In this chapter:

Chapter 5

Running Apache

/O, /Ot Minimize execution speed (default)
— Microsoft Visual C/C++ documentation,
"Environment and Tools," p. 531

Now that we have discussed in detail how Apache has been built and configured, it is time to actually run it. In this short chapter, we present the third reference part: the available command-line options of both the Apache daemon program and the Apache control program.

5.1 Command-Line Reference

5.1.1 Apache Daemon Program

This section presents a complete reference to the command line of the Apache daemon program. Because we built Apache with "`--target=apache`" in Chapter 3 on page 37, the Apache program is named `apache`. By default, it is usually called `httpd` for historical reasons. The command line has the following general structure:

```
$ apache [ option ... ]
```

The following *option*s are available on the Apache command line.

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- **-R *libexecdir*** DSO Runtime Path

  This option is available only if Apache was built with the `SHARED_CORE` rule enabled, which forces the Apache core code to be placed into a Dynamic Shared Object (DSO) file. By default, this file is searched in a hard-coded path under `ServerRoot`. Use this option if you want to override the default.

- **-d *serverroot*** Server Root Directory

  This option sets the initial value for the `ServerRoot` directory to *serverroot*. It can be overridden by the `ServerRoot` directive in the configuration file. The default is `/usr/local/apache`.

- **-f *configfile*** Server Configuration File

  This option executes the commands in the file *configfile* on start-up. If *configfile* does not begin with a slash character ("`/`"), then it is taken to be a path relative to `ServerRoot`. The default is `conf/httpd.conf`.

- **-C *directive*** Extra Configuration Directive Prolog

  This option processes the configuration *directive* before reading the configuration files.

- **-c *directive*** Extra Configuration Directive Epilog

  This option processes the configuration *directive* after reading the configuration files.

- **-D *parameter*** Define a Configuration Parameter

  This option sets a configuration *parameter* that can be used with <`IfDefine`> sections in the configuration files to conditionally skip or process commands.

- **-h** Output Help Page

  This option outputs a short summary of available command-line options.

- **-l** Output List of Built-in Modules

  This option outputs a list of modules compiled into the server.

- **-L** Output List of Implemented Directives

  This option outputs a list of directives together with expected arguments and places where the directive is valid.

- **-S** Show Virtual Host Settings

  This option shows the settings as parsed from the configuration file (currently, it shows the only virtual host settings).

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- **-t** Test Configuration Contents

  This option runs syntax tests for the configuration files only. The program immediately exits after this syntax parsing, with either a return code of 0 (syntax OK) or a return code not equal to 0 (syntax error).

- **-X** Run in Single-Process Mode

  This option runs in single-process mode, for internal debugging purposes only; the daemon does not detach from the terminal or fork any children. Do *not* use this mode to provide ordinary web service.

- **-v** Output Version Information

  This option prints the version of Apache and then exits.

- **-V** Output Version and Build Information

  This option prints the version and build parameters of Apache and then exits.

5.1.2 Apache Control Program

For convenience, an optional front end named `apachectl` (for "Apache Control") exists that can be used for easy starting, restarting, and even stopping of Apache. This script has the following general command-line structure:

```
$ apachectl [ command ... ]
```

The following *command*s are available on the Apache control command line:

- **start** Start Apache

  This command starts the Apache daemon and gives an error if it is already running.

- **stop** Stop Apache

  This command stops the Apache daemon.

- **restart** Restart Apache

  This command restarts the Apache daemon by sending it a `SIGHUP`. If the daemon is not running, it is started. The command automatically checks the configuration files via `configtest` before initiating the restart to make sure Apache doesn't die.

- **fullstatus** Display Status

  This command displays a full status report from `mod_status`. For it to work, you must have `mod_status` enabled on your server and a text-based browser such as `lynx` available on your system. The URL used to access the status report is `/server-status`.

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status — Display Status

This command displays a brief status report. It is similar to the `full-status` command, except that it omits the list of requests currently being served.

graceful — Graceful Restart Apache

This command gracefully restarts the Apache daemon by sending it a `SIGUSR1`. If the daemon is not running, it is started. This procedure differs from a normal restart in that currently open connections are not aborted. A side effect is that old log files are not closed immediately. Consequently, if this command is used in a log rotation script, a substantial delay may be necessary to ensure that the old log files are closed before processing them. The command automatically checks the configuration files via `configtest` before initiating the restart to make sure Apache doesn't die.

configtest — Test Configuration

This command runs a configuration file syntax test. It parses the configuration files and reports either "`Syntax Ok`" or detailed information about the particular syntax error.

help — Display Help Page

This command displays a short help message.

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