



Configuration examples for the D-Link NetDefend Firewall series

Scenario: How to configure Web-based User Authentication

Platform Compatibility: All NetDefend Firewall Series

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.

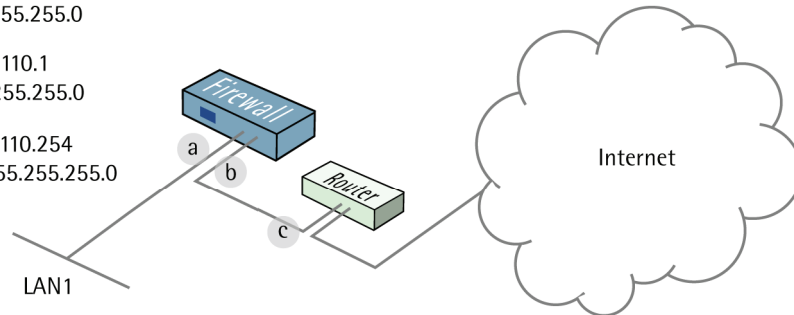
The screenshots in this document is from firmware version 2.11.02. If you are using an earlier version of the firmware, the screenshots may not be identical to what you see on your browser.

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

How to configure Web-based User Authentication

This scenario shows how to configure the firewall to require user authentication before local users can browse the Internet. The user will automatically be redirected to the login page if not already authenticated. In the end of this guide there is also an explanation of an alternative set up - how to configure the firewall to use authentication without the automatic redirection.

- a IP: 192.168.1.1
Mask: 255.255.255.0
- b IP: 192.168.110.1
Mask: 255.255.255.0
- c IP: 192.168.110.254
Netmask: 255.255.255.0



1. Addresses

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



Edit the following items:

Change **lan_ip** to **192.168.1.1**

Change **lanenet** to **192.168.1.0/24**

Change **wan1_ip** to **192.168.110.1**

Change **wan1net** to **192.168.110.0/24**

Add a new IP address object:

Name: **gw-world**

IP Address: **192.168.110.254**

Click **OK**.

Add a new IP address object.

In the **General** tab:

General:

Name:	<input type="text" value="lan-auth"/>
IP Address:	<input type="text" value="192.168.1.0/24"/> e.g: "172.16.50.8", "192.168.30.7, 192.168.30.11", "192.168.30.11"

Name: **lan-auth**

IP Address: **192.168.1.0/24**

In the **User Authentication** tab:

General:

Comma-separated list of user names and groups:
<input type="text" value="webuser"/>

Enter **webuser** in the textbox.

Click **Ok**.

2. Interfaces

Go to *Interfaces -> Ethernet*.

Edit the **wan1** interface.

In the **General** tab:

General:



The screenshot shows the configuration page for the WAN1 interface. It has four rows of fields:

Name:	<input type="text" value="wan1"/>
IP Address:	<input type="text" value="wan1_ip"/> ▼
Network:	<input type="text" value="wan1net"/> ▼
Default Gateway:	<input type="text" value="gw-world"/> ▼

Name: **wan1**

IP Address: **wan1_ip**

Network: **wan1net**

Default Gateway: **gw-world**

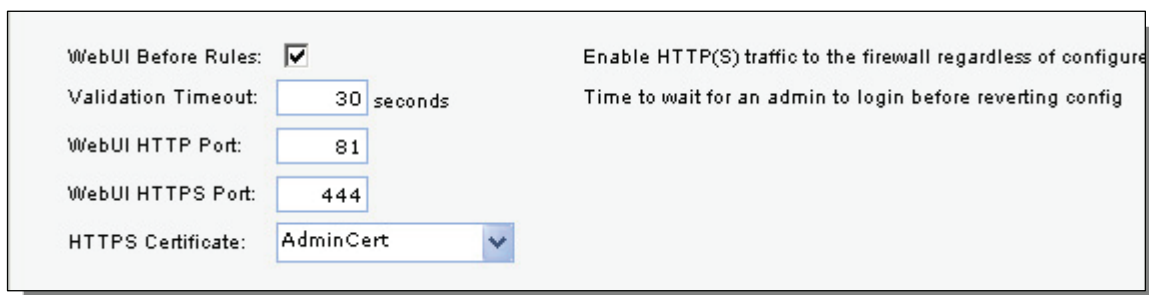
Click Ok.

3. Remote Management

The port used for the web user interface has to be changed, since web user authentication will use port 80.

Go to *System -> Remote Management*.

