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Open Source Software Libraries

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cc by Sherry Lochhaas & Melissa Moore, 2010.

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Abstract:

Open source software is not something to be afraid of! It's software that you can modify, fix, add to, and distribute to others. Benefits are numerous, including having the ability to create good software that works for you and your library, all while paying a fraction of the cost that you might spend on proprietary software. The website introduces librarians to using open source software and provides tips for implementing and evaluating your transition, ideas for funding, and suggestions for open source software to use in your library.

Website can be viewed online at http://slis.uiowa.edu/~slochhaas/osslibraries/

Keywords:
open source software | libraries | librarians | free software | linux | OSS | FOSS | FLOSS | copyright | copyleft

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Welcome to OSS Libraries

Last Updated: 20 June 2010

Don't be afraid of making the move to open source software. It's easy and this website is here to help with the transition. Have you ever created a blog on WordPress? Written a document on OpenOffice? Then you're already using open source software!

What is Open Source Software?

Open source software is software that provides access to the source code, meaning that users are free to see how the product is made. Additionally, users have the right to modify the product (change the code) to their liking, experiment with different versions, and give away or resell the new product with the guarantee that they must also provide their source code, and so on. Modifying the product and redistribution are the two main components of open source software.

Ideology

If you value fair use of information and intellectual freedom, open source software is right for you and your library. But remember, think of "free" as in freedom, not necessarily "free" as in price, although it often is. The free software movement differs slightly from open source software ideology in that free software promotes the freedom of all software everywhere and abhors proprietary software. Open

source software proponents believe that this is not completely realistic and prefer promoting collaboration methods as superior to proprietary software. If a piece of software is called "free software," then it is also open source software. Live free, code free, improve the world.

Reasons to Use Open Source Software

- It promotes creative development
- Those who can't afford proprietary software can download open source programs for free
- Money saved can be used to purchase other needed materials
- Can easily modify your software to suit patron's needs and your needs
- Little to no upgrade costs
- No more grueling over software that doesn't meet your standards -- create it yourself based off of a close pre-existing piece of software
- The price (free) makes it easier to change your mind when the software doesn't live up to its expectations
- Little to no viruses!

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Background on Open Source Software

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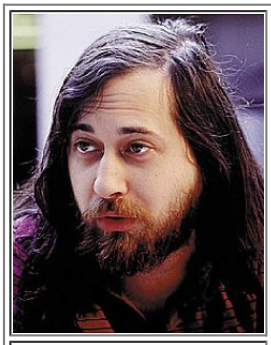
In the early days of computing, programmers and developers shared software in order to learn from each other and evolve the field of computing. Eventually, this goes-without-saying open source notion moved to the wayside as commercialization of software set it in the 1970s and 1980s. Richard Stallman, a proponent of free software, worked as a software developer for MIT's Artificial Intelligence Lab in the 1970s-1980s. When their computers systems were upgraded to use a commercialized software, Richard Stallman was forced to choose between his job and his beliefs and eventually left MIT's AI Lab in order to form the Free Software Foundation.


Richard Stallman

The Free Software Foundation promotes the Four Essential Freedoms of using free software:

- The freedom to run the program, for any purpose (freedom 0).
- The freedom to study how the program works, and change it to make it do what you wish (freedom 1). Access to the source code is a precondition for this.
- The freedom to redistribute copies so you can help your neighbor (freedom 2).
- The freedom to distribute copies of your modified

versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

Four Freedoms taken from the GNU Operating System

In 1998, Netscape announced it was releasing the source code for its web browser, which sparked a conference held in Palo Alto, California to discuss the strategic process for this extraordinary event. There, the term "open source" software was born and is attributed to Christine Peterson [http://www.opensource.org/history]. The Open Source Initiative was soon founded by Eric Raymond, another attendee at the conference, which continues to promote open source education, community building, and awareness of the benefits of open source software. The GNU General Public License (GPL), created by Richard Stallman, is one example of a free software license, cleverly nicknamed a copyleft license. Effictively, copyleft licenses use copyright law to require the derived works to be available for modifying and distributing under the general philosophies of free and open source software. Obtaining a GPL, or another form of copyleft, assures that these open source rights are legally enforced.

Definitions:

Proprietary - the software costs money and the source code is restricted. You cannot modify, fix, add to, take away, or change the code in any form.

