D-Link®

Model DVG-1120M
VoIP Station Gateway
Draft User's Guide

Rev. 01 (March 2002)
6DVG1120S.01
Printed in Taiwan

RECYCLABLE

Trademarks

Copyright ©2000 D-Link Corporation.
Contents subject to change without prior notice.
D-Link is a registered trademark of D-Link Corporation/D-Link Systems, Inc. All other trademarks belong to their respective proprietors.

Copyright Statement

No part of this publication may be reproduced in any form or by any means or used to make any derivative such as translation, transformation, or adaptation without permission from D-Link Corporation/D-Link Systems Inc., as stipulated by the United States Copyright Act of 1976.

Hardware:

D-Link warrants each of its hardware products to be free from defects in workmanship and materials under normal use and service for a period commencing on the date of purchase from D-Link or its Authorized Reseller and extending for the length of time stipulated by the Authorized Reseller or D-Link Branch Office nearest to the place of purchase.

This Warranty applies on the condition that the product Registration Card is filled out and returned to a D-Link office within ninety (90) days of purchase. A list of D-Link offices is provided at the back of this manual, together with a copy of the Registration Card.

If the product proves defective within the applicable warranty period, D-Link will provide repair or replacement of the product. D-Link shall have the sole discretion whether to repair or replace, and replacement product may be new or reconditioned. Replacement product shall be of equivalent or better specifications, relative to the defective product, but need not be identical. Any product or part repaired by D-Link pursuant to this warranty shall have a warranty period of not less than 90 days, from date of such repair, irrespective of any earlier expiration of original warranty period. When D-Link provides replacement, then the defective product becomes the property of D-Link.

Warranty service may be obtained by contacting a D-Link office within the applicable warranty period, and requesting a Return Material Authorization (RMA) number. If a Registration Card for the product in question has not been returned to D-Link, then a proof of purchase (such as a copy of the dated purchase invoice) must be provided. If Purchaser's circumstances require special handling of warranty correction, then at the time of requesting RMA number, Purchaser may also propose special procedure as may be suitable to the case.

After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. The package must be mailed or otherwise shipped to D-Link with all costs of mailing/shipping/insurance prepaid. D-Link shall never be responsible for any software, firmware, information, or memory data of Purchaser contained in, stored on, or integrated with any product returned to D-Link pursuant to this warranty.

Any package returned to D-Link without an RMA number will be rejected and shipped back to Purchaser at Purchaser's expense, and D-Link reserves the right in such a case to levy a reasonable handling charge in addition mailing or shipping costs.

Software:

Warranty service for software products may be obtained by contacting a D-Link office within the applicable warranty period. A list of D-Link offices is provided at the back of this manual, together with a copy of the Registration Card. If a Registration Card for the product in question has not been returned to a D-Link office, then a proof of purchase (such as a copy of the dated purchase invoice) must be provided when requesting warranty service. The term "purchase" in this software warranty refers to the purchase transaction and resulting license to use such software.

D-Link warrants that its software products will perform in substantial conformance with the applicable product documentation provided by D-Link with such software product, for a period of ninety (90) days from the date of purchase from D-Link or its Authorized Reseller. D-Link warrants the magnetic media, on which D-Link provides its software product, against failure during the same warranty period. This warranty applies to purchased software, and to replacement software provided by D-Link pursuant to this warranty, but shall not apply to any update or replacement which may be provided for download via the Internet, or to any update which may otherwise be provided free of charge.

D-Link's sole obligation under this software warranty shall be to replace any defective software product with product which substantially conforms to D-Link's applicable product documentation. Purchaser assumes responsibility for the selection of appropriate application and system/platform software and associated reference materials. D-Link makes no warranty that its software products will work in combination with any hardware, or any application or system/platform software product provided by any third party, excepting only such products as are expressly represented, in D-Link's applicable product documentation as being compatible. D-Link's obligation under this warranty shall be a reasonable effort to provide compatibility, but D-Link shall have no obligation to provide compatibility when there is fault in the third-party hardware or software. D-Link makes no warranty that operation of its software products will be uninterrupted or absolutely error-free, and no warranty that all defects in the software product, within or without the scope of D-Link's applicable product documentation, will be corrected.

D-Link Offices for Registration and Warranty Service

The product's Registration Card, provided at the back of this manual, must be sent to a D-Link office. To obtain an RMA number for warranty service as to a hardware product, or to obtain warranty service as to a software product, contact the D-Link office nearest you. An addresses/telephone/fax list of D-Link offices is provided in the back of this manual.

LIMITATION OF WARRANTIES

IF THE D-LINK PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, THE CUSTOMER'S SOLE REMEDY SHALL BE, AT D-LINK'S OPTION, REPAIR OR REPLACEMENT. THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. D-LINK NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION MAINTENANCE OR USE OF D-LINK'S PRODUCTS

D-LINK SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THAT THE ALLEGED DEFECT IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY THE CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLECT, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPTS TO REPAIR, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING OR OTHER HAZARD.

LIMITATION OF LIABILITY

IN NO EVENT WILL D-LINK BE LIABLE FOR ANY DAMAGES, INCLUDING LOSS OF DATA, LOSS OF PROFITS, COST OF COVER OR OTHER INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES ARISING OUT THE INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE OR INTERRUPTION OF A D- LINK PRODUCT, HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY. THIS LIMITATION WILL APPLY EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

IF YOU PURCHASED A D-LINK PRODUCT IN THE UNITED STATES, SOME STATES DO NOT ALLOW THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

FCC Warning

This equipment has been tested and found to comply with the limits for a Class B 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 receiver.

-Connect the equipment into 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.

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

(1) This device may not cause harmful interface.

(2) This device must accept any interference received, including interference that may cause undesired operation.

.

Table of Contents

INTRODUCTION 1

FEATURES 1

UNPACKING AND SETUP 2

UNPACKING 2
IDENTIFYING EXTERNAL COMPONENTS 2
Front Panel 2
Rear Panel 2
PHYSICAL INSTALLATION 3
CONNECTING THE NETWORK CABLE 3
Connecting the LAN Port of VoIP Gateway to a PC 4
Connecting the LAN Port of VoIP Gateway to a Hub/Switch 4

UNDERSTANDING INDICATORS 5

CONFIGURATION 6

CONFIGURING THE VOIP GATEWAY 6
Configuring the VoIP Gateway using a Console 6
Setting Up a Console 6
Configuring the VoIP Gateway Using Telnet 7
Console Usage Conventions 7
First Time Connecting To The VoIP Gateway 7
Configuration Settings 8
Configuring the VoIP Gateway using a Web Browser 10
Setting Up the Connection 10

USING THE CONSOLE PORT 20

Configuration Setting 21
Firmare Upgrade 22
Config IP 23

WEB-BASED MANAGEMENT 26

INTRODUCTION 26
GETTING STARTED 26
MANAGEMENT 26
Config IP - Config Device IP Address 27
Config IP – IP Information 28
Config IP – Config Call Agent IP Address 28
Device Information 30
XML Provisioning 30
Telephony Configuration 31
ACR Configuration-VoIP 32
ACR Configuration-Life Line 34
IP Filter 36
Routing - RIP 39
Routing - Static Route Configuration 40
DHCP Configuration - Dynamic IP Assignment 43
DHCP Configuration - Static IP Assignment 44
NAT Configuration - NAT Configuration 46
NAT Configuration - Local Server Configuration 47
SNMP Trap Configuration 49
Administration Management 50
Monitor - Ethernet Statistics 51
Monitor - DSP Statistics 52
Monitor - Tcid Configuration 53
Monitor - Coding Profile 54
Monitor - XGCP Configuration 54
Firmware Update 56
Factory Reset 57
Save Changes 58

COMMAND LINE INTERFACE **59**
General Setup Commands 59
TFTP Client Setup Commands 61
SPECIFICATIONS **63**

1

Introduction

Thank you for choosing the D-Link DVG-1120M, the value leader for VoIP products.

The D-Link DVG-1120M VoIP Station Gateway links traditional telephony networks to IP networks with conventional telephony devices such as analog phones or fax machines. The DVG-1120M includes two loop start Foreign Exchange Subscriber (FXS) interfaces with normal RJ-11 telephone connectors that provide voice/fax communication over the IP network, and it also provide two Ethernet ports. One Ethernet port is for a DSL/Cable Modem or other WAN devices, and the other is for connection to create a home or small office LAN networks. The built-in DHCP server/client and Network Address Translation (NAT) function automatically assign IP address for LAN users, allowing multiple users to share a single Internet connection. It can be configured/monitored via the Console, Web browser or Telnet and SNMP management is also supported.

By routing calls over the Internet or any IP network, this gateway can reduce or eliminate long distance or inter-office phone charges. Corporations can also enjoy the benefits of network consolidation and reduction of leased lines by relying on the Internet service providers to deliver toll-quality voice communications over the IP networks.

Features

Designed for versatility and performance, the DVG-1120M VoIP Gateway provides the following features:

- Two analog loop-start FXS interfaces using female RJ-11 connectors
- One analog POTS interface for PSTN Life Line
- One 10Mbps WAN port for connecting to a DSL/Cable Modem or other WAN devices
- One 10/100Mbps LAN port for connecting to a local network
- IP address assignment using DHCP (Dynamic Host Configuration Protocol) or static configuration
- IP Routing support (RIP1, RIP2 and Static Routing)
- Command port for easy configuration
- Remote software download/update
- Support IP sharing to allow multiple users to access the Internet via a single IP address
- Build-in PPPoE function to support dial-up connection for broadband technology
- Support Caller ID
- Support QoS to guarantee voice quality
- Automatic Call Re-direction (ACR) function support
    1. PSTN or VoIP line automatic selection (e.g. 110, 119)
    2. PSTN/ VoIP routing table support
- Life Line support
    3. PSTN/VoIP line selection manually (VoIP/PSTN Call alternation via configurable hot key)
    4. Listening of incoming call from PSTN

2

Unpacking and Setup

Unpacking

Open the shipping carton and carefully remove all items. In addition to this User's Guide, ascertain that you have:

- One DVG-1120M VoIP Gateway
- A/C Power Adapter

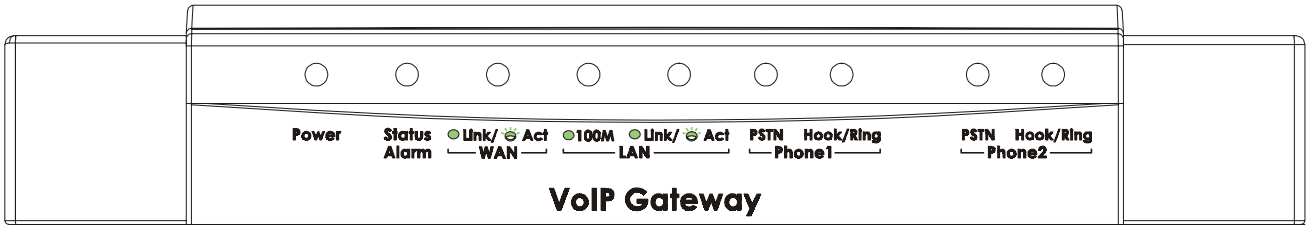
If any item is found missing or damaged, please contact your local reseller or D-Link directly at one of the offices listed at the rear of the manual for replacement.

Identifying External Components

This section identifies all the major external components of the device. Both the front and rear panels are shown, followed by a description of each panel feature. The indicator panel is described in detail in the next chapter.

Front Panel

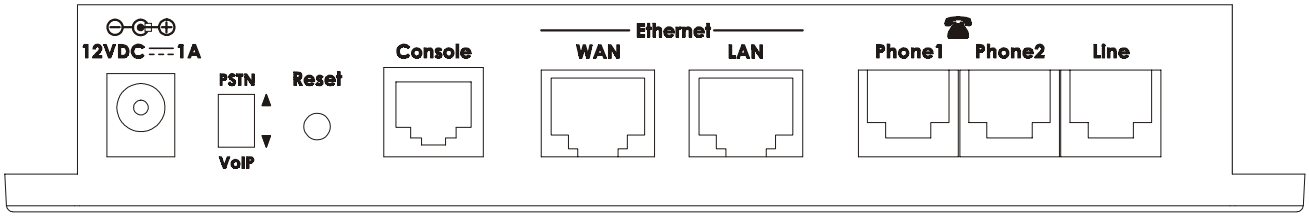
The figure below shows the front panels of the device.



LED Indicator Panel Refer to the next chapter, "Understanding Indicators," for detailed information about each of the VoIP Gateway's LED indicators.

