D-Link®
Building Networks for People

Information Security gateway(ISG) User Manual

DFL-M510

Network Security Solution http://www.dlink.com

NetDefend

Before You Begin

Before you begin using this manual, take a look at the copyright, trademark, and safety information in this section.

Copyright

Version 1.02

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- **Reorient or relocate the receiving antenna.**
- **Increase the separation between the equipment and the receiver.**
- **Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected.**
- **Consult the dealer or an experienced radio/TV technician for help.**

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- **This device may not cause harmful interference, and**
- **This device must accept any interference received, including interference that may cause undesired operation.**

Safety Certifications

CE, C-Tick, TUV, UL

About this Manual

This manual provides information for setting up and configuring the DFL-M510. This manual is intended for network administrators.

Safety Information

READ THIS IMPORTANT SAFETY INFORMATION SECTION. RETAIN THIS MANUAL FOR REFERENCE. READ THIS SECTION BEFORE SERVICING.

CAUTION:
To reduce the risk of electric shock, this device should only be serviced by qualified service personnel.

- **Follow all warnings and cautions in this manual and on the unit case.**
- **Do not place the unit on an unstable surface, cart, or stand.**
- **Avoid using the system near water, in direct sunlight, or near a heating device.**
- **Do not place heavy objects such as books or bags on the unit.**
- **Only use the supplied power cord.**

Table of Contents

CHAPTER 1: GETTING STARTED WITH THE DFL-M510

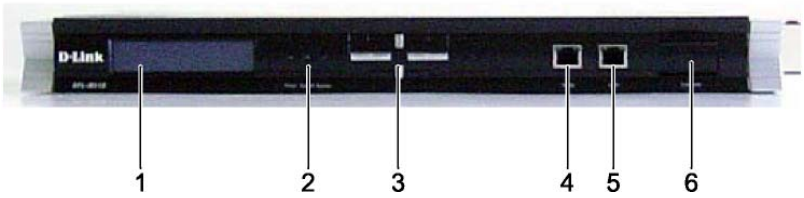
The DFL-M5 10 is a transparent network device. To ensure there is no disruption to your network, it can be installed in In-Line mode with a hardware bypass function enabled. The hardware bypass ensures that if the DFL-M510 crashes, or experiences a power out or some other problem; your network is still up and running. This allows your network administrator to begin monitoring selected PCs, while checking for anything that may upset your current network environment. Refer to the Quick Installation Guide for instructions on connecting the DFL-M510 to your network. This section covers the following topics:

Before using this manual, take a look at the copyright, trademark, and safety information section. See "**Before you Begin**" on page i.

IDENTIFYING COMPONENTS

The following illustrations show the front and rear of the DFL-M510.

FRONT VIEW



LCM BUTTON DESCRIPTION

The LCM buttons are described below.

Button Name	Description
Up	Scroll Up
Down	Scroll Down
ESC	Go back to the previous screen
Enter	Next screen

STATUS LEDS

The following table describes the status LEDs on the front of the DFL-M510.

Function	Naming	Color	Status	LED Description
Power	Power	Green	Off	Power off
			On	Power
System	System	Green	Off	Power off (System not ready)
			On	System ready and running ok
Bypass	Bypass	Red	Off	Hardware bypass is not enabled
			On	Hardware bypass is enabled
Inbound (Left)	Inbound (LAN)	Green	Off	Ethernet link OK and the speed is 10Mbps
			On	Ethernet link OK and the speed is 100Mbps
Inbound (Right)		Green	Off	No packets sending/receiving
			On	Link
			Blinking	Activity, port is sending/receiving data
Outbound (Left)	Outbound (WAN)	Green	Off	Ethernet link ok, and the speed is 10Mbps
			On	Ethernet link ok, and the speed is 100Mbps
Outbound (Right)		Green	Off	No packets sending/receiving
			On	Link
			Blinking	Activity, port is sending/receiving data

REAR VIEW

1	Power socket
2	Power switch

Detailed information on the LCM can be found in the Appendix.
See “**Appendix A: The Command Line Interface**” on page 115.

CONFIGURING THE DFL-M510

Before managing the DFL-M510, it must be initialized. This procedure is accomplished through the DFL-M510 Command Line Interface. Access to the Command Line Interface can be made either through SSH or from a terminal connected directly to the DFL-M510.

You can use Hyper Terminal, SSH v2 or browser to set up the IP parameters of the DFL-M510. The following are the default settings:

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.254
User name	admin
Password	admin

CONFIGURATION THROUGH THE COMMAND LINE INTERFACE

Configure the DFL-M510 using the following parameters.

The IP address shown below is only an example. Instead use the IP address for your network.

IP Address	192.168.9.231
Subnet Mask	255.255.255.0
Default Gateway	192.168.9.254

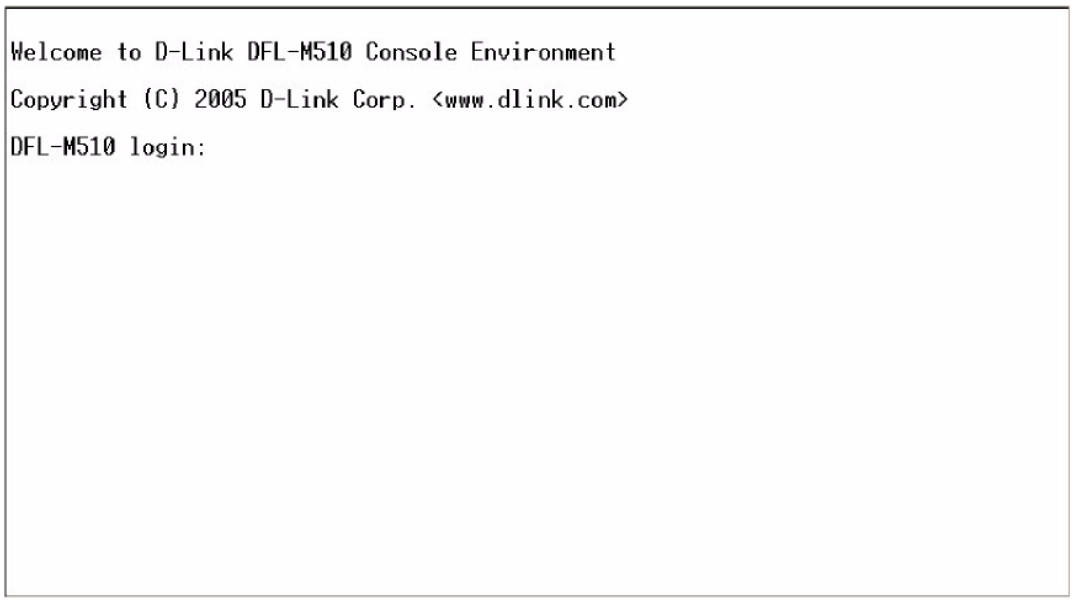
1. Connect one end of the RS-232 cable to the console port on the DFL-M510 and the other end to the COM1 or COM2 port on the PC. (The pin-out definitions are shown below.)

Terminal Emulation	VT-100, ANSI, or auto
Bit per Second	115200

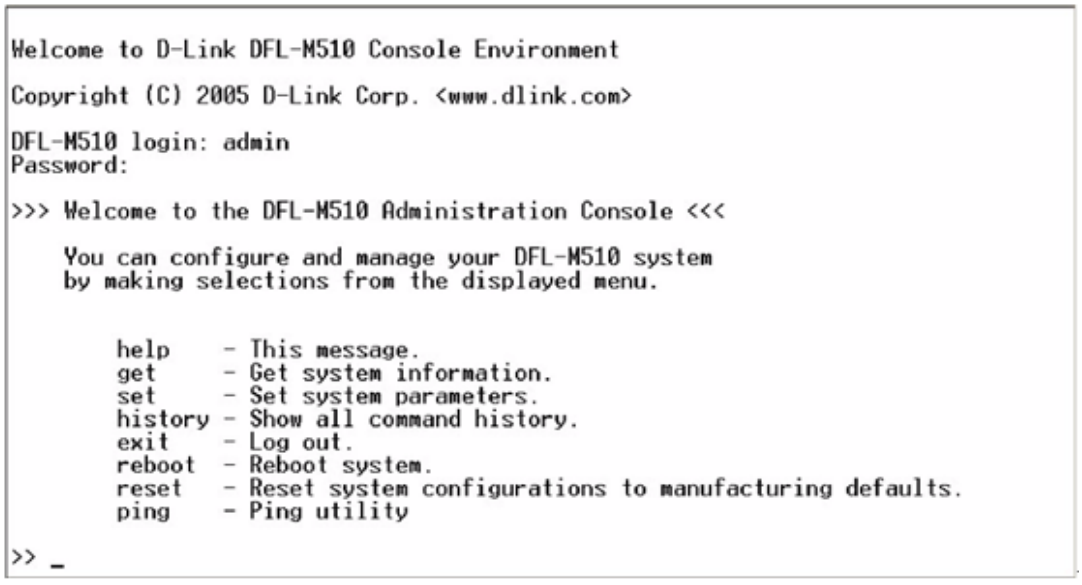
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	Nine

2. To open a connection in Windows 95/98/NT/2000/XP go to, **Program Files Accessory → Communications → Super Terminal.**

3. Once you access the Command Line Interface (CLI) with a terminal connection, press any key. The following prompt appears:



4. Type in the username and password.



5. Use the **get system** command to get information on the DFL-M510.

```
Device name: DFL-M510
MAC Address: 00:0a:1b:12:12:88
DFL-M510 IP Address:192.168.  1.  1, netmask:255.255.255.  0,
gateway:192.168.  1.254
TCP cold start duration time: 30 seconds
VLAN function: off.  VLAN ID: 0.
Detection parameters:
 Maximum ping packet size: 1000.
  TCP state check bypass: on.
 WAN port: policy check < on> Stealth <off> max ping  10000.
 LAN port: policy check < on> Stealth <off> max ping  10000.
Remote access:
HTTP:
Access: all
1 - Client IP: all              Netmask: 255.255.255.  0
2 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0
3 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0
SSH:
Access: all
1 - Client IP: all              Netmask: 255.255.255.  0
2 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0
3 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0

>>
```

6. Use the set system ip command to set the IP address.

```
Password:

>>> Welcome to the DFL-M510 Administration Console <<<

    You can configure and manage your DFL-M510 system
    by making selections from the displayed menu.


        help    - This message.
        get     - Get system information.
        set     - Set system parameters.
        history - Show all command history.
        exit    - Log out.
        reboot  - Reboot system.
        reset   - Reset system configurations to manufacturing defaults.
        ping    - Ping utility

>> set system ip 192.168.62.100
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n) y
Change device ip OK.

Device ip is changed, reboot now
Are you sure to reboot system? (y/n) y
```

7. After the system reboots, use **set system gateway** to set the default gateway.

```
Password:

>>> Welcome to the DFL-M510 Administration Console <<<

    You can configure and manage your DFL-M510 system
    by making selections from the displayed menu.


        help    - This message.
        get     - Get system information.
        set     - Set system parameters.
        history - Show all command history.
        exit    - Log out.
        reboot  - Reboot system.
        reset   - Reset system configurations to manufacturing defaults.
        ping    - Ping utility

>> set system gateway 192.168.62.1
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n) y
route: SIOC[ADD|DEL]RT: No such process
Change device gateway OK.

>> _
```

8. After setting the IP address, Mask and Gateway, use the **get system** command to get correct information. Use the web-based interface to configure other parameters. See “**Configuration Through a Web-based Interface**” on page 7.

```
Device name: DFL-M510
MAC Address: 00:0a:1b:12:12:88
DFL-M510 IP Address:192.168. 62.100, netmask:255.255.255.  0,
gateway:192.168. 62.  1
TCP cold start duration time: 30 seconds
VLAN function: off.  VLAN ID: 0.
Detection parameters:
 Maximum ping packet size: 1000.
  TCP state check bypass: on.
 WAN port: policy check < on> Stealth <off> max ping  10000.
 LAN port: policy check < on> Stealth <off> max ping  10000.
Remote access:
HTTP:
Access: all
1 - Client IP: all              Netmask: 255.255.255.  0
2 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0
3 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0
SSH:
Access: all
1 - Client IP: all              Netmask: 255.255.255.  0
2 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0
3 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0

>>
```

CONFIGURATION THROUGH A WEB-BASED INTERFACE

The DFL-M510 GUI is a Web-based application that allows you to manage the DFL-M510. The GUI is a Java™ applet application. Before accessing the GUI from any PC, you must install Java Run Time Environment (J2RE V1.4.2 or above). Then you can log on to the DFL-M510 from any computer on the network via a Web browser. You can download J2RE from www.java.com or you can download it from the link within the DFL-M510 GUI.

The PC you log in from must have the following system requirements:

- **Microsoft Windows XP professional operation systems**
- **Device with Internet connection**
- **CPU: Intel Pentium4 2.0G or 100% compatible**
- **Memory: 512MB RAM or above**
- **Java Run Time Environment (J2RE V1.4.2 or above)**

Refer to the following to log on to the DFL-M510.

1. Open your Web browser and type the IP address into the Address Bar: **http://192.168.1.1**. The login screen appears.

2. Click on the link to download the Java Runtime Environment.

3. Click **Run** to start the installation. Follow the onscreen prompts to complete the installation. The following Security Warning appears.

4. Click **Always** to continue and prevent this screen appearing again. The login screen appears.

NOTE

The IP address shown above is only an example. Instead use the IP address for your network.

5. Type in the default account name **admin** and the default password **admin**, choose your preferred language and click **Login.**

NOTE

Language support on the DFL-M510 includes English, Traditional Chinese and Simplified Chinese.

IMPORTANT

For security reasons, you should change the default password to a more secure password after you have completed the setup. See Chapter 4 "**User Authentication**" on page 63.

6. After two or three minutes, the GUI opens on the DFL-M510 main screen.

7. To log out click the **Close** button  at the top-right of the screen.

RUNNING THE SETUP WIZARD

The **Setup Wizard** helps you to quickly apply basic settings for the DFL-M510. You will need the following information for your network to complete the **Setup Wizard:**

- **IP Address**
- **Subnet Mask**
- **Default Gateway**

- **DNS Server**

Regarding how to configure DFL-M510 via **Setup Wizard**, see the "**Wizard**" section on page 11 for more detail.

The first time you log on to the DFL-M510, the **Setup Wizard** starts automatically.

TOOLBAR

The **Toolbar** provides many handy and frequent-use functions for you. These functions are mainly divided into three categories: **Wizard**, **Tools** and **Status**, illustrated as below.

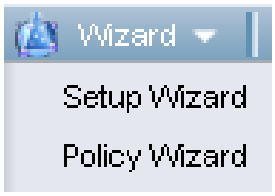
The **Wizard,** including **Setup Wizard** and **Policy Wizard,** guides you step-by-step to complete the entire procedure, helps you easily configure the essential system information and policy configuration for DFL-M510.

For system maintenance, several handy tools such as **Backup, Reset, Upgrade,** and **Debug**, are provided in the **Tools,** enable you to quickly maintain the system configuration.

The **Status** is the most fabulous function you may frequently utilize, for instance, **System** information, **Logging** information and **Report** for network status. The current status of the supported application DFL-M510 can monitor and manage is provided in the **Policy Status**. Also, you can obtain the information of pattern version in the **Pattern Status**.

WIZARD

The **Wizard** provides a handy ways for you to quickly apply system and policy settings for the DFL-M510. On DFL-M510, two wizards shown as below are provided - Setup Wizard and Policy Wizard.

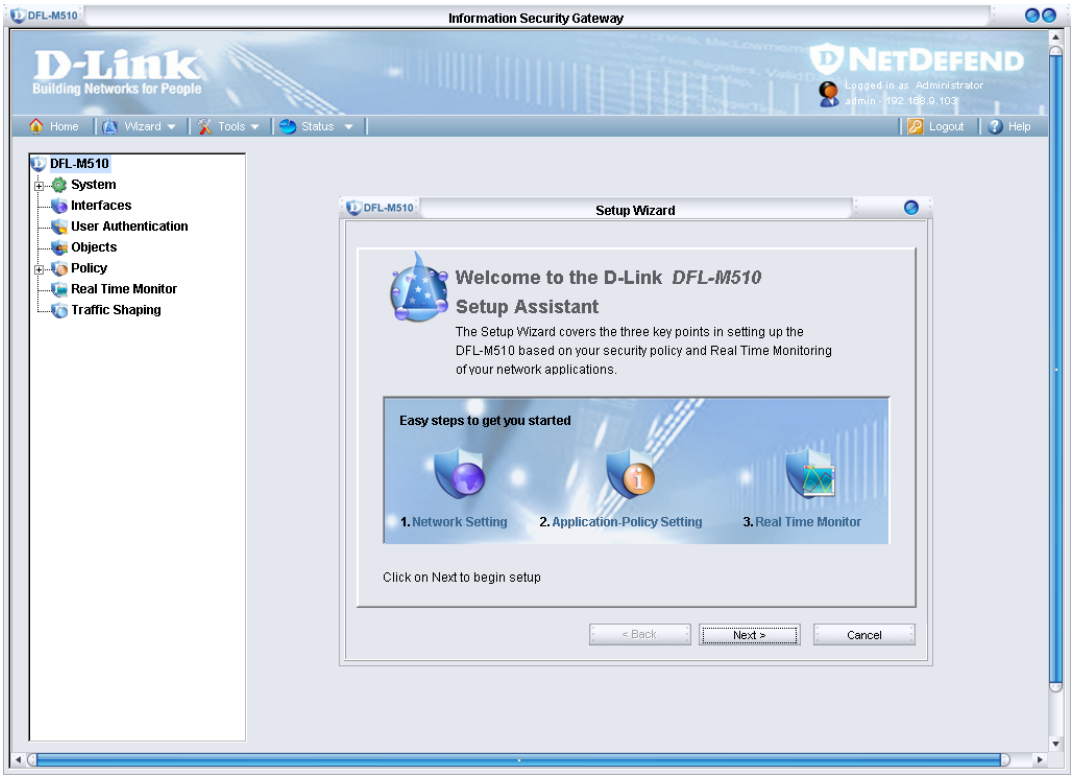


SETUP WIZARD

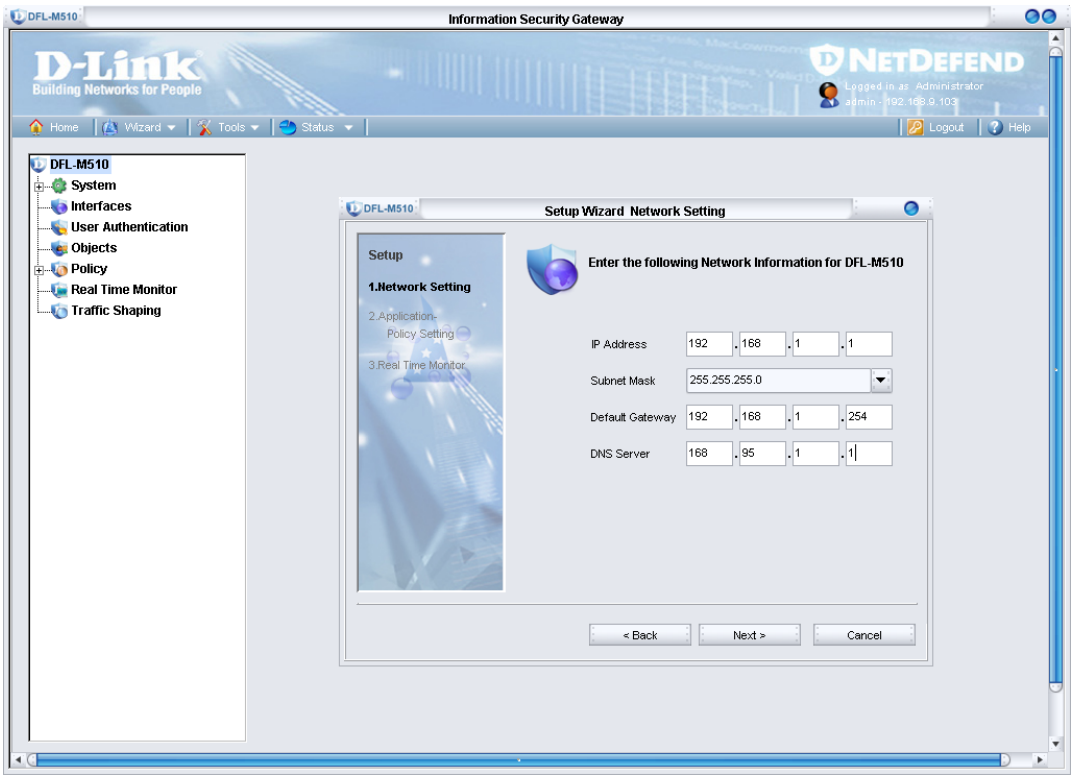
When initializing the DFL-M510 first time, the Setup Wizard will launch automatically after you logon the device. The Setup Wizard will guide you step-by-step through the entire procedure. After the procedure is completed, the basic system information for DFL-M510 is configured.

To run the **Setup Wizard:**

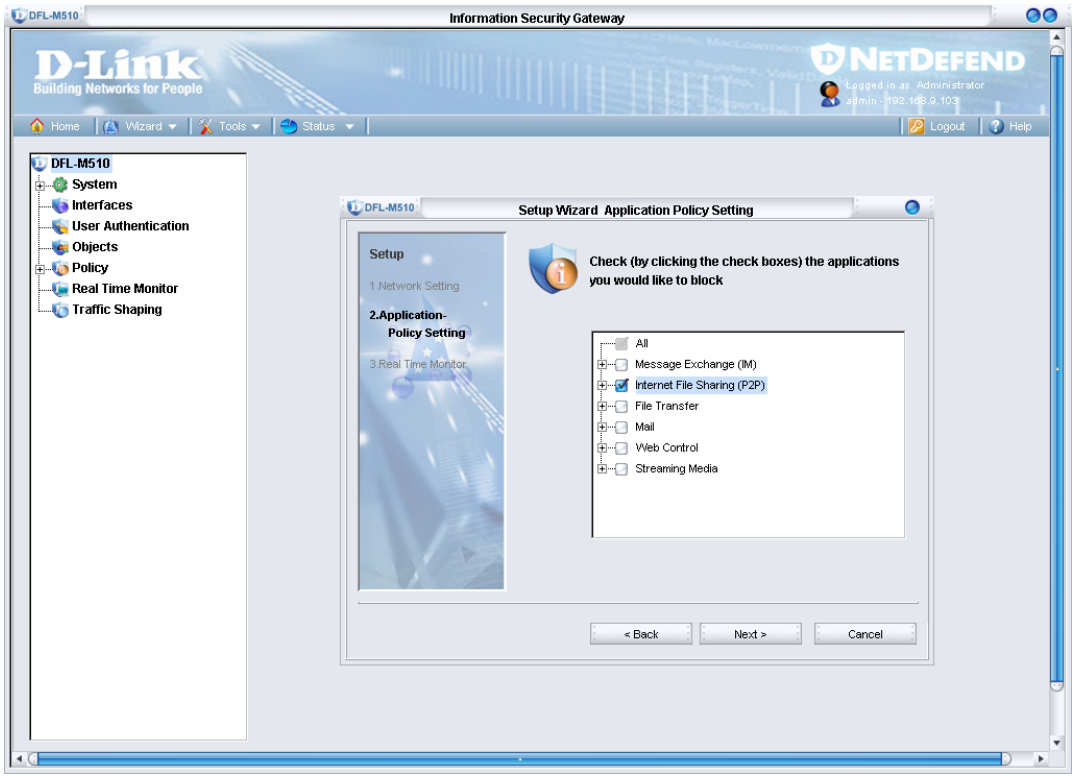
1. Go to **Toolbar,** click **Wizard**, **Setup Wizard**. The **Setup Wizard** window appears. Click **Next** to continue.



2. You need to provide your IP Address, Subnet Mask, Default Gateway, and DNS Server address to enable the device to connect to your network. If the network was set by CLI, check the settings here. Type in the required information and click **Next**.

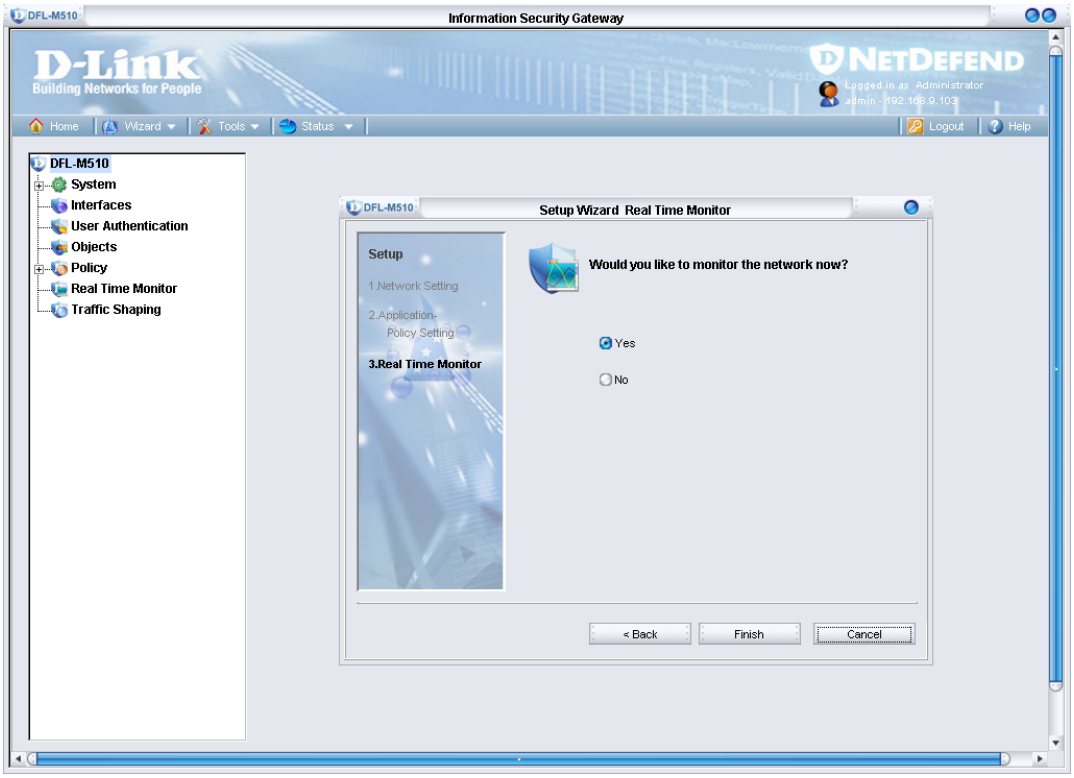


3. Select the check boxes for the applications you want to block and click **Next**.



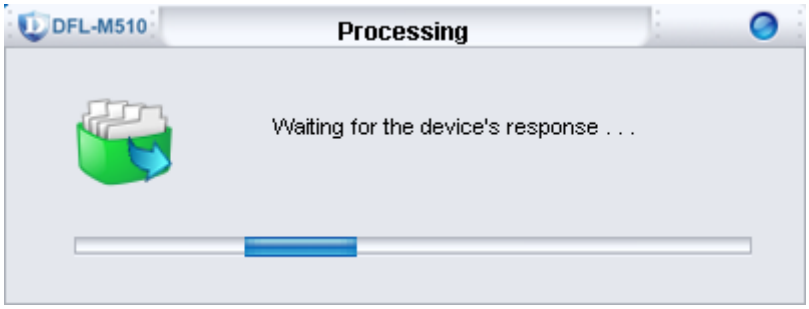
You can leave all the boxes unchecked to be sure the DFL-M510 is set up correctly. Later you can add applications to be blocked in the Policy menu. See Chapter 6 **"Policy"** on page 75.

4. Select the **No** radio button and click **Finish.**



If you select Yes in the screen above, you are taken to the Real Time Monitor screen when setup completes. See Chapter 7 "**Real Time Monitor**" on page 98.

It takes 30 seconds for the settings to be processed and then the following screen appears:



When the setup is successful, the following screen appears:

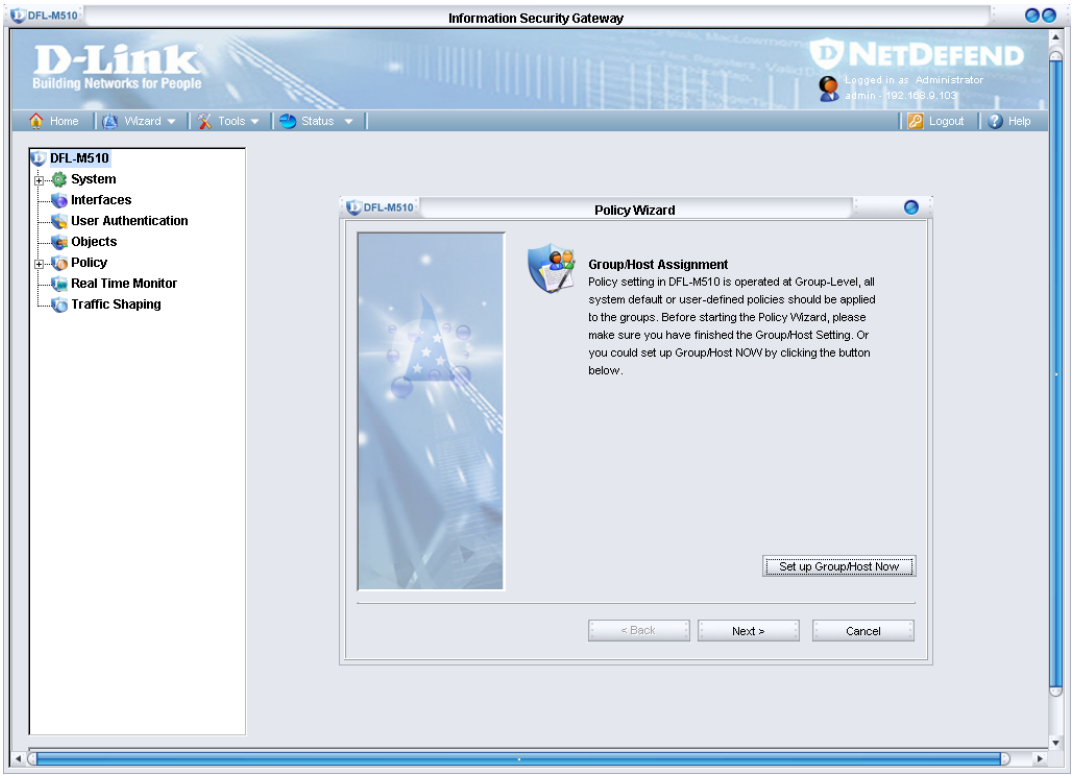
5. Click **OK.** The **System status** screen is shown for your information.

POLICY WIZARD

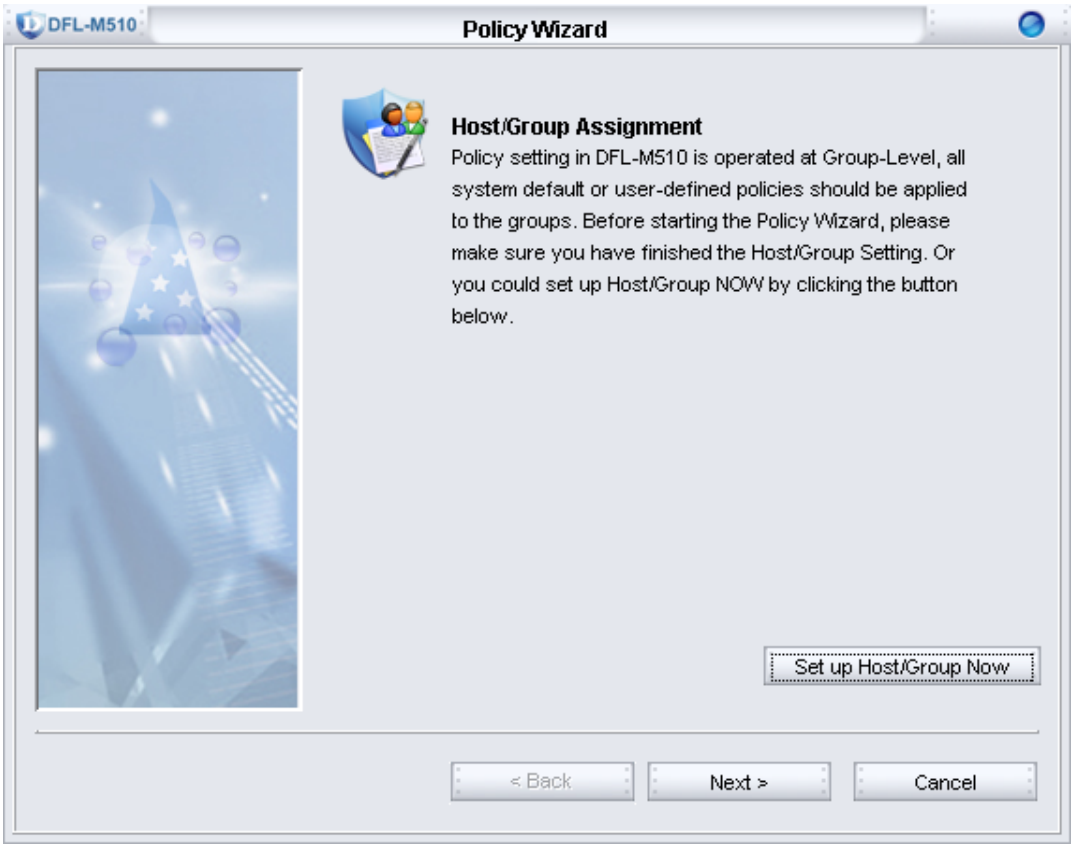
The **Policy Wizard** helps you to simplify the policy configurations and apply policy settings for the DFL-M510. Follow the steps as below to experience the easy use and convenience of **Policy Wizard:**

TO CREATE A NEW POLICY TEMPLATE VIA POLICY WIZARD

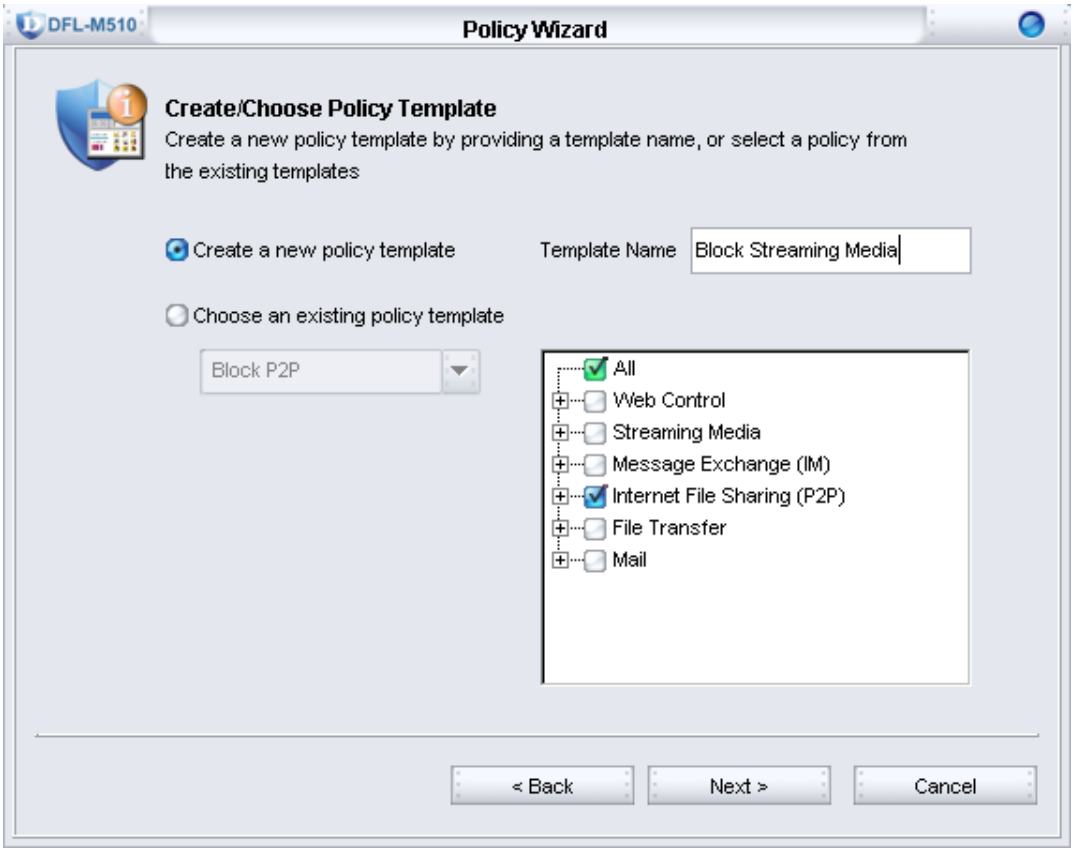
1. Go to **Toolbar,** click **Wizard, Policy Wizard.** The Policy Wizard window appears.



2. You can choose to manually setup Host/Group information here or latter in the tree view list. To setup the Host/Group information, click the “**Set up Host/Group Now**” button, otherwise, click **Next** to continue.



3. In this step, you can choose either to create a new policy or to select an existing policy template.



To create a new policy, you need to provide a policy name in the "**Template Name**" field, and click **Next** to continue. Here **Block Streaming Media** is the example.

To utilize an existing policy template, click the radio button "**Choose an existing policy template**", and select an existing policy template from the pull down list. The detail setting for the policy template you choose will appear in the three view list for your information, and click **Next** to continue.

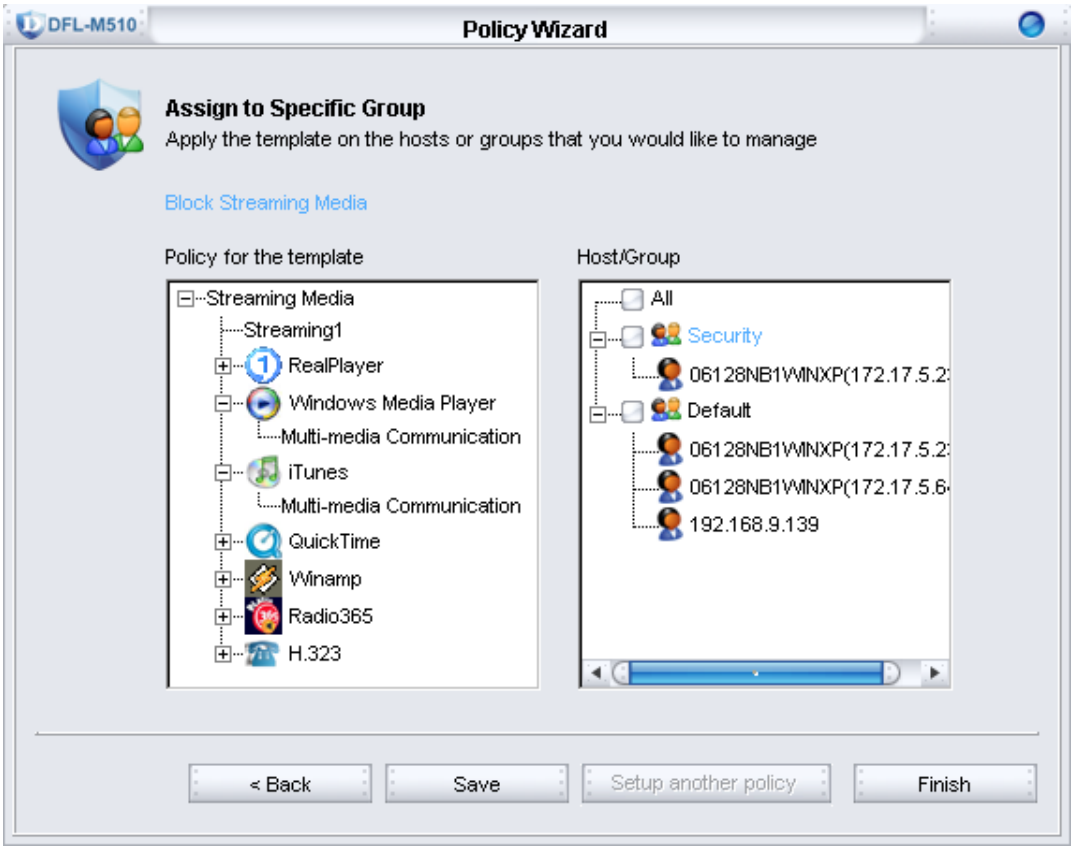
NOTE

If you select "**Choose an existing policy template**", and click **Next,** you are taken to the Step 5 for further configuration.