Open Source - the software is most likely free and the souce code is completely open. You can modify, fix, add to, take away, and change the code any way you wish.

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Open source software that can be incorporated into libraries

As much as it might seem that Microsoft or other proprietary groups rule the software world, the truth is *they don't have to unless you let them*. Other options exist--you only need to find them!

Software Great for Libraries Educational Software Software for the Desktop

Highlighted Software Great for Libraries

LibraryFind	LibraryFind is an open source metasearch web server application designed for issues unique to libraries. Developed by librarians for librarie & built with Ruby on Rails, it was developed by the Oregon State University Libraries and funded in part by a grant from the State Library. It allows for indexing local collections, web-based administration, and more.	Linux Web Server
Calibre	Calibre is a free and open source e-book library management application developed by users of e-books for users of e-books.	Linux, Windows, Mac
Evergreen	Evergreen is an open source integrated library system (ILS) designed by the Georgia PINES consortium and used in over 544 libraries of all types, worldwide. Used to help managae, catalog, and circulate materials.	Linux, Windows, Mac
PMB	PMB is an open source integrated library system with innovative features, including RSS, associated readings, and the ability for patrons to leave comments.	Hosted Online
Reference Portal	The Reference Portal is a departmental intranet designed for reference librarians, allowing them to record interactions with patrons, create workshops for librarians, and more.	Linux Web Server
Koha	Koha is an open source integrated library system using an OPAC interface.	Linux Web Server
VuFind	Known as the library OPAC that meets Web.2.0, VuFind is an OPAC that can replace your ILS's current interface.	Linux Web Server
LibKi	The LibKi Kiosk Management System is used to allow time-limited access to computers on a network--great for patrons using library computers!	Linux, Windows

Educational Software

Kalzium	Contains information, calculators, and graphics about the periodic table of the elements.	Linux
KGeography	A geography learning tool which teaches names of countries, capitals, and flags.	Linux
KAlgebra	A resource for learning algebra through calculators, and an algebraic dictionary.	Linux
Kig	Kig is an interactive geometry application that teaches users through graphing and calculating.	Linux
KStars	Provides an accurate graphical simulation of the night sky, from any location on Earth, at any date and time. The display includes upto 100 million stars, 13,000 deep-sky objects,all 8 planets, the Sun and Moon, and thousands of comets and asteroids.	Linux
Stellarium	A planetarium for your computer. It shows a realistic sky in 3D, just like what you see with the naked eye, binoculars or a telescope.	Linux, Windows, Mac
Parley	A vocabulary trainer through the creation of and repetitive use of flashcards.	Linux

Notes

Some of these educational resources are taken from the KDE Education Project. Currently, the KDE on Windows Project is working on making KDE applications available for Windows desktops. The project is not in its final state, so some applications may not be suitable for Windows yet.

Software for the Desktop

Type	Product	System
Graphics Editor	OpenOffice Draw Inkscape Gimp	Linux, Windows Linux, Windows, Mac Linux, Windows, Mac
Email Applications	Mozilla Thunderbird	Linux, Windows, Mac
Video Player	VideoLAN Dragon Player Kaffeine	Linux, Windows, Mac Linux Linux
Music Player	Amarok	Linux
PDF Viewer	Okular	Linux
Photo Management	DigiKam	Linux, Windows, Mac
Spreadsheet	OpenOffice Calc	Linux, Windows
Web Browser	Mozilla Firefox Konquerer	Linux, Windows, Mac Linux
Instant Messaging	Pidgin Kopete	Linux, Windows, Mac Linux
Financial Software	GNU Cash	Linux, Windows, Mac
File Compression	7Zip Ark	Windows Linux
Blogging	WordPress	Hosted Online
Slideshows	OpenOffice Impress	Linux, Windows
Word Processor	OpenOffice Word Writer	Linux, Windows
Real Time Collaborative Text Editing	PiratePad	Hosted Online

Notes

OpenOffice allows you to save your documents in a format that is compatible with Microsoft Office and opens files that are saved in the Microsoft format.

Pidgin instant messaging allows you to connect to multiple IM services at once, such as gmail, AIM, Yahoo, etc.

WordPress.com allows you to host a blog online, while downloading the blogging software from WordPress.org allows you to completely integrate the blog into your library's website.

