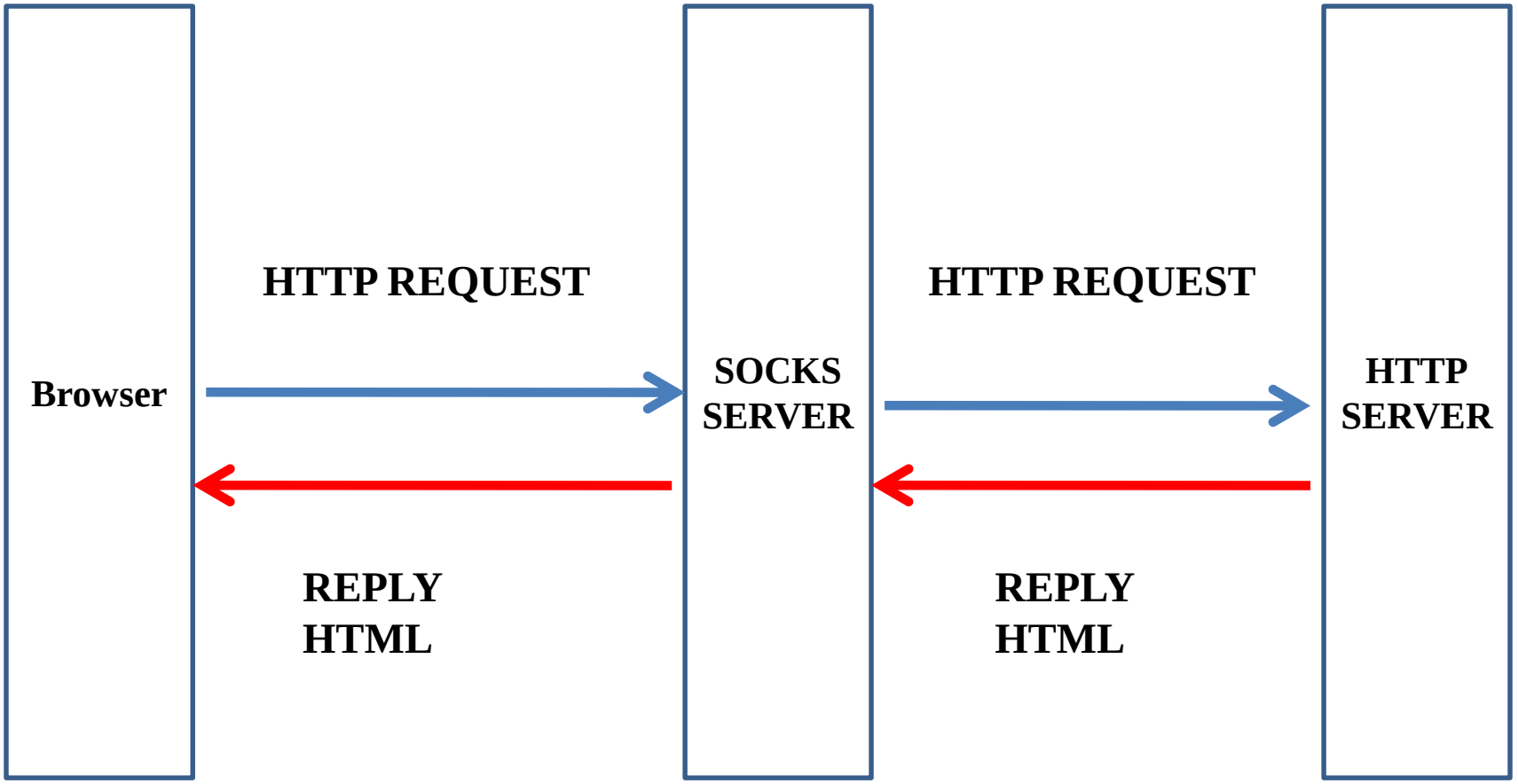
Project IV:
SOCKS4 Server

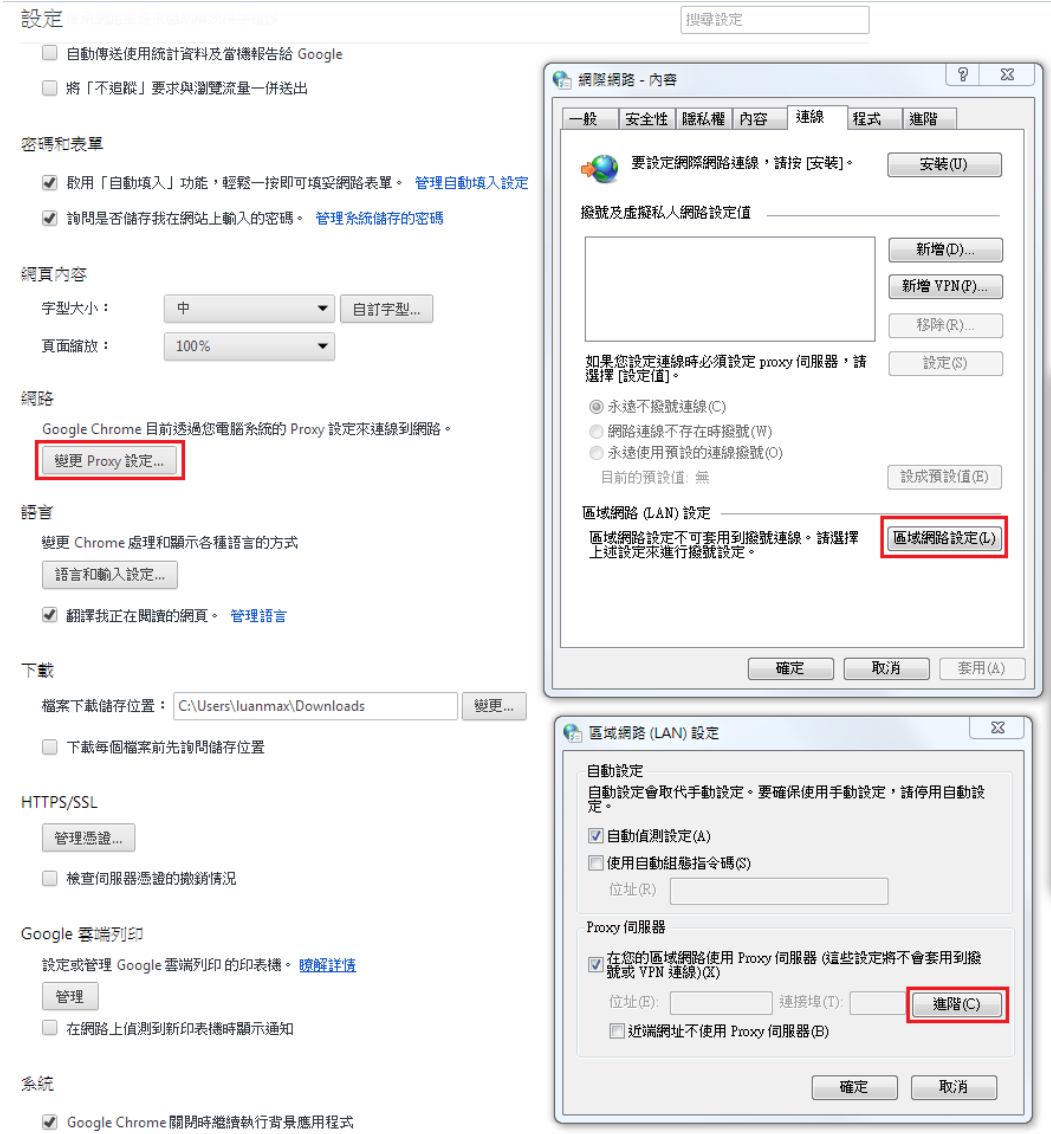
指導教授：吳毅成

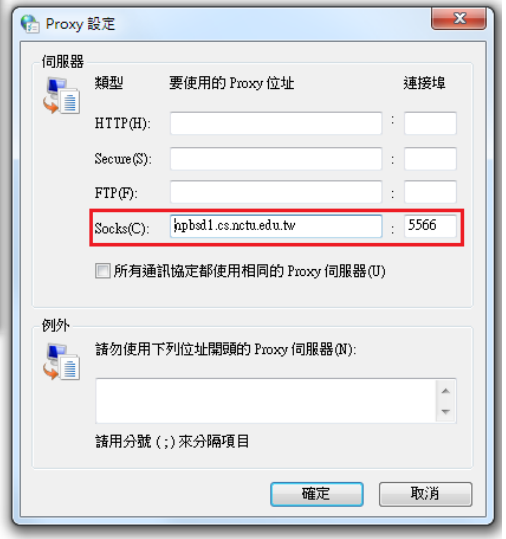
Part I: Socks4 Server Connect Mode

Web Browser(Connect mode)



