Configuration Examples for the D-Link NetDefend Firewall Series

Scenario: How to configure High Availability

Platform Compatibility: DFL-1600 and DFL-2500

Last update: 2008-03-07

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 2.20.00. 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

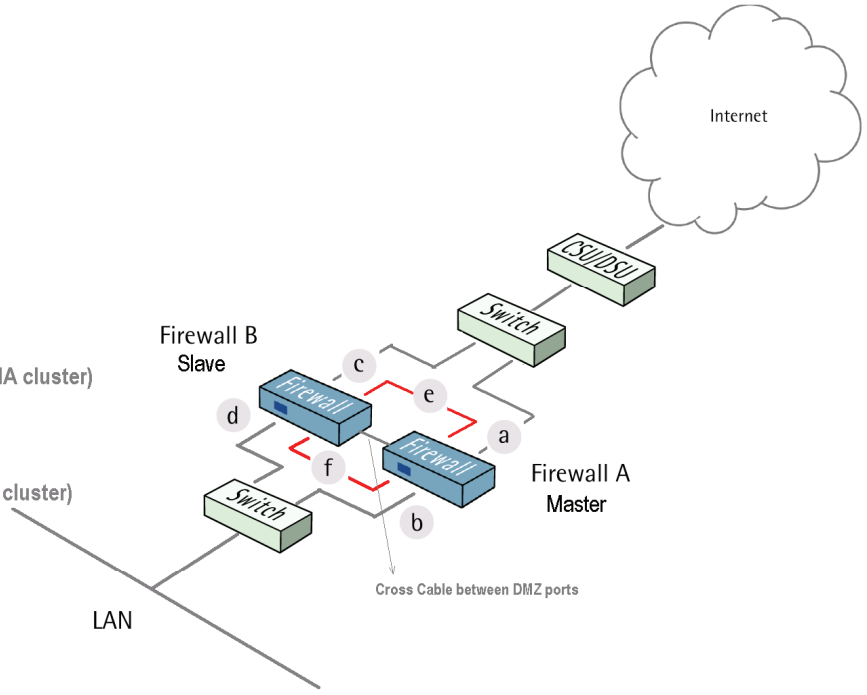
b IP: 192.168.1.253
Netmask: 255.255.255.0

c IP: 192.168.110.252
Netmask: 255.255.255.0

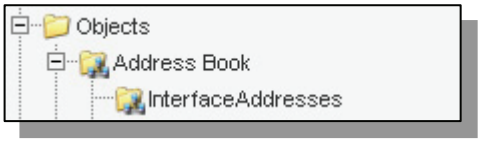
d IP: 192.168.1.252
Netmask: 255.255.255.0

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**

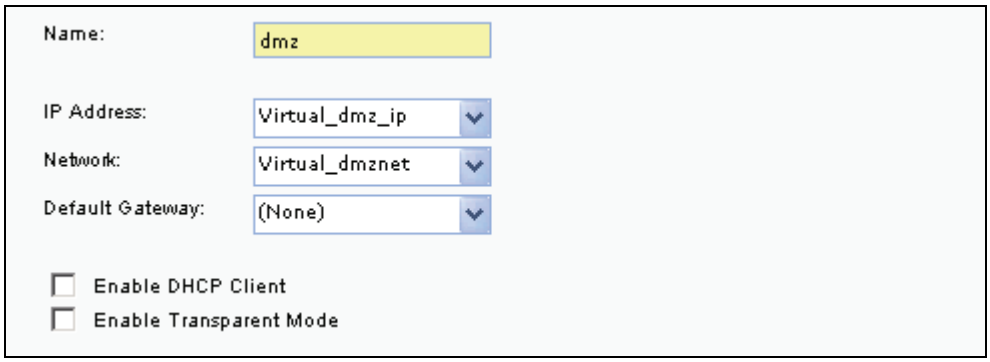
Click Ok.

2. Firewall A - Ethernet interfaces

Go to *Interfaces -> Ethernet*:
Edit the dmz interface.

