

Chapter  
2

# INSTALLATION

*Get on the  
Fast Track!*



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**Objectives**

You will learn:

- C How to procure Apache Server software.
- C How to install Apache Server.
- C How to configure Apache Server.



## 1 Software Acquisition

From the Apache web site select download. There will be a list of mirror sites.

Choose a download site close to you.

http

<a href="http://mirrors.ccs.neu.edu/Apache/dist/httpd/">http://mirrors.ccs.neu.edu/Apache/dist/httpd/</a>
<a href="http://nagoya.apache.org/dist/httpd/">http://nagoya.apache.org/dist/httpd/</a>
<a href="http://www.apache.inetcosmos.org/dist/httpd/">http://www.apache.inetcosmos.org/dist/httpd/</a>
<a href="http://www.ibiblio.org/pub/packages/infosystems/WWW/servers/apache/httpd/">http://www.ibiblio.org/pub/packages/infosystems/WWW/servers/apache/httpd/</a>
<a href="http://www.rge.com/pub/infosystems/apache/dist/httpd/">http://www.rge.com/pub/infosystems/apache/dist/httpd/</a>
<a href="http://apache.mirrorcentral.com/dist/httpd/">http://apache.mirrorcentral.com/dist/httpd/</a>
<a href="http://apache.oregonstate.edu/httpd/">http://apache.oregonstate.edu/httpd/</a>
<a href="http://apache.secsup.org/dist/httpd/">http://apache.secsup.org/dist/httpd/</a>
<a href="http://ftp.epix.net/apache/dist/httpd/">http://ftp.epix.net/apache/dist/httpd/</a>

