.htaccess
made easy

Learn how to redirect stuff.

Fine-tune site configuration.

Improve site performance.

Strengthen site-security.

Enhance usability.

.htaccess
made easy

A PRACTICAL GUIDE
FOR ADMINISTRATORS,
DESIGNERS & DEVELOPERS

by JEFF STARR

contents

1.0 welcome

2.0 the basics

3.0 essential techniques

4.0 optimizing performance

5.0 improving SEO

6.0 .redirecting stuff

7.0 tighten security

8.0 enhance usability

9.0 .htaccess tricks for WordPress

10.0 even more techniques

Epilogue

- *Sections 2.7 and 10.3 are highlighted for quick reference.*

httpd.conf sidebar menu

chapter 3

essential techniques

.htaccess techniques may vary greatly from site to site, but there are a handful that are useful for virtually any website. From enabling functionality to logging activity, these essential techniques culminate in a "universal" .htaccess starter template.

When beginning a new website, you can streamline production by utilizing a predefined set of "template" files — or "boilerplate" files — that are common to most any site on the Web. Such files include stuff like the robots.txt file, favicons, JavaScript libraries, CSS templates, and so on. The same principle may be applied when configuring a site with .htaccess: some directives are super-useful for most any setup. In this chapter, we'll cover these essential techniques and then combine them into a starter-template designed to kick-start development and speed-up production.


Such as the most-awesome HTML5 Boilerplate: http://html5boilerplate.com/


There's even a jQuery Boilerplate: http://jqueryboilerplate.com/


Boilerplate WordPress Theme: https://htaccessbook.com/o


And of course the .htaccess "boilerplate", aka the "starter" file (requires login): https://htaccessbook.com/members/

3.1 Enable mod_rewrite

As discussed in Chapter 2, certain servers may not have **mod_rewrite** enabled by default. The rewrite module is required for rewriting (redirecting) URLs from one page to another. To ensure that **mod_rewrite** is enabled on your server, install the temporary maintenance page and visit your site in a web-browser. The maintenance page requires **mod_rewrite** to work, so if you see the "We'll be right back..." message, that means you're good to go for URL-rewriting. If it's not working, then add the following line to the root .htaccess file:

```
<IfModule mod_rewrite.c>
      RewriteEngine On
</IfModule>
```

To test that it's working, revisit the maintenance page.

3.2 Enable symbolic links

You'll notice in the .htaccess starter-template that there are several listed values for the "`Options`" directives, located near the top of the file. These options are used to configure certain features, such as CGI, SSI, and symbolic links, or "symlinks" if you're nasty.

Symbolic links are used to integrate external directories into the filesystem. By default, files and directories not strictly beneath the "`DocumentRoot`" (i.e., the web-accessible root-


Apache docs for mod_rewrite:
https://htaccessbook.com/p


If things aren't working, see section 10.2 and 10.3 for troubleshooting and how to log mod_rewrite activity.


Learn more about the site-maintenance technique in section 6.3.


Apache docs on symbolic links:
https://htaccessbook.com/r

httpd.conf
AllowOverride & FollowSymLinks

As discussed, for symbolic links to work, Apache must be given explicit permission. The .htaccess method makes use of the Options directive, which itself must be enabled from within the httpd.conf file. Example:

```
<Directory "/var/www/html">
        AllowOverride Options
</Directory>
```

For performance considerations, it is important to only enable `AllowOverride` in the specific directory in which it is required.

While working with the httpd.conf file, we may go ahead and enable symbolic links from that location, rather than via .htaccess. Just add this to your httpd.conf file:

```
<Directory "/var/www/html">
        Options FollowSymLinks
</Directory>
```

directory) is not a part of the Apache filesystem, and thus not configurable via .htaccess.

Apache provides several ways of bringing other parts of the filesystem under the `DocumentRoot`, including "`Alias`", "`ScriptAlias`", and "`ScriptAliasMatch`" directives, as well as via shell-induced symbolic links.

Regardless of which method is used, Apache will follow symbolic links only when given explicit permission, either in httpd.conf or .htaccess. See the blue "httpd.conf" sidebar for more information on using either of these techniques.

To enable symlinks via .htaccess, add the following directive to the target directory:

```
# enable symbolic links
Options +FollowSymLinks
```

If you know that your site won't be using any symbolic links, or if you've enabled them via the main configuration file, feel free to comment-out or remove this directive. In general it's

The `SymLinksIfOwnerMatch` directive may be used in place of FollowSymLinks — either works to enable symbolic links. Read more in the Apache Docs: https://htaccessbook.com/r

Quick tutorial explaining two ways to create symbolic links: https://htaccessbook.com/s

Straight-up post on "How to Create a Symlink": https://htaccessbook.com/t

good practice to disable any functionality that's not needed, but technically it's fine to repeat the `FollowSymLinks` directive. See the blue sidebar for more about httpd.conf.