Rear Panel

The figure below shows the rear panel of the device.



AC Power Connector For the included power adapter. If you use a power adapter other than the one included with the product please make sure it has a DC output of 12VDC/1A.
PSTN/VoIP Switch Used the Hardware switch to select PSTN or VoIP mode
When the switch is in the down position (shown below), the Phone lines will be in VoIP Mode.
PSTN

VoIP
When the switch is in the up position (shown below), the Phone lines will be configured to PSTN Mode. Only one phone line can use the PSTN line simultaneously for security issue when it switch to PSTN mode..
PSTN

VoIP
Reset Switch Used to return the device to its original configuration. This is the same as performing a factory reset.
Diagnostic Port An RJ-14 port used to configure the device. (User needs a RJ-14 to RS-232 converter). Plug one end of a straight-through wired RJ-14 cable to the device and the other end to a serial port of a PC running a terminal emulation program (such as Microsoft HyperTerminal) or a VT-100 terminal.
Ethernet WAN A 10Mbps Ethernet port fitted with an RJ-45 connector used to connect the VoIP gateway to a WAN device (e.g. Cable/ADSL Modem). This port accepts Category 3, 4 or 5 UTP cabling with an RJ-45 connector.
Ethernet LAN A 10/100Mbps dual-speed Ethernet port fitted with an RJ-45 connector used to connect the VoIP gateway to a LAN device (hub, switch, PC, etc.). This port accepts Category 5 or better UTP cabling with an RJ-45 connector.
Phone 1 to 2 Normal RJ-11 phone jacks used to connect telephones and fax machines. Plug your normal telephone(s) and/or fax machine directly into any of these jacks.
Line RJ-11 phone jack for connecting to a standard telephone wall outlet through an approved (No. 26 AWG or larger) telecommunications line cord.

Physical Installation

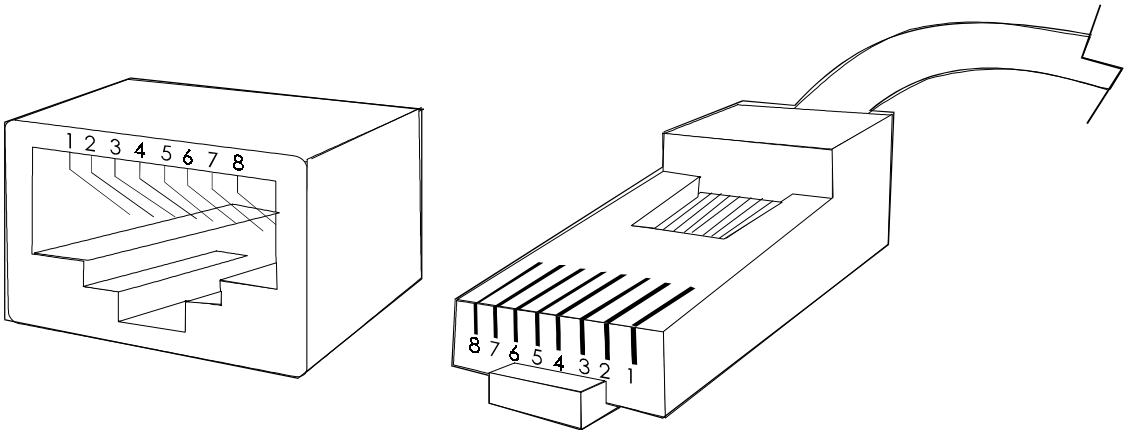
Use the following guidelines when choosing a place to install the VoIP Gateway:

- The surface must support at least 1 kg.
- The power outlet should be within 1.82 meters (6 feet) of the device.
- Visually inspect the power cord and see that it is secured to the AC power connector.
- Make sure that there is proper heat dissipation from and adequate ventilation around the device. Do not place heavy objects on the unit.

When installing the unit on a desktop or shelf, the rubber feet included with the device should first be attached. Attach these cushioning feet on the bottom at each corner of the device. Allow adequate space for ventilation between the device and the objects around it.

Connecting the Network Cable

Category 3, 4 or 5 UTP cable can be used to make the Ethernet connection to your WAN devices (e.g. Cable/ADSL Modem).



The maximum cable run between the DVG-1120M and the supporting call agent is 100 meters. The cable must be *straight* (not a *crossover* cable) with RJ-45 connectors at each end. Make the network connection by plugging one end of the cable into the RJ-45 jack of the DVG-1120M, and the other end into a port on your WAN devices.

Connecting the LAN Port of VoIP Gateway to a PC

Once the device has been connected to a PC, you will need a straight cable.

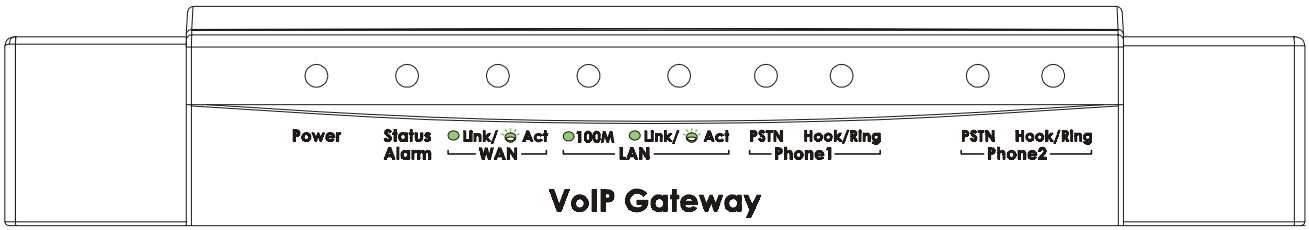
Connecting the LAN Port of VoIP Gateway to a Hub/Switch

To connect the device to either a hub or switch, you must connect the straight cable to the Uplink port.

3

Understanding Indicators

Before configuring your VoIP Gateway, take a few minutes to look over this section and familiarize yourself with the front panel LED indicators depicted below.



Power This LED is lit when the device is receiving power; otherwise, it is unlit.
Status/Alarm This LED will remain green when the CPE is either performing a self-test or booting up. The LED will flash green slowly when the system is ready for a connection with the Call Agent. It will remain red when the self-test or booting up is failed. It will flash red slowly when the system is ready but cannot receive an acknowledgement from the Call Agent.
WAN This LED displays the link status and activity on the 10M Ethernet port that is used to connect to your WAN device (usually a Cable or ADSL Modem). When a good link to a powered-up but idle device is detected on a port, the WAN indicator shines steadily. When packets are received from the device, the indicator blinks off and on.
LAN This LED displays the connection speed, link status, and activity on the 10/100 dual-speed Ethernet port that is used to connect to your LAN.

10/100M – This indicator remains unlit when there is no connection, or the port is operating at 10Mbps through a connection to a 10BASE-T device. It is lit when the port is operating at 100Mbps through a connection to a dual-speed or 100BASE-TX Fast Ethernet device.

Link/Act – When a good link to a powered-up but idle device is detected on a port, this indicator shines steadily. When packets are received from the device, the indicator blinks off and on.

Phone 1 to 2 This LED displays the PSTN status and Hook/Ringing activity on the RJ-11 port that is used to connect to your normal telephone(s)/fax machine and PSTN line.

PSTN – Lights when PSTN line is in use.

Hook/Ringing – When an off-hook action is detected on a phone port, this indicator shines steadily. When a ringing signal is received from the device, the indicator blinks off and on.

NOTE: If a powered-up device is connected to a port and the port's Link/Act status indicator is unlit, the most probable cause is a cabling or connection problem (for example, wrong cable type or bad contact) or a device malfunction.

4

Configuration

In order to use the DVG-1120M VoIP gateway, you must first configure it.

Configuring the VoIP Gateway

There are two ways to configure the VoIP gateway, both of which are discussed below. They are:

- Using a terminal or PC running terminal emulation software connected to the diagnostic port via an RS-232 cable. In the discussion below, the terminal (or PC) is referred to as a console and the connection a console connection.
- Using a web browser on a PC connected to the device via the WAN or LAN Ethernet connections. In the discussion below, the PC running the browser is referred to as the management station.

Configuring the VoIP Gateway using a Console

Setting Up a Console

First-time configuration must be carried out through a "console," that is, either (a) a VT100-type serial data terminal, or (b) a computer running communications software set to emulate a VT100. The console must be connected to the Diagnostics port. This is an RS-232 port with a 9-socket D-shell connector and DCE-type wiring. Make the connection as follows:

1. Obtain suitable cabling for the connection.

   You can use either (a) a "null-modem" RS-232 cable or (b) an ordinary RS-232 cable and a null-modem adapter. One end of the cable (or cable/adapter combination) must have a 9-pin D-shell connector suitable for the Diagnostics port; the other end must have a connector suitable for the console's serial communications port.

2. Power down the devices, attach the cable (or cable/adapter combination) to the correct ports, and restore power.

3. Set the console to use the following communication parameters for your terminal:

   - 9600 baud
   - VT-100/ANSI compatible
   - No parity checking (sometimes referred to as "no parity")
   - 8 data bits (sometimes called a "word length" of 8 bits)
   - 1 stop bit (sometimes referred to as a 1-bit stop interval)
   - No Flow control
   - VT-100/ANSI compatible
   - Arrow keys enabled

Configuring the VoIP Gateway Using Telnet

Once you have set an IP address for your device, you can use a Telnet program (in a VT-100 compatible terminal mode) to access and configure it. Most of the screens are identical, whether accessed from the console port or from a Telnet interface.

Console Usage Conventions

The console interface makes use of the following conventions:

Items in <angle brackets> can be toggled on or off using the space bar.

Items in [square brackets] can be changed by typing in a new value. You can use the Backspace and Delete keys to erase characters behind and in front of the cursor.

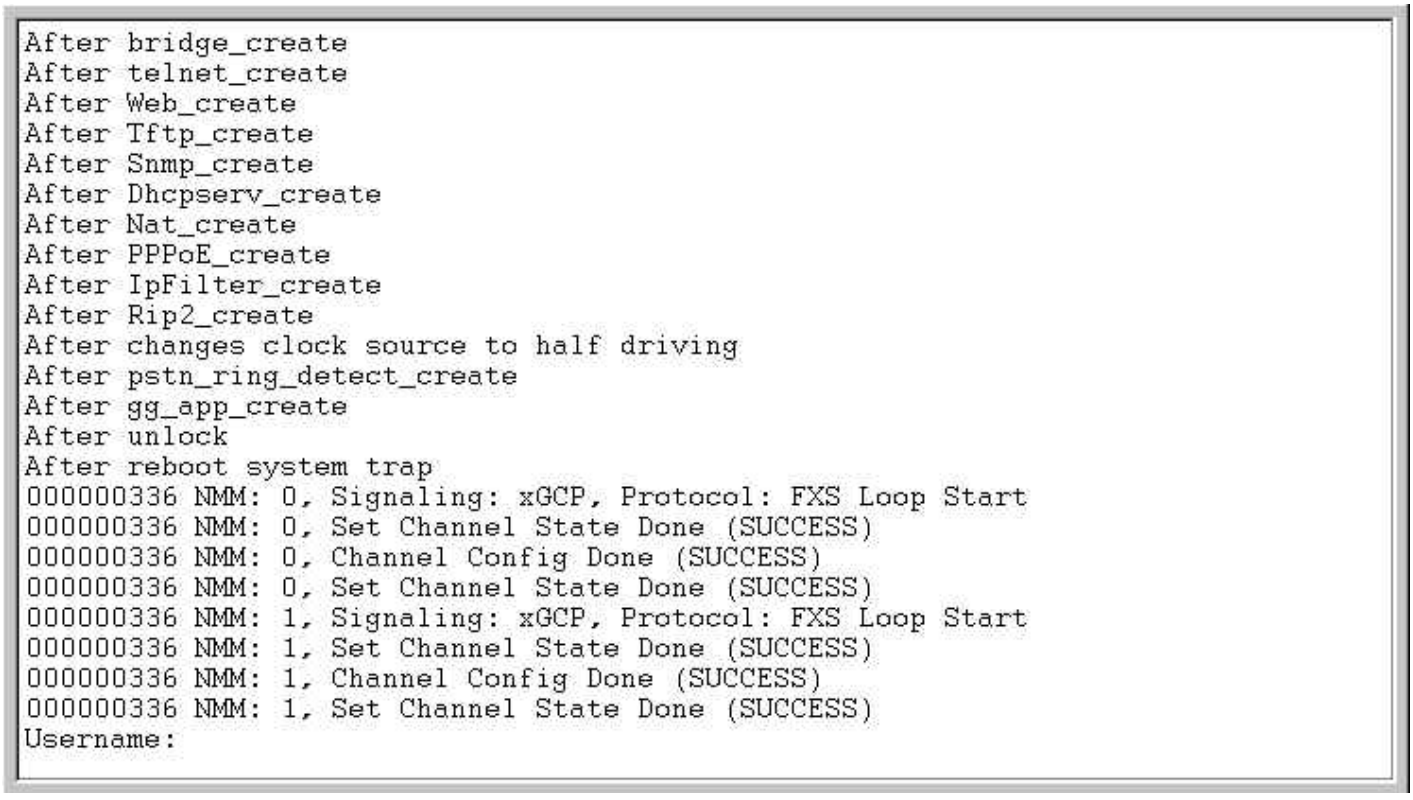
The up and down arrow keys, the left and right arrow keys, the Tab key and the Backspace key can be used to move between selected items. It is recommended that you use the Tab key and Backspace key for moving around the console.

