Configuration examples for the D-Link NetDefend Firewall series

DFL-210/260/800/860/1600/2500

Scenario: Virtual private network using a PPTP (or L2TP) lan-to-lan tunnel

Last update: 2007-07-31

Overview

In this document, the notation *Objects->Address book* means that in the tree on the left side of the screen **Objects** first should be clicked (expanded) and then **Address Book**.

Most of the examples in this document are adapted for the DFL-800. The same settings can easily be used for all other models in the series. The only difference is the names of the interfaces. Since the DFL-1600 and DFL-2500 has more than one lan interface, the lan interfaces are named lan1, lan2 and lan3 not just lan.

The screenshots in this document is from firmware version 2.11.02. If you are using an earlier version of the firmware, the screenshots may not be identical to what you see on your browser.

To prevent existing settings to interfere with the settings in these guides, reset the firewall to factory defaults before starting.

How to configure virtual private network using a PPTP (or L2TP) lan-to-lan tunnel

Create one lan-to-lan PPTP VPN tunnel between firewall A and B. Firewall B is the server and firewall A the client.

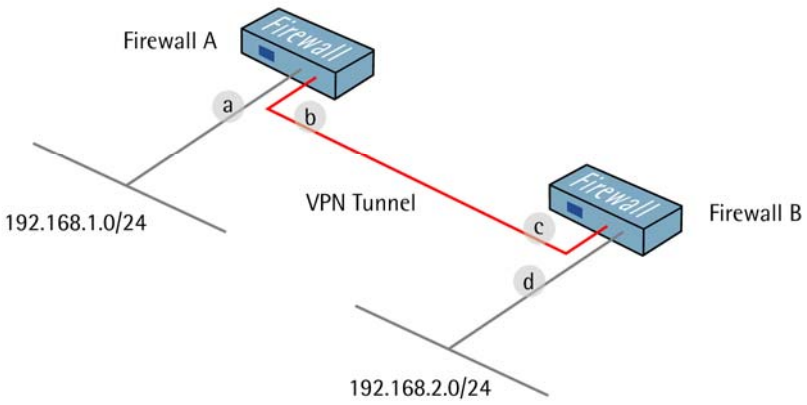
If a L2TP tunnel is going to be used, instead of PPTP, follow the steps in this guide but change tunnel protocol from PPTP to L2TP in step 2 and 6. The other settings are same in both cases.

a IP: 192.168.1.1

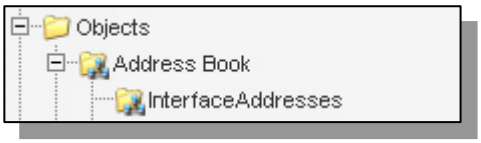
b IP: 192.168.110.1
Mask: 255.255.255.0
Gateway: 192.168.110.2

c IP: 192.168.110.2
Mask: 255.255.255.0
Gateway: 192.168.110.1

d IP: 192.168.2.1



1. Firewall A - Addresses



Go to *Objects -> Address book -> InterfaceAddresses.*
Edit the following items:
Change **lan_ip** to **192.168.1.1**
Change **lannet** to **192.168.1.0/24**

Change **wan1_ip** to **192.168.110.1**
Change **wan1net** to **192.168.110.0/24**

Go to *Objects -> Address book.*

Add a new **Address Folder** called **RemoteHosts**.

In the new folder, add a new **IP address**:
Name: **fwA-remotenet**
IP Address: **192.168.1.0/24**

Click **Ok**

In the same folder, add a new **IP address**:
Name: **fwB-remotegw**
IP Address: **192.168.110.2**

Click **Ok**

2. Firewall A – PPTP client interface

Go to *Interfaces -> PPTP/L2TP Clients*.

