



# OPEN SOURCE SOFTWARE

This booklet will be useful for small businesses that would like to learn more about open source software, its benefits and limitations. The booklet also contains a reference list of some of the most commonly used open source software.

## What is Open Source Software (OSS)?

Open source software is computer software that has a source code available to the general public for use as is or with modifications. This software typically does not require a license fee.

OSS has become very popular and there are OSS applications for a variety of different uses such as office automation, web design, content management, operating systems, and communications. Some of the most popular software packages such as Mozilla Firefox, the Linux Operating System and Apache web server software, are examples of OSS.

The key difference between OSS and proprietary software is its license. As copyright material, software is almost always licensed. The license indicates how the software may be used. OSS is unique in that it is always released under a license that has been certified to meet the criteria of the Open Source Definition. These criteria include the right to:

- Redistribute the software without restriction; modify computer programs.
- Access the source code.
- Modify the source code.
- Distribute the modified version of the software.

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Open source software is unique in that it is always released under a license that allows users to access, modify and redistribute the source code. Source code is the collection of computer language instructions used in writing the software. If you do not have legal access to the source code, then the program cannot be changed or moved to a different kind of computer.

In contrast, creators of proprietary software usually do not make their source code available to others to modify.

When considering the advantages of open source software you should consider the open source product itself. Open source products vary in quality. OSS software does not come with phone support or personalized e-mail support. However, there are commercial service providers who will provide support. If you need a lot of support, consider whether the overall costs of using an open source product will be higher those that of a proprietary product.

## Is it free?

The philosophy upon which OSS is founded gives users and developers the freedom to use, study, modify, and distribute the source code. Therefore, while most OSS is available free of charge, it can be still be sold for a price without losing its "open source" designation.

Be sure to keep in mind the indirect costs (or the total cost of ownership) involved in adopting and managing open source software. While the software itself may be free, you should consider the need **for additional services or products**, as these may have costs attached (e.g. access to software updates, support services). You also have to take into account possible **switching costs**. These costs would include moving data from an old system to new systems, training costs, and costs involved when switching from one platform to another (e.g. the costs of switching from Microsoft Windows to a Linux operating system). If your business does not have enough information technology expertise, you may have to outsource technical services to provide open source support or to manage its implementation and delivery.



## How is Open Source Software Useful to Small Businesses?

OSS can have many benefits for small businesses, allowing them to cut software costs, gather a personalized set of software features, and modify and customize software to meet their business needs. The range of open source software available means that businesses have a great deal of choice between implementing proprietary or open source solutions. Often OSS is used along with proprietary software in the business environment, where for example a company may choose to use Linux as an operating system instead of Windows, or Apache Openoffice instead of Microsoft Office. Businesses may also incorporate new OSS over the years as their business grows and their needs change.

There are many different claims and counterclaims with respect to the advantages and limitations of OSS. Some of the differing opinions arise from the fact that while an open source software package may work very well in one business environment, it might not work so well in a different environment. Depending on your current system (i.e. what software you are using now), your business needs, and the open source product you choose (some are better than others), certain advantages of using open source software will vary.

When considering the advantages of open source software you should look at the open source product itself. There are a variety of open source software packages out there that range widely in terms of quality. Some open source software has been around longer than others. More mature products will likely rate higher in terms of quality and reliability. In the end, it pays to do your homework when selecting the right software, whether open source or proprietary, for your business. As a small business, it's worthwhile to consider some of the open source options.

As I talk to organizations that have relied primarily on proprietary solutions, it's often easiest to get them to try one or two open source products in a non-critical setting. As they do so, they are discovering the high quality and the cost advantages of OSS. In addition, start-ups and small businesses are building their IT infrastructures on open source software, often on hosted servers or in the cloud."

*Source: Tony Wasserman, Director on the board of the Open Source Initiative and Professor of Software Management Practice at Carnegie Mellon Silicon Valley. Cited in the Open Source Initiative website, 2010 <http://opensource.org/node/514>*

Below are possible advantages for you to consider in terms of how OSS may benefit your business:

**Lower Costs:** Open source software usually does not require a licensing fee and its lower cost is generally one of the key reasons why small businesses choose to adopt this software. Make sure that you consider the total costs of ownership when considering open source software.

**Flexibility:** A programmer can take a standard software package and modify it to better suit your business needs. You can usually hire a programmer to add a particular function to open source software.

