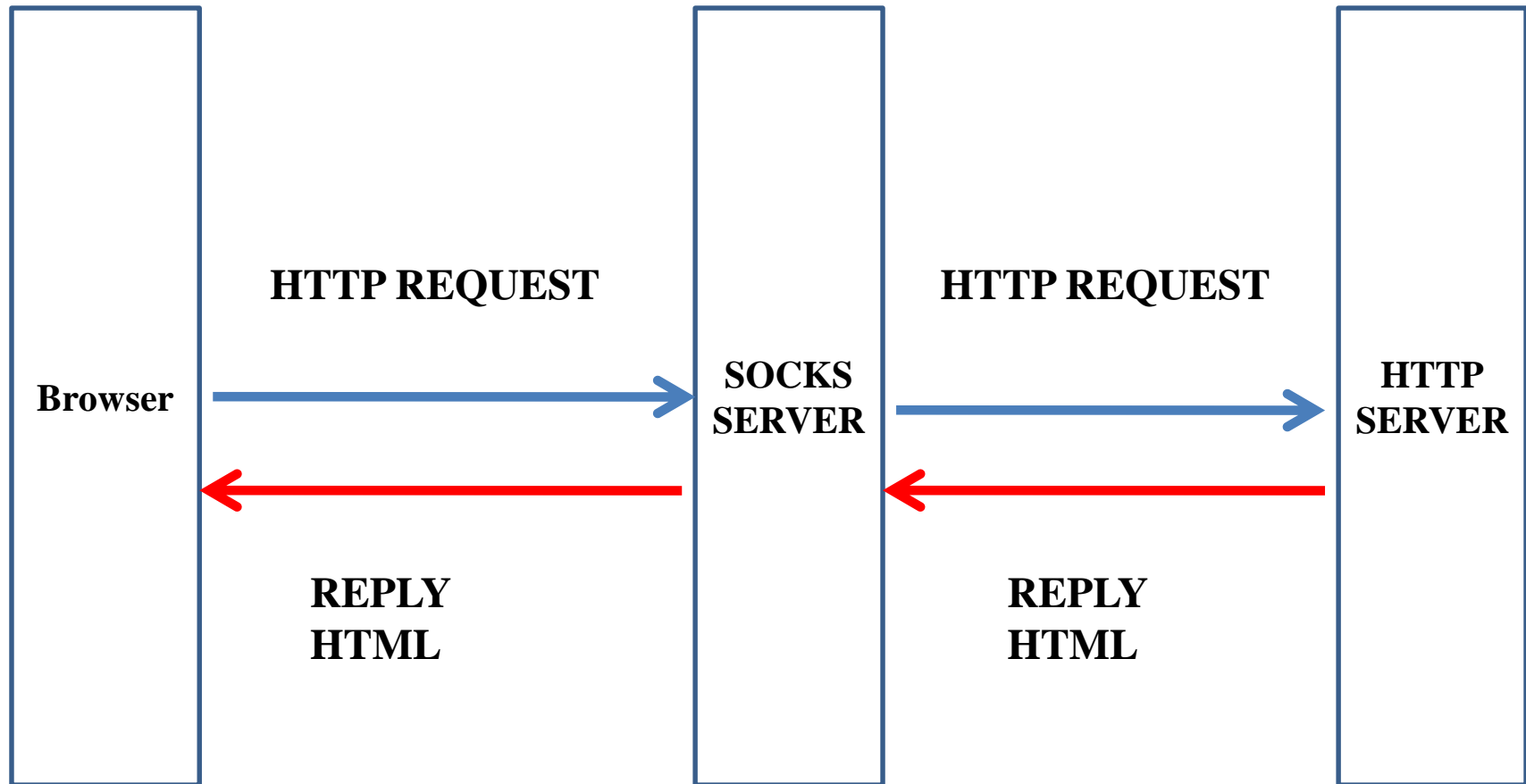


Project IV: SOCKS4 Server

指導教授：吳毅成

Part I: Socks4 Server **Connect Mode**

Web Browser(Connect mode)



Browser Setting

設定 使用網路連線來協助網路和電子郵件

搜尋設定

- ☐ 自動傳送使用統計資料及當機報告給 Google
- ☐ 將「不追蹤」要求與瀏覽流量一併送出

密碼和表單

- ☒ 啟用「自動填入」功能，輕鬆一按即可填妥網路表單。 [管理自動填入設定](#)
- ☒ 詢問是否儲存我在網站上輸入的密碼。 [管理系統儲存的密碼](#)

網頁內容

字型大小：
中 自訂字型...

