



Configuration examples for the D-Link NetDefend Firewall series

Scenario: How to configure VLAN

Platform Compatibility: All NetDefend Firewall Series

Last update: 2008-03-10

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 2.12.00. If you are using an earlier version of the firmware, the screenshots may not be identical to what you see on your browser.

How to Configure VLAN

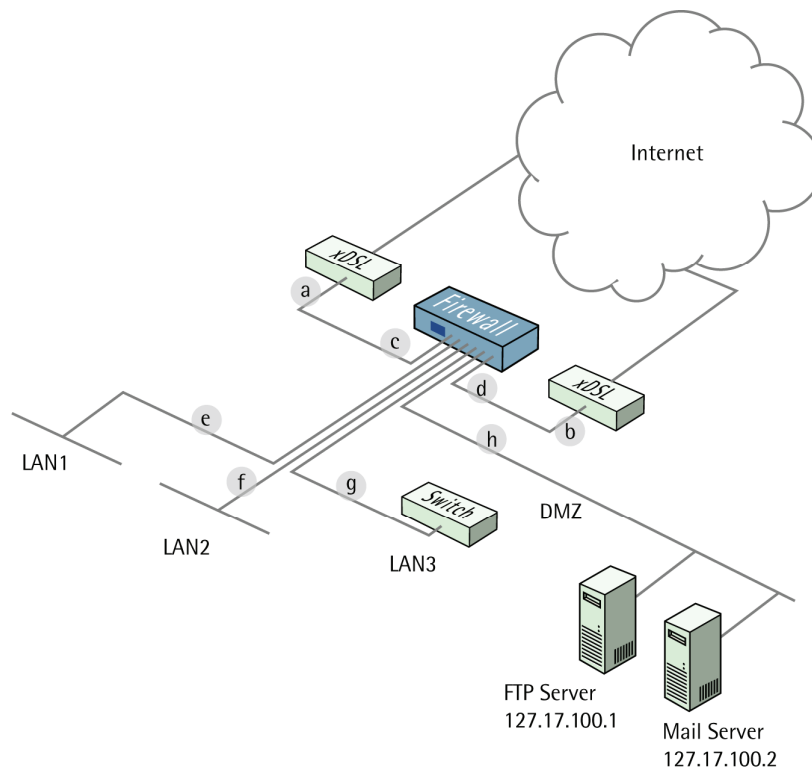
This example requires a DFL-1600 or 2500 to be fully implemented. Most settings can however also be used on a DFL-210 or DFL-800.

Two tag based VLANs will be created on lan3, that connect to switch port with VLAN tag.

Details:

- From lan1, lan2 and lan3: HTTP, HTTPS and DNS connect to Internet via wan2.
- All internal nets can also access the Mail server in dmz.
- Only VLAN2 can access the FTP server in dmz.

- a IP: 192.168.110.254
NetMask: 255.255.255.0
- b IP: 192.168.120.254
Netmask: 255.255.255.0
- c IP: 192.168.110.1
Netmask: 255.255.255.0
gateway: 192.168.110.254
- d IP: 192.168.120.1
Netmask: 255.255.255.0
gateway: 192.168.120.254
- e IP: 192.168.1.1
Netmask: 255.255.255.0
- f IP: 192.168.2.1
Netmask: 255.255.255.0
- g VLAN 1 IP: 192.168.5.254
VLAN 2 IP: 192.168.10.254
Netmask: 255.255.255.0
- h IP: 172.17.100.254
Netmask: 255.255.255.0



1. Addresses

Go to *Objects* -> *Address book* -> *InterfaceAddresses*

Make sure the configured addresses match the following list, and add the objects that not already exist. To add new objects, select **IP address** from the add dropdown, enter name and address and click ok.

