

Introducing GeekLog

By Andrew Gray

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One of the main problems with keeping a website up to date is the effort associated with adding, editing and maintaining pages of the site. Another problem is controlling who has access to edit specific pages and add content. Content Management Systems (CMS) are designed to handle these problems by providing an administration system that allows users to alter a web site via a web browser. CMSes come with a wide variety of functions, uses and costs and are used by most major web sites to handle content.

Using a CMS rather than manually editing pages with a text editor or graphical HTML editor eliminates many of the difficulties of maintaining a web site. First, multiple people can edit the web site through a single, consistent interface. Second, dynamic content such as forums, news feeds, and comments can be easily incorporated in the site. Third, the graphics and layout of the site are not tied to the content, so changes can be quickly rolled out without changing every static page.

A CMS is appropriate for a large range of website applications from small personal news sites to high traffic news portals. Someone who updates a site frequently should consider using a CMS instead of manually building each page. In fact, few large sites function without some form of Content Management Solution. Some good examples of these large sites include Slashdot.com, washingtonpost.com, and evolt.org.

A wide variety of CMS solutions are available. These range from packages that are simple and free, to those that are incredibly complicated and expensive. This article's goal is to introduce an open-source CMS called Geeklog. Geeklog is based on PHP and MySQL and runs fine under either Apache or IIS. Its designers created it with the intention of making it easy to install, configure and run. Part of doing this meant not requiring any unusual server configuration or PHP modules. As a result, initial installation is straightforward and should be easy for anyone who has past experience installing PHP scripts.

It is easy to customize Geeklog installations to make sites unique. There are a large number of plug-ins and theme sets available for Geeklog. These new plug-ins and themes are also easy to develop. By default, Geeklog comes with Topics, Calendar, Polls, Link Management, RSS News Parsing, User Statistics and Static Page modules. Additional plug-ins are available from a variety of sources and include download management, forums, photo galleries, and more. A great

REQUIREMENTS

PHP Version: **PHP 4.1+**

O/S: **Any**

Additional Software: **MySQL 3.2+**

Code Directory: **geeklog**

generic plug-in is also available to make plug-in development easier.

Geeklog is similar to other PHP based CMSes such as PHPnuke and Postnuke, though you may find Geeklog to be a bit more 'developer friendly'.

The core system that runs Geeklog is well written, efficient, and well commented. The developers have concentrated on perfecting the core code and have left plug-in development to the open-source community. To this end, the developers have created a core system in which the source code is easy to understand, so it is easy to alter the code to suit your specific needs or change/extend core functionality. Geeklog's code can be easily adapted to custom applications or used as a model for learning more about PHP programming.

One of my favorite features of Geeklog is its security model. Geeklog's user and group model is based on UNIX style permissions and allows administrators to effectively and intuitively control user behavior. Access to content can be controlled and administrative tasks can be delegated with confidence that users can not elevate their access.

Geeklog is relatively young compared to other CMSes and therefore does not have as many plug-ins, themes and add-ons available. However, as aforementioned, this is partially by design, and nevertheless, the advantages of Geeklog's core system make it an excellent system to manage any website.

Installing Geeklog

In order to install Geeklog you must have certain software installed on your computer. Geeklog requires PHP 4.04 or greater and MySQL 3.2 or greater. You must also decide where you are going to install Geeklog. Geeklog consists of two parts, the publicly accessible files (`public_html`) and the non-accessible files (all system files, `config`, and `documents`). Depending on the setup of your hosting, you may need to adjust where you put files. For the purpose of this tutorial, assume that you have write access to the site directory `/path/to/yoursite` and that the web accessible document root is `/path/to/yoursite/public_html/`. This means that `www.oursite.com` points to files in this directory.

Step 1. Download the current version (1.37sr2) of Geeklog from www.geeklog.net.

Step 2. Move the distribution tar file to the site directory and untar it.

```
tar -zxvf geeklog-1.3.7sr2.tar.gz
```

you should now have a directory named `geeklog-1.37sr1`

Step 3. Move the files from `geeklog-1.37sr2/pub-`

`lic_html` to your site's document root and move the remaining files in `geeklog-1.37sr2/` to the site directory.

Step 4. Create the database in MySQL that you want to use for Geeklog. As it states in the Install document, if you are not familiar with using MySQL, use phpMyAdmin or contact your system administrator.