Click **Modify advanced settings**.



The screenshot shows the advanced settings for Remote Management. It has five rows of fields:

WebUI Before Rules:	<input checked="" type="checkbox"/>	Enable HTTP(S) traffic to the firewall regardless of configuration
Validation Timeout:	<input type="text" value="30"/> seconds	Time to wait for an admin to login before reverting configuration
WebUI HTTP Port:	<input type="text" value="81"/>	
WebUI HTTPS Port:	<input type="text" value="444"/>	
HTTPS Certificate:	<input type="text" value="AdminCert"/> ▼	

General:

WebUI HTTP Port: **81**

WebUI HTTPS Port: **444**

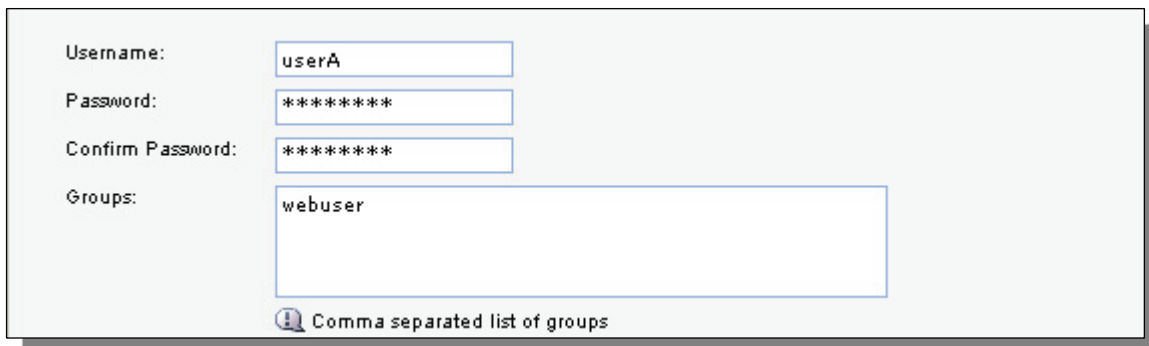
Click Ok.

4. User database

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

Add a new **Local User Database** called **WebUsers**.

In the new folder, add a new **User**.




Username:

Password:

Confirm Password:

Groups:

 Comma separated list of groups

General:

Username: userA

Enter a **Password** and confirm it.

Group: webuser

Click **Ok**.

5. Rules

Go to *Rules* -> *IP Rules* -> *lan_to_wan1*.

Add a new **IP Rule**.

In the **General** tab:

General:



Name:

Action: ▼

Service: ▼

Schedule: ▼

Name: allow_dns

Action: NAT

Service: dns-all

Schedule: (None)

Address Filter:

	Source	Destination
Interface:	lan	wan1
Network:	lannet	all-nets

Source Interface: **lan**
Source Network: **lannet**
Destination Interface: **wan1**
Destination Network: **all-nets**

Click Ok.

The rule just added will allow access from lan to the DNS servers.

Edit the **allow_ftp-passthrough** IP Rule.

In the General tab:

General:

Name:	allow_ftp-passthrough
Action:	NAT
Service:	ftp-passthrough
Schedule:	(None)

Name: **allow_passthrough**
Action: **NAT**
Service: **ftp-passthrough**
Schedule: **(None)**

Address Filter:

	Source	Destination
Interface:	lan	wan1
Network:	lan-auth	all-nets

Source Interface: **lan**
Source Network: **lan-auth**
Destination Interface: **wan1**
Destination Network: **all-nets**

Click Ok.

We modified the ftp-passthrough rule to only allow authenticated users to connect to the Internet using FTP (by changing source network to lan-auth).

Edit the `allow_standard` IP Rule.

In the General tab:

General:

Name:	<input type="text" value="allow_standard"/>
Action:	<input type="text" value="NAT"/>
Service:	<input type="text" value="all_tcpudp"/>
Schedule:	<input type="text" value="(None)"/>

Name: `allow_standard`

Action: `NAT`

Service: `all_tcpudp`

Schedule: `(None)`

Address Filter:

	Source	Destination
Interface:	<input type="text" value="lan"/>	<input type="text" value="wan1"/>
Network:	<input type="text" value="lan-auth"/>	<input type="text" value="all-nets"/>

Source Interface: `lan`

Source Network: `lan-auth`

Destination Interface: `wan1`

Destination Network: `all-nets`

The modified `allow_standard` rule will only allow authenticated users to connect to the Internet.

Add a new IP Rule.

