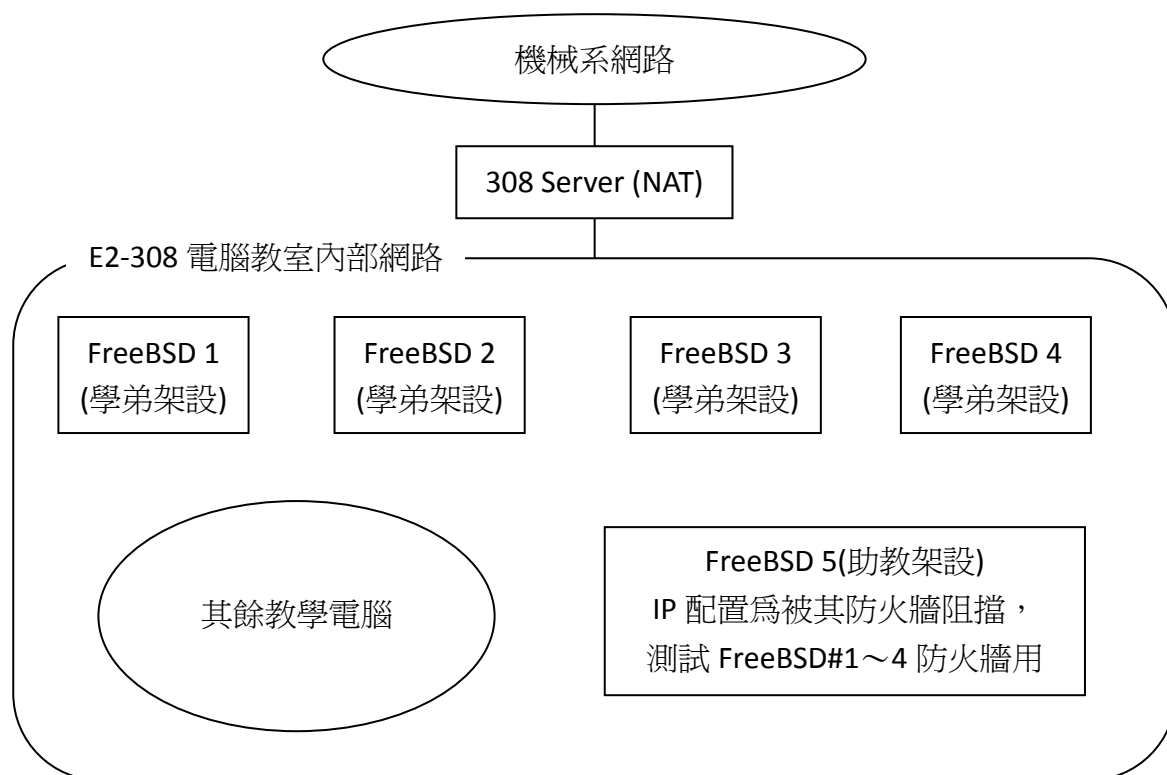


**網管專題：**系統組部分

**專題主旨：**讓新一屆的學弟可以在未來接手 Server 房的各伺服器。

**教學內容：**透過上面設計，讓學弟在內部網路架設 Apache(包含 PHP 語法)、MySQL、DNS、BBS、有 Firewall 功能的伺服器。

