

Introducing the Joomla! Content Management System

Joomla! is an award-winning content management system that enables you to easily create and manage the contents of a web site. You don't have to be a programmer to use Joomla!, because you don't need to work with the code to install, set up, or manage a site. To get started all you need is access to a web hosting service and a web browser. Moreover, the Joomla! content management system is open source, free of licensing fees and open for you to modify as needed to meet your requirements. The low cost and ease of use are the primary reasons Joomla! has become so popular, with more than 10 million downloads to date.

This introductory chapter explores the advantages of using Joomla! and open source, and provides basic information about how the Joomla! CMS works.

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Discovering Open Source Content Management

A *content management system* or *CMS*, is a software tool that is installed on a server. A CMS enables you to publish pages on a web site and to manage the web site's features, content, and users through an easy-to-use browser-based interface. Historically, full-featured CMS products were expensive affairs, dominated by major brand names such as Broadvision, Vignette, and Microsoft. Over the last five years, however, this market has begun to shift, as robust open source products have arrived on the scene, supplementing and in some cases supplanting, their commercial brethren.

The appearance of viable open source content management solutions has had a significant impact on the market, essentially democratizing the content management space. Small businesses and individuals that could never before

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afford a proper CMS can now implement an open source solution and create a web presence that is competitive with much larger firms. As open source systems have increased in stability and functionality, they have also started to find a place in larger firms. Today you can find open source CMS products at every level of business, both public and private. Among the organizations using open source content management systems today are:

NASA
MIT
French Parliament
Nokia
The U.S. Navy
Novell
National Geographic
The Brazilian Government
PBS

Deciding to use a CMS

Content management systems make maintaining a web site more practical and more affordable. In the past, if you wanted to build a web site, you built a set of static HTML pages — that is, you hard-coded each page with your text and images. The problem is that if you build a static web site, you are forever locked into working with page code each time you want to change the site. Changing the contents of a page by manually changing the code on the page is time-consuming and labor-intensive. Managing a static site also locks you into hiring people with coding skills to perform content management tasks. Doing this can be a misuse of resources and is typically not a cost-effective approach to the problem. In contrast, if you use a content management system to power your web site, anyone with basic skills can make changes to the web site. You don't need a programmer to change the text or images on a page. Most systems, including Joomla!, use a content management interface that is largely similar to what you see in common word processing programs, such as Microsoft Word.

With a CMS, you gain significant advantages, including

- Increased control over your web site
- Improved time to market with content changes
- Lower cost per page
- Decreased total cost of ownership for your site

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The same arguments that help justify the use of a CMS apply in even greater force to an open source CMS. Open source systems tend to deliver the same high degree of functionality but for a relatively lower cost base. This favorable cost-to-benefit ratio is largely responsible for the success of the systems and helps explain why they have become especially popular for businesses both small and large.

A content management system typically provides the following features:

- Identification of key users and their roles
- Ability to assign roles and responsibilities
- Ability to define workflow
- Ability to schedule and publish content
- Ability to limit access to content and functionality
- Ability to administer the system
- Ability to take the site offline and to perform maintenance tasks
- Ability to add components

Deciding to use open source

Open source is about freedom — not simply the ideal of freedom, but the commercial reality of freedom. Open source software does not carry licensing or subscription fees. Although the initial attraction of open source software may be the fact that it is free of charge, you are likely to find very quickly that the long-term advantage of open source lies in two other characteristics:

- The code is accessible. Unlike many commercial products that not only hide their code but also forbid you from modifying it, open source code is visible and you are free to modify it to suit your needs.
- Open source protects you from being tied to a specific vendor. If you adopt an open source solution, you can partner with the developer of your choice to assist you. If you deploy a system such as Joomla!, which is based on popular and common technologies, you need not dread having to change vendors in the future because finding people who are familiar with the system and have the skills needed to work on it is easy.

Taken together, the initial cost advantage plus the long-term benefits of having access to the code and your choice of vendors create a compelling argument in favor of open source.

However, you should also consider the disadvantages in the course of making your decision. If your firm has existing software deployed on a proprietary system, you may want to continue with those systems rather than introducing different products or platforms into your business. Support can also be an issue with open source products. If your firm requires a high level of support, you need to select an open source vendor that can offer you an appropriate service-level agreement.

