



Configuration examples for the D-Link NetDefend Firewall series

DFL-210/800/1600/2500

Scenario: How to configure High Availability (HA) mode on NetDefend Firewalls

Last update: 2007-01-18

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.

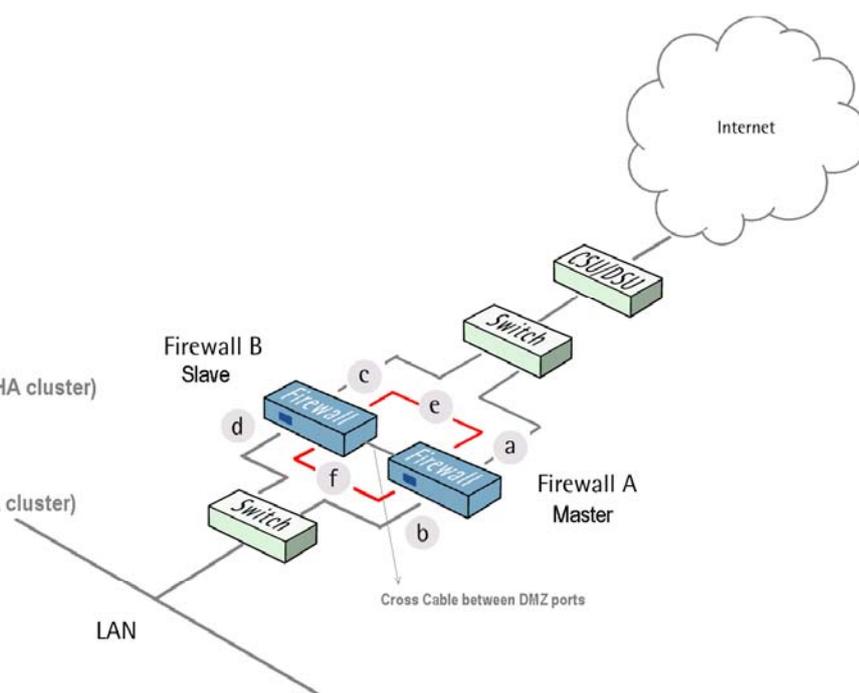
How to configure High Availability (HA) mode on NetDefend Firewalls

This scenario shows how to configure NetDefend Firewalls in High Availability mode to provide a fault-tolerant capability that is available on DFL-1600 and DFL-2500. Details for this scenario:

- Firewall A is the primary firewall as the Master
- Firewall B is the secondary firewall as the Slave
- Synchronization interface is on DMZ port connected via a cross-over cable.
- All the interfaces of the primary firewall need to be present on the backup firewall, and connected to the same networks.
- For each cluster interface, there are three IP addresses: two "real" IP addresses - one for each firewall; one "virtual" IP address - shared between the firewalls.

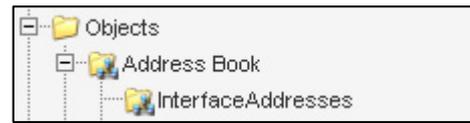
If the Master Firewall fails, the Slave Firewall will take over the jobs of the Master Firewall; thus network communication can be uninterrupted.

- a IP: 192.168.110.253
Netmask: 255.255.255.0
- b IP: 192.168.1.253
Netmask: 255.255.255.0
- c IP: 192.168.110.252
Netmask: 255.255.255.0
- d IP: 192.168.1.252
Netmask: 255.255.255.0
- e IP: 192.168.110.254 (Virtual IP for HA cluster)
Netmask: 255.255.255.0
Gateway: 192.168.110.250
- f IP: 192.168.1.254 (Virtual IP for HA cluster)
Netmask: 255.255.255.0



1. Firewall A - Addresses

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



Edit the following items:

Rename **dmz_ip** as **Virtual_dmz_ip** and change IP address to **172.17.100.254**
Rename **dmznet** as **Virtual_dmznet** and change IP address to **172.17.100.0/24**
Rename **lan1_ip** as **Virtual_lan1_ip** and change IP address to **192.168.1.254**
Rename **lan1net** as **Virtual_lan1net** and change IP address to **192.168.1.0/24**
Rename **lan2_ip** as **Virtual_lan2_ip** and change IP address to **192.168.2.254**
Rename **lan2net** as **Virtual_lan2net** and change IP address to **192.168.2.0/24**
Rename **lan3_ip** as **Virtual_lan3_ip** and change IP address to **192.168.3.254**
Rename **lan3net** as **Virtual_lan3net** and change IP address to **192.168.3.0/24**
Rename **wan1_ip** as **Virtual_wan1_ip** and change IP address to **192.168.110.254**
Rename **wan1net** as **Virtual_wan1net** and change IP address to **192.168.110.0/24**
Rename **wan1_gw** as **Virtual_wan1_gw** and change IP address to **192.168.110.250**
Rename **wan2_ip** as **Virtual_wan2_ip** and change IP address to **192.168.120.254**
Rename **wan2net** as **Virtual_wan2net** and change IP address to **192.168.120.0/24**

Create a new IP4 HA address for two real IP on DMZ Interface:

Name: HA-dmz

Master IP address: **172.17.100.253**

Slave IP address: **172.17.100.252**

Click Ok.

Create a new IP4 HA address for two real IP on Lan1 Interface:

Name: HA-lan1

Master IP address: **192.168.1.253**

Slave IP address: **192.168.1.252**

Click Ok.

Create a new IP4 HA address for two real IP on Lan2 Interface:

Name: HA-lan2

Master IP address: **192.168.2.253**

Slave IP address: **192.168.2.252**

Click Ok.

Create a new IP4 HA address for two real IP on Lan3 Interface:

Name: HA-lan3

Master IP address: **192.168.3.253**

Slave IP address: **192.168.3.252**

Click Ok.

Create a new IP4 HA address for two real IP on Wan1 Interface:

Name: HA-wan1

Master IP address: 192.168.110.253

Slave IP address: 192.168.110.252

Click Ok.

Create a new IP4 HA address for two real IP on Wan2 Interface:

Name: HA-wan2

Master IP address: 192.168.120.253

Slave IP address: 192.168.120.252

Click Ok.

2. Firewall A - Ethernet interfaces

Go to *Interfaces -> Ethernet*:

Edit the dmz interface.

In the General tab:

General:

Name:	dmz
IP Address:	Virtual_dmz_ip
Network:	Virtual_dmznet
Default Gateway:	(None)
<input type="checkbox"/>	Enable DHCP Client
<input type="checkbox"/>	Enable Transparent Mode

Leave IP Address as **Virtual_dmz_ip** and Network as **Virtual_dmznet**.

In the Advanced tab:

High Availability:

Private IP Address:	HA_dmz
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Select Private IP Address as **HA_dmz**

Click Ok

Edit the lan1 interface.

In the General tab:

General:

Leave IP Address as **Virtual_lan1_ip** and Network as **Virtual_lan1net**.

In the Advanced tab:

High Availability:

Select Private IP Address as **HA_lan1**

Click Ok

Edit the lan2 interface.

In the General tab:

General:

Leave IP Address as **Virtual_lan2_ip** and Network as **Virtual_lan2net**.

In the Advanced tab:

High Availability:

Select Private IP Address as **HA_lan2**

Click Ok

Edit the lan3 interface.

In the General tab:

General:

Leave IP Address as **Virtual_lan3_ip** and Network as **Virtual_lan3net**.

In the Advanced tab:

High Availability:

Select Private IP Address as **HA_lan3**

Click Ok

Edit the wan1 interface.

In the General tab:

General:

Leave IP Address as **Virtual_wan1_ip**, Network as **Virtual_wan1net**, and Default Gateway as **Virtual_wan1_gw**.

In the Advanced tab:

High Availability:

Select Private IP Address as **HA_wan1**

Click Ok

Edit the wan2 interface.

In the General tab:

General:

Leave IP Address as **Virtual_wan2_ip** and Network as **Virtual_wan2net**.