---

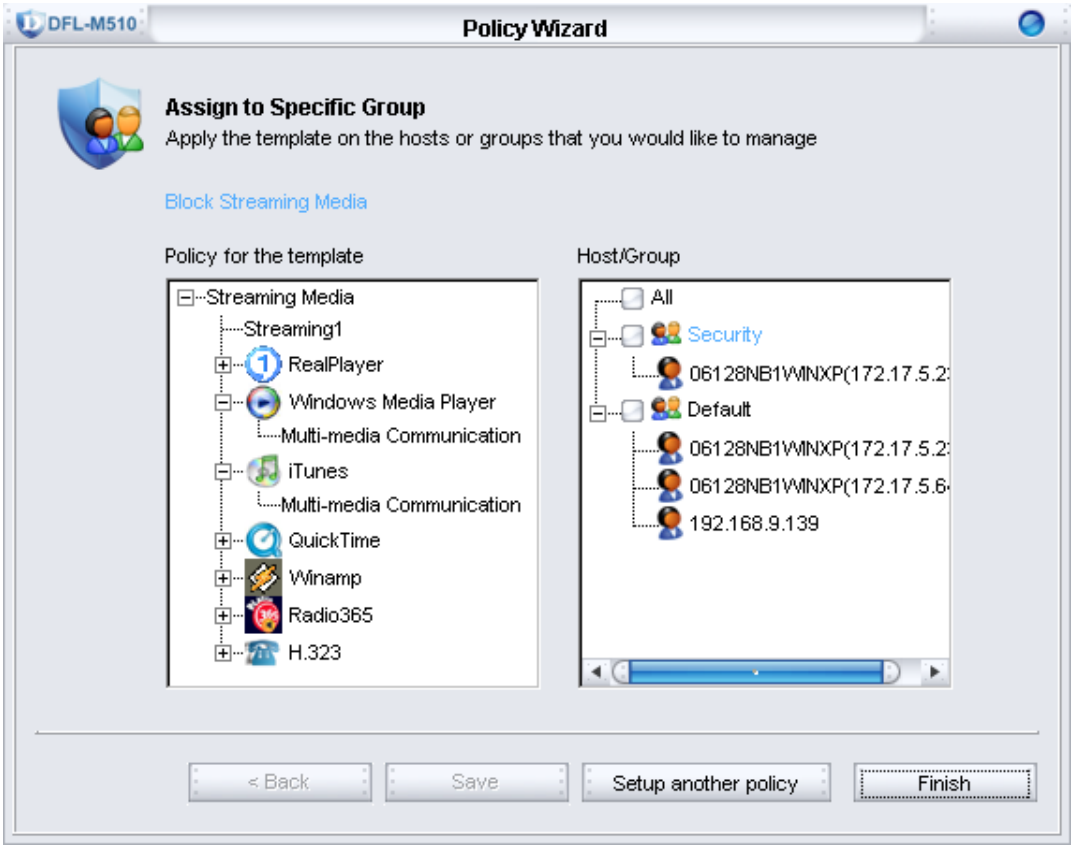
4. Specify the corresponding action and schedule for the "**Block Streaming Media**" template. Here the "**Block**" checkbox is checked, and the schedule is "**Always**". Click **Next** to continue.

5. Assign the “Block Streaming Media” template to a specific group. In this step, it is optional to assign the policy to a specific group. You can latter configure it in the “Policy Setting” Tab when you require. In this example, the policy does not apply to any specific group immediately. Click Save to save your setting for the new policy template.



Do not forget to click the “**Save**” button in this step; otherwise you will lose your entire configuration for your new policy template.

6. After saving your new policy template, you can choose either to finish the Policy Wizard or to set up another policy template via the wizard.



NOTE

The Policy Wizard provides a simple and easy way to set up your policy setting, these configurations still can be modified latter in the configuration tabs of “Policy Setting”. See Chapter 6 “**Policy**” on page 75 for more information.

TOOLS

The Tools includes the handy tools for the system maintenance, including Backup, Reset, Upgrade and Debug. Each of them will be described as below.

BACKUP

Go to the **Toolbar**, click **Tools**, **Backup**. The **Backup** window appears.

Backup configuration to	Press Backup configuration to store the currents settings to a file. The backup configuration dialog displays to ask the name of the stored file.
Restore configuration from	Press Restore configuration from to restore setting from a file on the management GUI. The restore configuration dialog would display to ask the name of the file.

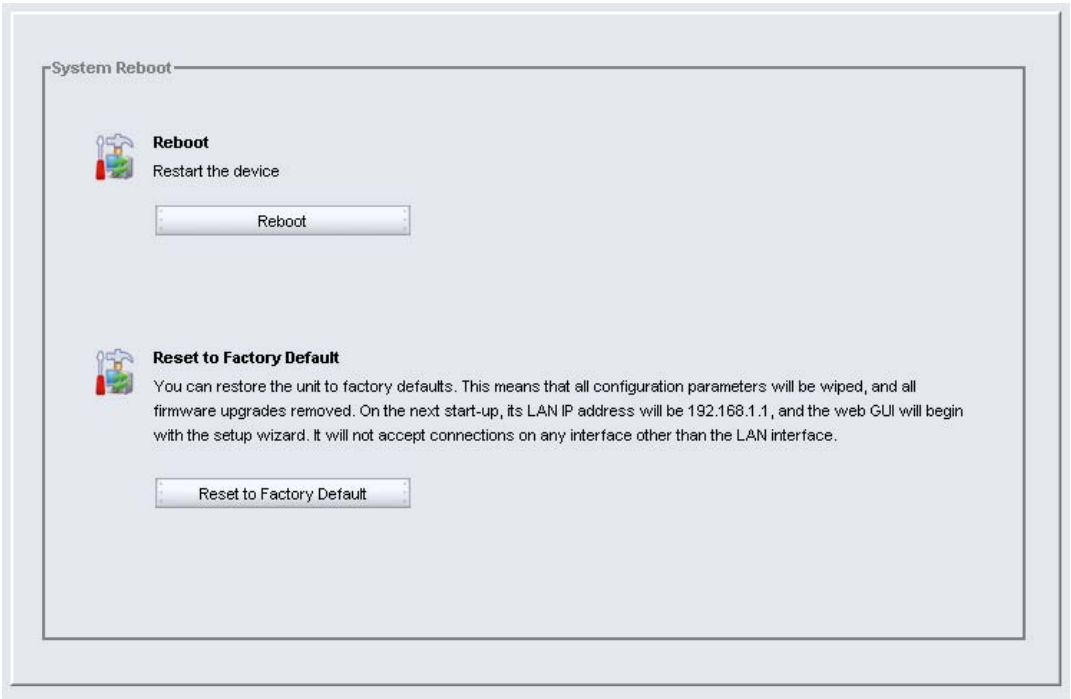
RESTORING A CONFIGURATION BACKUP

1. Click **Browse**.
2. Locate the DFL-M510.cbk file and click **Open**.
3. Click **Restore** to send the file to the device.
4. When the update completes, click Reboot to reboot the device.

The configuration file includes the user-defined policy.

RESET

Go to the Toolbar, click Tools, Reset. The System Reboot window appears as below.

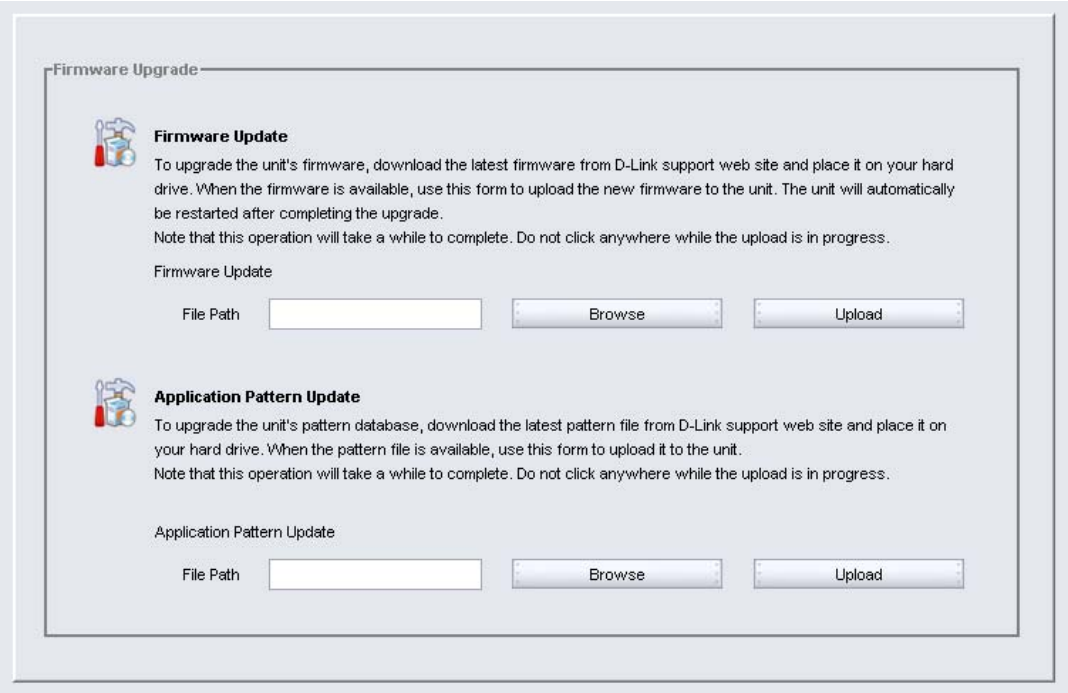


Reboot	After an update completes, press Reboot to boot the device from the new firmware.
Reset to Factory Default	Press Reset to Factory Default to restore the factory default settings.

Rebooting or resetting the device closes the GUI. Log back on as you normally do.

UPGRADE

Go to the **Toolbar**, click **Tools**, **Upgrade**. The **Firmware Upgrade** window appears, see below.



File Path	Type the file path to the update file.
Browse	Press **Browse** to locate the update file. Then press Upload to send the newest file to the device.
Upload	Press **Upload t**o begin the update.

DEBUG

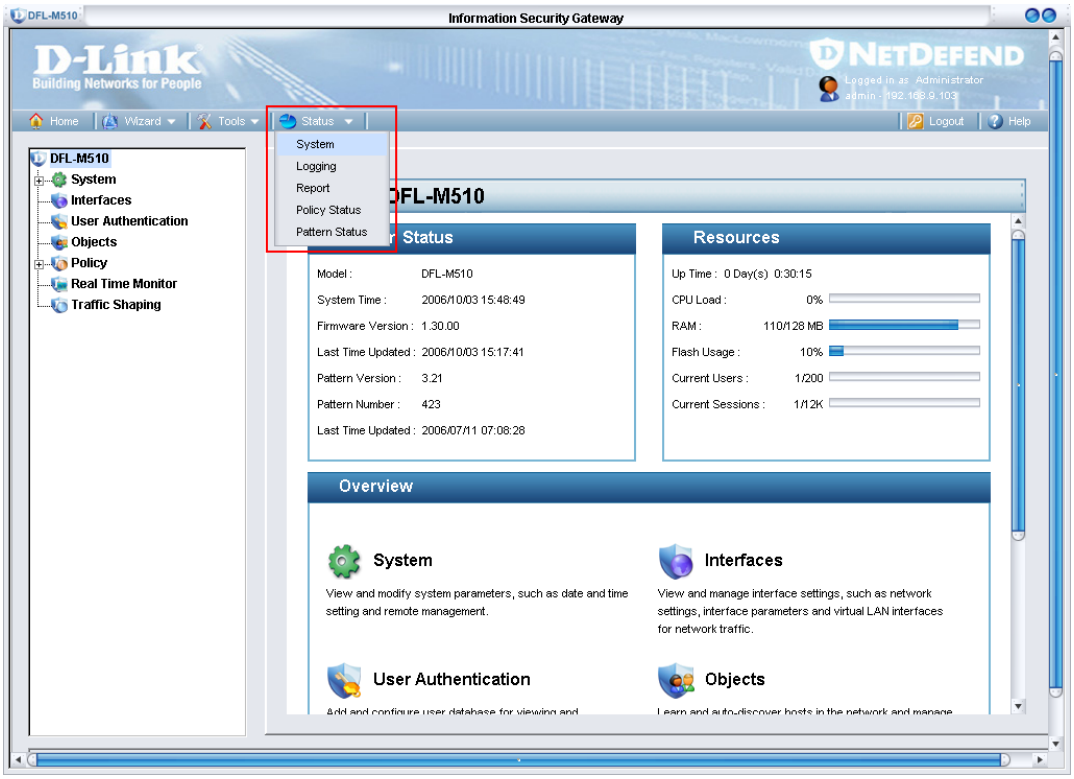
Go to the **Toolbar**, click **Tools**, **Debug**. The **Debug** window appears, see below.

The Debug tool is a trouble shooting tool for your hardware provider. When you encounter hardware problems or configuration problems of DFL-M510, you can retrieve the debug information from the DFL-M510, and provide this file to your vendor for further analysis.

STATUS

The Status provides information on the current network and system settings. You can also find details of what applications can be monitored and incorporated into your policies.

After you log on, go to **Toolbar**, and click **Status** to open the following screen:

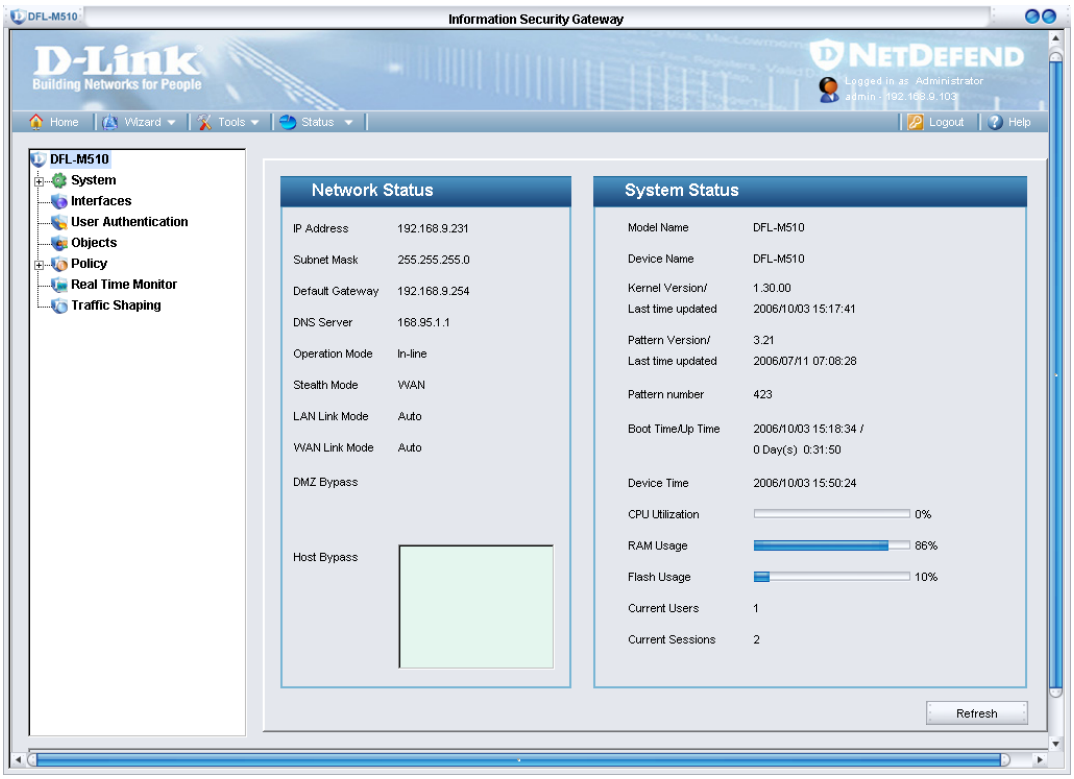


The **Status** screen gives you access to the following information:

- System Status
- Logging Status
- Report for Network Status
- Policy Status
- Pattern Status

System Status

The System tab information is updated every minute. You can also click the **Refresh** button to update the information. To view the **System Status,** click **Status**/**System**.



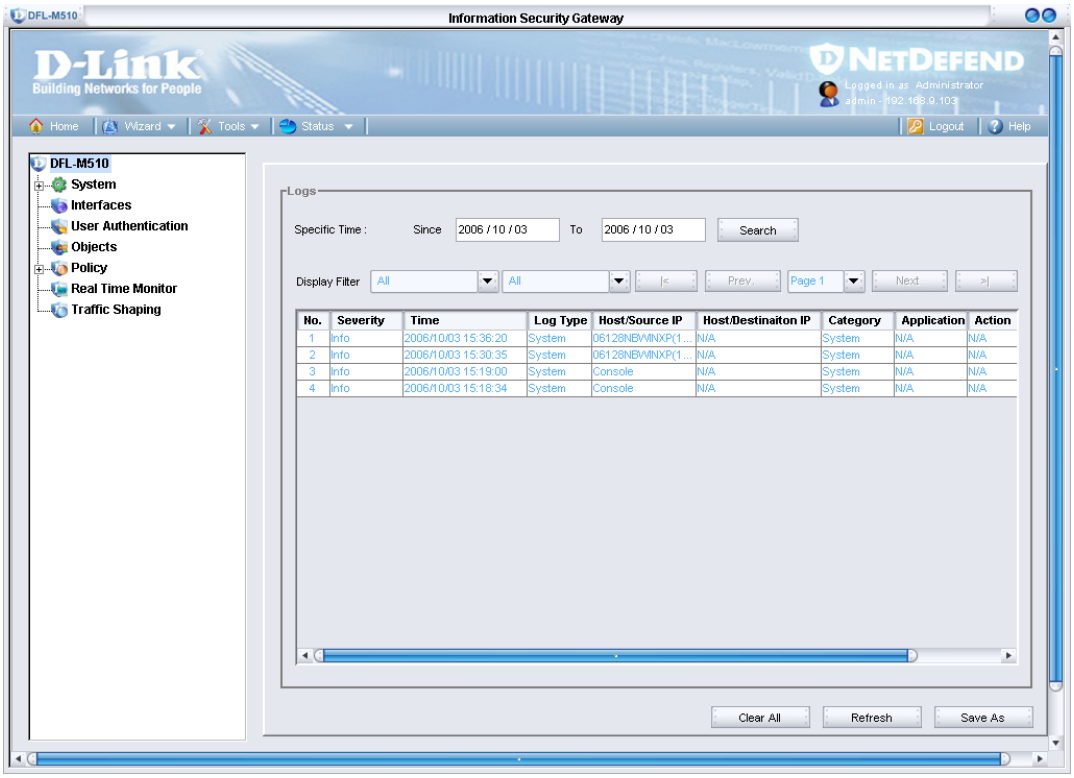
IP Address	Shows the IP Address (the default is 192.168.1.1)
Subnet Mask	Shows the subnet mask (the default is 255.255.255.0)
Default Gateway	Shows the default gateway (the default is 192.168.1.254
DNS Server	Shows the DNS server address
Operation Mode	Shows the defense status of the device
Stealth Mode	Shows if stealth mode is enabled
Lan Link Mode	Shows the LAN link mode
Wan Link Mode	Shows the WAN link mode
DMZ Bypass	Shows the DMZ bypass; packets are not monitored in DMZ
Host Bypass	Shows the host bypass
Model Name	Shows the model name
Device Name	Shows the device name
Kernel Version	Shows the kernel version
Last time updated	Shows last time the firmware was updated

Pattern Version	Shows the pattern version
Last time updated	Shows the last time the pattern was updated
Pattern number	Shows the pattern number
Boot Time/Up Time	Shows the last time the device was booted up
Device Time	Shows the system device time
CPU Utilization	Shows CPU utilization, monitor CPU usage to prevent overload
RAM Usage	Shows RAM usage, monitor memory usage to prevent overload
Flash Usage	Shows flash usage, monitor flash usage to prevent overload
Current Users	Shows the total number of hosts, monitor the host table to prevent it from running out
Current Sessions	Shows the total number of sessions, monitor the sessions table to prevent connection sessions from running out

CPU utilization, RAM and Flash Usage display the percentage being used, expressed as an integer percentage and calculated as a simple by time interval.

Logging Status

To view the **Logging Status,** click **Status/Logging**.



The log involves three lists of records. The system log records the device status changes and firmware operational conditions. It will statically list out incidents on the log windows when there are any. It is the administrator's decision to activate the log display by clicking **Refresh**. On the log display list, the default setting of the system is to display all information regarding incidents, including the occurring, source, and message. Administrators can inspect data and filter out unnecessary events

SEARCHING FOR LOGS BY A SPECIFIC TIME

To search a log for a specific time, specify the time under **Specific Time** and click **Search**.

SETTING THE LOG DISPLAY

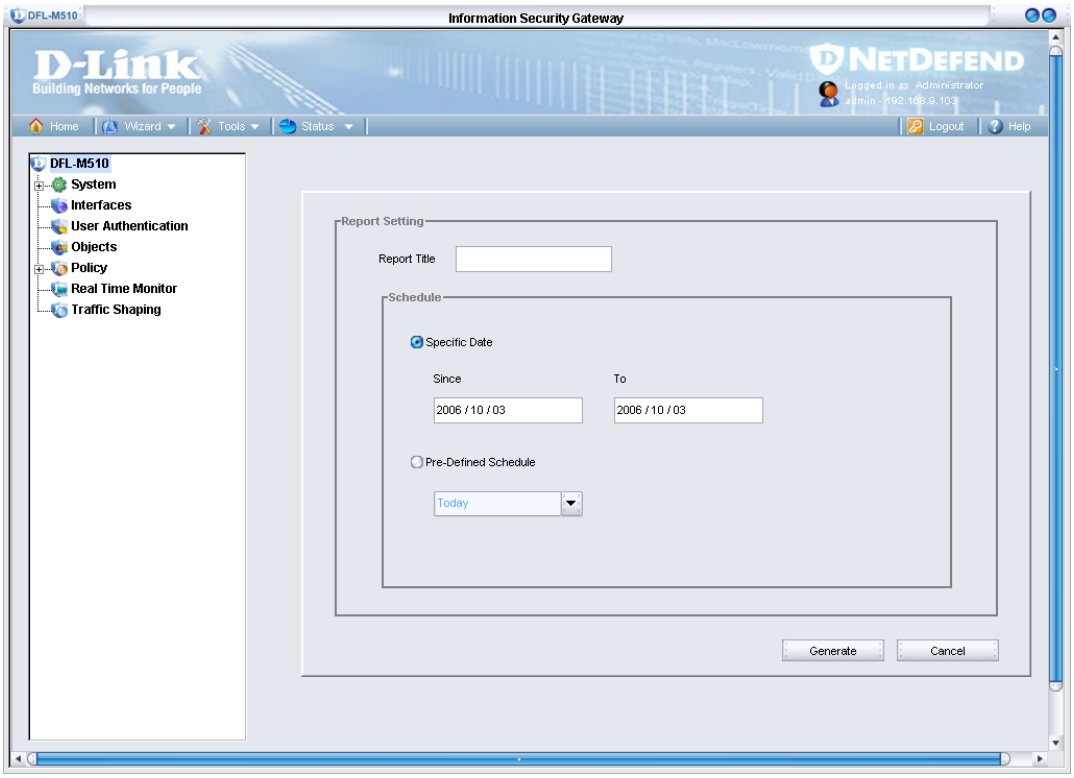
The **Display in one page** field lets you define how many log records display in one page. The default value is 10.

NAVIGATING LOGS

Use the navigation arrows </> to jump to the first or last page. Use **Prev/Next**, to go to the previous or next page. Go to a specific page by selecting it from the Page drop-down arrow.

THE REPORT for Network Status

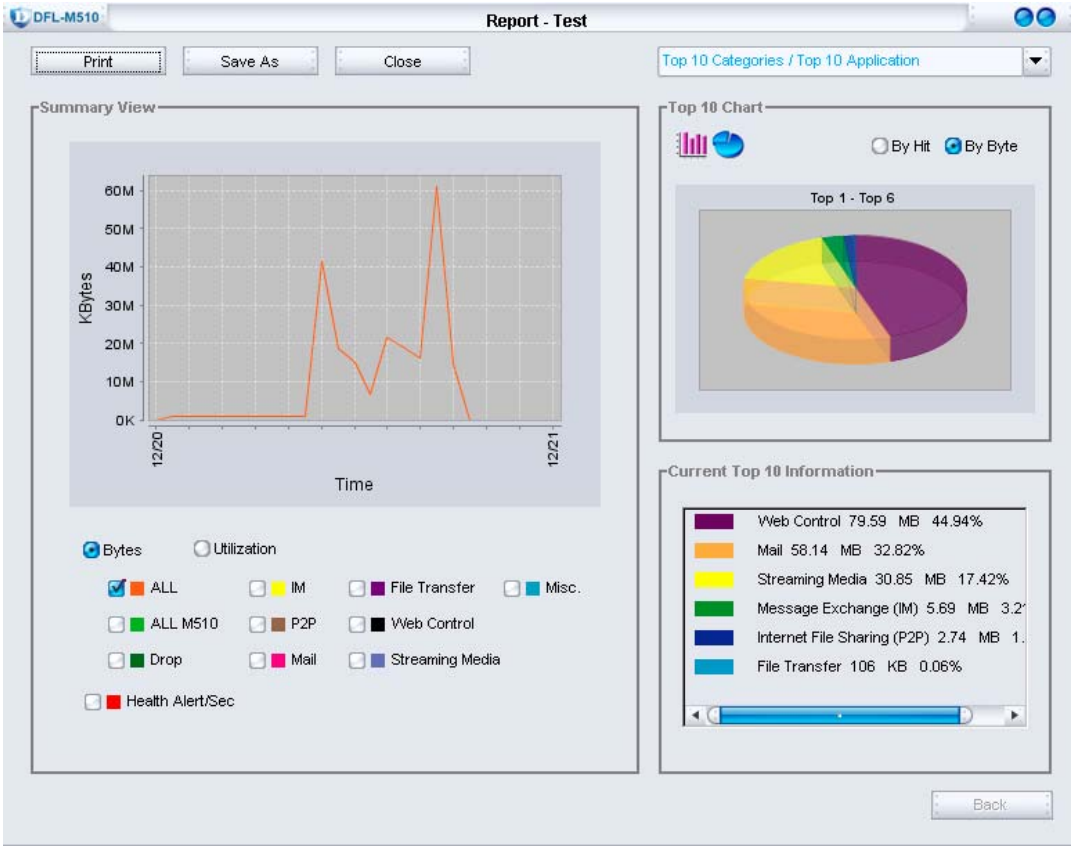
To view the **Report for Network Status,** click **Status** /**Report**.



In the **Report Title** field, type a title for the report, and click **Generate**.

INTERACTIVE REPORT

After you click Generate, the report window opens.

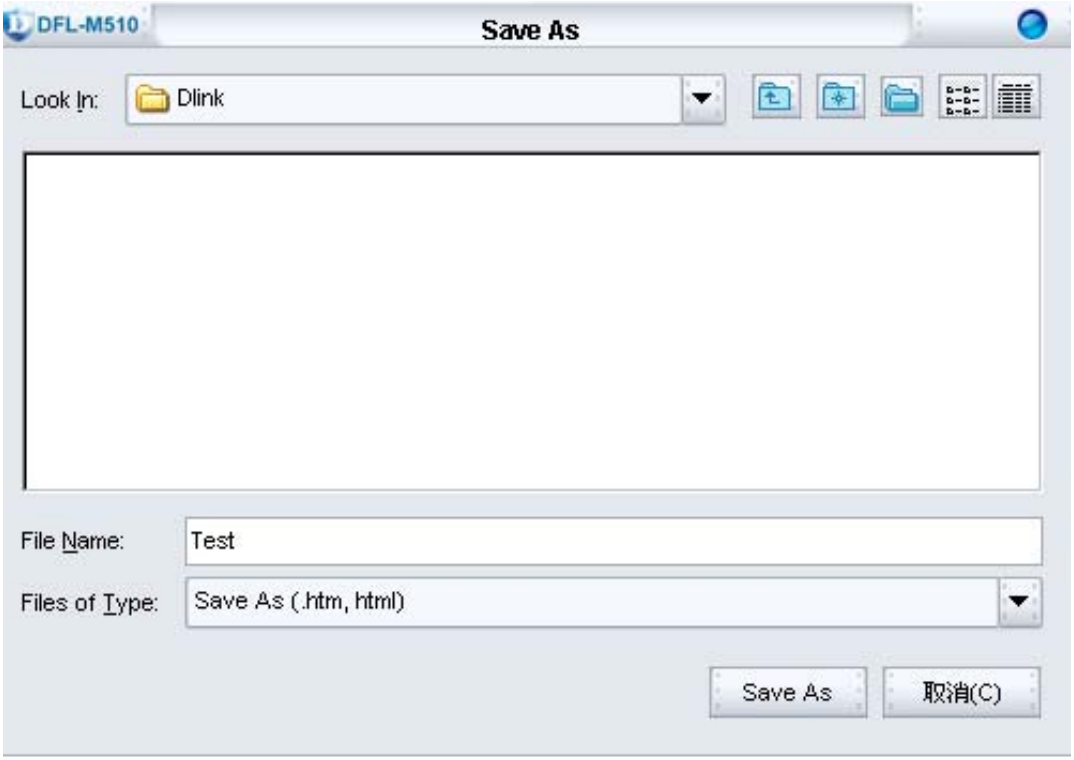


The above screen is described in the Real Time Monitor chapter. See “Monitoring Real Time Traffic”. Click **Print** to print the report. Click **Save As** to save the report to the local computer. Click **Close** to close the report window.

VIEWING A SAVED REPORT

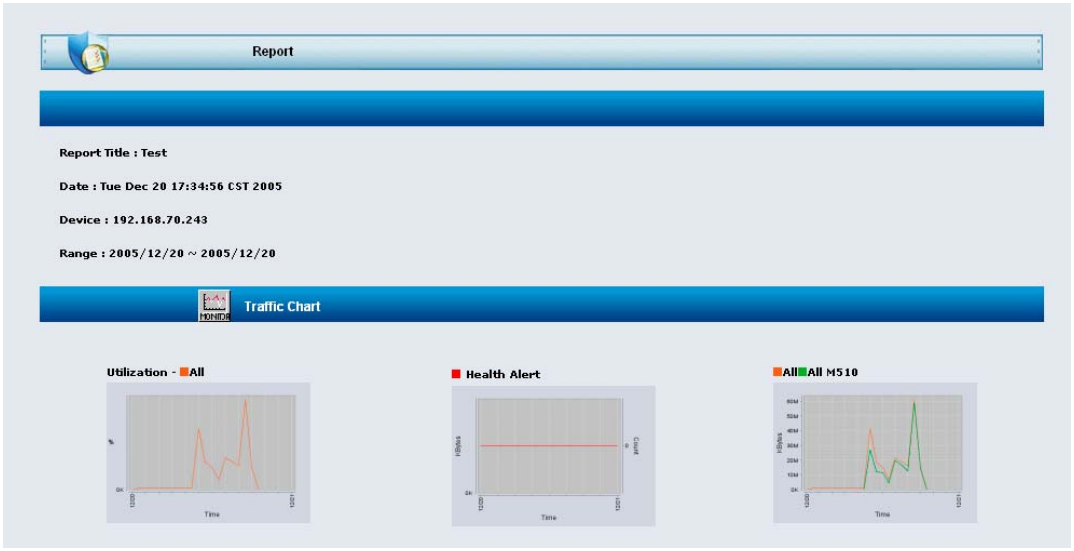
Reports are saved in HTML format and can be viewed in a Web browser.

1. Click **Save As**.



2. Type a name for the report and click **Save As**.

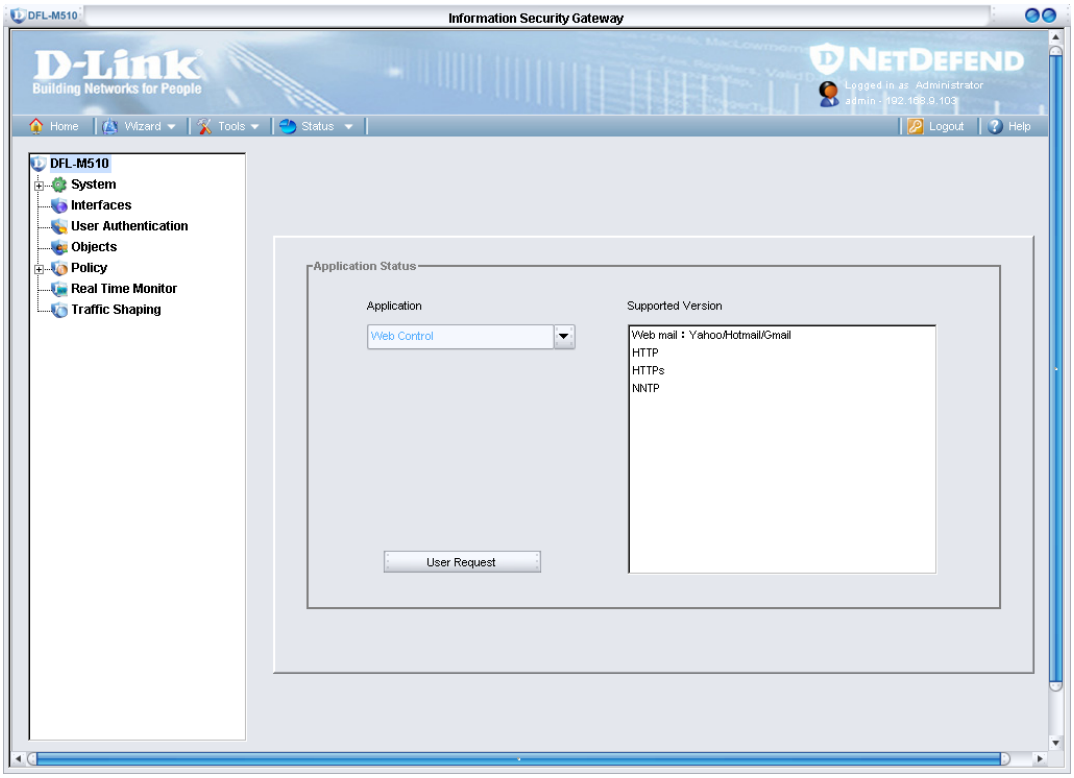
3. Open the file you saved in your Web browser.



4. Scroll down to view the details of the report.

POLICY STATUS

To view the **Policy Status,** click **Status/Policy Status**.



APPLICATION STATUS

Click **Application** to select the application category which you want to know. It will display the current version in the right field. The following are the supported applications of Pattern version 3.21 on the DFL-M510. The latest pattern can be downloaded automatically after you register the product information and enable the auto download feature on the DFL-M510. To register product information, please visit the following hyperlink: https://security.dlink.com.tw/member_registration.asp .

Application	Support Version
Web Control	Web mail: Yahoo/Hotmail/Gmail
	HTTP
	HTTPS
	NNTP
Internet File Sharing (P2P)	eDonkey2000-1.4.3
	eMule 0.46a
	WinMX 3.53
	BitTorrent 4.0.4
	EzPeer 2.0
	Overnet / eDonkey2000-1.1.2
	MLdonkey 2.5

	Shareaza v2.1.0.0
	Morpheus 4.9.2
	BearShare 5.1.0
	Kuro 6.0
	KaZaa 3.0
	Pigo 3.3
	GnuTella
	Grokster v2.6
	DirectConnect 2.2.0
	Beedo 2.0
	PP365 2004
	SoftEther 2.0
	PacketiX (Softether) 2.10 build 5080
	VNC 3.3.7
Streaming Media	RealPlayer 10.5
	Windows Media Player 10.0
	H.323
	RTSP
	iTunes 4.8
	WinAmp 5.09
	Radio365 1.1.11
	QuickTime 6.5.2
File Transfer	General FTP Applications
	GetRight 5.2d
	FlashGet 1.71
Message Exchange (IM)	MSN 7.5 Build 7.5.031
	Microsoft Live Messenger 8.0
	Web MSN
	AIM : 5.9.3759
	QQ V06.1.103.300
	TM 2006
	ICQ 5
	iChat 3.0.1
	Yahoo Messenger 7.0
	Odigo v4.0 Beta Build 689
	IRC MIRC 6.16
	Rediff BOL 7.0 Beta
	Google Talk 1.0.0.92
	Skype 1.3.0.57
Mail	SMTP

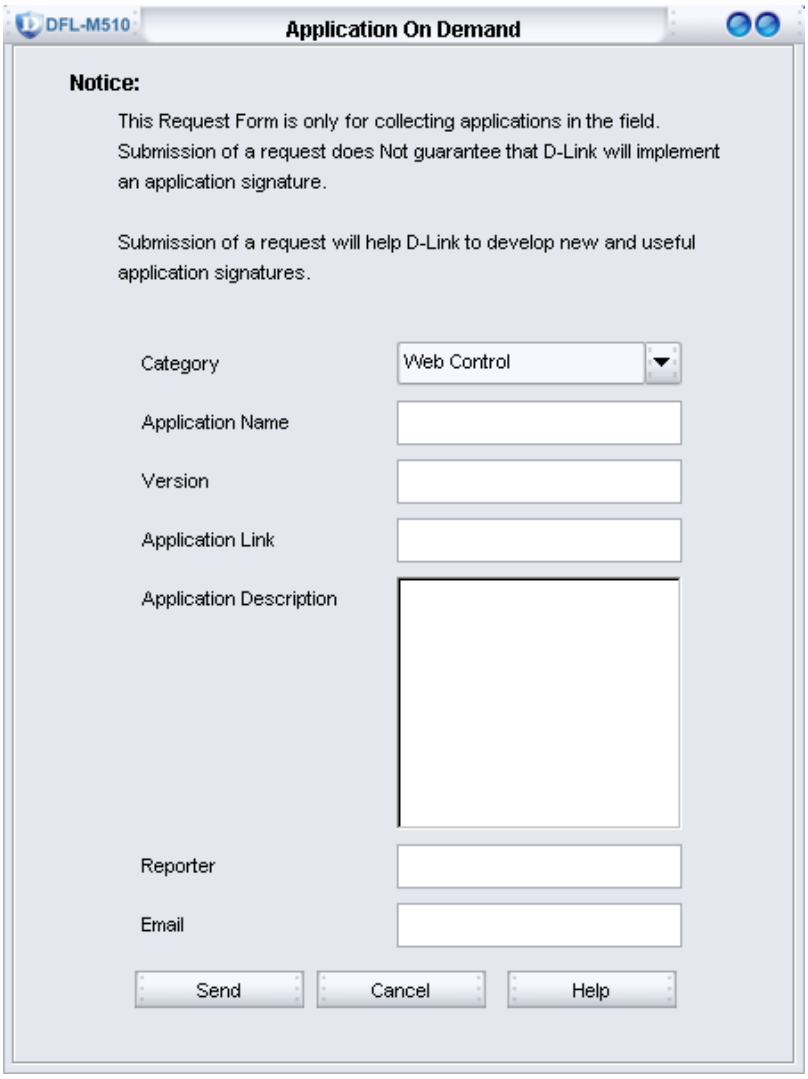
	POP3
	IMAP4
	NNTP

The DFL-M510 manages P2P downloads by using the P2P Protocol. In this architecture, no matter what version of the client you use, the DFL-M510 can manage it.

REQUEST NEW APPLICATION SUPPORT

If there is a new application that the DFL-M510 can not support, you can use this function to request support.

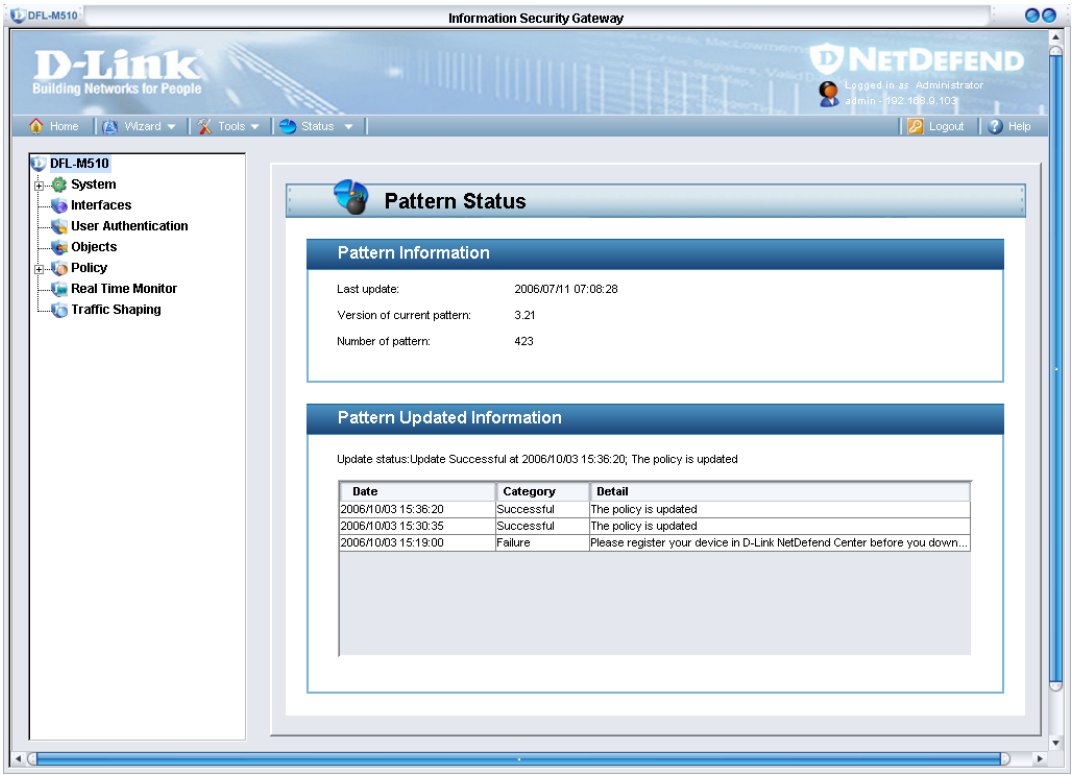
1. Click **User Request.** The following screen appears.



2. Complete all information of the new application, and click **Send**. You will be contacted by the D-Link support team.

PATTERN STATUS

To view the **Pattern Status,** click **Status/Pattern Status**.



