<https://www.cnblogs.com/diligenceday/p/6255788.html>

**阅读目录**

* [HTTP请求和IP/TCP](https://www.cnblogs.com/diligenceday/p/6255788.html#_label0)
* [实现GET请求](https://www.cnblogs.com/diligenceday/p/6255788.html#_label1)
* [实现POST请求：](https://www.cnblogs.com/diligenceday/p/6255788.html#_label2)
* [参考：](https://www.cnblogs.com/diligenceday/p/6255788.html#_label3)

[回到顶部](https://www.cnblogs.com/diligenceday/p/6255788.html#_labelTop)

# HTTP请求和IP/TCP

　　所谓的HTTP协议是基于IP/TCP协议的， 所以要获取远端的html数据只要创建socket对象就足够了；

　　HTTP是基于IP/TCP加上了网络请求的固定格式， 比如：

运行下面代码

method

URL

Content-host

Content-Type

Content-Length

[回到顶部](https://www.cnblogs.com/diligenceday/p/6255788.html#_labelTop)

# 实现GET请求

　　把组合成的数据按照固定的格式发送给服务器， 服务器解析相应的格式， 然后返回服务器数据：

运行下面代码

[复制代码](javascript:void(0);)

#include <stdio.h>

#include <sys/socket.h>

#include <sys/types.h>

#include <time.h>

#include <errno.h>

#include <signal.h>

#include <stdlib.h>

#include <string.h>

#include <unistd.h>

#include <sys/wait.h>

#include <sys/time.h>

#include <netinet/in.h>

#include <arpa/inet.h>

#define IPSTR "42.121.252.58" //服务器IP地址;

#define PORT 80

#define BUFSIZE 1024

int main(int argc, char \*\*argv)

{

int sockfd, ret, i, h;

struct sockaddr\_in servaddr;

char str1[4096], str2[4096], buf[BUFSIZE], \*str;

socklen\_t len;

fd\_set t\_set1;

struct timeval tv;

//创建套接字

if ((sockfd = socket(AF\_INET, SOCK\_STREAM, 0)) < 0 ) {

printf("创建网络连接失败,本线程即将终止---socket error!\n");

exit(0);

};

bzero(&servaddr, sizeof(servaddr));

servaddr.sin\_family = AF\_INET;

servaddr.sin\_port = htons(PORT);

if (inet\_pton(AF\_INET, IPSTR, &servaddr.sin\_addr) <= 0 ){

printf("创建网络连接失败,本线程即将终止--inet\_pton error!\n");

exit(0);

};

if (connect(sockfd, (struct sockaddr \*)&servaddr, sizeof(servaddr)) < 0){

printf("连接到服务器失败,connect error!\n");

exit(0);

}

printf("与远端建立了连接\n");

memset(str2, 0, 4096);

strcat(str2, "theDataToPost");

str=(char \*)malloc(128);

len = strlen(str2);

sprintf(str, "%d", len);

memset(str1, 0, 4096);

strcat(str1, "GET /ymnets/p/6255674.html HTTP/1.1\n");

strcat(str1, "Host: www.cnblogs.com\n");

strcat(str1, "Content-Type: text/html\n");

strcat(str1, "Content-Length: ");

strcat(str1, str);

strcat(str1, "\n\n");

strcat(str1, str2);

strcat(str1, "\r\n\r\n");

printf("%s\n",str1);

ret = write(sockfd,str1,strlen(str1));

if (ret < 0) {

printf("发送失败！错误代码是%d，错误信息是'%s'\n",errno, strerror(errno));

exit(0);

}else{

printf("消息发送成功，共发送了%d个字节！\n\n", ret);

}

FD\_ZERO(&t\_set1);

FD\_SET(sockfd, &t\_set1);

while(1){

sleep(2);

tv.tv\_sec= 0;

tv.tv\_usec= 0;

h= 0;

printf("--------------->1");

h= select(sockfd +1, &t\_set1, NULL, NULL, &tv);

printf("--------------->2");

//if (h == 0) continue;

if (h < 0) {

close(sockfd);

printf("在读取数据报文时SELECT检测到异常，该异常导致线程终止！\n");

return -1;

};

if (h > 0){

memset(buf, 0, 4096);

i= read(sockfd, buf, 4095);

if (i==0){

close(sockfd);

printf("读取数据报文时发现远端关闭，该线程终止！\n");

return -1;

}

printf("%s\n", buf);

}

}

close(sockfd);

return 0;

}

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[回到顶部](https://www.cnblogs.com/diligenceday/p/6255788.html#_labelTop)