頁面縮放：
100%

網路

Google Chrome 目前透過您電腦系統的 Proxy 設定來連線到網路。

[變更 Proxy 設定...](#)

語言

變更 Chrome 處理和顯示各種語言的方式

[語言和輸入設定...](#)

- ☒ 翻譯我正在閱讀的網頁。 [管理語言](#)

下載

檔案下載儲存位置：
C:\Users\luanmax\Downloads 變更...

- ☐ 下載每個檔案前先詢問儲存位置

HTTPS/SSL

[管理憑證...](#)

- ☐ 檢查伺服器憑證的撤銷情況

Google 雲端列印

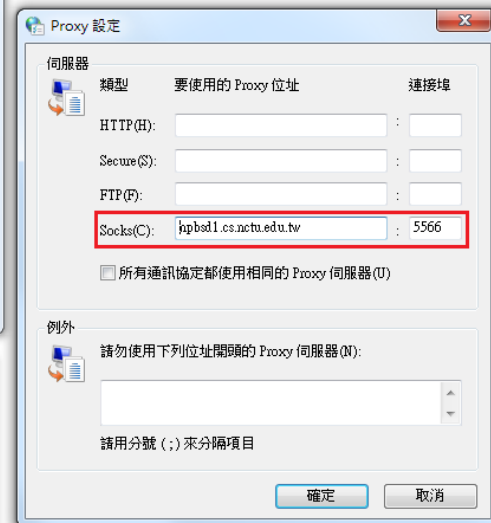
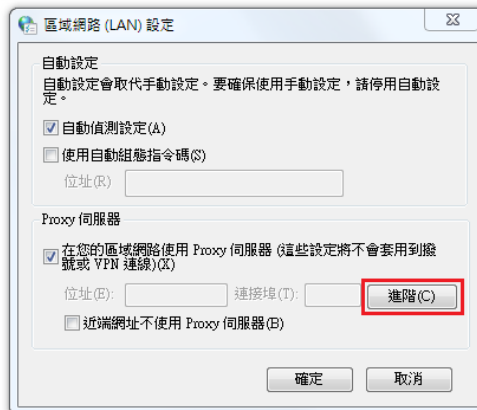
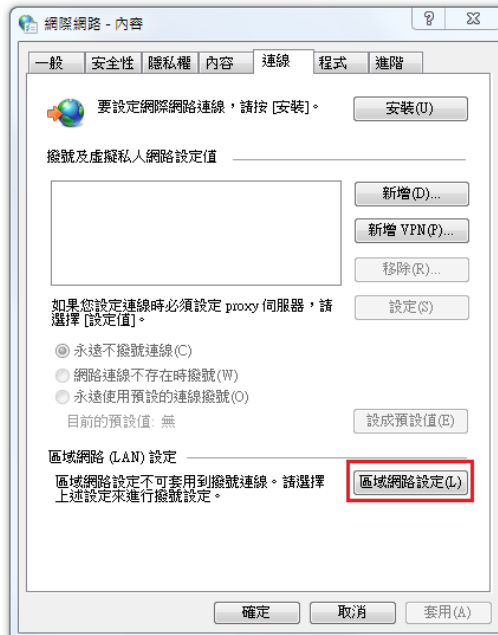
設定或管理 Google 雲端列印的印表機。 [瞭解詳情](#)

[管理](#)