PATTERN INFORMATION

This page will display the Pattern Information

Last Update	Shows the last time the pattern was updated
Version of current pattern	Shows the pattern version
Number of pattern	Shows the pattern number

Pattern Updated Information

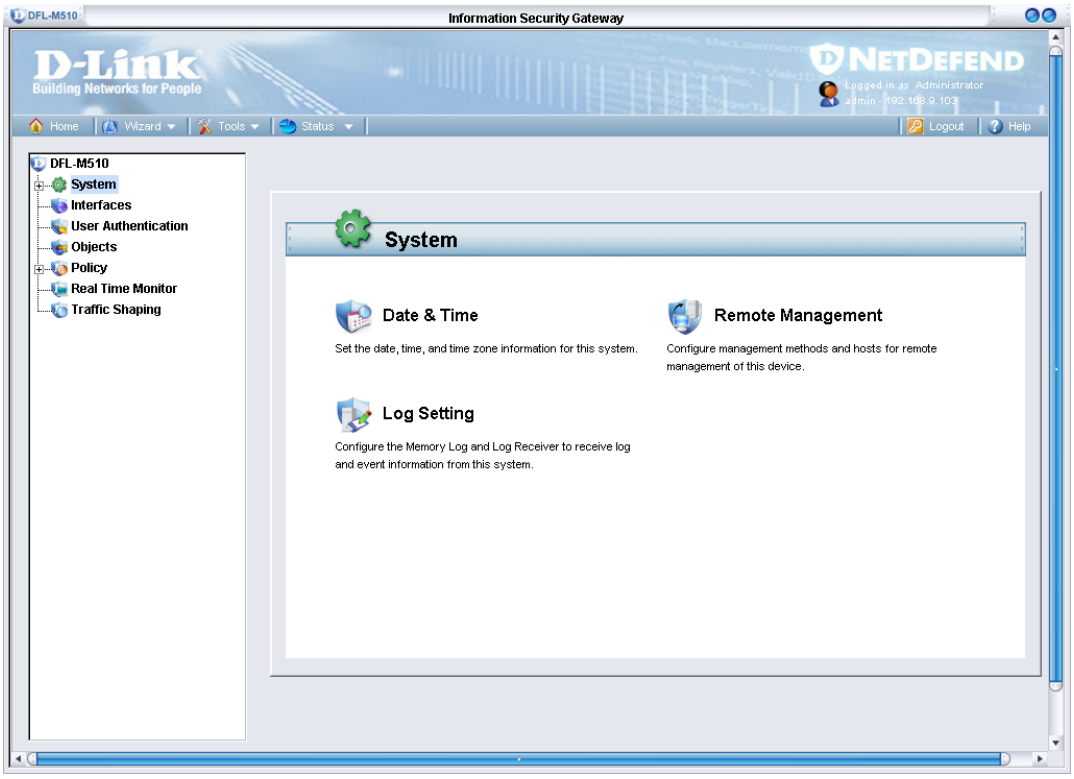
This page will show the log when you update pattern.

CHAPTER 2: SYSTEM

The System menu is where you carry out the basic setup of the DFL-M510 such as integration with your network. The System menu also lets you set local time settings and carry out maintenance.

THE SYSTEM SCREEN

After you log on, click **System** to open the following screen:



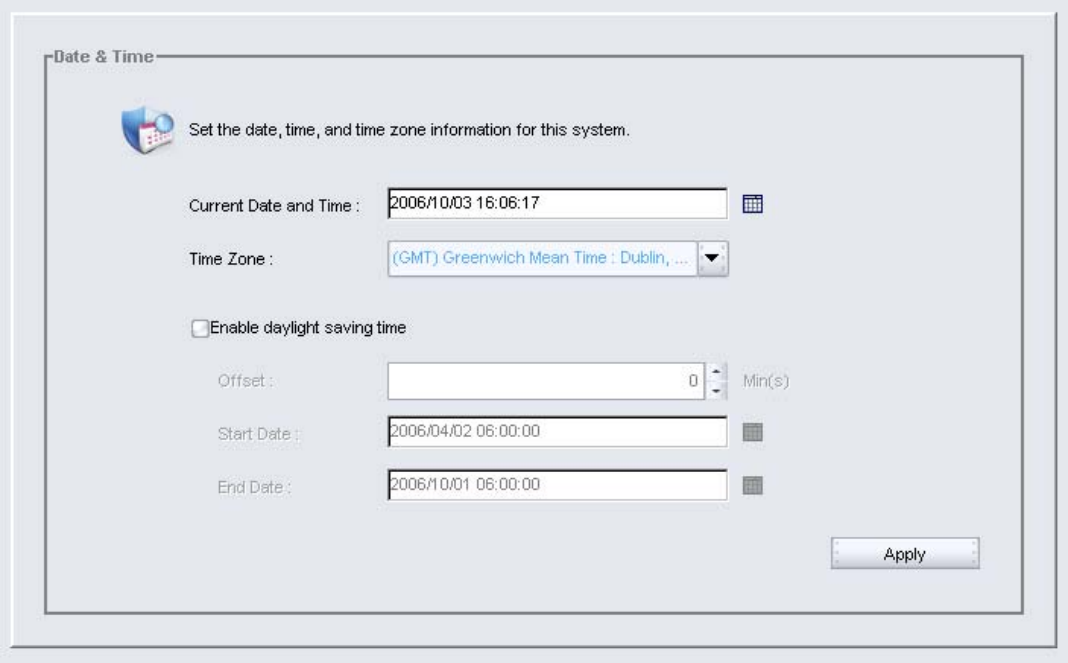
The System screen gives you access to the following screens:

- "**Date and Time**" on page 38
- "**Remote Management**" on page 40
- "**Log Setting**" on page 42

THE DATE AND TIME SCREEN

Use **Date and Time** to adjust the time for your location.

1. Click **System** > **Date and Time**.
   The **Date and Time** window appears.



2. Click  to the right of **Current Date and Time**.

3. Select the current date and click  to return to the **Date and Time** screen.

4. In the **Current Date and Time** field, type in the current time and then choose the time zone for your location from the drop-down list.

5. Click **Apply** to confirm your settings. The following screen appears:

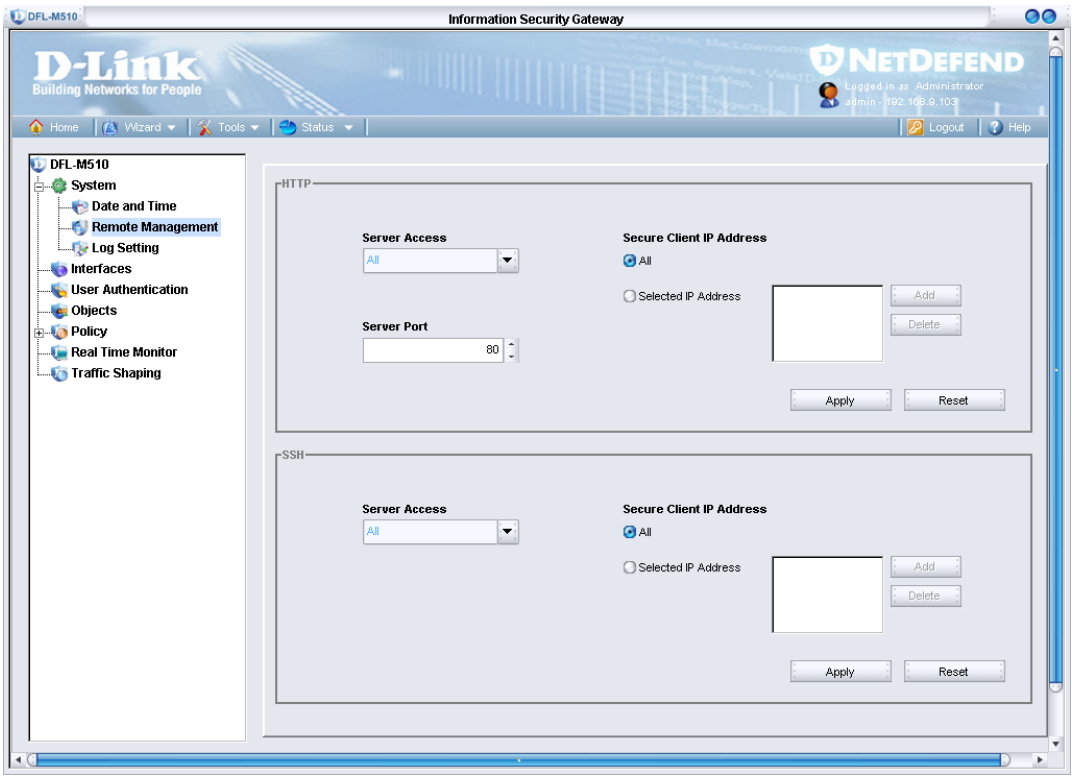
6. Click **OK** to exit.

NOTE

If your location uses daylight saving time:
A. Check **Enable daylight saving time**
B. At **Offset**, set the offset time
C. Click  to set the start and end dates and then click **Apply**.

THE REMOTE MANAGEMENT SCREEN

Use **Remote Management** to enable system administration remotely. The following screen appears.



The DFL-M510 can be remotely managed via HTTP or SSH. The Remote Access tab lets you control access rights.

HTTP/SSH

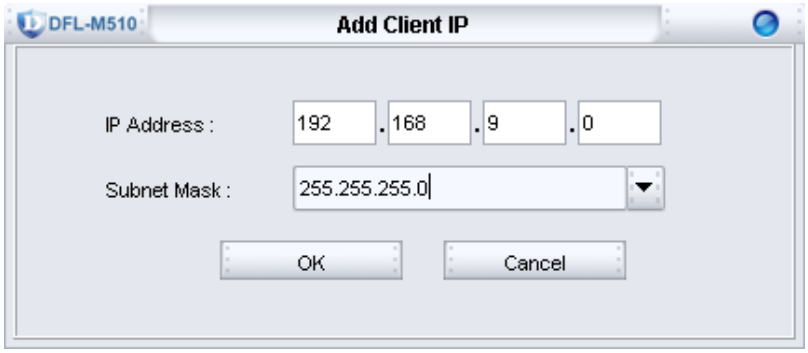
The descriptions for the HTTP and SSH fields are the same.

Server Access	Options are **All**, **Disabled, Allowed from LAN,** or **Allowed from WAN**. The default is **All**.
Secure Client IP Address	Options are **All** or **Selected IP Address**.
Add/Delete	Use Add/Delete to add IP Addresses or a Subnet address to the **Selected IP Address** window.

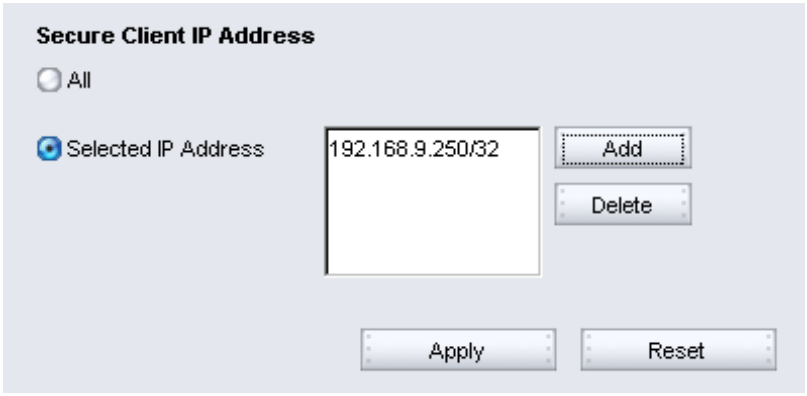
Configuring Server Access for SSH for Specific IP Addresses

1. Select **WAN** in the **Server Access** field.

2. Click the **Selected IP Address** radio button and click **Add**.



3. Type in the IP Address and Subnet Mask for the PC that will access the DFL-M510 and click **OK**. The IP Address is added to the Selected IP Address window. Repeat steps 2 and 3 to add other IP Addresses.



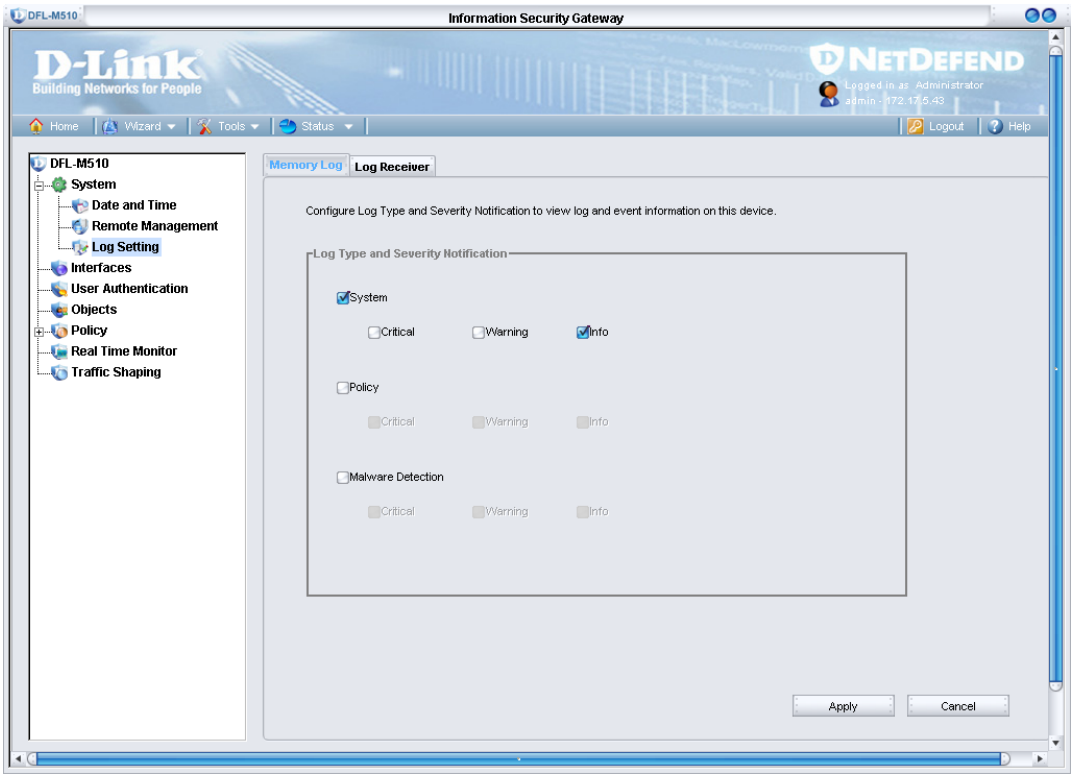
4. Click **Apply**. The new settings are processed.

When the settings are processed, the following screen appears:

5. Click **OK** to finish.

THE LOG SETTING SCREEN

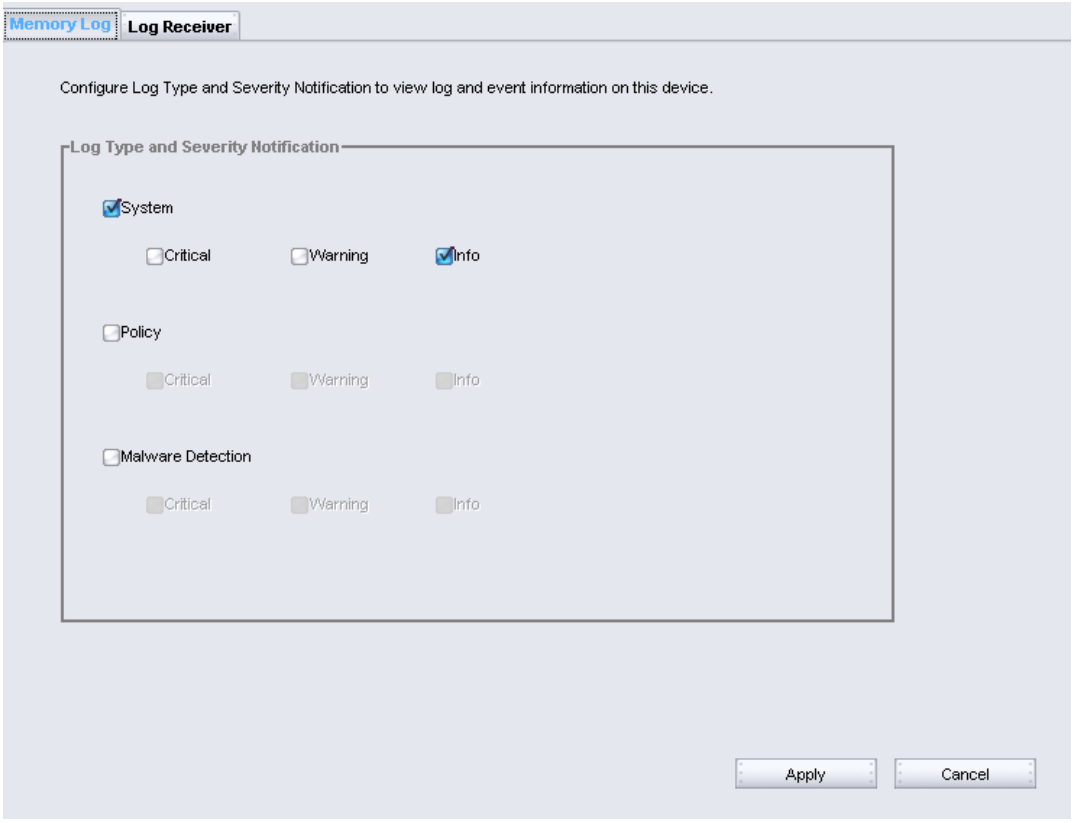
Configure Log Type and Severity Notification to view log information on the device. Click **System/Log Setting**, the following screen appears.



The Log Setting screen has two tabs. Click on a tab to view the settings.

MEMORY LOG TAB

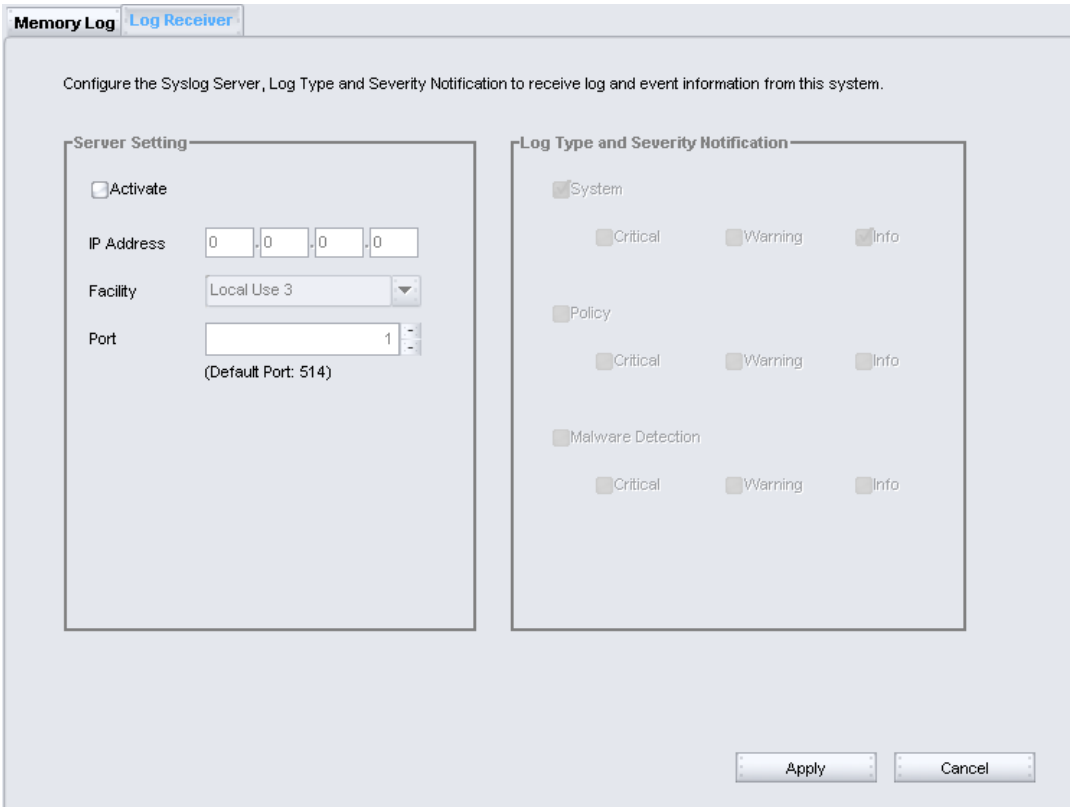
Click the Memory Log tab. The following screen appears.



On DFL-M510, there are three log types, including **System**, **Policy** and **Malware Detection**. System log setting enables you to log and view system related information on the DFL-M510. Policy log setting enables you further configure the logging for individual policy template. For Malware Detection log setting, it allows DFL-M510 log the information while the device detects any network health concern activities in your internal network. Each log type has three corresponding severity notification, including **Critical, Warning** and **Info**. You can configure severity notification for each log type to enable the logging on DFL-M510 according to your audit requirement.

LOG RECEIVER TAB

Click the Log Receiver tab. The following screen appears.



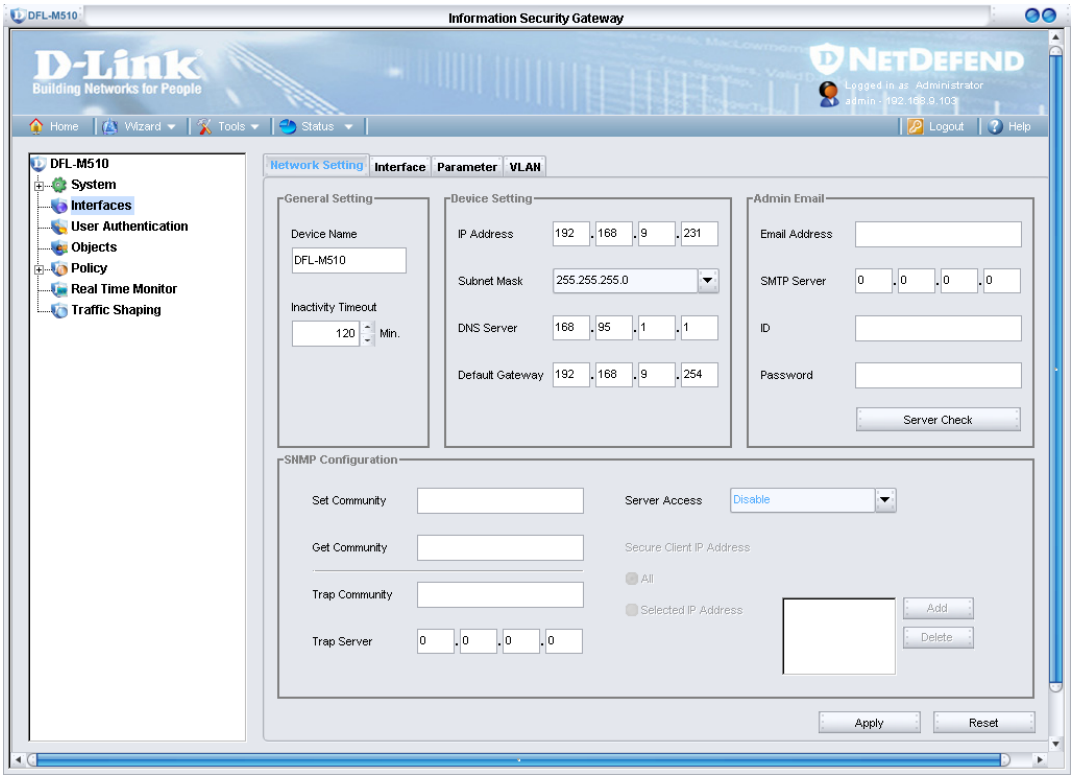
To export the logging information to external Syslog server, you need to activate the Server setting, meanwhile provide the IP address and port configuration of your Syslog server. Then specify the log type and severity notification you would like to export to and view on your Syslog server.

CHAPTER 3: INTERFACES

THE INTERFACE SCREEN

The Network screen lets you configure settings for your network.

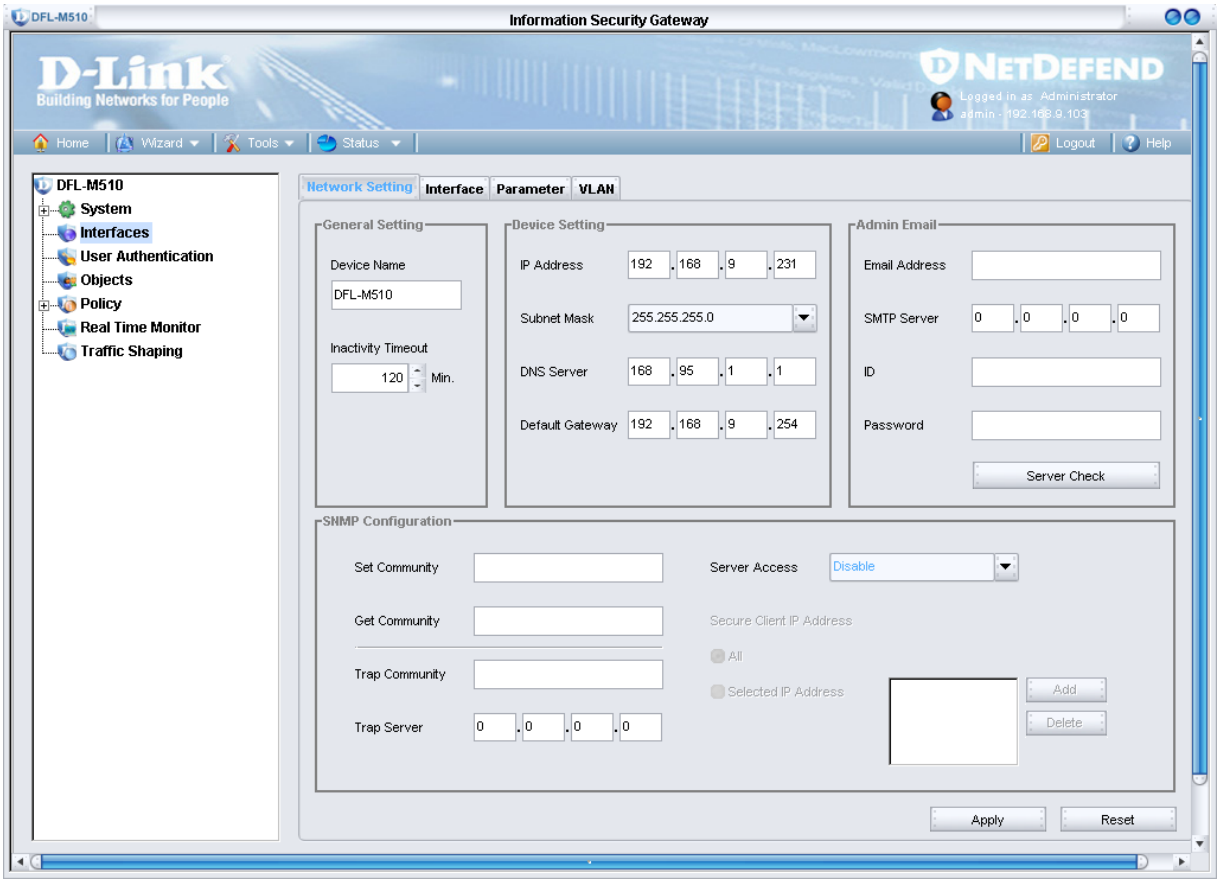
1. Click **Interface**. The **Network Setting** window appears.

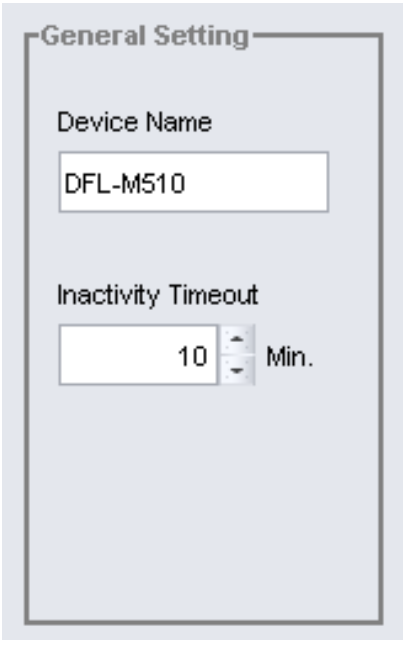


The Network screen has four tabs. Click on a tab to view the settings.

NETWORK SETTING TAB

Click the Network Setting tab. The following screen appears.



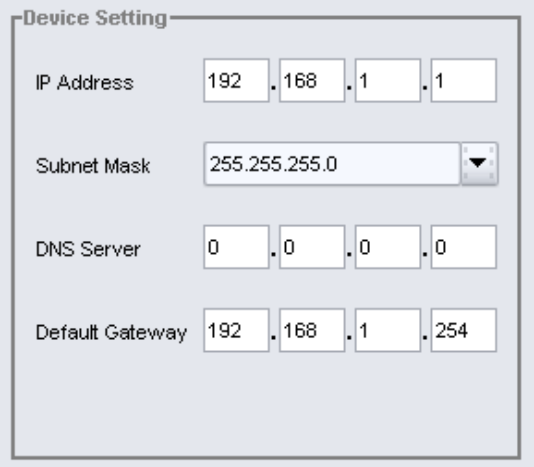


Device Name	Type a name for the device.
Inactivity Timeout	Set the inactivity time out.

When more than one DFL-M510 is installed in your location, assign device names to help identify different units.

DEVICE SETTING

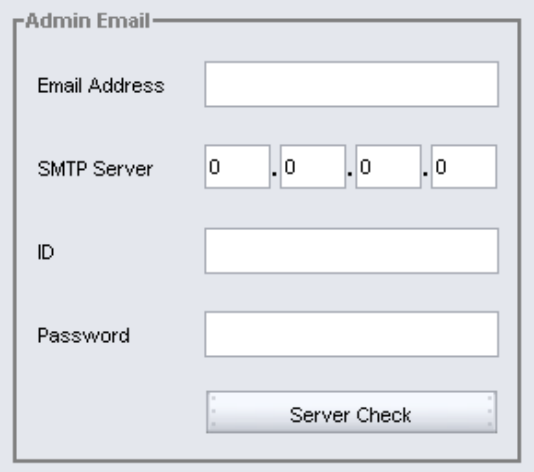
These fields display the IP address and related network information of the device.



IP Address	Device IP Address
Subnet Mask	Device Subnet Mask
DNS Server	Device DNS Server
Default Gateway	Device Default Gateway

ADMIN EMAIL

To enable the network administrator to receive emails from the DFL-M510, the following fields must be completed.



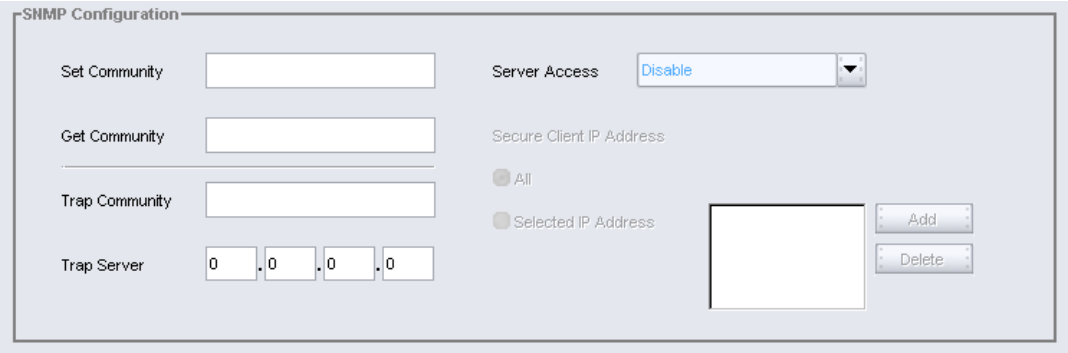
Email Address	Type the administrator's email address
SMTP Server	Type the IP of the SMTP server
ID	Type an ID if sender authentication is required
Password	Type a password if sender authentication is required
Server Check	When the above fields are completed, click **Server Check** to verify the mail account.

NOTE

The ID/Password field must be filled in if your mail server requires authentication.

SNMP CONFIGURATION

To set up SNMP (Simple Network Management Protocol), the SNMP communities have to be set and access control to the SNMP server has to be enabled



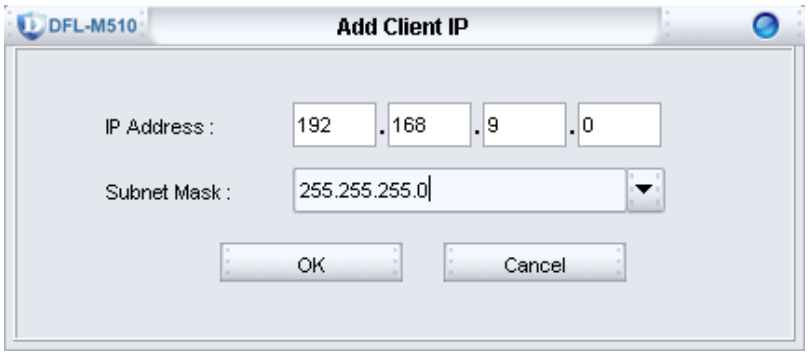
Set Community	Type the SNMP community that allows the SNMP set command. You can use SNMP software to configure the device such as System Contact, Name, and Location.
Get Community	Type the SNMP community that allows the SNMP get command. You can use SNMP software to retrieve configuration information from the device such as System description, Object ID, Up time, Name, Location, and Service.
Trap Community	Type the SNMP community that allows the SNMP trap command. When the device reboots, the device sends the trap to the trap server.
Trap Server	Type the IP of the SNMP management center that should be reported.
Server Access	Options are: **Disable**-No access from LAN or WAN **All**- Access from LAN and WAN (Note: This setting has no remote access restrictions; any IP address will have access to the DFL-M510.) **WAN -**Access from WAN only **LAN**- Access from LAN only The default option is Disable.
Secure Client IP Address	Options are **All** or **Selected IP Address**, which the SNMP commands are restricted to come from.
Add/Delete	Use Add/Delete to select IP addresses.

Configuring Server Access for LAN and WAN for Specific IP Addresses

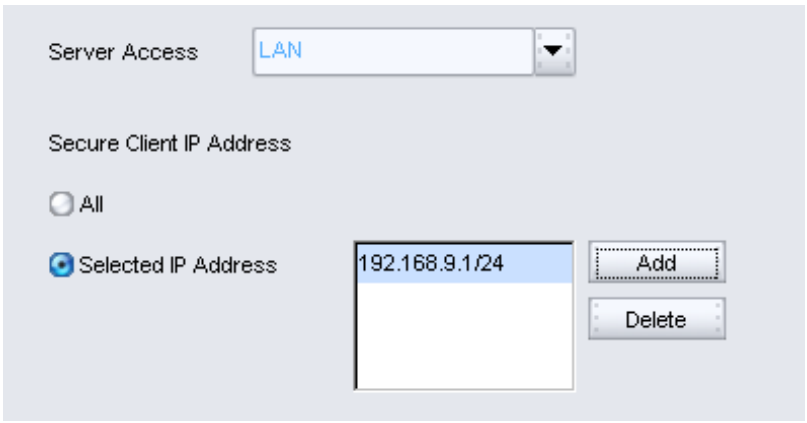
1. Select All in the Server Access field.

   Note: This setting has no remote access restrictions; any IP address will have access to the DFL-M510.

2. Click the **Selected IP Address** radio button and click **Add**.



3. Type in the IP Address and Subnet Mask for the PC that will access the DFL-M510 and click **OK**. The IP Address is added to the Selected IP Address window. Repeat steps 2 and 3 to add other IP Addresses.



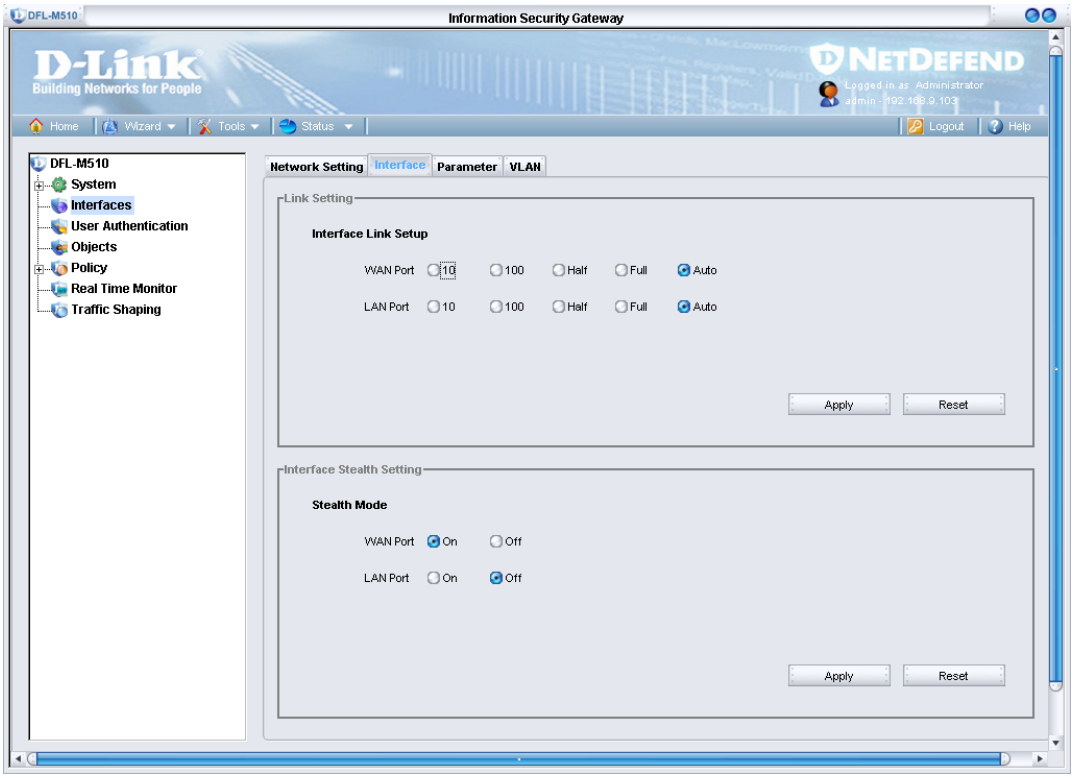
4. Click **Apply**. The new settings are processed.

When the settings are processed, the following screen appears:

5. Click **OK** to finish.

INTERFACE TAB

Click the Interface tab. The following screen appears.



LINK SETTING

Set the Ethernet ports for the speed you want and click **Apply**.

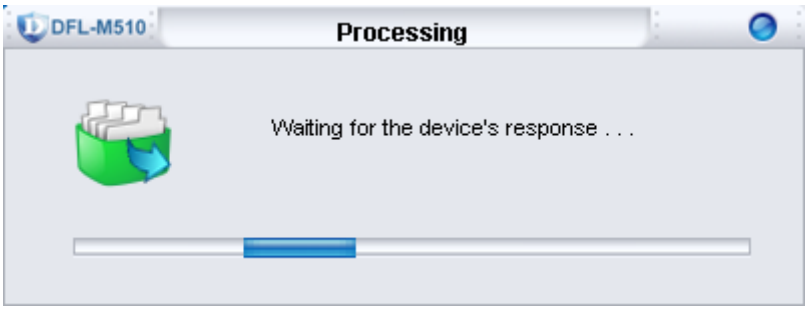
Interface Link Setup	WAN - 10/100/Half/Full/Auto
	LAN -10/100/Half/Full/Auto

INTERFACE STEALTH SETTING

The LAN/WAN Ports can be configured in Stealth Mode by selecting **On**.

Stealth Mode	WAN - On/Off
	LAN - On/Off
Subnet Mask	LAN Port

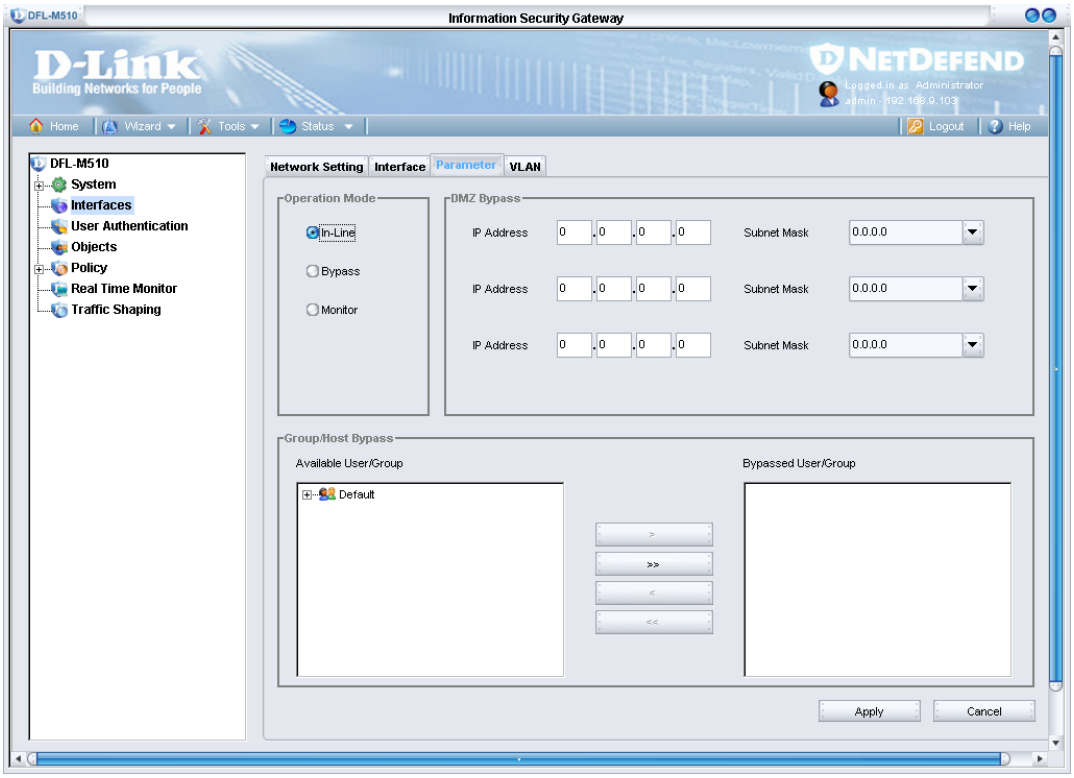
After you make changes, click **Apply**. The new settings are processed and the following screen appears:



Click **OK** to finish.

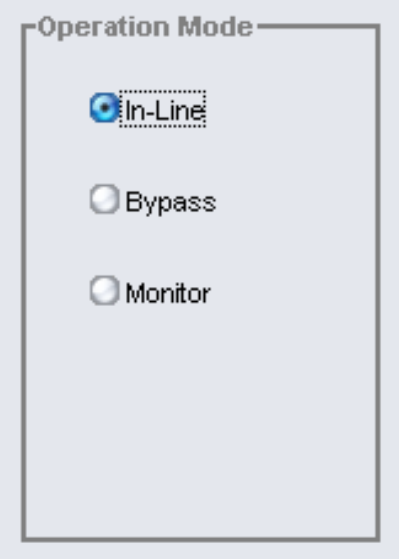
PARAMETER TAB

Click the Parameter tab. The following screen appears.