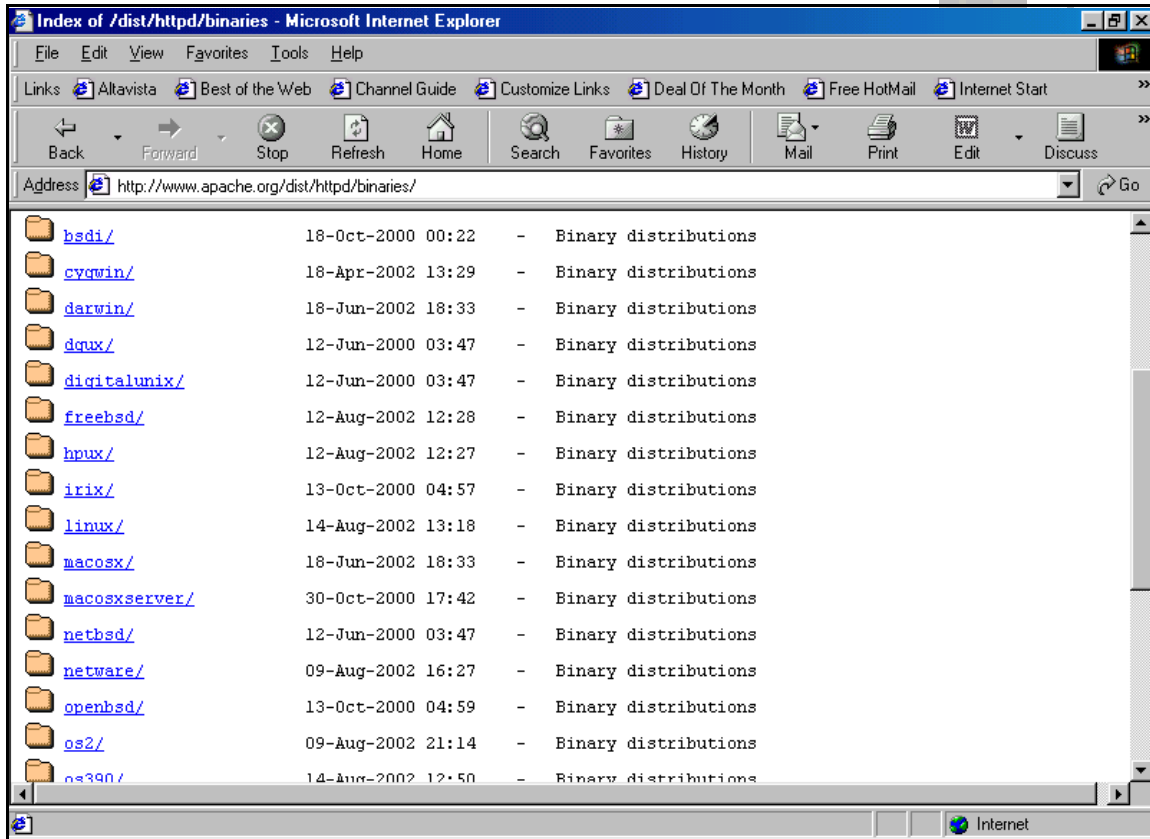
ftp

<a href="ftp://ftp.digex.net/pub/packages/network/apache/httpd/">ftp://ftp.digex.net/pub/packages/network/apache/httpd/</a>
<a href="ftp://ftp.epix.net/pub/apache/dist/httpd/">ftp://ftp.epix.net/pub/apache/dist/httpd/</a>
<a href="ftp://ftp.knowledge.com/pub/mirrors/apache/dist/httpd/">ftp://ftp.knowledge.com/pub/mirrors/apache/dist/httpd/</a>
<a href="ftp://ftp.oregonstate.edu/pub/apachehttpd/">ftp://ftp.oregonstate.edu/pub/apachehttpd/</a>
<a href="ftp://ftp.rge.com/pub/infosystems/apache/dist/httpd/">ftp://ftp.rge.com/pub/infosystems/apache/dist/httpd/</a>
<a href="ftp://ftp.sunsite.utk.edu/pub/apache/dist/httpd/">ftp://ftp.sunsite.utk.edu/pub/apache/dist/httpd/</a>
<a href="ftp://ftp.tux.org/pub/net/apache/dist/httpd/">ftp://ftp.tux.org/pub/net/apache/dist/httpd/</a>
<a href="ftp://mirror.telentente.com/pub/apache/dist/httpd/">ftp://mirror.telentente.com/pub/apache/dist/httpd/</a>
<a href="ftp://www.ibiblio.org/pub/packages/infosystems/WWW/servers/apache/httpd/">ftp://www.ibiblio.org/pub/packages/infosystems/WWW/servers/apache/httpd/</a>
<a href="ftp://apache.secsup.org/pub/apache/dist/httpd/">ftp://apache.secsup.org/pub/apache/dist/httpd/</a>
<a href="ftp://ftp.apache.inetcosmos.org/pub/apache/dist/httpd/">ftp://ftp.apache.inetcosmos.org/pub/apache/dist/httpd/</a>

In addition to these sites, there is a mirrored Apache distribution site and a full listing of mirror sites.

## 2 Distribution Formats

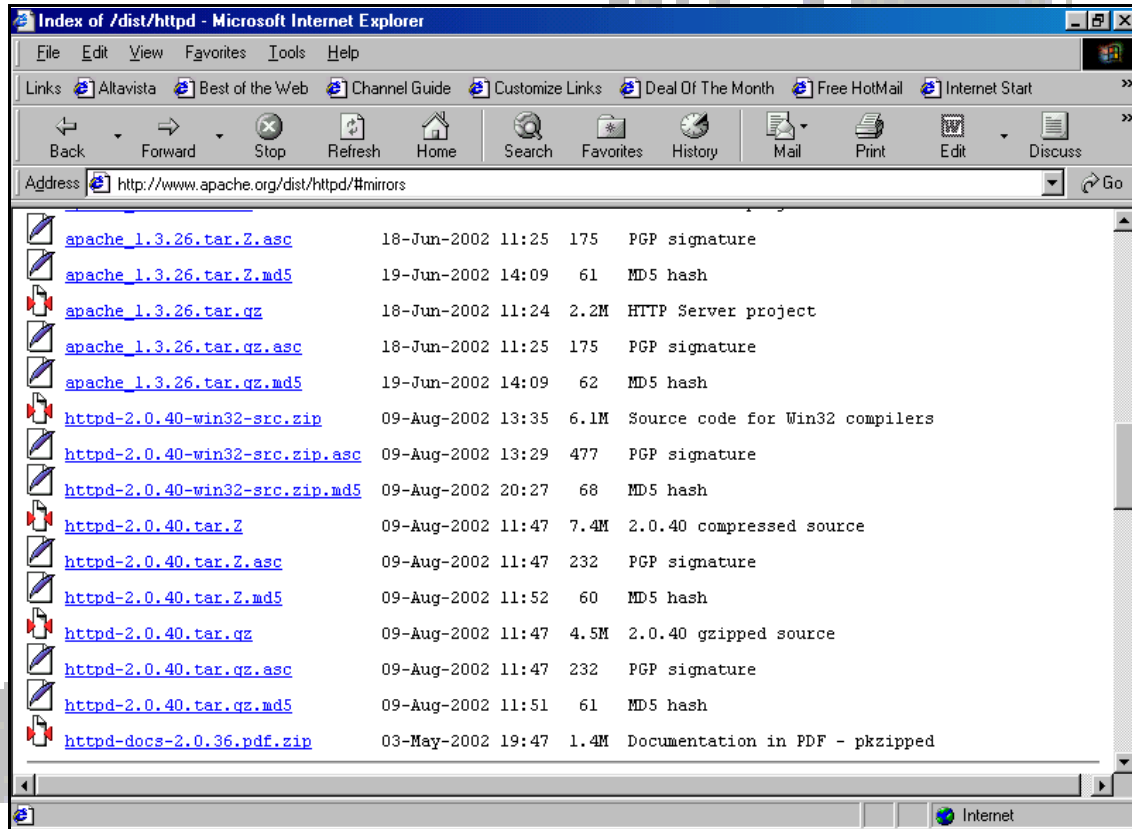
Either a binary distribution of Apache or the sourcecode can be downloaded.