In the General tab:

General:

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

Name: `allow_httpauth`

Action: `Allow`

Service: `http-all`

Schedule: `(None)`

Address Filter:

	Source	Destination
Interface:	lan	core
Network:	lannet	lan_ip

Source Interface: **lan**
Source Network: **lannet**
Destination Interface: **core**
Destination Network: **lan_ip**

Click Ok.

This rule will allow users to go directly to the login page, eg by entering the lan IP address in the browser (<http://192.168.1.1>).

Add a new IP Rule.

In the General tab:

General:

Name:	allow_httpauth
Action:	SAT
Service:	http-all
Schedule:	(None)

Name: **allow_httpauth**
Action: **SAT**
Service: **http-all**
Schedule: **(None)**

Address Filter:

	Source	Destination
Interface:	lan	wan1
Network:	lannet	all-nets

Source Interface: **lan**
Source Network: **lannet**
Destination Interface: **wan1**
Destination Network: **all-nets**

In the SAT tab:

General:

Translate the

Source IP Address

Destination IP Address

To:

New IP Address: lan_ip

New Port: This value may only be applied on TCP/UDP services with port set to either a

All-to-One Mapping: rewrite all destination IPs to a single IP

Select **Destination IP Address**
Select To New IP Address: **lan_ip**
Enable **All-to-One Mapping**.

Click Ok.

Add a new IP Rule.

In the General tab:

General:

Name: allow_httpauth

Action: Allow

Service: http-all

Schedule: (None)

Name: **allow_httpauth**
Action: **Allow**
Service: **http-all**
Schedule: **(None)**

Address Filter:

Source

Destination

Interface: lan wan1

Network: lannet all-nets

Source Interface: **lan**
Source Network: **lannet**
Destination Interface: **wan1**
Destination Network: **all-nets**

Click Ok.

The last to rules will redirect all unauthenticated HTTP users to the login page.

Add a new IP Rule.

In the General tab:

General:

Name:	<input type="text" value="reject_all"/>
Action:	<input type="text" value="Reject"/>
Service:	<input type="text" value="all_services"/>
Schedule:	<input type="text" value="(None)"/>

Name: **reject_all**

Action: **Reject**

Service: **all_services**

Schedule: **(None)**

Address Filter:

	Source	Destination
Interface:	<input type="text" value="lan"/>	<input type="text" value="wan1"/>
Network:	<input type="text" value="lannet"/>	<input type="text" value="all-nets"/>

Source Interface: **lan**

Source Network: **lannet**

Destination Interface: **wan1**

Destination Network: **all-nets**

Click Ok.

The last rule will reject all traffic from unauthenticated users instead of just dropping it.

Change the order of the rules so that the newly created allow_dns comes before the ftp rule. The order of the rules is important. If they are in wrong order, it will not work as expected.

Your list should now look like this (if you started from a factory default configuration):

#	Name	Action	Source Interface	Source Network	Destination Interface
0	drop_smb-all	Drop	lan	lannet	wan1
1	allow_ping-outbound	NAT	lan	lannet	wan1
2	allow_dns	NAT	lan	lannet	wan1
3	allow_ftp-passthrough	NAT	lan	lan-auth	wan1
4	allow_standard	NAT	lan	lan-auth	wan1
5	allow_httpauth	Allow	lan	lannet	core
6	allow_httpauth	SAT	lan	lannet	wan1
7	allow_httpauth	Allow	lan	lannet	wan1
8	reject_all	Reject	lan	lannet	wan1

First we have two rules highlighted with green color. These two will allow ping and DNS for all users. Then we have two rules marked with red, that only will allow authenticated users to use the FTP service (using the FTP ALG) and all other UDP and TCP based services. Finally there are three rules marked with blue. The first one will allow users to connect directly to the firewall for authentication. The other two will redirect unauthenticated HTTP users to the firewall for authentication.

6. User authentication


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

Add a new *User Authentication Rule*.

In the *General* tab:

General:

Name:	<input type="text" value="lan_http_auth"/>
Agent:	<input type="text" value="HTTP"/>
Authentication Source:	<input type="text" value="Local"/>
Interface:	<input type="text" value="lan"/>
Originator IP:	<input type="text" value="lannet"/>
Terminator IP:	<input type="text" value="(None)"/>

 For XAuth and PPP, this is the tunnel originator IP.