This tab defines management parameters.

OPERATION MODE

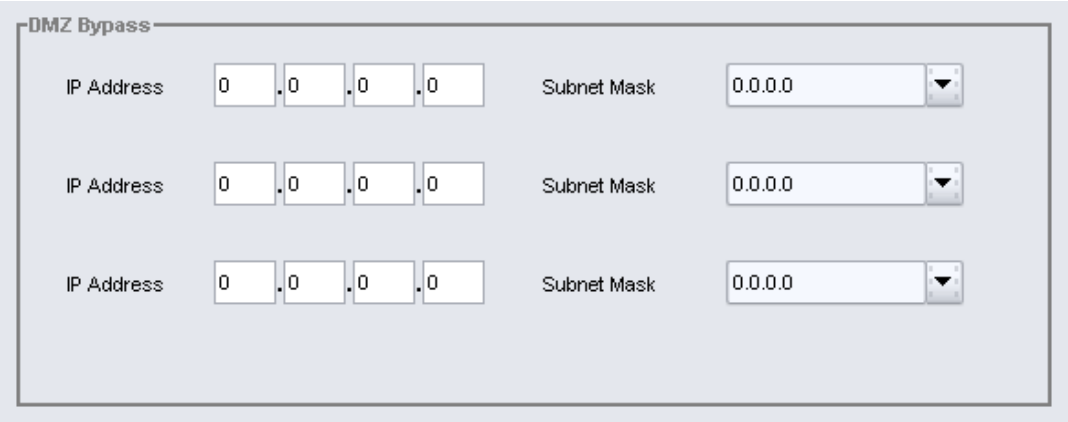


In-Line	In **In-Line** mode, the DFL-M510 works as a transparent gateway in your network. All traffic is inspected as it passes through the DFL-M510. The DFL-M510 responds to illegal activities based on policy rules. When attacks are detected, the DFL-M510 can take the following action: • **Drop the Packet** • **Reset the Connection** • **Log the Event** • **Save the Packet Message Content**
Bypass	In **Bypass** mode, the DFL-M510 works like a bridge with all rules and actions disabled. This mode is designed to help network administrators to debug and trace network abnormalities. When Bypass mode is selected, the DFL-M510 will not detect or take action to security events in the network.
Monitor	**Monitor** mode allows you to analyze network activities and make early-stage diagnosis before deployment. The DFL-M510 will detect all events by inspecting all packets. In this mode, the DFL-M510 will log all events, but will not take any countermeasure (reset, drop actions). It is suggested to monitor net-work traffic in this mode before setting In-Line mode, in order to fine tune your security policy and network performance.

The DFL-M510 only protects and monitors your net-work when set to In-Line mode. The other modes offer limited monitoring and are used for integrating the DFL-M510 smoothly with your network.

DMZ BYPASS

In order to speed up traffic from the intranet to DMZ, hosts within the given DMZ subnet addresses are not checked and all packets from or to those hosts pass unhindered.



IP Address	Type in the IP Address
Subnet Mask	Type in the Subnet Mask

NOTE

The IP addresses of the hosts in a subnet must be continuous. That is, the network mask contains only two pairs: the leading 1s, and the following 0s.

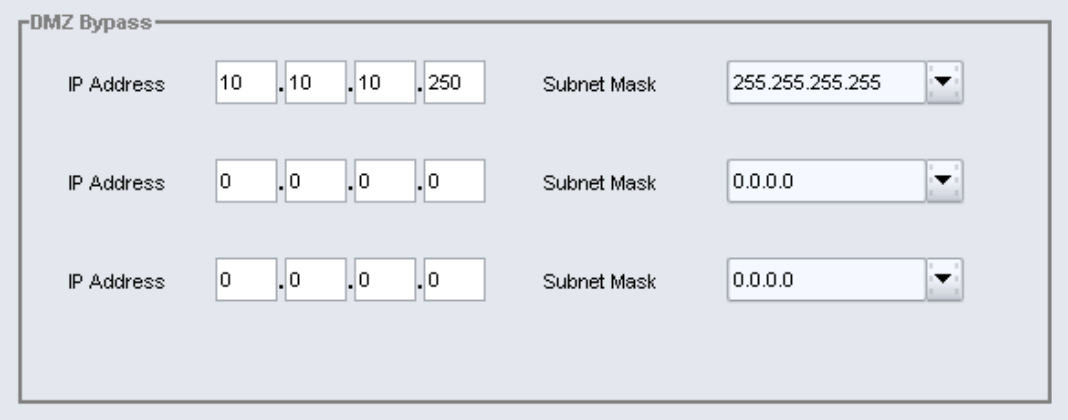
TIP

DMZ Bypass prevents the DFL-M510 as a bottleneck in your intranet. For example, the IP address of Mail / FTP server could be assigned in the DMZ Bypass configuration to provide wire speed traffic from the internal network to your Mail / FTP severs.

SETTING UP THE DMZ BYPASS FUNCTION

In the following example, a mail server with the IP address 10.10.10.250 is added to DMZ Bypass.

1. Type in the IP address and the Subnet mask of the mail server.

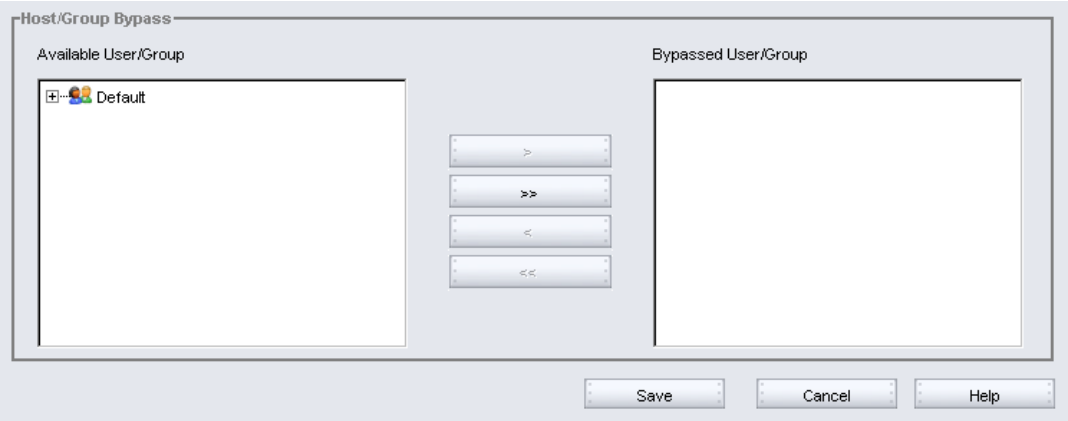


2. Click **Save**.

HOST/GROUPS BYPASS

Hosts within the intranet which do not need to be monitored are added to the Bypassed User/Group. These hosts have unhindered access to the WAN, but may be less secure than In-Line hosts.

The IP addresses of the hosts in the bypass list must be in the host table first. That is, the host must be learned or entered before you can select it. Otherwise, the host must be within a group and specified by a subnet. Such a host is automatically added to the bypass list when it is learned.



Available User/Group	Select the User or Group and click **>>** to add the User/Group to the **Bypassed User/Group** list.
Bypassed User/Group	Lists Users and Groups that have been added.

After you make changes, click **Save**. The new settings are processed and the following screen appears:

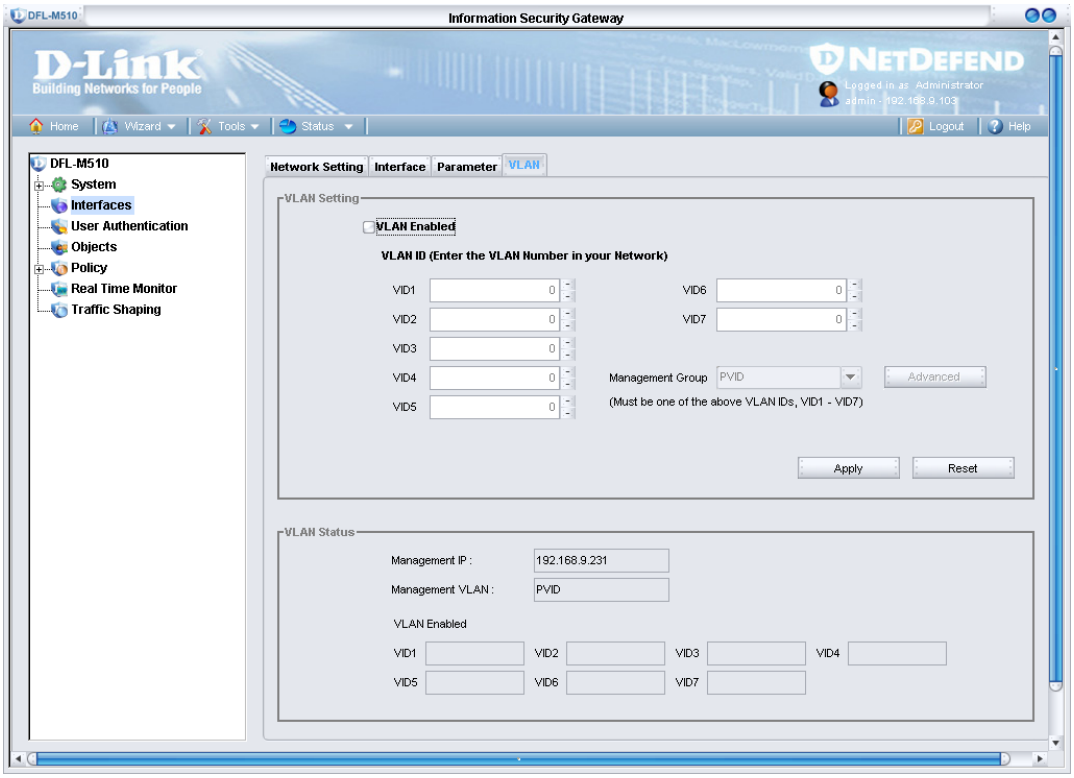
Click **OK** to continue.

TIP

An IP address in the Host Bypass implies bypass source IP. To provide more throughputs, you could set up the servers IP (ERP/mail/ftp) in the Host Bypass if the servers are located in the internal network.

VLAN TAB

Click the VLAN tab. The following screen appears.



A VLAN (Virtual LAN) is a group of devices on one or more LANs that are configured (using management software) so that they can communicate as if they were attached to the same wire, when in fact they are located on a number of different LAN segments. Because VLANs are based on logical instead of physical connections, they are extremely flexible.

The IEEE 802.1Q standard defines VLAN ID #1 as the default VLAN. The default VLAN includes all the ports as the factory default. The default VLAN's egress rule restricts the ports to be all untagged, so it can, by default, be easily used as a simple 802.1D bridging domain. The default VLAN's domain shrinks as untagged ports are defined in other VLANs.

If your have VLAN environment, and require the DFL-M510 recognize the VLAN tags, please configure VLAN settings before connecting the DFL-M510 to the intranet.

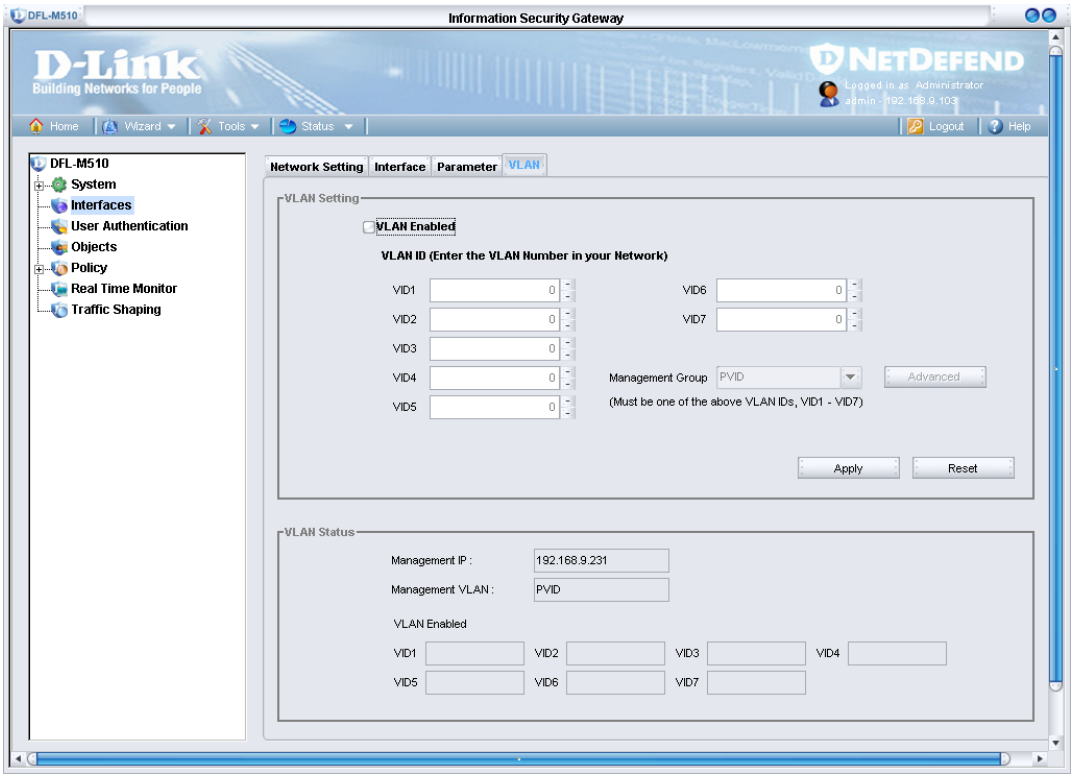
CONFIGURING VLAN SETTINGS

The following is an example of a network environment with four VLAN sets.

Item	Description
VID1	1
VID2	3
VID3	5
VID4	7
Management	VID2

Refer to the following to configure the VLAN setting.

1. Click **Interface** and then select the **VLAN** tab.



VLAN Enabled	Enables or disables the VLAN function
VID1 - VID7	Type in the VLAN ID.
Management Group	Select the Management VLAN Group

2. Click the VLAN Enabled checkbox to enable VLAN.

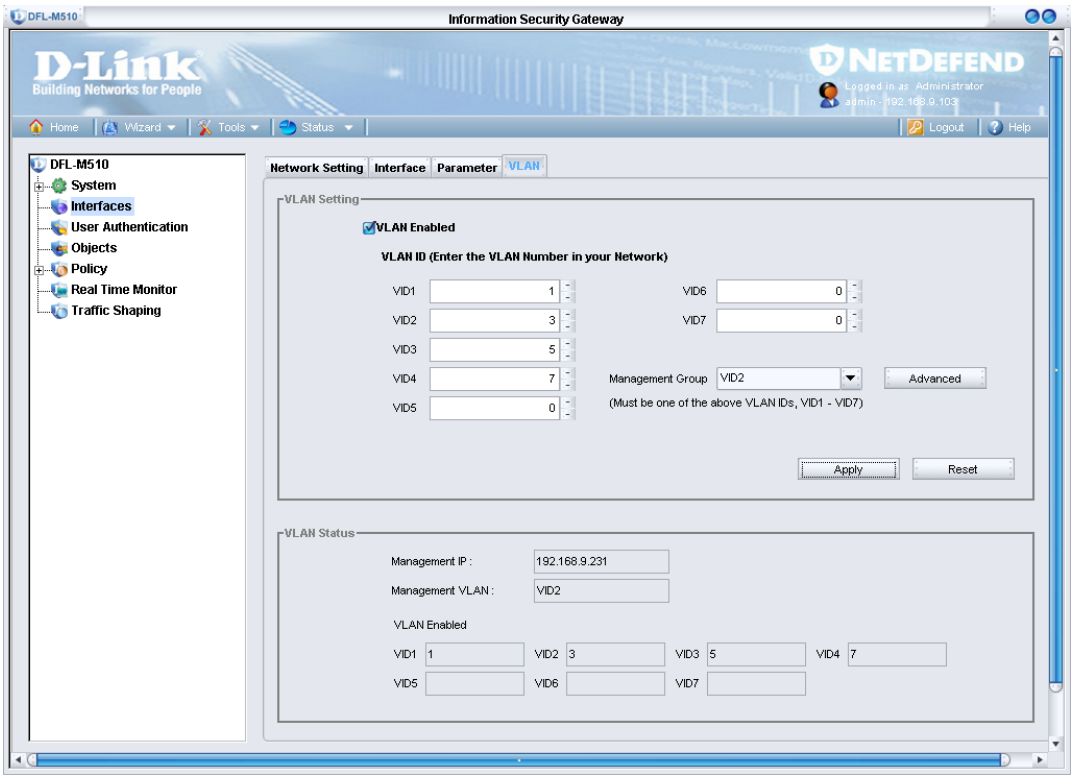
3. Type in each VID in the VID1 to VID7 boxes.

NOTE

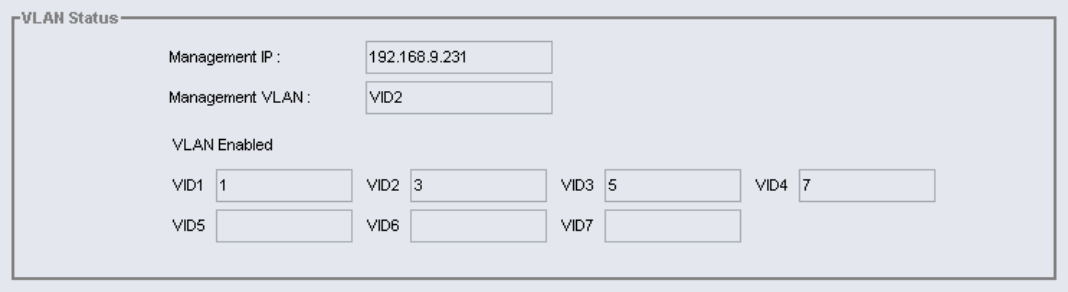
The DFL-M510 supports up to seven VLANs.
The Management VID must be either PVID, or VID1 to VID7. Configurations depend on your environment.

---

4. Click **Apply**. The screen updates as follows.



VLAN STATUS

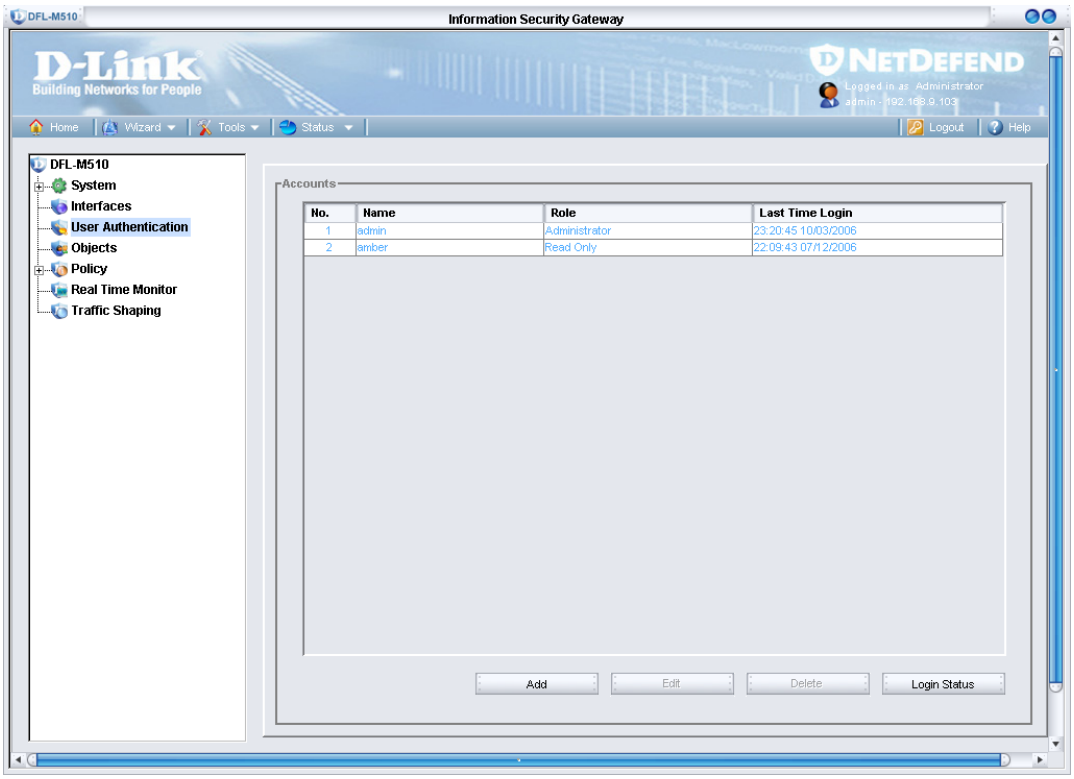


Management IP	Shows the device IP address
Management VLAN	Shows the Management VLAN Group ID
VID1 - VID7	Shows the ID of each VLAN

CHAPTER 4: USER AUTHENTICATION

THE USER AUTHENTICATION SCREEN

After you log on, click **User Authentication** to open the following screen.



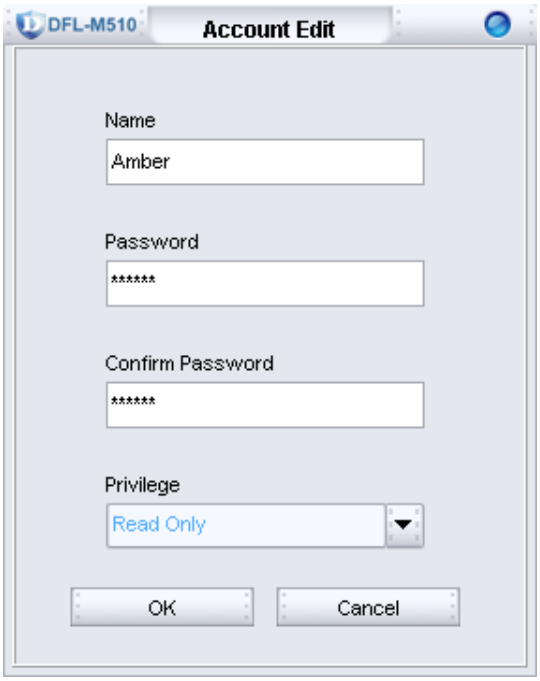
ACCOUNTS

No.	Shows the current number of accounts
Name	Shows the name for each account
Role	Shows the shows the level of the user's policy: **Administrator; Read Only;** or **Write.**
Last Time Login	Shows the last time the account was accessed

Only users that are assigned the Administrator role can edit the Account and Hosts/Groups menus.

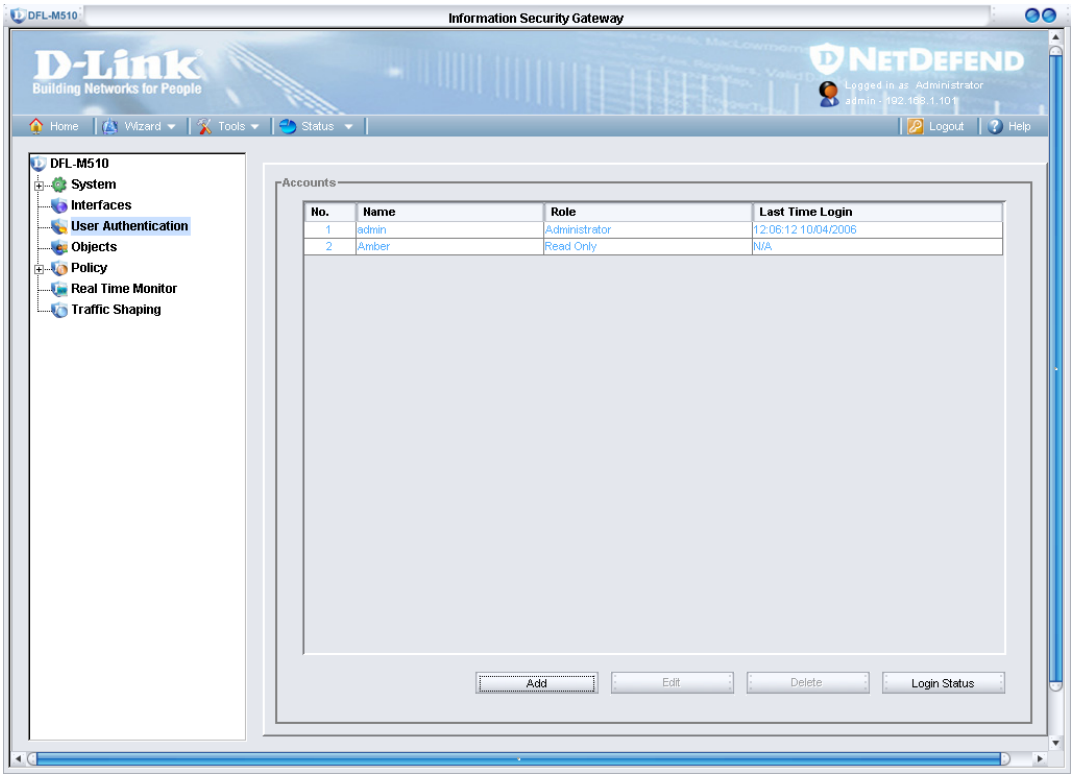
CREATING A NEW ACCOUNT

To create a new account click **Add.** The **Account Edit** dialog box appears.

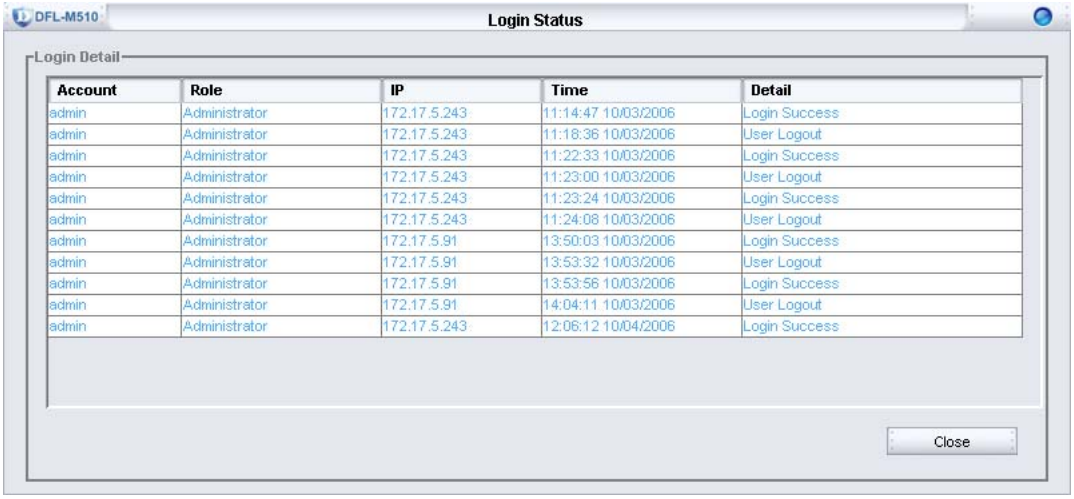


Name	Type a name for the account.
Password	Type a password.
Confirm Password	Retype the password.
Privilege	Assign privilege status: **Administrator; Read Only;** or **Write.**

Click OK to confirm. The account is added to the Accounts list.



To review or audit an account, click **Login Status.** The following screen appears:



A log is created each time a user logs on or logs out. Monitor this list for added security. See “**Toolbar, Logging**” on page 28.

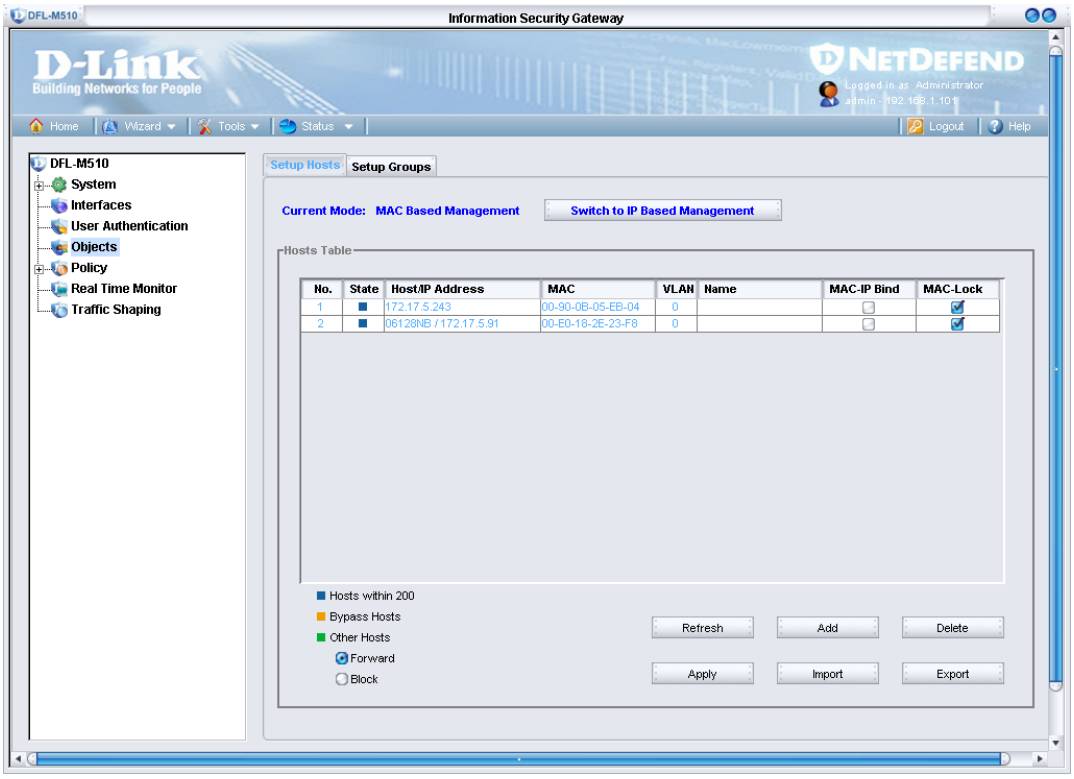
CHAPTER 5: OBJECTS

In DFL-M510, the term "**Objects**" mainly refers to **Hosts** and **Groups**. A host is a client computer with a network interface. A group is a set of hosts. The DFL-M510 learns host information from packets passing through the device. Host information includes the MAC address, IP address and VLAN address. In order to manage the host internet access, we can lock a host with a MAC address and/or an IP address.

Assign names to hosts to make them easier to manage. Otherwise, the DFL-M510 learns the device name from the network. Assigned names take priority over learned names.

THE OBJECTS SCREEN

After you log on, click **Objects** to open the following screen:



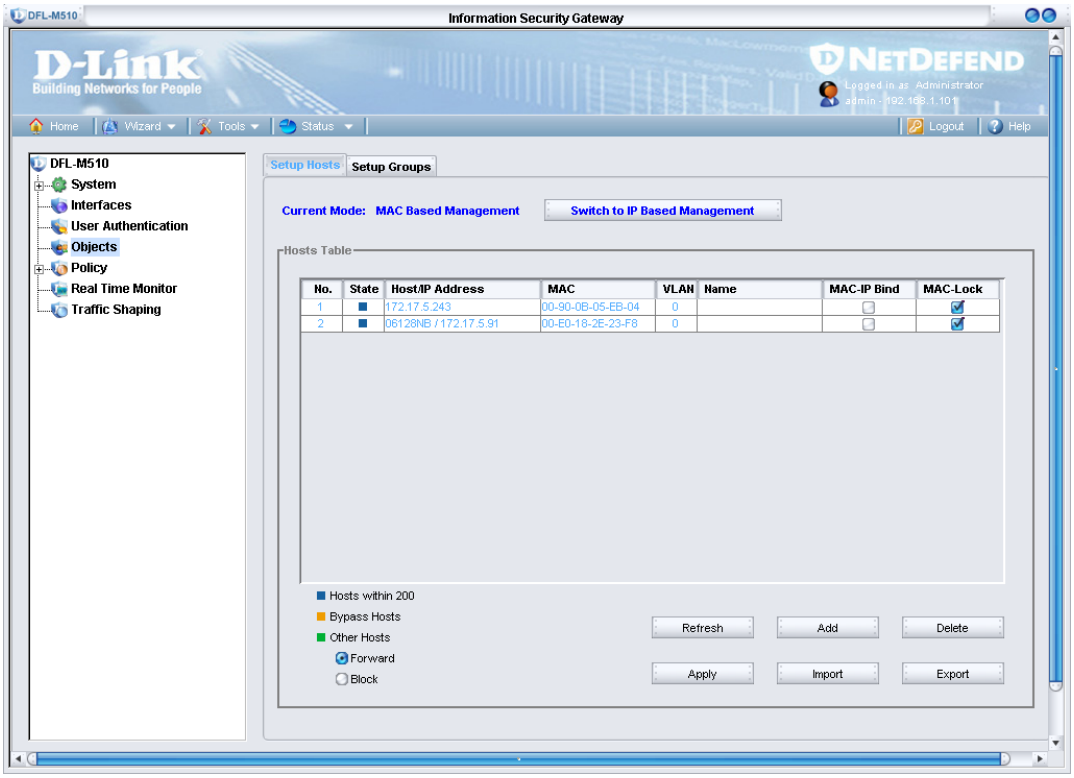
The **Objects** screen has the following two tabs:

- "The Setup Hosts Tab"
- "The Setup Groups Tab"

THE SETUP HOSTS TAB

The **Setup Hosts** tab lets you add new hosts and manage current hosts.

1. To view the **Setup Hosts tab,** click **Objects** > **Setup Hosts.**



MAC Based Management / IP Based Management

After DFL-M510 connects into your network, the DFL-M510 can automatically learn host information according to MAC or IP address information. In general circumstance, MAC Based Management is enough to fulfill the deployment environment where a switch is attached to the LAN port of your DFL-M510. However, if there is a router attached to your LAN port, the DFL-M510 will recognize the router mac address only, it cannot recognize the hosts automatically behind the routers, thus the IP Based Management mode is required in order to have your DFL-M510 correctly recognize the hosts behind your router.

Host Table

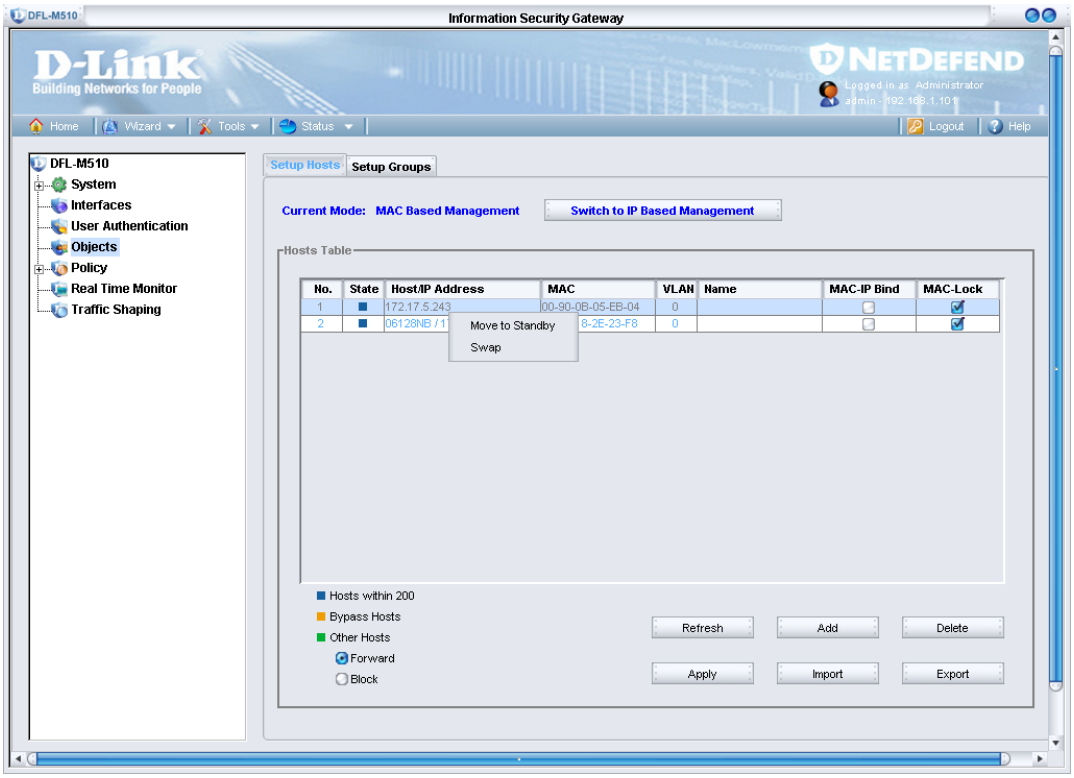
No.	Shows the current number of hosts
State	Shows the status for each host (refer to color legend at the bottom of the screen)
Host/IP Address	Shows the host IP address
MAC	Shows the host MAC address

Name	Shows the host name
MAC-IP Bind	Check this box to lock an IP address to the host's MAC address
MAC-Lock	Check this box to lock the MAC address
Hosts within 150	Hosts all within 200 hosts
Bypass Hosts	Hosts that are not monitored
Other Hosts	The DFL-M510 can manage 200 hosts. If you select **Block,** hosts that exceed 200 have no Internet access. If you select **Forward**, those hosts will be allowed to access the Internet, but will not be monitored by the DFL-M510.

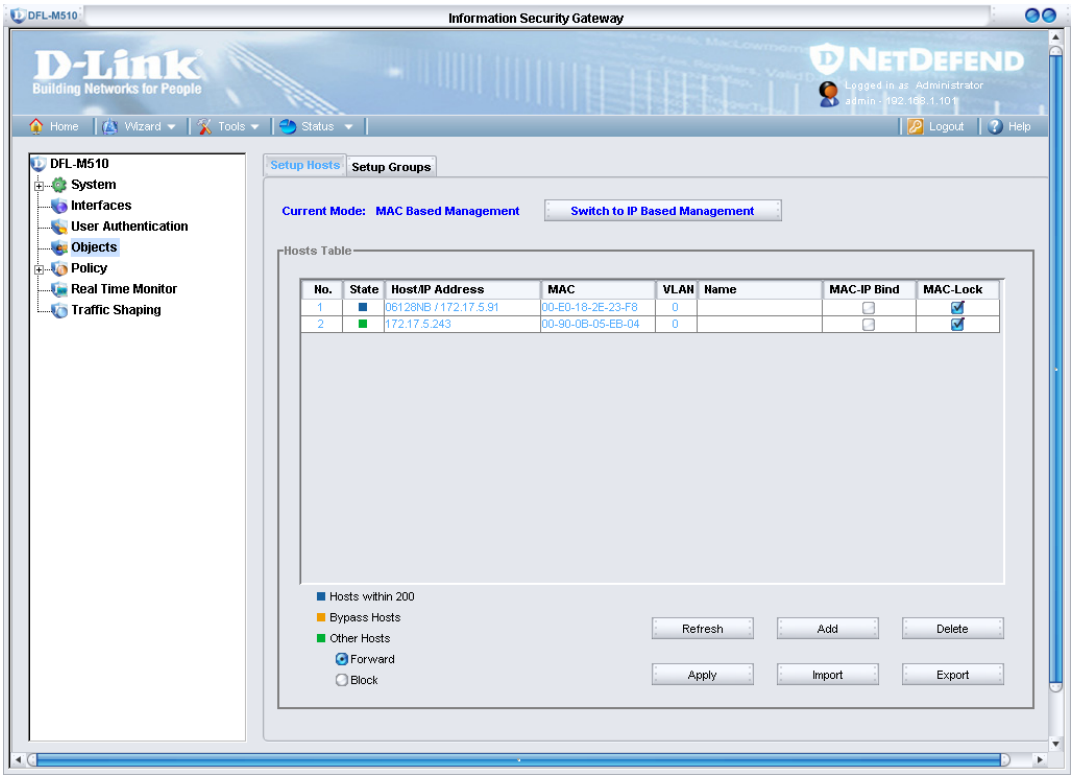
CHANGING THE STATUS OF A HOST

In the following example, the status of No. 1 is changed from **Hosts within 200** to **Other Hosts.**

1. Right-click on the host you want to change the status of.



2. Select **Move to Standby**.

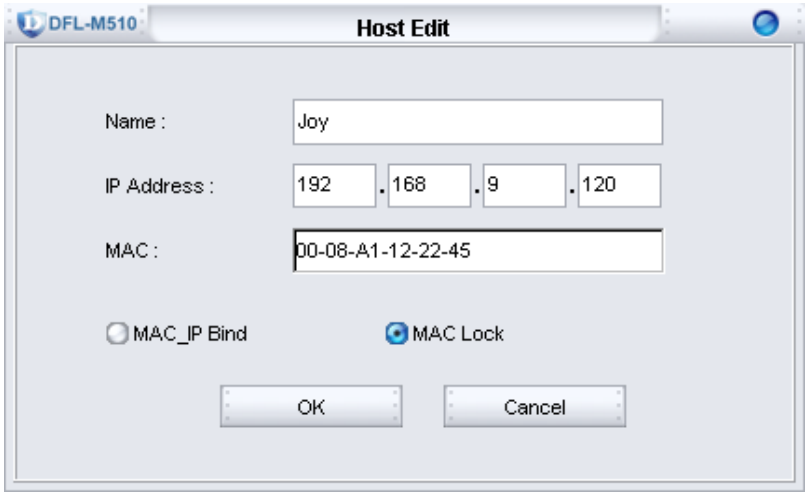


Notice, the **State** icon is now green, indicating the host is now in the **Other Hosts** category.

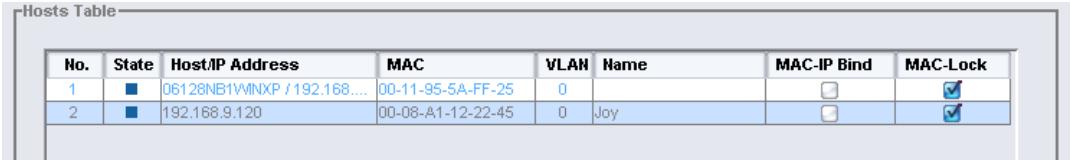
ADDING A HOST

Refer to the following to add a host.