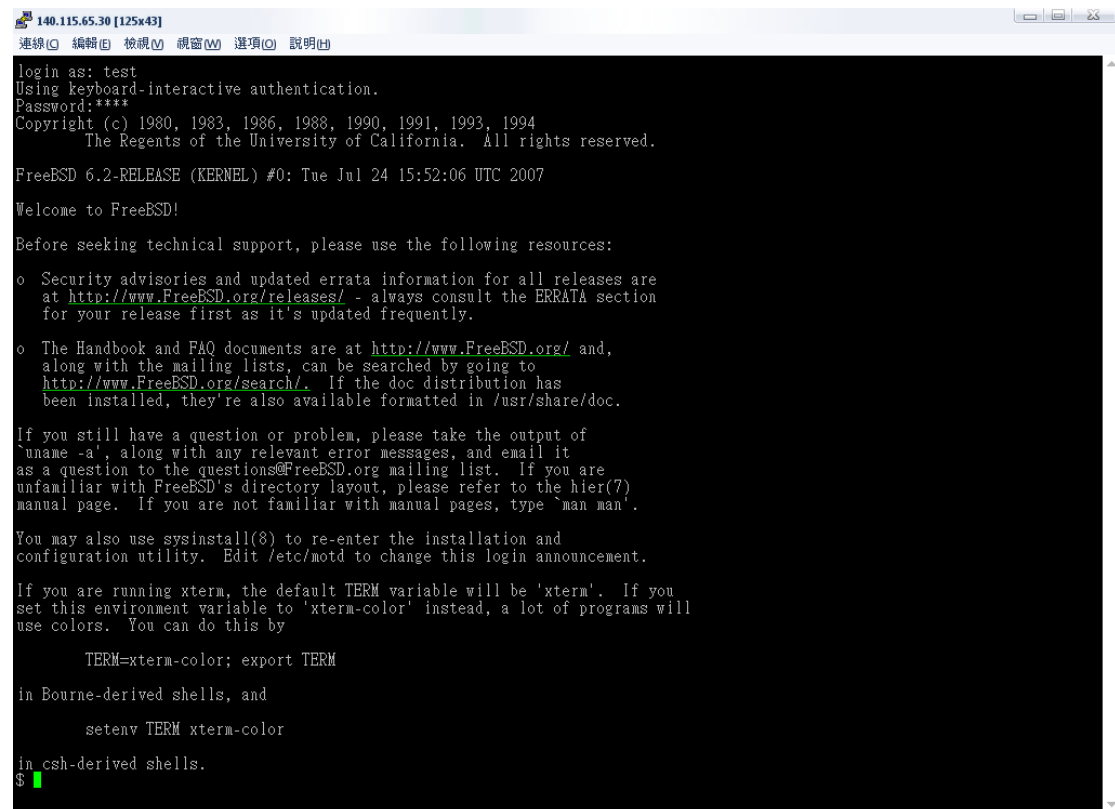
**專題設計：**因為這是教學性值，因此各項設定都是暫時的，所以使用電腦教室的資源來進行教學。透過 NAT 隔開網域，發配虛擬 IP，既不會影響現有的實體網路，教學效率也比較高，設定更改也比較方便。就架設伺服器所使用的系統為 FreeBSD6.2.1，並單純使用文字介面，提高伺服器的效能。