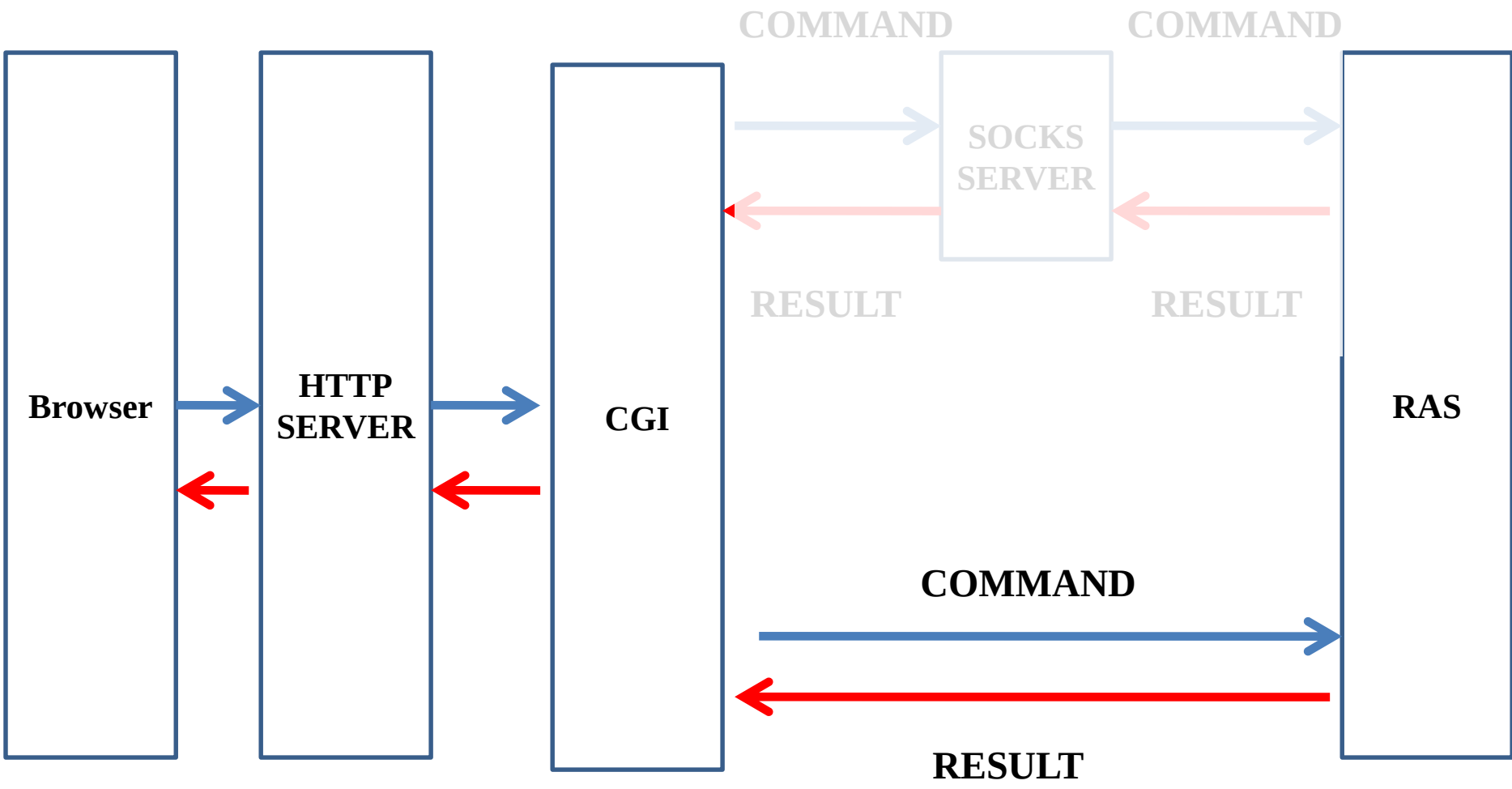
Browser Setting



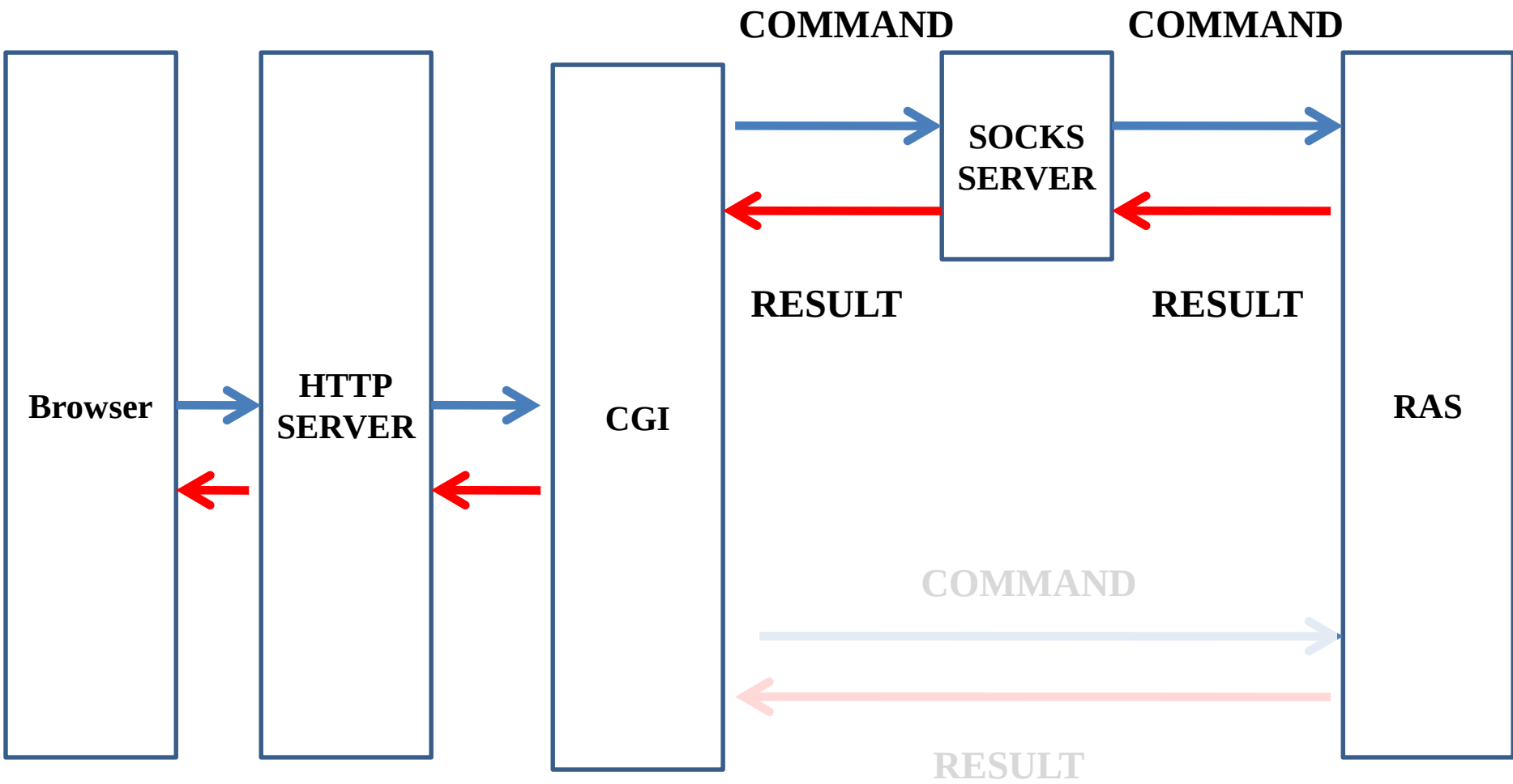


Part II: CGI Proxy