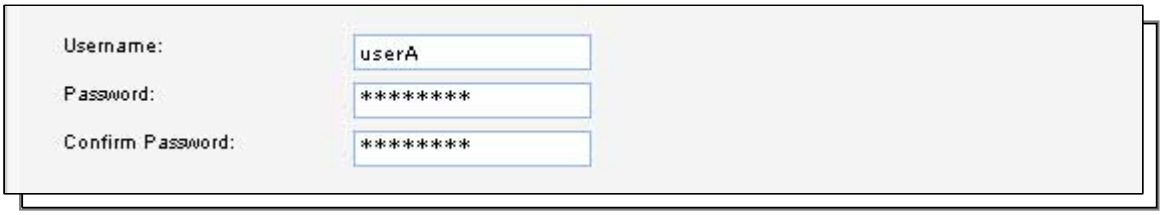
Add a new PPTP/**L2TP Client**.

In the **General** tab:

General:

Name: **PPTPClient**
Tunnel Protocol: **PPTP**
Remote Endpoint: **fwB-remotegw**
Remote Network: **fwB-remotenet**

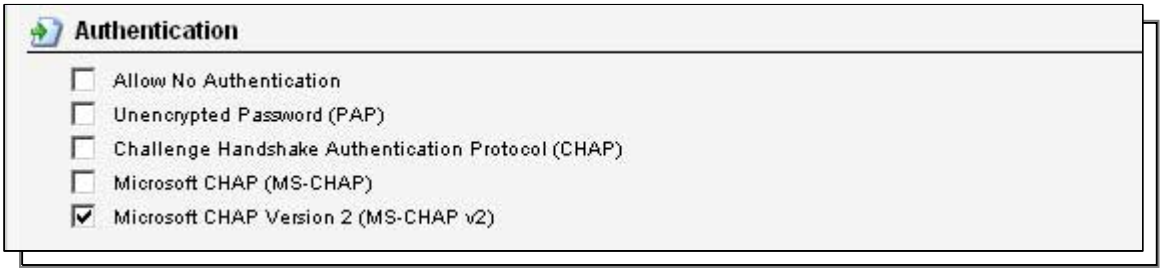
Authentication:



Username: userA

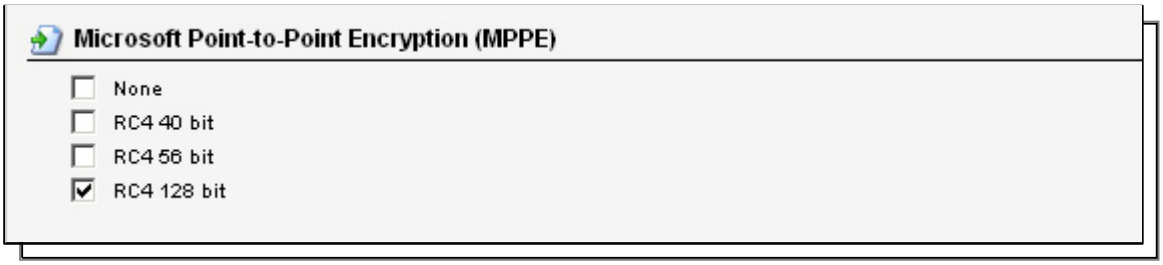
In the **Security** tab:

Authentication:



The only options that should be checked is **`Microsoft CHAP Version 2 (MS-CHAP v2)`**

Microsoft Point-to-Point Encryption (MPPE):



Only **`RC4 128 bit`** should be checked. (Using MS-CHAP v2 and 128 bit is the most secure option.)

3. Firewall A – Rules

Go to *Rules -> IP Rules*.

Create a new **IP Rules Folder** called **`lan_to_fwB-pptp`**

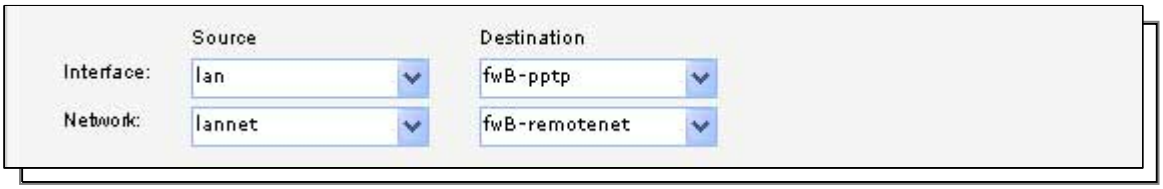
In the new folder, create a new **IP Rule**.