Step 5. Change the following to be writable by the web user. This is the user that the web server runs as, usually `nobody` or `www`.

```
/path/to/yoursite/public_html/backend/  
/path/to/yoursite/public_html/backend/geeklog.rdf  
/path/to/yoursite/public_html/images/userphotos/  
/path/to/yoursite/public_html/images/articles/  
/path/to/yoursite/logs/  
/path/to/yoursite/logs/access.log  
/path/to/yoursite/logs/error.log
```

Step 6. Edit

```
/path/to/yoursite/public_html/lib-common.php.
```

Set the `require` path on line 65 to point to your `config.php`, in this case `/path/to/yoursite/config.php`

Step 7. Edit `/path/to/yoursite/config.php`. Most of the configuration in this file is well commented, so make sure that you read the comments completely before you make a change. Most settings of your Geeklog install are controlled from this file, and we will revisit this file later to further customize the install.

The following are the most important steps to get your Geeklog system up and running.

- Set the database connection information: database name, username, password, and host. (lines 49-53)
- Set the path to your Geeklog install. (line 67)
- Set the site url. (line 87)
- Set the site name, slogan, and email address. (line 89-92).

Step 8. Run the database installation scripts at `http://yourgeeklogsite/admin/install/check.php`. Geeklog requires that the Register Globals is activated on your installation of php. For more information about this check out [php.net](http://php.net/registerglobals) (<http://php.net/registerglobals>) Geeklog is fully secure with Register Globals enabled.

Once you have completed these steps you can test your installation by running the following script:

```
http://yourgeeklogsite/admin/install/check.php
```

This will test the permissions for you.

You should now be ready to take your new Geeklog web site for a test drive.

Start by visiting the front page of your site at the domain you specified in the config.php. You should see a default installation of Geeklog, with the following sections: an article detailing default passwords and users names, a user login block, an upcoming events block, a "Who's Online" block, a poll block, a "What's New" block and an "About Geeklog" block.

Basic Geeklog Administration

Login with the username "admin" and the password "password." This will give you access to the administrative area where you can alter the options of the default installation. You should see two new blocks, the administrative functions and the "Are You Secure" security test block. The security test block reminds you to remove the install directory and to change your passwords. This is very important because failing to do either of these things could result in someone gaining administrative access to your new Geeklog site.

The administrative area allows you to control most of the functions of your site. In order to get your site up and running, you should first set up the topics you want to use. It is important to set up the topics before you begin to submit news stories because if you delete a topic, the news stories attached to that topic will also be deleted. Start by choosing the "Topics" link and then adding new topics. If you are only going to need one topic, delete the Geeklog topic, leaving only the "General News" topic.

Adding a new topic is a good introduction to the permissions system used by Geeklog. Geeklog's permissions are similar to UNIX style permissions. For an example of how these permissions work, create a new topic or edit an existing topic. If you have experience with UNIX permissions, the "Access Rights" section of the Topic editing screen should look familiar. Each element in Geeklog, from topics to blocks and stories, has a permission attached to it. This information includes the owner and group associated with the topic and permissions for owner, group, site members, and anonymous users. Permissions to allow viewing and editing can be set by checking the applicable boxes. Unchecking the "Anonymous R" box will prevent users who are not logged in from seeing a topic. This is especially useful if you want to prevent non-registered users from viewing specific content on your site. Anonymous users will not see this topic in the menu and will not be able to submit stories to this topic. In order to prevent anonymous users from accessing the individual stories, you will need to uncheck the "Anonymous R" check box on the stories themselves.

The group associated with a topic is also important. Groups work in a similar manner to UNIX style groups. A user can belong to multiple groups or can be a root

user who can do anything. In the default install, the "admin" user is root, and the "moderator" user is only able to edit stories, links, and events. If you plan to have a large number of users editing content on your site, using groups will make your life a lot easier. The default groups that come with Geeklog are quite complete and probably do not need to be changed unless you have specific needs. When you add a new topic, block, or news story, you should probably leave the default group associated with it, either topic admin, block admin, or story admin.

The admin user is the root user and can edit all information on the site. Check out the "moderator" user for an example of limited access. By default the Moderator can only edit limited pages. This is indicated by the groups to which the user belongs. Checking the "Root" box will give the user root level access, so you do not need to check all boxes for a root user. You can add new users and control the access you give them through this screen. Just a note, the batch add feature does not work without giving write permission for the web server's user to the site folder. This is a bug that the designers will address in future releases.