In the General tab:

General:



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

In the Advanced tab:

High Availability:

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`**

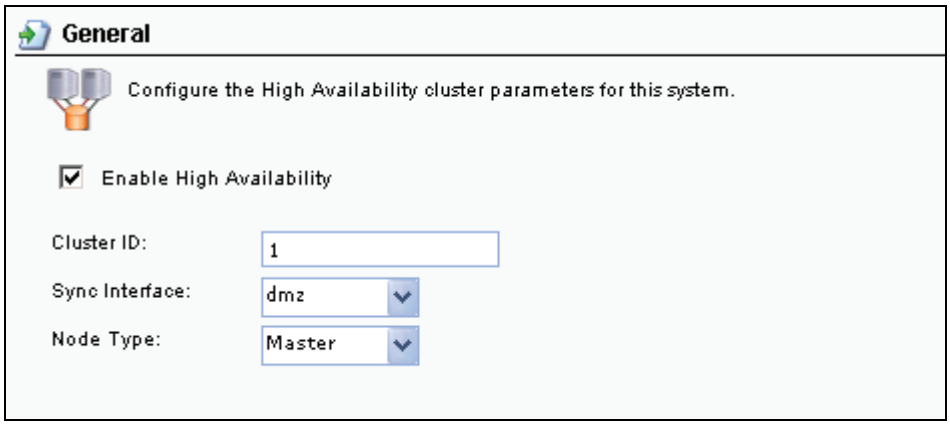
Click Ok

3. Firewall A - Enable High Availability Configuration

Under *System -> High Availability:*

In the General tab:

General:



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**

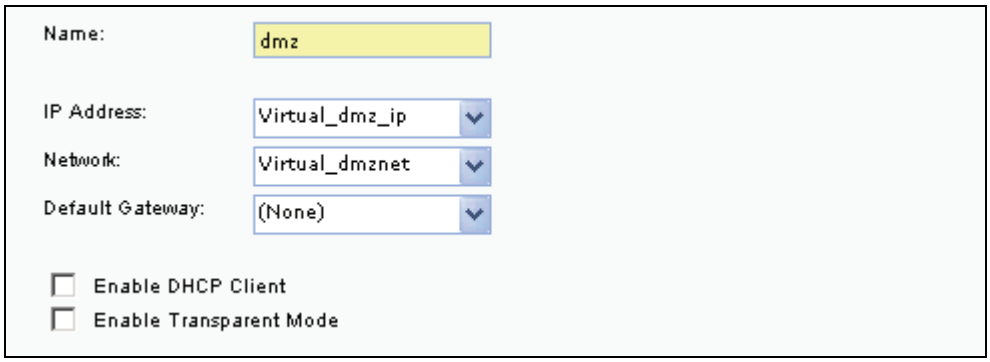
Click Ok.

5. Firewall B - Ethernet interfaces

Go to *Interfaces -> Ethernet*:
Edit the dmz interface.

In the General tab:

General:



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

In the Advanced tab:

High Availability:

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`**

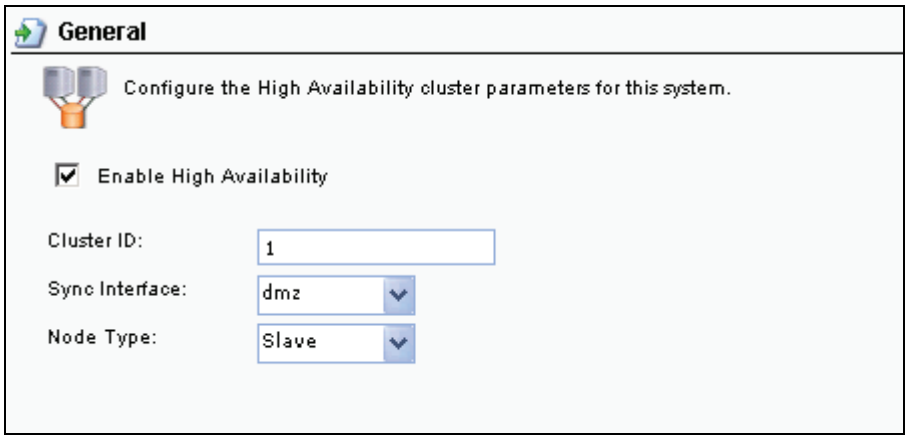
Click Ok

6. Firewall B - Enable High Availability Configuration

Under *System -> High Availability:*

In the General tab:

General:



Select Enable High Availability
Cluster ID: **`1`**
Sync Interface: **`dmz`**
Node Type: **`Slave`**

Save and activate the configuration.