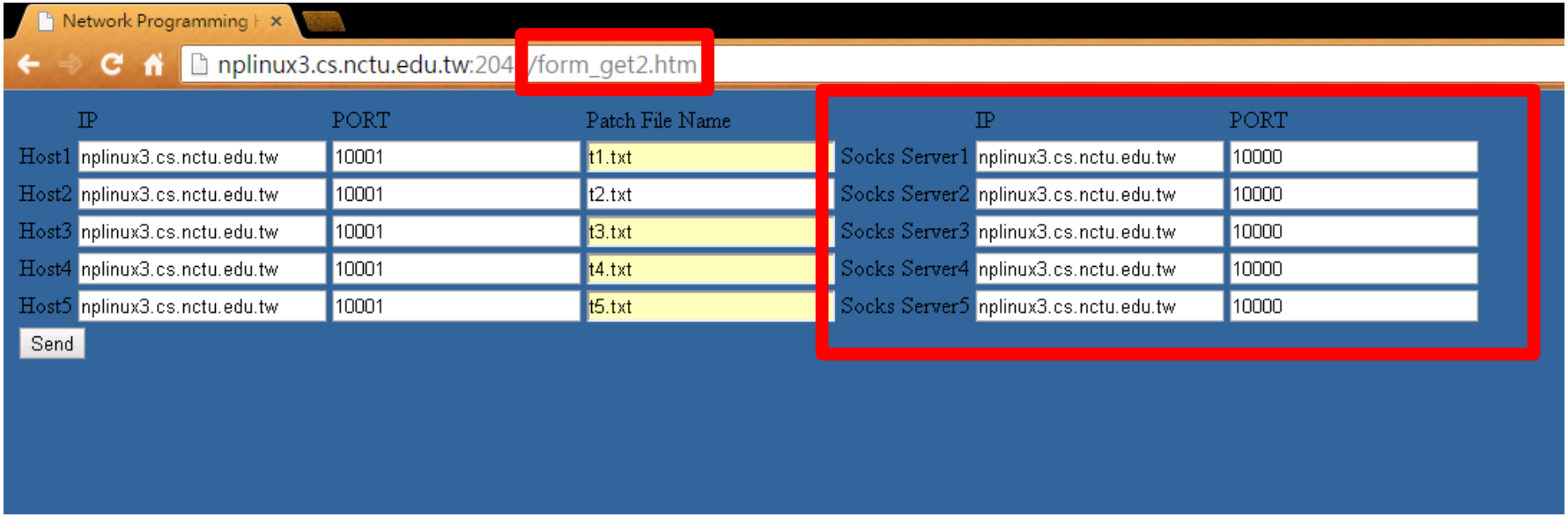
CGI Connection



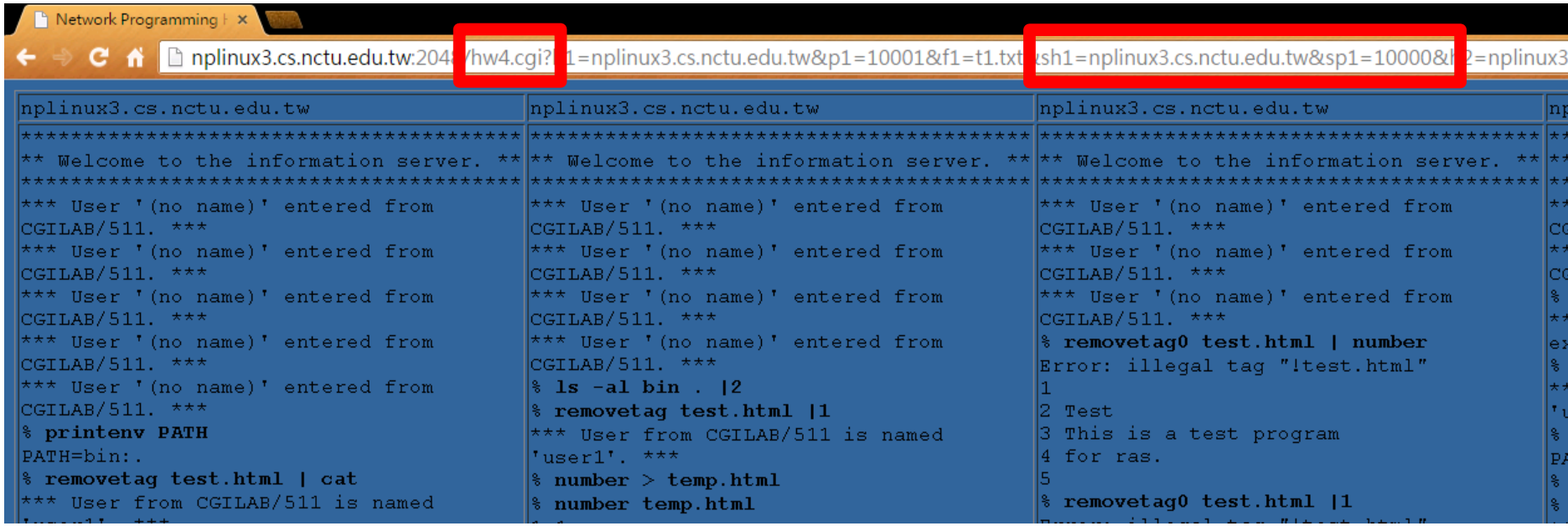
CGI Connection(Connect mode)



