

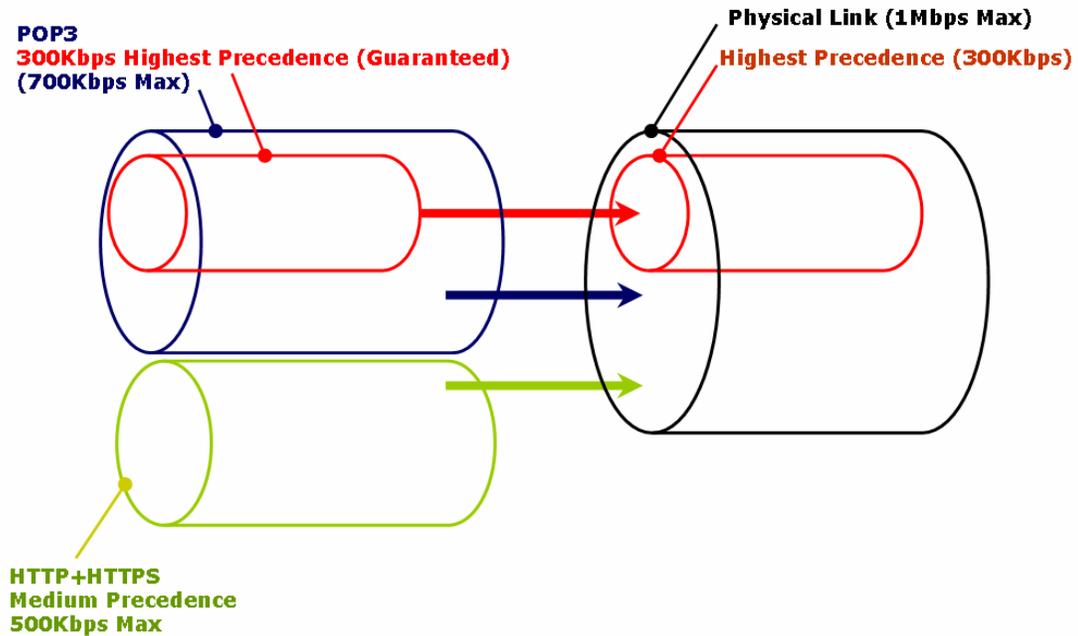
## DFL-800/1600/2500 How to setup Traffic Shaping

You can set your firewall to limit or guarantee bandwidth for certain services or/and for certain computers.

The below steps describe the configuration where we are using 1Mbps up / 1Mbps down link with the following traffic shaping rules:

- inbound and outbound HTTP and HTTPS the max bandwidth is 500Kbps.
- inbound and outbound POP3 the guaranteed bandwidth is 300Kbps, max is 700Kbps.
- other inbound and outbound services use the remaining bandwidth.

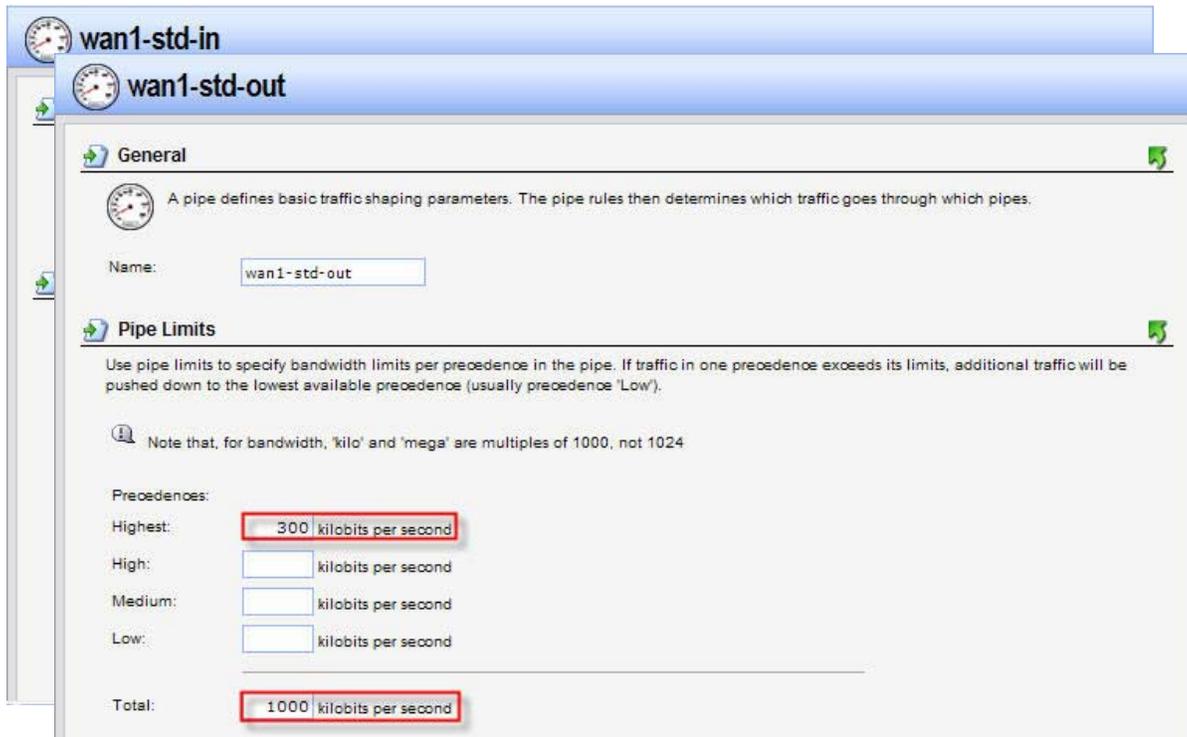
Here is the schematic representation of the three traffic shaping pipes we are going to create (we will need three pipes for outbound and three pipes for inbound traffic):