Items in UPPERCASE are commands. Moving the selection to a command and pressing Enter will execute that command, e.g. APPLY, etc.

Please note that the command APPLY only applies for the current session. Use **Save Changes** from the **Main Menu** for permanent changes.

First Time Connecting To The VoIP Gateway

First make the console connection to the device and then power it on. If your terminal (or terminal emulation program) is properly configured according to the specifications defined above, you will see the boot up process. After the process complete, you can see a window shown below.



Initial Screen, First Time Connecting to the device

Initially, the VoIP gateway does not have a Username or Password. To log in, simply click on the <Enter> twice. The following window will be displayed:

```
After Tftp_create
After Snmp_create
After Dhcpserv_create
After Nat_create
After PPPoE_create
After IpFilter_create
After Rip2_create
After changes clock source to half driving
After pstn_ring_detect_create
After gg_app_create
After unlock
After reboot system trap
000000336 NMM: 0, Signaling: xGCP, Protocol: FXS Loop Start
000000336 NMM: 0, Set Channel State Done (SUCCESS)
000000336 NMM: 0, Channel Config Done (SUCCESS)
000000336 NMM: 0, Set Channel State Done (SUCCESS)
000000336 NMM: 1, Signaling: xGCP, Protocol: FXS Loop Start
000000336 NMM: 1, Set Channel State Done (SUCCESS)
000000336 NMM: 1, Channel Config Done (SUCCESS)
000000336 NMM: 1, Set Channel State Done (SUCCESS)
Username:
Password:

192.168.15.1>
```

The prompt " 192.168.15.1> " is the default LAN IP address.

Configuration Settings

You can type **nwdbg** to see the all of configuration commands. (Shown below)

```
After Tftp_create
After Snmp_create
After Dhcpserv_create
After Nat_create
After PPPoE_create
After IpFilter_create
After Rip2_create
After changes clock source to half driving
After pstn_ring_detect_create
After gg_app_create
After unlock
After reboot system trap
000000336 NMM: 0, Signaling: xGCP, Protocol: FXS Loop Start
000000336 NMM: 0, Set Channel State Done (SUCCESS)
000000336 NMM: 0, Channel Config Done (SUCCESS)
000000336 NMM: 0, Set Channel State Done (SUCCESS)
000000336 NMM: 1, Signaling: xGCP, Protocol: FXS Loop Start
000000336 NMM: 1, Set Channel State Done (SUCCESS)
000000336 NMM: 1, Channel Config Done (SUCCESS)
000000336 NMM: 1, Set Channel State Done (SUCCESS)
Username:
Password:

192.168.15.1>nwdbg
```

```
nwdbg ca <NOTIFY ENTITY>       - set the notify entity, the format can be :
                               -      [domainName|ip]:port
                               -      [domainName|ip]
nwdbg rgw <STRING OF RGW NAME> - set the gateway raw name
nwdbg dns [DNS IP]             - set the dns ip
nwdbg dns [disable|enable]     - set the dns state
***** use save-changes command to activate the above setting
--------------------------------------------------------------------------------

nwdbg bridge [on|off]     - on/off software bridge
nwdbg bridge 0 [10 to 60] - 10M rx watermark
nwdbg bridge 1 [26 to 60] - N-way rx watermark
--------------------------------------------------------------------------------

nwdbg prov [disable*|enable|useproxy]
nwdbg prov url [prov_server_url]
nwdbg prov proxy [proxy_name_or_address]
nwdbg prov proxyport [port]  - default proxy port = 8080
nwdbg prov test  [direct|proxy]  - test provsioning feature
--------------------------------------------------------------------------------

nwdbg [config|mac|ip|...] - show [all|mac|...] configuration
192.168.15.1>_
```

This **192.168.15.1>** command line allows you to enter the related commands for the initial configuration of this device.

To verify the version, type **show version**:

192.168.15.1>*show version*

To check the LAN & WAN ip information, type **nwdbg ipgw**:

192.168.15.1>*nwdbg ipgw*

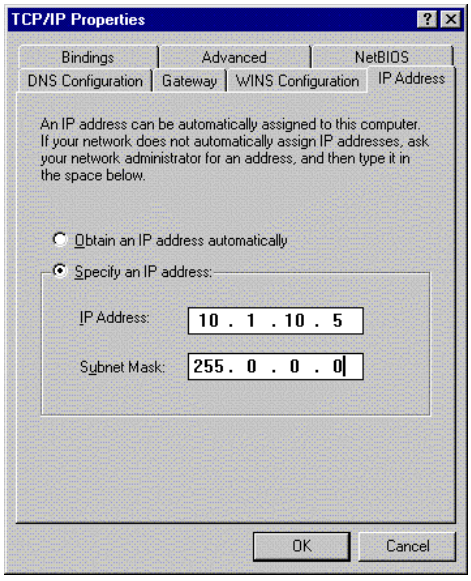
```
        Clock Mult          = 4
        Fsx Fsr             = 2
        Pwr Dn Tmr Period   = 5000
        Wake Up Int Mask    = 0
        HW Companding       = 1
        Serial Port Config  = 0
        Sync Int Config     = 1
        Clock Out Config    = 1
        Hint Control        = 0x0
        BDX Delay Control   = 0
        HW Gain Control     = 0
        PktIsr TS Offset    = 0
        Sample Freq (IPP)   = 0
        Serial Port Type    = 1
        Analog Codec Type   = 0
        Hpi Fifo Size       = 894
        Serial Port Assigm  = 16

192.168.15.1>nwdbg ipgw
Default gateway:  10.1.1.254
WAN IF:  IP 10.43.15.6,  Mask 255.0.0.0
LAN IF:  IP 192.168.15.1,  Mask 255.255.255.0
OK
192.168.15.1>
```

Configuring the VoIP Gateway using a Web Browser

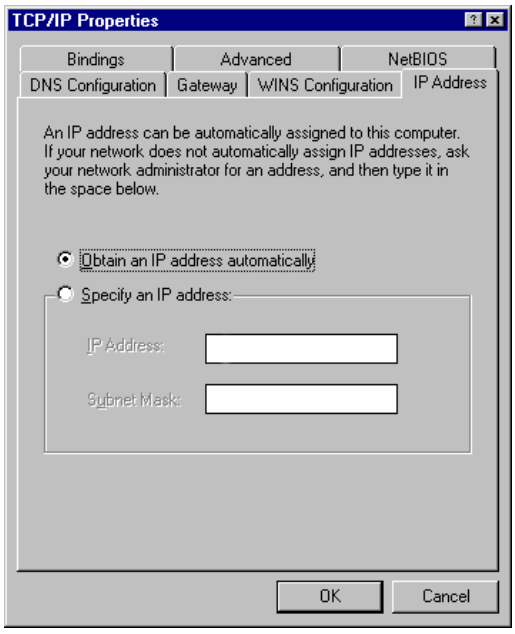
Setting Up the Connection

In order to use a web browser to configure the VoIP gateway, you must make sure it has a valid Ethernet connection to a PC or LAN via its LAN or WAN ports.

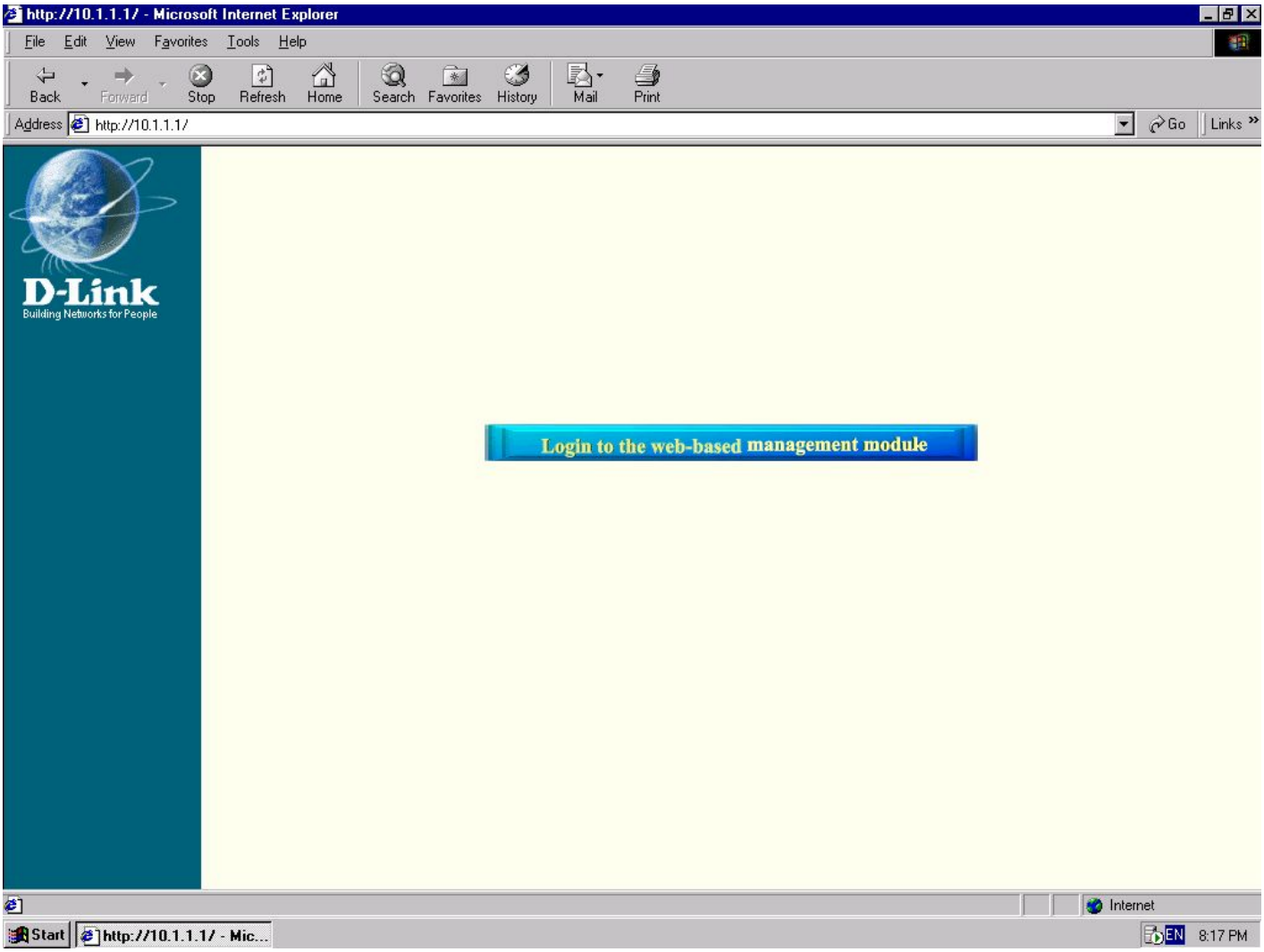
The VoIP gateway's WAN port comes with a DHCP as default IP setting. If the VoIP gateway cannot get the assigned DHCP IP, it will use the manual IP (default is 10.1.1.1) as it's default IP. You must make sure the PC is in the same IP domain as the VoIP gateway. You can do this by changing the IP address of the PC as shown below.



Or you can access the VoIP gateway througt the LAN port. Its default IP address is 192.168.15.1 You must make sure the PC is in the same IP domain as the VoIP gateway. You can do this by changing the IP address of the PC as shown below.