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Support for Joomla! is typically a self-help scenario. If you need to obtain a commercial support contract with a service-level agreement, you need to search for a developer who can provide this service because Joomla! does not offer commercial support. Although commercial support can be difficult to find, Joomla! does provide numerous community-based support options, including:

- Online documentation
- Community forums
- Online tutorials
- Mailing lists
- RSS feeds
- Developer wiki

Although the software is free of charge, you can expect to pay for a few things, either at the time you build your site or some time during the life of ownership. Common costs include:

- Design services
- Consulting services
- Custom development
- Deployment
- Support
- Hosting services
- Domain names
- Licenses for other related software, for example, certain extensions
- Maintenance

All of these expenses may not be applicable to your project, but you should consider them when calculating the total cost of ownership of an open source system. Even if you plan to manage and maintain the site yourself, don't forget that there is a cost associated with your time. It is a common mistake to underestimate the amount of time it can take to maintain a site. A CMS is a complex piece of software and it can be a target for hackers and others with bad intent. You cannot just build your site and forget it. Across the life of the site you need to install patches and security releases. The more complicated your site, the more time this takes. Don't make the mistake of ignoring this sometimes significant ongoing cost of ownership.

Determining whether open source is right for you

Although open source provides a welcome alternative to commercial software and it will work for the vast majority of people, it is not necessarily the right answer for everyone. Whether open source is right for you depends upon your situation and your tolerance for business risk. The advantages are:

- **Cost.** Open source is cheaper to obtain and studies show that implementation costs can be significantly less than for closed source solutions.

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- **Open source can be vendor agnostic.** You are not tied to a single vendor and cannot be held hostage by that vendor.
- **Open source presents less risk.** Studies consistently show that open source development process produces better code and that many eyes make for more secure applications. Moreover, when problems are detected, open source produces patches at an extremely fast rate.
- **Open source is easier to install, configure, and customize.**
- **Open source promises more rapid innovation.**

If you are still not sure, start small. Roll out an open source solution in a limited role in your firm. Try it out. Six months from now evaluate the result and decide whether open source is the right path for you. If you are like many others, you will find that it is not only a viable option, but also an attractive one!

Discovering Joomla!

Joomla! started life in 2005 as a fork of the already popular Mambo open source content management system. The Joomla! community came together around the new project very quickly and helped create prominence and excitement around the new brand. Over the years, the project has gone from success to success and has grown to become one of the largest and most active open source projects.

The features included with the core system include:

- **WYSIWYG Content Editor:** Edit articles with the ease of use of a word processor.
- **Content scheduling:** Set start and stop dates for the publication of your content.
- **Content archiving:** Store old articles for ease of reference.
- **User management:** Create users and assign them to groups.
- **Access control:** Control the users' access to content and functionality.
- **Media manager:** Upload and organize your media files.
- **Language manager:** Add new language packs to enable multi-lingual interfaces for your site.
- **Banner manager:** Upload and run advertisements.
- **Contact manager:** Store contact details of your users and enable contact forms for them.
- **Polls:** Run polls and surveys on the site.
- **Search:** Search the site's content.
- **Web links management:** Create pages containing links to other web sites.
- **Content syndication:** Syndicate your content items with RSS feeds.
- **News feed aggregation and display:** Bring external RSS content into your site.

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- **Integrated help system:** View help files from within your admin system.
- **Multiple template management:** Add new templates and assign them to the pages of your site.
- **Cache management:** Manage site performance by controlling the caching of information.
- **Integrated FTP:** Use the system's integrated FTP manager to move files to and from your server.
- **Search engine friendly URLs:** Create search engine friendly URLs to make your site more competitive on the search engines.

Joomla! 1.6

In addition to the core functionalities, Joomla! is extendable. With over 4,000 open source extensions available for little or no charge, you can customize the site to include the functionalities you need.

Deciding to use Joomla!

Why should you use Joomla? The short answer is that Joomla! provides an easy-to-install option for creating and managing a full-featured web site. The system is easy to use, affordable, and flexible enough to grow with you over time.

Who uses Joomla!

Joomla's popularity means that you can find a large number of example sites live on the Web. The system supports everything from small marketing sites to large e-commerce sites. Here's a roundup of some of the better known companies and brands that use Joomla!

Name	URL
Harvard University, Graduate School of Arts and Sciences	http://gsas.harvard.edu/
IHOP Restaurants	http://www.ihop.com/
Nickelodeon	http://www.quizilla.com/
United Nations Regional Information Centre	http://www.unric.org/
U.S. Army Corps of Engineers	http://www.spl.usace.army.mil
Yale University Association of Yale Alumni	http://grad.alumni.yale.edu/
University of Nebraska	http://nebraska.edu/
Olympus (Australia)	http://www.olympus.com.au/
Epson - Research & Development	http://www.erd.epson.com/
Dr. Ruth	http://www.drruth.com
Samuel L. Jackson	http://samuelljackson.com/

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Although Joomla! is an excellent solution for many needs, it is not suited to every conceivable use. There are areas where the system excels, and others that present challenges. If you want to be more analytical about Joomla, then you should consider the pros and the cons.