**Reliability and Quality:** When looking at improved quality, you have to compare the products themselves. It is impossible to say that open source software is better than proprietary software in terms of reliability and quality – both have a range of products. However, mature open source software is generally viewed to be of good quality and reliability. If your business is not familiar with open source software, you may only want to review some of the more mature products (e.g. Linux, Apache and Sendmail).

**Speed of Change:** Updates for OSS that increase the security of the software are often more frequently available because more users are inspecting the code and resolving potential bugs or vulnerabilities. With proprietary software, users have to rely on the updates and patches coming from the vendor.

**Reduces “Vendor Lock-in”:** If you are using proprietary software you may be restricted to using certain vendors. Switching vendors in this case usually involves significant costs. Keep in mind though that choosing an OSS product may not make you totally independent of vendors. For some OSS products there may be a limited number of vendors that can provide you with services, upgrades or security patches.

**Availability of External Support:** External technical support is available for many of the open source software packages. Some vendors offer support contracts and there are service providers that install, configure and maintain an OSS system. Many open source products also have an active online community support that may be able to answer your questions through online blogs.

## Is There a Downside to Using Open Source Software?

There are some downsides to using OSS. Remember when considering the limitations of open source software, it is important to look at the product individually as each product can vary in terms of quality and limitations. Some of the limitations can be overcome with adequate training and service support.

**Lack of Personalized Support.** Unlike most proprietary software, OSS packages do not come with official phone support or personalized e-mail support. However, as mentioned there are commercial service providers who will provide support. If you need a lot of support, consider whether the overall costs of using an open source product will be higher than that of a proprietary product.

**Continued Compatibility.** Software is being modified on an ongoing basis in the open source world, which can make it difficult to ensure that the software is compatible with other applications.

**No warranty.** OSS does not come with a warranty, as there is no single company backing the product.

## Examples of Open Source Software

You can find information about open source products on the Internet by using a search engine and typing the keywords “open source” followed by the “type of software application” that you are looking for. For example:

- Open source web design
- Open source presentation software
- Open source spreadsheets
- Open source shopping carts
- Open source communications (and so on)

View the following table for descriptions of some of the most popular open source software applications by category. The categories listed in the table include only a few of the many OSS applications available on the Internet. You should investigate whether any of the packages are suitable for your needs. There are general directories that reference open source applications such as [www.wikipedia.com](http://www.wikipedia.com), [www.opensourcecms.com](http://www.opensourcecms.com), and [www.cmsmatrix.org](http://www.cmsmatrix.org). For a list of open source software packages, the following Wikipedia site may be helpful: [http://en.wikipedia.org/wiki/List\\_of\\_free\\_and\\_open-source\\_software\\_packages](http://en.wikipedia.org/wiki/List_of_free_and_open-source_software_packages)

These are good places to start your investigation. You may also want to look at various blogs and forums for product comparisons and reviews. Once you know what OSS you require, you can either download it from sites like SourceForge, currently the largest OSS directory, or search directly online for the software by brand name online.



## CATEGORIES OF OPEN SOURCE SOFTWARE

### Office Automation (word processing, spreadsheet and presentation software)

| OSS Example | Description  |
|-------------|--|
| OpenOffice  | <ul style="list-style-type: none"><li>• Office suite</li><li>• Suitable for individuals and businesses</li><li>• Includes a word processor (compatible with predominant proprietary word-processing programs), spreadsheet (compatible with predominant proprietary spreadsheet programs) and presentation system (compatible with predominant proprietary presentation systems)</li></ul> |

### Web Design

| OSS Examples | Description   |
|--------------|---|
| Nvu          | <ul style="list-style-type: none"><li>• Intended for those with no technical or programming expertise</li><li>• Enables creation of web pages and management of websites</li></ul>  |
| GIMPShop     | <ul style="list-style-type: none"><li>• Image editor similar to Adobe Photoshop</li></ul>   |
| Bluefish     | <ul style="list-style-type: none"><li>• Editor targeted towards programmers and web designers</li><li>• Supports many programming and mark-up languages</li><li>• Focused on editing dynamic and interactive websites</li></ul> |

### Web Browser

| OSS Example     | Description  |
|-----------------|--|
| Mozilla Firefox | <ul style="list-style-type: none"><li>• Faster start-up times, rapid graphics rendering and improved page load times</li><li>• Can customize browser to your exact needs</li><li>• Highly advanced security features to keep you safe while you browse</li></ul> |

