

# 1.113.3

## Operate and perform basic configuration of Apache

### Weight 4

Linux Professional Institute Certification — 102

Andrew Eager [andrew.eager@aes-pl.com.au](mailto:andrew.eager@aes-pl.com.au)

Geoffrey Robertson [ge@ffrey.com](mailto:ge@ffrey.com)

Nick Urbanik [nicku@nicku.org](mailto:nicku@nicku.org)

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## 1 Context

### Topic 113 Networking Services [24]

- 1.113.1** Configure and manage inetd, xinetd, and related services [4]
- 1.113.2** Operate and perform basic configuration of sendmail [4]
- 1.113.3** Operate and perform basic configuration of Apache [4]
- 1.113.4** Properly manage the NFS, smb, and nmb daemons [4]
- 1.113.5** Setup and configure basic DNS services [4]
- 1.113.7** Set up secure shell (OpenSSH) [4]

## 2 Objective

### Description of Objective

Candidates should be able to modify simple parameters in Apache configuration files, start, stop, and restart httpd, arrange for automatic restarting of httpd upon boot. Does not include advanced custom configuration of Apache.

### Key files, terms, and utilities include:

**httpd.conf** — main configuration file for Apache

**apachectl** — a program to send commands to a running Apache server, especially the graceful command

**httpd** — the Apache server program

## 3 Resources

### Operate and Perform Basic Configuration of Apache

**Apache home page:** <http://httpd.apache.org>

## 4 Intro to Apache

### Apache

- Apache is a web server (http daemon)
- Default on all Linux distros
- Most popular web server on the internet
- Named after the number of patches to original source code
- Provides both HTTP and HTTPS (SSL) as standard
- Other features added with modules (eg cgi)

## 5 Starting and Stopping Apache

### Starting and Stopping Apache

- Apache can be started:
  - On demand through `inetd` or `xinetd`
  - As a daemon
- Normally started as daemon to reduce connect delay
- Uses standard SysV start/stop semantics
  - Debian, Red Hat: \$ **sudo /etc/init.d/apache start** ←
  - Red Hat/Fedora: \$ **sudo service httpd start** ←
- An alternative is `apachectl`
  - \$ **sudo service httpd graceful** ← actually calls `apachectl`

## 6 apachectl

### apachectl

`apachectl` is a management utility. To use it:

```
$ sudo apachectl <command> ←
```

<i>command</i>	<i>function</i>
<code>start</code>	Start the daemon
<code>stop</code>	Stop the daemon
<code>restart</code>	Restart or start the daemon
<code>fullstatus</code>	Report status of server (requires lynx)
<code>graceful</code>	Gracefully restart the server
<code>configtest</code>	Test config file syntax
<code>help</code>	Display commands

## 7 httpd options

### httpd Options

The `httpd` daemon can be run directly if needed. On Debian the daemon is called `apache`.

<i>Option</i>	<i>Function</i>
<code>-v</code>	Shows version
<code>-V</code>	Shows compile configuration
<code>-h</code>	List all cmd line parameters
<code>-l</code>	List compiled in modules
<code>-L</code>	List config directives
<code>-S</code>	Shows parsed settings (virtual hosts only)
<code>-t</code>	Test config file & doc root
<code>-T</code>	Test config file only

### 7.1 httpd Options with Parameters

#### httpd options with parameters

The following options take parameters:

<i>Parameter</i>	<i>Function</i>
-D <i>&lt;name&gt;</i>	Defines a name for use in <code>IfDefine</code> name
-d <i>&lt;directory&gt;</i>	Defines an alternate server root
-f <i>&lt;file&gt;</i>	Set a new configuration file
-C <i>&lt;"directive"&gt;</i>	Process directive before reading config file
-c <i>&lt;"directive"&gt;</i>	Process directive after reading config file

## 8 Configuring Apache

### Configuring Apache

- Apache originally (a decade ago) used 3 configuration files:
  - `httpd.conf` — Server settings
  - `srm.conf` — File types & doc specs
  - `access.conf` — Security settings
- All configuration is now done in `httpd.conf`
- Normally located in `/etc/httpd/conf`

### 8.1 Site-wide Directives

#### Site-wide Directives

<i>Directive</i>	<i>Function</i>
<code>ServerAdmin</code>	Sets email address for admin
<code>ServerName</code>	Sets the name of the server
<code>DocumentRoot</code>	Sets the root for content served
<code>ServerRoot</code>	Sets root for server files
<code>ServerType</code>	<code>standalone</code> or <code>inetd</code>
<code>MinSpareServers</code>	No of free <code>httpd</code> 's before starting more
<code>MaxSpareServers</code>	No of free <code>httpd</code> 's before killing some
<code>StartServers</code>	No of <code>httpd</code> 's to start
<code>MaxClients</code>	Maximum no of <code>httpd</code> 's to run at once.

## 8.2 Directory block Directives

### Directory block Directives

You can set directives so that they only apply to a particular part of the content directory tree. For example:

```
<Directory /Games>
    AllowOverride None
</Directory>
```

This says that the `.htaccess` file can not override settings for this directory

### 8.3 Access Control

#### Access Control

This directive controls who can access what directories on your site. This is about the only directive that needs to be changed from an 'off-the-shelf' configuration if you don't want external users to access your site.

```
<Location />
    order deny,allow
    deny from all
    allow from 127.0.0.0/255.0.0.0
    allow from .c222
</Location>
```

This says to deny first then allow. The result is that only users in the `.c222` domain and the localhost will be able to access the server.

### 8.4 Other Directives

#### Other Directives

There are a large number of configuration directives. These are grouped as follows:

- Aliases and Redirects
- Default pages
- User Web Directories (site content in a users home)
- MIME types
- CGI files
- Directory Browsing
- Authentication

- Virtual hosts (multiple sites on one host)
- Logging directives

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