commercial, technical, and educational concerns. For education systems, what you actually need to do with the technology and the needs of students and teachers are the most important factors in making technology decisions.

OSS is provided with a license that gives the end user the right to use it freely for private or commercial use. You also have the right to inspect and even modify the underlying source code. If you have no interest in source code, you may ask why the open availability of this matters. One answer is that the release of source code allows external observers to inspect the internal functions of the program, which means you can be confident that your private data is not being spied on or utilized by others. It also means that many software developers can come up with additional functions (add-ons) that complement the core functionality of the software.

One problem with proprietary software is that it tends to use closed file formats to store your data. Once the parent company stops supporting older versions of a proprietary program, you may therefore have to upgrade to newer versions of that program, at significant expense, in order to retain access to your data. This does not happen with OSS, because when the source code for opening and saving files is available, a third party can easily write an import filter for the next generation of software, ensuring that your data will always be available.

Finally, the release of source code has in some cases spawned large communities of volunteer developers who have in turn provided the world with highly useful and entirely free software such as Linux, OpenOffice.org, and Mozilla. These are then available free

of charge to schools or anyone else who may not have a large budget available for software.

Linux, part of the family of UNIX-based operating systems, is one of the most popular open source software products used for computer operating systems. Linux has become popular primarily because it is available free of charge and has a large development and user community. Linux is also the first or second most popular operating system software for Internet servers, accounting for about 30% of all Web servers in the world today. It is used only rarely as a client operating system, however, mainly because of low awareness of how to use and install such an operating system.

Benefits of OSS

- It's free.
- Servers running Linux crash less often and perform better than commercial and other OSS software.
- Linux can be used on a wider range of computer platforms than any other operating system and is more secure than commercial OSS.
- Studies have shown that Linux and other open source software usually have significantly lower initial costs than commercial operating system software.
- Risk of hacking, security issues and other similar problems is lower

However...

- While OSS may be free, operating system and network operating system software only account for about 5% to 8% of the total cost of buying a client computer system. With any operating system (including Windows), teachers will need training in how to operate the software. Ongoing training costs for teachers to learn how to utilize software as a tool in teaching and learning, and technical support and maintenance costs can be costly.
- A shift from Windows to OSS options may require schools to spend money and time on finding the technical support capacity essential to making effective use of software, unless there are technicians readily available who have the capacity to manage UNIX and Linux operating systems.
- Windows is the operating system used on 80% to 90% of all client computers in business, government, and the non-profit sectors of the economy. Students studying using computers in schools with OSS, may also need to gain familiarity with Windows operating systems so that they are able to operate the software they encounter in the work place.
- There are so far relatively few educational software applications that can operate on OSS; and software used in special-needs education is currently not available for OSS operating systems.