Name	Address
lan1_ip	192.168.1.1
lan1net	102.168.1.0/24
lan2_ip	192.168.2.1
lan2net	192.168.2.0/24
lan3_ip	192.168.3.1
lan3net	192.168.3.0/24
dmz_ip	172.17.100.254
dmznet	172.17.100.0/24
wan1_ip	192.168.110.1
wan1net	192.168.110.0/24
wan1-gw	192.168.110.254
wan2_ip	192.168.120.1
wan2net	192.168.120.0/24
wan2-gw	192.168.120.254
vlan1_ip	192.168.5.254
vlan1net	192.168.5.0/24
vlan2_ip	192.168.10.254
vlan2net	192.168.10.0/24
ftp-server	172.17.100.1
mail-server	172.17.100.2

Add a new IP4 Group.

In the **General** tab:

Name:

Group members: Available

all-nets	>>	lan1net
ftp-server		lan2net
mail-server		vlan1net
vlan1_ip		vlan2net
vlan2_ip		
wan1_gw		

Selected

General:

Name: **all-lannets**

Add **lan1net**, **lan2net**, **vlan1net** and **vlan2net**.

Click **Ok**.

2. Ethernet interfaces

Go to *Interfaces -> Ethernet*.

Edit the **wan1** interface to use the following settings.

Name:

IP Address: ▼

Network: ▼

Default Gateway: ▼

In the **General** tab:

IP Address: **wan1_ip**

Network: **wan1net**

Default Gateway: **wan1_gw**

In the **Advanced** tab:

Automatically add commonly used routes related to this interface

Add route for interface network

Add default route if default gateway is specified

Route Metric:

Automatic Route Creation:

Deselect **Add route for interface network** and **Add default route if default gateway is specified**.

Click **Ok**.

Edit the **wan2** interface according to the following settings.

In the **General** tab:

General:

IP Address: **wan2_ip**

Network: **wan2net**

Default Gateway: **wan2_gw**

In the **Advanced** tab:

Automatic Route Creation:

Automatically add commonly used routes related to this interface

Add route for interface network

Add default route if default gateway is specified

Route Metric:

Deselect **Add route for interface network** and **Add default route if default gateway is specified**.

Click **Ok**.

3. Routes

Go to *Routing -> Routing Tables -> Main*.

Add a new Route.

In the **General** tab:

Interface:	<input type="text" value="wan1"/>
Network:	<input type="text" value="all-nets"/>
Gateway:	<input type="text" value="wan1_gw"/>
Local IP Address:	<input type="text" value="(None)"/>
Metric:	<input type="text" value="90"/>

General:

Interface: **wan1**

Network: **all-nets**

Gateway: **wan1_gw**

Local IP Address: **(None)**

Metric: **90**

Click Ok.

Add a new Route.

In the **General** tab:

General:

Interface: **wan2**

Network: **all-nets**

Gateway: **wan2_gw**

Local IP Address: **(None)**

Metric: **80**

Click Ok.

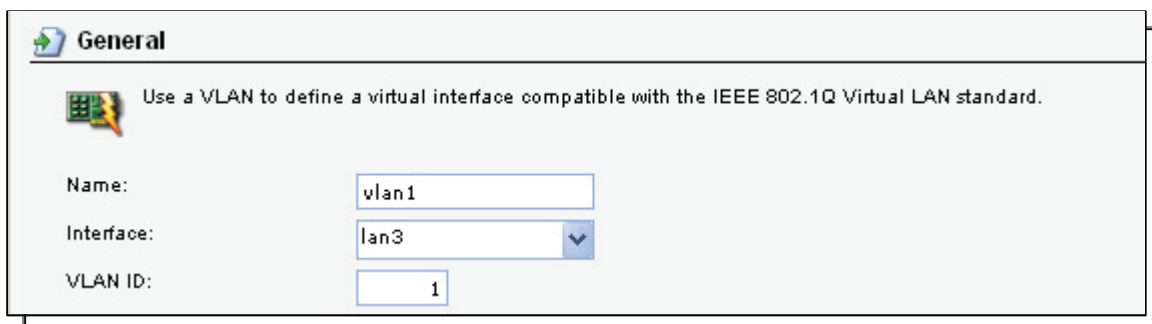
4. VLAN interfaces

Go to *Interfaces* -> *VLAN*.

Add a new VLAN.