In the Advanced tab:

High Availability:

Select Private IP Address as **HA_wan2**

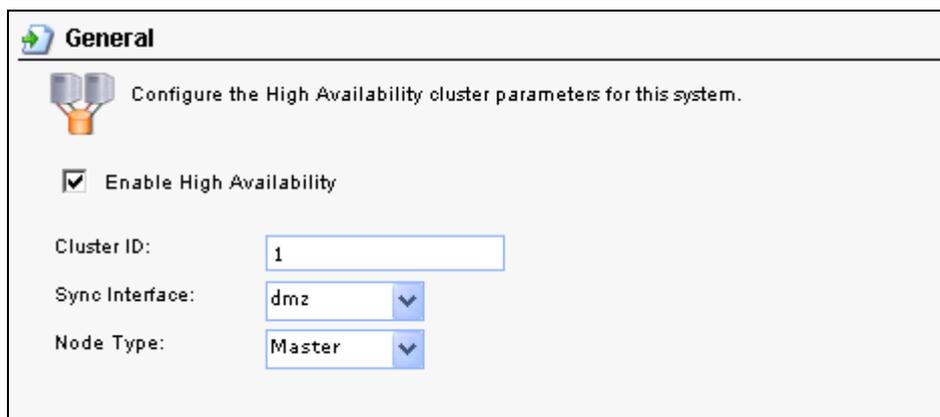
Click Ok

3. Firewall A - Enable High Availability Configuration

Under *System* -> *High Availability*:

In the General tab:

General:



The screenshot shows the 'General' configuration window for High Availability. It features a title bar with a folder icon and the word 'General'. Below the title bar, there is a sub-header with a server rack icon and the text 'Configure the High Availability cluster parameters for this system.' A checkbox labeled 'Enable High Availability' is checked. Below this, there are three configuration fields: 'Cluster ID' with a text input field containing '1', 'Sync Interface' with a dropdown menu showing 'dmz', and 'Node Type' with a dropdown menu showing 'Master'.

Select Enable High Availability

Cluster ID: **1**

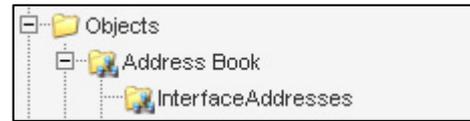
Sync Interface: **dmz**

Node Type: **Master**

Save and activate the configuration.

4. Firewall B - Addresses

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



Edit the following items:

Rename **dmz_ip** as **Virtual_dmz_ip** and change IP address to **172.17.100.254**
Rename **dmznet** as **Virtual_dmznet** and change IP address to **172.17.100.0/24**
Rename **lan1_ip** as **Virtual_lan1_ip** and change IP address to **192.168.1.254**
Rename **lan1net** as **Virtual_lan1net** and change IP address to **192.168.1.0/24**
Rename **lan2_ip** as **Virtual_lan2_ip** and change IP address to **192.168.2.254**
Rename **lan2net** as **Virtual_lan2net** and change IP address to **192.168.2.0/24**
Rename **lan3_ip** as **Virtual_lan3_ip** and change IP address to **192.168.3.254**
Rename **lan3net** as **Virtual_lan3net** and change IP address to **192.168.3.0/24**
Rename **wan1_ip** as **Virtual_wan1_ip** and change IP address to **192.168.110.254**
Rename **wan1net** as **Virtual_wan1net** and change IP address to **192.168.110.0/24**
Rename **wan1_gw** as **Virtual_wan1_gw** and change IP address to **192.168.110.250**
Rename **wan2_ip** as **Virtual_wan2_ip** and change IP address to **192.168.120.254**
Rename **wan2net** as **Virtual_wan2net** and change IP address to **192.168.120.0/24**

Create a new IP4 HA address for two real IP on DMZ Interface:

Name: HA-dmz

Master IP address: **172.17.100.253**

Slave IP address: **172.17.100.252**

Click Ok.

Create a new IP4 HA address for two real IP on Lan1 Interface:

Name: HA-lan1

Master IP address: **192.168.1.253**

Slave IP address: **192.168.1.252**

Click Ok.

Create a new IP4 HA address for two real IP on Lan2 Interface:

Name: HA-lan2

Master IP address: **192.168.2.253**

Slave IP address: **192.168.2.252**

Click Ok.

Create a new IP4 HA address for two real IP on Lan3 Interface:

Name: HA-lan3

Master IP address: **192.168.3.253**

Slave IP address: **192.168.3.252**

Click Ok.

Create a new IP4 HA address for two real IP on Wan1 Interface:

Name: HA-wan1

Master IP address: 192.168.110.253

Slave IP address: 192.168.110.252

Click Ok.

