



云计算技术性能报告

实 验 名 称: 云计算实验2

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一、实验概述

实验要求编写一个自己的 http 服务器，能够处理 get 和 post 请求。

1.1 程序文件清单

程序包括：main.cc	负责创建 tcp 连接和多个线程
function.cc	负责处理不同的 http 请求
Makefile	
client.c	负责测试性能
src/index.html	get 指令请求的文件

1.2 执行过程

1.2.1 执行服务器程序，开始监听

```
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$ ./httpserver
TCP Server Started at port 8888!
Binding server to port 8888
Binding server to ip (null)
Waiting client...
```

1.2.2 处理 http 请求

另一个终端发送 get 请求 index.html，并得到 200 OK 的回复：

```
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$ curl -I -X GET http://127.0.0.1:8888/index.html
HTTP/1.1 200 OK
Content-Length:406
Content-Type: text/html

<html><head>
<title>CS06142</title>
</head><body>
<h1>CS06142</h1>
<p>Welcome to Cloud Computing Course.<br />
</p>
<hr>
<address>Http Server at ip-127-0-0-1 Port 8888</address>
<form action="http://localhost:8080/Post_show" enctype="multipart/form-data" method="POST">
  <input type="text" name="Name" value="admin"/>
  <input type="text" name="ID" value="123456"/>
</form>
</body></html>
```

发送 post 请求并得到 200 OK 的回复：

```
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$ curl -I -X POST --data 'Name=HNU&ID=CS06142' http://127.0.0.1:8888/Post_show
HTTP/1.1 200 OK
Content-type: text/html
Content-Length: 125

<html><title>POST Method</title><body bgcolor=ffffff>
Your Name: HNU
ID: CS06142
<hr><em>Http Web server</em>
</body></html>
```

当客户端发送其他请求时（如 delete）返回 501:

```
zwq@ubuntu: ~/CloudComputingLabs/Lab2/ours
</body></html>
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$ curl -i -X DELETE http://127.0.0.1:8888/index.html
Http/1.1 501 Not Implemented
Content-type: text/html
Content-Length:167

<html><title>501 Not Implemented</title><body bgcolor=ffffff>
  Not Implemented
  <p>Does not implement this method: DELETE
  ,<hr><em>HTTP Web Server </em>
</body></html>
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$ curl -i -X DELETE http://127.0.0.1:8888/index.html
Http/1.1 501 Not Implemented
Content-type: text/html
Content-Length:167

<html><title>501 Not Implemented</title><body bgcolor=ffffff>
  Not Implemented
  <p>Does not implement this method: DELETE
  ,<hr><em>HTTP Web Server </em>
</body></html>
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$
```

1.2.3 多线程并行

程序采用按需线程的方式，每当有新的客户端连接时创建一个线程，并用该线程处理请求任务。

```

binding server to ip (null)
waiting client...
inet_http:127.0.0.1
.....
client ip:127.0.0.1,port:45714
total=1
client closed!
inet_http:127.0.0.1
.....
client ip:127.0.0.1,port:45714
name=8,id=8
total=2
client closed!
inet_http:127.0.0.1
.....
client ip:127.0.0.1,port:45714
total=3
client closed!

zwq@ubuntu:~/CloudComputingLabs/Lab2/ours
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$ curl -i -X GET http://127.0.0.1:8888/index.html
Http/1.1 200 OK
Content-Length:406
Content-Type: text/html

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<title>CS06142</title>
</head><body>
<h1>CS06142</h1>
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</p>
<hr>
<address>Http Server at Ip:127.0.0.1 Port 8888</address>
<form action="http://localhost:8888/Post_show" enctype="multipart/form-data" method="POST">
  <input type="text" name="Name" value="admin"/>
  <input type="text" name="ID" value="123456"/>
</form>
</body></html>
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$

zwq@ubuntu:~/CloudComputingLabs/Lab2/ours
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$ curl -i -X DELETE http://127.0.0.1:8888/index.html
Http/1.1 501 Not Implemented
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<html><title>501 Not Implemented</title><body bgcolor=ffffff>
  Not Implemented
  <p>Does not implement this method: DELETE
  ,<hr><em>HTTP Web Server </em>
</body></html>
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$ curl -i -X POST --data "Name=8888ID=CS06142" http://127.0.0.1:8888/Post_show
Http/1.1 200 OK
Content-type: text/html
Content-Length: 125

<html><title>POST Method</title><body bgcolor=ffffff>
Your Name: 8888
ID: CS06142
<hr><em>Http Web server</em>
</body></html>
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$

zwq@ubuntu:~/CloudComputingLabs/Lab2/ours
zwq@ubuntu:~/CloudComputingLabs/Lab2/ours$ curl -i -X GET http://127.0.0.1:8888/index.html
Http/1.1 200 OK
Content-Length:486
Content-Type: text/html

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</form>
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```