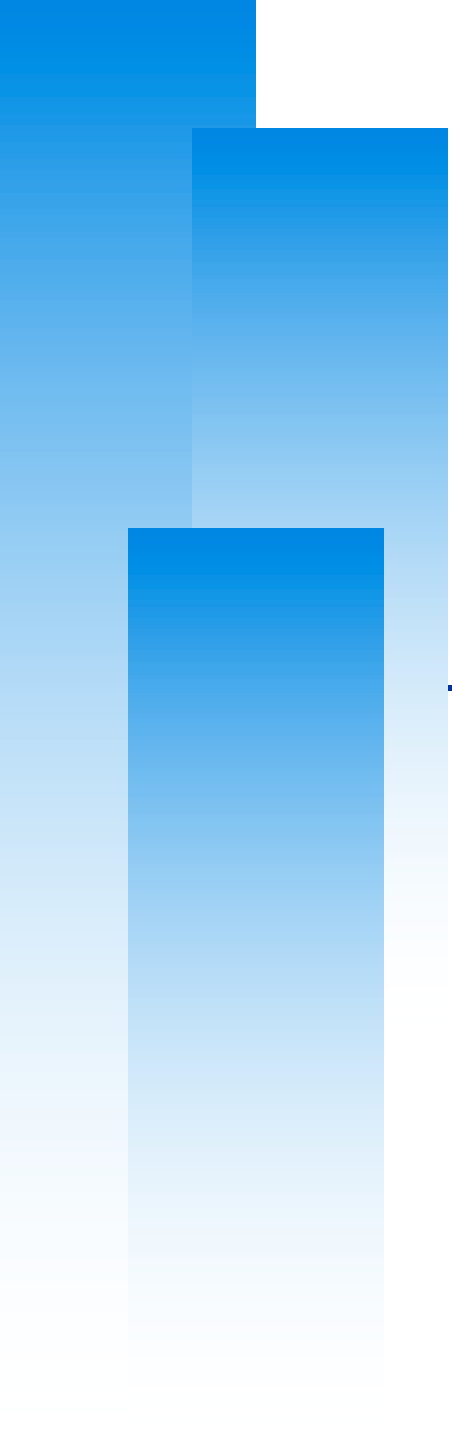




MPD

Multi-link PPP daemon

linpc

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
```

Multi-link PPP Daemon ... x
http://192.168.7.1:5006/cmd?bund%20DerekVPN-1&show%20iface

Multi-link PPP Daemon for FreeBSD

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```
[ ] bund DerekVPN-1
[VPNLINK-1] show iface
Interface configuration:
  Name       : ng0
  Maximum MTU : 1500 bytes
  Idle timeout : 1800 seconds
  Session timeout : 0 seconds
  Event scripts
    up-script : ""
    down-script : ""
Interface options:
  on-demand      : disable
  proxy-arp      : enable
  tcpmssfix      : enable
  tee            : disable
  nat            : disable
  netflow-in     : disable
  netflow-out    : disable
  netflow-once   : disable
  ipacct         : disable
Interface status:
  Admin status   : CLOSED
  Status         : UP
  Session time   : 192 seconds
  Idle timeout   : 1800 seconds
  MTU            : 1396 bytes
  IP Addresses   : 192.168.7.1/32 -> 192.168.7.50
Dynamic routes via peer:
IPFW pipes:
IPFW queues:
IPFW tables:
IPFW rules:
Traffic filters:
Traffic limits:
```

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Multi-link PPP Daemon ... x
http://192.168.7.1:5006/

Multi-link PPP Daemon for FreeBSD

Current status summary

Bund	Iface	IPCP	IPv6CP	CCP	ECF	Link	LCP	User	Device	Peer	
						VPNLINK	Initial		pptp	DOWN	
DerekVPN	Down	Initial	Initial	Initial	Initial						
DerekVPN-1	ng0 Up	Opened	Initial	Opened	Initial	VPNLINK-1	Opened	Mexico	pptp	UP	140.113.3.63 <=