圖一 伺服器配置圖

## 教學講義：

### 繼之前上課所架的 FreeBSD 主機



```
140.115.65.30 [125x43]
連線 編輯 檢視 視窗 選項 說明
login as: test
Using keyboard-interactive authentication.
Password:****
Copyright (c) 1980, 1983, 1986, 1988, 1990, 1991, 1993, 1994
The Regents of the University of California. All rights reserved.

FreeBSD 6.2-RELEASE (KERNEL) #0: Tue Jul 24 15:52:06 UTC 2007

Welcome to FreeBSD!

Before seeking technical support, please use the following resources:

o Security advisories and updated errata information for all releases are
  at http://www.FreeBSD.org/releases/ - always consult the ERRATA section
  for your release first as it's updated frequently.

o The Handbook and FAQ documents are at http://www.FreeBSD.org/ and,
  along with the mailing lists, can be searched by going to
  http://www.FreeBSD.org/search/. If the doc distribution has
  been installed, they're also available formatted in /usr/share/doc.

If you still have a question or problem, please take the output of
`uname -a`, along with any relevant error messages, and email it
as a question to the questions@FreeBSD.org mailing list. If you are
unfamiliar with FreeBSD's directory layout, please refer to the hier\(7\)
manual page. If you are not familiar with manual pages, type `man man`.

You may also use sysinstall(8) to re-enter the installation and
configuration utility. Edit /etc/motd to change this login announcement.

If you are running xterm, the default TERM variable will be 'xterm'. If you
set this environment variable to 'xterm-color' instead, a lot of programs will
use colors. You can do this by

    TERM=xterm-color; export TERM

in Bourne-derived shells, and

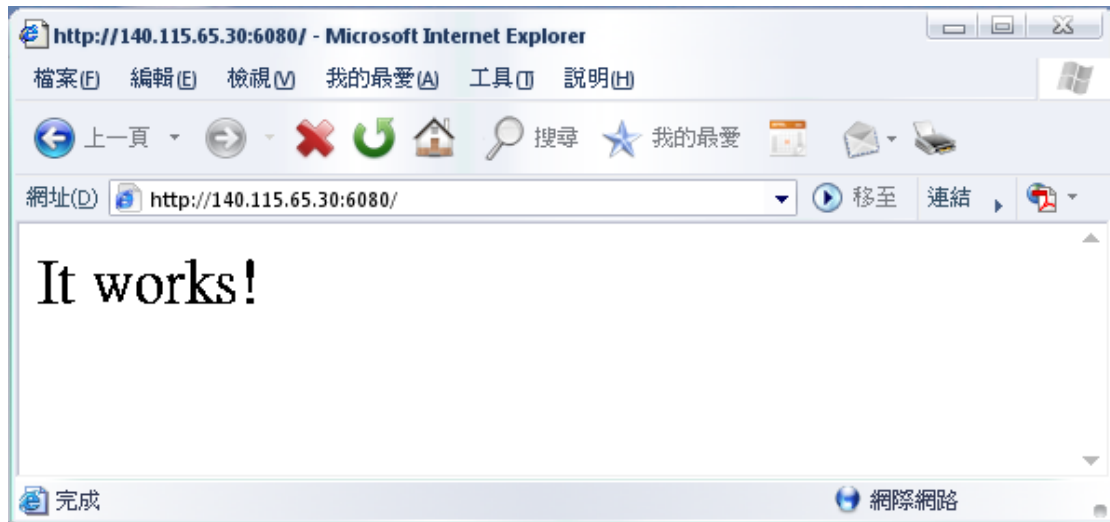
    setenv TERM xterm-color

in csh-derived shells.
$
```

圖二 FreeBSD 作業系統

一、安裝網頁伺服器(提供網頁服務)