Pros

- **Over 10 million downloads:** This is a healthy and growing project with a large fan base.
- **Over 4,500 extensions available:** The large number of extensions means you can tailor Joomla's functionality for your site.
- **Uses the popular LAMP stack:** It is easy to find hosting and help.
- **Presentation layer is very easy to work with:** You can customize the appearance of the site to match your brand. You aren't restricted to creating a "cookie cutter" web site.
- **Decent e-commerce options:** If you want to sell products online, Joomla! is perfectly capable of delivering all the most common e-commerce functionalities as well as providing usable catalog management.
- **Wide developer support:** It's easy to find help for your Joomla! site. Developers, designers, and other third-party services are readily available.
- **Decent documentation:** The online documentation provided by Joomla! is some of the best in open source. You can also find commercial documentation in a variety of formats.
- **Very active community:** An active and dynamic community means that you can get support in the forums and you can be assured of the ongoing vitality of the project.
- **Affordable development costs:** Competition and a common platform make for a wide range of vendor choices and price points. Given the large number of people providing Joomla! services, you can probably even find someone in your area.

Cons

- **No workflow:** If your site needs to replicate your offline workflow, Joomla! may not be the answer for you. The system does not include a workflow engine.
- **Limited user hierarchies:** The Joomla! 1.5 system includes a limited and fixed hierarchy of users. If you need complex user permissions, you either should choose Joomla! 1.6, or face installing extensions to your site to add this functionality. Be sure to examine the third-party extensions to determine if they will meet your needs in advance of committing to the system.
- **Limited content structure:** The Joomla! 1.5 system includes a limited and fixed content organization structure. If you need to create a site with complex content structures, you should either choose Joomla! 1.6 or face installing extensions to your site to add this functionality. Be sure to examine the third-party extensions to determine if they will meet your needs in advance of committing to the system.
- **Can be tough to maintain customized sites:** If you need to customize the code of your site, you have to be careful with upgrades in order to avoid losing your customizations. So, the greater the amount of customization you need, the greater the amount of work involved in upgrades.

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- **SEO is mixed:** Joomla! includes an SEF URLs option, but the default system's configuration options are quite limited. There are, however, a number of third-party extensions you can add to the site to improve this.
- **Extensions vary widely in quality:** While there are a lot of extensions available for the system, they are not of equal quality. Do your homework and check extensions carefully before committing to them.
- **An increasing number of extensions are commercial:** The Joomla! core is free of charge, but a number of extensions for the system are commercial — and some are even encrypted! This troubling trend is a cause for concern and does erode some of the cost advantage of the system. Encrypted extensions also destroy your freedom to modify the code and should be avoided.

The Joomla! open source license

The Joomla! system is released under the GNU General Public License, commonly known as the GNU GPL. Joomla! is governed by Version 2.0 of the license. The GNU General Public License grants users four freedoms:

The freedom to run the program for any purpose.

The freedom to study how the program works and adapt it to your needs.

The freedom to redistribute copies so you can help your neighbor.

The freedom to improve the program and release your improvements to the public, so that the whole community benefits.

As a site owner, this means that the software is free of licensing fees and that you are able to use it for any purpose or any type of site. The only significant restriction is on your ability to resell the system; though it is permissible to sell products that include the code, you must release those products under licensing terms that are consistent with the GNU GPL v.2. This provision essentially takes away the motivation to turn the code into a commercial product because the terms of the license mean that the person who buys the code can distribute it to the public without paying you further for that privilege.

The user's freedom extends to the right to modify the code. You are not only free to use the system however you see fit, but you are also free to customize the code to suit your needs. Although your customizations are modifications of the GPL code, the license does not force you to disclose that modified code to others, unless you decide to release and redistribute the code. In other words, you cannot be forced to release code you have developed but do not wish to release to the public.

The majority of the extensions available for the Joomla! system are also released under the GNU GPL. While some of the extensions are commercial, and a few are even encrypted, a growing impetus exists within the Joomla! community to make sure that extensions are fully GPL-compliant and that the code for the extensions is accessible and can be modified by users.