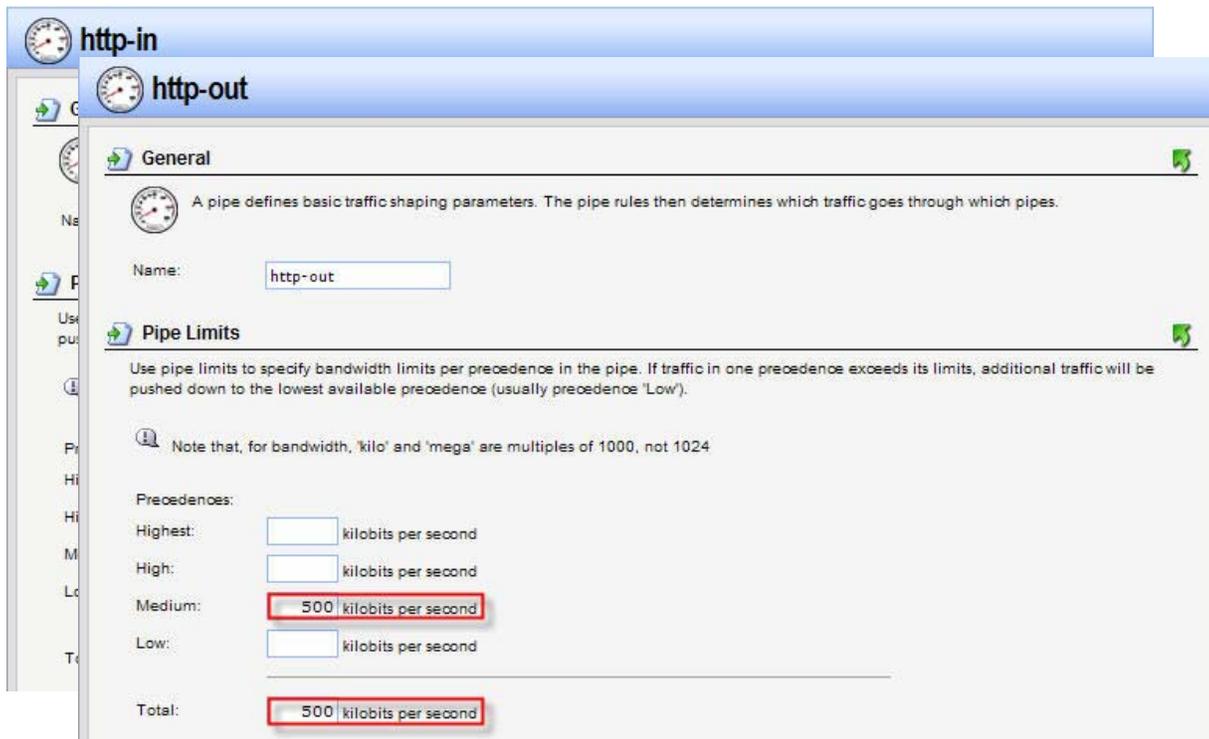
**Step 1.** Log into your firewall. Go to Traffic Shaping > Pipes.

Create a new entry for a “standard-in” pipe which describes physical connection limitations for download speed. Set the pipe limits: Total - 1000Kb. Under Precedences set “Highest” with 300Kbps (this is for the guaranteed bandwidth).