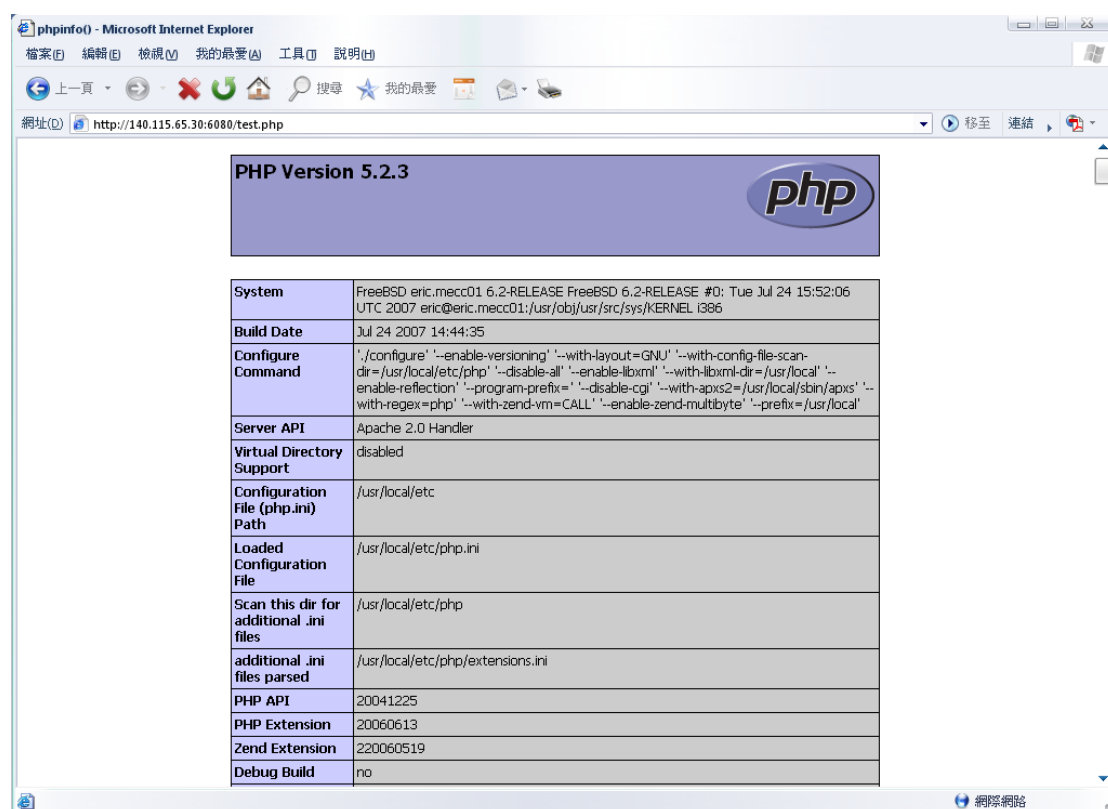
1. Apache 官方網頁：<http://httpd.apache.org/>
2. `cd /usr/ports/www/apache22`
3. `make install clean`
4. 修改網頁首頁順序：`DirectoryIndex index.php index.html index.htm index.html.var`
5. 設定開機時啟動 Apache：在 `/etc/rc.conf` 中加入 `apache22_enable="YES"`



圖三 Apache 網頁伺服器架設成功

## 二、安裝 PHP(使網頁可以使用動態功能)

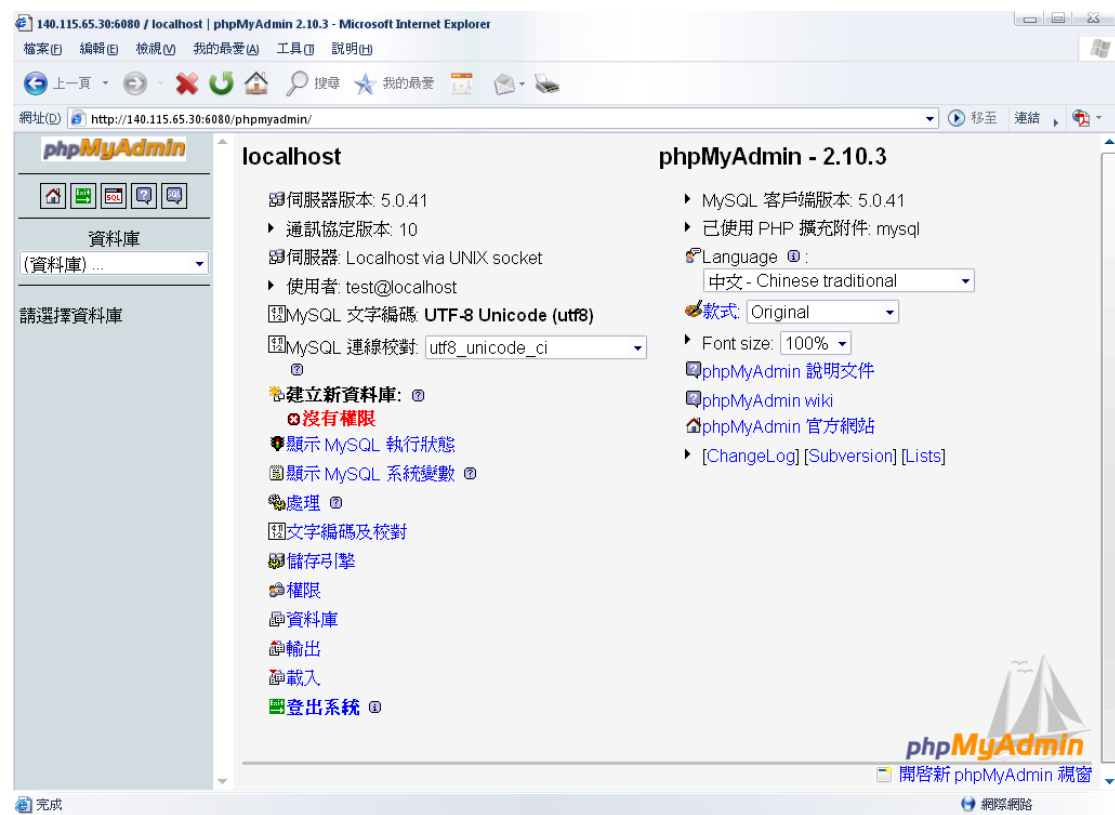
1. PHP 官方網頁：<http://tw.php.net/>
2. `cd /usr/ports/lang/php5`
3. `make install clean`
4. 選擇 PHP 支援內容：CLI、Apache、Suhosin、Multibyte、IPV6 (與 CGI 有關的皆不要勾選)
5. `cd /usr/ports/lang/php5-extensions` (安裝 PHP 擴充支援)
6. `make install clean`
7. 選擇擴充套件：選單上除了預設的以外，再加上 CTYPE、EXIF、GD、ICONV、IMAP、MbString、PCRE、SESSION、ZLIB
8. 在 `httpd.conf` 中加入支援 PHP：
9. `AddType application/x-httpd-php .php`
10. `AddType application/x-httpd-php-source .phps`
11. 複製 PHP 組態設定檔 `cp /usr/local/etc/php.ini-dist /usr/local/etc/php.ini`
12. 修改 `php.ini`，將要載入驅動程式前的「;」去掉、環境變數的開關設定。



