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## thttpd - tiny/turbo/throttling HTTP server



[Fetch the software.](#) [Release notes.](#)

thttpd is a simple, small, portable, fast, and secure HTTP server.

IPv6-Ready

### Simple:

It handles only the minimum necessary to implement HTTP/1.1. Well, maybe a little more than the minimum.

### Small:

See the [comparison chart](#). It also has a very small run-time size, since it does not fork and is very careful about memory allocation.

### Portable:

It compiles cleanly on most any Unix-like OS, specifically including FreeBSD, SunOS 4, Solaris 2, BSD/OS, Linux, OSF.

### Fast:

In typical use it's about as fast as the best full-featured servers (Apache, NCSA, Netscape). Under extreme load it's much faster.

### Secure:

It goes to great lengths to protect the web server machine against attacks and breakins from other sites.

It also has one extremely useful feature ([URL-traffic-based throttling](#)) that no other server currently has. Plus, it supports [IPv6](#) out of the box, no patching required.

### More specific info:

- [HTMLized man page](#)
- [thttpd notes](#)
- [options guide](#)
- [auxiliary programs](#)
- [web server comparisons](#)
- [other web resources](#)

How do you pronounce thttpd? Ask Bloom County's Bill the Cat, as seen in [User Friendly](#), the excellent geek-positive comic. You can also use this fun Bill-based thttpd badge on your own web site if you like. It was drawn by Anatole Shaw.



Are you using thttpd? There's a mailing list: [thttpd@mail.acme.com](mailto:thttpd@mail.acme.com) ([thttpd-request@mail.acme.com](mailto:thttpd-request@mail.acme.com) to subscribe, [archived here](#)). And an announcements-only mailing list: [thttpd-announce@mail.acme.com](mailto:thttpd-announce@mail.acme.com) ([thttpd-announce-request@mail.acme.com](mailto:thttpd-announce-request@mail.acme.com) to subscribe). Anything sent to the announcements list also goes to the regular list, so you don't need to be on both.

Also if you have any nice quotes I can use, send 'em in. For instance:

*"I got thttpd compiled and running on the web server at work in no time at all, or close enough for my purposes, and I really like it, and when I told the rest of the crew what the footprint was they almost coughed up their lunches."*

-- Martin Kelly

*"Our load averages have dropped significantly since we moved our graphics to thttpd."*

-- Randy Cosby

*"i just grabbed thttpd and set it up on my personal box to test it out, and i am amazed at how quick and easy that was. i'm a hardcore apache expert but this was just phenomenally simple. very refreshing."*

-- Jon Drukman

*"I switched to thttpd on my underpowered server about 20 minutes after downloading it."*

-- Daniel Quinlan

*"I just wanted to let you know that I installed thttpd and it works really great. The server is a P3/500 w/512 megs running FreeBSD 3.3 and when it was using apache it was at about 11 load average and kept throwing connections and errors. Now it runs dandy with thttpd and the load average is between 0.1 and 0.2. The thttpd process is at about 200 megs size and the system is usually 60% idle. The machine serves about 400 simultaneous connections (more on peak hours)."*

-- Petru Paler

*"I just upgraded my htdocs development box from apache to thttpd. I was looking for a httpd that would use less memory - I found one that was faster and easier to use as well :)"*

-- David Brownlee

*"We are using thttpd to serve all of our images. We are a huge traffic site. We moved about a month ago from a barebones apache. The load on our web servers dropped dramatically, as did the memory usage! woohoo!"*

-- Jeremy Brand

*"Configuration: Athlon 700, 800MB RAM. Before: Apache, load=170, machine unusable, capped at 4Mbits, SWAPPING. After: thttpd, load=.09 (yes, that's point-zero-nine), happy at 8Mbits, only using ~300MB of RAM."*

-- Jon Oringer

Some major sites that are running or have run thttpd:

- [demon.net](http://demon.net), Demon Internet, a large UK ISP
- [global.net.uk](http://global.net.uk), Global Internet, another large UK ISP
- [bluelight.com](http://bluelight.com), Kmart's web site
- [img.gamespot.com](http://img.gamespot.com), GameSpot's image server
- [download.napster.com](http://download.napster.com), Napster's download server
- [stephenking.com](http://stephenking.com), Stephen King's official site
- [mtv.com](http://mtv.com), It's not TV, it's eMpTV.
- [news.excite.com](http://news.excite.com), one of Excite's internal servers
- [valueclick.com](http://valueclick.com), a banner ad broker
- [sealandgov.com](http://sealandgov.com), The Sovereign Principality of Sealand
- [The Drudge Report](http://TheDrudgeReport)
- [garfield.com](http://garfield.com), the comic strip
- [images.paypal.com](http://images.paypal.com)

On Red Hat Linux systems you can use RPM to install thttpd, like so:

```
cd /usr/src/redhat/SOURCES
wget http://www.acme.com/software/thttpd/thttpd-2.29.tar.gz
```

```
rpm -ta thttpd-2.29.tar.gz
rpm -i /usr/src/redhat/RPMS/i386/thttpd-2.29-1.i386.rpm
```

#### New in version 2.29:

- Allow CGI to handle HTTP methods besides GET/HEAD/POST.

#### New in version 2.28:

- Improvements to the FreeBSD startup script. (Craig Leres)
- Minor portability tweak in mmc.c.
- Fix to buffer overrun bug in htpasswd. Reported by Alessio Santoru as CVE-2017-17663.

#### New in version 2.27:

- Stats syslog changes from LOG\_INFO to LOG\_NOTICE.
- Use memmove() for self-overlapping string copies instead of strcpy().
- Couple of subroutine name changes for consistency.

#### New in version 2.26:

- Ignore ECONNABORTED on accept().
- Correctly implemented the config-file option change from "nosymlink" to "nosymlinkcheck", which was supposedly done in version 2.24.
- Removed mailto: link from default index page.
- Allow CGIs to provide both Location and Status headers. (A. Skrobov)
- Better logic for figuring out CGI SERVER\_NAME environment variable. (Oleg)
- Updated for clang, and general cleanup.

#### New in version 2.25b:

- Move fdwatch initialization before the chroot, so that /dev/poll can work.
- Multiple fdwatch cleanups and fixes (Adam Zell).

#### New in version 2.25:

- Prohibit "Host: ." and "Host: .." (David Leadbeater).
- Don't free memory prematurely on SIGUSR1 (A.D.F.).
- Use the specified charset in directory listings and errors (Jonas Ohlsson).
- Lowered THROTTLE\_TIME from 60 seconds to 2 seconds, plus more aggressive computation of sending rate, to improve throttle reaction time (E Frank Ball).
- Added code to redistribute the throttled bandwidth fairly among the currently sending connections.
- Some more throttling changes that smooth things out a lot.
- Added an experimental limitation on the number of simultaneous CGIs.
- Chown the log file when starting as root, so that it can later be re-opened when running as nobody (or whatever user you configure). Also tweak the logfile pathname so that it still works inside a chroot tree.
- Make sure URL paths begin with a slash.
- Generate multiple MIME encodings in the correct order, and with the correct separator.
- Ignore EINTR on read() and write().
- Fix error in httpd\_read\_fully() and httpd\_write\_fully() that could cause incorrect data to be read or written (Daniel Jensen).

- Don't attempt to double-free a file descriptor if a connection times out while it is paused for throttling.
- Save and restore errno in signal handlers.
- The non-local referer check is no longer fooled by URLs with query strings.
- Simplified handling of HAVE\_INT64T (Trisk). If this causes problems, e.g. if there are still systems which don't have "long long", we can back out the change.
- Keep a list of free connection structs, instead of doing linear search to find a free one (Adam Zell).
- Added config.h option FLUSH\_LOG\_EVERY\_TIME - if it's turned off, the log does not get flushed after each request (Adam Zell).
- Multiple robustness improvements to the fdwatch module (Adam Zell).
- Added /dev/poll support to fdwatch (Adam Zell).
- Automatically add no-cache control header on error responses.