Name: **lan_http_auth**

Agent: **HTTP**

Authentication Source: **Local**

Interface: **lan**

Originator IP: **lannet**

In the *Authentication Options* tab:

General:

Local User DB:	<input type="text" value="WebUsers"/>
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Local User DB: **WebUsers**

In the *HTTP(S) Agent Options* tab:


General:

Login Type:	<input type="text" value="HTMLForm"/>
Realm String:	<input type="text"/>

Login Type: **HTMLForm**

In the Restrictions tab:


Timeouts:



Idle Timeout: seconds

Session Timeout: seconds

Use timeouts received from the authentication server.

 Note that if no timeouts are received, OR if this checkbox is unchecked, the above settings will be used.

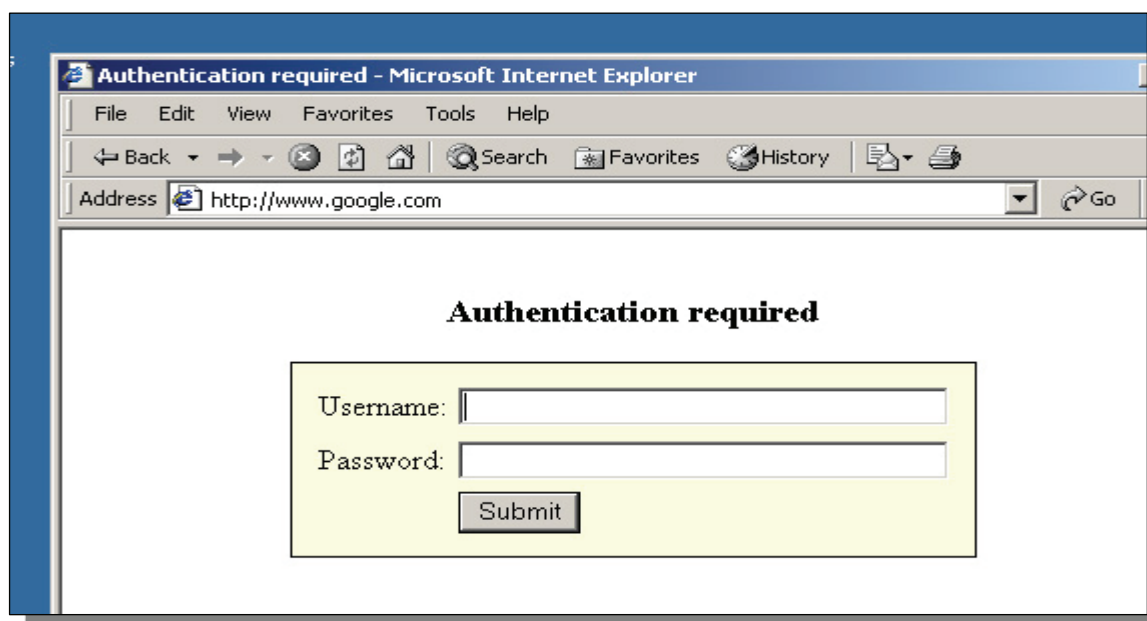
Idle Timeout: 600 seconds

Click Ok.

Users that are idle for more then 10 minutes (600 seconds) will automatically be logged out.

Save and activate the configuration.

When a user from the lan network tries to browse the Internet with his/her browser, he/she will be redirected to the log in page and must log in.



Enhancements:

More users can be added to the **WebUsers** database. Just make sure the new users also belong to the **webuser** group (the group textbox in step 4).

Note!

The port of the firewall web user interface has been changed. When you connect to the firewall from now on you will have to specify port 81. If the address earlier was **http://192.168.1.1** you will now have to use **http://192.168.1.1:81**. If https is used, the address will be **https://192.168.1.1:444**.

Note!

Some browsers may cache webpages. Since we redirected the browsers first attempt to access a website on the Internet, the browser may cache the login page for that URL. Eg, if the user enters `www.google.com`, logs in and tries to connect to `www.google.com` again the browser might display the login page again. A reload/refresh page in the browser should solve the problem.

Note!

If there is a proxy installed in the network, some additional modifications have to be done. If the proxy uses port 8080, add this port to the `http-all` service (under *Objects -> Services*). The destination ports should be `80, 443, 8080`.

Alternative setups:

In this example we automatically redirected the user to the login page when not authenticated. A simpler example would be to remove the last two `allow_httpauth` rules (SAT and Allow, leave the first Allow).

The user then will have to manually connect to the firewall (`http://192.168.1.1`) first to log in.

It is also possible to change the setup to only require authentication for certain services, like HTTP. All other services would be accessible for all users.