- ☐ 在網路上偵測到新印表機時顯示通知

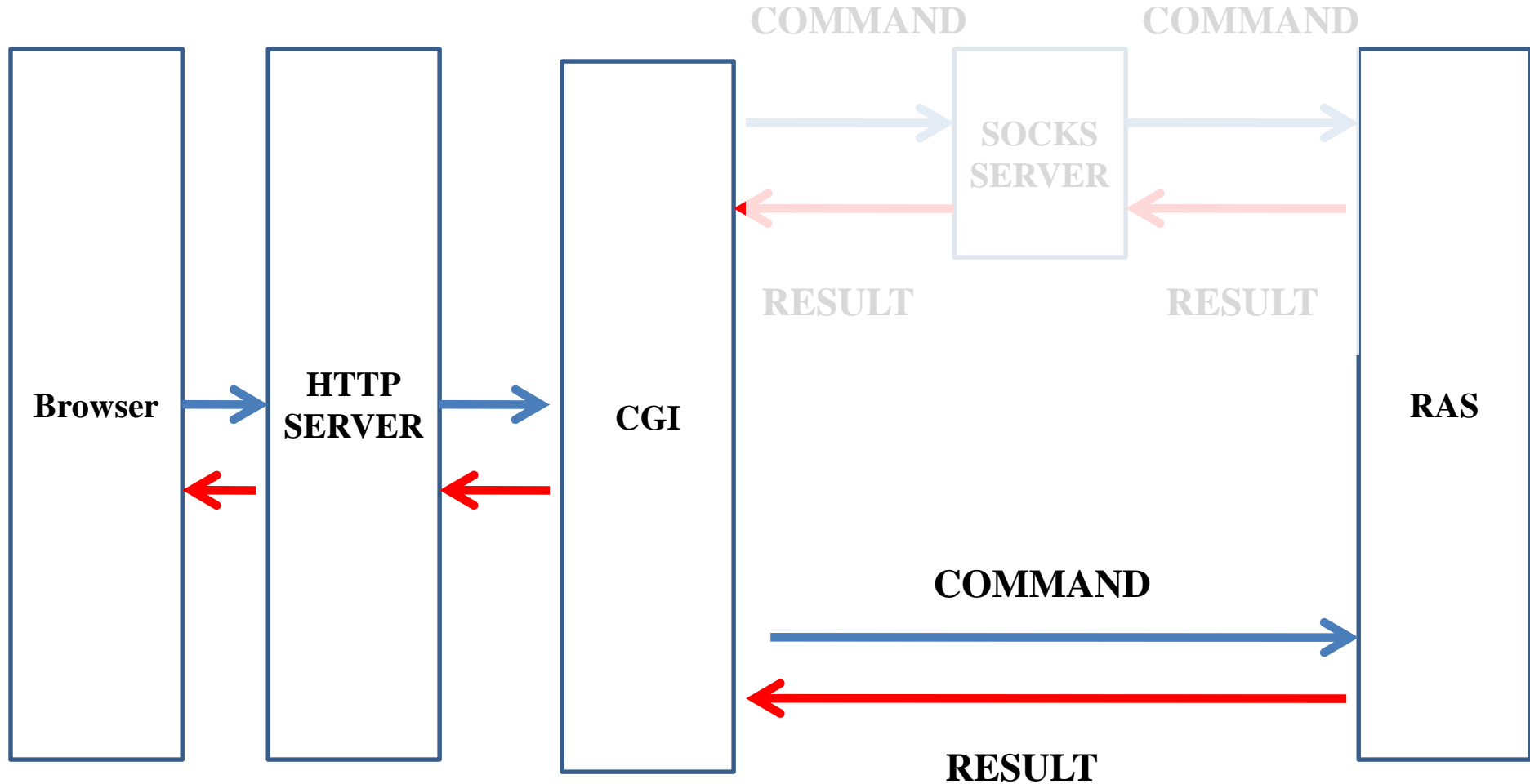
系統

- ☒ Google Chrome 關閉時繼續執行背景應用程式