#### New in version 2.24:

- Added a bunch of MIME types.
- Fix minor problem with returning unknown protocol on some errors.
- Changed the config-file option for disabling symlink checking from "nosymlink" to "nosymlinkcheck" to make its function clearer.
- Allow blank lines in the config file.
- Handle more than one SIGHUP and SIGUSR2 (Cameron Gregory).
- Slight change to handle\_newconnect() to better deal with unexpected errors from accept(), such as running out of file descriptors (Alex Keahan).
- Added optional minimum rate to throttles.
- Stats syslog messages downgraded from LOG\_NOTICE to LOG\_INFO.
- Use unsigned short consistently for port number.
- Prohibit slashes in the Host: header (Marcus Breiing).
- Added a -dd data\_dir flag and corresponding config-file option.
- Got rid of the old timer-based zombie process reaper, replacing it with a SIGCHLD handler.
- Changed the idle connection checking from using a separate timer for each connection to using a single timer that checks all active connections.
- Correction to missing-slash directory redirect with query string.
- Added a watchdog alarm handler that forces a core dump if thttpd stops running its timers for too long.
- Don't send Content-Length header on 304 Not Modified responses.
- Allow user-agent log entries to be up to 200 characters long, instead only of 80.
- Fixed buffer overflow bug in defang().
- Re-arranged the order of calling de\_dotdot() so that it doesn't get applied to query strings.
- Some fixes for the syslogtcern script (paul fox).
- Changed configure script to use "gcc -dumpversion" instead of "gcc --version" (Ed Goforth).
- Changed most uses of \r and \n to \015 and \012 (Jens Bauer).
- In ssi.c, lack of PATH\_INFO is now non-fatal (David Phillips).
- Some improvements to fdwatch (David Burgess).

#### New in version 2.23:

- Added some Microsoft MIME types (Kevin Day).
- Switch httpasswd from using tmpnam to mkstemp.
- Use memmove instead of memcpy.
- Fix to de\_dotdot (Mark Dunlap).
- Corrected some uses of size\_t and off\_t.
- Rewrote figure\_mime() to do binary search. If you're updating an existing installation, you'll need to do a ./configure ; make clean ; make.

- Removed the x- from gzip and compress in mime\_encodings.txt.
- Added rudimentary option to set cache-control headers.
- Simplified the IPv6 ifdefs.
- Allow filenames with ? in them (Cameron Gregory).
- Some improvements to the mmap cache - added a "panic mode" if you run out of address space, added DESIRED\_MAX\_MAPPED\_BYTES config.h option.
- Lowered OCCASIONAL\_TIME from five minutes to two minutes.
- Added include of config.h in mmc.c (A.D.F.).
- Fixed compile nit in syslog.c (Peter Harris).
- Added configure test for int64\_t.
- Fix CGI variable AUTH\_TYPE (Alexandre CHERIF).
- Slight correction to SIGUSR1 handling.
- Split clear\_connection() into two routines, one which sends a possible buffered response and the other which ignores such (David Burgess).
- Remove ./ in de\_dotdot() (Dana Dahlstrom).
- Shortened LINGER\_TIME from two seconds to half a second.
- Changed some write() calls to httpd\_write\_fully(), as suggested by Neale Pickett.
- Changed the non-mmap() read() call in mmc.c to httpd\_read\_fully(), as suggested by Cameron Gregory.
- Added .xhtml and .xht to mime\_types.txt (suggested by Dave Hodder).
- Added index.xhtml and index.xht to INDEX\_NAMES (suggested by Dave Hodder).
- Fix to error messages for CGI.
- Got rid of the custom-jiggered syslog.c, now we just use the standard system version. Also added a paragraph in the man page about the syslogd flags needed to make syslogging work from inside a chroot tree.
- Fixed problem involving a connection going into lingering-close mode multiple times (Cameron Gregory).
- Added a bunch of checks to the fdwatch package to make it more robust.
- Added some more checks for timers getting over-written.
- On generated pages which set BGCOLOR, also set TEXT LINK and VLINK.
- Added some OpenOffice MIME types (Dave Hodder).
- Fix to kqueue code (Alexey Dokuchaev, Michal Suszycki, qhwt@myrealbox.com).