1. Click **Add.**



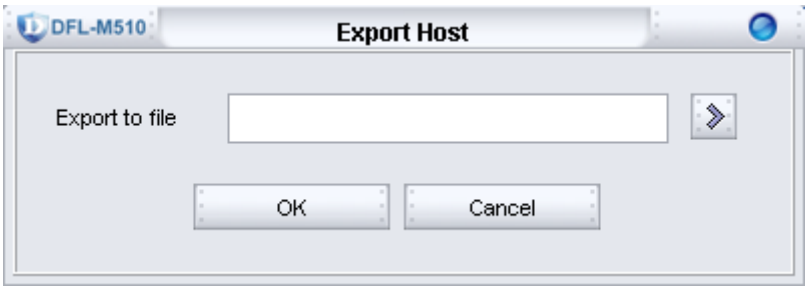
2. Type in the required information and click **OK.** The new host is added to host table.



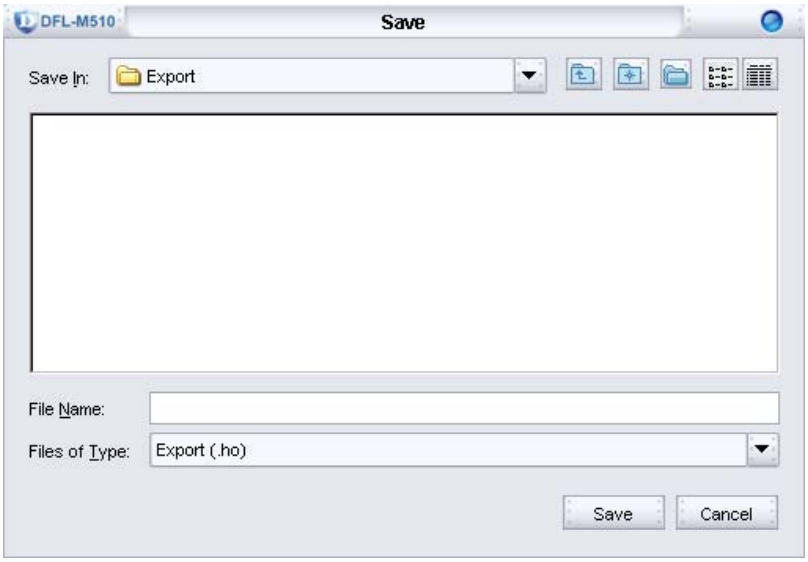
EXPORTING A HOST DATABASE

You can export a host database to reuse or to import into another DFL-M5 10. Refer to the following to export a host database.

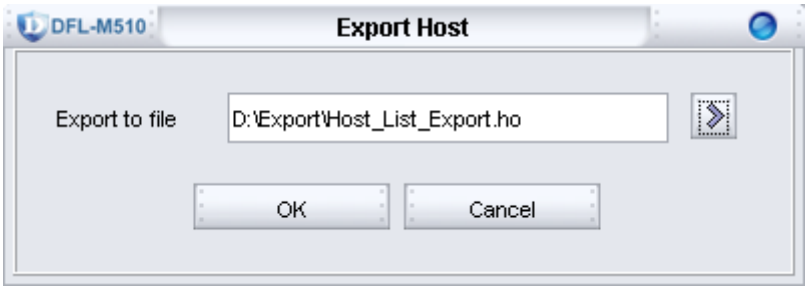
1. Click **Export.**



2. Click  . The Save dialog box appears.



3. Enter a file name and click **Save**.



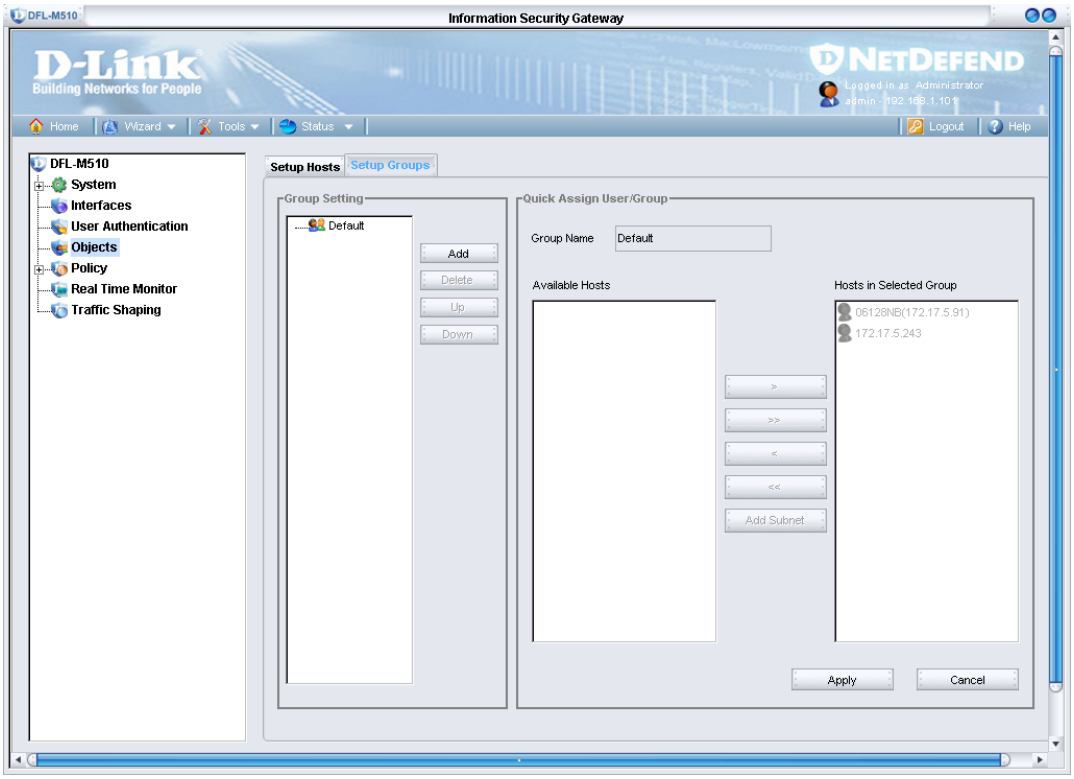
4. Click **OK** to confirm the export.

5. Click **OK** to continue.

THE SETUP GROUPS TAB

There is one **Default** Setup Group in the DFL-M510. The **Setup Groups** tab lets you add and configure additional Setup Groups.

1. To view the **Setup Groups tab,** click **Objects** > **Setup Groups.**



GROUP SETTING

Add	Click to add a new Setup Group
Delete	Click to delete a Setup Group
Up	Click to move a Setup Group up
Down	Click to move a Setup Group down

QUICK ASSIGN USER/GROUP

Group Name	Type in the group name
Quota	Total available space to a group
Session	Total sessions available to a group
Available Hosts	Lists the available hosts
Hosts in Selected Group	Lists the hosts in the selected group

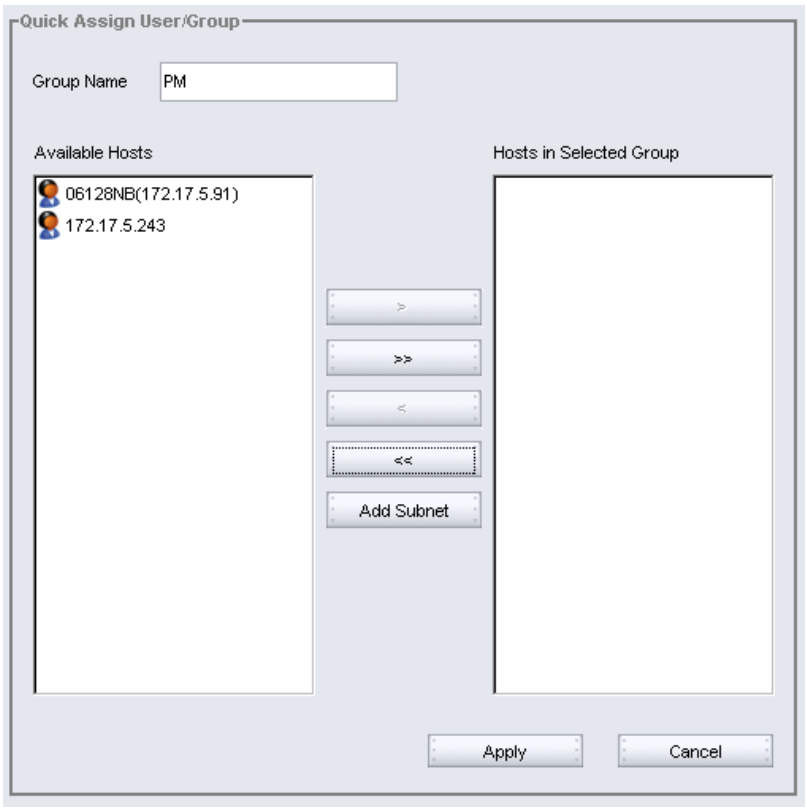
Add Subnet	Click to add a sequential IP address range to a group.

ASSIGNING HOSTS TO GROUPS

You can assign a host to a group by checking the button crossing the host and the group. Refer to the following to add a host to a group.

1. Click **Add.**

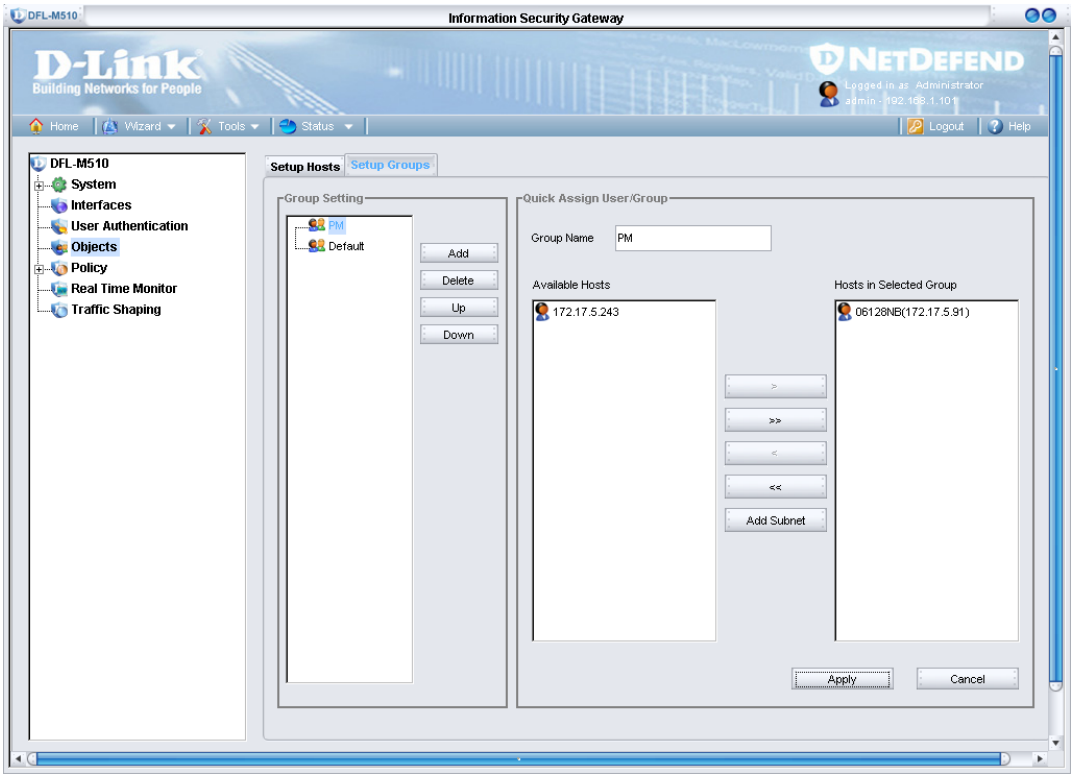
2. Type a group name and click **OK.**



3. Select the host and click  to add it to the Hosts in Selected Group window.

4. Click **Apply**.

5. Click **OK** to finish. The new group is added to the Group Setting list.

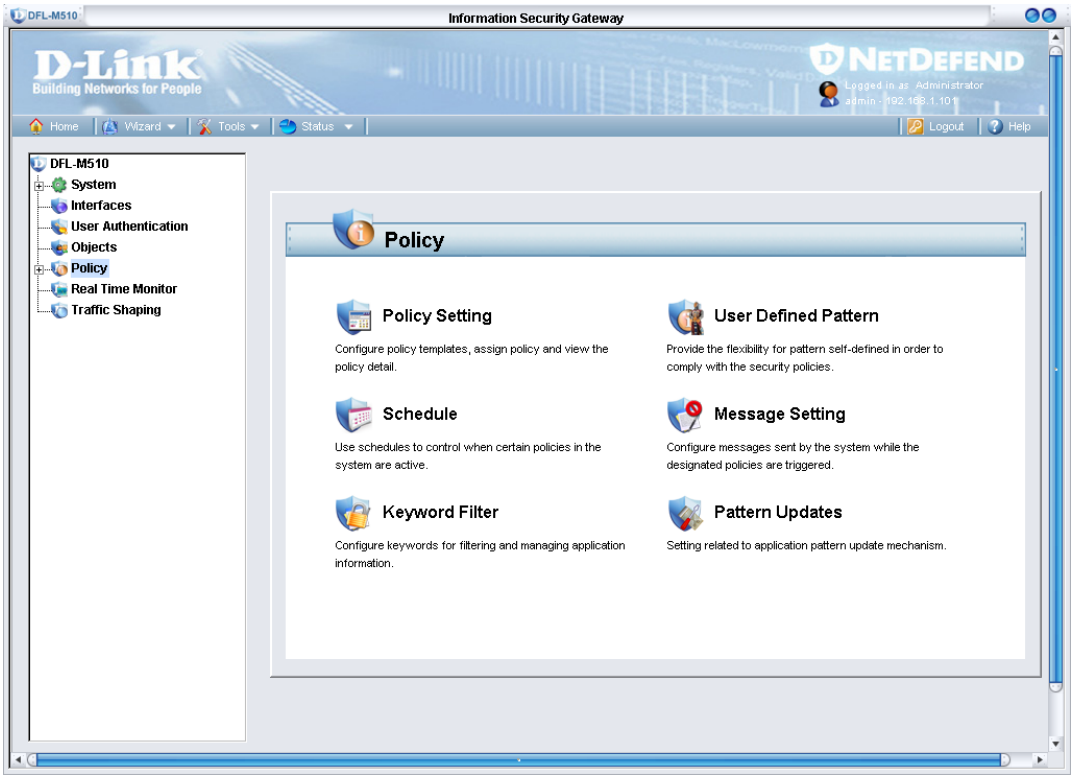


CHAPTER 6: POLICY

Policy is the most important information in the DFL-M510 Management System. A policy can consist of thousands of patterns. Each pattern defines how to detect an application, how to respond when an application is detected, what to block, and when to block. You can view and modify the settings, including applying scope, acting schedule, actions and information such as category, and constraints.

THE POLICY SCREEN

After you log on, click **Policy** to open the following screen:



The **Policy** screen gives you access to the following screens:

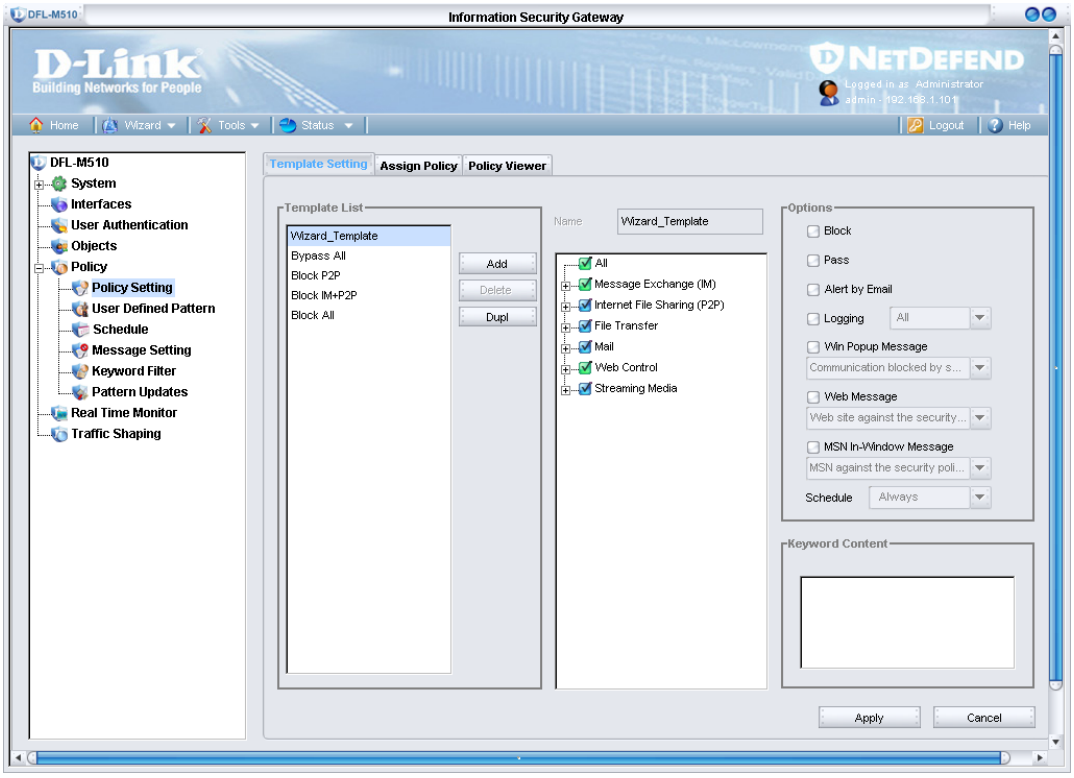
- The Policy Setting Screen
- User Defined Pattern
- The Schedule Screen
- Message Setting
- Keyword Filter
- Pattern Updates

After the policy database is published and fetched, it is uploaded to the DFL-M510. To manage the users and applications, policies are defined and each of them complies with a company policy. Then each policy can be applied to a host or a group. We define a policy before applying it or creating a template. A template can be defined manually or via the template wizard. Once a template is defined, it can be assigned to

a host or a group and it becomes a complete policy.

THE POLICY SETTING SCREEN

After you log on, click **Policy/Policy Setting** to open the following screen:



Every template, including the global template created by the device wizard, can be created or modified.

The protocols displayed on the policy are described as follows.

A. The IM Applications that can be managed by the DFL-M510

Item	Protocol	Management Type	Support Version
Message Exchange (IM)	MSN	MSN Keyword Login Chat File Transfer Audio Communication Video Communication Online Game Encrypted with SIMP	MSN 7.5 / Microsoft Live Messenger : 8.0

		Web MSN	
	ICQ/ AIM/ iChat	Login Chat File Transfer Audio Communication Video Communication Web ICQ	ICQ5/ AIM 5.9.3759/ iChat 3.0.1
	Yahoo Messenger	Login Chat File Transfer Audio Communication Video Communication Web Yahoo IM	6.0.0.1921
	QQ/ TM	Login	QQ V06.1.103.300/ TM 2006
	Gadu-Gadu	Login	Gadu-Gadu 7.1
	Skype	Login (Normal Mode)	Skype 1.3.0.60
		Login (Strict Mode)	
	IRC	Login File Transfer	MIRC 6.16
	Odigo	Login	v4.0 Beta(Build 689)
	Rediff BOL	Login Chat Audio Communication File Transfer	Rediff BOL 7.0 Beta
	Google Talk	Login	Google Talk 1.0.0.92
		Chat	
		Audio Communication	
Web Control	Web Mail	Yahoo Mail	--
		Gmail	
		Hotmail	
	Web	Web Page Keyword	--

	Application	URL Keyword	
		Upload	
		Java Applet/ Active X	
		Download	
		Web Post	
		Cookie	

B. The P2P/Remote Access Application that can be allowed/blocked by the DFL-M510

Item	**Protocol**	**Software Version**
Internet File Sharing (P2P)	Gnutella	Shareaza 2.1.0.0
		BearShare 5.0.1.1
		LimeWire 4.8.1
		Gnucleus 2.2.0.0
		Morpheus 5.0
		ezPeer2.0
	FastTrack	mldonkey 2.5.x
		Kazaa 3.0
		Grokster 2.6
	Kuro	Kuro 5.30.0704
	eDonkey2000	eDonkey2000-1.4.3
		Shareaza 2.1
		eMule 0.46a
		Morpheus 5.0
		mldonkey 2.5.x
	BitTorrent	BitComet 0.59 Shareaza 2.1 BitTorrect 4.0.4 mldonkey 2.5.x
	DirectConnect	PeerWeb DC++ 0.300
		StrongDC++ 1.00 RC9
		RevConnect 0.674d

		DC++ 0.674
		DirectConnect 2.2
		Jubster MP3 Finder 3.0.0
		BCDC++ 0.674b
		DC Pro 0.2.3.45E
	PiGO	PiGO V 3.0
	PP365	PP365 1.11
	WinMX	WinMX 3.53
	PC Anywhere	PC Anywhere 11
	VNC	VNC Ver. 3.37
	SoftEher	SoftEher Ver. 2.0
		PacketiX (SoftEther) 2.10 build 5080
File Transfer	FTP Application	File Transfer
		Command Execution
	GetRight	GetRight 5.2d
	FlashGet	FlashGet 1.71
Mail	POP3	--
	IMAP4	--
	SMTP	--
	NNTP	--
Streaming Media	RealPlayer	10.5
	MS Media Player	10.0
	iTunes	4.9.0.17
	QuickTime	7
	Winamp	5.09
	Radio365	1.11
	H.323	--

The DFL-M510 manages P2P downloads by using P2P Protocol. In this architecture, no matter what version of client is used, the DFL-M510 can manage it.

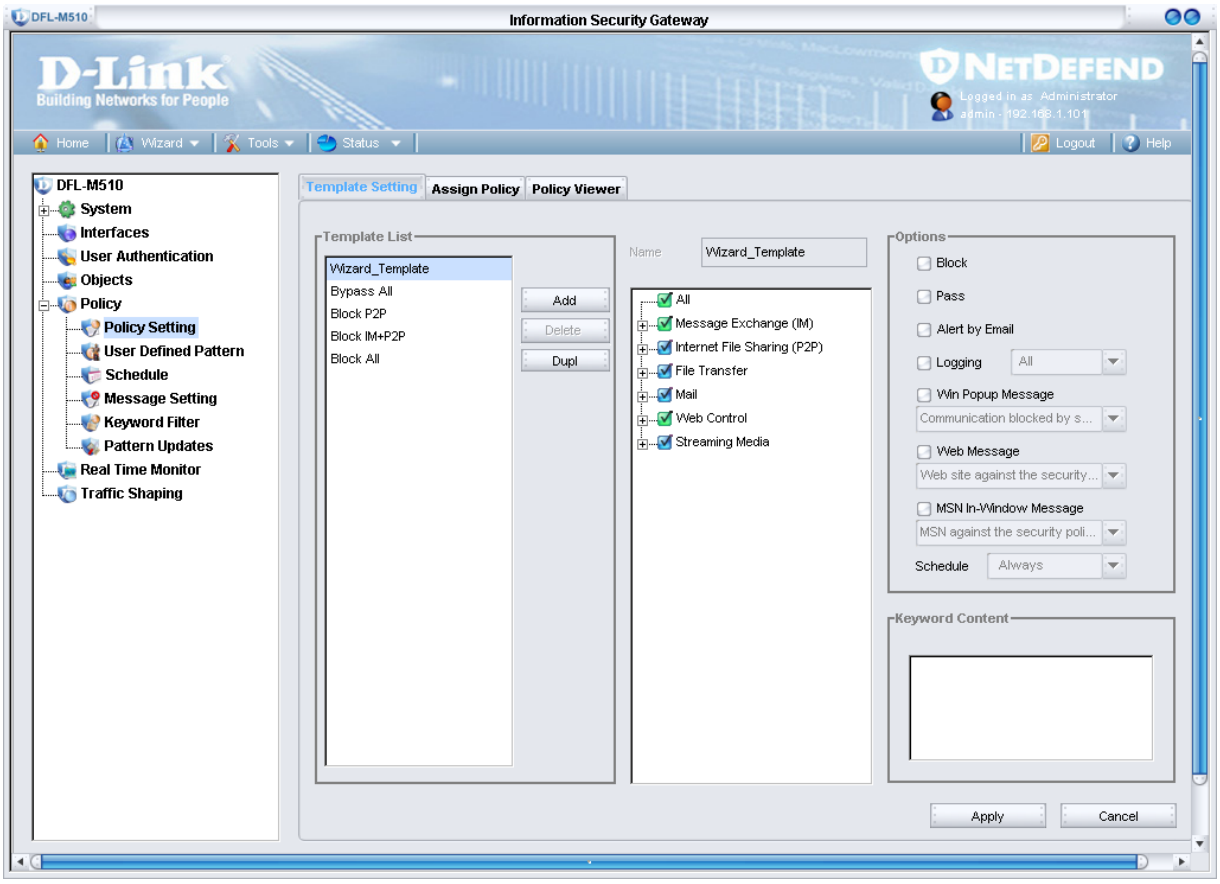
The DFL-M510 only supports HTTP download via Getright.

The **Policy Setting** screen has the following three tabs:

• “The Template Setting Tab” on page 80
• “The Assign Policy Tab” on page 83
• “The Policy Viewer Tab” on page 87

THE TEMPLATE SETTING TAB

To view the **Template Setting** tab**,** click **Policy** > **Policy Setting > Template Setting**.



When you select a template from this list, its patterns are listed in the center pane. You can add, delete, and duplicate templates.

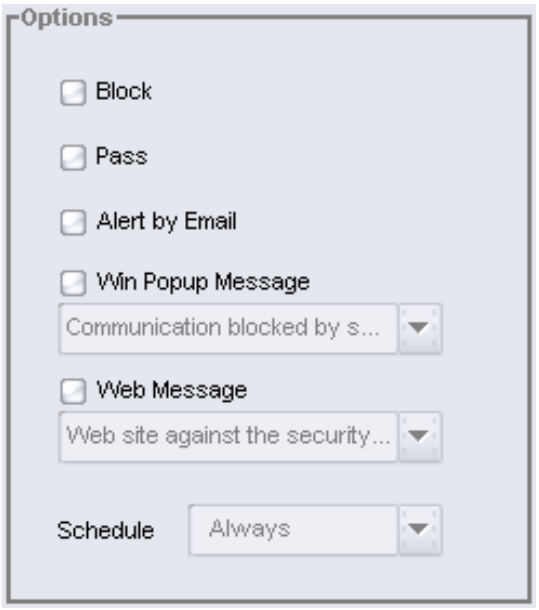
To quickly make a new template, find an existing template that has a similar pattern and duplicate it. Then modify the new template as desired.

Each time only one category, application, or pattern can be chosen and settings are shown in the **Options** pane. When a category is chosen, the options or the constraints show that all patterns of the category are the same. When an application is chosen, the options or the constraints show that all patterns of the application are the same. When a pattern is chosen, it shows all the options and all the constraints of it. The options or constraints which are not shown are grayed out.

Changes made in the fields under Options apply to all patterns.

THE OPTIONS PANE

When a pattern is detected, the DFL-M510 takes certain management actions, such as blocking the connection, or notifying the administrator. There are five actions that can be taken:



Action	Description
Block	The pattern packet is dropped and its connection cut off.
Pass	Just log the event.
Alert by Email	An email with details of the attack to the administrator defined in email management parameter.
Win Popup Message	Send a Windows popup message to the user.

Web Message	Send a message to the user and cut the web connection and replace it with a web page.

NOTE

When you turn off Messenger Service or enable Personal Firewall, the Win Popup Message function works correctly.

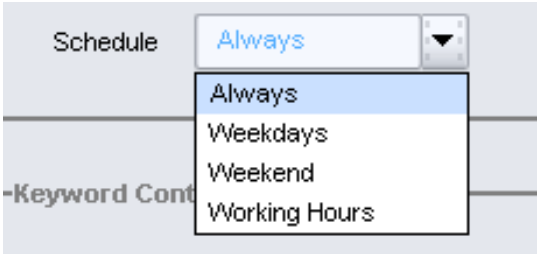
DEFINING THE ACTIVE SCHEDULE

It is possible to define the active time range of a pattern. The default setting is **Always** (all the time).

The Scope confines the detection ranges of a pattern rule to some hosts or some directions of traffic. This is very helpful for users who need to fine tune the policy so as to match their environment. For example, if you want to block your staff using P2P software, you can limit the detection range of the P2P policy to only intranet, and skip detection against DMZ. Thus, false-positives can be reduced, while maintaining performance.

If the detection scope is defined as Directional, the scope is distinguished by source and destination.

If it is defined as Non-directional, the rule will manage. Therefore, an administrator does not have to choose the detection scope from the combo box. Instead it is fine tuned before the policy database is published. The only thing the administrator needs to do is to apply the templates or the policy to the hosts or the groups.



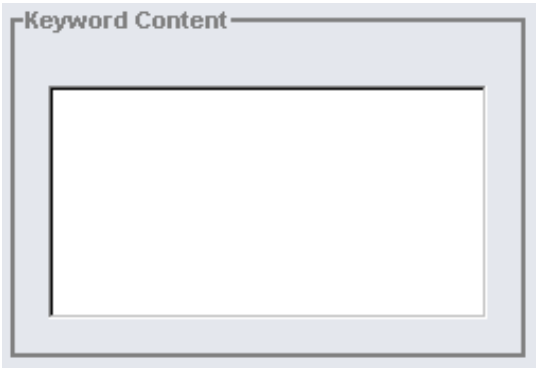
NOTE

Only schedules already defined show in the combo box. If you want to use custom schedule, you need to define it first. See "**The Schedule Screen**" on page 93.

DEFINE KEYWORD CONTENT

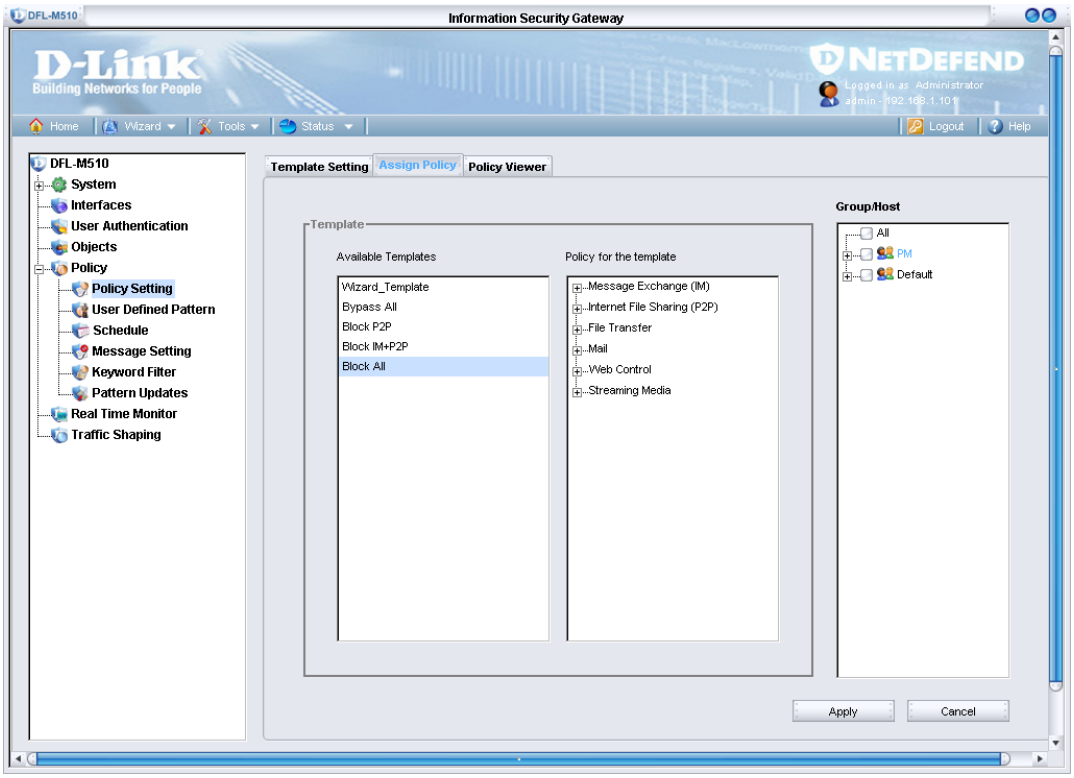
Some patterns have constraint parameters. If such a pattern rule is selected, there is a constraint parameter section as following.

Keyword: The user defined keyword to match the content of packets.



THE ASSIGN POLICY TAB

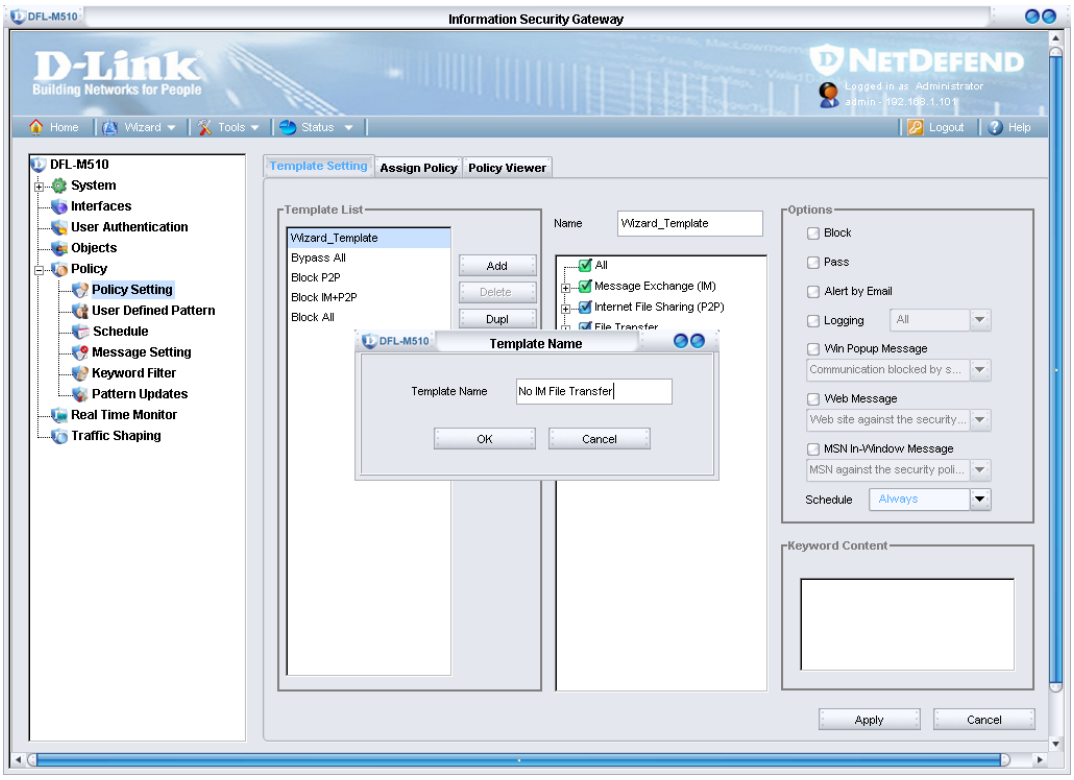
To view the **Assign Policy** tab**,** click **Policy** > **Policy Setting > Assign Policy**.



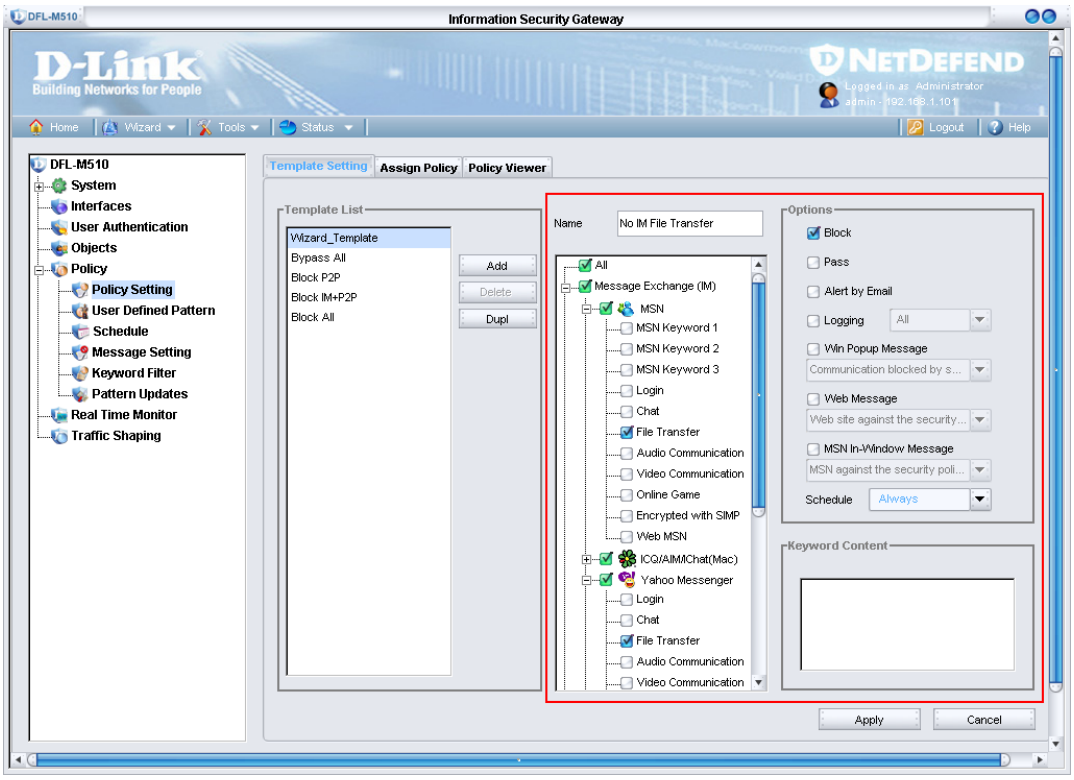
HOW TO ASSIGN A POLICY

In the following example, the Security group is assigned a policy only allowing Web control such as Web browsing.

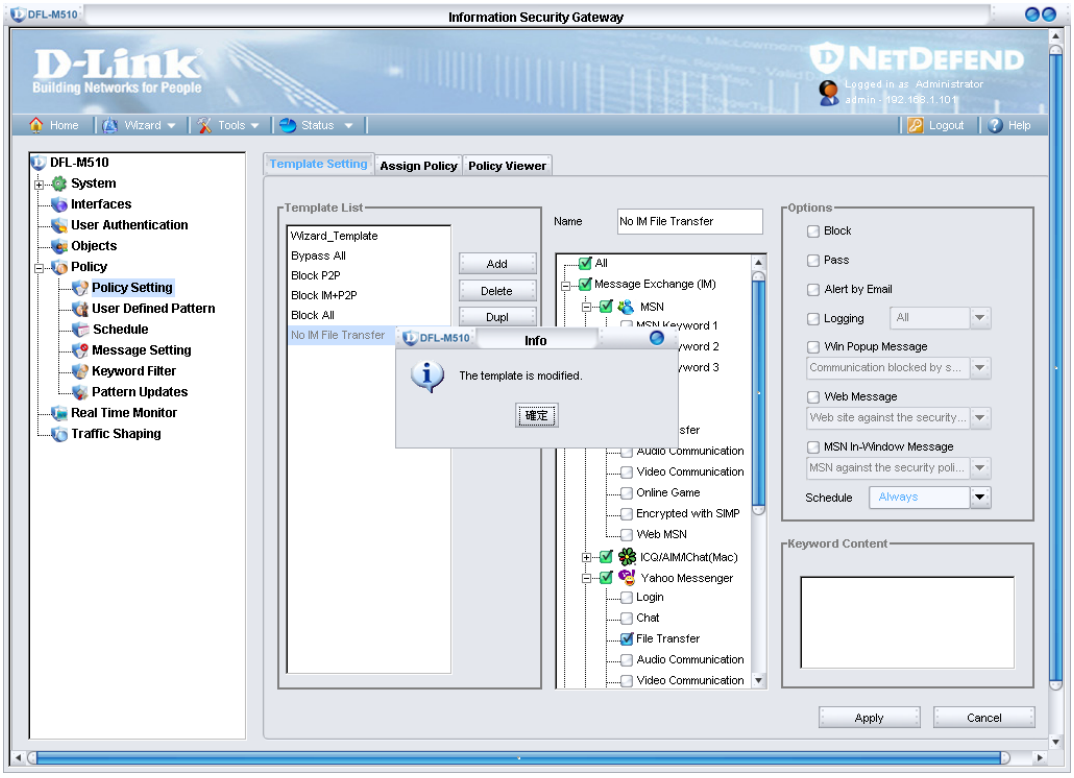
1. In the **Template Setting** tab, click **Add** to add a new template.