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Tips for Implementation and Evaluation

Making the Switch

Transition

- If you're wary about completely switching operating systems, you can start by simply using open source applications that work for Windows. See how you and the patrons like them.
- Re-check every so often to see if more open source applications have been adapted for Windows (if you haven't yet switched to Linux).
- Train staff! Select a few programs your library wishes to host or promote and familiarize the library staff with them, so that they will be able to assist patrons who have questions.
- See if a local Linux user group exists in your community, often affiliated with a university. Check them out!

Software

- Be mindful that you're downloading the latest version of a product. Older versions are likely to have bugs in them or might not work properly. Older versions are kept around to monitor the changes that have been made to the open source software, but often have old errors that cause problems, which have been fixed in newer

versions, or "stable" versions.

- Be aware of OSS limitations. "There are three major issues in using or re-using open-source software; quality, documentation, and licensing terms." Read more on this here.
- Check activity level: When was this software last released? Do developers keep a current forum about changes? Be aware whether the software is old or current.

Helping Patrons Adapt to the Changes

Add first, Remove second

- Start by installing open source software programs like OpenOffice on your public computers. Teach patrons that OpenOffice is compatible with Microsoft files. Inform them that they can download this program for free to use at home, if they wish.

Monitor

- Switch a few public computers to Linux and monitor how patrons react. Are they used less? Do patrons bother asking how to use it? Do patrons seem interested?
- Look out for opportunities! Listen to what patrons want, not what brand names they use. Ex. Are they asking just for a word processor? Or do they really require Microsoft?

Advertise & Educate

- Educate patrons on how to save OpenOffice documents to be compatible with Microsoft Office products, if they need to use them in the future on other computers.

- Similarily, if they need to send documents to someone & they don't know what type of software they have, suggest saving as PDF. For instance, when sending out a resume, PDF is usually the best option.
- Have a sign by the reference desk that says, "Ask me about open source software!" Place posters in the computer areas (including places where patrons like to use their laptops), and on library website. Advertise within the library!
- Hold events like lectures or hands-on tutorials to teach patrons about various software options.

How to Evaluate Your Library's Success

Here are some pointers for how to evaluate whether your integration of open source software is successful.

To measure the success of implementing open source software into your library, you must first take account of the input (time, funding, staff/volunteers, etc) needed to implement the program or activity. What all was changed or added? This might include website integration, tutorials and aide, advertisements, software downloads and research about software, etc. Finally, you can compare this to the output of your open source software integration. Ways to measure the output of your open source integration include:

- Patron satisfaction or dissatisfaction (measurable through surveys)
- Attendance at tutorials or lectures (and their reactions)
- Longterm cost reduction or increase
- Knowledge or attitude of staff and patrons about the program

Read this slideshow for more tips on the benefits, process, and evaluation of implementing new programs into your work environment, created by Cherie McCraw: Evaluating Program Success .

This worksheet provides a great organizational aid for evaluating your proprietary software options vs. free and open source options, created by the NonProfit Open Source Initiative: Software Choice Worksheet.

What to expect after a successful integration of open source software

- Licensing costs will go down, allowing you to devote more of your IT budget on training staff, purchasing needed equipment for your library (such as buying more computers), or spending more money on building the collection.

- Patrons can freely download the same software at home as they use at the library

- Often, patrons won't even notice that you've swtiched operating systems or software available, as the basic web functionality is exactly the same. Your goal is a smooth transition.

- Ultimately, your library should aim for staff and patron satisfaction. If people are frustrated, then you should probably hold more training sessions or re-evaluate the changes you've made or how you've made them.

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Successful examples of bringing open source software into the library community

Howard County Library - Maryland
They use a distribution of Linux called Groovix

- 100% of servers
- 100% of customer computers (322 computers offered system-wide)
- 70% of staff computers

Golden Gate University Library - California
Uses an open souce software intranet program designed for reference librarians called Reference Portal.

Georgia Public Library Service - Georgia
A conglomeration of libraries, the Georgia Public Library Service is responsible for developing the Evergreen ILS .

Thomas Ford Memorial Library - Western Springs, IL
Utilized OSS to build its popular and interactive Western Springs History Web site with the WordPress platform.