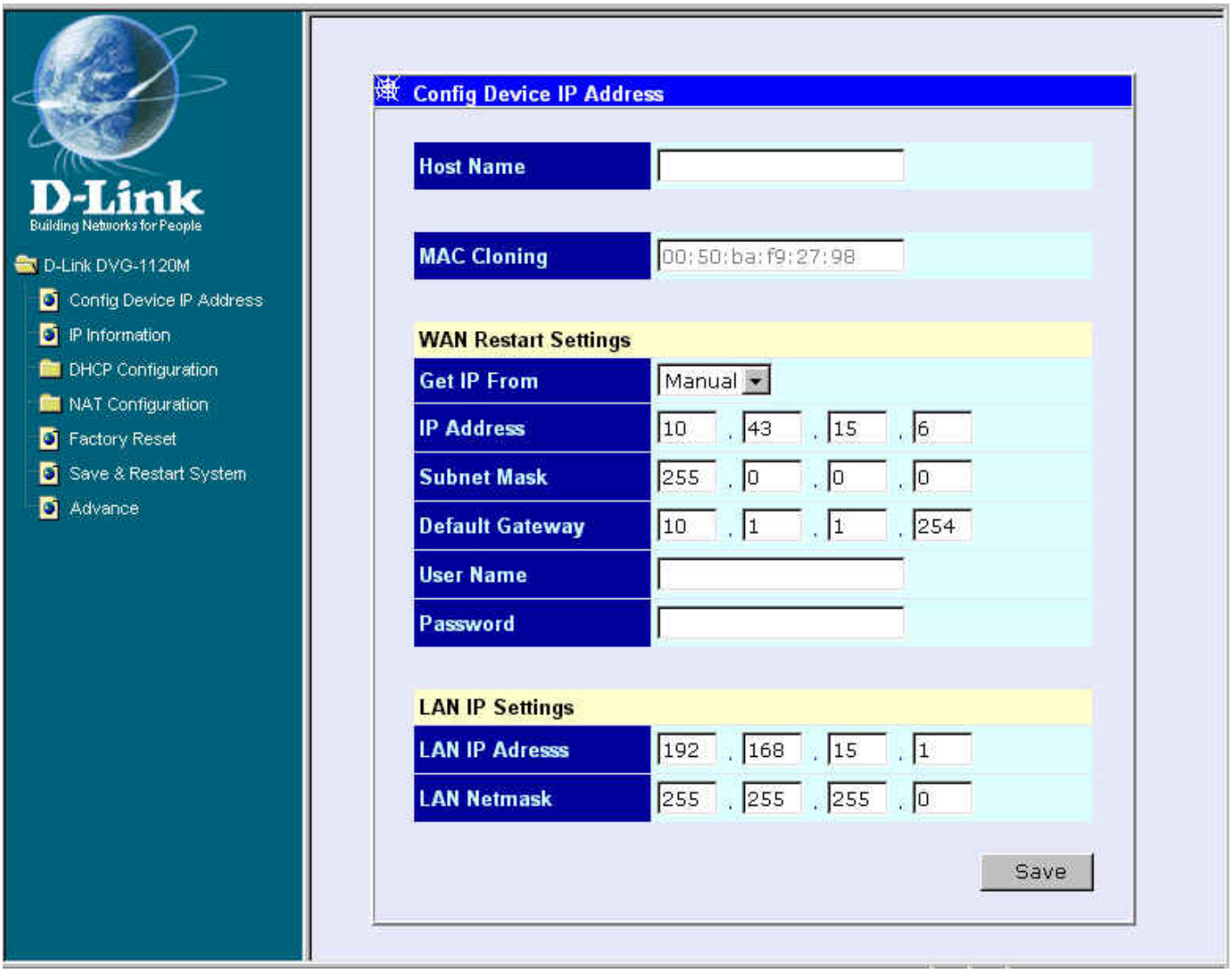
Once this is done, run any browser on the PC and point it to the default IP address of the VoIP as shown below:



Initial Window, First Time Connecting to the Web-Based Management Module

Click on the *Login to the web-based management module* button in the middle of the window.

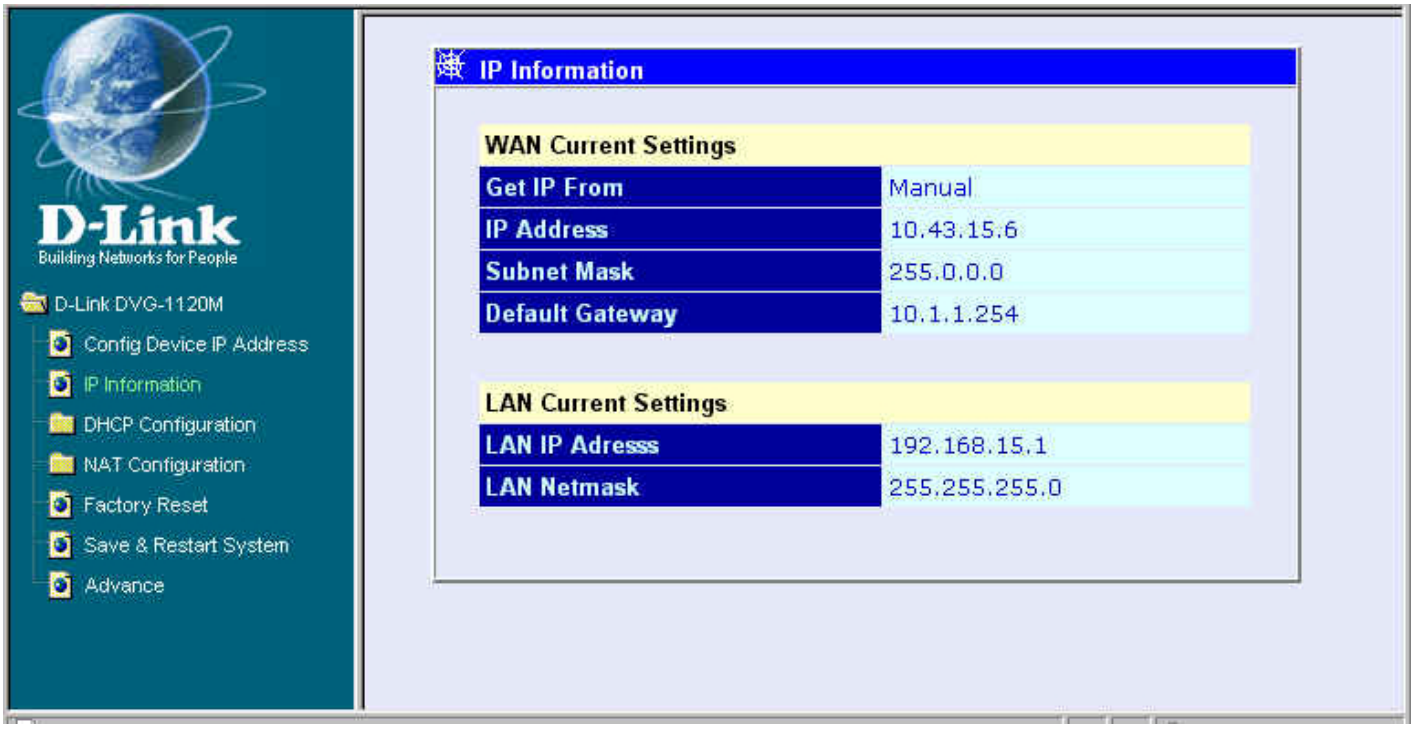
The following window will be displayed:



Device Information window

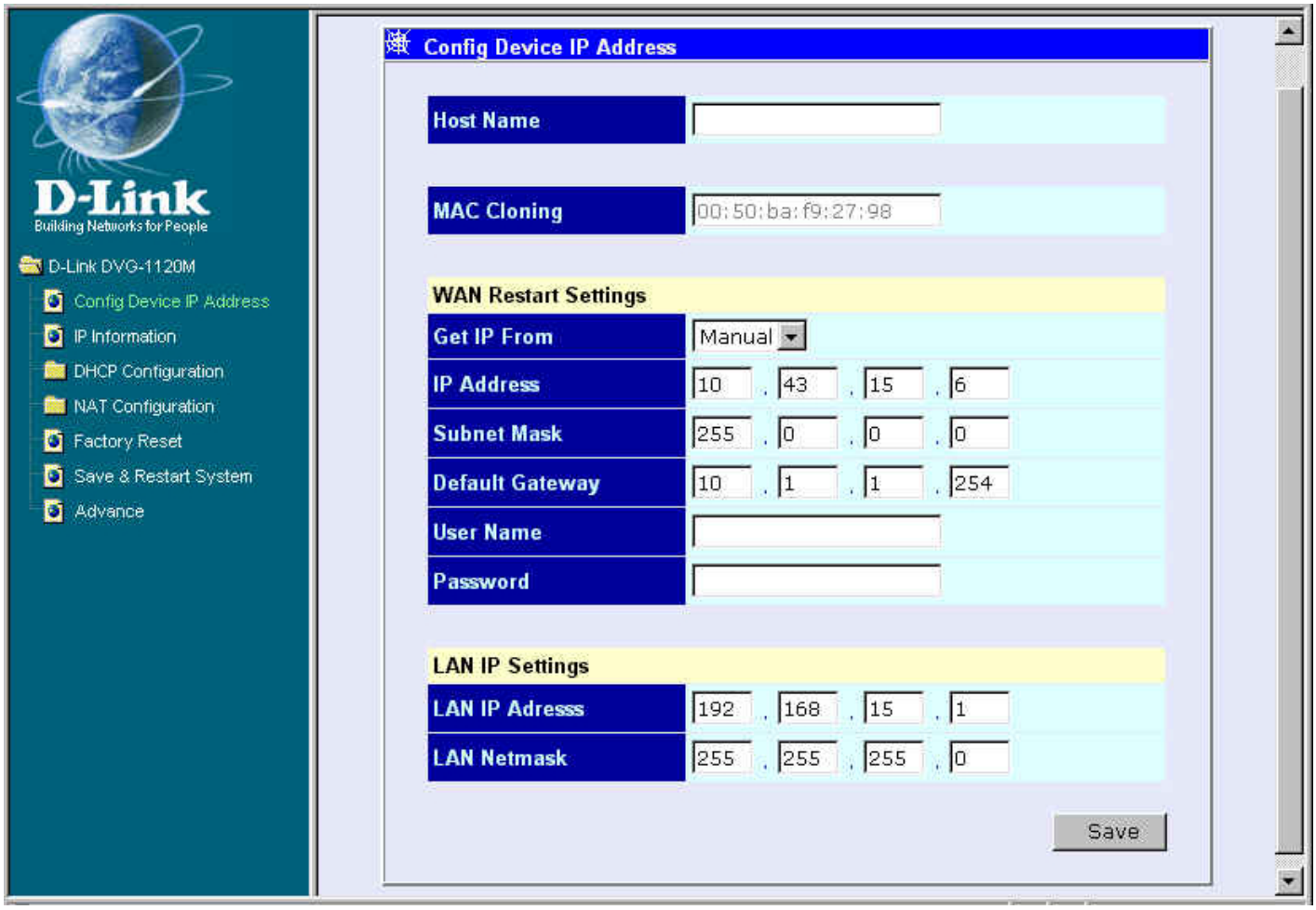
To see the brief IP setting of WAN and LAN, click on the **IP Information page** on the left-hand side of the window (shown below).

The following window will appear on the right-hand side.



To begin configuring the device, click on the **Config Device IP Address** page on the left-hand side of the window.

Next, click on **Config Device IP Address**. The following window will appear:



Configure Device IP Address window

The items on this window are described below:

- **Host Name** This is a user-defined host name for this VoIP Gateway.
- **MAC Cloning** The cloned MAC of the VoIP Gateway.

WAN Restart Settings

Get IP From Choose the method the VoIP gateway will use to obtain its IP settings once it is rebooted (restarted). Choices include:

Manual – When Manual is chosen, the VoIP gateway will obtain its IP settings from the fields located just below.