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 assignment.
```

```
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

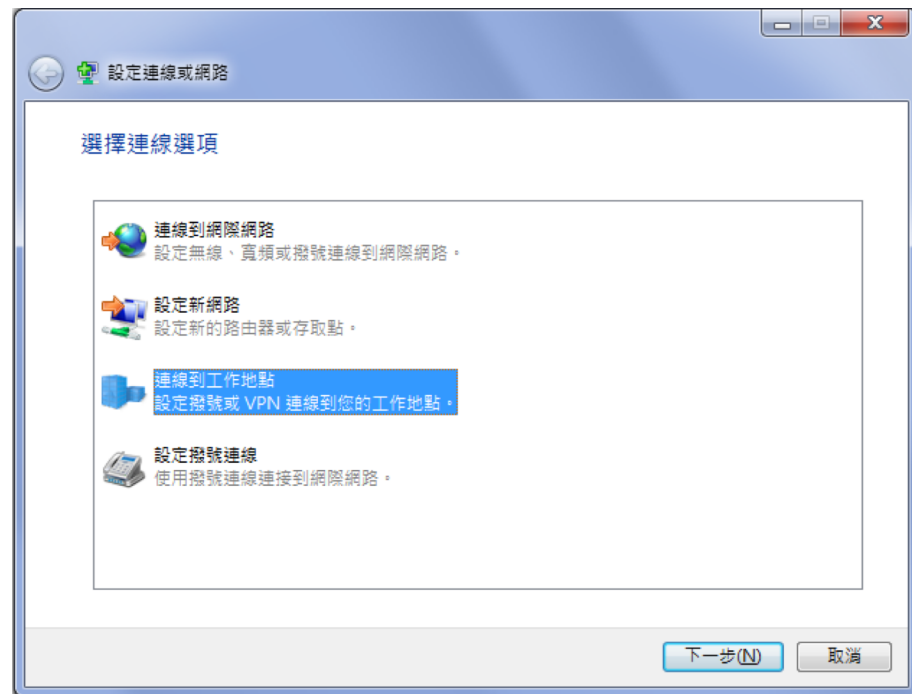
- ☐ Modify /etc/syslog.conf

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

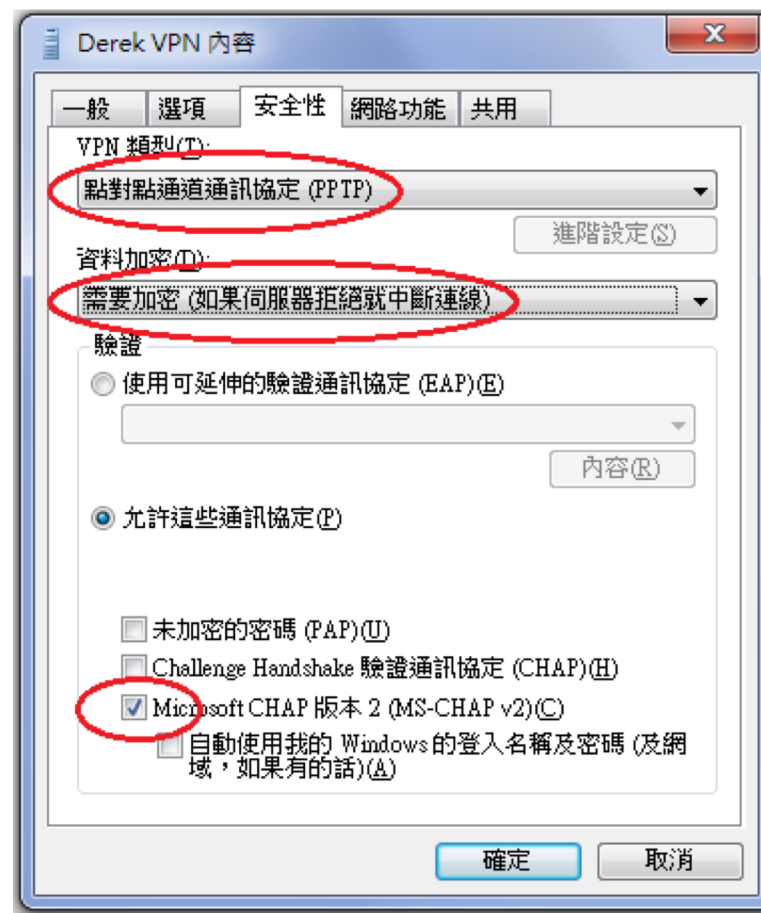
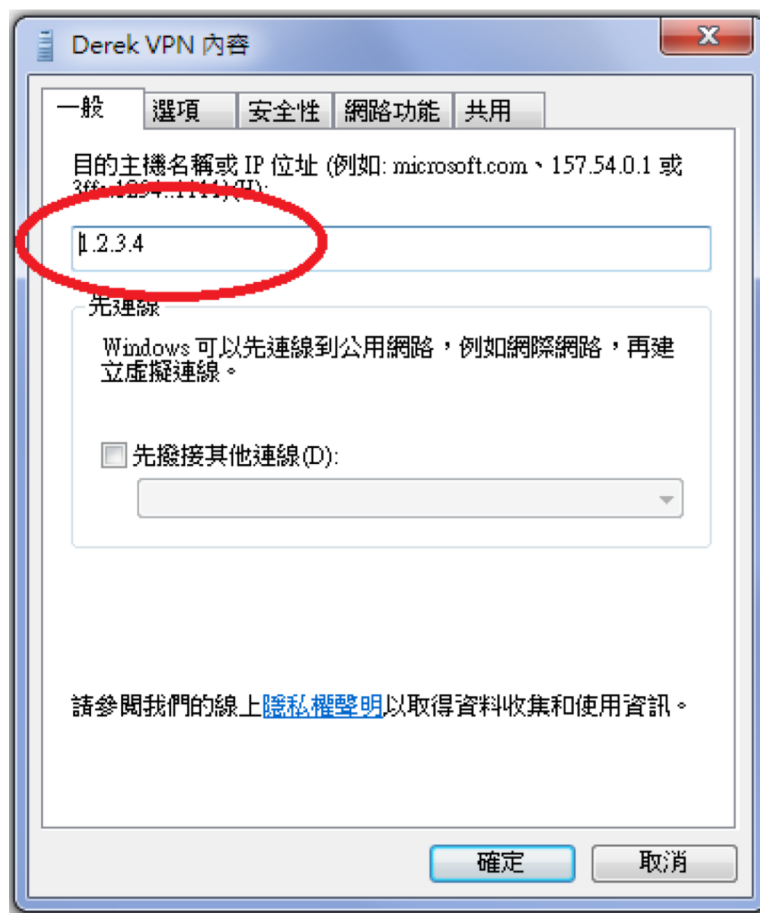
- ☐ touch /var/log/mpd.log
- ☐ /etc/rc.d/syslogd reload
- ☐ Maybe firewall need some configuration.
 - Allow 1723 port, and GRE packets.

VPN client

❑ 建立新的連線



VPN client



Reference

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