Demo

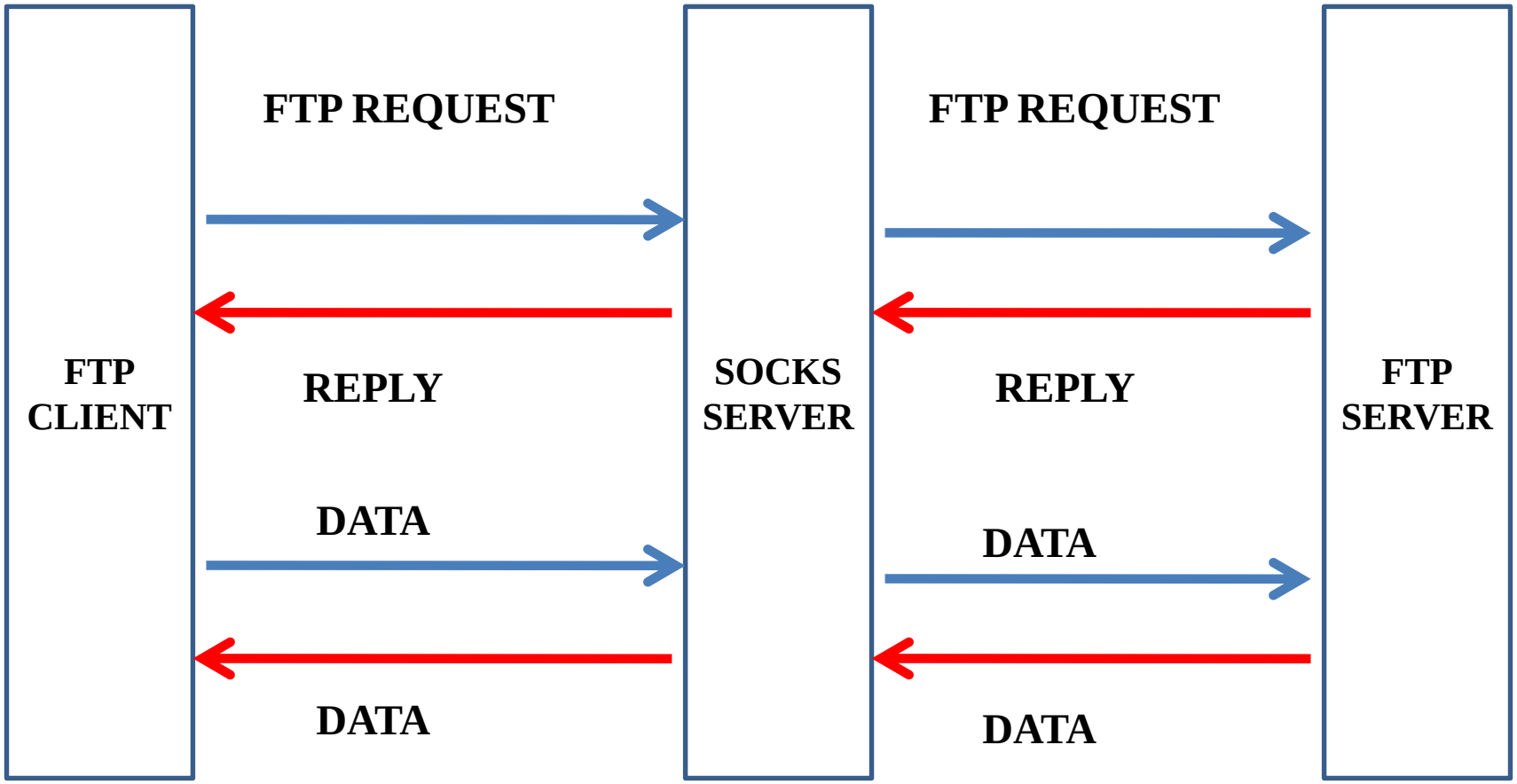

Network Programming
nplinux3.cs.nctu.edu.tw:204 /form_get2.htm
IP
PORT
Patch File Name
IP
PORT
Host1 nplinux3.cs.nctu.edu.tw 10001 t1.txt
Host2 nplinux3.cs.nctu.edu.tw 10001 t2.txt
Host3 nplinux3.cs.nctu.edu.tw 10001 t3.txt
Host4 nplinux3.cs.nctu.edu.tw 10001 t4.txt
Host5 nplinux3.cs.nctu.edu.tw 10001 t5.txt
Socks Server1 nplinux3.cs.nctu.edu.tw 10000
Socks Server2 nplinux3.cs.nctu.edu.tw 10000
Socks Server3 nplinux3.cs.nctu.edu.tw 10000
Socks Server4 nplinux3.cs.nctu.edu.tw 10000
Socks Server5 nplinux3.cs.nctu.edu.tw 10000
Send

Demo


Network Programming
nplinux3.cs.nctu.edu.tw
nplinux3.cs.nctu.edu.tw
** Welcome to the information server. **
*** User '(no name)' entered from CGILAB/511. ***
% printenv PATH
PATH=bin:.
% removetag test.html | cat
% ls -al bin . |2
% removetag test.html |1
% number > temp.html
% number temp.html
% removetag0 test.html | number
Error: illegal tag "!test.html"
1
2 Test
3 This is a test program
4 for ras.
5
% removetag0 test.html |1

Part III: Socks4 Server Bind Mode

FTP Transfer(Bind mode)