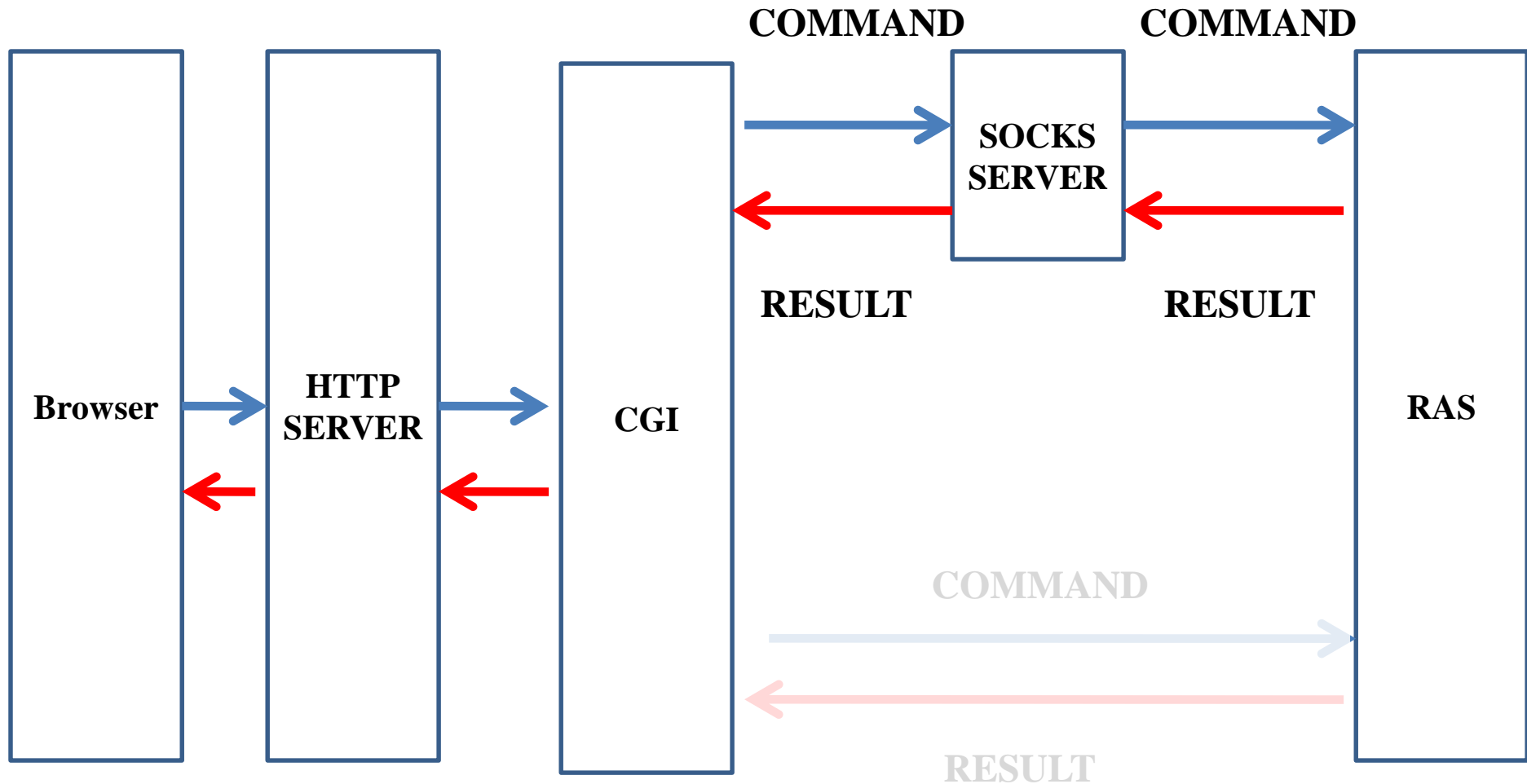


Part II: CGI Proxy

CGI Connection



CGI Connection(Connect mode)