#### New in version 2.22:

- Fix for the garbage characters after POST data hack.
- Fix for poll() problem.
- Some fixes for unusual cases in the CGI file-descriptor shuffling (Michael Gorlick).
- Lowered the default DESIRED\_MAX\_MAPPED\_FILES from 2000 to 1000.
- On SysV use sigset() instead of signal() (David Koblas).
- Set up accept filters after listen() (Kris Spinka).
- Preserve query string when doing a missing-slash directory redirect.
- Fixed off-by-one error on EWOULDBLOCK (Sascha Schumann).
- Special-case logging to '-' as stdout (Matt Armstrong).
- Fix to poll() error handling (Sascha Schumann).
- Decreased memory use on kqueue() systems (Sascha Schumann).
- Added -s to usage line (Pavel Janík).
- Fix for security hole that exposed contents of .htpasswd in some cases (noticed by zeno@cgisecurity.com).
- Allow (and ignore) extra fields in .htpasswd files.
- Added some calls to shutdown() in strategic places.
- Added a timer-kill of the CGI interpose input and output process. These processes also now close the listen fd(s).
- Fixed rare file descriptor leak, when we get an unknown sockaddr family (George Schlossnagle).

- Zero the kqueue data structures in fdwatch before use (Jonathan Lemon).
- Put virtual hostname in non-local referer syslog (Craig Leres).
- Added a P3P server privacy header setting (Henrik Schack Jensen).

#### New in version 2.21b:

- Fix for lingering-close problem from Taner Halicioglu - on some systems, it was hanging the server.

#### New in version 2.21:

- ANSI compile nits in timers.h and libhttpd.c. I thought I had already fixed these.
- Two small fixes to USR1 signal handling. Should be more reliable now.
- Fixed the "throttle sending count was negative" bug.
- 503 Service Overloaded errors were not getting logged.
- New throttling syslogs.
- Tuning tweaks to throttling, it's much more accurate now.
- Tweak to the sample log-rotation script.
- Allow trailing whitespace on the HTTP request line - it violates the HTTP/1.1 spec, but it's harmless, and at least one client (TiVo's v1.3 http\_get [not related to my own http\_get]) generates it.
- Changed the capitalization on some HTTP headers we generate, to interoperate with a client (yes, the same one) that is too stoopid to do case-insensitive matching.
- Pass Accept-Language headers to CGIs.
- Make log entries at the end of a connection instead of the beginning, so that the byte count is correct.
- Off-by-one error in base-64 decoding (Archie Cobbs).
- Updated man page throttling section for the wildcard change in 2.17.
- Couple of fixes for top-level redirection, from KIKUCHI Takahiro.
- New option to hide thttpd's version, from Paul Fox.
- Changed include of <sys/time.h> to <time.h>.
- Fixed cross-site scripting bug relating to the built-in error pages.
- Changed the mmap cache to use ctime instead of mtime, to better handle permissions changes.
- VHOST\_DIRLEVELS patch, from Vadim Belman.
- ssi missing-header bugfix, from Marcel Telka.
- Hack to deal with garbage characters after POST data generated by some browsers.
- Added -g global passwd file option, suggested by Craig Leres.
- Robustness and performance improvements for mmap cache, from Evan Jones.
- kqueue support, from Niels Provos.
- If both select and poll are available, always use poll.
- Don't syslog "Connection reset by peer" errors.
- If the logfile is "/dev/null", don't bother logging at all.
- The mmap cache now tries to keep the total number of maps below a configurable parameter. See [DESIRED\\_MAX\\_MAPPED\\_FILES](#).
- Fix for garbled packets causing needless 400 errors, from John Salmon.
- Improved some status-checking and error-reporting.
- Redid the debugging stats syslog messages, and made them show up on a SIGUSR2 as well as by timer.
- Use accept filtering if available.