# 实现POST请求：

　　C实现POST请求参考代码， 只要把请求类型从GET改为POST， 然后把请求的数据代入到请求头中即可：

运行下面代码

[复制代码](javascript:void(0);)

#include <stdio.h>

#include <sys/socket.h>

#include <sys/types.h>

#include <time.h>

#include <errno.h>

#include <signal.h>

#include <stdlib.h>

#include <string.h>

#include <unistd.h>

#include <sys/wait.h>

#include <sys/time.h>

#include <netinet/in.h>

#include <arpa/inet.h>

#define IPSTR "61.147.124.120"

#define PORT 80

#define BUFSIZE 1024

int main(int argc, char \*\*argv)

{

int sockfd, ret, i, h;

struct sockaddr\_in servaddr;

char str1[4096], str2[4096], buf[BUFSIZE], \*str;

socklen\_t len;

fd\_set t\_set1;

struct timeval tv;

if ((sockfd = socket(AF\_INET, SOCK\_STREAM, 0)) < 0 ) {

printf("创建网络连接失败,本线程即将终止---socket error!\n");

exit(0);

};

bzero(&servaddr, sizeof(servaddr));

servaddr.sin\_family = AF\_INET;

servaddr.sin\_port = htons(PORT);

if (inet\_pton(AF\_INET, IPSTR, &servaddr.sin\_addr) <= 0 ){

printf("创建网络连接失败,本线程即将终止--inet\_pton error!\n");

exit(0);

};

if (connect(sockfd, (struct sockaddr \*)&servaddr, sizeof(servaddr)) < 0){

printf("连接到服务器失败,connect error!\n");

exit(0);

}

printf("与远端建立了连接\n");

memset(str2, 0, 4096);

strcat(str2, "qqCode=287101329");

str=(char \*)malloc(128);

len = strlen(str2);

sprintf(str, "%d", len);

memset(str1, 0, 4096);

strcat(str1, "POST /webservices/qqOnlineWebService.asmx/qqCheckOnline HTTP/1.1\n");

strcat(str1, "Host: www.webxml.com.cn\n");

strcat(str1, "Content-Type: application/x-www-form-urlencoded\n");

strcat(str1, "Content-Length: ");

strcat(str1, str);

strcat(str1, "\n\n");

//str2的值为post的数据

strcat(str1, str2);

strcat(str1, "\r\n\r\n");

printf("%s\n",str1);

ret = write(sockfd,str1,strlen(str1));

if (ret < 0) {

printf("发送失败！错误代码是%d，错误信息是'%s'\n",errno, strerror(errno));

exit(0);

}else{

printf("消息发送成功，共发送了%d个字节！\n\n", ret);

}

FD\_ZERO(&t\_set1);

FD\_SET(sockfd, &t\_set1);

while(1){

sleep(2);

tv.tv\_sec= 0;

tv.tv\_usec= 0;

h= 0;

printf("--------------->1");

h= select(sockfd +1, &t\_set1, NULL, NULL, &tv);

printf("--------------->2");

//if (h == 0) continue;

if (h < 0) {

close(sockfd);

printf("在读取数据报文时SELECT检测到异常，该异常导致线程终止！\n");

return -1;

};

if (h > 0){

memset(buf, 0, 4096);

i= read(sockfd, buf, 4095);

if (i==0){

close(sockfd);

printf("读取数据报文时发现远端关闭，该线程终止！\n");

return -1;

}

printf("%s\n", buf);

}

}

close(sockfd);

return 0;

}

[复制代码](javascript:void(0);)

　　POST请求的方式可以再改改：

运行下面代码

https://images.cnblogs.com/OutliningIndicators/ExpandedBlockStart.gif

[复制代码](javascript:void(0);)

#include <stdio.h>

#include <sys/socket.h>

#include <sys/types.h>

#include <time.h>

#include <errno.h>

#include <signal.h>

#include <stdlib.h>

#include <string.h>

#include <unistd.h>

#include <sys/wait.h>

#include <sys/time.h>

#include <netinet/in.h>

#include <arpa/inet.h>

#define IPSTR "61.147.124.120"

#define PORT 80

#define BUFSIZE 1024

int main(int argc, char \*\*argv)

{

int sockfd, ret, i, h;

struct sockaddr\_in servaddr;

char str1[4096], str2[4096], buf[BUFSIZE], \*str;

socklen\_t len;

fd\_set t\_set1;

struct timeval tv;

if ((sockfd = socket(AF\_INET, SOCK\_STREAM, 0)) < 0 ) {

printf("创建网络连接失败,本线程即将终止---socket error!\n");

exit(0);

