MPD

Multi-link PPP daemon

zswu

mpd

- Mpd is a netgraph(4) based implementation of the multi-link PPP protocol for FreeBSD
  - /usr/ports/net/mpd5
  - pkg install mpd5
- It supports several of the numerous PPP sub-protocols and extensions, such as:
  - Multi-link PPP capability
  - PAP, CHAP, MS-CHAP and EAP authentication
  - PPP compression and encryption
- Mpd have support for many link types:
  - Serial port modem
  - Point-to-Point Tunnelling Protocol (PPTP)
  - Layer Two Tunnelling Protocol (L2TP)
  - PPP over Ethernet (PPPoE)

mpd - setup

- /etc/rc.conf

```
gateway_enable="YES"
mpd_flags="-b"
mpd_enable="YES"
```

- Configuration files
  - /usr/local/etc/mpd5/
    - mpd.conf
    - mpd.secret
- Start

```
# sysctl net.inet.ip.forwarding=1
# /usr/local/etc/rc.d/mpd5 start
```

mpd - authentication

- mpd.secret
  - Syntax: username password [ip_address | CIDR]

```
userA           "hello123"
foo1            "foobar"                192.168.1.100
vpnuser         "vpn_passwd"    192.168.1.128/25

# An external password access program
*       "!/usr/local/bin/mpd/vpn_passwd.sh"
```

  - plain text
  - chmod 600 mpd.secret

mpd - configuration (1)

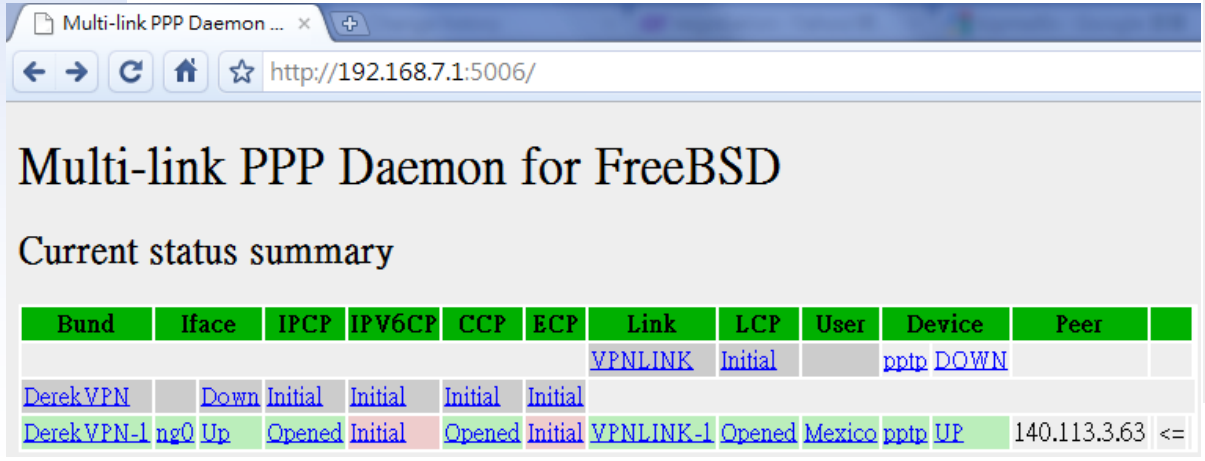
- mpd.conf
  - Consists of a *label* followed by a sequence of mpd commands
  - A label begins at the first column and ends with a colon character
  - Commands are indented with a tab character and follow the label on the next and subsequent lines.