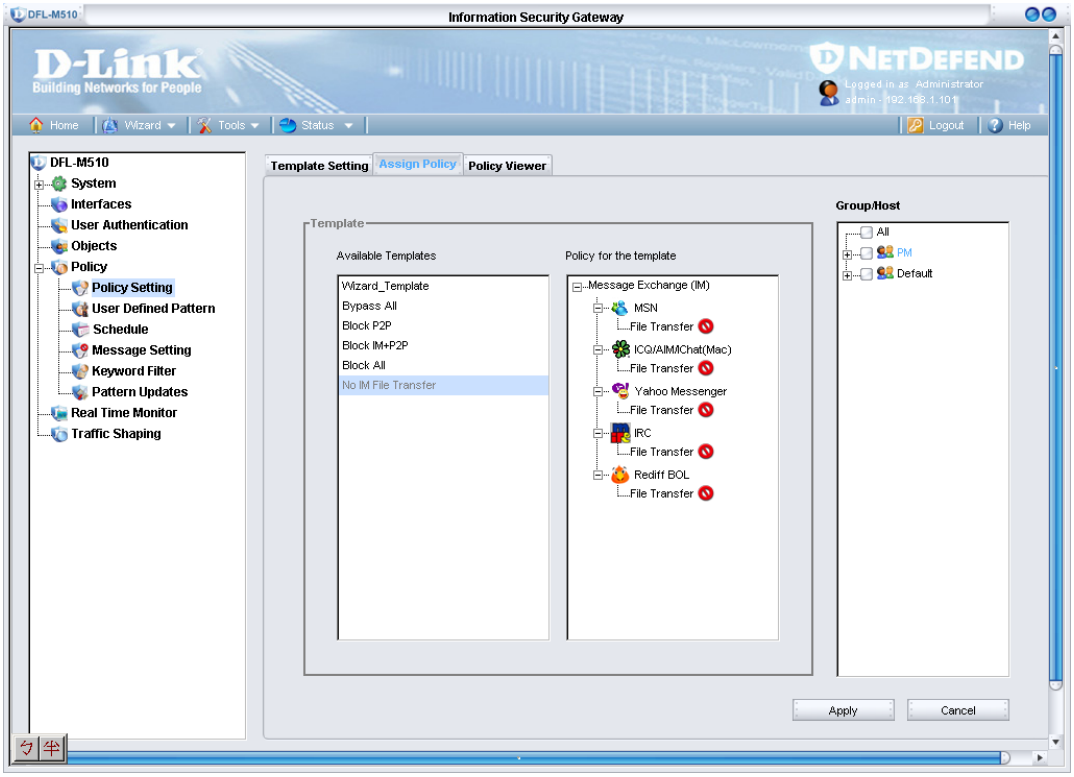
2. Configure Policy for application behavior management.



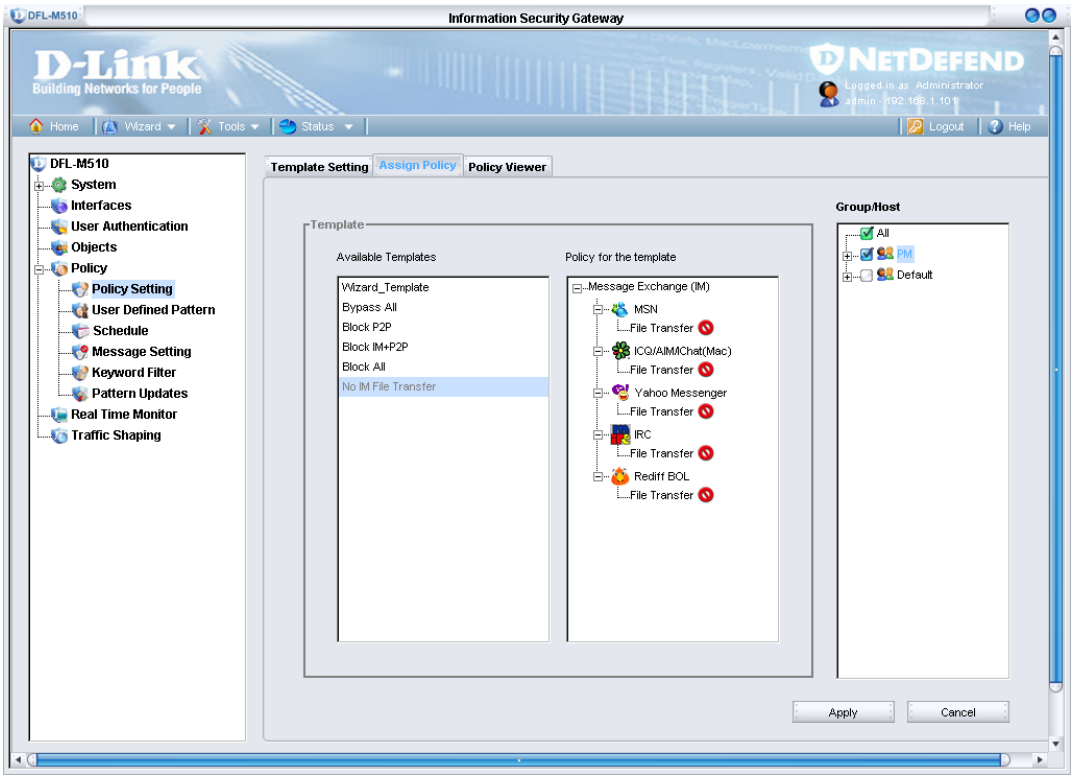
3. Click “**Apply**” to save the policy template.



4. Click the **Assign Policy** tab**.** Select the template you want to implement from the **Available Templates** pane

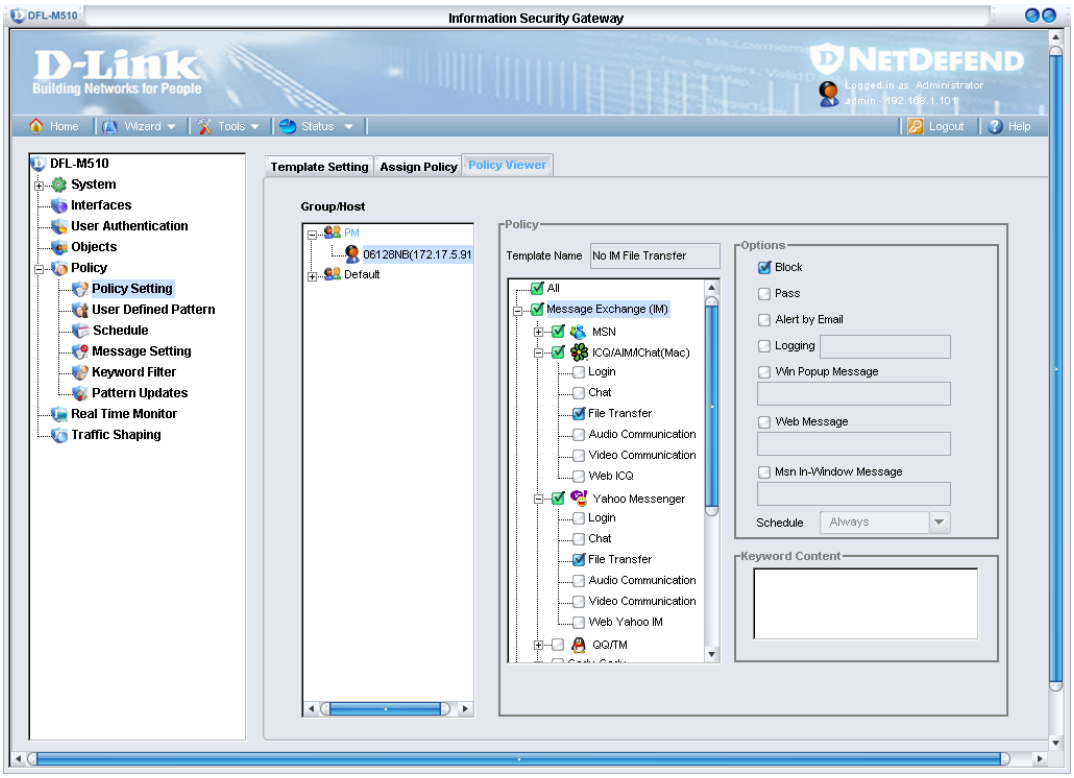


5. Under **Group/Host**, select **PM** and click **Apply.**



THE POLICY VIEWER TAB

In the Policy Viewer tab, you can view all policies of groups. In the example below, we check the policy of the **PM** group via the **Assign Viewer** tab**,** click **Policy** > **Policy Setting > Policy Viewer,** and then select **PM** in the **Group/Host** pane.

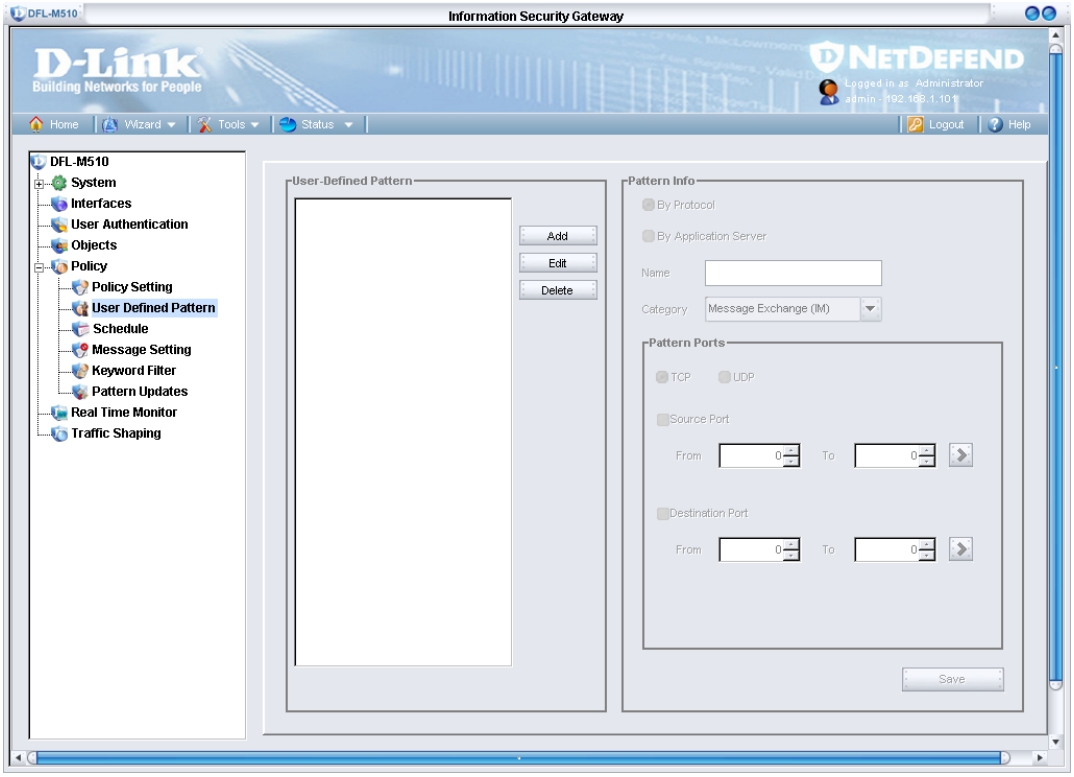


USER DEFINED PATTERN

The pattern database is made by a team of professional signature researchers. They are familiar with protocols, system vulnerability, and application patterns.

After a new application pattern is detected, the pattern is put into the pattern database and published. Before publishing, there are still ways for a manager to define application patterns. If a specific application is always connecting to several specific servers or by several specific ports. The servers and the ports can be blocked by a user-defined pattern.

Policies can be defined in the following **Policy/User Defined Pattern** screen:

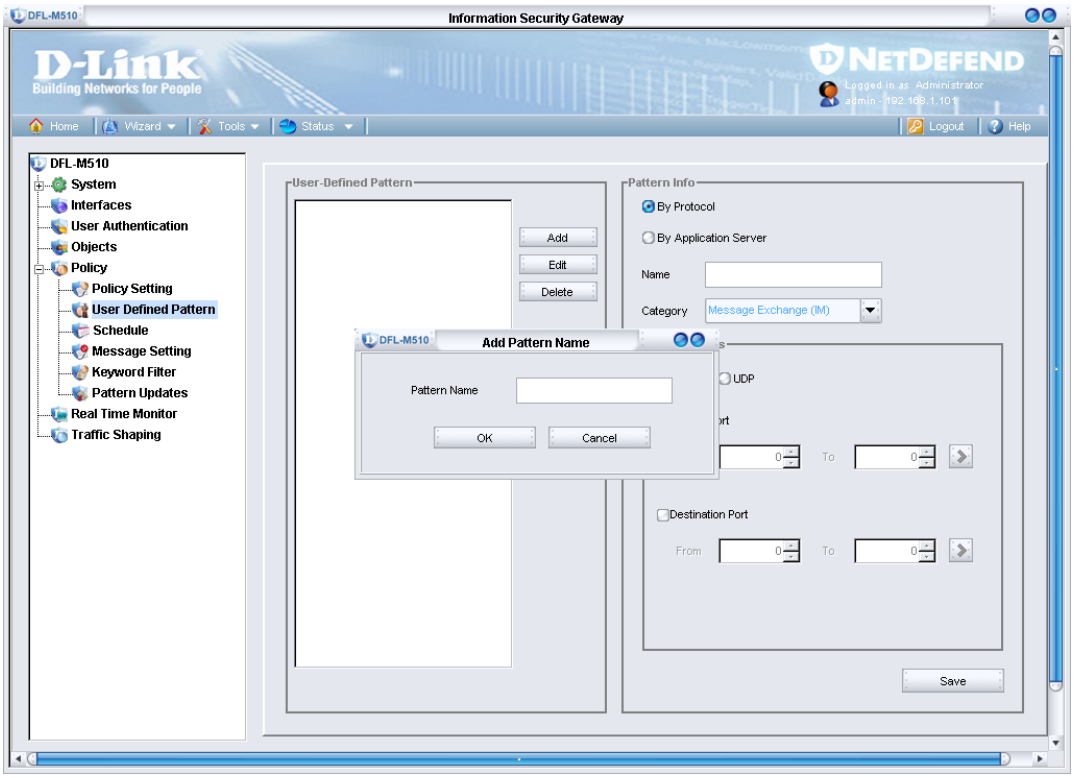


After a pattern is defined, the pattern is displayed in the pattern list, contained in a template, and assigned with options and constraints. Click **Edit** to edit a defined rule. Click **Delete** to delete a defined rule.

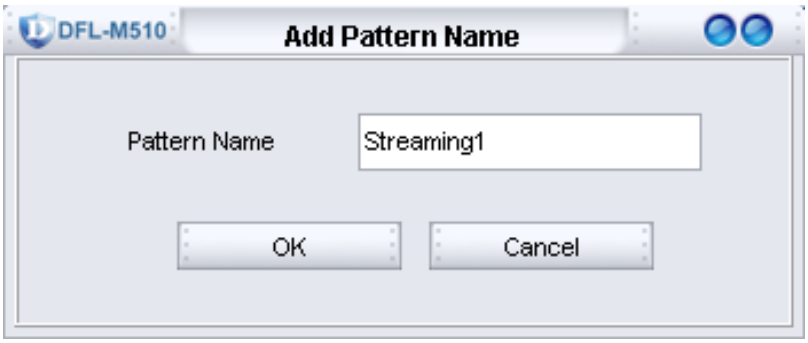
DEFINING A PATTERN BY PROTOCOL

For example, a Streaming Media sees TCP 3001 ports to connect to Media servers. To block this Streaming Media game do the following.

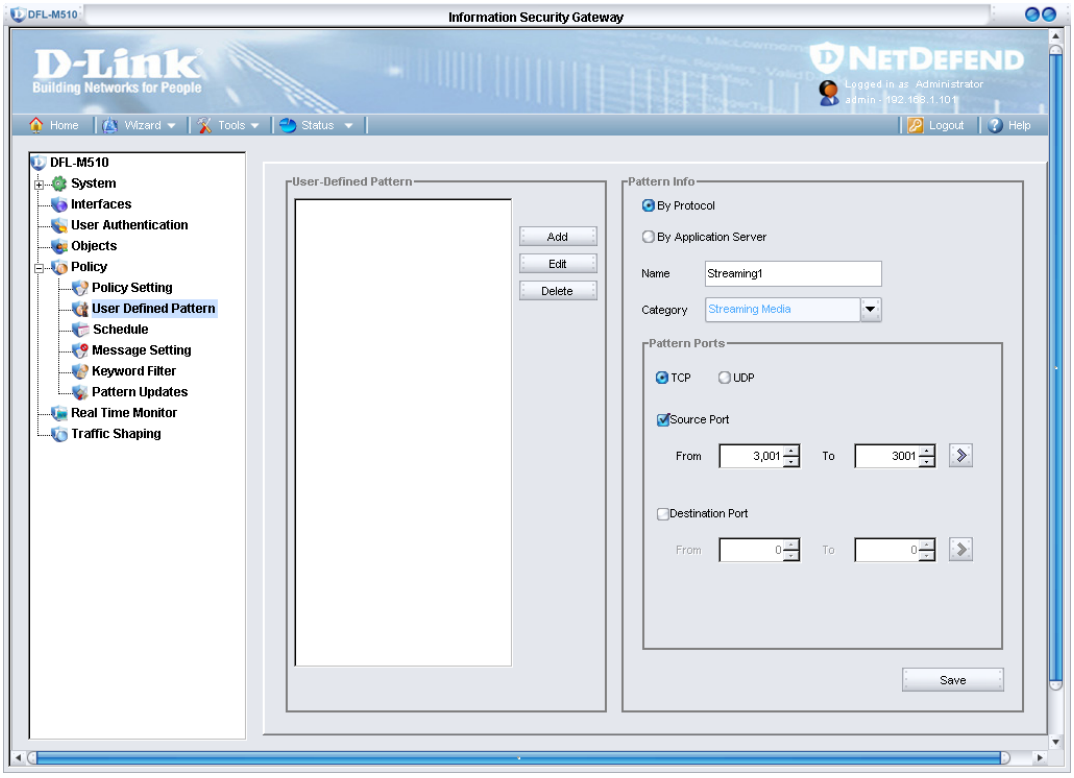
1. In the **User Defined Pattern** screen, click **Add**.



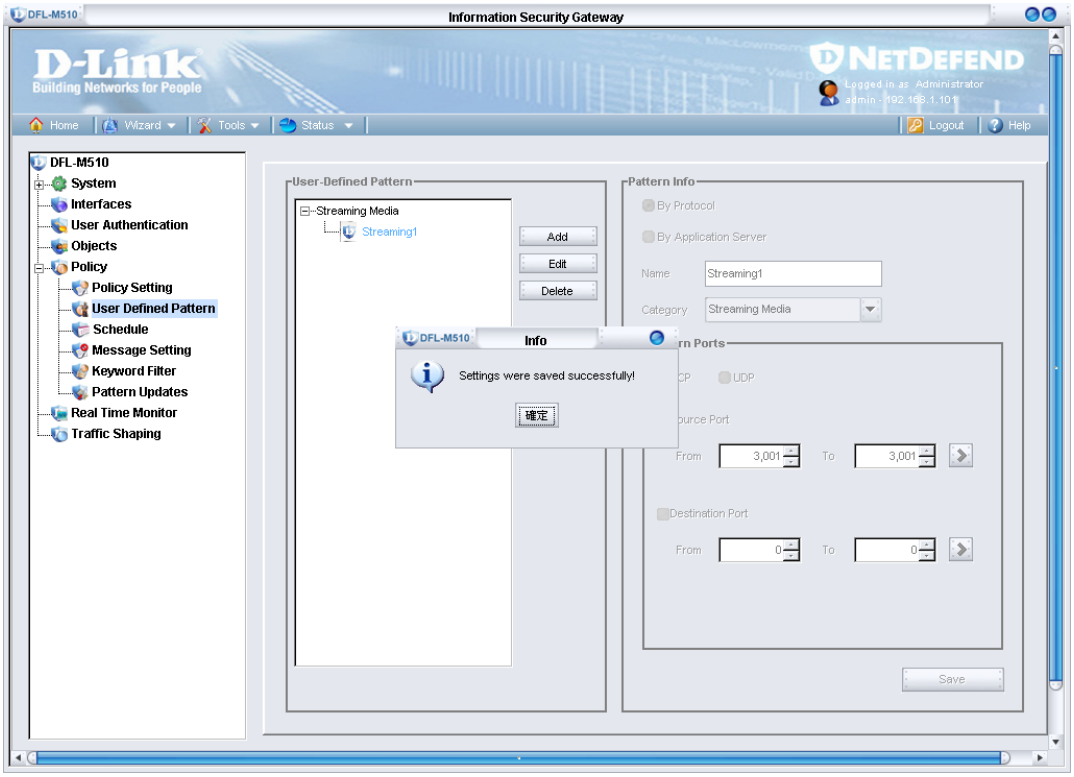
2. Type in **Streaming1** for the pattern name and click **OK**.



3. Input a pattern named **Streaming 1**, with category **Streaming Media** and TCP port 3001.



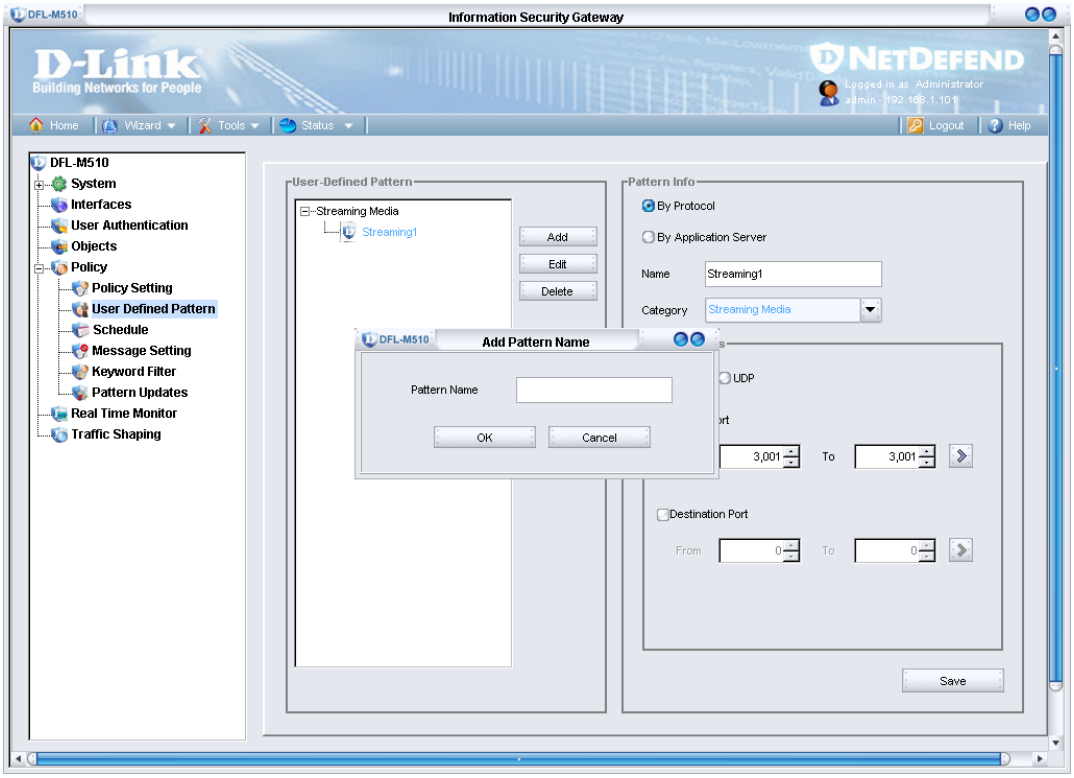
4. Click **Save**.



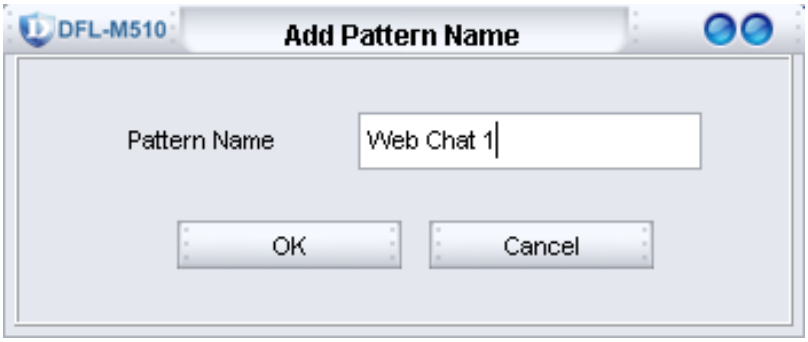
DEFINING A PATTERN BY SERVER

In this scenario, a web chat application is always connecting to a network server with the IP address 140.126.21.4. You can block this web chat application and then click the **Save** button to add a new rule as follows.

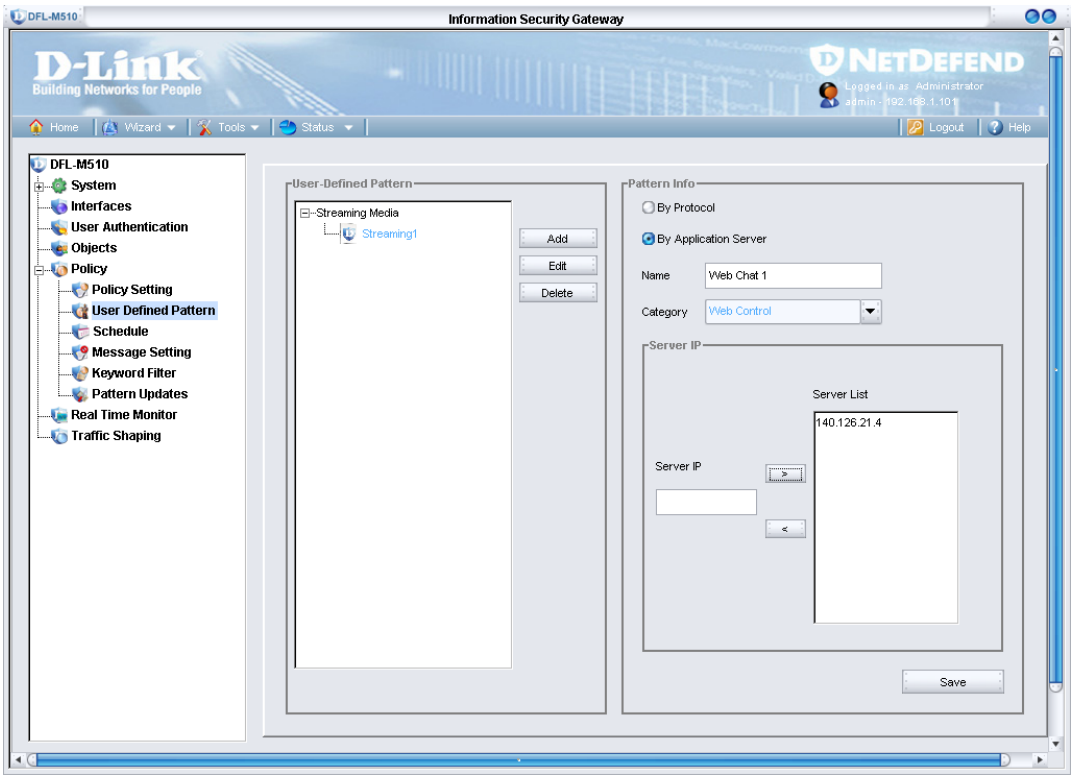
1. In the **User Defined Pattern** screen, click **Add**.



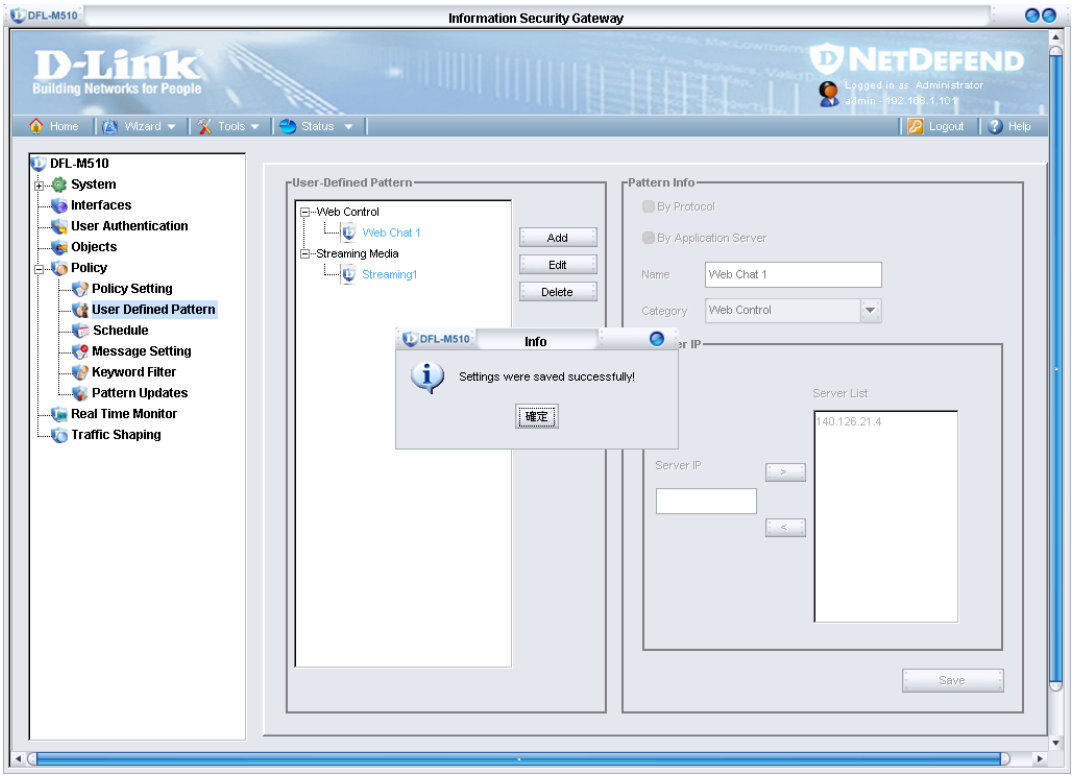
2. Type in **Web Chat 1** for the pattern name and click **OK**.



3. Input a rule name **Web Chat 1**, with category **Web Control** and servers, 140.126.21.4.



4. Click **Save**.

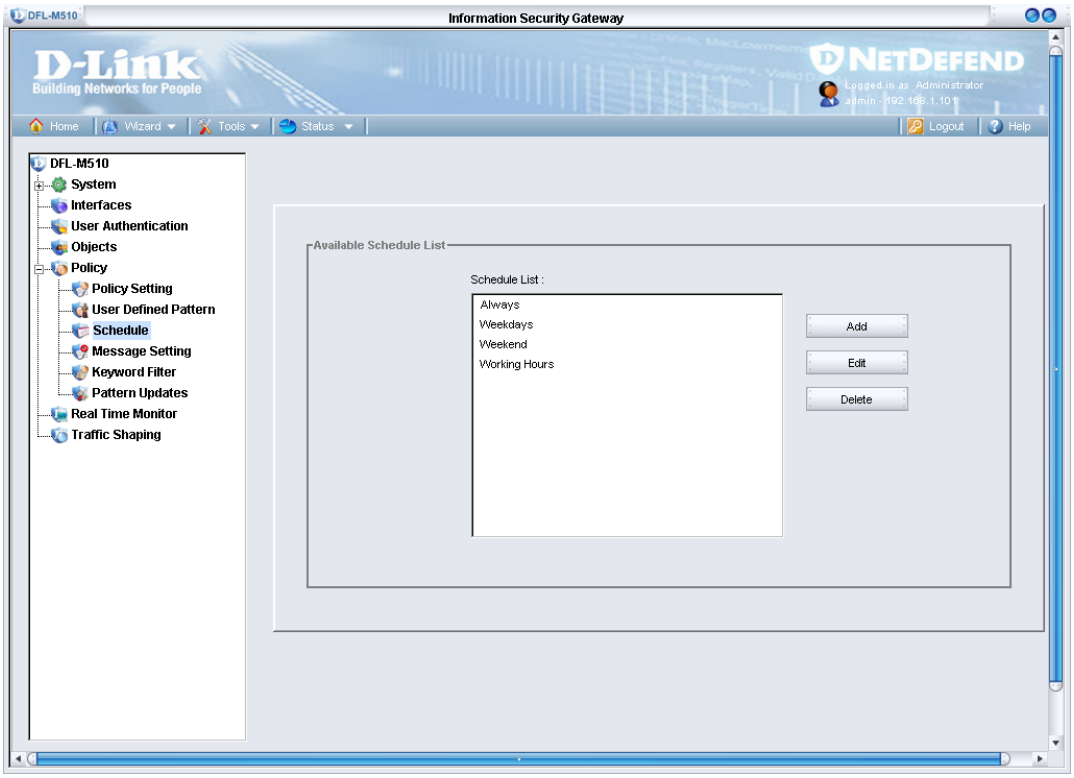


The DFL-M510 supports 1500 sets of user-defined patterns by protocol and 1500 sets of user-defined patterns by Application Server.

THE SCHEDULE SCREEN

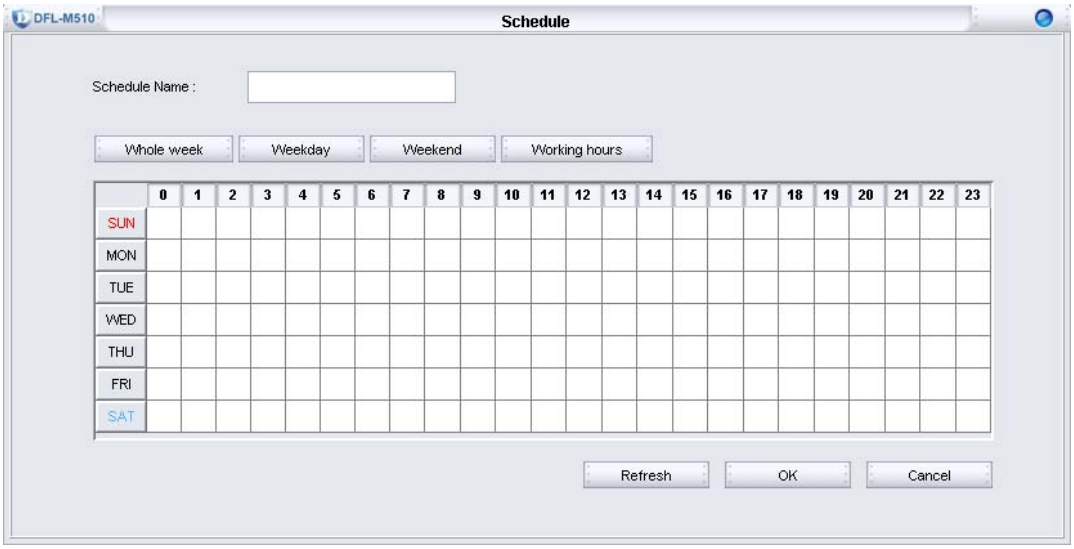
It is possible to define the active time range of a policy. The time range can be defined by the schedule. Each schedule has a name, and a time range. The time range is specified in units of hours.

Click **Policy > Schedule** to access the **Schedule** screen.



There are four predefined schedules. The **Always** schedule means the policy is always active. The **Working Hours** schedule means the policy is active during working hours. The regular working hours are Monday to Friday from 9:00 AM to 5:00 PM. The **Weekdays** schedule means the policy is active during the whole workdays. The regular workdays are Monday to Friday. The **Weekend** schedule means the policy is not active during the whole workdays. The regular Weekend days are Saturday to Sunday.

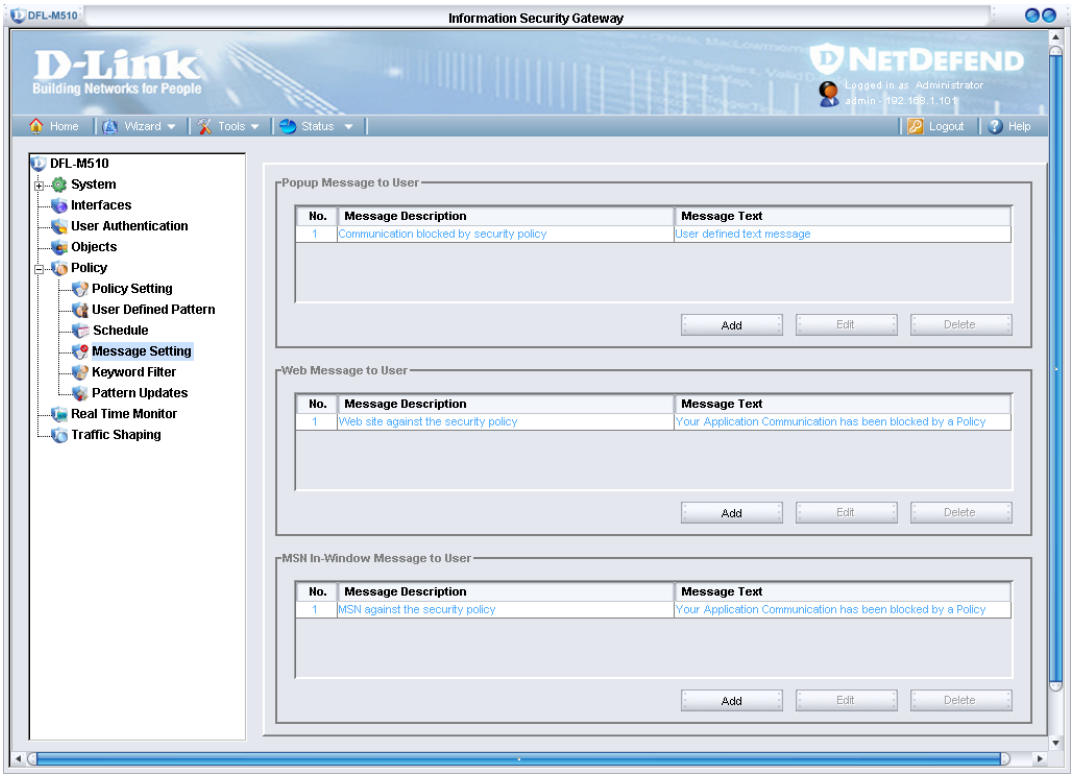
To Add or Modify a schedule press the Add or Modify button to open the schedule editing dialog box. Modify the schedule name and check the hour tab to include or exclude the hour represented by the tab.



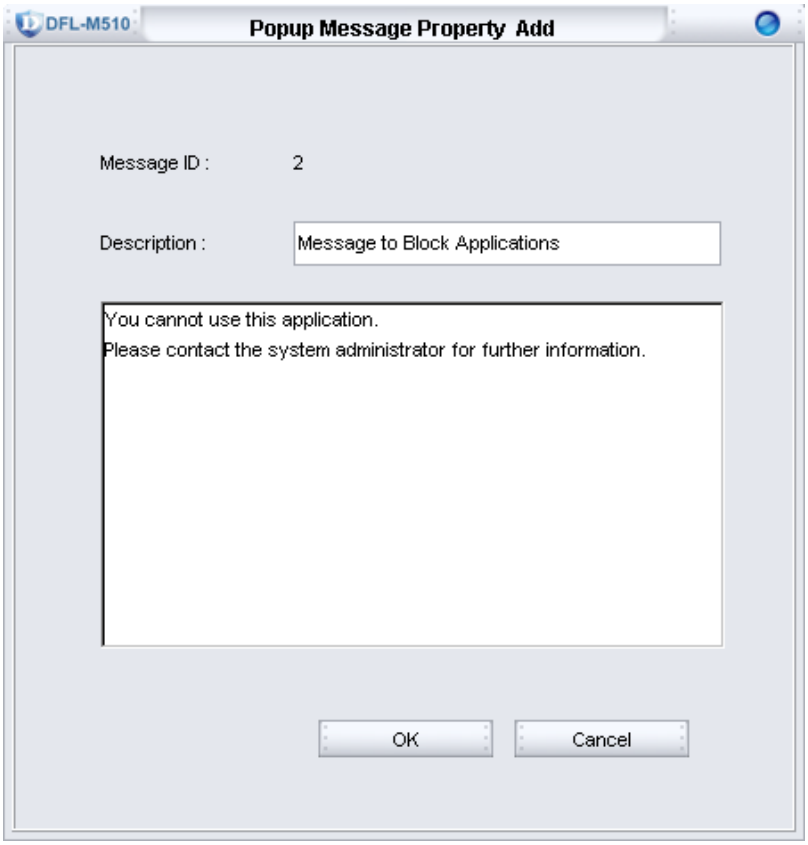
MESSAGE SETTING

In this section, you can edit popup or Web messages. Refer to the following to add a popup message.

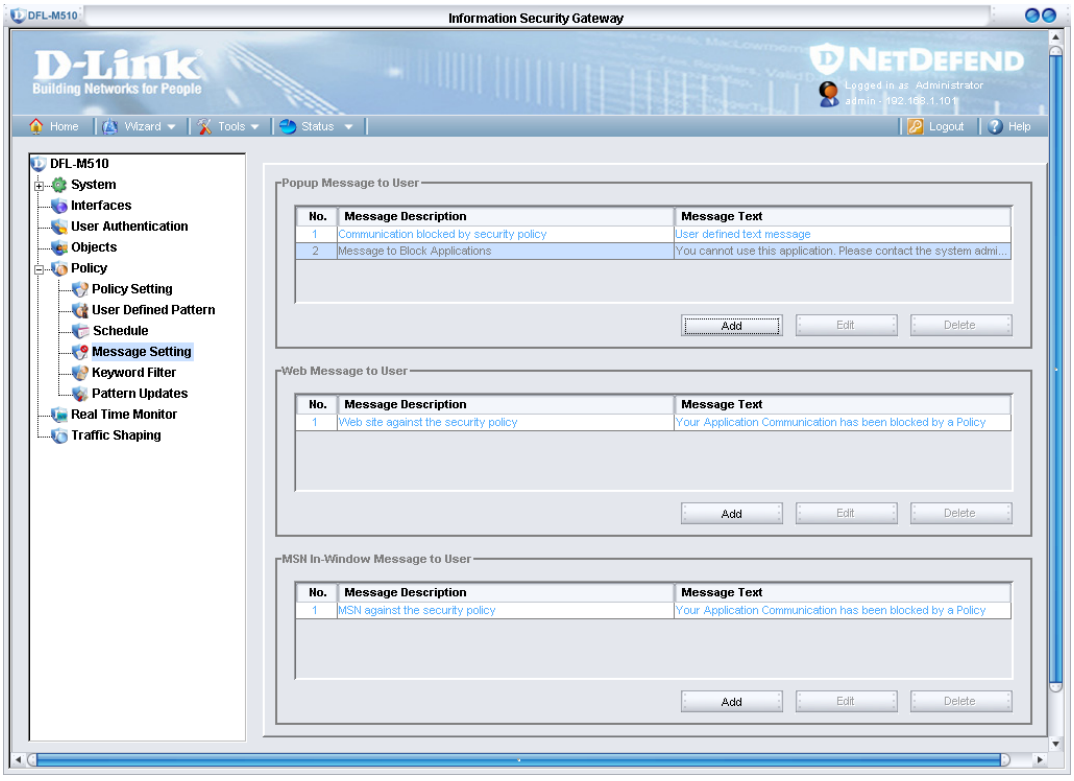
1. Click **Policy > Message Setting**.