};

bzero(&servaddr, sizeof(servaddr));

servaddr.sin\_family = AF\_INET;

servaddr.sin\_port = htons(PORT);

if (inet\_pton(AF\_INET, IPSTR, &servaddr.sin\_addr) <= 0 ){

printf("创建网络连接失败,本线程即将终止--inet\_pton error!\n");

exit(0);

};

if (connect(sockfd, (struct sockaddr \*)&servaddr, sizeof(servaddr)) < 0){

printf("连接到服务器失败,connect error!\n");

exit(0);

}

printf("与远端建立了连接\n");

memset(str2, 0, 4096);

strcat(str2, "qqCode=287101329");

str=(char \*)malloc(128);

len = strlen(str2);

sprintf(str, "%d", len);

memset(str1, 0, 4096);

strcat(str1, "POST /webservices/qqOnlineWebService.asmx/qqCheckOnline HTTP/1.1\n");

strcat(str1, "Host: www.webxml.com.cn\n");

strcat(str1, "Content-Type: application/x-www-form-urlencoded\n");

strcat(str1, "Content-Length: ");

strcat(str1, str);

strcat(str1, "\n\n");

//str2的值为post的数据

strcat(str1, str2);

strcat(str1, "\r\n\r\n");

printf("%s\n",str1);

ret = write(sockfd,str1,strlen(str1));

if (ret < 0) {

printf("发送失败！错误代码是%d，错误信息是'%s'\n",errno, strerror(errno));

exit(0);

}else{

printf("消息发送成功，共发送了%d个字节！\n\n", ret);

}

FD\_ZERO(&t\_set1);

FD\_SET(sockfd, &t\_set1);

tv.tv\_sec= 0;

tv.tv\_usec= 0;

h= 0;

while(1){

sleep(2);

printf("--------------->1");

h = select(sockfd +1, &t\_set1, NULL, NULL, &tv);

printf("--------------->2");

//if (h == 0) continue;

if (h == -1) {

close(sockfd);

printf("在读取数据报文时SELECT检测到异常，该异常导致线程终止！\n");

return -1;

};

if ( FD\_ISSET(sockfd, &t\_set1) ){

memset(buf, 0, 4096);

i= read(sockfd, buf, 4095);

if (i==0){

close(sockfd);

printf("读取数据报文时发现远端关闭，该线程终止！\n");

return -1;

}

printf("%s\n", buf);

}

}

close(sockfd);

return 0;

}

[复制代码](javascript:void(0);)

　　请求一个HTTP服务器的数据， 接收一个参数为请求的服务器IP：

运行下面代码

[复制代码](javascript:void(0);)

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

#include <sys/types.h>

#include <sys/socket.h>

#include <arpa/inet.h>

#include <netinet/in.h>

#include <unistd.h>

int main(int argc, char \*argv[]){

if(argc!=2){

printf("error usage %s ip\n",argv[0]);

return 1;

}

int sockfd;

int len;

struct sockaddr\_in address;

int result;

char httpstring[100];

sprintf(httpstring,"GET / HTTP/1.1\r\n"

"Host: %s\r\n"

"Connection: Close\r\n\r\n",argv[1]);

char ch;

sockfd = socket(AF\_INET, SOCK\_STREAM, 0);

address.sin\_family = AF\_INET;

address.sin\_addr.s\_addr = inet\_addr(argv[1]);

address.sin\_port = htons(80);

len = sizeof(address);

result = connect(sockfd,(struct sockaddr \*)&address,len);

if(result == -1){

perror("oops: client");

return 1;

}

write(sockfd,httpstring,strlen(httpstring));

while(read(sockfd,&ch,1)){

printf("%c", ch);

}

close(sockfd);

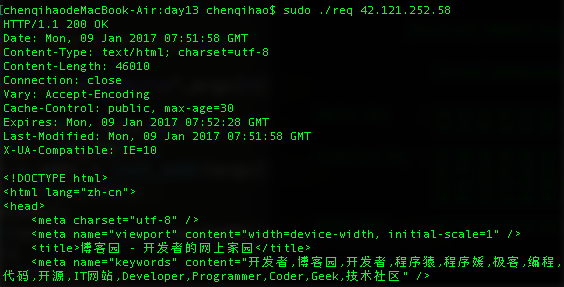
printf("\n");

return 0;

}

[复制代码](javascript:void(0);)

　　使用**gcc**编译以后执行： **sudo ./req 42.121.252.58**



[回到顶部](https://www.cnblogs.com/diligenceday/p/6255788.html#_labelTop)

# 参考：

　　Linux下用c语言实现发送http请求 方式可以Get或者Post：<http://www.oschina.net/code/snippet_176076_5908/>