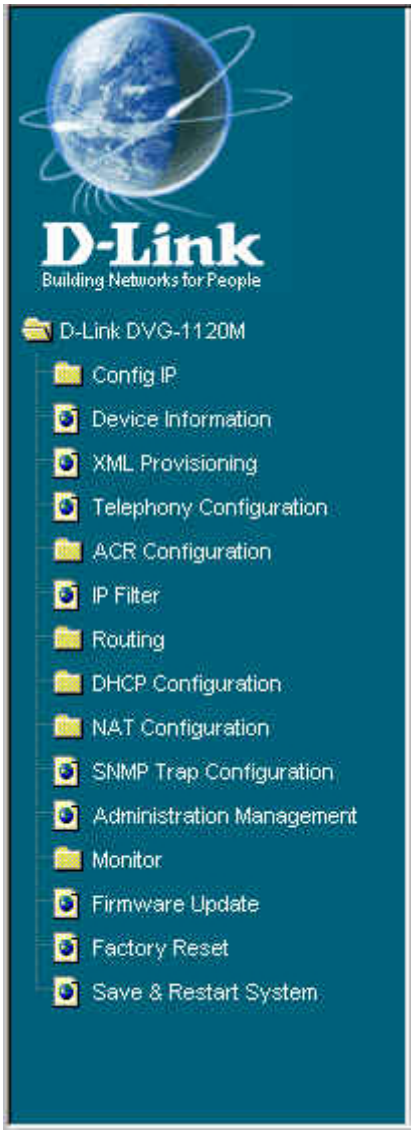
BOOTP – When BOOTP is chosen, the VoIP gateway will attempt to obtain its IP settings from a BOOTP server located on your WAN.

DHCP – When DHCP is chosen, the VoIP gateway will attempt to obtain its IP settings from a DCHP server located on your WAN.

PPPoE – (For DSL users) When PPPoE is chosen, the VoIP will attempt to obtain its IP settings from ISP PPPoE server.

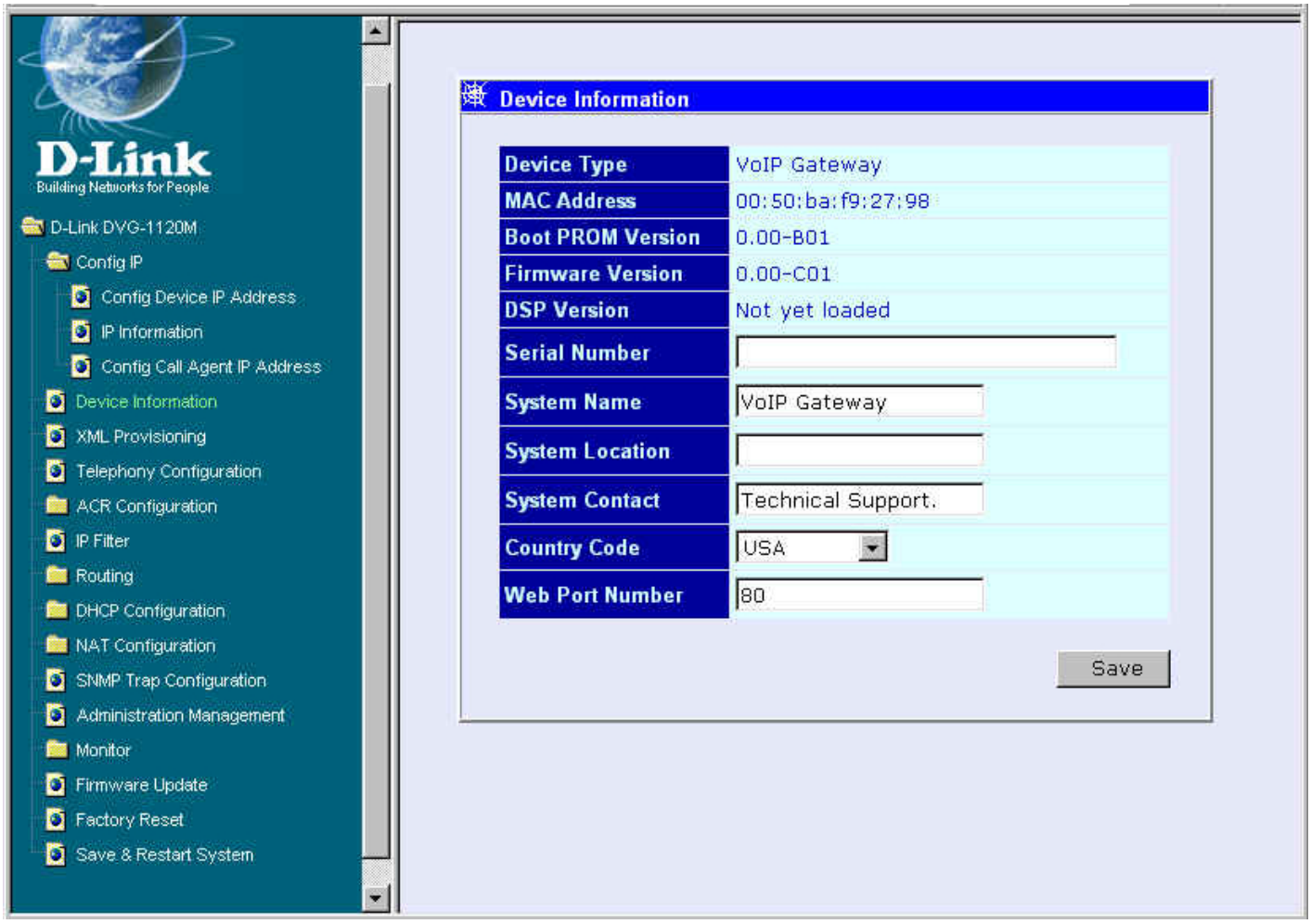
IP Address Enter an WAN port IP address for the VoIP gateway.
Subnet Mask Enter an WAN port subnet mask for the VoIP gateway.
Default Gateway Enter the IP address of the WAN devices you are using to make the WAN connection.
User Name Enter the User Name for the PPPoE function
Password Enter the Password for the PPPoE function.
LAN IP Settings
Local IP Address Enter an local LAN IP address for the VoIP gateway.
Local Netmask Enter an local LAN netmask for the VoIP gateway.
Click on the **Save** button at the bottom right of the screen to save the settings.

Next, click on the **Advance** item in the list at the left of the screen for more advance parameter settings. More items will be shown on the left side:

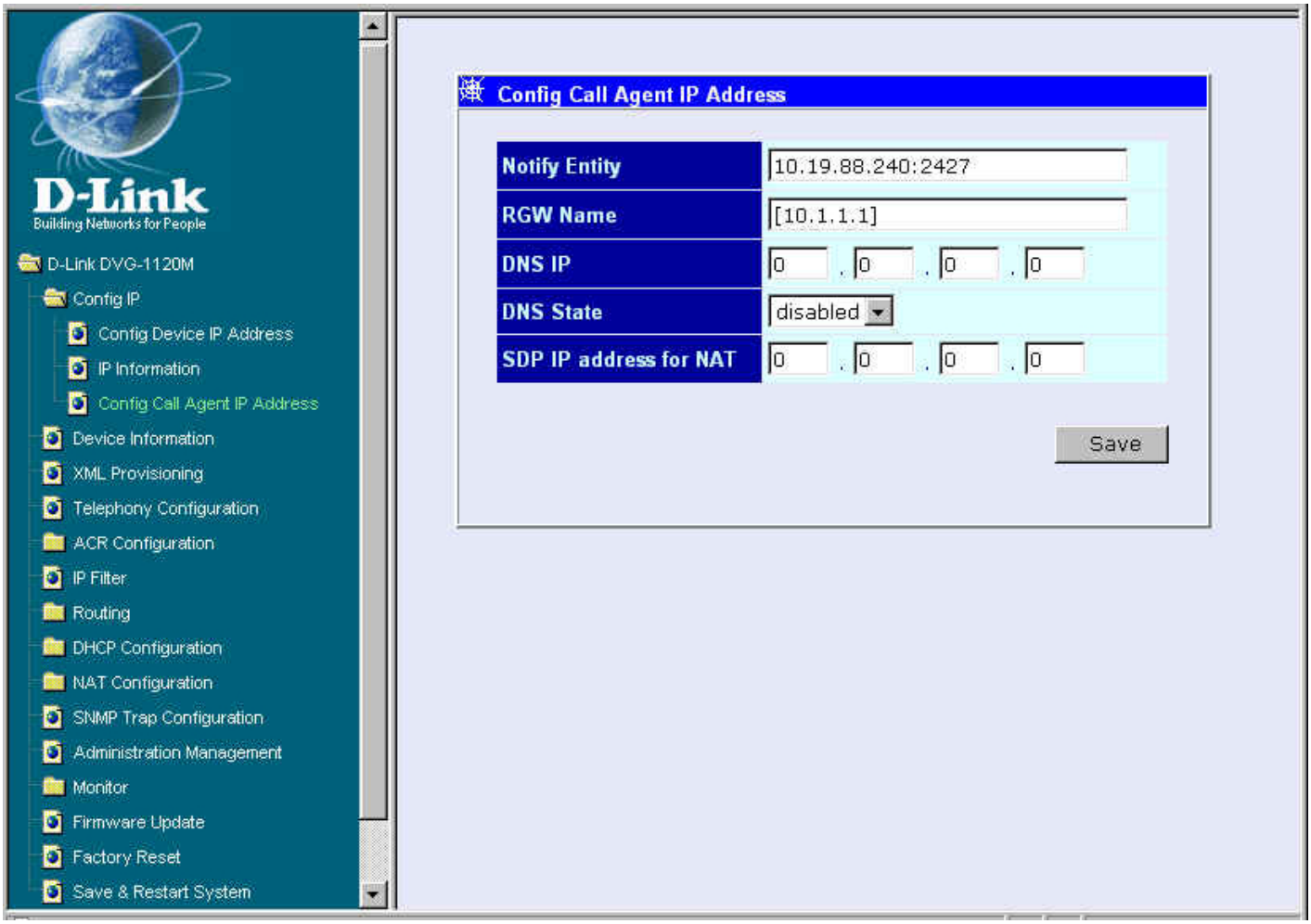


The following window will be displayed:

Initially, the VoIP gateway does not have a Username or Password. To log in, simply click on the OK button. The following window on the right-hand side will show the **Device information** page:



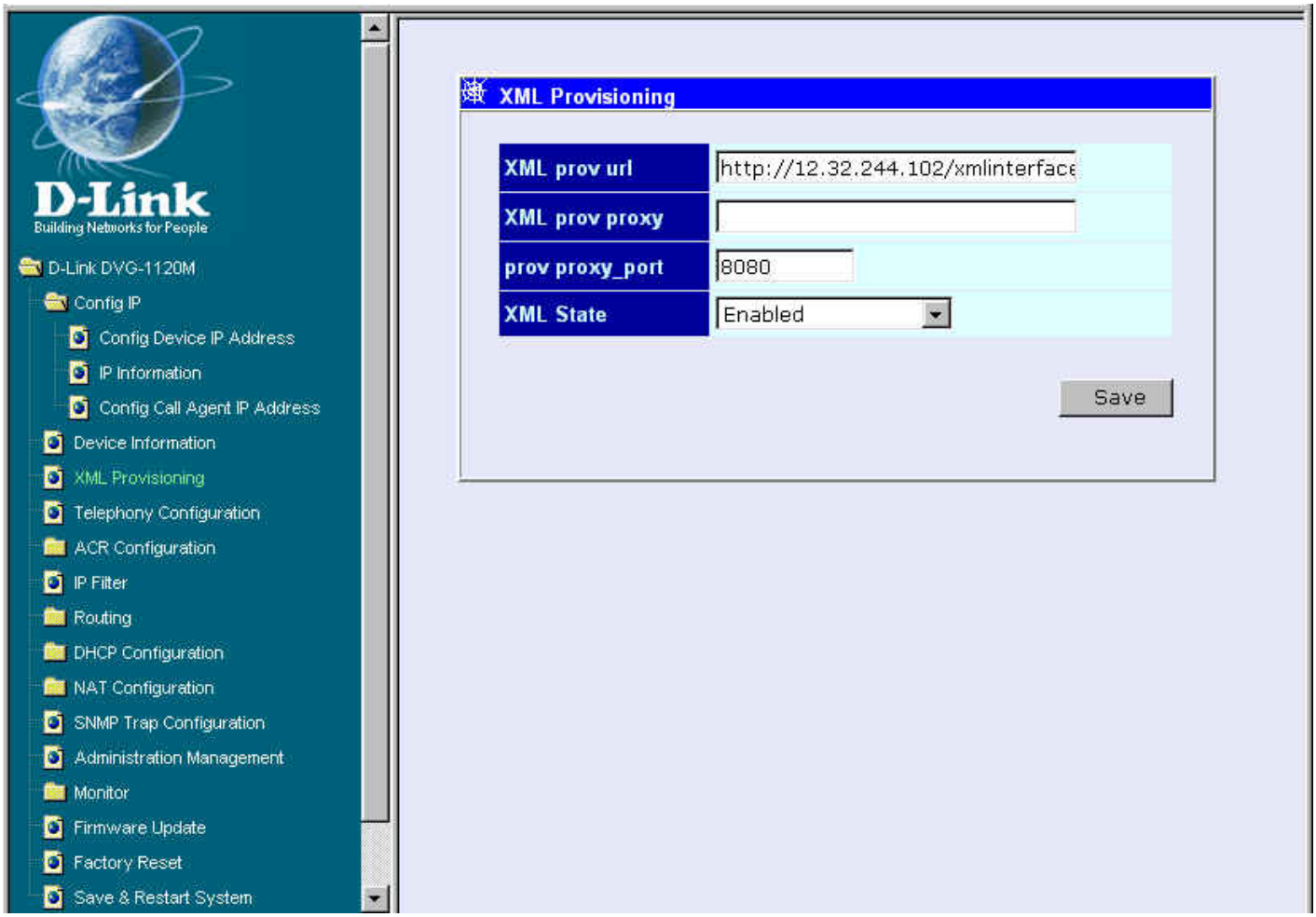
Click on the **Config IP** item in the list at the left of the screen. And then, click **Config Call Agent IP address** for MGCP Call Agent settings. The following window will appear:



- **Notify Entity** Enter the appropriate information for you call agent into this field.
- **RGW Name** This is the residential gateway name your VoIP gateway will be known as by the call agent. It usually consists of the IP address or a normal name.
- **DNS IP** Enter the IP address for the closest DNS server in this field.
- **DNS State** When this item is enabled and the call agent is not responding, the device will try to get the call agent's IP settings from the DNS server defined above.
- **SDP IP address for NAT** Allowing user to define what IP goes in the SDP rather than Src IP address.