Create another pipe for “standard-out” (upload speed). Set the pipe limits: Total - 1000Kb. Under Precedences set 'Highest' with 300Kbps.



**Step 2.** Create two pipes (in and out) for HTTP traffic: Total bandwidth – 500 kbps. Precedence: Medium 500 kbps.



**Step 3.** Create two pipes (in and out) for POP3 traffic: Total bandwidth – 700 kbps. Precedence: Highest 300 kbps.

The screenshot shows a configuration window for a pipe named 'pop3-out'. It is divided into two sections: 'General' and 'Pipe Limits'. In the 'General' section, the name 'pop3-out' is entered in a text box. The 'Pipe Limits' section contains a note about bandwidth units and a list of precedence levels with their respective bandwidth limits. The 'Highest' and 'Total' values are highlighted with red boxes.

**pop3-in**

**pop3-out**

**General**

A pipe defines basic traffic shaping parameters. The pipe rules then determines which traffic goes through which pipes.

Name:

**Pipe Limits**

Use pipe limits to specify bandwidth limits per precedence in the pipe. If traffic in one precedence exceeds its limits, additional traffic will be pushed down to the lowest available precedence (usually precedence 'Low').

Note that, for bandwidth, 'kilo' and 'mega' are multiples of 1000, not 1024

Precedences:

Highest:  kilobits per second

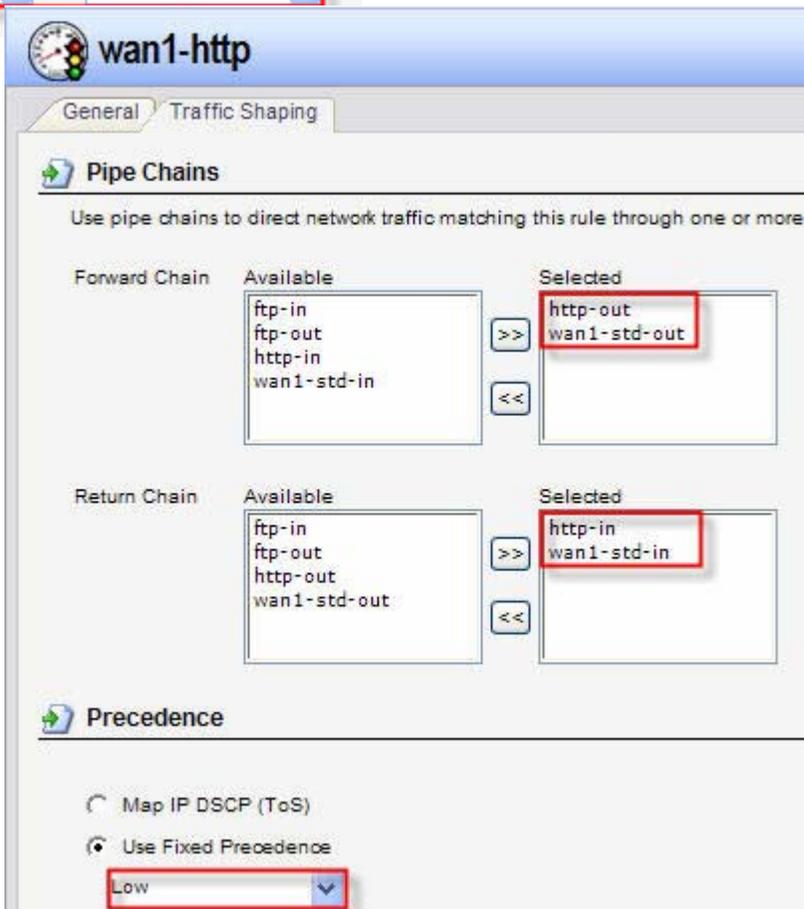
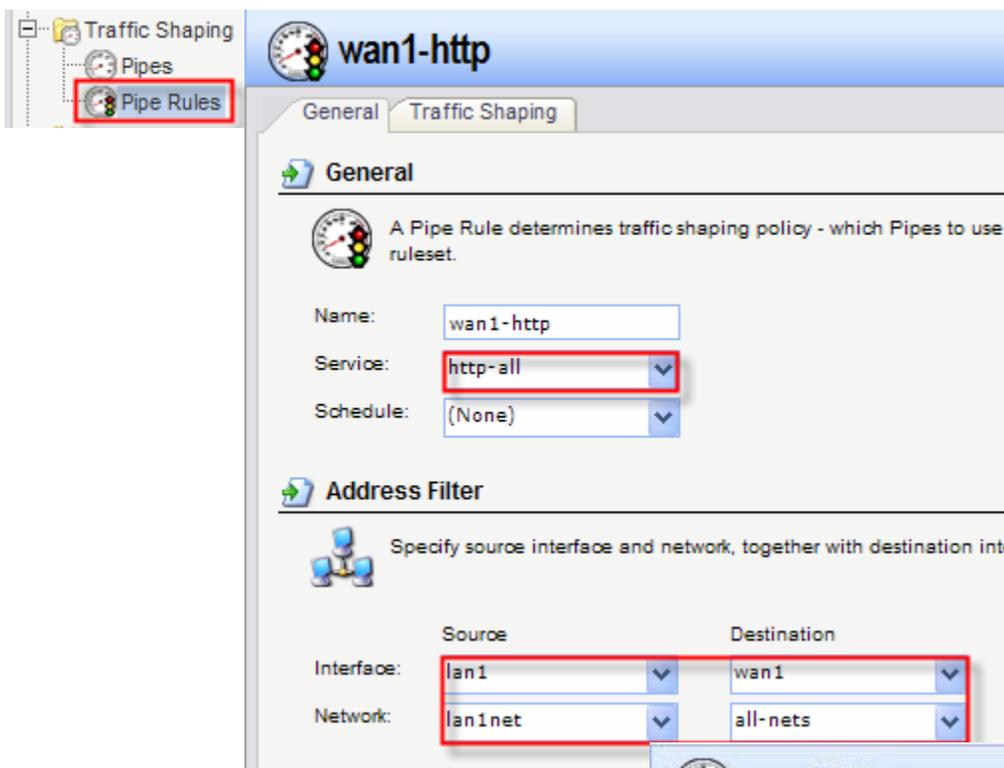
High:  kilobits per second