Another important screen in the administrative area is the "Submissions" page. This screen allows users with edit rights to approve or disapprove submissions before they appear on the site. This may not be true if you have changed the behavior of Geeklog by editing the config.php file to remove queuing submissions, News Stories, Links, and Calendar submissions from users who do not have edit rights. Generally, users' submissions are queued for approval before they appear on the site. The "Moderator" user, for example, would not have his submissions queued because he has write access as a member of the "Story Admin" group.

This is a very important feature for Geeklog because it allows administrators and editors to check over information before it is displayed on the site. In addition to the moderator, users from any domain specified in config.php can submit without going through the queue. This is helpful if Geeklog is used for a company intranet or news portal. You can also enable email notification of submissions by activating it in the config.php. This is useful if you have a low traffic site or do not want to check the Submission screen often to approve submissions.

Managing Basic Content

The default Geeklog installation includes a story and event submission system to get you started. You should be able to see them by accessing the "Submissions" admin page. Try approving the event submission, but leave the news story as it is used in the next example. Choose the "approve" radio button next to the link and submit the form to approve a submission. With any of the submissions you can use the edit link to verify or change the content of the submis-

sion before you approve it.

Editing a story prior to approving it is a good way to see the features of the stories and the editing process. The way Geeklog handles stories is one of its strongest features. When editing a story, you get a preview on the top followed by all of the editable attributes and statistics.

The most important editable areas of the story include a title, topic dropdown, intro text area, full text area, and controls for how and when the story is displayed. The title and intro text area are important because they will be shown first when the news is displayed on the site. A link to the complete text including both the intro and full text is displayed at the bottom of the summary if a full text is provided. The text areas can handle either HTML formatted text or plain text. If you choose plain text, line breaks will be translated into `
` tags and HTML will be converted into HTML entities. If you are not comfortable writing HTML by hand, simply use the plain text option.

Even when submitted as HTML formatted text, all submissions are stripped of non-approved tags. The list of approved tags is displayed below the text areas and can be altered by editing `config.php`. You can also control how Geeklog censors objectionable words. By default Geeklog will replace certain words with `"*censored*"`. This behavior, including the replacement text and the censored word list, can be edited in `config.php`.

The date field is also important because it allows you to schedule submission to appear at a later date. This is very helpful if you do not want to show evidence that you were working on something at 4:00 am or if you would like to time a press release. The draft check box is also helpful in that it allows you to save your work and not publish it.

Geeklog handles images attached to stories well. To add an image to a news story, use the browse button to add the image. Then add a text string to identify where you want it to go in the story. The instructions on how to do this are clearly identified under the upload form. You can change the maximum number of images allowed by editing `config.php`. You can also set Geeklog to resize images if you specify the path to either `imageMagick` or `Netpbm`. This is a more advanced set up and requires installing binaries of either program.

As mentioned previously, the access control section of the story, controls who can see and edit a story. Unchecking the "Anonymous R" check box will prevent anonymous users from viewing a story. Like the "Why Register" block detailed above, you could make a story that details the benefits of registering and only display it to anonymous users. Similar techniques can be used to keep content from non-members of the site. In addition to setting the permissions correctly, you could change the stories mode to "featured" and disable

commenting on it. "Featured" designates the article to show up at the top of the list and use a different display template. There can only be one featured article, so choosing this option will switch the featured flag to that article. You can set an option in `config.php`, to feature the first article in a topic if one is not already defined.

"The way Geeklog handles stories is one of its strongest features."

Another useful feature of Geeklog is its handling of static pages. Static pages are similar to regular web pages but include the Geeklog navigation and can be found with the site's search engine. Static pages are useful for pages such as an F.A.Q. page, "about the site" page, or any other content that would normally be a regular web page. You can add static pages through the static pages admin screen. In addition to the title and HTML content of the page, you can choose whether to put a link to the page in the menu bar, the label or link title, and which sides of the navigation to display. You can copy and paste any HTML into the content area to display on the page. Images used in your static pages can be stored in `/path/to/yoursite/public_html/staticpages/images`, but you must use FTP to put them there and there is no upload feature.

