

The Apache Web Server

“”

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The apache web server is the most widely used webserver on the internet. It is a large program with a myriad of configuration options and other tools.

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| <i>Getting Help</i> | Section 1 |
|----------------------------|-----------|

The apache webserver has very detailed documentation which should (eventually) help you out of any tight spots.

<http://httpd.apache.org/docs/2.2/>
official documentation for apache version 2.2

Install documentation for apache2 on a debian style linux

```
■ sudo apt-get install apache2-doc
```

Show options which can be used with apache

```
■ man apache2
```

```
■ man apache ~ (the same, for an older version)
```

| | |
|----------------------------|-----------|
| <i>Installation</i> | Section 2 |
|----------------------------|-----------|

Install apache version 2 on a debian-style linux

```
■ sudo apt-get install apache2
```

```
■ sudo aptitude install apache2 ~ (the same)
```

Test the installation from the webserver computer itself

```
■ firefox 127.0.0.1
```

```
■ firefox localhost
```

See what the status (running, stopped etc) of the webserver is

```
■ sudo apache2ctl status
```

2.1 Lamp Installation

Install Apache2 with the MySQL database server and PHP on a 'debian' system

```
■ sudo tasksel install lamp-server
```

<http://www.ubuntugeek.com/how-to-install-apache2-webserver-with-phpcgi-and-perl-support-in-html>

how to install apache2 with php and cgi but not mysql

Symbolic Links

Make apache serve documents referenced by unix-style symbolic links

```
options followsymlinks
```

Cgi Configuration

Execute all scripts in the folder as cgi scripts

```
ScriptAlias /cgi-bin/ /usr/local/apache2/cgi-bin/
```

Allow cgi execution of '.cgi' and '.pl' in a particular folder

```
<Directory /usr/local/apache2/htdocs/somedir>
Options +ExecCGI
AddHandler cgi-script .cgi .pl
</Directory>
```

All cgi execution of all files in all user cgi-bin folders

```
<Directory /home/*/public_html/cgi-bin>
Options ExecCGI
SetHandler cgi-script
</Directory>
```

A perl script to show all environment variables

```
#!/usr/bin/perl
print "Content-type: text/html\n\n";
foreach $key (keys %ENV) {
    print "$key --> $ENV{$key}<br>";
}
```

4.1 Perl Cgi Support

<http://slashdot.org>

an example of a site using the apache perl module with the web server and perl scripts

Install the perl-cgi module for apache

```
sudo aptitude install libapache2-mod-perl2
```

Create a cgi folder

```
sudo mkdir /home/www/cgi-bin
```

Add to the virtual host configuration

```
ScriptAlias /cgi-bin/ /home/www/cgi-bin/
<Directory /home/www/cgi-bin/>
Options ExecCGI
AddHandler cgi-script cgi pl
</Directory>
```

Test perl cgi support

```
cd /home/www/cgi-bin
sudo vim test.pl
#!/usr/bin/perl -w
print "Content-type: text/html\r\n\r\n";
print "Hello there!\n";

sudo chmod a+x test.pl
lynx http://yourserverip/cgi-bin/test.pl
```

4.2 Php Installation

Install php5 to run with apache

```
sudo aptitude install php5 libapache2-mod-php5
```

Install php4 to run with apache

```
sudo aptitude install php4 libapache2-mod-php4
```

Load the php4 or 5 modules into apache

```
sudo a2enmod php5
```

```
sudo a2enmod php4
```

Test if the php installation worked swimmingly

```
sudo nano /var/www/testphp.php
```

```
add the line '<?php phpinfo(); ?>'
```

```
lynx http://localhost/testphp.php
```

Section 5

Starting And Stopping The Server

Restart the apache server

```
sudo apache2ctl restart
```

Section 6

Configuration Tools

some configuration tools

rapache Graphical configuration

Section 7

Modules

<http://127.0.0.1/doc/apache2-doc/manual/en/mod/index.html>

the location of module documentation when apache2 documentation has been installed in the web-server

<http://www.debian-administration.org/articles/136>

how to enable a module

Show all loaded modules

```
apache2ctl -M
```

```
apachectl -M ~ (the same for older version of apache)
```

```
httpd -M ~ (for old versions of apache)
```

Show which modules are enabled

```
ls /etc/apache2/mods-enabled/
```

Load the php4 module into apache

```
sudo a2enmod php4; sudo apache2ctl restart
```

Section 8

Htaccess Configuration

To check if .htaccess files are actually being considered put junk in them and restart the server.

Allow .htaccess files to have effect

```
AllowOverride all
```

Prevent the directives in '.htaccess' files from having any effect

```
AllowOverride None
```

Global Configuration

Show options for `apache2` (which can be used with `apache2ctl` as well)

```
man apache2
```

Show where the global configuration file is

```
apache2ctl -V | grep SERVER_CONFIG_FILE
```

Show verbose information about the installation

```
apache2ctl -V
```

Edit the `apache2` global configuration file

```
sudo nano /etc/apache2/apache2.conf
```

```
sudo vim /etc/apache2/apache2.conf ~ (for the intrepid)
```

Change the default document root to `'/home/www/'`

```
DocumentRoot /home/www/
```

```
and the following <Directory> tag
```

```
<Directory /home/www/>
```

```
...
```

```
</Directory>
```

Edit the configuration file for a virtual host

```
sudo vim /etc/apache2/sites-available/default
```

Section 10

Aliases

Section 11

Redirections

Place redirections in the `“.htaccess”` file

```
Redirect / http://www.site.com
```