Medium:  kilobits per second

Low:  kilobits per second

Total:  kilobits per second

**Step 4.** Go to Traffic Shaping > Pipe Rules. Create a Pipe Rule for HTTP traffic. Service - HTTP-All; Source - LAN/LAN-Net; Destination - WAN/All-nets. Click on Traffic Shaping tab and add the pipes for outgoing traffic (Forward Chain - HTTP-out, Standard-out) and incoming traffic (Return Chain - HTTP-in, Standard-in). Set Precedence to “Low”.



**Step 5.** Create another Pipe Rule for the POP3 traffic. Service - POP3; Source - LAN/LAN-Net; Destination - WAN/All-nets. Click on Traffic Shaping tab and add the pipes for outgoing traffic (Forward Chain - POP3-out, Standard-out) and incoming traffic (Return Chain - POP3-in, Standard-in). Set Precedence to “Low”.

The screenshot displays the configuration interface for a Pipe Rule named "wan1-pop3" in Mikrotik WinBox. The interface is divided into several sections:

- General:** Name: wan1-pop3; Service: pop3; Schedule: (None).
- Address Filter:** Source Interface: lan1; Source Network: lan1net; Destination Interface: wan1; Destination Network: all-nets.
- Pipe Chains:** Forward Chain (Available: wan1-std-out, http-in, http-out, pop3-out; Selected: pop3-in, wan1-std-in); Return Chain (Available: wan1-std-in, http-in, http-out, pop3-in; Selected: pop3-out, wan1-std-out).
- Precedence:** Map IP DSCP (ToS) is unselected; Use Fixed Precedence is selected with a value of Low.

**Step 6.** Create another Pipe Rule for the rest of the services. Click on Traffic Shaping tab and add the pipes for outgoing traffic (Forward Chain - Standard-out) and incoming traffic (Return Chain - Standard-in). Set Precedence to Low.

The image shows two screenshots of the D-Link configuration interface for a rule named "wan1-all".

**Left Screenshot (General Tab):**

- Name:** wan1-all
- Service:** all\_services
- Schedule:** (None)
- Address Filter:**
  - Source:** lan1
  - Destination:** wan1
  - Network:** lan1net
  - all-nets**

**Right Screenshot (Traffic Shaping Tab):**

- Forward Chain:**
  - Available:** wan1-std-in, http-in, http-out, pop3-in, pop3-out
  - Selected:** wan1-std-out
- Return Chain:**
  - Available:** wan1-std-out, http-in, http-out, pop3-in, pop3-out
  - Selected:** wan1-std-in
- Precedence:**
  - Map IP DSCP (ToS)
  - Use Fixed Precedence
  - Low**

**Step 7.** In the top menu bar select Configuration > Save and Activate > OK.

The image shows the D-Link configuration interface with the "Save Configuration" dialog box open. The "Save and Activate" option is selected in the Configuration menu. The dialog box asks "Are you sure you want to save the configuration?" and has "OK" and "Cancel" buttons.