### 3 Unpacking and Building Apache

A package can be unpacked and built by:

- C using tar, gzip, and make.
- C configure to customize Apache.
- C compiling Apache source.



```
Download    $ lynx http://www.apache.org/dist/httpd/httpd-2_0_NN.tar.gz
Extract     $ gzip -d httpd-2_0_NN.tar.gz
$ tar xvf httpd-2_0_NN.tar
Configure   $ ./configure --prefix=PREFIX
Compile     $ make
Install     $ make install
Customize   $ vi PREFIX/conf/httpd.conf
Test        $ PREFIX/bin/apachectl start
```

NN needs to be replaced with the current minor version number.

PREFIX needs to be replaced with the filesystem path under which the server should be installed.

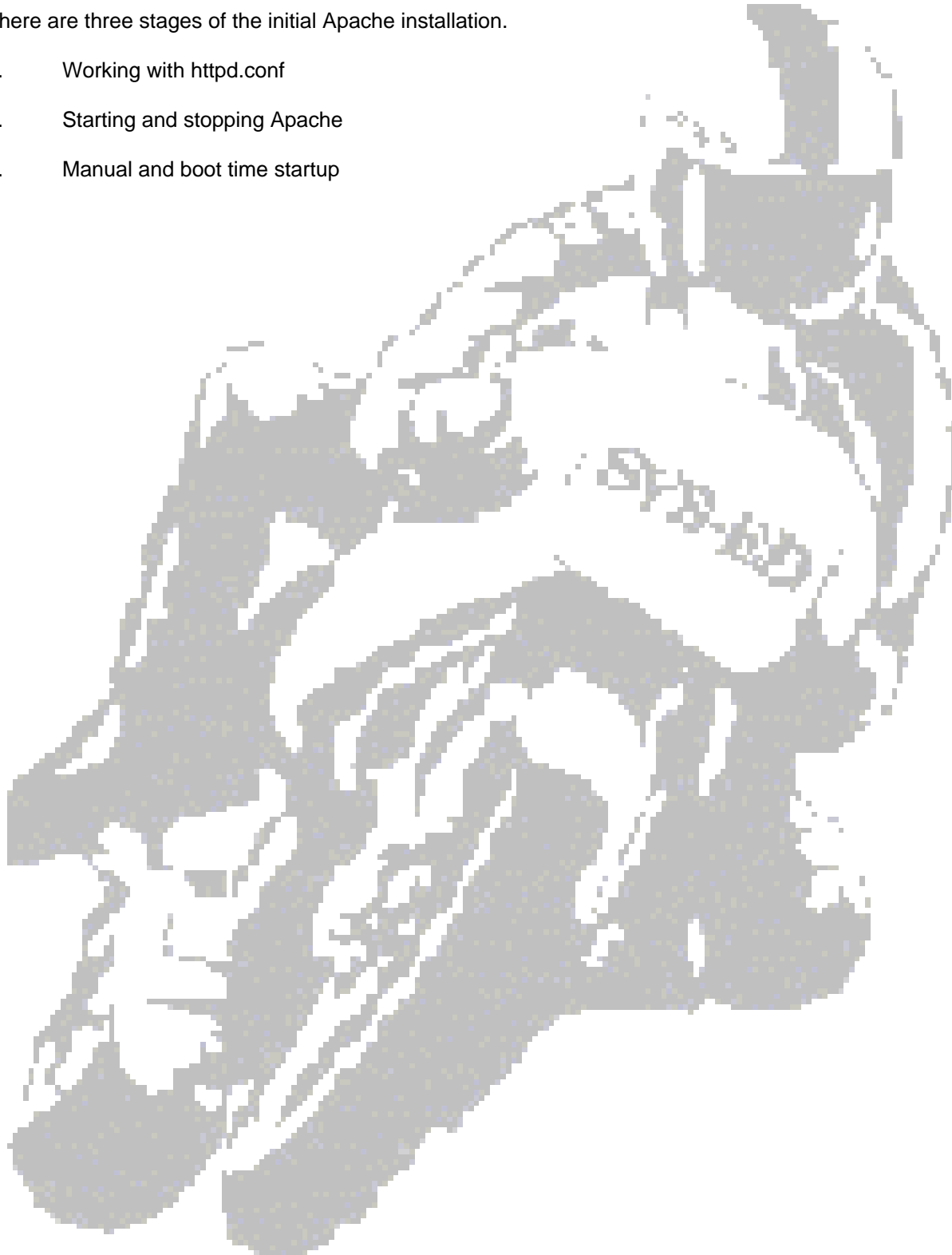
If PREFIX is not specified, it defaults to /usr/local/apache2.