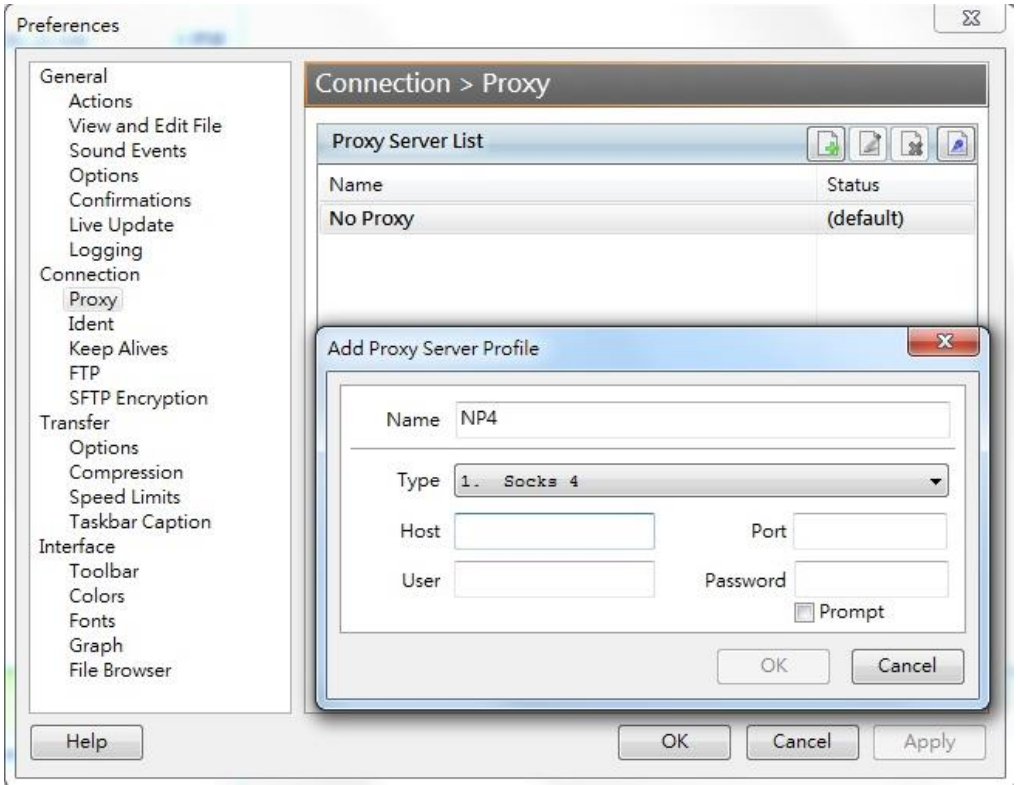


FlashFXP

- 測試請不要用FileZilla
- 建議使用FlashFXP

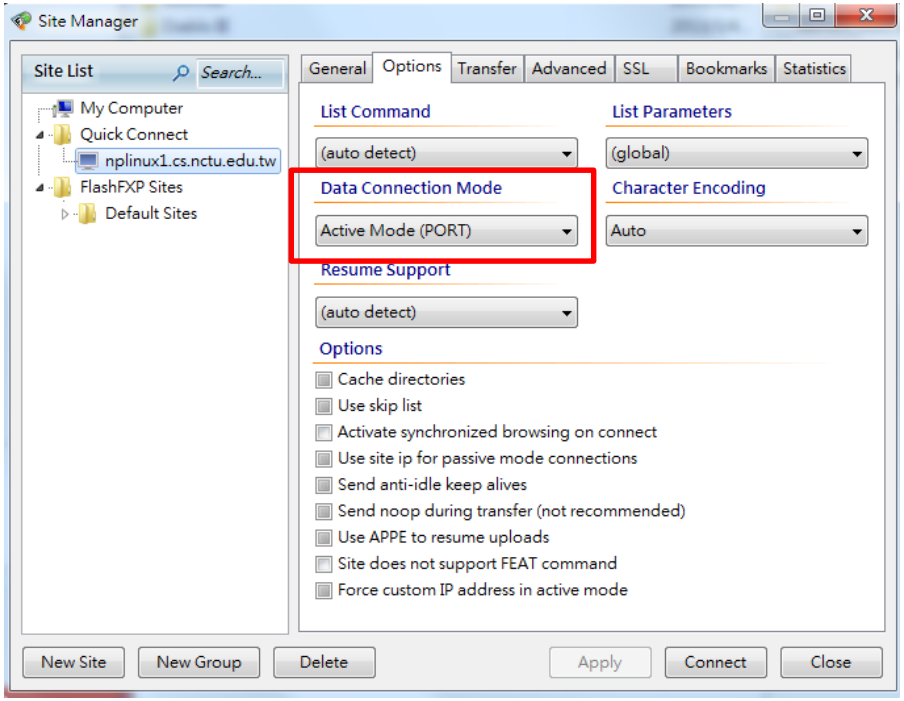
FlashFXP

- Options → Preferences→Connection→Proxy
  - Add entry
    - Socks4, Host/Port



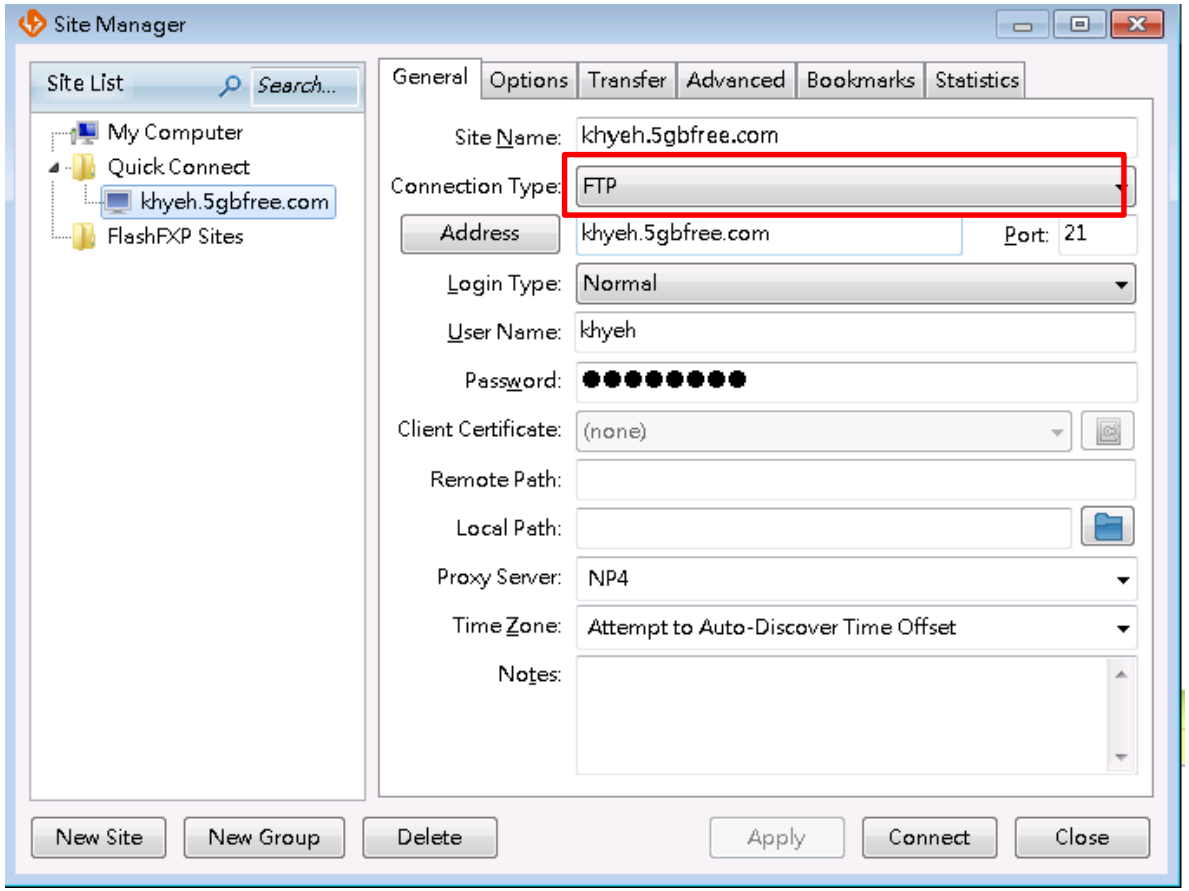
FlashFXP

- Sites → Site Manager→FTP→ Data Connection Mode
  - Change to Active Mode(PORT)



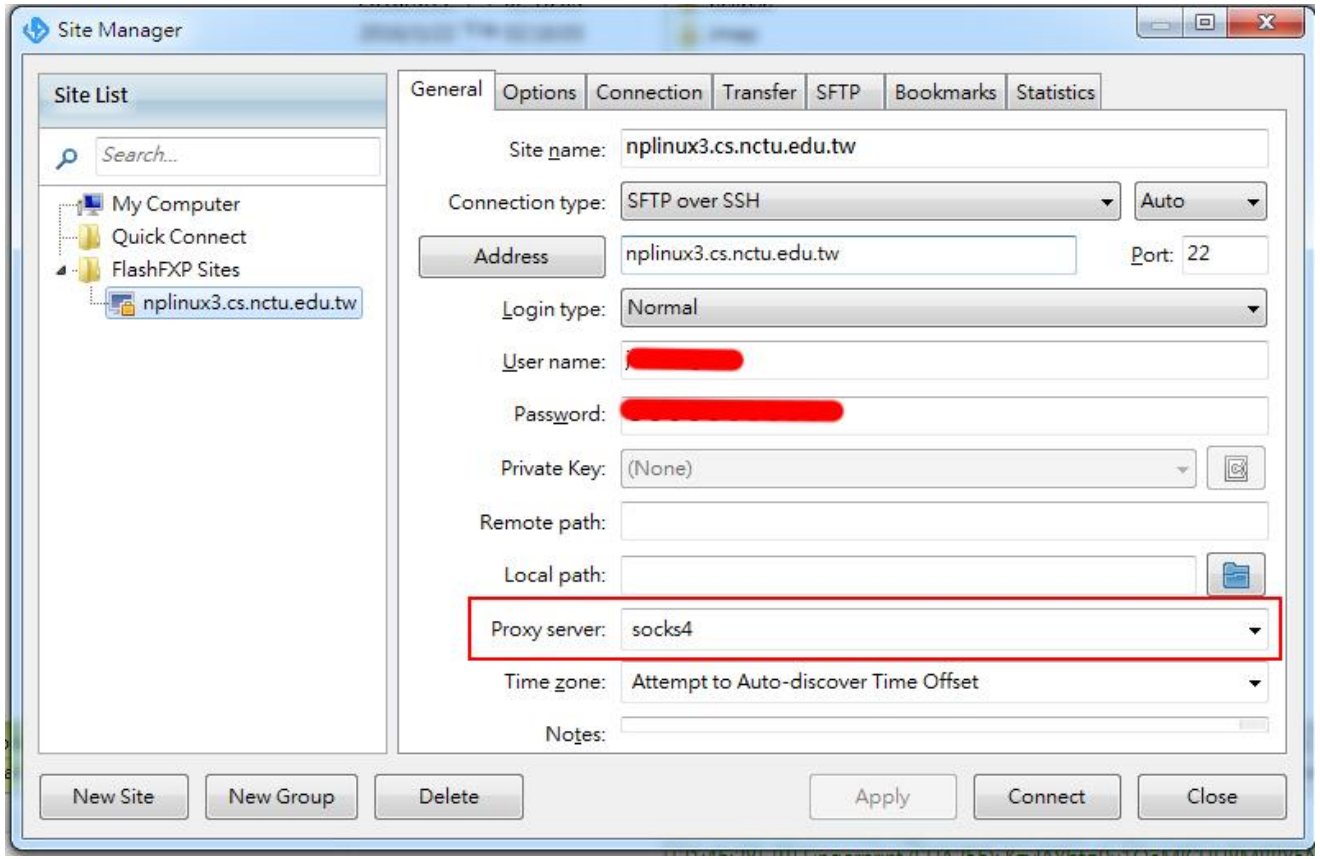
FlashFXP

- Sites → Site Manager→General → Apply
  - Connect



FlashFXP

- Sites → Site Manager →General → Proxy Server



FlashFXP

- 需要一個 FTP Server 來測試 Bind mode
  - 網路上申請可當FTP server上傳/下載的空間
    - 可以在 http://5gbfree.com/ 申請一個 5GB的空間
      - 假設你申請的帳戶名為: UserName
        - » Server: **ftp.UserName.5gbfree.com:21**
        - » Account: UserName
  - 或是自行在自己電腦架設 FTP server
    - 可參考: http://goo.gl/UjrFwy