In the **General** tab:

General:



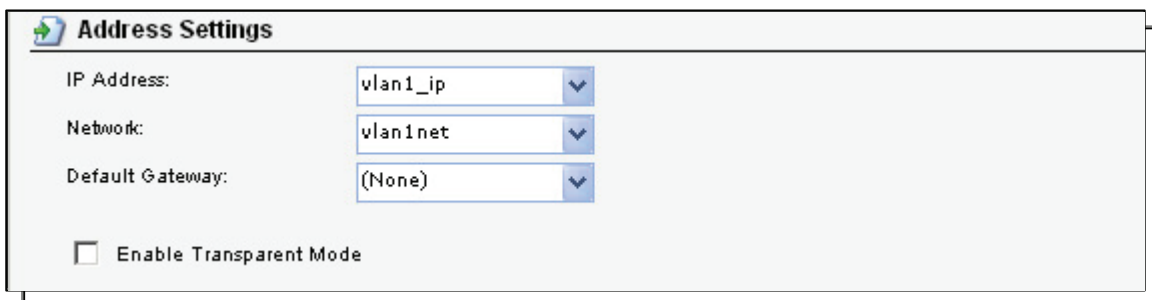
The screenshot shows the 'General' tab of a VLAN configuration window. At the top, there is a title bar with a green arrow icon and the word 'General'. Below the title bar, there is a small icon of a network card and a descriptive text: 'Use a VLAN to define a virtual interface compatible with the IEEE 802.1Q Virtual LAN standard.' The configuration fields are as follows: 'Name:' with a text input field containing 'vlan1'; 'Interface:' with a dropdown menu showing 'lan3'; and 'VLAN ID:' with a text input field containing '1'.

Name: **vlan1**

Interface: **lan3**

VLAN ID: **1**

Address Settings:



The screenshot shows the 'Address Settings' tab of a VLAN configuration window. At the top, there is a title bar with a green arrow icon and the words 'Address Settings'. Below the title bar, there are three configuration fields: 'IP Address:' with a dropdown menu showing 'vlan1_ip'; 'Network:' with a dropdown menu showing 'vlan1net'; and 'Default Gateway:' with a dropdown menu showing '(None)'. At the bottom, there is a checkbox labeled 'Enable Transparent Mode' which is currently unchecked.

IP Address: **vlan1_ip**

Network: **vlan1net**

Default Gateway: **(None)**

Click **Ok**

Add a new VLAN.

In the General tab:

General:

General

Use a VLAN to define a virtual interface compatible with the IEEE 802.1Q Virtual LAN standard.

Name:

Interface:

VLAN ID:

Name: **vlan2**

Interface: **lan3**

VLAN ID: **2**

Address Settings:

Address Settings

IP Address:

Network:

Default Gateway:

Enable Transparent Mode

IP Address: **vlan2_ip**

Network: **vlan2net**

Default Gateway: **(None)**

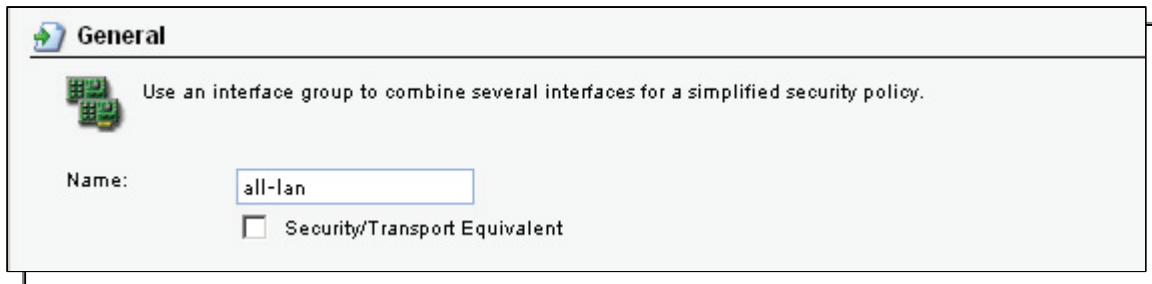
Click Ok

5. Interface groups

Go to *Interfaces* -> *Interface Groups*.