In the **General** tab:

General:

Name: **allow_all**
Action: **Allow**
Service: **all_services**

Address Filter:



Source Interface: **lan**
Source Network: **lannet**
Destination Interface: **fwB-pptp**
Destination Network: **fwB-remotenet**

Click **Ok**.

Create a second rule in the same folder.

In the **General** tab:

General:
Name: **allow_all**
Action: **Allow**
Service: **all_services**

Address Filter:

Source Interface: **fwB-pptp**
Source Network: **fwB-remotenet**
Destination Interface: **lan**
Destination Network: **lannet**

Click **Ok**.

Save and activate the configuration on firewall A.

4. Firewall B - Addresses

Go to *Objects -> Address book -> InterfaceAddresses.*
Edit the following items:
Change **lan_ip** to **192.168.2.1**
Change **lannet** to **192.168.2.0/24**

Change **wan1_ip** to **192.168.110.2**
Change **wan1net** to **192.168.110.0/24**

Go to *Objects -> Address book.*

Add a new **Address Folder** called **RemoteHosts**.

In the new folder, add a new **IP address**
Name: **fwA-remotenet**
IP Address: **192.168.1.0/24**

Add a new **Address Folder** called **IPPools**.

In the new folder, add a new **IP address.**
Name: **fwA-ippool**
IP Address: **192.168.2.100-192.168.2.199**

Click **Ok**

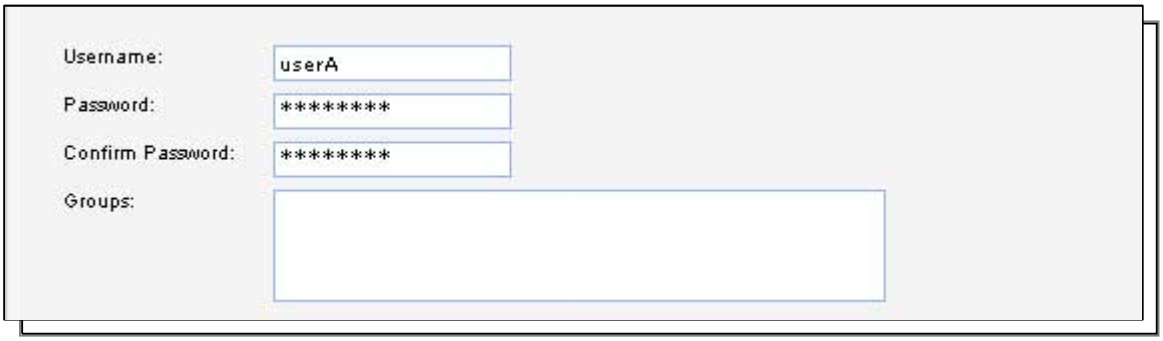
5. Firewall B – User database

Go to *User Authentication -> Local User Databases*.

Add a new **Local User Database** called **`PPPUsers`**.

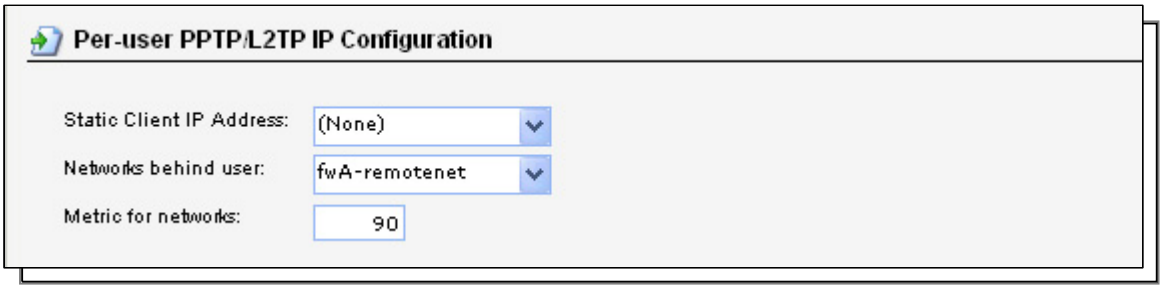
In the new database, add a new **User**:

General:



Username: **`userA`**

Per-user PPTP/L2TP IP Configuration:



Static Client IP Address: **`(None)`**
Networks behind user: **`fwA-remotenet`**
Metric for networks: **`90`**

6. Firewall B – PPTP Server interface

Go to *Interfaces -> PPTP/L2TP Server*.

Add a new **PPTP/L2TP Server**

In the **General** tab:

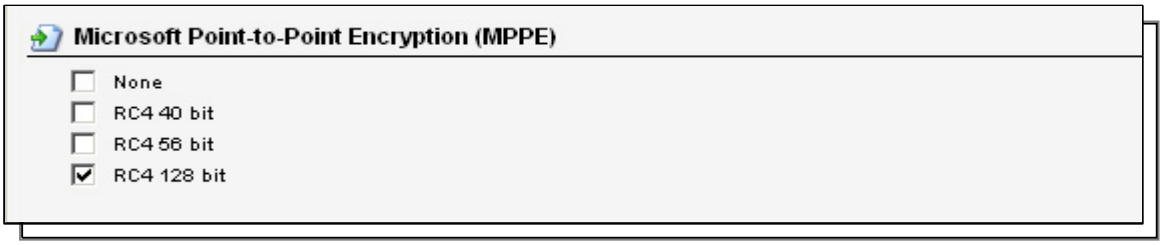
General:

Name: **fwA-pptp**
Inner IP Address: **lan_ip**
Tunnel Protocol: **PPTP**
Outer Interface Filter: **wan1**
Server IP: **wan1_ip**

In the **PPP Parameters** tab:

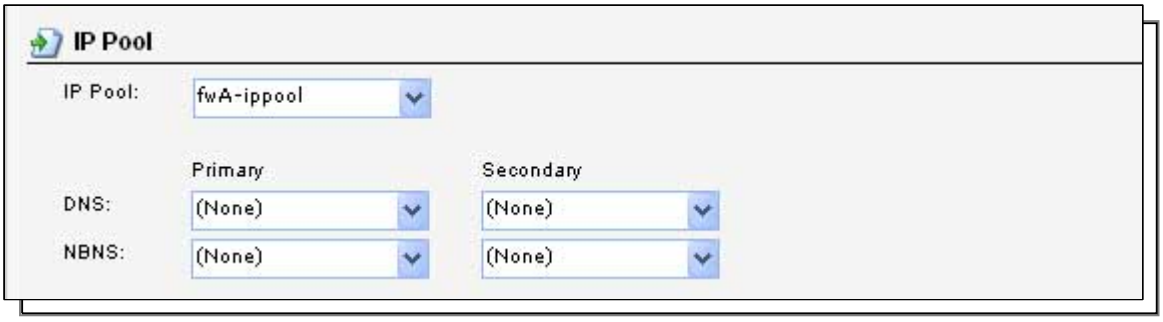
General:
Check the **Use User Authentication Rules** option

Microsoft Point-to-Point Encryption (MPPE):



Only **RC4 128 bit** should be checked.