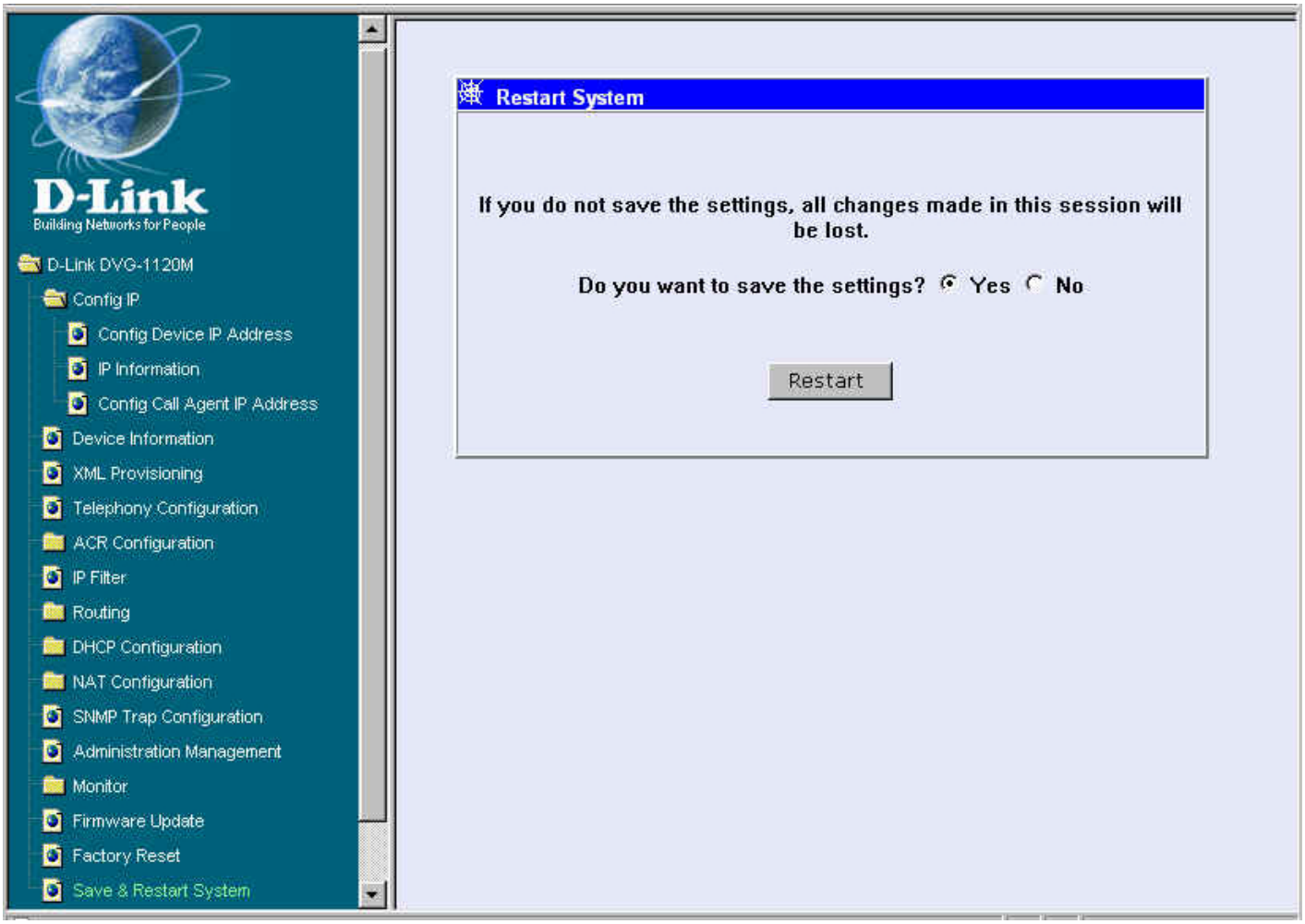
Click on the **Save** button at the bottom right of the screen to save the settings.

Next, click **XML provisioning** item on the left-hand side and the follow screen will appear:



- **XML prov url** Enter XML provisioning server URL.
- **XML prov proxy** Enter XML provisioning proxy server.
- **Prov proxy_port** Enter XML provisioning proxy server port number.
- **XML State**
  - **Enable**: Enable XML provisioning.
  - **Disable**: Disable XML provisioning.
  - **Enable & Useproxy:** Enable XML provisioning and using XML proxy server.

After you have finished, click on the **Save & Restart System** item in the list at the left of the screen. The following window will appear:



Click on the **Yes** and the settings will be saved to NV-RAM and reboot system.

Your VoIP is now configured for use.

5

Using The Console Port

The DVG-1120M VoIP gateway features a Console Port for debugging, which is described in this chapter.

To access the console mode, you must first make sure the console is connected to the Diagnostics port and the appropriate cabling for the connection is being used. (You need a RJ-14 to RS-232 converter, RJ-14 and RS-232 cable). Please see the previous chapter, *"Configuration,"* for additional information. Next, power the device on by simply plugging it in. You will see the boot up process. After the process complete, you can see a window shown below:

```
After bridge_create
After telnet_create
After Web_create
After Tftp_create
After Snmp_create
After Dhcpserv_create
After Nat_create
After PPPoE_create
After IpFilter_create
After Rip2_create
After changes clock source to half driving
After pstn_ring_detect_create
After gg_app_create
After unlock
After reboot system trap
000000336 NMM: 0, Signaling: xGCP, Protocol: FXS Loop Start
000000336 NMM: 0, Set Channel State Done (SUCCESS)
000000336 NMM: 0, Channel Config Done (SUCCESS)
000000336 NMM: 0, Set Channel State Done (SUCCESS)
000000336 NMM: 1, Signaling: xGCP, Protocol: FXS Loop Start
000000336 NMM: 1, Set Channel State Done (SUCCESS)
000000336 NMM: 1, Channel Config Done (SUCCESS)
000000336 NMM: 1, Set Channel State Done (SUCCESS)
Username:
```

Initial Screen, First Time Connecting to the device

Initially, the VoIP gateway does not have a Username or Password. To log in, simply click on the <Enter>. The following window will be displayed:

```
After Tftp_create
After Snmp_create
After Dhcpserv_create
After Nat_create
After PPPoE_create
After IpFilter_create
After Rip2_create
After changes clock source to half driving
After pstn_ring_detect_create
After gg_app_create
After unlock
After reboot system trap
000000336 NMM: 0, Signaling: xGCP, Protocol: FXS Loop Start
000000336 NMM: 0, Set Channel State Done (SUCCESS)
000000336 NMM: 0, Channel Config Done (SUCCESS)
000000336 NMM: 0, Set Channel State Done (SUCCESS)
000000336 NMM: 1, Signaling: xGCP, Protocol: FXS Loop Start
000000336 NMM: 1, Set Channel State Done (SUCCESS)
000000336 NMM: 1, Channel Config Done (SUCCESS)
000000336 NMM: 1, Set Channel State Done (SUCCESS)
Username:
Password:

192.168.15.1>
```

Configuration Setting

You can type **nwdbg** to see the all of configuration commands. (Shown below)

```
After Tftp_create
After Snmp_create
After Dhcpserv_create
After Nat_create
After PPPoE_create
After IpFilter_create
After Rip2_create
After changes clock source to half driving
After pstn_ring_detect_create
After gg_app_create
After unlock
After reboot system trap
000000336 NMM: 0, Signaling: xGCP, Protocol: FXS Loop Start
000000336 NMM: 0, Set Channel State Done (SUCCESS)
000000336 NMM: 0, Channel Config Done (SUCCESS)
000000336 NMM: 0, Set Channel State Done (SUCCESS)
000000336 NMM: 1, Signaling: xGCP, Protocol: FXS Loop Start
000000336 NMM: 1, Set Channel State Done (SUCCESS)
000000336 NMM: 1, Channel Config Done (SUCCESS)
000000336 NMM: 1, Set Channel State Done (SUCCESS)
Username:
Password:

192.168.15.1>nwdbg
```

```
nwdbg ca <NOTIFY ENTITY>       - set the notify entity, the format can be :
                               -      [domainName|ip]:port
                               -      [domainName|ip]
nwdbg rgw <STRING OF RGW NAME> - set the gateway raw name
nwdbg dns [DNS IP]             - set the dns ip
nwdbg dns [disable|enable]     - set the dns state
***** use save-changes command to activate the above setting
--------------------------------------------------------------------------------

nwdbg bridge [on|off]     - on/off software bridge
nwdbg bridge 0 [10 to 60] - 10M rx watermark
nwdbg bridge 1 [26 to 60] - N-way rx watermark
--------------------------------------------------------------------------------

nwdbg prov [disable*|enable|useproxy]
nwdbg prov url [prov_server_url]
nwdbg prov proxy [proxy_name_or_address]
nwdbg prov proxyport [port]  - default proxy port = 8080
nwdbg prov test  [direct|proxy]  - test provsioning feature
--------------------------------------------------------------------------------

nwdbg [config|mac|ip|...] - show [all|mac|...] configuration
192.168.15.1>_
```

This ***prompt >*** command line allows you to enter the related commands for the initial configuration of this device.

Firmare Upgrade

New software can be downloaded from a TFTP server.

You can type **TFTP** to see the TFTP update commands. (Shown below)

```
Image File Name :
192.168.15.1>tftp
tftp srvip <IP ADDRESS> - set the IP address of TFTP server
tftp get <FILENAME>     - get the remote image file
                          if <FILENMAE> is not specified, the
                          image file name in EEPROM will be
                          employed.
tftp update             - update the image in flash

Current Settings :
TFTP Server IP Address : 0.0.0.0
Image File Name :
192.168.15.1>tftp
tftp srvip <IP ADDRESS> - set the IP address of TFTP server
tftp get <FILENAME>     - get the remote image file
                          if <FILENMAE> is not specified, the
                          image file name in EEPROM will be
                          employed.
tftp update             - update the image in flash

Current Settings :
TFTP Server IP Address : 0.0.0.0
Image File Name :
192.168.15.1>
```

Console mode---TFTP update firmware commands screen

Type the following commands to upgrade firmware:

192.168.15.1> tftp srvip <tftp server ip address>

192.168.15.1> tftp get <file name>

192.168.15.1> tftp update

192.168.15.1> nwdbg system reboot

192.168.15.1> nwdbg factory reset

The firmware upgrade procedure is complete after factor reset.

Config IP

Type **nwdbg ipgw** command after prompt to check the IP information of LAN & WAN for current setting.

192.168.15.1> nwdbg ipgw

Type **nwdbg ip** to check the current WAN interface settings:

192.168.15.1> nwdbg ip

```
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>nwdbg ipgw
Default gateway:  10.1.1.254
WAN IF:  IP 10.43.15.6,  Mask 255.0.0.0
LAN IF:  IP 192.168.15.1,  Mask 255.255.255.0
OK
192.168.15.1>nwdbg ip

Current settings
  Boot mode:        Manual
Restart settings
  BOOTP:            Manual
  IP address:       10.43.15.6
  Subnet mask:      255.0.0.0
  Default gateway:  10.1.1.254
OK
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>
```

Type **nwdbg ip <mode>** to change the way for getting WAN IP address.