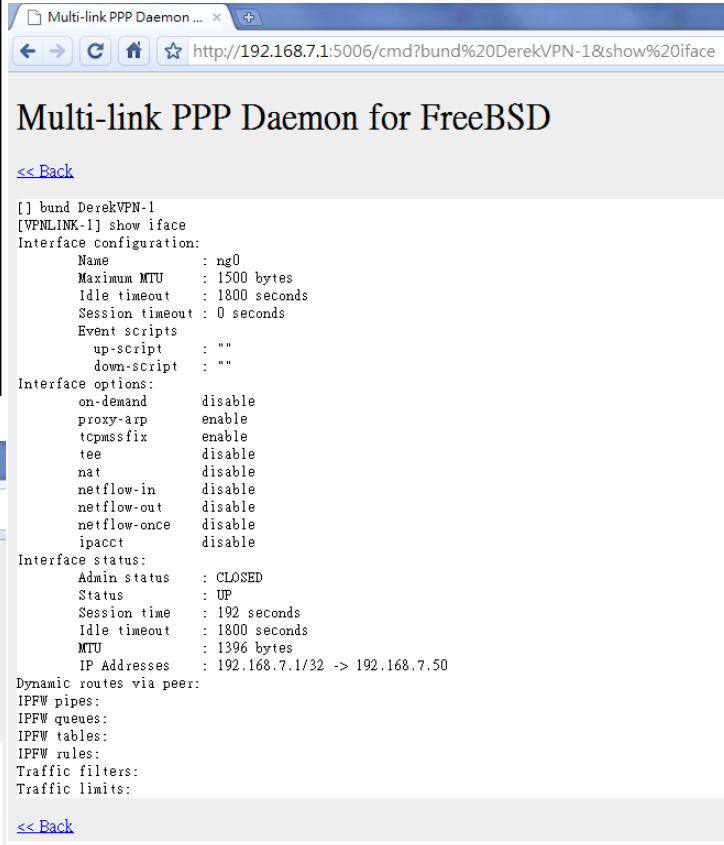
```
client:
        create bundle template B1
        create link static L1 modem
        set modem device /dev/cuad0
        set modem speed 115200
        set modem script DialPeer
        set modem idle-script AnswerCall
        set modem var $DialPrefix "DT"
        set modem var $Telephone "1234567"
        set link no pap chap eap
        set link accept pap
        set auth authname "MyLogin"
        set auth password "MyPassword"
        set link max-redial 0
        set link action bundle B1
        open
```

mpd - configuration (2)

- startup section
  - Added a new startup section to the config-file, which is loaded once at startup.

```
startup:
        # configure mpd console users
        set user foo1 bar1
        # configure the console
        set console self 127.0.0.1 5005
        set console open
        # configure the web server
        set web self 0.0.0.0 5006
        set web open
```





mpd - configuration (3)

- default section
  - Set interface
    - ip range
  - Set bundle name
  - Link layer configuration

```
default:
        load pptp_server

pptp_server:
        # Define dynamic IP address pool.
        set ippool add VPNPOOL 192.168.1.50 192.168.1.99
        # Create clonable bundle template
        create bundle template VPN

        set iface enable proxy-arp
        set iface idle 1800
        set iface enable tcpmssfix  # adjust incoming and outgoing TCP SYN segments (MTU)
        set ipcp yes vjcomp     # Van Jacobson TCP header compression
        # Specify IP address pool for dynamic assigment.
        set ipcp ranges 192.168.1.1/32 ippool VPNPOOL
```

mpd - configuration (4)

- default section
  - Link layer configuration

```
pptp_server:
        …. (skip)
        # Create clonable link template named L
        create link template VPNLINK pptp
        # Set bundle template to use
        set link action bundle VPN
        # Multilink adds some overhead, but gives full 1500 MTU.
        set link enable multilink
        # Address and control field compression, save 2 bytes,
        # Protocol field compression, save 1 byte
        set link yes acfcomp protocomp
        set link keep-alive 10 60

        # Configure PPTP
        set pptp self 1.2.3.4
        set link enable incoming
```

mpd - encryption

- Microsoft Point-to-point compression (MPPC) CCP subprotol
  - 'mppc' option should be enabled at the CCP layer

```
# The five lines below enable Microsoft Point-to-Point encryption
# (MPPE) using the ng_mppc(8) netgraph node type.
    set bundle enable compression
    set ccp yes mppc
    set mppc yes e40
    set mppc yes e128
    set mppc yes stateless
```

mpd - configuration (5)