2. Under **Popup Message to User**, click **Add**.



3. Type a description and the content of the message and click **OK**.



When you turn off Messenger Service or enable Personal Firewall, the Win Popup Message function works correctly.

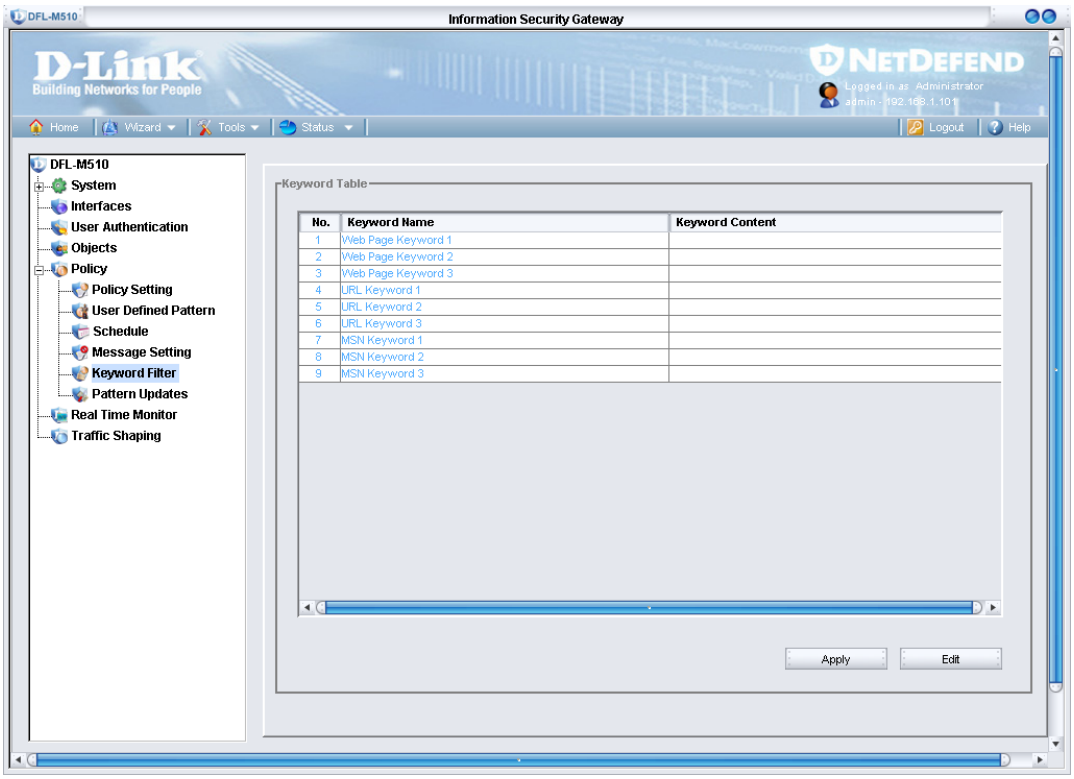
KEYWORD FILTER

The DFL-M510 provides the following keyword functions:

- **Web page keyword**
- **URL keyword**
- **MSN keyword**

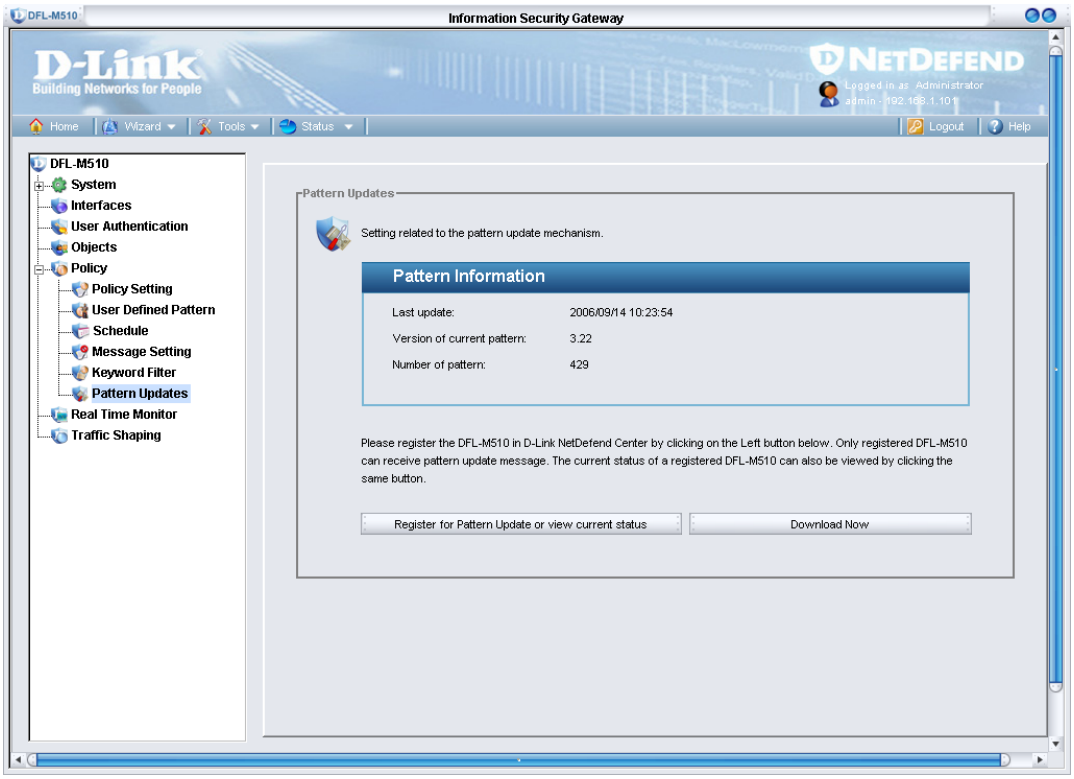
These keyword functions are used to describe applications of MSN and Web browsers.

Since all the keyword policies and other policies are too complex to display in a page, an integrated GUI frame is designed to aggregate these rules to use more easily. The special keyword policy GUI is illustrated as following.



This function only supports chapter by ASCII encoding.

PATTERN UPDATE



PATTERN UPDATE

The DFL-M510 provides up-to-date protection for your network. Pattern information can be reviewed in this section such as last update, version of current pattern and number of pattern.

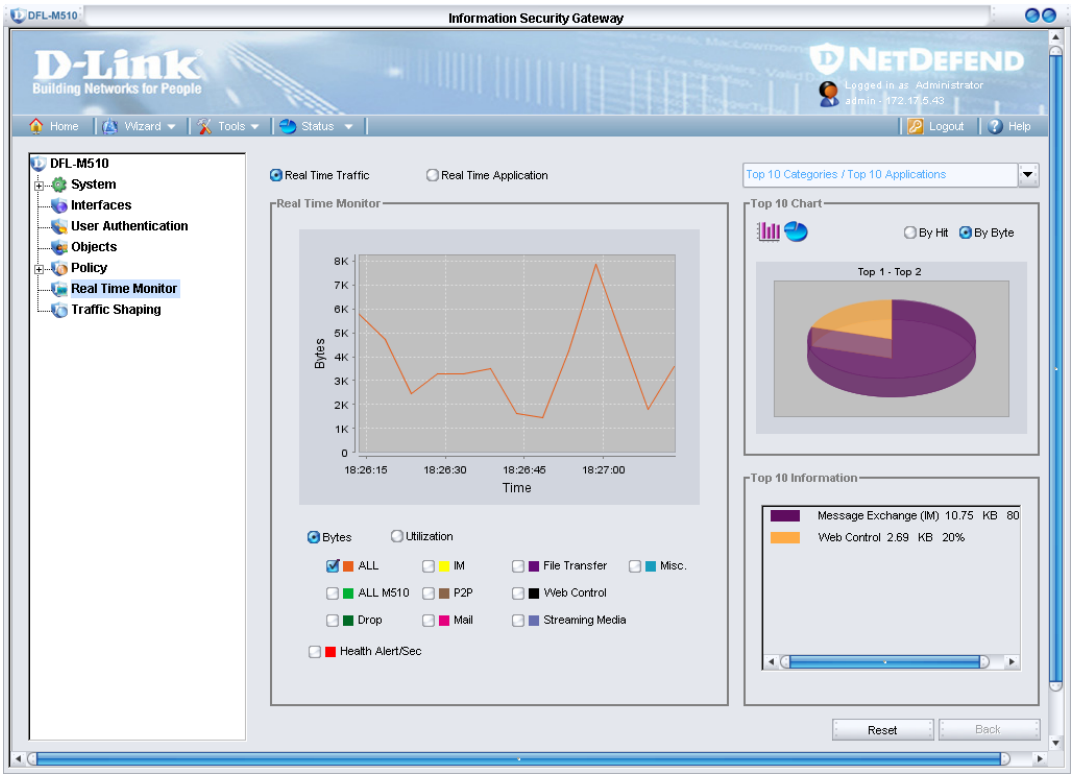
You can register the DFL-M510 in D-Link's security portal by clicking on the "Register for Pattern Update or view current…" button. By clicking “Download Now”, you can immediately connect to the update server and manually download the latest pattern. To obtain the detailed information for the latest pattern before you download, please click “Check details before download” for further information.

CHAPTER 7: REAL TIME MONITOR

The Real Time Monitor provides real-time tracking of network usage in the form of text and graphs. System administrators can monitor significant application pattern events, quickly understand network status, and take imperative action.

THE REAL TIME MONITOR SCREEN

After you log on, click **Real Time Monitor** to open the following screen:



NOTE

For Real-time Monitor to work properly, port 8801 - 8810 must be opened on the client PC to receive the analysis data from the DFL-M510.

IMPORTANT

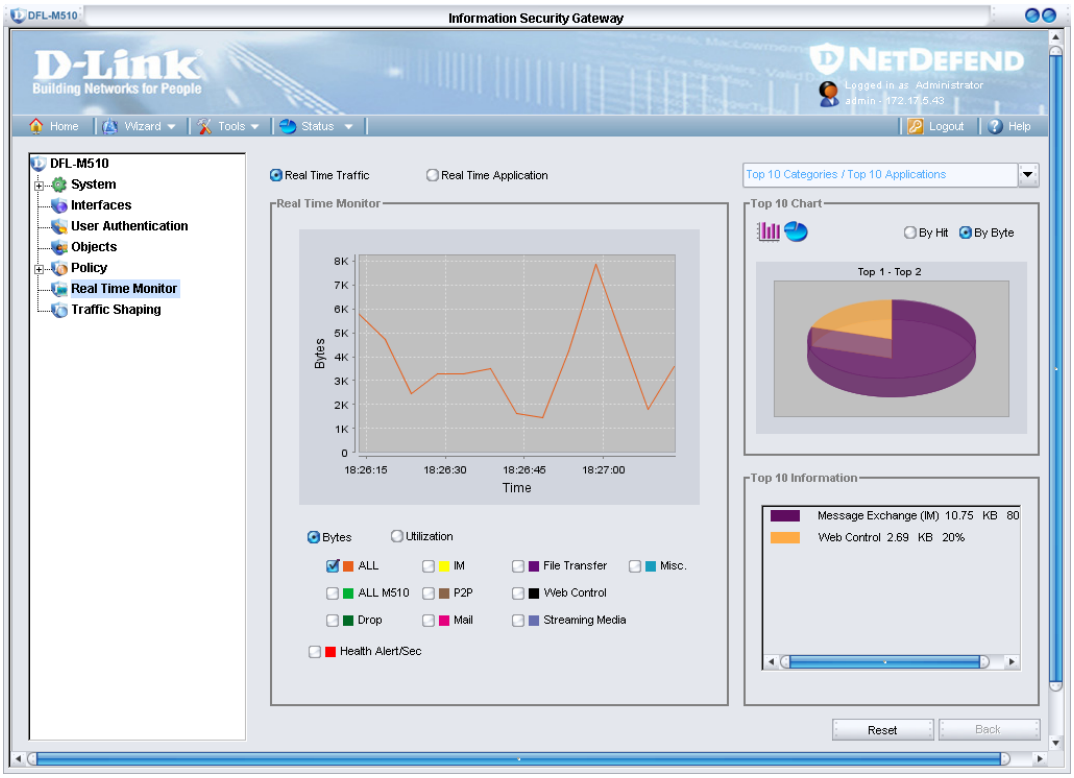
D-Link recommends not managing the DFL-M510 through a WAN link, since the Real-time Monitor feature would get data from the DFL-M510.

The **Real Time Monitor** screen gives you access to the following:

- Monitoring Real Time Traffic
- Monitoring Real Time Application

MONITORING REAL TIME TRAFFIC

To monitor Real Time Traffic check the **Real Time Traffic** radio button.



ALL	The number of bytes of all packets received
ALL M510	The total amount of traffic the DFL-M510 can manage
Drop	The number of bytes of packets that are identified as an application patter and discard by DFL-M510
IM	The number of bytes of all application of the IM category
P2P	The number of bytes of all application of the P2P category
Mail	The number of bytes of all application of the Mail category
File Transfer	The number of bytes of all application of the File Transfer category
Web Control	The number of bytes of all application of the Web Control category
Streaming Media	The number of bytes of all application of the Streaming Media category
Misc.	The number of bytes of all traffic which does not belong to IM. P2P, Mail, File Transfer, or Streaming Media
Health Alert/Sec	The number of events that a packet was detected as a health concern packet

Administrators can accumulate and analyze detected application patterns by information revealed from their packets. These are explained in the Top N analysis section.

REFRESH TIME

The system provides the new traffic status every thirty seconds.

TRAFFIC LINES

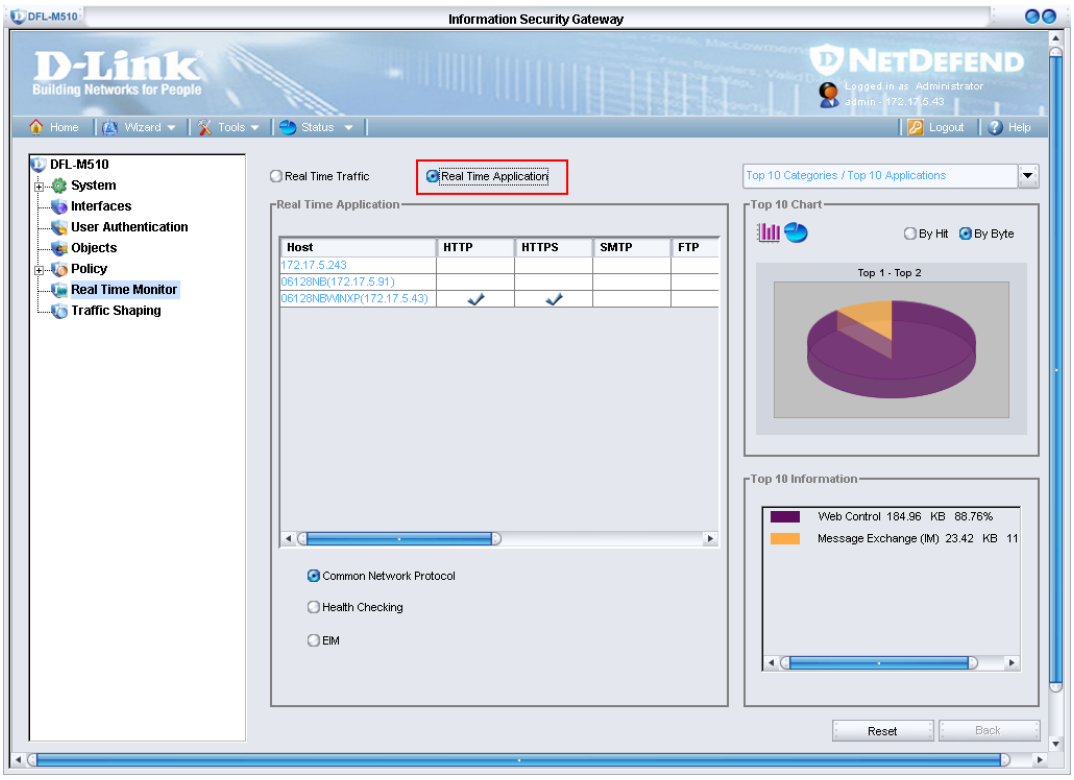
One line in the traffic chart means one meter of current time. Each line can be hidden or shown by clicking the check box before the specified label.

SCOPE

Click the drop-down arrow to select a group or subnet to monitor. It filters hosts and doesn't affect the current traffic status but instead zooms into the subset of the hosts that are specific by each case.

MONITORING REAL TIME APPLICATION

To monitor Real Time Application check the **Real Time Application** radio button.



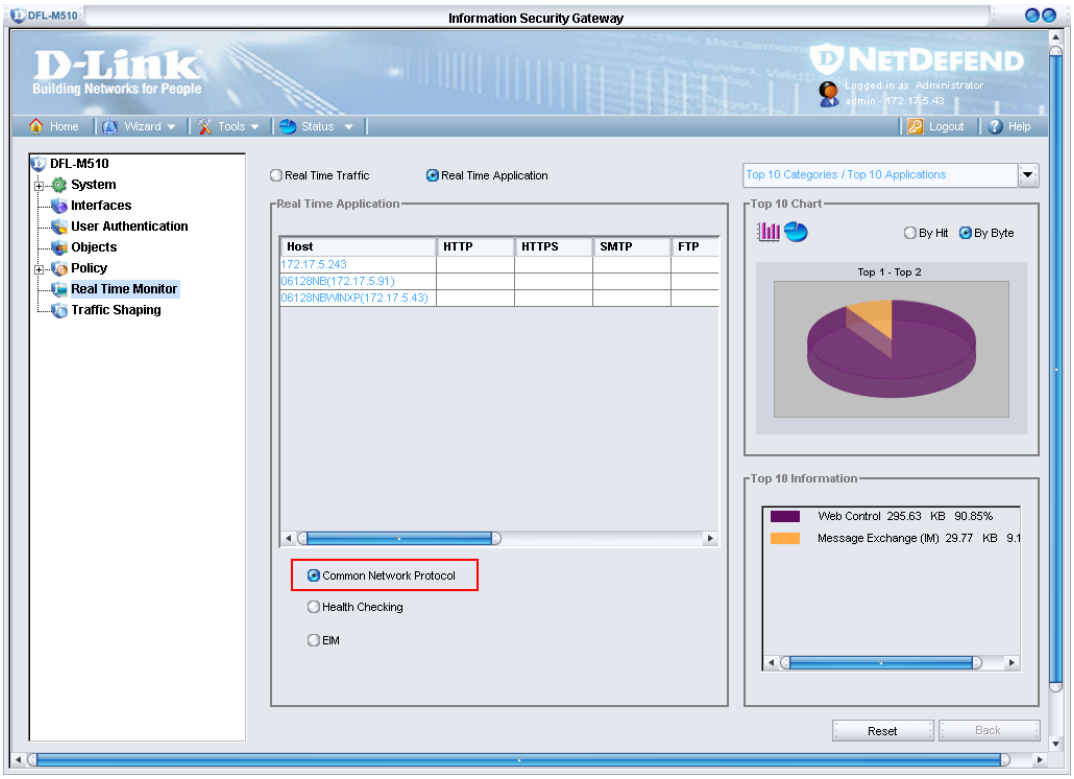
The Real Time Application page shows management information classified by pre-defined types and hosts.

The left of this screen displays the current application information; the right of this screen displays the accumulated application information for Top N analyzing. The right part is the same as the right part of real time traffic.

There are three tables: the common network protocol table; the EIM table; and the health checking table. Select the radio button to display each table. The EIM table is the default.

COMMON NETWORK PROTOCOL

The common network protocol table shows the current status of each host. This table is a layer 4 table and network applications are monitored at the network port number. The common network protocol contains HTTP, HTTPS, SMTP, FTP, TELNET, POP3, IRC, NNTP, and IMAP. If a host is connecting to the Internet via the above ports, the table shows a check mark to indicate the host is currently connecting.



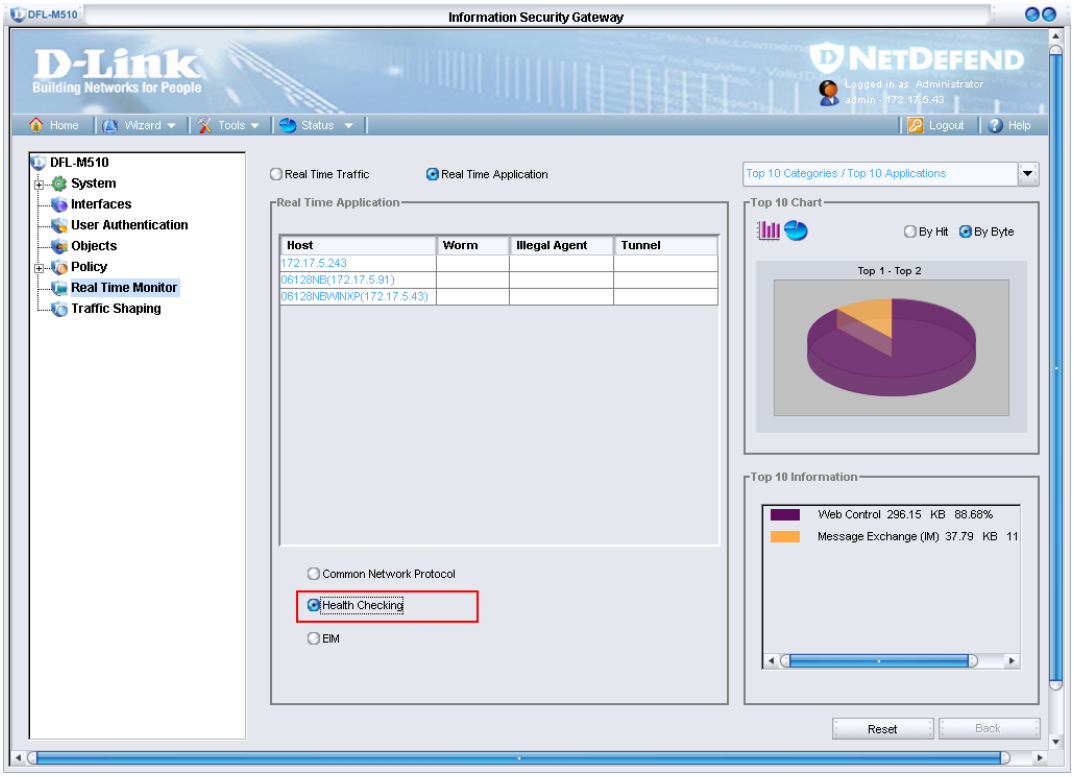
HEALTH CHECKING

The Health Checking table is a layer seven table. Instead of classifying the application pattern, several packets that come from attacking tools can damage the host. Some of the packets are assembled and stored in the file system and are detectable by anti-virus software. Some packets try to get system authorized control and run as an operating system's administrator without storing to the file system. These packets are invisible to almost all anti-virus software, but detectable by the DFL-M510. When those packets come from a host and are detected, the corresponding field shows a check mark to indicate the host has health concern problems.

Health-concern problems include network based worms, illegal agents, and tunnels. Network based worms do not include common viruses, since they are easy to discover by standard virus software.

Illegal agents include backdoors, trojans, spyware, and ad-ware.

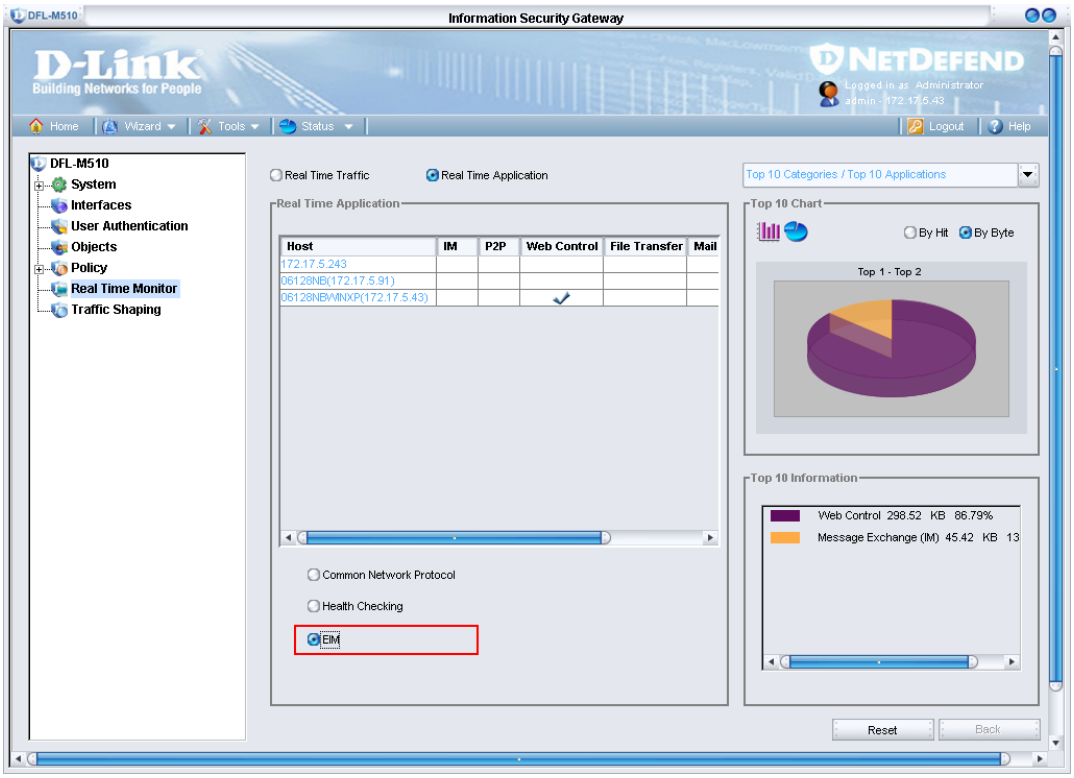
Tunnels are host-based software. They provide a secure channel for communication. The purpose is to break through a firewall and escape content inspecting. For example, like soft ether, VNN, and VNC.



EIM

The EIM table provides layer seven monitoring. A packet is classified by its application pattern and summarized into six categories: IM, P2P, Web application, file transfer, E-mail, and media.

If a host is connecting to the Internet and identified as a category application, the table shows a check mark to indicate the host is currently running the application with that specific category.



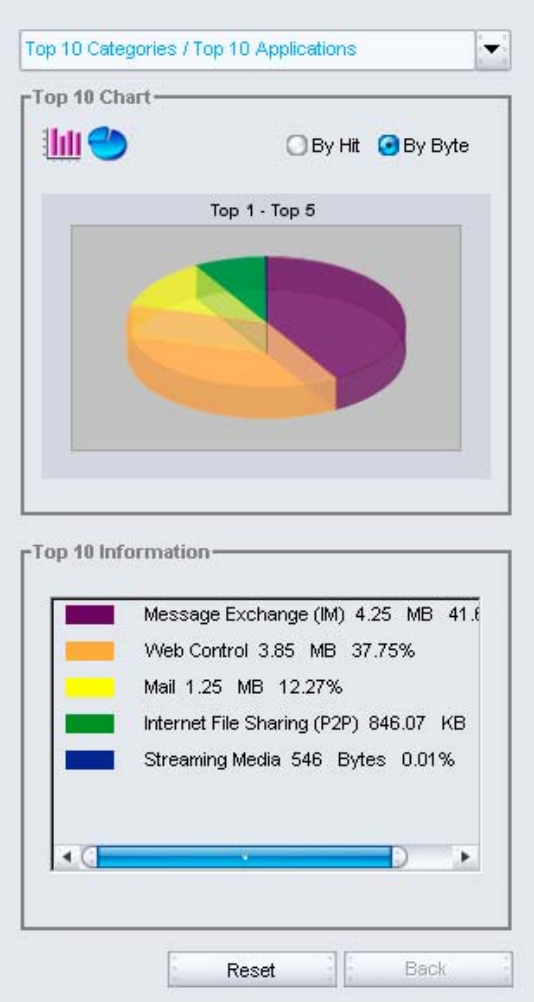
TWO LEVELS TOP 10 ANALYSIS

Administrators can review detected application patterns by information revealed from its packets. All triggered incidents are categorized on the principle of sequence, health, time of occurrence, name of pattern, source address, destination address, counts, and responsive actions (dropping packets, disconnects, emailing the administrator in charge, or keeping logs of incidents,) and are all displayed in charts for administrators to quickly understand the present status of the network. These monitoring charts have two levels. First: choose one chart from the six charts; then pick one item from the first level to display the second level chart.

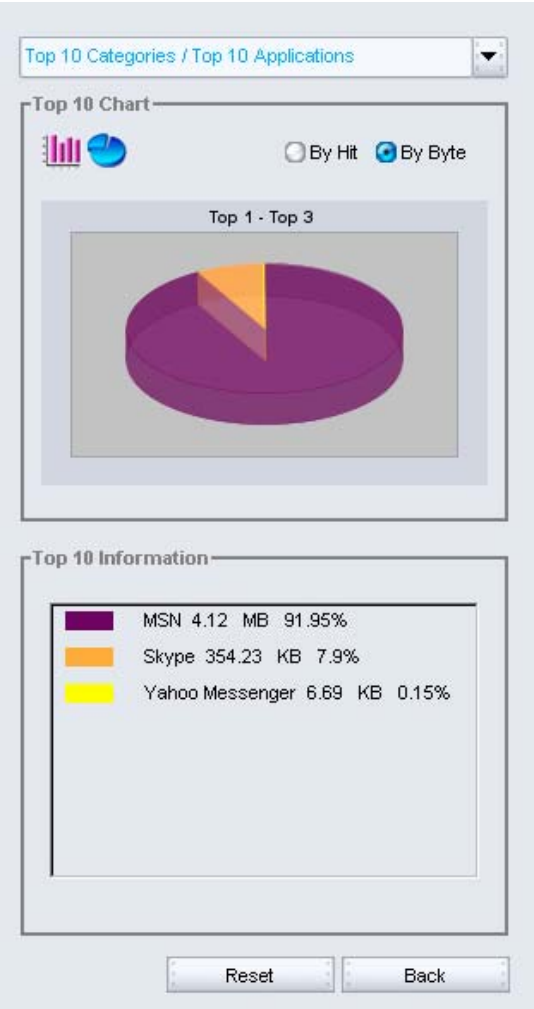
TOP 10 CATEGORIES/TOP 10 APPLICATION

In these charts, the first level shows the top 7 categories. When a category is chosen, the second level shows the top 10 applications in the chosen category. The following means that the top category is the IM category. The following means that the top category is Message Exchange (IM).

The lower list shows details of each category. When the IM category is chosen, the second level chart covers the first chart as follows:



The lower list shows details of each category. When the IM category is chosen, the second level chart covers the first chart as follows:



It would be understood that the MSN is the most frequent application within the IM category.

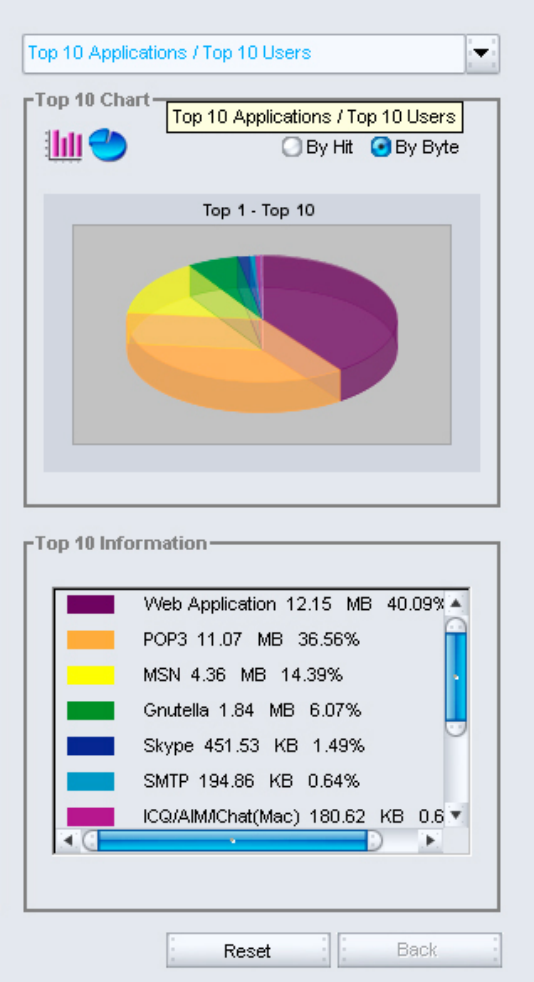
NOTE

If you press **Reset**, all data is erased. Click Back to go to the previous page.

TOP 10 APPLICATIONS / TOP 10 USERS

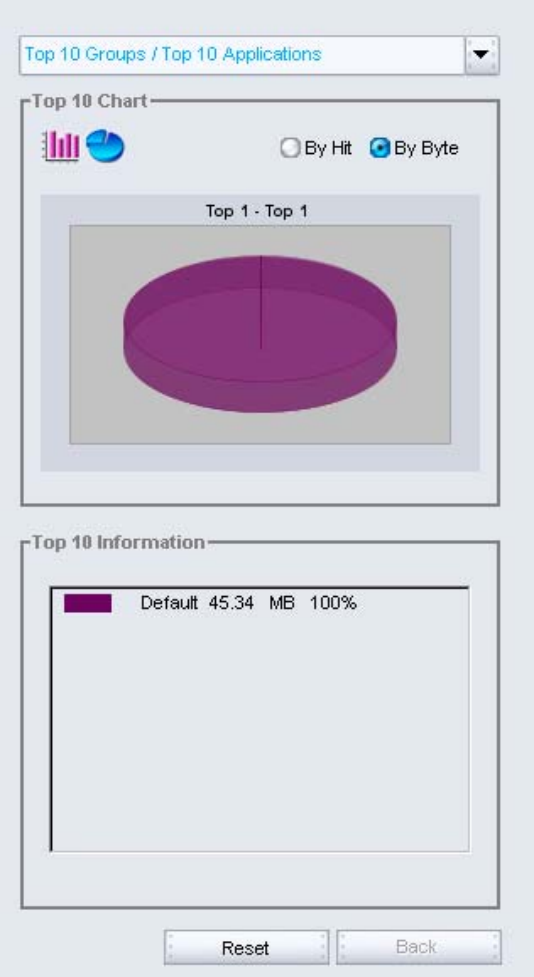
In these charts, the first level shows the top 10 applications. When an application is chosen, the second level shows the top 10 users in the chosen application.

The following means that the top application is MSN.



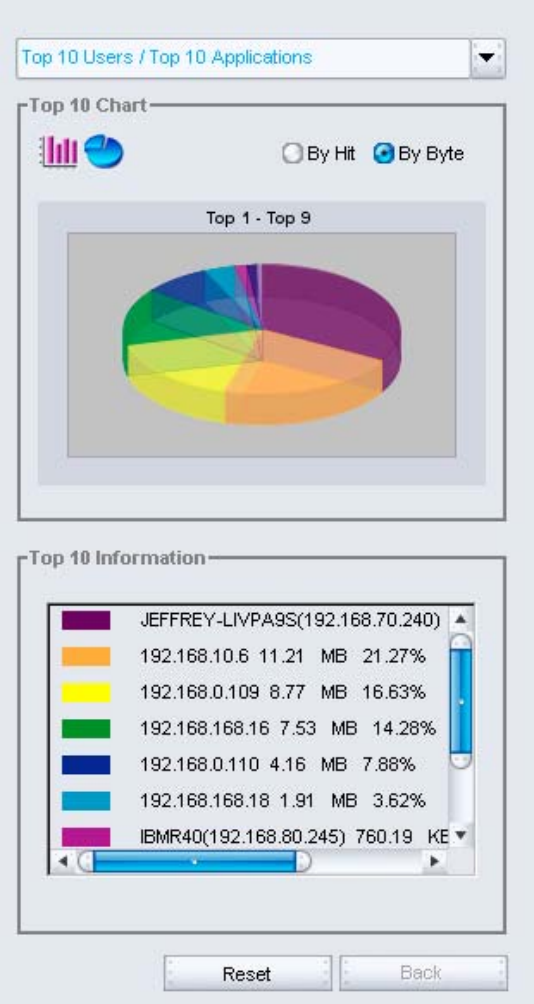
TOP 10 GROUPS/TOP 10 APPLICATIONS

In these charts, the first level shows the top 10 groups. When a group is chosen, the second level shows the top 10 Applications. The following means that the top group is the default group.



TOP 10 USERS/TOP 10 APPLICATIONS

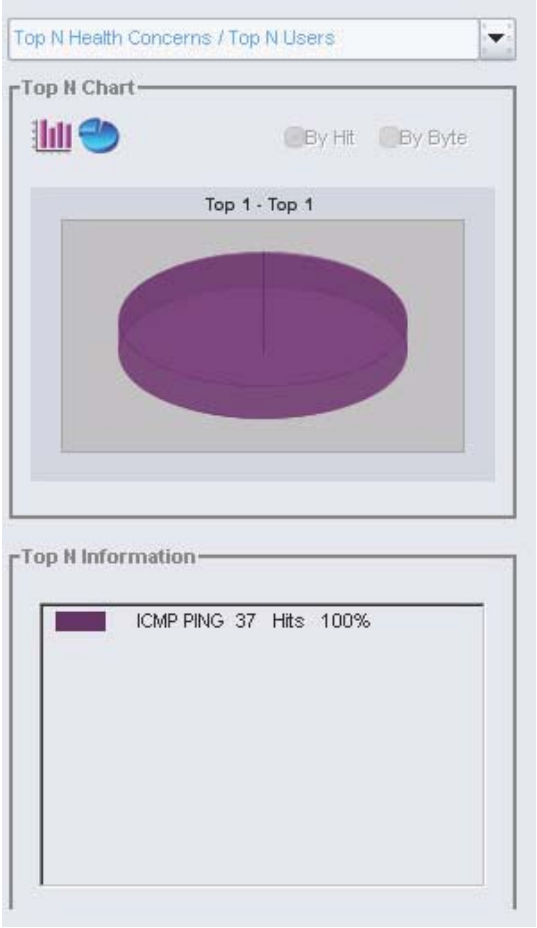
In these charts, the first level shows the top 10 users. When a user is chosen, the second level shows the top 10 applications in the chosen user. The following means that the top user is Jeffrey.



TOP 10 HEALTH CONCERNS/TOP 10 USERS

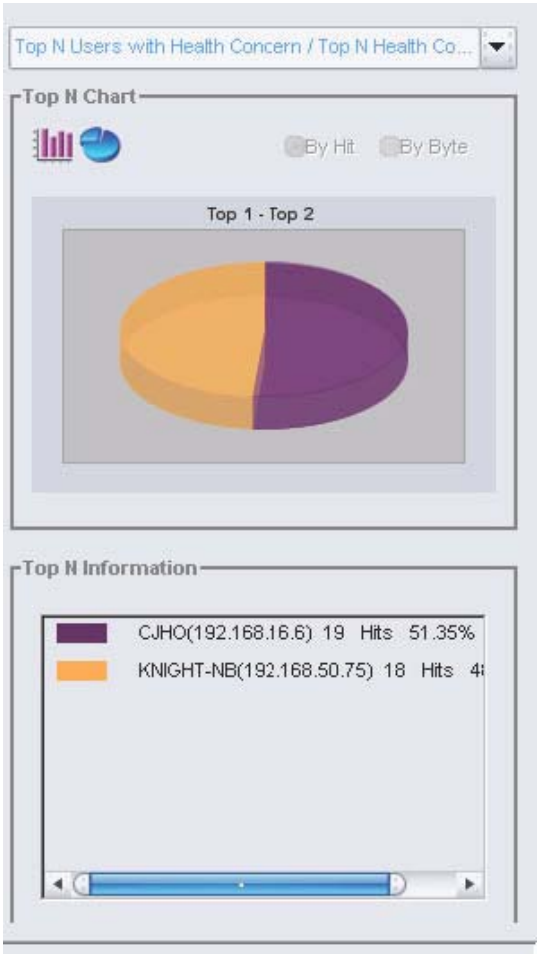
In these charts, the first level shows the top 3 health concerns. When a health concern is chosen, the second level shows the top 10 users in the chosen health concern.

The following means that the top health concern is the illegal agent.