---

## 4 Apache Installation

There are three stages of the initial Apache installation.

1. Working with httpd.conf
2. Starting and stopping Apache
3. Manual and boot time startup



## 5 HTTP: Hypertext Transfer Protocol

httpd is the Apache HyperText Transfer Protocol (HTTP) server program. It is designed to be run as a standalone daemon process. It will create a pool of child processes to handle requests.

```
httpd [ -d serverroot ] [ -f config ] [ -C directive ]
      [ -c directive ] [ -D parameter ]
httpd [ -h ] [ -l ] [ -L ] [ -v ] [ -V ] [ -t ] [ -X ]
```

To stop it, send a TERM signal to the initial (parent) process. The PID of this process is written to a file as given in the configuration file.

Option	Description
-d serverroot	Sets the initial value for the ServerRoot directive to serverroot.  This can be overridden by the ServerRoot command in the configuration file. The default is /usr/local/apache2.
-f config	Execute the commands in the file config on startup.  If config does not begin with a /, then it is taken to be a path relative to the ServerRoot.  The default is conf/httpd.conf.
-C directive	Process the configuration directive before reading config files.
-c directive	Process the configuration directive after reading config files.
-D parameter	Sets a configuration parameter which can be used with <IfDefine>...</IfDefine> sections in the configuration files to conditionally skip or process commands.
-h	Output a short summary of available command line options.
-l	Output a list of modules compiled into the server.
-L	Output a list of directives together with expected arguments and places where the directive is valid.
-S	Show the settings as parsed from the config file (currently only shows the virtualhost settings).
-t	Run syntax tests for configuration files only.  The program immediately exits after the syntax parsing with either a return code of 0 (Syntax OK) or return code not equal to 0 (Syntax Error).  If -D DUMP_VHOSTS is also set, details of the virtual host configuration will be printed.
-v	Print the version of httpd , and then exit.

Option	Description
-V	Print the version and build parameters of httpd, and then exit.
-X	Run httpd in debug mode. Only one worker will be started and the server will not detach from the console.

The following FILES are used:

```
/usr/local/apache2/conf/httpd.conf  
/usr/local/apache2/conf/mime.types  
/usr/local/apache2/conf/magic  
/usr/local/apache2/logs/error_log  
/usr/local/apache2/logs/access_log  
/usr/local/apache2/logs/httpd.pid
```

## 6 apachectl

apachectl is the Apache HTTP server control interface.

apachectl command [...]

apachectl is a front end to the Apache HyperText Transfer Protocol (HTTP) server. It is designed to help the administrator control the functioning of the Apache httpd daemon.

If a Apache installation uses non-standard paths, it will be necessary to edit the apachectl script in order to set the appropriate paths to the PID file and httpd binary.

The apachectl script returns:

- C a 0 exit value on success.
- C >0 if an error occurs.

The command can be any one or more of the following options:

Option	Description
start	Start the Apache daemon. Gives an error if it is already running.
stop	Stops the Apache daemon.
restart	Restarts the Apache daemon by sending it a SIGHUP.  If the daemon is not running, it is started.  This command automatically checks the configuration files via configtest before initiating the restart to make sure Apache doesn't die.
fullstatus	Displays a full status report from mod_status.  For this to work, it will be necessary to have mod_status enabled on the server and a text-based browser such as lynx available on the system.  The URL used to access the status report can be set by editing the STATUSURL variable in the script.
status	Displays a brief status report. Similar to the fullstatus option, except that the list of requests currently being served is omitted.

Option	Description
graceful	<p>Gracefully restarts the Apache daemon by sending it a SIGUSR1.</p> <p>If the daemon is not running, it is started. This differs from a normal restart in that currently open connections are not aborted.</p> <p>A side effect is that old log files will not be closed immediately. This means that if used in a log rotation script, a substantial delay may be necessary to ensure that the old log files are closed before processing them.</p> <p>This command automatically checks the configuration files via configtest before initiating the restart to make sure Apache doesn't die. On certain platforms that do not allow USR1 to be used for a graceful restart, an alternative signal may be used (such as WINCH). <code>apachectl graceful</code> will send the right signal for the platform.</p>
configtest	<p>Run a configuration file syntax test. It parses the configuration files and either reports Syntax Ok or detailed information about the particular syntax error.</p>
help	<p>Displays a short help message.</p>