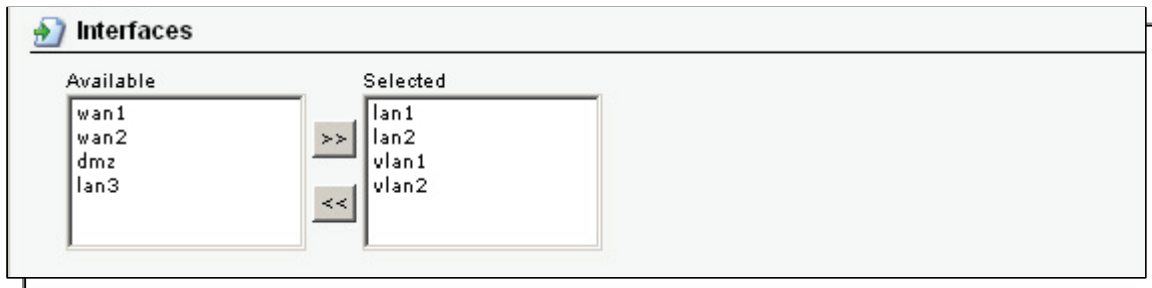
Add a new Interface Group.

General:



The screenshot shows the 'General' configuration page for an interface group. At the top, there is a title bar with a green arrow icon and the word 'General'. Below the title bar, there is a small icon of a network card and the text: 'Use an interface group to combine several interfaces for a simplified security policy.' Underneath, there is a 'Name:' label followed by a text input field containing 'all-lan'. Below the input field, there is a checkbox labeled 'Security/Transport Equivalent' which is currently unchecked.

Name: **all-lan**



The screenshot shows the 'Interfaces' configuration page for an interface group. At the top, there is a title bar with a green arrow icon and the word 'Interfaces'. Below the title bar, there are two columns: 'Available' and 'Selected'. The 'Available' column contains a list box with the following items: wan1, wan2, dmz, and lan3. The 'Selected' column contains a list box with the following items: lan1, lan2, vlan1, and vlan2. Between the two list boxes, there are two buttons: a right-pointing arrow (>>) and a left-pointing arrow (<<).

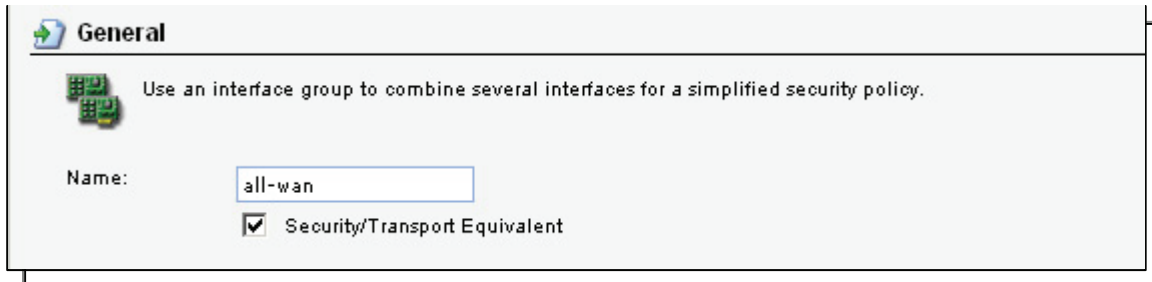
Interfaces:

Add **lan1**, **lan2**, **vlan1** and **vlan2** to this group.

Click **Ok**.

Add a new Interface Group.