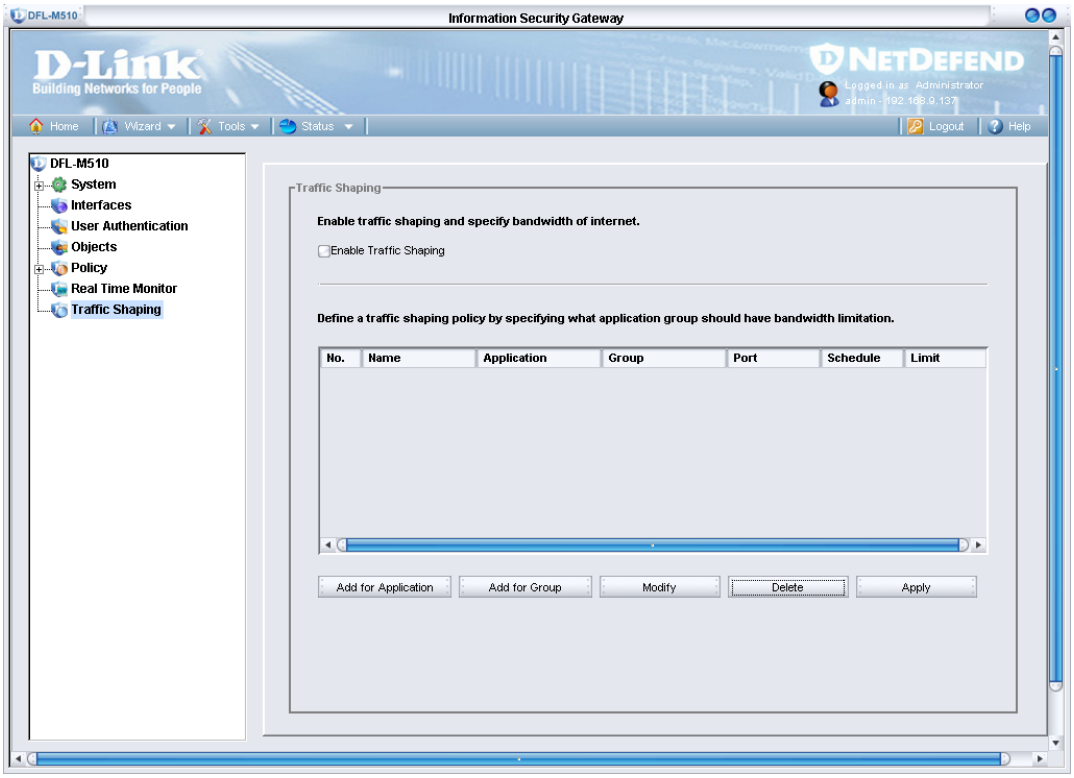
TOP 10 USER WITH HEALTH CONCERNS/TOP 10 HEALTH CONCERNS

In these charts, the first level shows the top 10 users with health concerns. When a user is chosen, the second level shows the top 3 health concerns in the chosen user. The following means that the top user with health concern is CJHO.



CHAPTER 8: TRAFFIC SHAPING

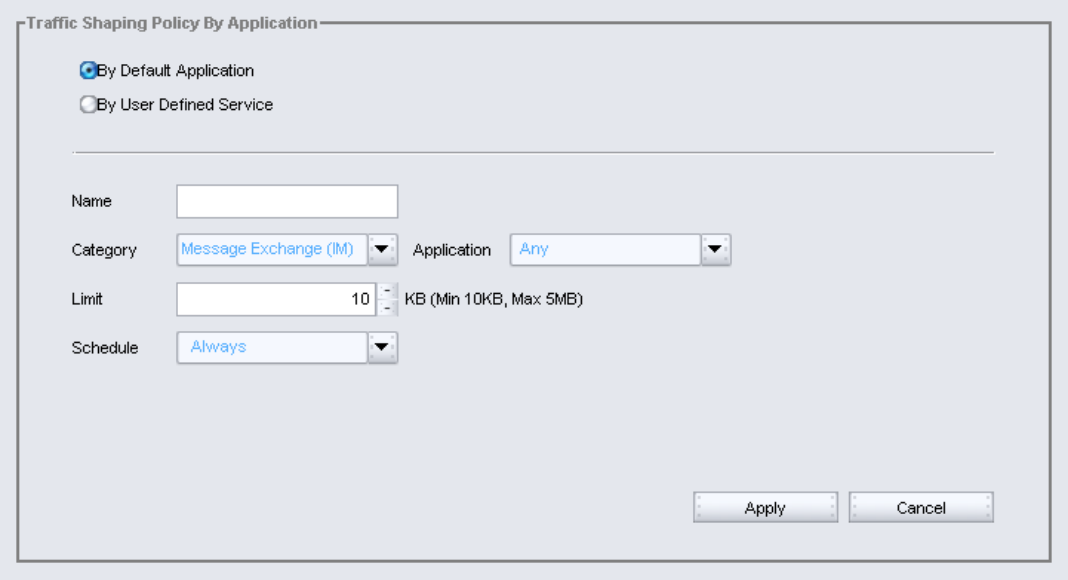
The Traffic Shaping enables bandwidth control over the Internet applications. System administrators can specify the bandwidth either for user groups or for applications.



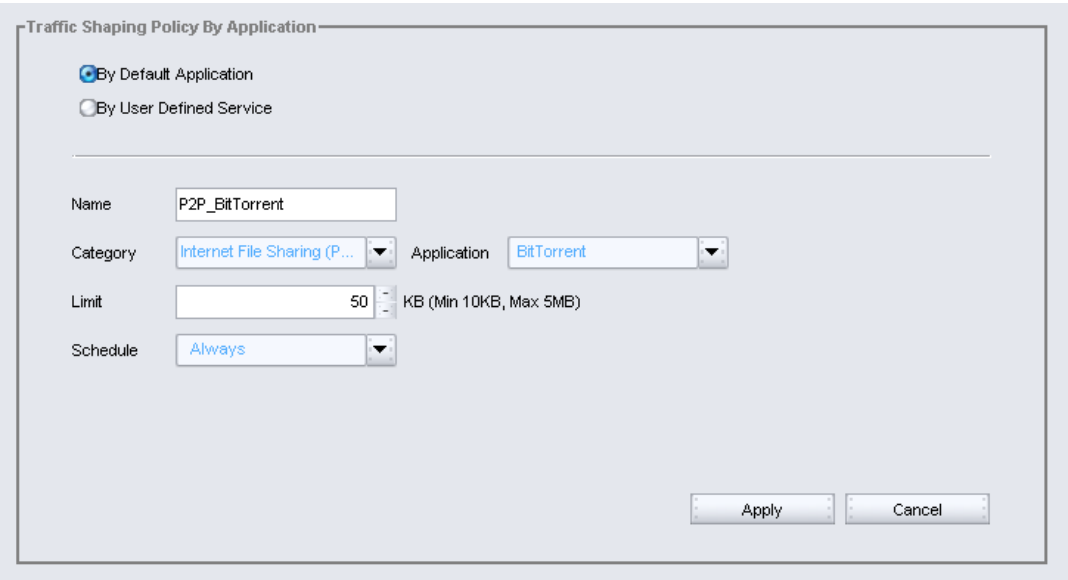
DEFINING A TRAFFIC SHAPING POLICY FOR APPLICATIONS

This scenario illustrates how to configure bandwidth limitation for applications. Here the example below demonstrates how to create a traffic shaping policy for BitTorrent. You can create a traffic shaping policy via click the **Add for Application** button, and then click the **Apply** button to add a traffic shaping policy as follows.

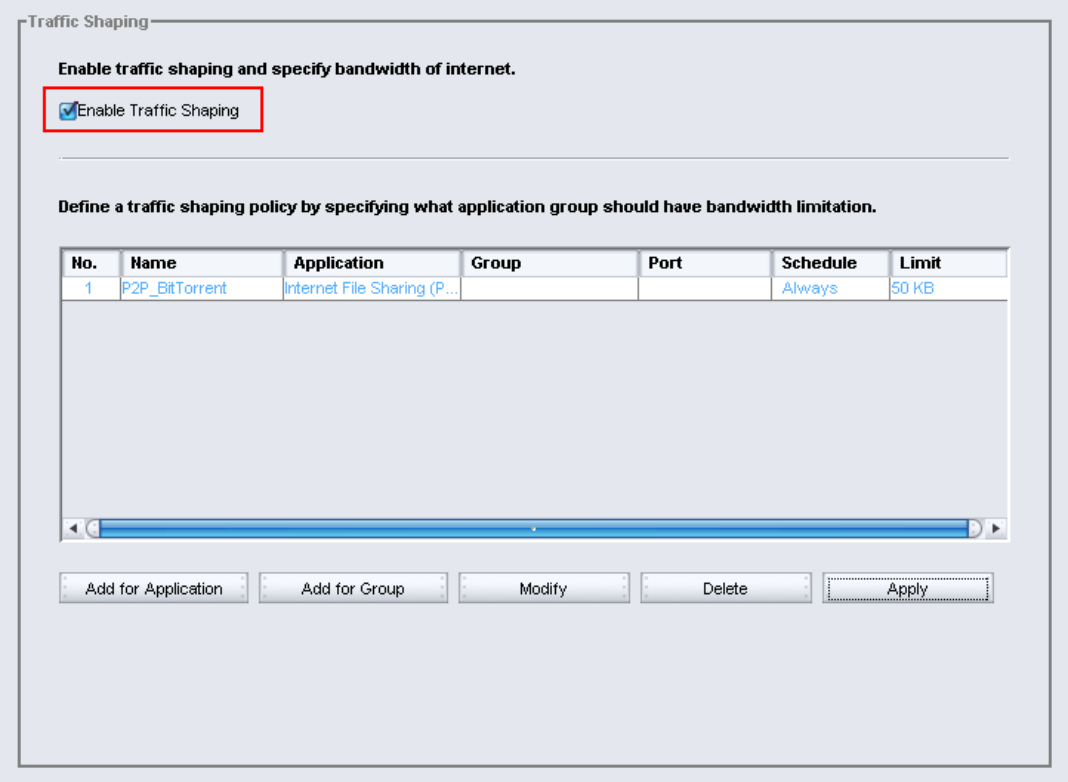
1. In the **Traffic Shaping** screen, click **Add for Application**.



2. Select **By Default Application**, provide the policy name **P2P_BitTorrent.** In Category and Application menu, select **Internet File Sharing (P2P)** and **BitTorrent**, meanwhile assign bandwidth limitation, for instance **50KB** for BitTorrent. Then click the **Apply** button to add a new policy.



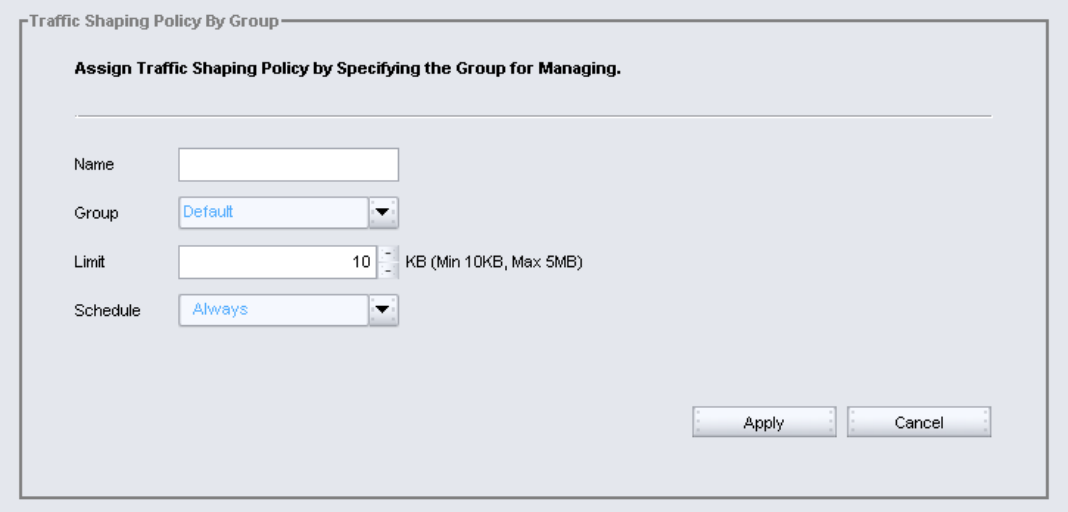
3. Enable Traffic Shaping feature, and click **Apply** to take effective.



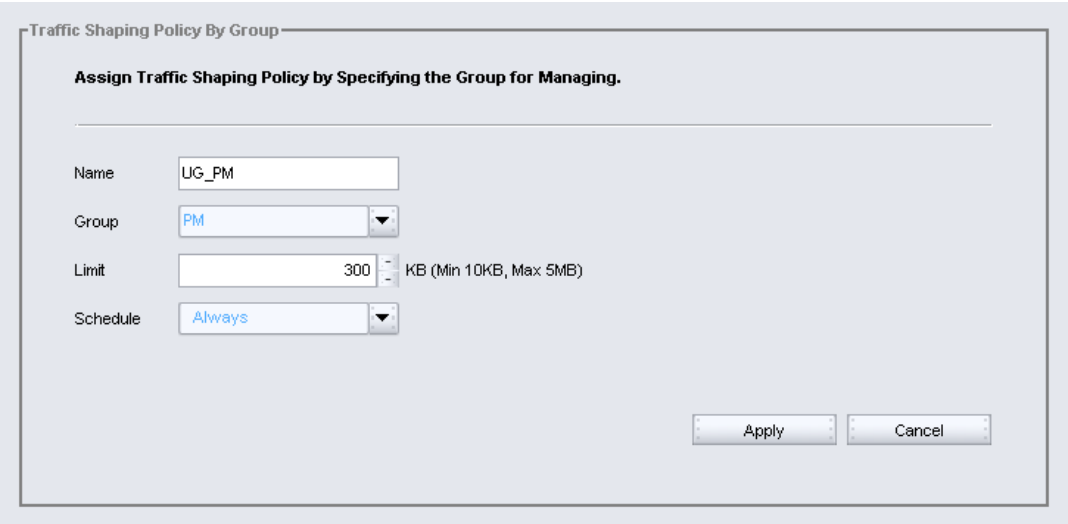
DEFINING A TRAFFIC SHAPING POLICY FOR USER GROUPS

This scenario illustrates how to configure bandwidth limitation for user groups. Here the example below demonstrates how to create a traffic shaping policy for the PM user group. You can create a traffic shaping policy via click the **Add for Group** button, and then click the **Apply** button to add a traffic shaping policy as follows.

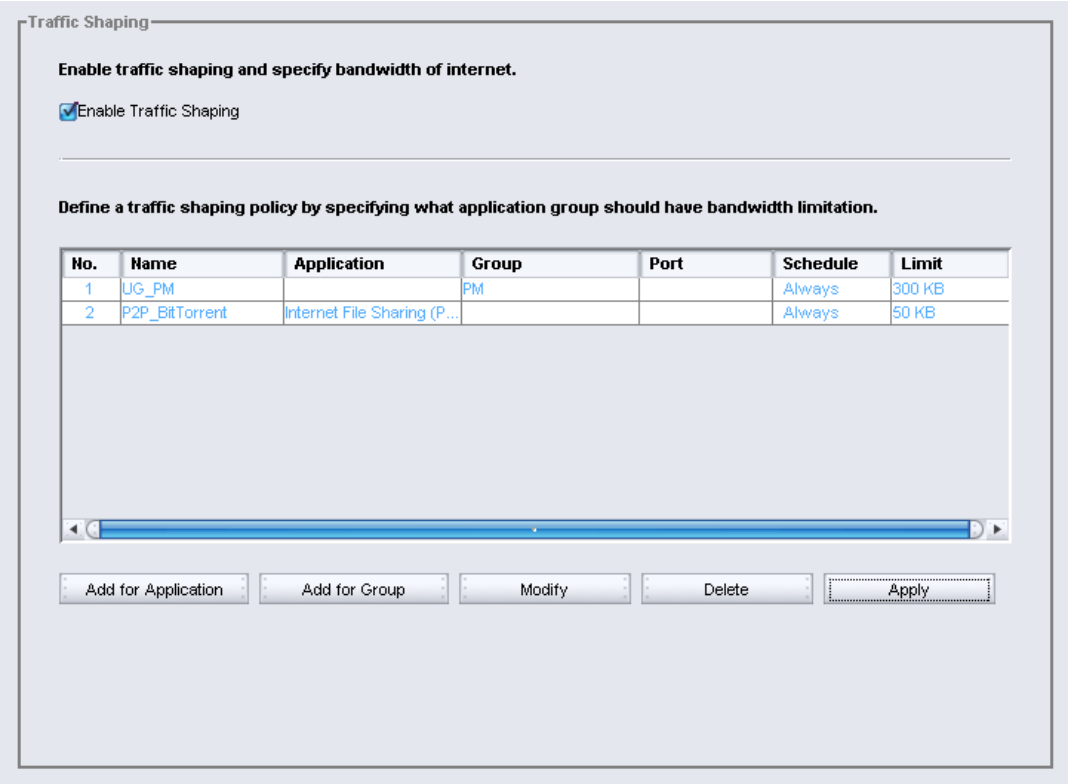
1. In the **Traffic Shaping** screen, click **Add for Application**.



2. Provide the policy name **UG_PM.** In Group menu, select the **PM** user group; meanwhile assign bandwidth limitation, for instance **300KB** for the user group. Then click the **Apply** button to add a new policy.



3. Click **Apply** to take the policy effective.



APPENDIX A: THE COMMAND LINE INTERFACE

This section covers the following topics:

- Terminal/SSH (Secure Shell) Connection
- CLI Command List
- Help Command
- Get Command
- Set Command
- Exit Command
- Reboot Command
- Reset Command
- Ping Command

Terminal/SSH (Secure Shell) Connection

The DFL-M510 Console Service provides administrators a text-mode interface to configure the DFL-M510 and its arguments via an RS-232 serial cable. The DFL-M510 devices provides terminal emulation and SSH connection service. Administrators can attach an RS-232 cable to the RS-232 console port on the DFL-M510, and log in with the super terminal program provided by Windows 95/98/2000/NT/XP; or use the remote login command line interface by using terminal connection software with SSHv2 encryption function.

These two methods of accessing the command line interface have three major differences between them:

1. SSH service provides administrators an ISG remote control mechanism and higher security compared to a traditional Telnet connection.

2. Since remote access is considered more risky than accessing from a terminal connection, some functions are limited to the terminal connection service only. For example, the device booting message does not show on the remote access. (Details of the limited functions are provided in the next section.)

3. For the sake of security, the SSH service provided by ISG devices can be shut down. From security stand point, the best way to protect against brute force approach is to prolong the interval between login attempts. Therefore, the SSH login attempt is limited to 3 times, and each interval 60 seconds. If a user has failed logins that exceeds this or is stuck in the login process for more than 60 seconds, the SSH connection will be terminated, and login resources are released. In addition, the DFL-M510 only allows one SSH connection at a time for the consideration of the conformity of system configuration and the security of the remote connection.

Getting Started

Once you have accessed the Command Line Interface (CLI) with a terminal connection, press any key and the following prompt will appear. Enter the user name and password: the default user name is **admin**, the default password is **admin**.

Welcome to D-Link DFL-M510 Console Environment
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DFL-M510 login:

CLI Command List

You can use the console or SSH to connect the DFL-M510. After login, you can use the CLI commands to configure the DFL-M510. The complete CLI commands are described as follows.

Commands	**Description**
help	Getting information of all command's usage and argument configuration
get	Display all kinds of configuration information of the DFL-M510
set	Set the system parameter
history	Display all commands which you have used
exit	Exit command shell
reboot	Reboot system
reset	Reset system configuration to default settings, type "y" to load default setting.
ping	Send ICMP echo request messages

Help Command

Help is used for getting information of other command's usage and argument configuration.

Main command	Sub command	Example	Command description
help	get	help get	Display all information of "get" command.
	set	help set	Display all information of "set" command.
	history	help history	Display all information of "help" command
	exit	help exit	Display all information of "exit" command
	reboot	help reboot	Display all information of "reboot" command
	reset	help reset	Display all information of "reset" command
	ping	help ping	Display all information of "ping" command

EXAMPLE

(A) help get

```
>> help get
get - Get system parameters. Available commands
      system - System configurations, including IP, password and etc.
      time - Device clock setting
      state - Device operation state
      interface - Device interface configuration
```

(B) help set

```
>> help set
set - Set system parameters. Available commands
      system - System configurations, including IP, password and etc.
      time - Device clock setting
      state - Device operation state
      remote - Setup remote access configuration.
      Interface - Change interface link mode
```

(C) help history

```
>> help history
history - Show all command history
```

(D) help exit

>> help exit
exit - Log out

(E) help reboot

>> help reboot
reboot - Reboot system

(F) help reset

>> help reset
reset - Reset system configurations to manufacturing defaults

(G) help set

>> help ping
ping - Ping utility

Get Command

This command will display all kinds of configuration information of the DFL-M510.

Main command	Sub command	Example	Command description
get	system	get system	Display system configurations, including IP, password and etc.
	time	get time	Display device clock setting
	state	get state	Display device operation state
	interface	get interface	Display device interface configuration

EXAMPLE

(A) get system

>> get system

```
Device name: M510
MAC Address: 00:00:00:00:00:00
DFL-M510 IP Address:192.168. 80.244, netmask:255.255.  0.  0,
gateway:192.168.168.253
TCP cold start duration time: 300 seconds
VLAN function: off.  VLAN ID: 1.
Detection parameters:
 Maximum ping packet size: 1024.
  TCP state check bypass: off.
 WAN port: policy check <off> Stealth < on> max ping  10000.
 LAN port: policy check <off> Stealth < on> max ping  10000.
Remote access:
HTTP:
Access: all
1 - Client IP: all              Netmask: 255.255.  0.  0
2 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0
3 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0
SSH:
Access: all
1 - Client IP: all              Netmask: 255.255.255.  0
2 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0
3 - Client IP:   0.  0.  0.  0  Netmask: 255.255.255.  0

>> _
```

(B) get time

>> get time
Current time : (GMT + 0) Mon Apr 18 08:34:37 2005
DST time : (GMT + 0) Mon Apr 18 08:34:37 2005
System duration: 0 days 0:43:10

(C) get state

>> get state
Operation mode: In-Line

(D) get interface

>> get interface
Interface:
WAN: auto.
LAN: auto.

Set Command

Use this command to set the system's parameter.

Main command	Sub command	Command description
set	system	Set system configurations, including IP, password and etc.
	time	Set device clock
	state	Set device operation mode
	remote	Set remote control mode
	interface	Set interface link mode

"SET SYSTEM" COMMAND

Prefix command	2nd command	Example	Command description
set system	ip	set system ip 192.168.80.244	Set device's IP
	mask	set system mask 255.255.0.0	Set device's mask
	gateway	set system gateway 192.168.80.244	Set device's default gateway
	passwd	set system passwd	Set administrator's new password
	detect	set system detect	Set the relating arguments for ISG's outgoing and incoming packets detection.

	vlan	set system vlan	Set the VLAN environment related parameters
	name	set system name	Set device's name

Prefix command	2nd command	3rd command	Postfix command	Example	Command description
set system detect	tcptimeout	20 -2592000		set system detect tcptimeout 6000	Set TCP connection timeout
	policy	wan	On	set system detect policy wan on	Turn on wan port's policy check
			Off	set system detect policy wan off	Turn off wan port's policy check
		lan	On	set system detect policy lan on	Turn on lan port's policy check
			Off	set system detect policy lan off	Turn off lan port's policy check
	pingmax	wan	10 - 300000	set system detect ping wan 5000	Set max ICMP count of wan port
		lan	10 - 300000	set system detect ping lan 5000	Set max ICMP count of lan port
	stateful	on		set system detect stateful on	Turn on TCP state bypass
		off		set system detect stateful off	Turn off TCP state bypass
	pinglen	64 - 1500		set system detect pinglen 1024	Set max acceptable ICMP size 64 -1500
	tcpcoldstart	0 -300		set system detect art 250	Set TCP cold start timer

Prefix	2nd command	3rd command	Example	Command description
set system vlan	on		set system vlan on	Turn on VLAN function
	off		set system vlan off	Turn off VLAN function
	vid	1 - 4094	set system vlan 1	Set VLAN ID

EXAMPLE

(A) set system ip

>> set system ip 192.168.1..245
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)

(B) set system mask

>> set system mask 255.255.255.0
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)

(C) set system gateway

>> set system gateway 255.255.255.0
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)

(D) set system passwd

>> set system passwd
Original password: *****
New password: *****
Retype password: *****

(E) set system detect tcptimeout

>> set system detect tcptimeout 100000
Change TCP session time out limit OK.

(F) set system detect policy wan on

>> set system detect policy wan on
Apply policy check for wan interface OK.

(G) set system detect policy wan off

>> set system detect policy wan off
Remove policy check for wan interface OK.

(H) set system detect policy lan on

>> set system detect policy lan on
Apply policy check for lan interface OK.

(I) set system detect pingmax wan 100000

>> set system detect pingmax wan 100000
Change wan port maximum ping packet limit OK.

(J) set system detect pingmax lan 100000

>> set system detect pingmax wan 100000
Change lan port maximum ping packet limit OK

(K) set system detect stateful on

>> set system detect stateful on
Turn on TCP state check bypass

(L) set system detect stateful off

>> set system detect stateful off
Turn off TCP state check bypass

(M) set system detect pinglen 1024

>> set system detect pinglen 1024
Change maximum length of ping packet OK.

(N) set system detect tcpcoldstart 250

>> set system detect tcpcoldstart 250
Change TCP cold start duration time OK.

(O) set system vlan on

>>set system vlan on
Turn on VLAN function.

(P) set system vlan off

>>set system vlan off
Turn off VLAN function.

(Q) set system vlan vid 1

>>set system vlan vid 1
Set VLAN ID OK

(R) set system name

>>set system name
Press new device name: M510

“SET TIME” COMMAND

Main command	Sub command	Example	Command description
set	time	set time	Set device clock

EXAMPLE

(A) set time

>> set time
Current time : (GMT + 0) Mon Apr 18 10:57:15 2005
Specify year [2000 – 2099] :
Specify month [1 – 12] :
Specify date [1 – 31] :
Specify hour [0 – 23] :
Specify minute [0 – 59] :
Specify second [0 – 59] :
Specify timezone [-12 to +12] :

Change time successfully !
Current time : (GMT + 0) Mon Apr 18 10:57:43 2005
DST time : (GMT + 0) Mon Apr 18 10:57:43 2005
System duration: 0 days 1:9:1

"SET STATE" COMMAND

Prefix	2nd command	Example	Command description
set state	inline	Set state inline	Set ISG to execute normally based on its configured policy
	Monitor	Set state monitor	ISG only inspects and keep logs does not drop packets or disconnects on its own accord
	Bypass	Set state bypass	ISG will transmit all received packets to work on another port unconditionally, which can be regarded as bridge mode.
	Span	Set state span	ISG accept packets mirrored from hub or switch mirror port and is able to reset network connection; two connection ports of ISG work at this time.

EXAMPLE

(A) set state inline

>> set state inline
Set system state to In-Line mode.

(B) set state monitor

>> set state monitor
Set system state to MONITOR mode.

(C) set state bypass

>> set state bypass
Set system state to BYPASS mode.

(D) set state span

>> set state span
Set system state to SPAN mode.

“SET REMOTE” COMMAND

Prefix command	2nd command	3rd command	Postfix command	Command description
set remote http	access	wan		Enable remote access using browser from wan port
		lan		Enable remote access using browser from lan port
		all		Enable remote access using browser from wan and lan port
		disable		Disable remote access using browser
	ip	1	xxx.xxx.xxx.xxx	Assign specify IP can use browser to remote access device
		2		
		3		
	mask	1	xxx.xxx.xxx.xxx	Assign specify subnet mask can use browser to remote access device
		2		
		3		

Prefix command	2nd command	3rd command	Postfix command	Command description
set remote ssh	access	wan		Enable remote access using SSH from wan port
		lan		Enable remote access using SSH from lan port
		all		Enable remote access using SSH from wan and lan port
		disable		Disable remote access using SSH
	ip	1	xxx.xxx.xxx.xxx	Assign specify IP can use SSH to remote access device
		2		
		3		
	mask	1	xxx.xxx.xxx.xxx	Assign specify subnet mask can use SSH to remote access device
		2		
		3		

EXAMPLE

(A) set remote http access wan

```
>> set remote http access wan
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)
```

(B) set remote http access lan

```
>> set remote http access lan
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)
```

(C) set remote http access all

```
>> set remote http access all
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)
```

(D) set remote http access disable

```
>> set remote http access disable
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)
```

(E) set remote http ip 1 192.168.1.230

```
>> set remote http ip 1 192.168.1.230
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)
```

(F) set remote http mask 1 255.255.255.0

```
>> set remote http mask 1 255.255.255.0
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)
```

(G) set remote ssh access wan

```
>> set remote ssh access wan
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)
```

(H) set remote ssh access lan

>> set remote ssh access lan
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)

(I) set remote ssh access all

>> set remote ssh access all
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)

(J) set remote ssh access disable

>> set remote ssh access disable
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)

(K) set remote ssh ip 1 192.168.1.230

>> set remote ssh ip 1 192.168.1.230
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)

(L) set remote ssh mask 1 255.255.255.0

>> set remote ssh mask 1 255.255.255.0
Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)

“SET INTERFACE” COMMAND

Main command	Sub command	Command description
set	interface	Set interface link mode

EXAMPLE

(A) set interface

```
>> set interface
Interface.
WAN: auto
LAN: auto

Setup WAN port configuration :
Specify auto mode or speed [auto / 10 / 100] :
Specify stealth mode [on / off] :
Setup LAN port configuration :
Specify auto mode or speed [auto / 10 / 100] :
Specify stealth mode [on / off] :

Do you want to apply this setting immediately?
Your current ssh/http connection will be cut off. (y/n)
```

History Command

This command will display all commands which you have used.

Main command	Sub command	Example	Command description
history	none	history	Display all commands which you have used

EXAMPLE

(A) history

```
>> history
1 : get system
2 : history
```

Exit Command

Use this command to exit command shell.

Main command	Sub command	Example	Command description
exit	none	exit	Exit command shell

EXAMPLE

(A) exit

```
>> exit
Logout
Welcome to D-Link DFL-M510 Console Environment
Copyright (C) 2005 D-Link Corp. <www.dlink.com>
DFL-M510 login:
```

Reboot Command

Use this command to reboot system.

Main command	Sub command	Example	Command description
reboot	none	reboot	Reboot system, type "y" to reboot the system.

EXAMPLE

(A) exit

```
>> reboot
Are you sure to reboot system? (y/n)
```

Reset Command

Use this command to reset system configuration to default settings.

Main command	Sub command	Example	Command description
reset	none	reset	Reset system configuration to default settings, type "y" to load default setting.

EXAMPLE

(A) reset

```
>> reset
This will set the system configuration to the default values, and then reboot the system.
Continue? (y/n)
```

Ping Command

Use this command to reset system configuration to default settings.

Main command	Sub command	Example	Command description
ping	xxx.xxx.xxx.xxx	Ping 168.95.192.1	Send ICMP echo request messages

EXAMPLE

(A) ping

```
>> ping 192.168.80.243
PING 192.168.80.243 (168.95.192.1) : 56 data bytes
--- 168.95.192.1 ping statistics ---
1 packets transmitted, 1 packets received, 0% packet loss
Round-trip min/avg/max = 2.2/2.2/2.2 ms
```

APPENDIX B: GLOSSARY

Bandwidth
The transmission capacity of a given device or network

Bit
A Binary Digit (either a one or a zero); a single digit number in base-2. A bit is the smallest unit of computerized data.

Bridge
A device that connects two different kinds of local networks, such as a wireless network to a wired Ethernet.

Browser
A browser is an application program that provide a way to look at and interact with all the information on the World Wide Web

CLI (Command Line Interface)
In this interface, you can use line commands to configure the device or perform advanced device diagnostics and troubleshooting.

Console
This is a device (usually a computer) that you use to manage a networking device via a serial port (RS232) connection.

Crossover Cable
A cable that wires a pin to its opposite pin, for example, RX+ is wired to TX+. This cable connects two similar devices, for example, two data terminal equipment (DTE) or data communications equipment (DCE) devices.

DNS (Domain Name System)
Domain Name System links names to IP addresses. When you access Web sites on the Internet you can type the IP address of the site or the DNS name.

Domain Name
The unique name that identifies an Internet site. Domain Names always have two or more parts that are separated by dots. The part on the left is the most specific and the part on the right is the most general.

Ethernet
A very common method of networking computers in a LAN. There are a number of adaptations to the IEEE 802.3 Ethernet standard, including adaptations with data rates of 10 Mbits/sec and 100 Mbits/sec over coaxial cable, twisted-pair cable and fiber-optic cable. The latest version of Ethernet, Gigabit Ethernet, has a data rate of 1 Gbit/sec.

Events
These are network activities. Some activities are direct attacks on your system, while others might be depending on the circumstances. Therefore, any activity, regardless of severity is called an event. An event may or may not be a direct attack on your system.

FCC (Federal Communications Commission)
The FCC (Federal Communications Commission) is in charge of allocating the electromagnetic spectrum and thus the bandwidth of various communication systems.

Firewall
A hardware or software "wall" that restricts access in and out of a network. Firewalls are most often used to separate an internal LAN or WAN from the Internet.

Flash memory
A nonvolatile storage device that can be electrically erased and reprogrammed so that data can be stored, booted and rewritten as necessary.

FTP (File Transfer Protocol)
File Transfer Protocol is an Internet file transfer service that operates on the Internet and over TCP/IP networks. A system running the FTP server accepts commands from a system running an FTP client. The service allows users to send commands to the server for uploading and downloading files.

Gateway
A gateway is a computer system or other device that acts as a translator between two systems that do not use the same communication protocols, data formatting structures, languages and/or architecture.

HTTP (Hyper Text Transfer Protocol)
The most common protocol used on the Internet. HTTP is the primary protocol used for web sites and web browsers. It is also prone to certain kinds of attacks.

HTTPS (HyperText Transfer Protocol over Secure Socket Layer)
HyperText Transfer Protocol over Secure Socket Layer, or HTTP over SSL is a web protocol that encrypts and decrypts web pages. Secure Socket Layer (SSL) is an application-level protocol that enables secure transactions of data by ensuring confidentiality (an unauthorized party cannot read the transferred data), authentication (one party can identify the other party) and data integrity (you know if data has been changed).

ICMP (Internet Control Message Protocol)
A message control and error-reporting protocol between a host server and a gateway to the Internet ICMP uses Internet Protocol (IP) datagram, but the messages are processed by the TCP/IP software and are not directly apparent to the application user.

IM (Instant Messaging)
IM (Instant Messaging) refers to chat applications. Chat is real-time, text-based communication between two or more users via networked-connected devices.

IP (Internet Protocol)
(Currently IP version 4 or IPv4) The underlying protocol for routing packets on the Internet and other TCP/IP-based networks.

IRC (Internet Relay Chat)
It is a way for multiple users on a system to “chat” over the network.

ISP (Internet Service Providers)
Provide connections into the Internet for home users and businesses. There are local, regional, national, and global ISPs. You can think of local ISPs as the gatekeepers into the Internet.

LAN (Local Area Network)
A shared communication system to which many computers are attached. A LAN, as its name implies, is limited to a local area. LANs have different topologies, the most common being the linear bus and the star configuration.

Logs
Logs are device information that a device is scheduled to send out.

NAT (Network Address Translation)
The translation of an Internet Protocol address used within one network to a different IP address known within another network.

Network
Any time you connect two or more computers together, allowing them to share resources, you have a computer network. Connect two or more networks together and you have an internet.

NIC (Network Interface Card)
A board that provides network communication capabilities to and from a computer system. Also called an adapter.

P2P (Peer-To-Peer)
Peer-to-peer (P2P) is where computing devices link directly to each other and can directly initiate communication with each other; they do not need an intermediary. A device can be both the client and the server.

Packet Filter
A filter that scans packets and decides whether to let them through or not.

Port
An Internet port refers to a number that is part of a URL, appearing after a colon (:), directly following the domain name. Every service on an Internet server listens on a particular port number on that server. Most services have standard port numbers, for example, Web servers normally listen on port 80.

Protocol
A “language” for communicating on a network. Protocols are sets of standards or rules used to define, format and transmit data across a network. There are many different protocols used on networks. For example, most web pages are transmitted using the HTTP protocol.

Router
A device that connects two networks together. Routers monitor, direct and filter information that passes between these networks.

RS-232
RS-232 is an EIA standard which is the most common way of linking data devices together.

Server
A computer, or a software package, that provides a specific kind of service to client software running on other computers.

SSL (Secured Socket Layer)
Technology that allows you to send information that only the server can read. SSL allows servers and browsers to encrypt data as they communicate with each other. This makes it very difficult for third parties to understand the communications.

Subnet Mask
The subnet mask specifies the network number portion of an IP address. Your device will compute the subnet mask automatically based on the IP Address that you entered. You do not need to change the computer subnet mask unless you are instructed to do so.

Switch
A layer-2 network device that selects a path or circuit to send a data packet through.

TCP (Transmission Control Protocol)
TCP is a connection-oriented transport service that ensures the reliability of message delivery. It verifies that messages and data were received.

Telnet
Telnet is the login and terminal emulation protocol common on the Internet and in UNIX environments. It operates over TCP/IP networks. Its primary function is to allow users to log into remote host systems.

Terminal
A device that allows you to send commands to a computer somewhere else. At a minimum, this usually means a keyboard, display screen and some simple circuitry.

TFTP (Trivial File Transfer Protocol)
TFTP is an Internet file transfer protocol similar to FTP (File Transfer Protocol), but it is scaled back in functionality so that it requires fewer resources to run. TFTP uses the UDP (User Datagram Protocol) rather than TCP (Transmission Control Protocol).

Transparent Firewall
A transparent firewall, also known as a bridge firewall, is a device that can act as a bridge and also filter/inspect packets. You do not have to change other network settings when you add a transparent firewall to the network.

URL (Uniform Resource Locator)
URL is an object on the Internet or an intranet that resides on a host system. Objects include directories and an assortment of file types, including text files, graphics, video and audio. A URL is the address of an object that is normally typed in the Address field of a Web browser. A URL is basically a pointer to the location of an object.

WAN (Wide Area Networks)
WANs link geographically dispersed offices in other cities or around the globe including switched and permanent telephone circuits, terrestrial radio systems and satellite systems.

APPENDIX C: FEATURES AND SPECIFICATIONS

Hardware Specification

Ethernet	2 x 10/100 M auto-sensing auto-crossing with frog light
Other port	RS232(9 pin)
LCD Module	Blue background with white light LCD Panel
Power	AC LINE 100-240V AC 50-60Hz 0.8A MAX
Dimension (L*D*H, mm)	440mm * 250mm * 44mm

Features Specification

Application Detection / Prevention / Management

Application Class	Application Type	Application Name	Control Points
1. Message Exchange	*Instant Messengers (IM)	1. MSN 2. Yahoo Messenger 3. ICQ 4. AIM 5. QQ 6. IChat (MAC) 7. Odigo 8. Trillian	1. Login 2. Send/Receive Message 3. Send File 4. File Type/Name/Size 5. Receive File 6. VoIP Establishment 7. Video Establishment 8. White Board Establishment
2. Internet File Sharing	*Peer-to-Peer (P2P)	1. EzPeer 2. eDonkey 3. Skype 4. eMule 5. Kazaa 6. Limwire 7. BitTorrent 8. Grokster 9. Gnutella 10. Shareaza	1. Connection Establishment

		11. Morpheus 12. Bearshare 13. WimMX	
3. Web Application Control	Web Browser (HTTP/HTML)	1. Web Mail 2. Web Uploading 3. Web Download 4. Web Posting 5. Web IM 6. Web URL Filter 7. Web Content	1. Login 2. Post/Put 3. Upload 4. Download 5. URL 6. Keyword 7. Cookie Retrieval
	Java Applet /ActiveX Application	1. Anti-WebPage 2. Kidnap Webpage	1. ActiveX/Java Applet Download
4. File Transfer	*FTP	1. FTP Applications 2. FlashGet 3. GetRight 4. NetTranport	1. Login/Password 2. Download File 3. Upload File
5. Media	*Streaming Media	1. Media Player 2. RealOne 3. Winamp	1. Connection Establishment
	Internet Audio	Radio on line	1. Connection
6 Mail	SMTP		1. Restricted “mail from” Address 2. Restricted “rcpt to”
	POP3		Login/Password
	IMAP4		Login/Password
	Mail Content		Keyword Matching
Intranet Illegal Agent	*Illegal Intranet-Internet Tunnel	1. SoftEther	Connection Establishment
	Spyware		Block Outgoing Information
	*Backdoor / Trojan	1. Backorifice 2. Subseven	Deny Replying to Hacker
Troubleshooting	Victim	1. Worm affected	Detect affected packet

Helper	Identification	Hosts 2. Trojan affected Hosts 3. Spyware/ADware affected Hosts 4. Intruded Hosts	generated by Victim

LCM Module

Main Menu	Sub-Menu	Description
Device Status	System Info.	Firmware Ver
		Policy Ver
		Policy Number
		Current Date
		Current Time
		Dev. Up Time
		CPU Load
		Memory Usage
		Current Session
	Traffic Info.	WAN RX
		WAN Drop
		LAN RX
		LAN Drop
		Traffic Level
	Alert Monitor	Traffic Alert
Device Config	IP Info,	Device Name
		IP Address
		IP Mask
		Gateway IP
		DNS IP
		Operation Mode
	Interface Info.	LAN Link Mode
		LAN Stealth

		WAN Link Mode
		WAN Stealth
Reset	Reset Confirm	
Reboot	Reboot Confirm	

Other Specifications

Performance: 30-40 Mbps (All function enabled), Wires peed for L3 switching
Concurrent Users: 150
Concurrent TCP Sessions: 4,000

Mechanic & ID Design Front LED indicators

Function	Naming	Color	Status	LED description
Power	Power	Green	Off	Power off
			On	Power on
System	System	Green	Off	Power off (System not ready)
			On	System ready and running ok
Bypass	Bypass	Red	Off	System bypass not enable
			On	System bypass or failed
Inbound (left)	Inbound (LAN)	Green	Off	Ethernet link ok, and the speed is 10Mbps
			On	Ethernet link ok, and the speed is 100Mbps
Inbound (right)		Yellow	Off	No packet forwarding
			ON	Link
			Blinking	Act
Outbound (left)	Outbound (WAN)	Green	Off	Ethernet link ok, and the speed is 10 Mbps
			On	Ethernet link ok, and the speed is 100Mbps
Outbound		Yellow	Off	No packets Send/Receive
(right)			On	Link
			Blinking	Act

Physical Environment

Power

~ 25W Open Frame Switching Power Supply, Input AC range 100 ~ 240V 50/60Hz.

Operation Temperature

0 – 60

Storage Temperature

-20 – 70

Humidity

Operation: 10%~90% RH
Storage: 5%~90% RH

INDEX