Geeklog Blocks

Once you have set up your topics and gotten a grip on basic administration and permissions, move on to the block administration screen. Blocks are the navigation elements that appear in the left and right columns. They use the same access control as the other elements. There are three types of blocks: Normal HTML, PHP function, and RSS news feed. Two parameters, which side the block is on and the sort order, control the position of the block. Almost every page in Geeklog uses the left column, so this is a good place to keep the most important blocks. The sort order determines in what order they are displayed. You can also decide if you want the block to appear on every page, under a specific topic, or only on the home page. Organizing the blocks on your site and removing the unnecessary ones will help improve the usability of your site and make your site look unique.

For example, you could create a new block to tell anonymous users that they should register. To do this you would create a new block, choose “Normal” from the type dropdown, and uncheck the “Members R” check box in the Access permissions. Put the HTML of your message in the block content text area. Because members do not have read access to the block, it will not be displayed once a user has logged in. The same method can be used to only show a block to registered users or members of a specific group.

In addition to adding static content, you can also add RSS news feeds or the results of a PHP function as a block. RSS is a technology used to syndicate news stories and content between sites and news readers. It provides a standard method to describe the news stories on a site. Adding news from an RSS feed is easy. From the Block admin screen, add a new block, give the block a title and name and choose “Portal Block” from the type drop down. In the “Portal Block Options” section, put in the URL of the news feed. For example, if you would like to show the news from [phpjarchitect](http://www.phpjarchitect.com) on your new site, use <http://www.phpjarchitect.com/phpa.rss>. Geeklog will grab a copy of the news feed and display it with links to the news. Most sites have some form of news feed available, or you can check www.syndic8.com for a directory of RSS news feeds. The RSS parsing engine used by Geeklog can handle all valid RSS forms and is smart enough to only load the RSS feed every hour as to not overwhelm the source of the news feed.

Geeklog also provides an RSS feed of your news stories for others to syndicate. By default, it is available at www.yoursite.com/backend/geeklog.rdf, although this can be changed in `config.php`. This is useful for providing your content to others. You can submit the URL of your newsfeed to www.syndic8.com so others can also access your news. Geeklog’s RSS exporting function uses Geeklog permissions and will not export news stories that are restricted from anonymous users. If you change the name of the RSS file Geeklog exports in `config.php`, make sure that the `/path/to/your/site/public_html/backend/` is writable by the web server so that the new file can be created.

Once you have customized the blocks on your sites, go back to the home page and see your work. Just a note, in some browsers RSS portal blocks may not show up the first time you load the page. If this happens, refresh the page and they should appear.

It is also possible to display the result of a function in a block. This is an easy way to put content in a block without writing a complete plug-in. Make sure you follow the instructions provided and put the function in `lib_custom.php` so they are not replaced when you upgrade.

As an example, let’s make a block that displays a quote of the day. Most Linux systems include the fortune command and `fortune` is also available for other

platforms. Start by writing a simple function in `lib_custom.php`.

```
function phpblock_getFortune ()
{
    //where the binary is located
    $command = "/path/to/fortune";

    // stores results of call in an array
    exec($command, $result_array);

    // format the array to display
    $retval = join ($result_array , "<br>" );

    return $retval;
}
```

Once you have created the function that produces a text string a result, you need to add a new block that calls this function. Do this by going to the block admin screen and adding a new block. Set the new block as a function block, give it a title, and put the name of your function (`phpblock_getFortune` in our case) in the applicable form field. After saving the new block, a random message should display in a block.

It is possible to create more complicated function blocks and access information from a database or remote source. You could even write a self contained web application that exists as a Geeklog block. One limitation is that the content must exist in either the left or right column of the page. To put content in the center area of a page, you must develop a plugin.

Plug-ins

Plug-ins add functionality to the Geeklog system. A wide variety of plug-ins are available. Geeklog’s developers have concentrated on designing the core system and have avoided adding too much functionality to the core itself, opting to keep it clean and easy to understand and navigate. Plug-in developers have created plug-ins to handle a large variety of functions. Plug-ins are available to add forums, file download management, photo galleries, advanced user statistics and more. Plug-ins are available from the main Geeklog site as well as from gplugins.sourceforge.net, squatty.com, and others.

Installing plug-ins in Geeklog is straightforward and should not be a problem if you were able to install Geeklog. The process is usually the same: untar the plug-in, move files into the `public_html` directory, `admin` directory and `plug-in` directory. Then run an installer provided with the plug-in to install any database tables. It is usually a good idea to backup your Geeklog database before installing a new plug-in just to be safe.