Create a new IP4 HA address for two real IP on Wan2 Interface:

Name: HA-wan2

Master IP address: 192.168.120.253

Slave IP address: 192.168.120.252

Click Ok.

5. Firewall B - Ethernet interfaces

Go to *Interfaces -> Ethernet*:

Edit the dmz interface.

In the General tab:

General:

Name:	<input type="text" value="dmz"/>
IP Address:	<input type="text" value="Virtual_dmz_ip"/>
Network:	<input type="text" value="Virtual_dmznet"/>
Default Gateway:	<input type="text" value="(None)"/>
<input type="checkbox"/>	Enable DHCP Client
<input type="checkbox"/>	Enable Transparent Mode

Leave IP Address as **Virtual_dmz_ip** and Network as **Virtual_dmznet**.

In the Advanced tab:

High Availability:

Private IP Address:	<input type="text" value="HA_dmz"/>
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Select Private IP Address as **HA_dmz**

Click Ok

Edit the lan1 interface.

In the General tab:

General:

Leave IP Address as **Virtual_lan1_ip** and Network as **Virtual_lan1net**.

In the Advanced tab:

High Availability:

Select Private IP Address as **HA_lan1**

Click Ok

Edit the lan2 interface.

In the General tab:

General:

Leave IP Address as **Virtual_lan2_ip** and Network as **Virtual_lan2net**.

In the Advanced tab:

High Availability:

Select Private IP Address as **HA_lan2**

Click Ok

Edit the lan3 interface.

In the General tab:

General:

Leave IP Address as **Virtual_lan3_ip** and Network as **Virtual_lan3net**.

In the Advanced tab:

High Availability:

Select Private IP Address as **HA_lan3**

Click Ok

Edit the wan1 interface.

In the General tab:

General:

Leave IP Address as **Virtual_wan1_ip**, Network as **Virtual_wan1net**, and Default Gateway as **Virtual_wan1_gw**.

In the Advanced tab:

High Availability:

Select Private IP Address as **HA_wan1**

Click Ok

Edit the wan2 interface.

In the General tab:

General:

Leave IP Address as **Virtual_wan2_ip** and Network as **Virtual_wan2net**.

In the Advanced tab:

High Availability:

Select Private IP Address as **HA_wan2**

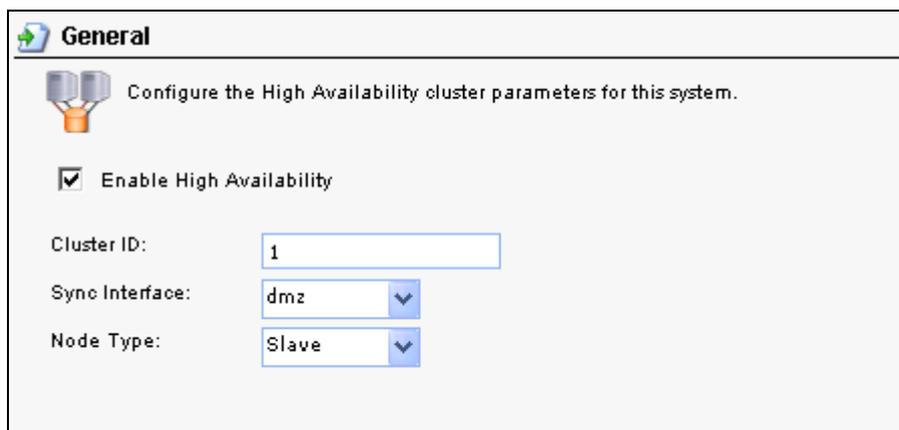
Click Ok

6. Firewall B - Enable High Availability Configuration

Under *System* -> *High Availability*:

In the General tab:

General:



The screenshot shows a configuration window titled "General" with a sub-header "Configure the High Availability cluster parameters for this system." Below this, there is a checked checkbox for "Enable High Availability". Underneath, there are three fields: "Cluster ID" with a text input containing "1", "Sync Interface" with a dropdown menu showing "dmz", and "Node Type" with a dropdown menu showing "Slave".

Select Enable High Availability

Cluster ID: **1**

Sync Interface: **dmz**

Node Type: **slave**

Save and activate the configuration.