#### New in version 2.20c:

- Off-by-one error in base-64 decoding (Archie Cobbs).

#### New in version 2.20b:



- Corrected version of Marcel Telka's ssi fix. My bad.

#### New in version 2.20:

- Performance improvements to the timer package via hashing, and double-linking / sorting the lists. Partially based on a suggestion by Michal Ostrowski.
- Performance improvement to the mmap cache package, from Evan Jones.
- Minor Linux fix for open files limit, from Jordan Ritter.
- Fix for null ClientData, which picky compilers didn't like.
- Unknown sockaddr type becomes a non-fatal error, preventing a DOS attack.
- Close extraneous file descriptors on CGI calls, from Russell Dill.
- Security fixes for the external ssi program, from ghandi@dopesquad.net and Wolfgang Rupprecht.
- Fix to make the ssi program elide the HTML comment sequence, from Marcel Telka.
- Red Hat packaging updates from Bennett Todd.
- Throttling fix from Tom Pavel.

#### New in version 2.19:

- Added hack to prevent MSIE 5 from censoring error messages.
- Minor fix to handling of shouldn't-happen error in ls().
- IPv6/Linux fix from Tero Pelander.
- Documented the -D flag.

#### New in version 2.18:

- Fixed URL-encoding of high-bit characters - used in directory listings.
- Made a few more characters come through verbatim instead of %-encoded.
- Couple of minor code cleanups.
- Added some MIME types to support WAP/WML.
- IPv6 fix.
- Made MIME text character-set an option, with iso-8859-1 the default.

#### New in version 2.17:

- A change in the way wildcard matching works - now a single \* only matches strings that don't include a slash. To match entire pathnames including slashes you have to use \*\*.
- On systems with IPv6, automatically bind to both v4 and v6 sockets.
- Slight change to non-local referer checking to handle older browsers.
- Tweaks to some of the error-403 syslog messages.
- Portability tweak for OSF/1.
- Portability tweak for IPv6 systems.
- Fix for ssi.c from Marcel Telka.
- Added charset=iso-8859-1 to text MIME types.
- Added wildcards to redirect.
- Changed symlinks/nosymlinks config options to symlink/nosymlink, to conform to the man page (old style still accepted).

#### New in version 2.16:

- More explicit error pages for 403 Forbidden.
- New section in the manual page explaining how thttpd is picky about file permissions.
- Couple of CGI tweaks from David Chaiken.

#### New in version 2.15:

- Use standard `isxdigit` macro instead of `is_hexit` routine.
- Portability fix for Debian, which lacks `gai_strerror()`.
- Fix for `.htpasswd` authorization, broken by 2.14's custom error pages change.

#### New in version 2.14:

- Fix to non-local referer code - it was trying to dereference a null pointer under some circumstances.
- Fix to If-Modified-Since - some leap year problems.
- Rewrote `match()` - it was using a whole lot of CPU time for patterns with lots of `|`'s, such as those used by the new non-local-referer filtering.
- Fix to host lookup code for `-h` flag.
- Fix custom error pages to work with 401 Unauthorized.
- Removed unused variable.

#### New in version 2.13:

- Portability fix for `fdwatch` on systems with `poll()` but not `select()`.
- Renamed `nph-redirect` to `redirect`, now that `thttpd` does header parsing.
- Always `chdir` to `/` after a `chroot`.
- Some minor de-linting changes.
- Revived code that closes `stdin/stdout/stderr`, after adding a fix in the CGI code to prevent descriptors from getting screwed up.
- Bugfix for CGI header parsing - if the CGI was sending binary data (e.g. images), the result could get truncated or corrupted.
- Disallow `".."` listing of virtual host directory.
- Revised `snprintf` portability fix.
- Rearranged the `hc` initialization so it's all in one place.
- New IPv6 code from KIKUCHI Takahiro.
- New non-local referer filtering code from Craig Leres.
- New custom error pages code from Catalin Ionescu.