- Minimum configuration

```
startup:
default:
        set ippool add VPNPOOL 192.168.1.11 192.168.1.15
        create bundle template NAVPN
        set ipcp ranges 192.168.1.1/32 ippool VPNPOOL
        create link template VPNLINK pptp
        set link action bundle NAVPN
        set link no pap chap eap
        set link enable chap-msv2
        set pptp self 1.2.3.4
        set link enable incoming
```

syslog

- Modify /etc/syslog.conf

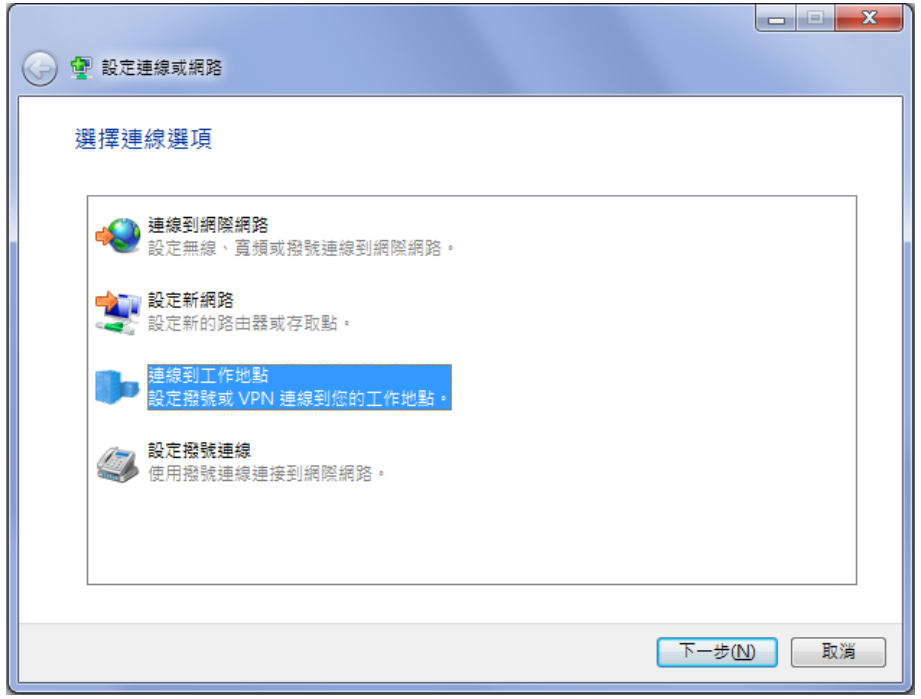
```
!mpd
*.*     /var/log/mpd.log
```

- touch /var/log/mpd.log
- /etc/rc.d/syslogd reload

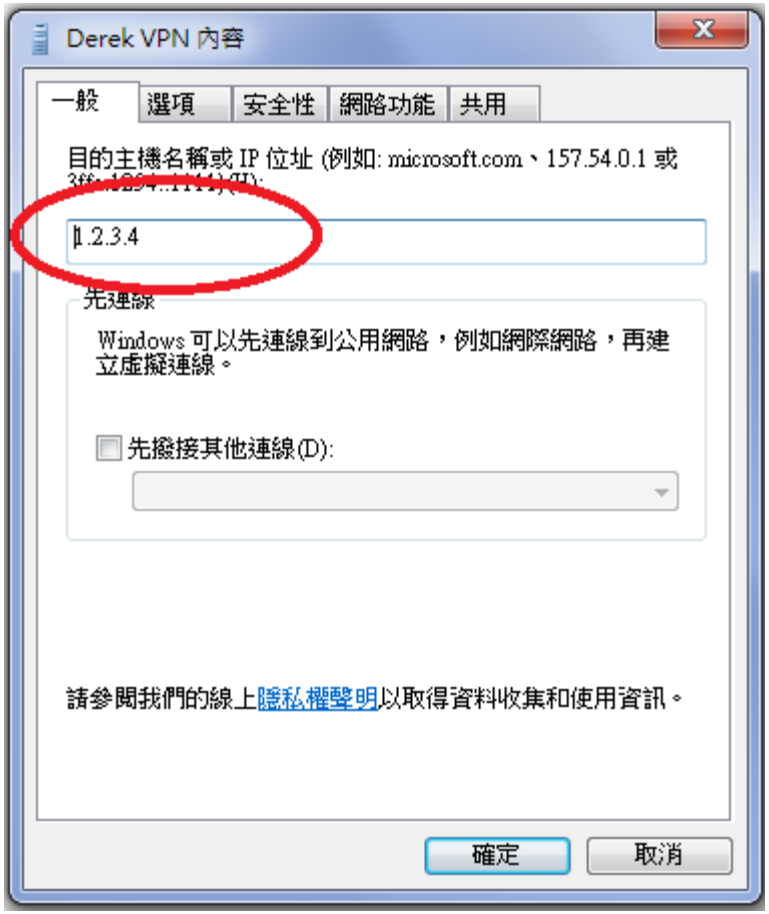
- Maybe firewall need some configuration.
  - Allow 1723 port, and GRE packets.