圖四 PHP 語法安裝成功及其相關設定顯示

### 三、安裝資料庫(使資料可以有效的整理、蒐集)

1. MySQL 官方網站：<http://www.mysql.com/>
2. `cd /usr/ports/databases/mysql50-server`
3. `make WITH_CHARSET=utf8 WITH_XCHARSET=all install clean`
4. `cd /usr/ports/databases/php5-mysql` (PHP 與 MySQL 的驅動程式)
5. `make install clean`
6. 安裝資料庫管理頁面：到 [phpmyadmin](http://www.phpmyadmin.net/) 官方網頁下載合適的版本，放置於首頁資料夾下
7. [phpmyadmin](http://www.phpmyadmin.net/home_page/index.php) 官方網頁：[http://www.phpmyadmin.net/home\\_page/index.php](http://www.phpmyadmin.net/home_page/index.php)



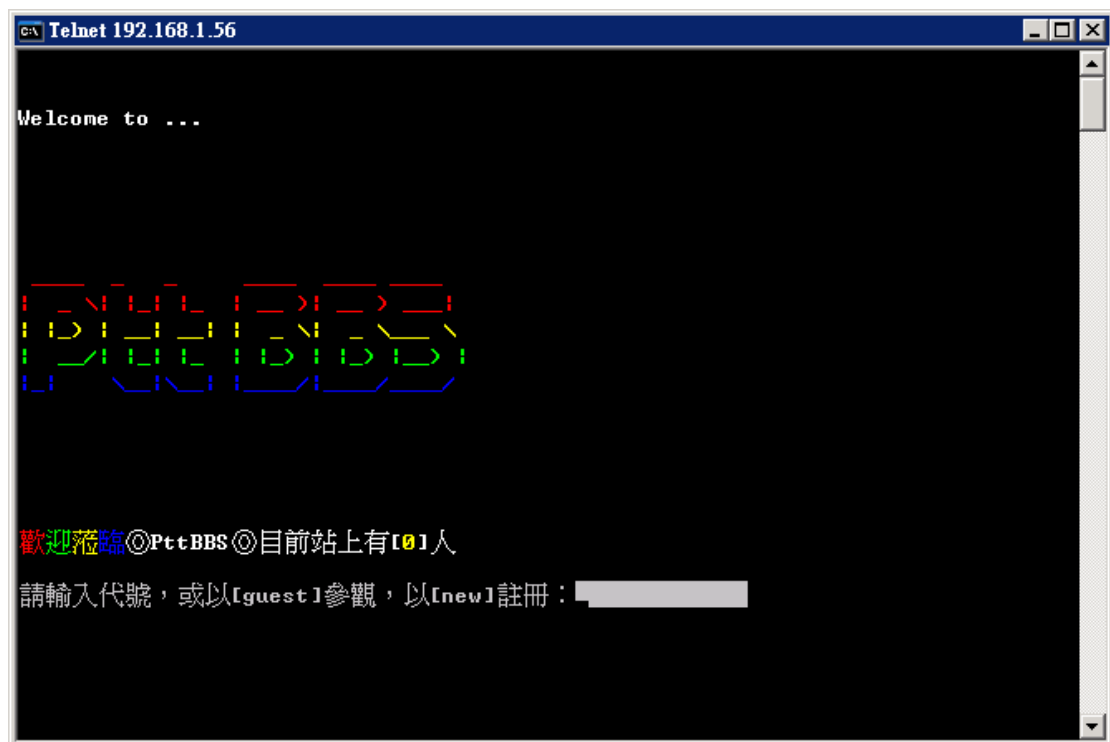
圖五 MySQL 資料庫管理頁面

#### 四、啓動 DNS(使網路上的位置有意義化)

1. BIND 是目前市占率最高的 DNS 程式：<http://www.isc.org/index.pl>
2. DNS 53 PORT 是一個很不安全的 PORT，所以非必要，不要有多餘的功能，DNS 就純粹只是 DNS。
3. BIND 裡頭，主要就是三種檔案的修改。依據不同的作業系統，這三種檔案會在不同的位置，也可自行修改位置。
  - named.conf：定義有哪些網域及其屬性。
  - 正解檔：此 DNS 所管網域裡的正解資源記錄。
  - 反解檔：此 DNS 所管網域裡的反解資源記錄。
4. `cd /etc/namedb`
5. 設定反解檔：`sh ./make-localhost`
6. 編輯/etc/resolv.conf，設定 DNS 的 IP
7. 使開機時就啓動：`/etc/rc.conf` 加入 `/etc/rc.d/named start`