Meadville Public Library - Pennsylvania
Uses the open source ILS Koha, as well as other programs such as Libki, a Kiosk Management System

Nelsonville Public Library - Ohio

Uses the open source ILS Koha, one of whose staff members left the library to develop a Koha support company, LibLime. They have also integrated an abundance of OSS products, including Linux-based servers, the Drupal Content Management System, Inkscape Graphics Editor, Firefox, OpenOffice, and more.

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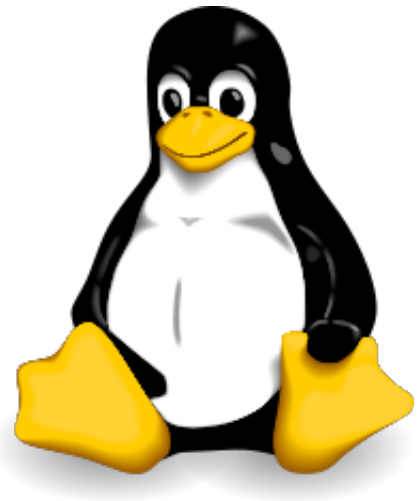
An open source operating system.



Even if you're new to open source software, then you've probably heard people talking about Linux. Linux is an operating system based off of the Linux kernel, created by Linus Torvalds in 1991.
Linux is an open source operating system, meaning that the underlying code can be modified, built upon, and chanegd by anyone under the GNU General Public License. Most desktops computers run on Windows or Mac, and Linux remains an open source alternative, capable of being installed on a variety of hardware devices.

Distributions

The Linux kernel is packaged via a specific distribution ("distro"), which basically means the supporting software that comes with the OS. Different distributions come with different software packages and a different environment layout; however many Linux distros come with the same basic products, including the Firefox web browser and OpenOffice.

Which distributions are best for the end-

user?

Linus Torvalds

There are many distributions available for Linux. Some, however, are designed for the computer programmer, and some are more simple, which work better for the non-programmer. We recommend experimenting with the following distributions for your library:

- OpenSUSE
- Ubuntu or Kubuntu
- Mandriva
- Fedora

Top 10 Reasons to Switch to Linux

This list is taken from the article "10 Reasons to Switch to Linux" (found here). The article also contains a more detailed explanation for each reason listed.

1. It doesn't crash
2. Viruses are few and far between
3. Virtually hardware-independent
4. Freedom of choice
5. Standards
6. Applications, Applications, Applications
7. Interoperability
8. It's a community relationship, not a customer relationship
9. It's not how big your processor is...It's how you use it
10. Linux is configurable

KDE

KDE is an international open sorce software community,

built around the goal of creating and promoting open source software. You can often recognize their programs by the seemingly misplaced "K" in their names: KStars, KAddressbook, digiKam. KDE has created its own desktop environment that is often packaged with many Linux distributions. (Another example of a desktop environment is Gnome).

You can find more information about the KDE community here: www.kde.org.

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How can my library afford to switch to open source software?

The great part about open source software is that it is typically free to download!

However, some libraries, such as the Howard County Library of Maryland, utilize the services of companies to complete the installation or training and maintenance for them. This route costs money, and such companies include Open Sense Solutions or LibLime.

The first tip in thinking about funding is to realize that in the longrun, your library will end up saving money with open source software. Proprietary software requires licensing charges and frequent computer upgrades. Instead, your library will save money by using open source software, which requires no licensing fees and can be used with refurbishing older computers instead of continually buying new computers every few years. So the money your library puts out now (whether through training staff, hiring a company to install software for you, or hiring more technicians) will be an investment toward saving money in the future.

- This page describes the cost effectivenes of switching to open source software at the Howard County Public Library: Cost Effectiveness.

Alternatives to hiring an outside company to facilitate your open source integration

Finding Technical Support: Open source communities generally keep documentation of all open source products, updates, changes, installation tips, etc. Monitoring these forums and websites yourself in order to keep up-to-date with the latest open source opportunities is a way to save money (and learn!).

Finding Community Support: Look for open source user groups, mailing lists, or organizations. Many people have the same questions your having and would love to get the word out and help each other, which is all in line with the philosophies of using open source software.

- *These two ideas for finding support were taken from the Nonprofit Open Source Initiative Website*

If your library is part of a consortium, discuss the possibility of integrating open source software. Assigning a librarian or computer technician to integrate and track the success of OSS across the consortia of libraries can save both time and money and creates an instant community of support.