Demo

Network Programming + x

← → ↻ 🏠 nplinux3.cs.nctu.edu.tw:2048/form_get2.htm

	IP	PORT	Patch File Name
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

Send

	IP	PORT
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

Demo

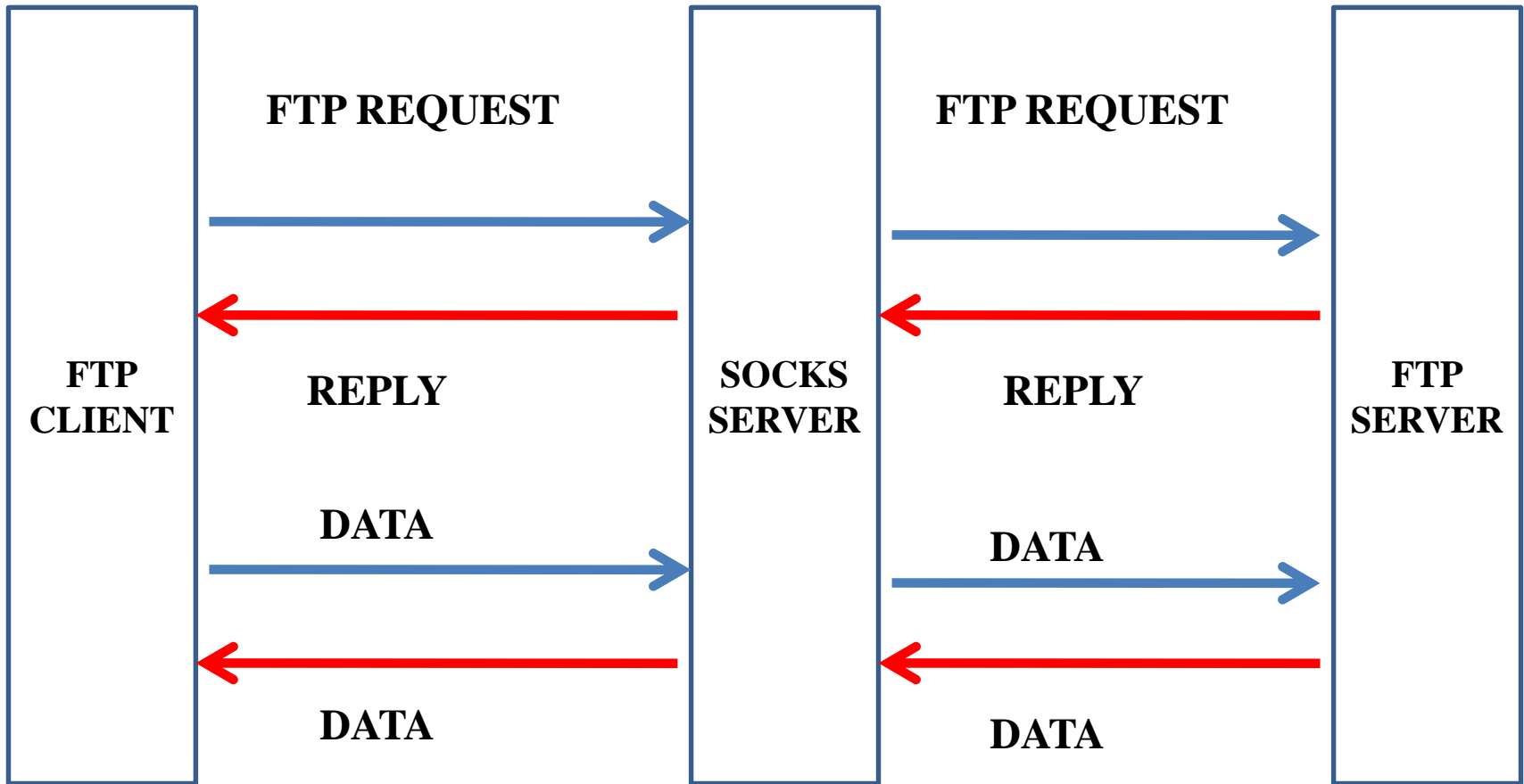
Network Programming | x

← → ↺ 🏠 nplinux3.cs.nctu.edu.tw:2048/hw4.cgi? p1=nplinux3.cs.nctu.edu.tw&p1=10001&f1=t1.txt sh1=nplinux3.cs.nctu.edu.tw&sp1=10000&f2=nplinux3

nplinux3.cs.nctu.edu.tw	nplinux3.cs.nctu.edu.tw	nplinux3.cs.nctu.edu.tw	nplinux3.cs.nctu.edu.tw
*****	*****	*****	*****
** Welcome to the information server. **	** Welcome to the information server. **	** Welcome to the information server. **	** Welcome to the information server. **
*****	*****	*****	*****
*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***
*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***
*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***
*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***
*** User '(no name)' entered from CGILAB/511. ***	*** User '(no name)' entered from CGILAB/511. ***	% removetag0 test.html number	ex
% printenv PATH	% ls -al bin . 2	Error: illegal tag "!test.html"	%
PATH=bin:.	% removetag test.html 1	1	***
% removetag test.html cat	*** User from CGILAB/511 is named 'user1'. ***	2 Test	'u
*** User from CGILAB/511 is named 'user1'. ***	% number > temp.html	3 This is a test program	%
	% number temp.html	4 for ras.	PA
		5	%
		% removetag0 test.html 1	%
		Error: illegal tag "!test.html"	