#### New in version 2.12:

- Better heuristic for deciding between `select()` and `poll()`.
- Added Red Hat RPM spec file.

#### New in version 2.11:

- Use `poll()` instead of `select()` when favorable.
- Do lazy allocation of part of the connection data structure, to save on memory now that we can have thousands of simultaneous connections.
- Some speed optimizations.
- Added `HTTP_HOST` to CGI environment.
- Bugfix for rare uninitialized variable.

#### New in version 2.10:

- Bugfix for CGI header parsing.
- Call `setlogin()` if it's available.

#### New in version 2.09:

- Never do lingering-close on CGI calls - this fixes the problems some people noticed with large amounts of CGI POST data.



- Better portability fix for numeric timezone.
- CGI header parsing.

#### New in version 2.08:

- Connection read buffers are allocated on demand, lowering typical memory use by a megabyte or so.
- Handle zero-length files better on weird systems.
- URI-encoding of weird characters in index generation.
- Enhancements to periodic stats log message.

#### New in version 2.07:

- Added CGI\_LD\_LIBRARY\_PATH config option.
- Solaris portability fix for numeric timezone change.
- Virtual hostnames get pounded to lower case before getting looked up.
- Fix for TILDE\_MAP\_2 non-existent directories.
- Fix for throttling problem seen on high-traffic sites.
- Added option to defeat explicit symlink checking.

#### New in version 2.06:

- Portability fix for machines which don't have snprintf().
- Bugfix for generated index pages.
- Change order of chroot initialization so that pidfile works.
- Change order of signal initialization so that we don't get a startup HUP.
- Use numeric timezones in log file.
- When vhosting, prepend hostname in log entry.
- Minor install fix.
- Added AUTH\_TYPE CGI variable.
- Fix to TILDE\_MAP\_2.
- Optional multi-level vhost directory indexing.

#### New in version 2.05:

- New el-cheapo virtual hosting feature.
- Assorted bug fixes - non-anchored wildcard matching, truncated CGI output, throttling, authorization cache, daemonization, date-header parsing.
- Option to write pid to a file, re-open log file on SIGHUP.
- Now looks for index files from a list, instead of only index.html.
- Simple config file.

#### New in version 2.04:

- The simple mmap cache added in version 2.01 is now more aggressive, improving performance when a small set of files gets fetched a whole lot.
- Fixed bug in filename translation.

#### New in version 2.03:

- Fix for CGI, broken on Linux by the close-on-exec hack in 2.01.
- Do a setgroups() when root to give up supplementary groups as well as primary group.

#### New in version 2.02:

- SunOS 4 compile fix.

- Fix for occasional SEGV when reading too-large requests.

#### New in version 2.01:

- Mmap cache to improve performance on multiple large downloads.
- 40% CGI performance improvement via the close-on-exec flag.
- Minor optimization to the timers package, no visible effect on performance.
- Send response headers and first load of data as a single packet instead of two packets, which seems to save a network roundtrip time, drastically improving latency.
- CGI programs may now be mode 711 (execute-only).
- Some fixes to 'make install'.

#### New in version 2.00:

- No more 5-second initial read timeout.
- Faster handling of initial connections.
- Periodic stats syslog message.
- Optional logging to a file instead of syslog.
- Misc performance improvements.

#### New in version 1.95:

- HTTP/1.1 support.
- Basic authentication.
- Byte-range serving.
- New config options: [GENERATE\\_INDEXES](#), [LOG\\_UNKNOWN\\_HEADERS](#).
- Bug fixes.

#### New in version 1.90a:

- If-modified-since.
- POST.
- Auto-configure.
- Combined log format.

See also: [micro\\_httpd](#), [js\\_httpd](#), [mini\\_httpd](#), [Acme.Serve](#), [http\\_get](#).  
[ACME Labs](#) / [Software](#) / thttpd

[ACME Labs Webmaster](#) <[webmaster@mail.acme.com](mailto:webmaster@mail.acme.com)>