### WebServer Software

| OSS Example | Description  |
|-------------|--|
| Apache      | <ul style="list-style-type: none"><li>• WebServers help to deliver web content that can be accessed through the Internet</li><li>• Apache offers an open-source HTTP server for modern operating systems including UNIX and Windows NT</li></ul> |

## Communications

| OSS Examples | Description   |
|--------------|---|
| Pidgin       | <ul style="list-style-type: none"> <li>• Free Instant Messaging (IM) client</li> <li>• Allows use of all IM accounts at once</li> </ul> |
| Thunderbird  | <ul style="list-style-type: none"> <li>• Cross-platform e-mail and news client</li> </ul>   |
| PhpBB        | <ul style="list-style-type: none"> <li>• Internet forum package written in computer scripting language PHP</li> </ul>                   |

## E-Commerce

| OSS Examples | Description   |
|--------------|---|
| OsCommerce   | <ul style="list-style-type: none"> <li>• E-commerce and online store-management application</li> <li>• Offers a wide range of features that allows online stores</li> <li>• Can be used on any web server that has PHP web scripting language and the MySQL database</li> </ul> |
| VirtueMart   | <ul style="list-style-type: none"> <li>• E-commerce solution intended for use with the content-management system Joomla or Mambo</li> <li>• Written in PHP: Hypertext Processor (PHP)</li> <li>• Made for easy use in a PHP/MySQL environment</li> </ul>                        |
| Zen Cart     | <ul style="list-style-type: none"> <li>• Free, shopping-cart system</li> <li>• Features multiple customer modes, unlimited category depth, multiple sales and discounts, multiple display modes, multiple add banner controller, multiple payment options, etc.</li> </ul>      |

## Content Management Systems

| OSS Examples | Description  |
|--------------|--|
| Drupal       | <ul style="list-style-type: none"> <li>• Free, modular, content-management framework, content management system and blogging engine</li> <li>• Written in PHP</li> <li>• Allows an individual or a community of users to easily publish, manage and organize a wide variety of content on a website</li> </ul>   |
| Joomla       | <ul style="list-style-type: none"> <li>• Free open source content-management system meant for publishing content on the Web and intranets using the MySQL database</li> <li>• Written in PHP</li> <li>• Includes features such as page caching to improve performance, RSS feeds, printable versions of pages, news flashes, blogs, polls, website searching, and language internationalization</li> </ul> |
| Wordpress    | <ul style="list-style-type: none"> <li>• Free web software to create websites or blogs</li> <li>• Can be used as full content management system through the thousands of plugins, widgets, and themes</li> </ul>   |



## Accounting Software

| OSS Example | Description   |
|-------------|---|
| GNUCash     | <ul style="list-style-type: none"><li>• Free personal and small-business financial-accounting software</li><li>• Allows you to track bank accounts, stocks, income and expenses</li><li>• Includes features such as double entry accounting, reports and graphs, scheduled transactions</li></ul> |

## Database

| OSS Example | Description   |
|-------------|---|
| MySQL       | <ul style="list-style-type: none"><li>• One of the world's most used open source relational database management systems</li><li>• Users can create and manage MySQL databases, build database structures, back up data, inspect status, and work with data records</li><li>• MySQL Workbench is available in two editions, the regular free and open source <i>Community Edition</i>, and the proprietary <i>Standard Edition</i>, which extends and improves features in the Community Edition</li></ul> |

## Operating Systems (all Linux distributions)

| OSS Examples | Description   |
|--------------|---|
| Ubuntu       | <ul style="list-style-type: none"><li>• Largest community maintained Linux OS – enables users to draw upon a wide network for support</li></ul>   |
| Fedora       | <ul style="list-style-type: none"><li>• Open source Fedora is a general purpose Linux operating system, developed by the community-supported Fedora Project and sponsored by Red Hat (a company committed to open source software, and a major Linux distribution vendor)</li></ul> |

## How Do I Know if a Particular OSS Application Is Right for My Business?

The following series of questions can help you decide if a particular OSS application is right for your business:

1. **How long has the software been around? Is the software well established?** As a general rule, open source software that has been around longer is more reliable and of good quality. Each open source software application has a version number. The software may represent the first version or ninth-or more. Mature OSS software examples—Linux, OpenOffice, and Thunderbird.
2. **Are there regular updates, patches and new features?** Open source software that receives regular updates, patches and new features will likely be less bug-ridden, more secure, and more feature-rich than that which does not.
3. **Does your company have the skills to install and maintain the software?** If your company does not have the expertise, there are service providers out there that do. You should also consider whether staff need training to help use and maintain the software. (this consideration applies to any type of software).
4. **Is there commercial support available to help you install and manage the software?** Are service providers available to provide you with installation and management support for your software? Two well known specialist OSS organizations that provide support are - [www.redhat.com](http://www.redhat.com) and [www.mysql.com](http://www.mysql.com).
5. **Are the costs reasonable for the service and support that you might require?** The less technical expertise your business has, the more likely it is that you will need professional support for your open source software.
6. **Is there good (active) free support from the online OSS community (e.g. online forums, blogs)?** Can you go online and post a question about the product? Be prepared to participate
7. **What are the conditions of use for the software?** Take the time to read the conditions for use. Many open source packages use GNU General Public License.
8. **Is there documentation available?** Is the documentation complete and coherent? Open source software should have documentation available with respect to its development history. Are the bug fixes and feature changes well documented?

Source: Adapted from OSS Watch –  
Top Tips for selecting Open Source Software.





## Support Services for OSS

With the growing popularity of OSS, several types of support services have emerged to assist users and businesses.

### Commercial Support

**Sponsoring Vendors:** There are several popular OSS packages used by businesses where commercial paid support is available. For example, Red Hat and Canonical offer commercial support for their Linux software. At the same time, some vendors offer training and certification courses, such as Oracle for MySQL.

**Consultants:** There is a large number of OSS specialists available, each with different levels and types of experience and different knowledge of specific OSS. It is important to choose a specialist that has particular expertise in the OSS with which you require assistance. Some sponsoring vendors will provide a directory of service providers that possess expertise in the specific OSS. For example, Apache provides a global consultant directory of those with expert support services for OpenOffice.

### Free Support

**Sponsoring Vendors:** Many vendors have started initiatives to help bring experienced users to the forefront to help those having trouble with the OSS. For example, Mozilla Firefox has an “Army of Awesome” support service, where Firefox users can login to Twitter and tweet support solutions to other users with questions.

**Online community resources:** There are several ways of tapping into knowledge of OSS online, such as through community forums, free documentation and tutorials, and mailing lists to gain information and assistance from the collaboration community and experienced users.

*Source: [http://www.pcworld.com/article/207958/how\\_to\\_get\\_support\\_for\\_open\\_source\\_software.html](http://www.pcworld.com/article/207958/how_to_get_support_for_open_source_software.html)*

## OSS vs. Freeware vs. Shareware Pitfalls to Using Freeware and Shareware

Freeware and shareware are software alternatives to OSS. Each of these options is described below:

**Freeware:** Freeware is free software (often written by a student or software enthusiast) that is made available for use for an unlimited time. In contrast to OSS, which is released under an open source license where the source code is made available for use, modification, and redistribution, freeware does not make its source code available to users. Users are prohibited from altering the program, repackaging it or selling it. Because the source code is not accessible, there is no community or development infrastructure around freeware like there is for OSS. Though it comes at no cost, you should keep in mind that if you choose freeware for your business there will be no opportunities to customize the software. There will also be limited support and updates available.