Redirect any requests to `'/msadc'` to `microsoft`

```
redirect /msadc http://www.microsoft.com
```

Redirect any request to a `'cmd.exe'` file to `microsoft`

```
RedirectMatch (.*)\cmd.exe$ http://www.microsoft.com$1
```

11.1 Using Mod Rewrite

http://httpd.apache.org/docs/2.2/rewrite/rewrite_guide.html

solving specific problems using the rewrite module

<http://www.tutorio.com/tutorial/enable-mod-rewrite-on-apache>

how to enable the rewrite module

Redirect filenames ending in `“.txt.html”` to the cgi script `'text2html.cgi'`

```
RewriteRule ^(.*)\.txt\.html$ /cgi-bin/text2html.cgi?$1
```

For example a request to

```
www.server.org/path/file.txt.html
```

Is translated to

```
www.server.org/cgi-bin/text2html.cgi?path/file.txt.html
```

Redirect `'www.m.org'` to `'www.m.org/cgi-bin/test.cgi?'`

```
RewriteRule ^$ /cgi-bin/test.cgi?$1
```

Allow editing of the '.htaccess' file (probably not a great idea)

```
RewriteRule ^htaccess$ /cgi-bin/edit.cgi?../htdocs/.htaccess
```

If the user makes a request to 'www.m.org/htaccess' she will be redirected to 'www.m.org/cgi-bin/edit.cgi?../htdocs/'. If the 'edit.cgi' script allows editing of files, then this is one, extremely insecure way of update the '.htaccess' file.

11.2 Conditional Redirections

Redirect requests from 192.12.131.1 to the page 'about.html' .., `SetEnvIf REMOTE_ADDR 192.12.131.1 REDIR="r"`
`RewriteCond %{REDIR} redir RewriteRule ^/$ /about.html ,,`

Section 12

Denying Access

In some cases it is advisable to disallow any web-access to a file on the web-server.

Deny access from anybody to a web-folder

```
deny from all
```

Forbidd access to all files with a '.cfg' filename extension

```
<Files ~ "\.(cfg)$">  
  order allow,deny  
  deny from all  
</Files>
```

Forbid access for anyone to the file 'config.inc.php'

```
<Files config.inc.php>  
  order allow,deny  
  deny from all  
</Files>
```

Section 13

Allow Access By Ip Address

Allow connections only from the ip address 192.126.12.199 ..,
`order allow deny deny from all allow from 192.126.12.199 ,,`

13.1 Using Basic Authentication

`http://www.htpasswdgenerator.com/apache/htaccess.html`
a simple introduction to the htaccess file

Create a password file for a user 'gruber' to use with basic authentication

```
htpasswd -c /path/to/passwordfile gruber
```

Place the text 'restricted zone' in the title bar of the login box

```
AuthName "restricted zone"
```

Set a password for the file 'private.txt'

```
<Files private.txt>  
  AuthName "Users zone"  
  AuthType Basic  
  AuthUserFile /pub/home/your_login/.htpasswd  
</Files>
```

Require a password to access all files which end with ".cgi"

```
AuthType Basic  
AuthName "Password Protected"  
AuthUserFile /home/users/www/.htpasswd  
<Files ~ "\.x\.cgi$">  
  Require valid-user  
</Files>
```

Require a password to access all files which end with "x.cgi"

```
AuthType Basic
AuthName "Password Protected"
AuthUserFile /home/users/www/.htpasswd
<Files ~ "\.x\.cgi$" >
    Require valid-user
</Files >
```

Require a password to access all files which end with 'cgi' or 'txt'

```
AuthType Basic
AuthName "Password Protected"
AuthUserFile /home/users/www/.htpasswd
<Files ~ "\.(cgi|txt)$" >
    Require valid-user
</Files >
```

Require a password to access an entire folder

```
AuthName "Private zone"
AuthType Basic
AuthUserFile /pub/home/user/.htpasswd
require valid-user
```

This should be placed in a '.htaccess' file in the folder which you wish to protect, or else in a <directory> tag in the global configuration file.

Section 14

Log Files

log file tools

| | |
|------------|--|
| ip2host | Substitute servernames for ip addresses in the log files |
| jdresolv | Alternative to logresolv |
| logstalgia | Access log visualizer |
| visitors | Access log analyser |
| vlogger | Log file rotator |

Show the apache2 error log on a debian-style linux system

```
less /var/log/apache2/error.log
```

Look in configuration files to see where the error log file is

```
grep -sri errorlog /etc/apache2
```

Section 15

Monitoring

apache webserver monitoring tools

```
apachetop
```

Section 16

Load Testing

```
jmeter Load testing and metering
```

Section 17

Other Web Servers

some alternatives to apache

| | |
|------------|--------------------------------|
| mini-httpd | A small server with cgi |
| lighttpd | Small server |
| cherokee | Another one |
| nanoweb | Web server written in php (!?) |
| nginx | |

Notes

Restart apache only if config works

```
alias restart='apache2ctl configtest && apache2ctl restart'
```

List apache2 virtualhosts

```
/usr/sbin/apache2ctl -S 2>&1 | perl -ne 'm@.*port\s+([0-9]+)\s+\w+\s+(\s+
⇒ S+)\s+\((.+):.*@ && do { print "$2:$1\n\t$3\n"; $root = qx{grep
⇒ DocumentRoot $3}; $root =~ s/^\s+//; print "\t$root\n" }';'
```

Restart the web server gracefully

```
apache2ctl graceful
```