Part III: Socks4 Server **Bind Mode**

FTP Transfer(Bind mode)

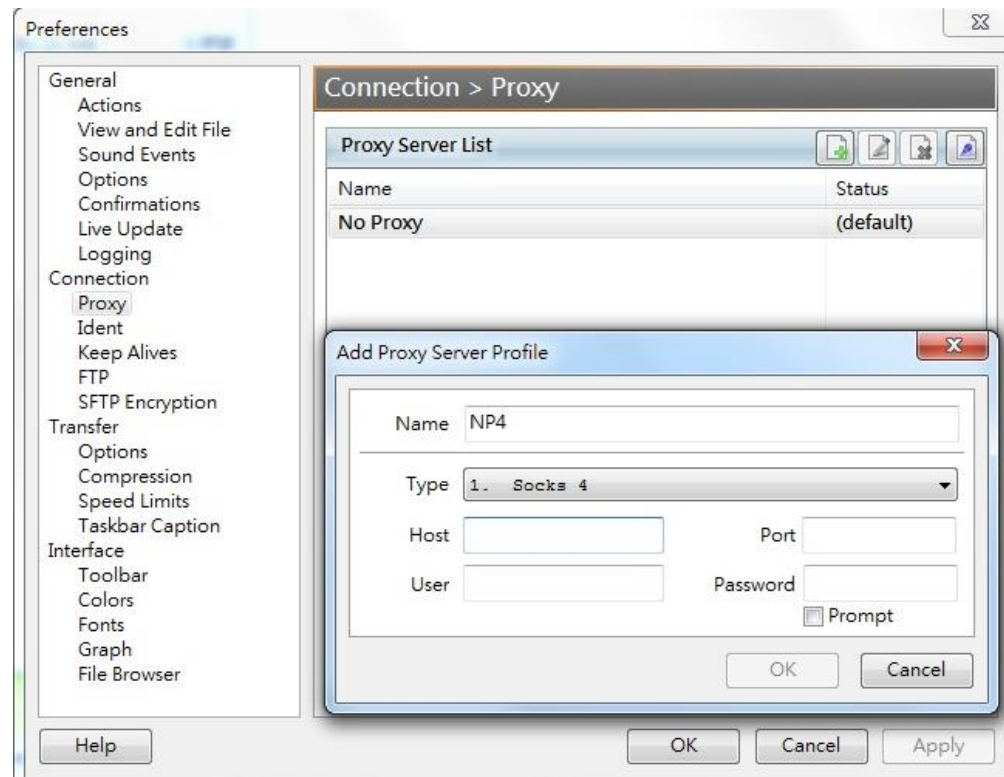


FlashFXP

- 測試請不要用FileZilla
- 建議使用FlashFXP

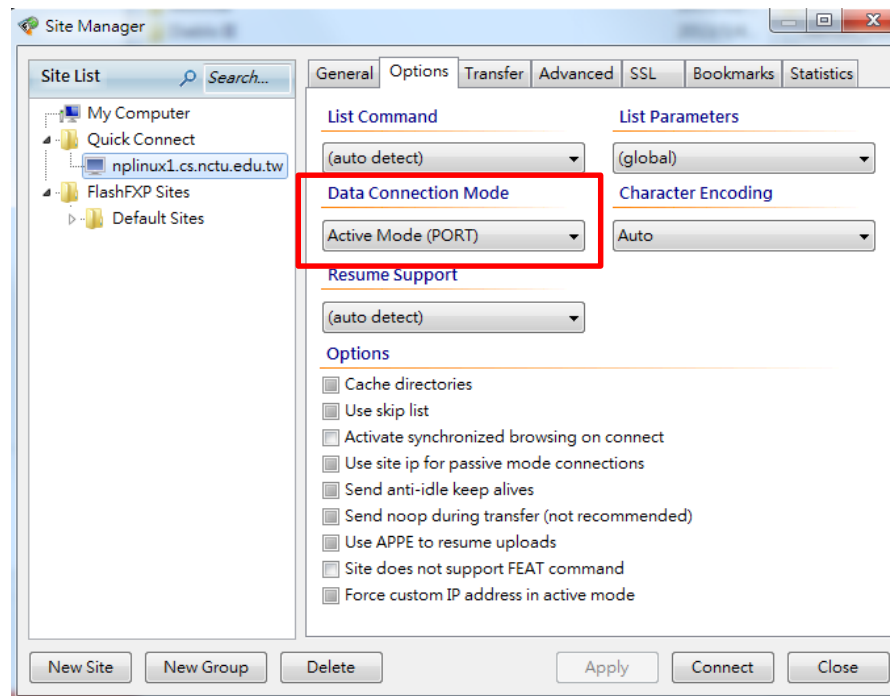
FlashFXP

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