192.168.15.1>nwdbg ip <dhcp | bootp | manual | pppoe>

If in the Manual mode, type the following command to change the IP, netmask and default gateway settings:

192.168.15.1> nwdbg ip <IP ADDRESS>
192.168.15.1> nwdbg mask <SUBNET MASK>
192.168.15.1> nwdbg gw <GATEWAY IP>

```
  Subnet mask:       255.0.0.0
  Default gateway:   10.1.1.254
OK
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>nwdbg ip manual
OK
192.168.15.1>nwdbg ip 10.43.15.6
OK
192.168.15.1>nwdbg mask 255.0.0.0
OK
192.168.15.1>nwdbg gw 10.1.1.254
OK
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>
192.168.15.1>
```

6

Web-Based Management

Introduction

The DVG-1120M VoIP gateway offers an embedded Web-based (hypertext) interface allowing users to manage the device from anywhere on the network through a standard browser such as Netscape Navigator/Communicator, 4.x or later, or Microsoft Internet Explorer, 4.x or later. The Web browser acts as a universal access tool and can communicate directly with the device using HTTP protocol. Your browser screen may vary with the screen shots (pictures) in this guide.

Note: This Web-based Management Module does not accept Chinese language input (or other languages requiring two bytes per character).

Getting Started

The first step in getting started in using Web-based management for your device is to secure a browser. A Web browser is a program that allows a person to read hypertext, for example, Netscape Navigator, 4.x or later, or Microsoft Internet Explorer, 4.x or later. Follow the installation instructions for the browser.

The second and last step is to configure the IP interface of the device. This can be done manually through a console. See the *Configuring the VoIP Gateway using a Web Browser* section of the "*Configuration*" chapter for specific instructions.

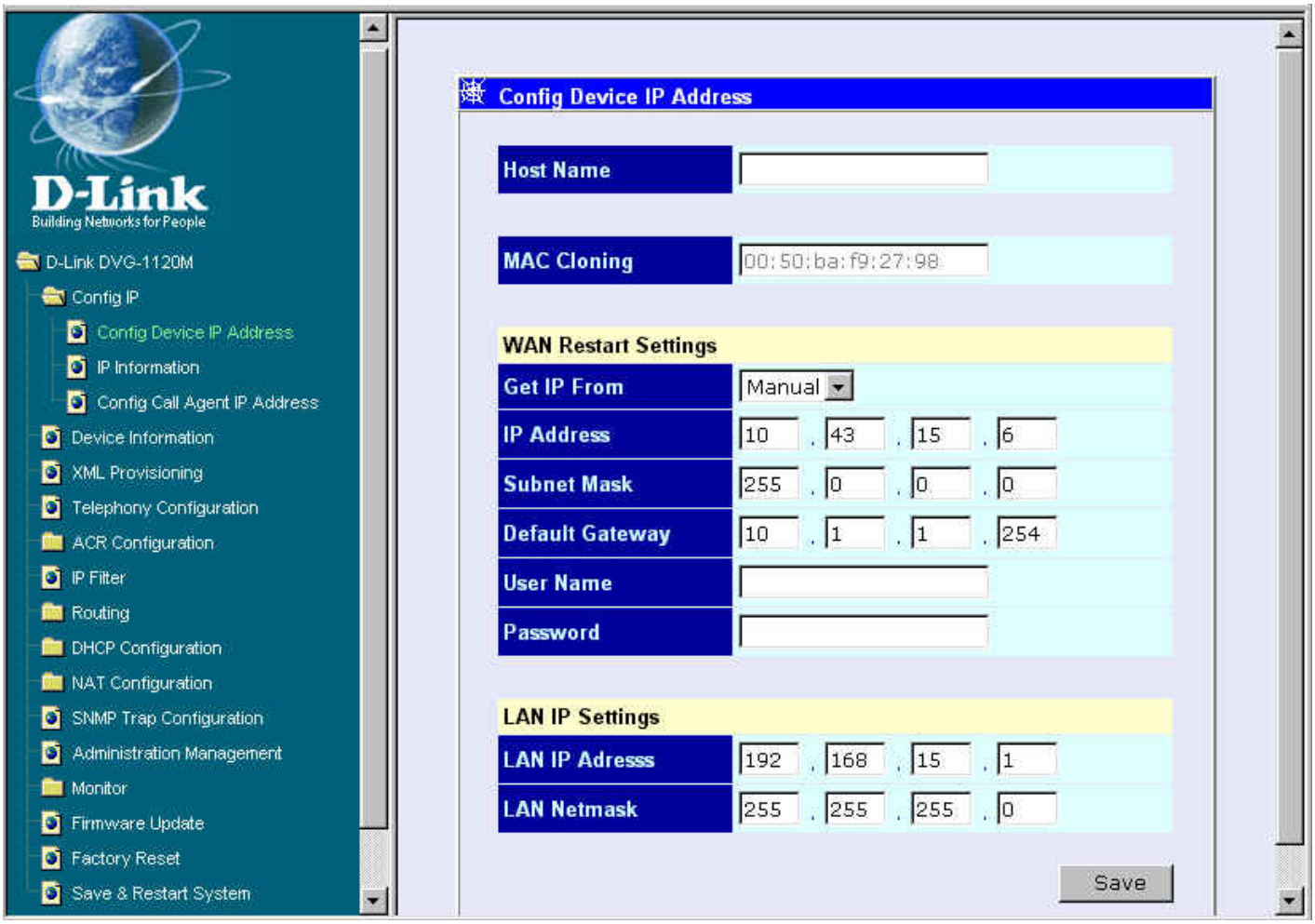
Management

To begin managing your device simply run the browser you have installed on your computer and point it to the IP address you have defined for the device. The URL in the address bar should read something like: http://123.123.123.123, where the numbers 123 represent the IP address of the device.

In the page that opens, click on the following **Login to the web-based management module** button:

This categories listed on the left-side of the web-based management module include: **Config IP** (**Config Device IP Address, IP Information, Config Call Agent IP Address**), **Device Information**, **XML provisioning, Telephony Configuration, ACR Configuration** (**VoIP** and **Life Line**), **IP Filter, Routing (RIP, Static Route Configuration), DHCP Configuration** (**Dynamic IP Assignment** and **Static IP Assignment**), **NAT Configuration** (**NAT Configuration** and **Local Server Configuration**), **SNMP Trap Configuration**, **Administration Management**, **Monitor** (**Ethernet Statistics, DSP Statistics**, **Tcid Configuration**, and **Coding Profile**), **Firmware Update**, **Factory Reset**, and **Save & Restart System**.

Config IP - Config Device IP Address



Configure Device IP Address window

The items on this window are described below:

- **Host Name** This is a user-defined host name for this VoIP Gateway.
- **MAC Cloning** The cloned MAC of the VoIP Gateway.

WAN Restart Settings

Get IP From Choose the method the VoIP gateway will use to obtain its IP settings once it is rebooted (restarted). Choices include:

Manual – When Manual is chosen, the VoIP gateway will obtain its IP settings from the fields located just below.

BOOTP – When BOOTP is chosen, the VoIP gateway will attempt to obtain its IP settings from a BOOTP server located on your WAN.

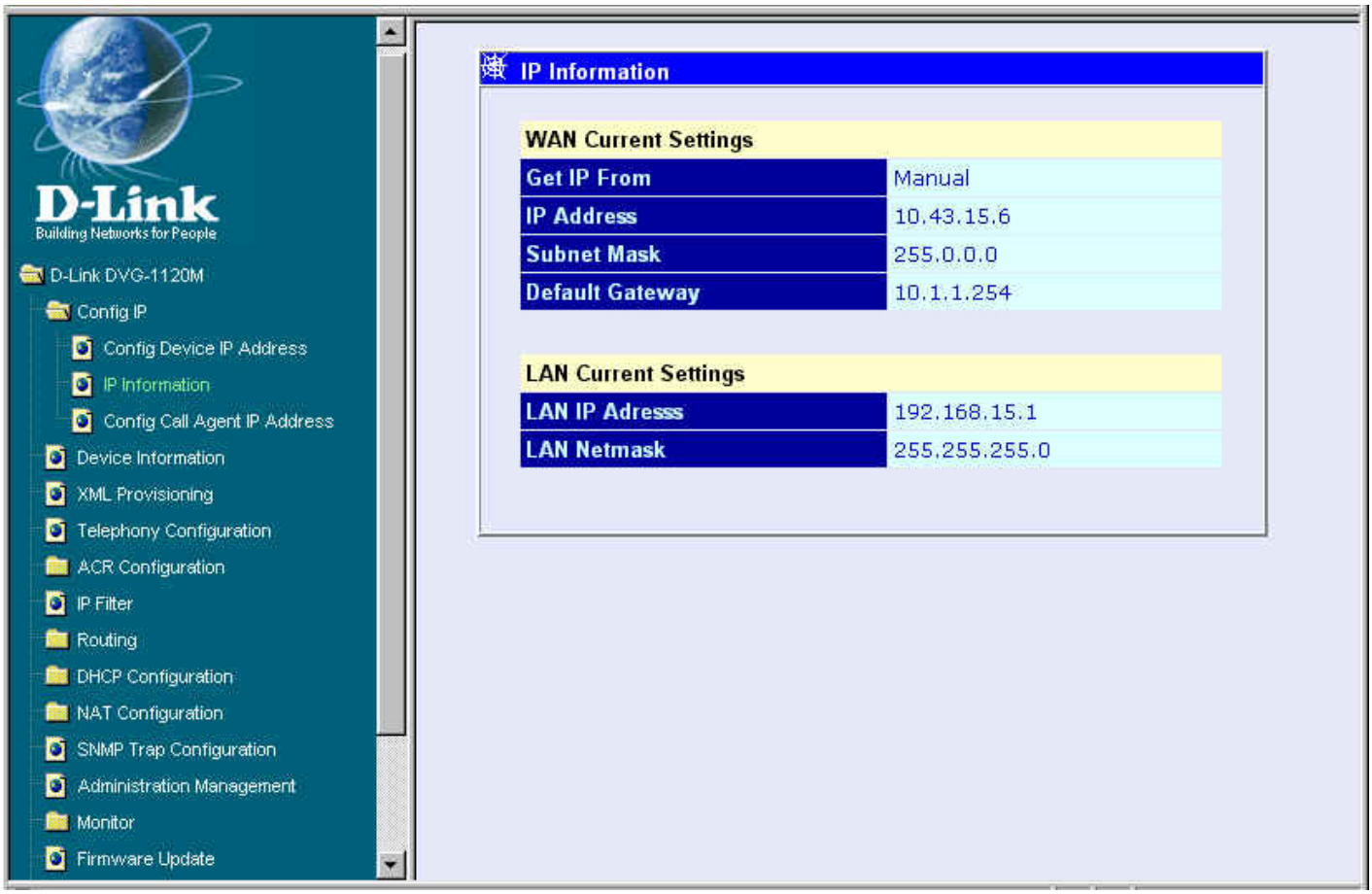
DHCP – When DHCP is chosen, the VoIP gateway will attempt to obtain its IP settings from a DCHP server located on your WAN.

PPPoE – (For DSL users) When PPPoE is chosen, the VoIP will attempt to obtain its IP settings from ISP PPPoE server.

IP Address Enter an WAN port IP address for the VoIP gateway.
Subnet Mask Enter an WAN port subnet mask for the VoIP gateway.
Default Gateway Enter the IP address of the WAN devices you are using to make the WAN connection.
User Name Enter the User Name for the PPPoE function
Password Enter the Password for the PPPoE function.
LAN IP Settings
Local IP Address Enter an local LAN IP address for the VoIP gateway.
Local Netmask Enter an local LAN netmask for the VoIP gateway.

Click on the **Save** button at the bottom right of the window to save the settings.