3.3 Disable index views

By default, Apache will display the contents of any directory that doesn't include some sort of index file. For some directories, this may be a useful for public content, but most of the time it's undesirable. For example, directories that contain sensitive core files, such as WordPress' `/wp-admin/` and `/wp-includes/` — there's no reason to list the contents of these directories for the public.

To disable directory listings for all directories, add this line to the site's root .htaccess file:

```
# disable directory listing
Options All -Indexes
```

To test, visit any directory that doesn't contain an index file. If you need to enable directory listing for some specific directory, create an .htaccess file for it, and add the following lines:

Index of /Pink-Floyd/More

Name	Last modified	Size	Description
Parent Directory		-	
01 - cirrus minor.mp3	15-Jun-2012 20:40	12M	
02 - the nile song.mp3	15-Jun-2012 20:40	7.8M	
03 - crying song.mp3	15-Jun-2012 20:41	8.2M	
04 - up the khyber.mp3	15-Jun-2012 20:41	5.1M	
05 - green is the colour.mp3	15-Jun-2012 20:41	6.8M	
06 - cymbaline.mp3	15-Jun-2012 20:41	11M	
07 - party sequence.mp3	15-Jun-2012 20:41	2.7M	
08 - main theme.mp3	15-Jun-2012 20:41	13M	
09 - ibiza bar.mp3	15-Jun-2012 20:41	7.5M	
10 - more blues.mp3	15-Jun-2012 20:41	5.1M	
11 - quicksilver.mp3	15-Jun-2012 20:42	16M	
12 - a spanish piece.mp3	15-Jun-2012 20:42	2.5M	
13 - dramatic theme.mp3	15-Jun-2012 20:42	5.2M	
Seabirds.mp3	15-Jun-2012 20:42	731K	

By default, Apache displays the contents of directories that don't include an index file.

Error 403 — Forbidden

You don't have permission to access `Requested URL: http://bluefeed.net/Pink-Floyd/More/` on this server..

Apache returns a "403 — Forbidden" response when directory listing is disabled. This prevents scripts, bots, and humans from any meddling.

There are several other "httpd.conf" sidebars throughout the book. Refer to the Table of Contents for more info.

WordPress protects these directories with a blank `index.php` file, which is an alternate way of doing it.

Unless disabled by the web-host. Some hosts disable index-views as an added security measure. Ask if unsure.

In general, it's preferred to configure Apache directives in the `httpd.conf` file to ensure optimal performance.

```
# ENABLE DIRECTORY LISTING
Options All +Indexes
```

As with other `Options` directives, `AllowOverride` must be enabled in the httpd.conf file.

3.4 Specify the default language

Apache makes it easy to control the default language used by different directories. For example, if you provide translated versions of your web pages, each in their own directory, you can set the default language for each with Apache's `DefaultLanguage` directive.

This can be a huge time-saver when working with multilingual sites — no more messing with meta tags to set the language. To specify the default language for the entire site, place the following directive near the top of the root .htaccess file:

```
DefaultLanguage en
```

Here, we're specifying English as the default language using its two-digit abbreviation. This will cascade down the filesystem and apply to all directories and files therein.

As mentioned, the default language may be overridden in specific subdirectories. If we have a subdirectory for a French translation, for example, we would create an .htaccess file

See the blue httpd.conf sidebar on page 26 for basic information about enabling `AllowOverride`.

Note that multiple language variations may be specified like so: `DefaultLanguage el, em, en`

`DefaultLanguage` applies to all files in the directive's scope, which excludes files that have an explicit language extension, such as "`.ch`" or "`.de`", see: https://htaccessbook.com/u

Quick example showing how to override language-defaults for specific file-types: `AddLanguage en .html .css .js`

and add the following line:

```
DefaultLanguage fr
```

See the footer for more information and resources about setting the default language.

3.5 Specify the default character set

It's also possible to specify the default character-set (charset) for all of your HTML and plain-text content. Apache's `AddDefaultCharset` directive may be used to add a default charset parameter to the server-response header. Basically, that just means the server lets the browser know how the content is encoded.

The screenshot at right shows an example of this. First, the request to Google.com is made by the web browser. The server then responds with `UTF-8` as the charset parameter for the `Content-Type` header.