Need Money? Check out these grants

Institute of Museum & Library Services Funds Innovative Use of Broadband Technologies
http://www.imls.gov
"IMLS has issued a request for proposals for projects to develop innovative approaches to the use of broadband technologies under the National Library Grants program for library and museum collaborations. Successful proposals will demonstrate the ability to develop innovative educational programming drawing on content from libraries and

museums and using high-bandwidth capacity for delivery. A collaboration between at least one eligible library applicant and at least one eligible museum applicant is required.."

Digital Humanities Start-Up Grants
http://tinyurl.com/yg46y8m
"The National Endowment for the Humanities (NEH) announces grants up to $50,000 each to encourage innovations in the digital humanities. Digital Humanities Start-Up Grants may involve planning and developing prototypes of new digital tools for preserving, analyzing, and making accessible digital resources, including libraries' and museums' digital assets; scholarship that examines the philosophical implications and impact of the use of emerging technologies; innovative uses of technology for public programming and education utilizing both traditional and new media; and new digital modes of publication."

Cyberlearning Matching Grants National Education Association
http://www.cyberlearning.org/links/grants.asp
"For non-profits, schools, libraries & museums and individuals, the mission of the CyberLearning Match Grant is to provide the highest quality education to all, especially the disadvantaged, at the lowest fee. They provide up to 50% matching grants to all eligible organizations including schools, colleges, non-profits, workforce development programs, banks, government agencies and corporations and individuals."

For more resources on finding grants, visit this site:
Techology Grant News
http://technologygrantnews.com/technology-funding.html

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A bibliography of open source software resources

Intro to OSS

The Free Software Foundation - http://www.fsf.org/about/

A nonprofit organization that promotes free and open source software.

Herbert, Eric. "How Open Source Software Can Improve Our Library." DegreeTutor. DegreeTutor.com, 2010. Web. 31 Mar 2010. http://www.degreetutor.com/library/managing-expenses/open-source-library.

"History of the OSI." Open Source Initiative. Web. 31 Mar 2010. http://www.opensource.org/history.

Open Source Initiative is an organization that oversees licenses that follow the open source definition.

"The Free Software Definition." GNU Operating System. N.p., 30 Mar 2010. Web. 31 Mar 2010. http://www.gnu.org/philosophy/free-sw.html.

This article explains what it means to license your software under the GNU GPL Public License (an open source software license).

Open Source Products

Damicon's List of Open Source Software - http://www.damicon.com/resources/opensoftware.html#photoalbum.

KDE.org - http://kde.org/

KDE is an open source software community that promotes the creation and usage of open source software. Their website contains information on many open source

applications and products.

LibLime Developers' Blog
http://blogs.liblime.com/developers/
A blog for open source software developers

Open Source Software on libsuccess.org:
http://www.libsuccess.org/index.php?title=Open_Source_Software
A list of success stories throughout libraries and open source software options.

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Howard County Library. "Open Source Solutions Offer Superior Service." Presentation. Palinet Annual Conference. Baltimore, Maryland. October 29-30,2007. http://hclibrary.org/uploads/Palinet07.odp.

Liblime.com - http://www.liblime.com/.

LibLime sells services (e.g., hosting, installation, data migration, development, training and maintenance) that help facilitate open-source adoption by libraries.

NonProfit Open Source Initiative - http://nosi.net

This organization helps non-profits decide whether open source software is right for them.

Open-sense.com - http://open-sense.com/

Open Sense Solutions is a company that helps organizations integrate open source software and that meets their needs. They have designed a Linux-based OS called Groovix especially for libraries.

Stencel, Mark. "The Open-Minded Desktop." Governing. e.Republic Inc., 1 Jan 2007. Web. 31 Mar 2010.\ http://www.governing.com/article/open-minded-desktop.

An article describing Howard County Library's switch to Linux.

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Open Source Software Libraries is a website created by Sherry Lochhaas and Melissa Moore as a class project for their Public Libraries class, as part of the School of Library and Information Science master's program at the University of Iowa during the Spring 2010 semester.

The content of the site is not as extensive as it could be--more technologies are always being created. We wanted to create a site for introducing librarians to using open source software, the benefits, and ideas to get started.

The creators can be reached at sherry-lochhaas (at) uiowa (dot) edu & and melissa-moore (at) uiowa (dot) edu.