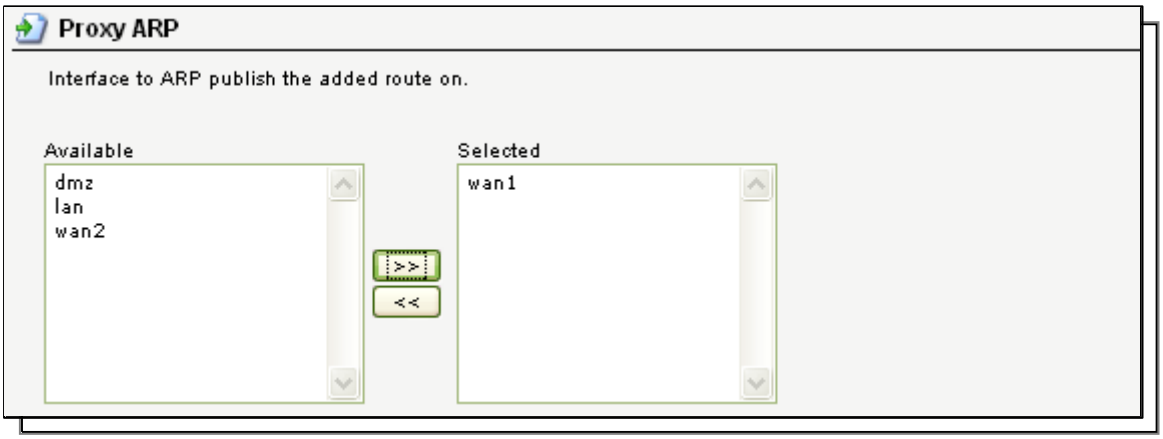
IP Pool:



IP Pool: **`fwA-ippool`**

In the **Add Route** tab:

Proxy ARP:



Proxy ARP: **`wan1`**
Click **Ok**.

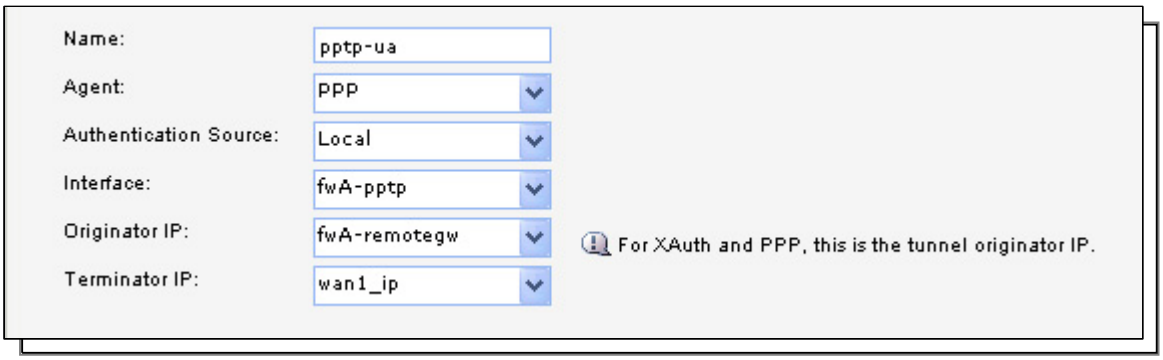
7. Firewall B – User authentication rules

Go to *User Authentication -> User Authentication Rules*.

Add a new **User Authentication Rule**.

In the **General** tab:

General:



Name: **pptp-ua**
Agent: **PPP**
Authentication Source: **Local**
Interface: **fwA-pptp**
Originator IP: **fwA-remotegw**
Terminator IP: **wan1_ip**

In the **Authentication Options** tab:

General:

Local User DB: **PPPUsers**

Click **Ok**.

8. Firewall B – Rules

Go to *Rules -> IP Rules*.

Create a new **IP Rules Folder** called **`lan_to_fwA-pptp`**

In the new folder, create a new **IP Rule**.

In the **General** tab:

General:

Name: **`allow_all`**
Action: **`Allow`**
Service: **`all_services`**

Address Filter:
Source Interface: **`lan`**
Source Network: **`lannet`**
Destination Interface: **`fwA-pptp`**
Destination Network: **`fwA-remotenet`**

Click **Ok**.

Create a second rule in the same folder.

In the **General** tab:

General:
Name: **allow_all**
Action: **Allow**
Service: **all_services**

Address Filter:
Source Interface: **fwA-pptp**
Source Network: **fwA-remotenet**
Destination Interface: **lan**
Destination Network: **lannet**

Click **Ok**.

Save and activate the configuration on firewall A.