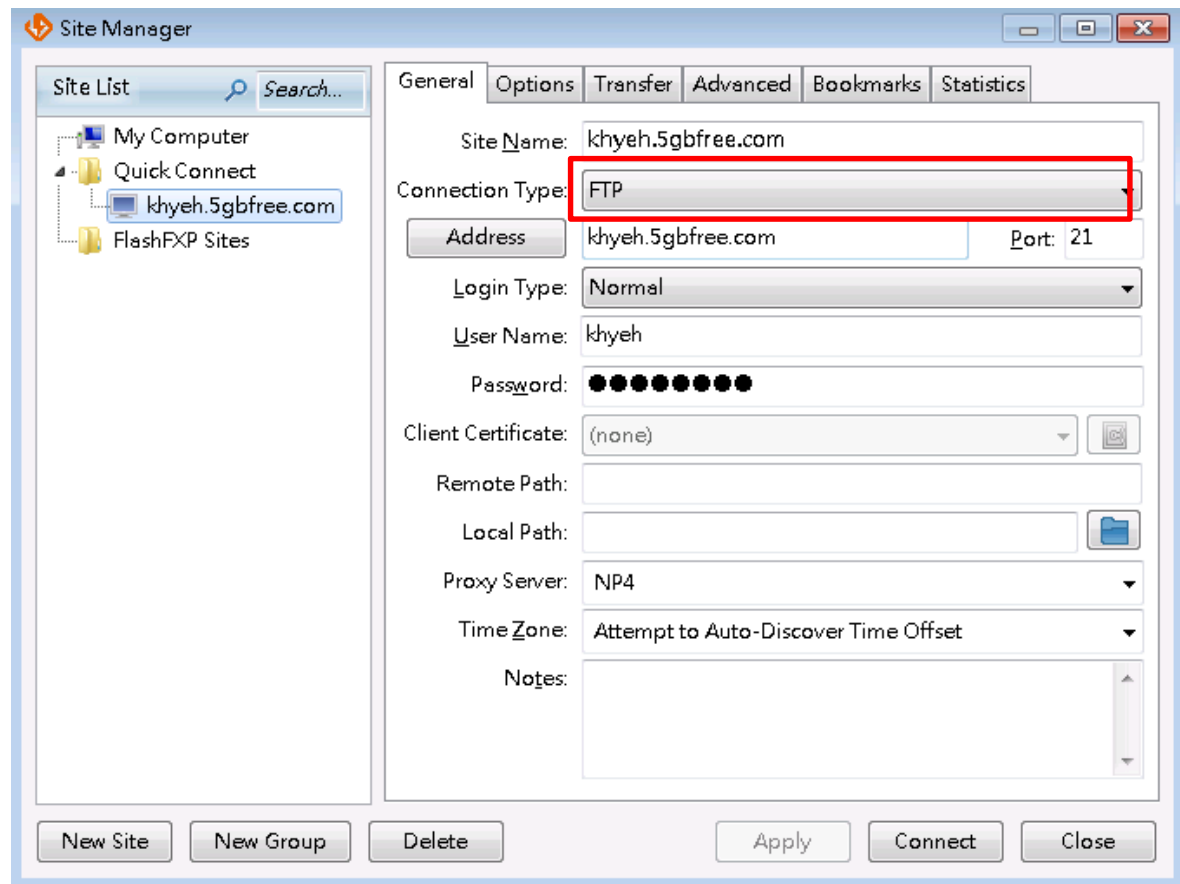
FlashFXP

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



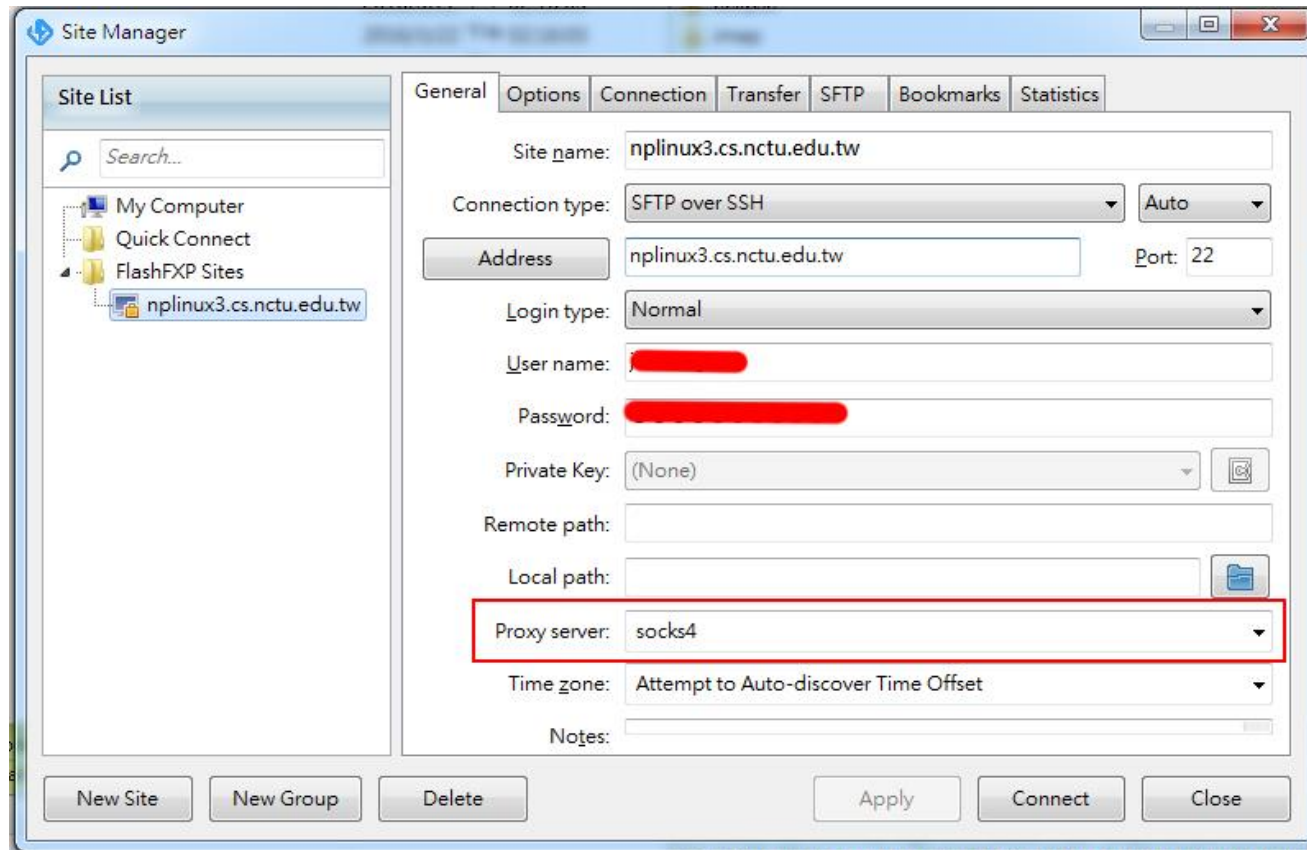
FlashFXP

- 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

VN 4	CD 1 or 2	DST PORT	DST IP	USER ID	NULL
1	1	2	4	variable	1

VN 4	CD 1 or 2	DST PORT	DST IP = 0.0.0.x	USER ID	NULL	Domain Name	NULL
1	1	2	4	variable	1	variable	1

[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

VN	CD	DST PORT	DST IP
0	90 or 91		
1	1	2	4

[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);
```