Detailed instructions are provided with most plug-ins and developers are usually willing to help answer any questions that may arise. A generic plug-in is available from the main Geeklog site if you are interested in

developing a new plug-in. The framework provides all of the necessary files along with detailed comments on how to access the functions Geeklog.

The generic plug-in framework is a powerful way to quickly develop a plug-in. It includes all of the files necessary for creating the public and admin code as well as the installer functions. A perl script is also included to populate the code with the name of your plug-in. Complete plug-in development, while straightforward, is beyond the scope of this introductory article, but look for a complete article on plug-in development in the future. Also, the documentation included with plug-in framework is very complete and anyone with any experience writing code should have no problem writing a new plug-in.

Template Development

Probably the easiest way to produce a unique Geeklog site is to alter the graphics and color scheme used on the site. For Geeklog, as well as for many other CMS applications, this is called a "Theme." A theme consists of HTML templates, style sheets and images and is stored in the `public_html/layout` directory in a directory named after the theme. Geeklog ships with seven themes and many more are available from the main Geeklog site as well as from squatty.com. It is easy to see how themes work by changing the default theme for your new Geeklog site. You can do this by choosing the "Personalize" link. You can easily change the look of the entire site by choosing another theme from the drop down menu. The list of themes is generated from those in the `/path/to/yoursite/public_html/layout` directory, so adding a new theme is as simple as adding a new folder to that directory. The default theme is defined in the `config.php`, and users can be prohibited from changing themes by disabling user themes in `config.php`.

A quick way to make your new site look unique is to change the main logo and style sheet. If you have not changed from the Xsilver theme that comes with Geeklog by default, the logo can be found at `/path/to/yoursite/public_html/layout/XSilver/images/logo.gif`. Simply replace this graphic with your own gif or jpg. If you change the image size, you will need to edit the image tag in `/path/to/yoursite/public_html/layout/XSilver/header.html`.

Another way to alter the look of the site is to change the CSS style sheet used by the site. Most font and color attributes are defined in `/path/to/yoursite/public_html/layout/XSilver/site.css`. Remember, if you allow users to change themes, you will need to update all available themes to use your new logo and style sheet.

A theme consists of many HTML templates, but the main parts are the style sheet, the main header and footer, the left and right block headers and footers, and the story header and footer. Geeklog's HTML templates

use the open-source "FastTemplate" model and consist of regular HTML and place holders for information. These place holders are designated by a variable name surrounded by parentheses. An example of this designation is the page title defined in the `header.html`.
<title>{page_title}</title>

When Geeklog assembles a page, it creates the HTML of the page on the fly. It first loads the main header, and then assembles the left blocks by wrapping a left block header and footer around the left block content. The Geeklog engine then displays the center content, either stories with story templates, or center blocks templates. Next, the engine assembles the right blocks in similar fashion to the left and then adds the footer.

Editing these templates is a bit tricky if you have not edited HTML by hand, in that it is done without a WYSIWYG editor like Dreamweaver or Frontpage. Because each template makes up a small part of the total page, special care needs to be taken to not create broken HTML. For example the header and footer make up one large HTML table. Neither would display properly alone, but when combined they form valid HTML. The same is true for most template header and footer pairs used in Geeklog.

The best way to get started editing Geeklog's templates is to duplicate one of the existing templates, rename it and explore all of the files. This way you have reference to see an operating template if the one in development is not working properly. Editing your Geeklog templates will make your site unique and stand out when compared to other Geeklog installs.

In Conclusion

Geeklog is a powerful tool to help you develop an attractive and functional web site. The developers are working hard to improve the core engine while plug-in developers are constantly adding functions. According to Geeklog developer Dirk Haun, the 1.3.8 version should be out soon. It will include quite a few changes but most notably it will add new static page functionality, a new center block API for plugins, and an improved "forgot password" function. Even bigger plans are in the works for the 2.0 version. If you develop something new or are interested in contributing to the project, make sure that you sign up for the mailing lists and make your contribution.

About The Author

[?>](#)

Andrew Gray is a freelance application developer and technology consultant with a focus on open-source technology and has been a fan of PHP since version 3. He is currently working for a non-profit world music portal and a network management start up. His web site is <http://grayamerica.com>.

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