By default, Apache disables `AddDefaultCharset`. If you enable it using the "`On`" value, the default charset is ISO-8859-1. Otherwise, to specify your own default charset, such as UTF-8, add the following directive to the root .htaccess file, preferably somewhere near the top of the file:

```
GET / HTTP/1.1
Host: www.google.com
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.6; rv:12.0) Ge
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*
Accept-Language: en-us,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Cookie: NID=60=CZGVl8Zz7mwHFTSKpQakTKy8MveJ2IllvXM_ekt-E-
Cache-Control: max-age=0

HTTP/1.1 200 OK
Date: Mon, 18 Jun 2012 22:49:05 GMT
Expires: -1
Cache-Control: private, max-age=0
Content-Type: text/html; charset=UTF-8
Content-Encoding: gzip
Server: gws
Content-Length: 25341
X-XSS-Protection: 1; mode=block
X-Frame-Options: SAMEORIGIN
```

The screenshot shows Google.com returning the UTF-8 charset along with the `Content-Type` header.

The scoop about UTF-8: http://www.utf-8.com/

ISO 8859-1 character set overview: https://htaccessbook.com/7d

The charset should be an IANA registered charset value for use in MIME media-types. See https://htaccessbook.com/v

```
AddDefaultCharset utf-8
```

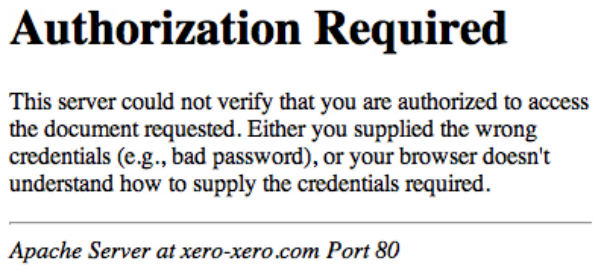
Specifying the default charset via server-response header should override any charset specified in the body of the response, such as those included via `<meta>` tag. If your web pages specify a character set via `<meta>` tags, and you're not hosting any non-HTML content, it's fine to disable `AddDefaultCharset` and just roll with the `<meta>` tags, although Google PageSpeed suggests going the `AddDefaultCharset` route for better performance.

```
AddDefaultCharset Off
```

3.6 Disable the server signature

Unless you have reason to do otherwise, disabling your server signature is a good way to keep sensitive information out of the wrong hands. Why broadcast sensitive server details such as which port you're using, your server name, and possibly other information?

Fortunately this behavior is disabled by default, but some hosts enable it for certain configurations. If you're sure you don't need to display that information, it should be disabled as a basic security measure. As seen in the "Authorization Required" screenshot, server-generated documents include the default server-signature displayed in the footer area.



For more info on setting the default charset with .htaccess, check out: https://htaccessbook.com/w

How To Use HTML Meta Tags https://htaccessbook.com/7e

How to disable (apache's) server signature https://htaccessbook.com/x

How (and why) to disable apache server signature https://htaccessbook.com/y

It's possible to customize the footer-line using the `ServerTokens` directive or by specifying "EMail" as the value for the `ServerSignature` directive.

Unless you have reason to do otherwise, it's best to disable this feature, preferably via the main configuration file, but it's also possible using the following line in the root .htaccess:

```
ServerSignature Off
```

Along with the other essential techniques in this chapter, this directive is included in the .htaccess starter-template included with this book. We'll get to that after seeing two more widely used .htaccess techniques.

3.7 Configure ETags

According to the Yahoo! Developer team, disabling ETags can improve site performance by decreasing response-sizes by around 12 Kilobytes each. There's a long, sordid story that goes with the "what", "why" and "how" of ETags, but let's not get into that here. Rather, let's stay focused on the task at hand: best practices and essential .htaccess techniques. And when it comes to ETags, it all depends on how your website is hosted. If you're hosting your site on a single server, Apache's default configuration should work fine. If, on the other hand, your site is hosted on a network of servers, ETags are probably *decreasing* performance and should be disabled.

The `ServerSignature` directive allows the configuration of a trailing footer-line under server-generated documents such as error-messages, directory-listings, and module output. More details in the Apache Docs: https://htaccessbook.com/z

Yahoo's "Best Practices for Speeding Up Your Web Site": https://htaccessbook.com/10

Steve Souders' "High Performance Web Sites": https://htaccessbook.com/86

Fortunately, Apache makes it easy to override default settings using the **FileETag** directive. For example, to **disable ETags**, add the following line to the root .htaccess:

```
FileETag none
```

Whenever possible, I like to keep core directives — such as `DefaultLanguage`, `ServerSignature`, and `FileETag` — located at the beginning of the .htaccess file. It makes sense mostly from a functional point of view, but really they may be placed anywhere.