#### 五、安裝 BBS(提供網路電子佈告欄功能)

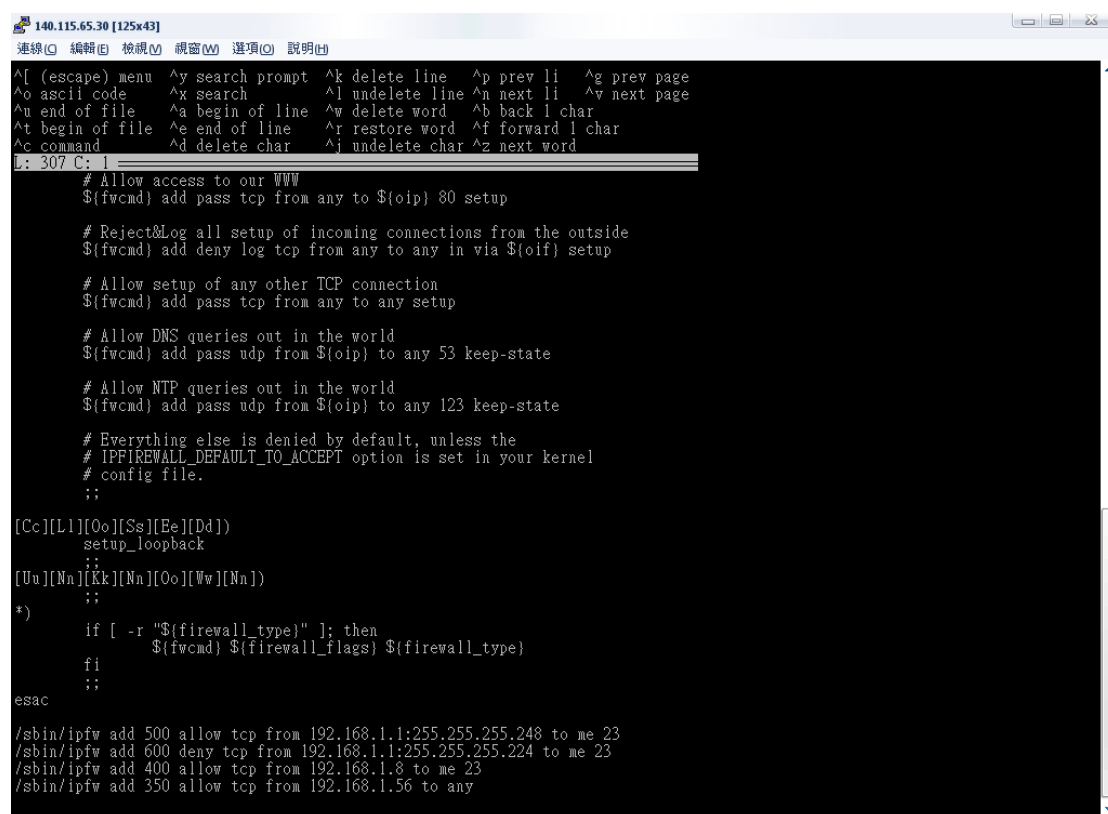
參考：[ptt.cc](http://ptt.cc) BBS 站上的架設 PTT 系統文件



圖六 BBS 登入畫面

## 六、設定防火牆(提高伺服器安全)

參考：[www.twbbs.org](http://www.twbbs.org)



```
140.115.65.30 [125x43]
連線(L) 編輯(E) 檢視(V) 視窗(W) 選項(O) 說明(H)
^_ (escape) menu ^y search prompt ^k delete line ^p prev li ^g prev page
^o ascii code ^x search ^l undelete line ^n next li ^v next page
^u end of file ^a begin of line ^w delete word ^b back 1 char
^t begin of file ^e end of line ^r restore word ^f forward 1 char
^c command ^d delete char ^j undelete char ^z next word
L: 307 C: 1
# Allow access to our WWW
${fwcmd} add pass tcp from any to ${oip} 80 setup

# RejectLog all setup of incoming connections from the outside
${fwcmd} add deny log tcp from any to any in via ${oif} setup

# Allow setup of any other TCP connection
${fwcmd} add pass tcp from any to any setup

# Allow DNS queries out in the world
${fwcmd} add pass udp from ${oip} to any 53 keep-state

# Allow NTP queries out in the world
${fwcmd} add pass udp from ${oip} to any 123 keep-state

# Everything else is denied by default, unless the
# IPFWALL_DEFAULT_TO_ACCEPT option is set in your kernel
# config file.
;;

[Cc][Ll][Oo][Ss][Ee][Dd])
setup_loopback
;;
[Uu][Nn][Kk][Nn][Oo][Ww][Nn)
;;
*)
if [ -r "${firewall_type}" ]; then
fi
;;
esac

/sbin/ipfw add 500 allow tcp from 192.168.1.1:255.255.255.248 to me 23
/sbin/ipfw add 600 deny tcp from 192.168.1.1:255.255.255.224 to me 23
/sbin/ipfw add 400 allow tcp from 192.168.1.8 to me 23
/sbin/ipfw add 350 allow tcp from 192.168.1.56 to any
```

圖七 防火牆規則鍵

以上內容皆與 [www.twbbs.org](http://www.twbbs.org)、鳥哥的 Linux 私房菜 [linux.vbird.org](http://linux.vbird.org) 交叉參考

支援資料：