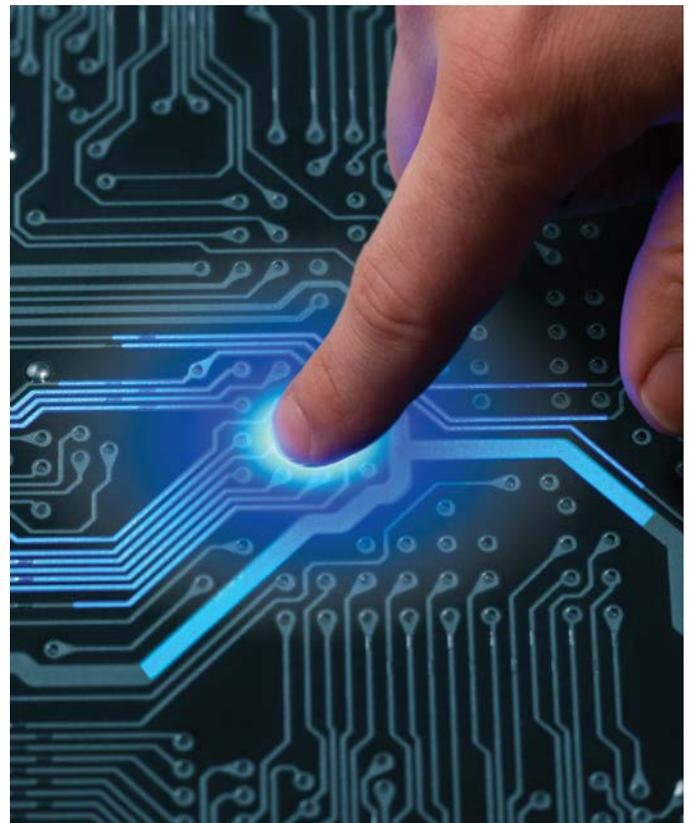
**Shareware:** Shareware is a method of distributing software that is based on a “try before you buy” model, where the authors give users a license to try out the software for a specific period of time, usually for 30 days. If users wish to continue using the software after this trial period, they are required to register with the author and pay a small fee. If, however, users do not wish to continue using the software after the free trial period, they are expected to discontinue use of the product and erase the product files. Shareware is distributed on the basis of an honour system. In many cases, however, once the trial period ends shareware will have updates and will require the user to pay a small fee for additional functionality. Unlike OSS, shareware does not involve the release of the source code or allow for modifications and redistribution by users. Again, there is no community or development infrastructure around shareware like there is for OSS. Shareware is usually written by a professional developer or small software company that may lack the resources to extensively market the software. Thus, they turn to a “try before you buy” business model.

Sources: <http://www.pc-shareware.com/whatissh.htm>  
<http://www.techsupportalert.com/freeware.htm>

The three primary pitfalls to using freeware and shareware are as follows:

- Both may contain viruses, spyware (i.e., software that secretly sends information about your Web surfing **habits to its website**).
- Some shareware and freeware programs do not have an uninstall feature, making them difficult to get rid of.
- There may be a lack of technical support if you have questions about a particular shareware or freeware program.

As a precaution, always keep your anti-virus software up to date. Manually scan freeware and shareware files with an anti-virus software program before opening them. If possible, avoid **.exe files** from unknown websites, and use caution when downloading files that are not .zip extensions.





## Future Trends

The increasing customizability and security offered by OSS, in combination with its low cost, is driving the growing adoption of OSS by businesses. It is expected that businesses will increasingly turn to OSS solutions in order to meet their business needs and remain competitive in the market. In fact, Gartner, an information technology research and advisory company, found in their 2011 OSS adoption survey that over half of the 547 organizations that had been surveyed across 11 countries adopted OSS as part of their IT strategy. Also, OSS was expected to comprise 30% of IT portfolios in 2012 amongst these organizations, up from just 10% in 2006.

Advances in OSS will provide new capabilities for small and medium sized businesses in terms of their operations and the products and services they provide to clients. For example, Openstack, a project by NASA and Rackspace Hosting, is an OSS initiative to develop a cloud computing operating system so that any organization can create and deliver public and private cloud computing services on standard hardware.

With the OSS model becoming more popular and with large corporations like Google and Oracle participating in and supporting the open source community there is no doubt that OSS will continue to grow in importance in the future. Advances in OSS will impact small and medium-sized businesses by increasing the software choices available to them and the opportunities for their businesses to grow.

Sources: <http://www.cloudtweaks.com/2012/08/is-the-future-of-the-cloud-computing-open-source-few-things-to-consider/>  
<http://www.openstack.org/>  
<http://www.slideshare.net/OpenLogic/predictions-and-trends-for-open-source-support-adoption-in-2012>

## Related Topics Covered in Other Booklets

- *Customer Relationship Management*
- *Online Sources of E-Business Information*

To view or download these booklets visit [Ontario.ca/ebusiness](http://Ontario.ca/ebusiness).



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This publication is part of an **E-Business Toolkit** which includes a series of booklets on advanced e-business topics and an introductory handbook *How You Can Profit from E-Business*. The entire Toolkit is available at [ontario.ca/ebusiness](http://ontario.ca/ebusiness).