The right folder permissions for a website on a Linux server

Say you have a website running on Linux. What are the correct permissions for the folder that contains the HTML, CSS, images, JavaScript files and so on?

This is something that has been bugging me since my day one of web development. In this article I want to sort it out for good.

Prerequisites

The website is stored in a Linux server like Ubuntu, and it is run by a web server like Apache or Nginx. You are the project owner and the sole user responsible for maintaining it.

The site is made of static content like CSS, images, HTML pages as well as some dynamic content generated by the web server on the fly — for example, a PHP script that manages file upload. So the web server needs to read the static content in order to display it to the public, as well as write data into the site folder as instructed by the script files.

Finally, let's pretend your user is called john, the website folder is located in /var/www/my-website.com/ and the web server belongs to the www-data user group.

Set the folder permissions

Your user will be the owner of the website directory and will have full read, write and execute permissions. The web server will be the group owner and initially will have read and execute

permissions, except for some folders where it will have write access. No one else will be allowed to mess around with the whole website directory.

To get started, login into your server and run the four commands below.

1: set your user as the owner

chown -R john /var/www/my-website.com/

This command sets john as the owner of every file and folder inside the directory (-R stands for recursive).

2: set the web server as the group owner

chgrp -R www-data /var/www/my-website.com/

This command sets www-data as the group owner of every file and folder inside the directory. Recursive mode, as above.

3: 750 permissions for everything

chmod -R 750 /var/www/my-website.com/

The third command sets the permissions: read, write and execute (7) for the owner (i.e. you), read and execute (5) for the group owner (i.e. the web server), zero permissions at all (0) for others. Once again this is done on every file and folder in the directory, recursively.

4: new files and folders inherit group ownership from the parent folder

chmod g+s /var/www/my-website.com/

The last command makes all files/folders created within the directory to automatically take on the group ownership of the parent folder, that is your web server. The s flags is a special mode that represents the setuid/setgid. In simple words, new files and directories created by the web server will have the same group ownership of my-website.com/ folder, which we set to www-data with the second command.

When the web server needs to write

If you have folders that need to be writable by the web server, you can just modify the permission values for the group owner so that www-data has write access. Run this command on each writable folder:

chmod g+w /var/www/my-website.com/<writable-folder>

For security reasons apply this only where necessary and not on the whole website directory.

Sources

Server Fault - [What permissions should my website files/folders have on a Linux web server?](#)

Unix & Linux - ['chmod g+s' command](#)

Wikipedia - [chmod](#)