3.8 Enable basic spell-checking

Apache has a built-in spelling-check module — ironically named "**mod_speling**" — that can "fix" basic spelling and capitalization errors in the URL request. The Apache documentation really explains it best:

> *[mod_speling] does its work by comparing each document name in the requested directory against the requested document name without regard to case, and allowing up to one misspelling (character insertion / omission / transposition or wrong character).*

For example, let's say a visitor misspells the URL to your site's "About" page, located at `http://example.com/about/`. With `CheckSpelling` enabled, one of the following things will happen:

Some servers require more "convincing" to disable ETags, so if FileETag isn't cutting it, try adding this:

```
<IfModule mod_headers.c>
        Header unset ETag
</IfModule>
```

Read more about FileETag in the Apache Docs: https://htaccessbook.com/11

For more details about how mod_speling works, visit the Apache Documentation: https://htaccessbook.com/12

- Apache can't find a matching document, and so delivers a "document not found" error.
- Apache finds something that "almost" matches the URL request, and redirects to it.
- Apache finds multiple possible matches and presents a list of options to the client.

`CheckSpelling` is disabled by default, but the general consensus is that it's useful for SEO[1]. The following directive is also included in the starter-template, and may be added to the root .htaccess file to enable basic spell-checking on your site[2]:

```
<IfModule mod_speling.c>
      CheckSpelling On
</IfModule>
```

"Mission accomplished," as it were. Further details are available in the Apache Docs.

3.9 Combining Options

Two of the techniques in this chapter — `Indexes` and `FollowSymlinks` — are enabled via the `Options` directive[3]. It's perfectly fine to write them separately, like so:

```
Options -Indexes
Options +FollowSymlinks
```

[1] SEO = Search Engine Optimization
https://htaccessbook.com/2i

[2] If you don't want the server trying to "guess" at which URL to serve, but would like to ensure that all URLs are returned in lowercase format, you may want to try the `CheckCaseOnly` directive:
https://htaccessbook.com/13

[3] The Options directive is part of the Apache core:
https://htaccessbook.com/14

By default, the `Options` directive is set to "`All`", which is overridden by any `Options` values that are more specific. Similarly, when *multiple options* are specified, only the most specific is applied, again by default. The key to specifying multiple values is the plus-sign "`+`" or minus-sign "`-`", which instruct Apache to merge the options or remove them from the `Options` currently in place. This enables us to combine options into a single directive:

```
Options -Indexes +FollowSymlinks
```

In this fashion, as many options as needed may be combined. See the Apache Docs for further information and examples.

3.10 .htaccess starter-template

Any or all of the techniques in this chapter may be applied to your site, but as discussed in the chapter-introduction, they are all general and useful enough to be included in just about any .htaccess file, collectively as a foundation.

To help streamline development, I've combined these essential techniques into an .htaccess "boilerplate", or "starter" template. It's a simple and flexible template to customize and build upon. Anything that's not needed may be removed or commented-out with a hash-symbol "#". I use a similar file, tuned to my particular server setup, for new projects or implementing .htaccess on client sites.

The Options directive is part of the Apache core, as described in the official documentation: https://htaccessbook.com/14

The .htaccess starter-template contains only directives and techniques that are covered explicitly in this book. Log in to the Member's Area for current download (requires login): https://htaccessbook.com/members/

Get the book to read more!

https://htaccessbook.com/store/

> Jeff has long been the go-to guy for all things .htaccess. I always think of .htaccess as pretty much programming voodoo, where saying a chant as you save the file has about the same chance of working as any actual characters I type. But of course that isn't true, and I'm glad Jeff is here to help us through it with this book.
>
> — **Chris Coyier**
> **css-tricks.com**

> I'll probably never master regex or the mysterious ways of the .htaccess file but thanks to Jeff I am a few steps closer to being a little more in control of both! It's all in here, from redirects, to optimisation through to a dedicated section on using .htaccess to super charge your WordPress site. I can't recommend it enough — grab a copy now.
>
> — **Keir Whitaker**
> **keirwhitaker.com**

> If you ever wanted to finally fully understand .htaccess and all its peculiarities, this comprehensive, well-written book will be just what you are looking for.
>
> — **Vitaly Friedman**
> **smashingmagazine.com**

> In .htaccess made easy, Jeff Starr has carried out the difficult task of creating a guide that provides instruction for beginners while acting as a useful reference that advanced users can dip in and out of. This beautiful guide to .htaccess is delivered in Jeff's good-humoured and engaging style, making it readable, accessible, and a must-have for your web development library.
>
> — **Siobhan McKeown**
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