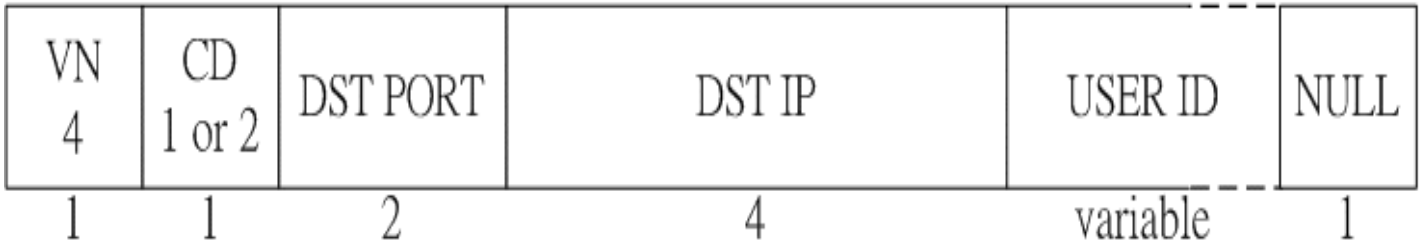
- 整體流程:
  - 下載&設定好FlashFXP
    - 透過Socks server 使用active mode連線
  - 連線至FTP server
  - 開始上傳和下載資料

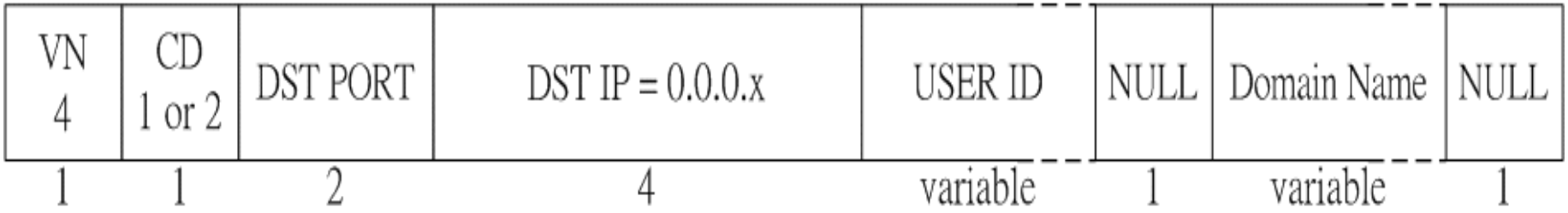
END

Implementation

Implementation

SOCKS4_REQUEST





[CD]
1: CONNECT command
2: BIND command

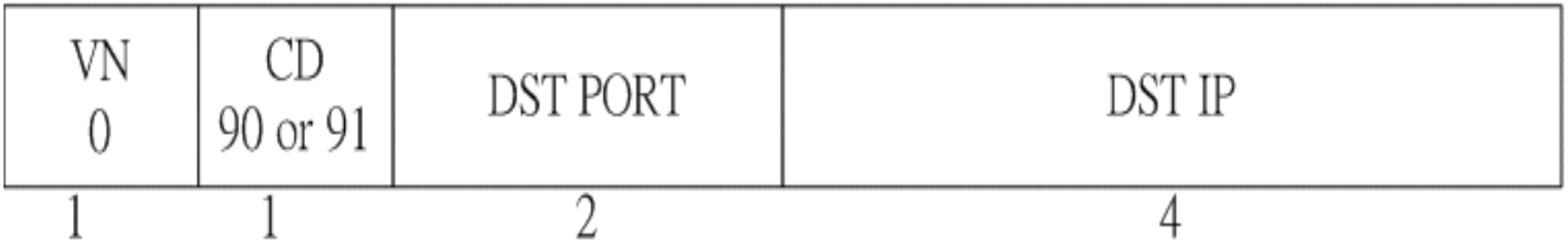
Implementation

Request

```
read(sock, buffer, size);
unsigned char VN = buffer[0] ;
unsigned char CD = buffer[1] ;
unsigned int DST_PORT = buffer[2] << 8 |
                        buffer[3] ;
unsigned int DST_IP = buffer[4] << 24 |
                      buffer[5] << 16 |
                      buffer[6] << 8 |
                      buffer[7] ;
char* USER_ID = buffer + 8 ;
```

Implementation

SOCKS4_REPLY



[CD]
90: request granted
91: request rejected or failed

Implementation

Reply

```
package[0] = 0;
package[1] = (unsigned char) CD ; // 90 or 91
package[2] = port / 256;
package[3] = port % 256;
package[4] = ip >> 24;
        // ip = ip in SOCKS4_REQUEST for connect mode
        // ip = 0 for bind mode
package[5] = (ip >> 16) & 0xFF;
package[6] = (ip >> 8)  & 0xFF;
package[7] = ip & 0xFF;
write(sock, package, 8);
```