The Joomla! architecture

Joomla! is designed to run on the popular and widely available LAMP stack, that is, on Linux with the Apache web server, the MySQL database, and the PHP programming language.

In broad terms, Joomla! works like this: When a site visitor requests a page by clicking on a link, Joomla! assembles that page by pulling the contents from the database; it then uses the template files for guidance in how to present that information on the page. The merged information is then sent to the user's browser where it is rendered for the visitor to see.

Unlike other systems that store rendered pages, almost all information in Joomla! is kept in the database and produced on the visitor's screen on demand. The text, images, usernames, and passwords are all kept in the database. Use of caching can change this to a limited extent, but generally speaking everything is dynamically generated. When you are editing content in Joomla!, you are editing information in the database. The Joomla! template files provide the formatting and layout the site visitors see on their screens. A template is actually a collection of files typically containing a mix of CSS, PHP, HTML, XML, and image files. If you want to change the underlying layout of the site's page, then you need to edit the template files.

Programming languages used

Joomla! is primarily written in PHP, though you will find a number of types of files inside the system, including the following:

- .css
- .html
- .ini
- .js
- .php
- .xml

You will also find image files in the following formats:

- .gif
- .png
- .jpg

The database

Joomla! is built to run on the MySQL database. Joomla! 1.5 is compatible with Versions 4.1 and later of MySQL. Joomla! 1.6 requires version 5.0.4 and later.

Official Joomla! sites

The Joomla! team maintains a number of official sites. Some sites are informational in nature, others provide a way to distribute the code, others help promote and market Joomla!

Name	URL
Joomla! (main site)	http://www.joomla.org/
JoomlaCode	http://www.joomlacode.org/
Joomla! Developer Site	http://developer.joomla.org/
Joomla! Extensions Directory	http://extensions.joomla.org/
Joomla! Documentation	http://docs.joomla.org/
Joomla! Forums	http://forum.joomla.org/

Joomla! is an example of a community-driven open source project. This means that unlike corporate-sponsored projects, Joomla! is the work of a loosely affiliated group of individuals working together as a community. It is, in other words, a volunteer effort.

Finding out how the community works

Joomla!, like many of the larger community-backed projects, is supported by a foundation. In the case of Joomla! the foundation is a not-for-profit organization named Open Source Matters. The foundation holds the intellectual property rights to the brand name and related assets and provides legal shelter for the project. The foundation accepts donations of cash and services. The donations go to cover the basic overhead and operating costs such as for the servers, the hosting infrastructure, and promotional expenses. People are not directly paid to work on Joomla!

Open Source systems like Joomla! are offered free of charge for users. Often, people ask how this is possible. How is it that they can afford to give something valuable away for free? That is a complex question and in the case of a community-driven Open Source project, the answer is not always obvious. Community members work for free largely out of a desire for recognition, status, and access to expertise. Some are even more idealistic and participate for the pleasure of being part of something bigger than themselves and to feel like they have given something back to a group that has helped them in some fashion. The Joomla! Team is divided into a set of Working Groups that handle the following responsibilities:

- **Development:** Develops and maintains the Joomla! codeset.
- **Documentation:** Handles the developer and user documentation and maintains the help site.

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- **Sites and infrastructure:** Maintains and moderates the forums and takes care of the various official sites.
- **Translation:** Coordinates translation of the interfaces as well as helping produce official announcements in a variety of languages.
- **Foundation:** Handles the more administrative matters related to the project, including marketing, events, and fundraising.

Participating in the community

Volunteers are the lifeblood of Joomla! If you are inclined to get involved with the project, do so. The easiest way to start is by registering on the Joomla! forums and to contribute by helping others in the forums. Many users come to the forums with very basic questions; others with more complex technical issues. The forums always need people who are willing to take the time to answer these questions and help others work their way through problems.

After you have participated in the forums for a while, you will be more familiar with the team members and how things in general work. If you want to do more, you can then approach a team member or the leader of a working group and ask to become involved on a more official level. Open source projects that are the size and scope of Joomla! need all sorts of people. Don't worry about whether you have sufficient technical skills or the right type of knowledge. The most important requirements are a willingness to donate your time and a sincere desire to help others. There are opportunities for everyone who is interested in helping.

Summary

In this introductory chapter, we have taken a look at the basics of Joomla! and open source. You learned the following:

- The advantages of using open source
- The pros and cons of using Joomla!
- How Joomla! works
- The terms of the Joomla! license
- How to get involved in the Joomla! community

