
build **passing**

See [httpserver.h](#) for API documentation

Description

httpserver.h is a single header C library for building event driven non-blocking HTTP servers

Supports Linux with epoll and BSD/Mac with kqueue.

Example

```
1 #define HTTPSERVER_IMPL
2 #include "httpserver.h"
3
4 #define RESPONSE "Hello, World!"
5
6 void handle_request(struct http_request_s* request) {
7     struct http_response_s* response = http_response_init();
8     http_response_status(response, 200);
9     http_response_header(response, "Content-Type", "text/plain");
10    http_response_body(response, RESPONSE, sizeof(RESPONSE) - 1);
11    http_respond(request, response);
12 }
13
14 int main() {
15     struct http_server_s* server = http_server_init(8080, handle_request)
16     ;
17     http_server_listen(server);
18 }
```

See full documentation in [httpserver.h](#)

Benchmark

I ran some micro-benchmarks with httpserver.h and NGINX serving a simple Hello, World! The purpose here was just to get a performance reference point, not to try and make any statement of superiority since httpserver.h is not a competitor or replacement for NGINX.

With keep-alive

```
ab -k -c 200 -n 100000 http://localhost:8080/
```

NGINX 74441.26 requests/sec

```
1  Server Software:      nginx/1.14.0
2  Server Hostname:      localhost
3  Server Port:          8000
4
5  Document Path:        /
6  Document Length:      13 bytes
7
8  Concurrency Level:    200
9  Time taken for tests:  1.343 seconds
10 Complete requests:    100000
11 Failed requests:      0
12 Keep-Alive requests:  99052
13 Total transferred:    20995260 bytes
14 HTML transferred:    1300000 bytes
15 Requests per second:  74441.26 [#/sec] (mean)
16 Time per request:     2.687 [ms] (mean)
17 Time per request:     0.013 [ms] (mean, across all concurrent
    requests)
18 Transfer rate:        15262.83 [Kbytes/sec] received
19
20 Connection Times (ms)
21      min  mean[+/-sd] median   max
22 Connect:    0    0  17.8      0   1029
23 Processing:  0    2   8.8      1    148
24 Waiting:    0    2   8.8      1    148
25 Total:      0    3  21.4      1   1150
26
27 Percentage of the requests served within a certain time (ms)
28  50%        1
29  66%        2
30  75%        2
31  80%        2
32  90%        2
33  95%        2
34  98%        3
35  99%       35
36 100%     1150 (longest request)
```

httpserver.h 123907.91 requests/sec

```
1  Server Software:
```

```

2 Server Hostname:      localhost
3 Server Port:         8080
4
5 Document Path:       /
6 Document Length:     13 bytes
7
8 Concurrency Level:   200
9 Time taken for tests: 0.807 seconds
10 Complete requests:   100000
11 Failed requests:     0
12 Keep-Alive requests: 100000
13 Total transferred:   13400000 bytes
14 HTML transferred:    1300000 bytes
15 Requests per second: 123907.91 [#/sec] (mean)
16 Time per request:    1.614 [ms] (mean)
17 Time per request:    0.008 [ms] (mean, across all concurrent
    requests)
18 Transfer rate:       16214.51 [Kbytes/sec] received
19
20 Connection Times (ms)
21      min  mean[+/-sd] median   max
22 Connect:    0      0   0.1      0      4
23 Processing:  1      2   0.3      2      6
24 Waiting:    1      2   0.3      2      6
25 Total:      1      2   0.4      2      6
26
27 Percentage of the requests served within a certain time (ms)
28  50%        2
29  66%        2
30  75%        2
31  80%        2
32  90%        2
33  95%        2
34  98%        3
35  99%        3
36 100%        6 (longest request)

```

With Connection: close

```
ab -c 200 -n 100000 http://localhost:8080/
```

NGINX 15773.47 requests/sec

```

1 Server Software:      nginx/1.14.0
2 Server Hostname:      localhost
3 Server Port:         8000
4

```

```

5 Document Path:      /
6 Document Length:    13 bytes
7
8 Concurrency Level:   200
9 Time taken for tests: 6.340 seconds
10 Complete requests:  100000
11 Failed requests:    0
12 Total transferred:  20500000 bytes
13 HTML transferred:   1300000 bytes
14 Requests per second: 15773.47 [#/sec] (mean)
15 Time per request:    12.680 [ms] (mean)
16 Time per request:    0.063 [ms] (mean, across all concurrent
    requests)
17 Transfer rate:       3157.77 [Kbytes/sec] received
18
19 Connection Times (ms)
20      min    mean[+/-sd] median    max
21 Connect:    0      4  40.6      3   1123
22 Processing:  1      8  46.7      4    508
23 Waiting:    1      7  46.7      3    508
24 Total:      3     12  64.5      6   1460
25
26 Percentage of the requests served within a certain time (ms)
27   50%      6
28   66%      7
29   75%      7
30   80%      8
31   90%      8
32   95%      9
33   98%     10
34   99%    503
35  100%   1460 (longest request)

```

httpserver.h 27605.45 requests/sec

```

1 Server Software:
2 Server Hostname:  localhost
3 Server Port:      8080
4
5 Document Path:    /
6 Document Length:  13 bytes
7
8 Concurrency Level: 200
9 Time taken for tests: 3.622 seconds
10 Complete requests: 100000
11 Failed requests:   0
12 Total transferred: 12900000 bytes
13 HTML transferred:  1300000 bytes
14 Requests per second: 27605.45 [#/sec] (mean)

```

```
15 Time per request:      7.245 [ms] (mean)
16 Time per request:      0.036 [ms] (mean, across all concurrent
17   requests)
17 Transfer rate:          3477.64 [Kbytes/sec] received
18
19 Connection Times (ms)
20      min    mean[+/-sd] median    max
21 Connect:      2      3    0.5      3      6
22 Processing:    1      4    0.7      4      8
23 Waiting:       1      3    0.8      3      7
24 Total:         4      7    0.6      7     11
25
26 Percentage of the requests served within a certain time (ms)
27   50%        7
28   66%        7
29   75%        8
30   80%        8
31   90%        8
32   95%        8
33   98%        9
34   99%        9
35  100%       11 (longest request)
```

NGINX conf

```
1 worker_processes 1;
2
3 http {
4     server {
5         listen 8000;
6         location / {
7             add_header Content-Type text/plain;
8             return 200 'Hello, World!';
9         }
10    }
11 }
```