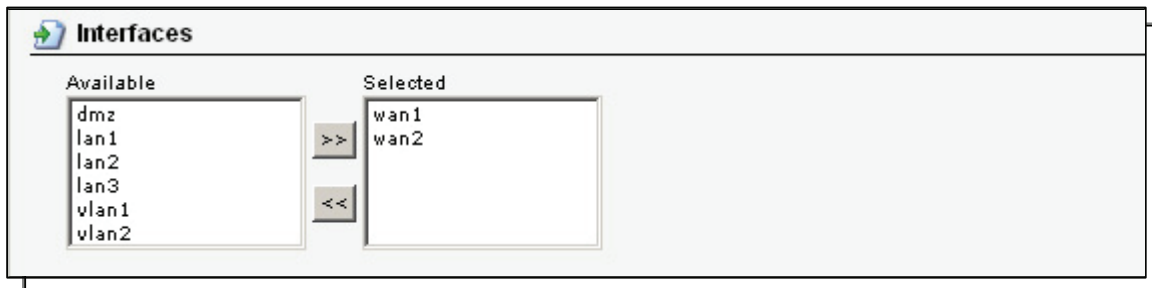
General:



The screenshot shows the 'General' configuration page. At the top, there is a title bar with a green arrow icon and the word 'General'. Below the title bar, there is a small icon of a computer monitor and the text: 'Use an interface group to combine several interfaces for a simplified security policy.' Underneath, there is a 'Name:' label followed by a text input field containing 'all-wan'. Below the input field, there is a checked checkbox labeled 'Security/Transport Equivalent'.

Name: **all-wan**

Select **Security/Transport Equivalent**



The screenshot shows the 'Interfaces' configuration page. At the top, there is a title bar with a green arrow icon and the word 'Interfaces'. Below the title bar, there are two list boxes. The left box is titled 'Available' and contains the following items: dmz, lan1, lan2, lan3, vlan1, and vlan2. The right box is titled 'Selected' and contains the following items: wan1 and wan2. Between the two boxes are two buttons: a right-pointing arrow (>>) and a left-pointing arrow (<<).

Interfaces:

Add **wan1** and **wan2** to this group.

Click Ok.

6a. Rules to allow HTTP, HTTPS and DNS to Internet

Go to *Rules* -> *IP Rules*.

Add a new IP Rule (to allow outgoing HTTP).

In the **General** tab:

Name:	<input type="text" value="allow-http-all"/>
Action:	<input type="text" value="NAT"/> ▼
Service:	<input type="text" value="http-all"/> ▼
Schedule:	<input type="text" value="(None)"/> ▼

General:

Name: **allow-http-all**

Action: **NAT**

Service: **http-all**

	Source	Destination
Interface:	<input type="text" value="all-lan"/> ▼	<input type="text" value="all-wan"/> ▼
Network:	<input type="text" value="all-lannets"/> ▼	<input type="text" value="all-nets"/> ▼

Address Filter:

Source interface: **all-lan**

Source network: **all-lannets**

Destination interface: **all-wan**

Destination network: **all-nets**

Click **Ok**.

Add a new IP Rule (to allow outgoing dns).

In the **General** tab:

Name:	<input type="text" value="allow-dns-all"/>
Action:	<input type="text" value="NAT"/>
Service:	<input type="text" value="dns-all"/>
Schedule:	<input type="text" value="(None)"/>

General:

Name: **allow-dns-all**

Action: **NAT**

Service: **dns-all**

	Source	Destination
Interface:	<input type="text" value="all-lan"/>	<input type="text" value="all-wan"/>
Network:	<input type="text" value="all-lannets"/>	<input type="text" value="all-nets"/>

Address Filter:

Source interface: **all-lan**

Source network: **all-lannets**

Destination interface: **all-wan**

Destination network: **all-nets**

Click Ok.

6b. Rules to allow internal users to access mail server

Add a new IP Rule (to allow internal smtp traffic to mailserver).

In the **General** tab:

General:

Name: **allow-smtp-int**

Action: **Allow**

Service: **smtp**

Address Filter:

Source interface: **any**

Source network: **all-nets**

Destination interface: **dmz**

Destination network: **mail-server**

Click Ok.

6d. Rules to allow traffic to FTP server from vlan2

Add a new IP Rule folder called **vlan2_to_dmz**.

Add a new IP Rule (to allow ftp from vlan2 to dmz).

In the General tab:

General:

Name: **allow-ftp**

Action: **Allow**

Service: **ftp-passthrough**

Address Filter:

Source interface: **vlan2**

Source network: **vlan2net**

Destination interface: **dmz**

Destination network: **dmznet**

Click Ok.

Save and activate the configuration