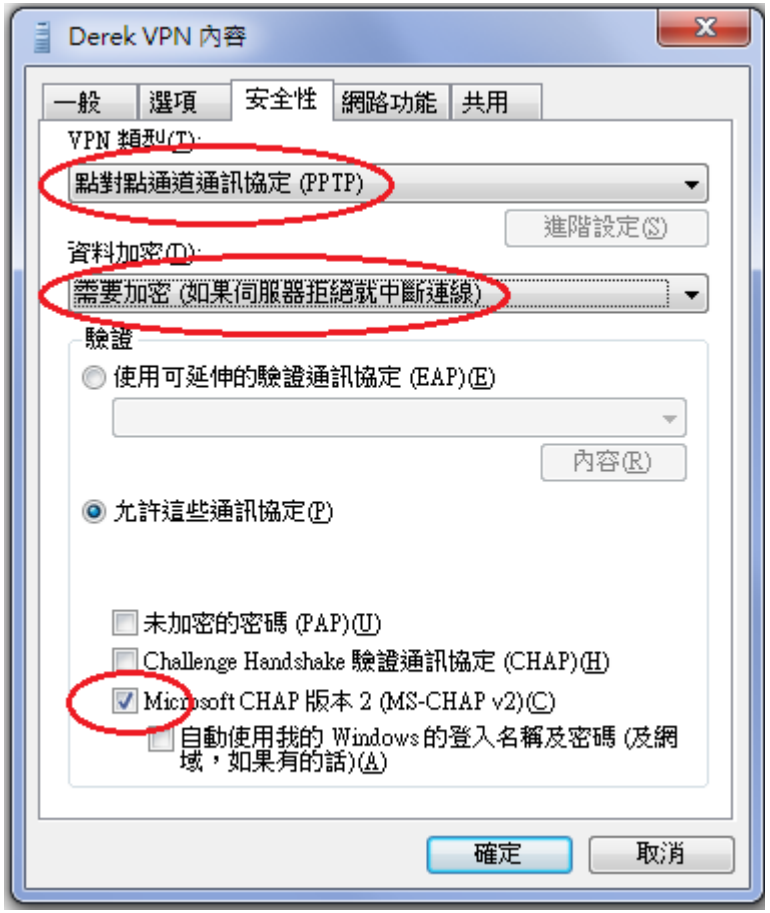
VPN client

- 建立新的連線



VPN client


Derek VPN 內容
一般
選項
安全性
網路功能
共用
目的主機名稱或 IP 位址 (例如: microsoft.com、157.54.0.1 或
1.2.3.4
先連線
Windows 可以先連線到公用網路，例如網際網路，再建立虛擬連線。
先撥接其他連線(D):
請參閱我們的線上隱私權聲明以取得資料收集和使用資訊。
確定
取消


Derek VPN 內容
一般
選項
安全性
網路功能
共用
VPN 類型(T):
點對點通道通訊協定 (PPTP)
進階設定(S)
資料加密(D):
需要加密 (如果伺服器拒絕就中斷連線)
驗證
使用可延伸的驗證通訊協定 (EAP)(E)
內容(R)
允許這些通訊協定(P)
未加密的密碼 (PAP)(U)
Challenge Handshake 驗證通訊協定 (CHAP)(H)
Microsoft CHAP 版本 2 (MS-CHAP v2)(C)
自動使用我的 Windows 的登入名稱及密碼 (及網域，如果有的話)(A)
確定
取消

Reference

- Mpd User Manual
- ports: net/pptpclient
  - http://pptpclient.sourceforge.net/