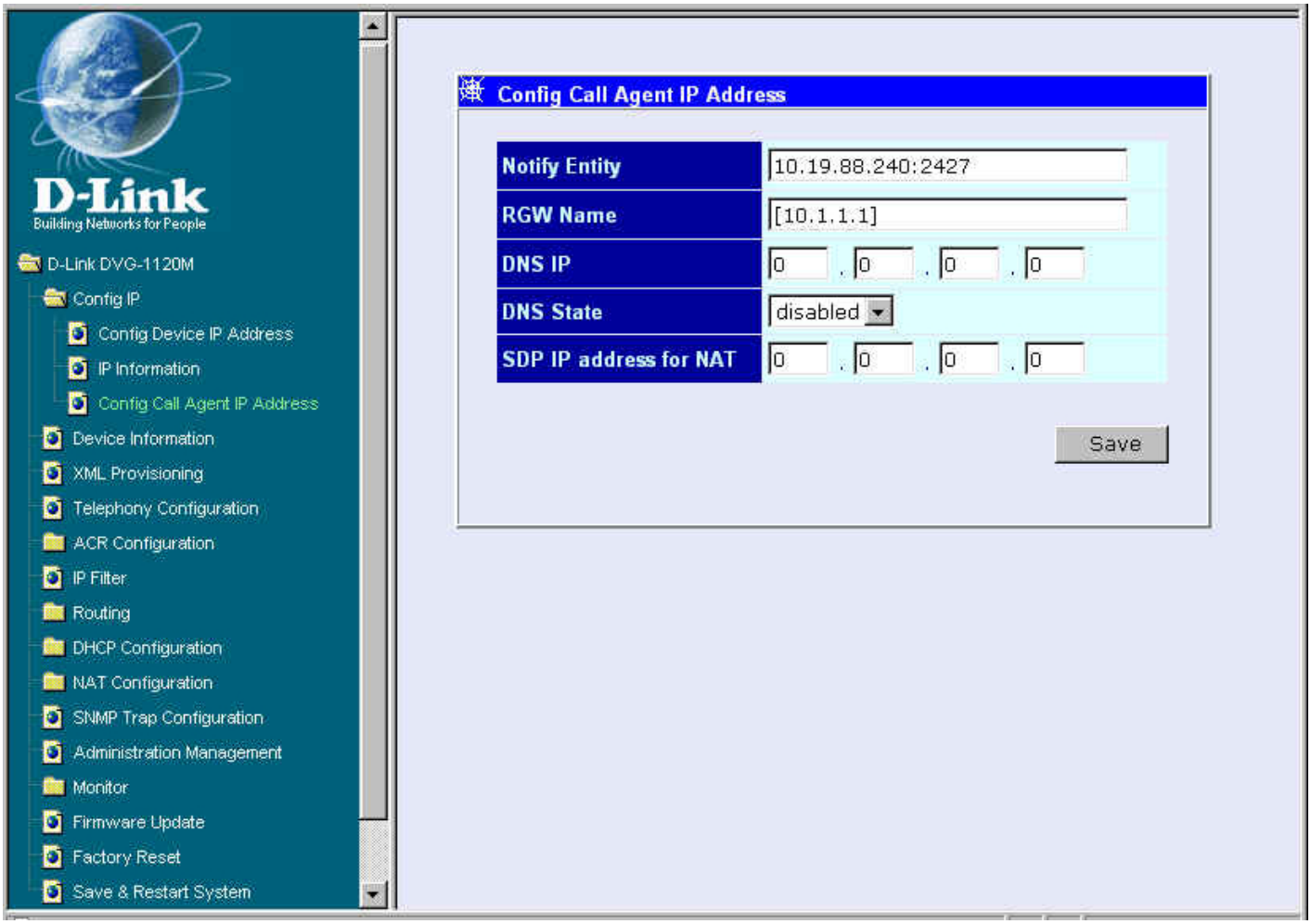
Config IP – IP Information



IP Information window

The default settings of WAN and LAN are shown on this page

Config IP – Config Call Agent IP Address



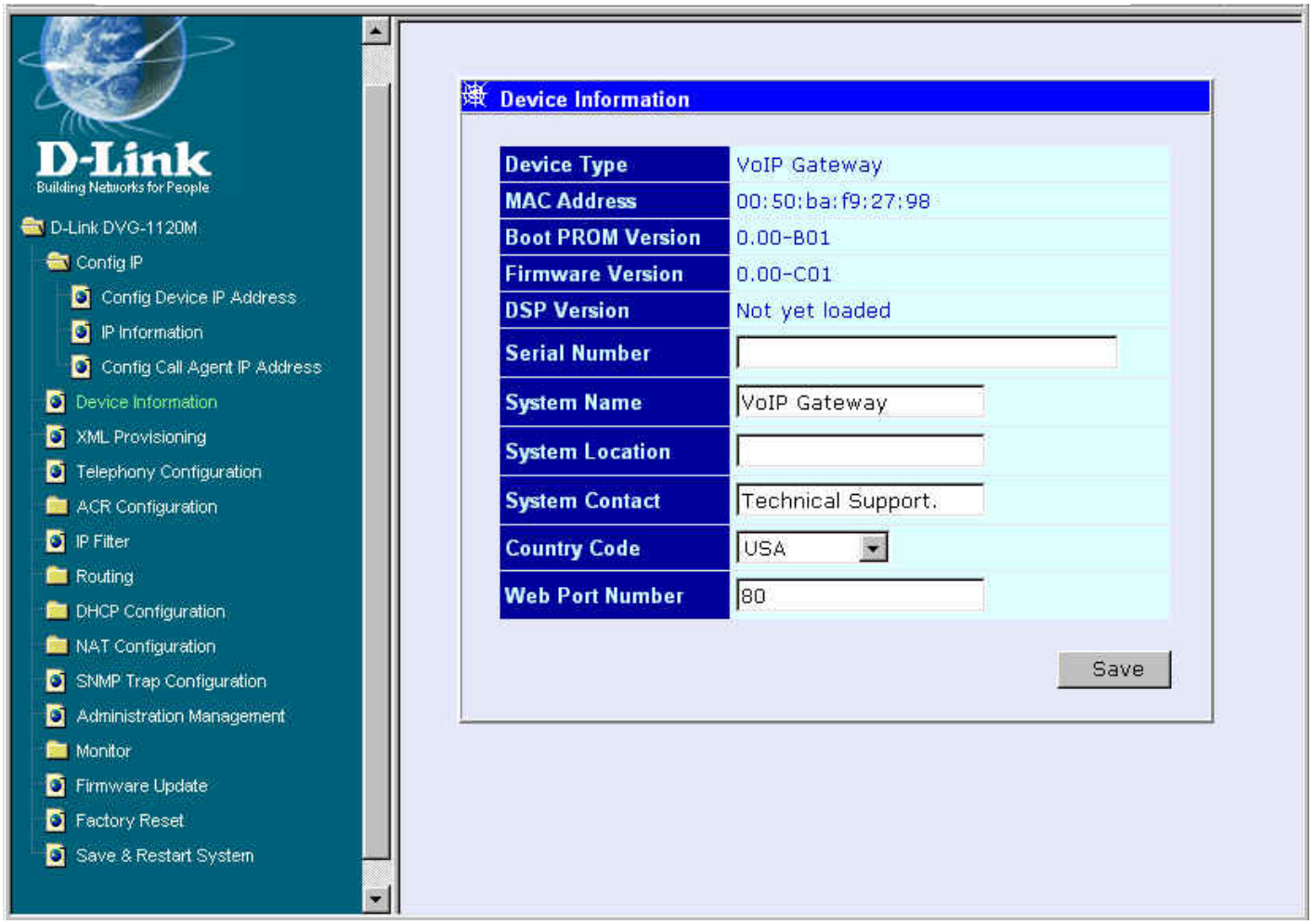
Config Call Agent IP Address window

The items on this window are described below:

- **Notify Entity** Enter the appropriate information for you call agent into this field.
- **RGW Name** This is the residential gateway name your VoIP gateway will be known as by the call agent. It usually consists of the IP address or a normal name.
- **DNS IP** Enter the IP address for the closest DNS server in this field.
- **DNS State** When this item is enabled and the call agent is not responding, the device will try to get the call agent's IP settings from the DNS server defined above.
- **SDP IP address for NAT** Allowing user to define what IP goes in the SDP rather than Src IP address.

Click on the **Save** button at the bottom right of the screen to save the settings.

Device Information



Device Information window

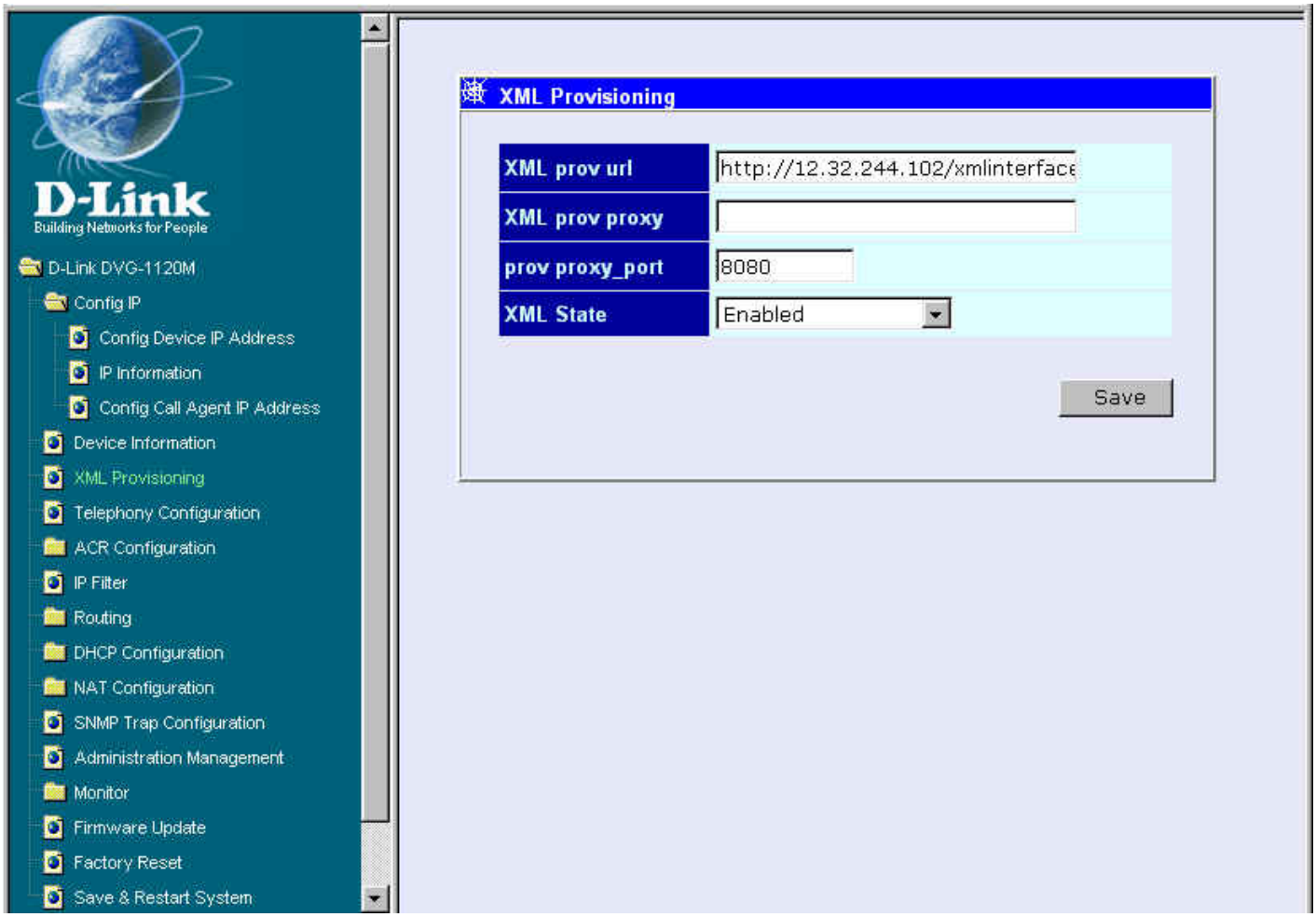
The items on this window are described below:

Device Type This displays the model name of this device.
MAC Address This displays the MAC address of this device.
Boot PROM Version This displays the version number of the device's startup code.
Firmware Version This displays the version number of the device's runtime code.
DSP Version This displays the Digital Signal Processor version, if any.
Serial Number This field is for a user-determined identification number.
System Name This is a user-defined name for this device.
System Location This is a user-defined physical location of the device.

System Contact This is user-defined contact information for the person or department responsible for the maintenance of this device.
Country Code This is a user-defined country code for this device. < 0:USA (Default), 1:Japan, 2:Hong Kong, 3:Sweden, 4:China>
Web Port Number This is a user-defined web port number.

Click on the **Save** button at the bottom right of the window to save the settings.

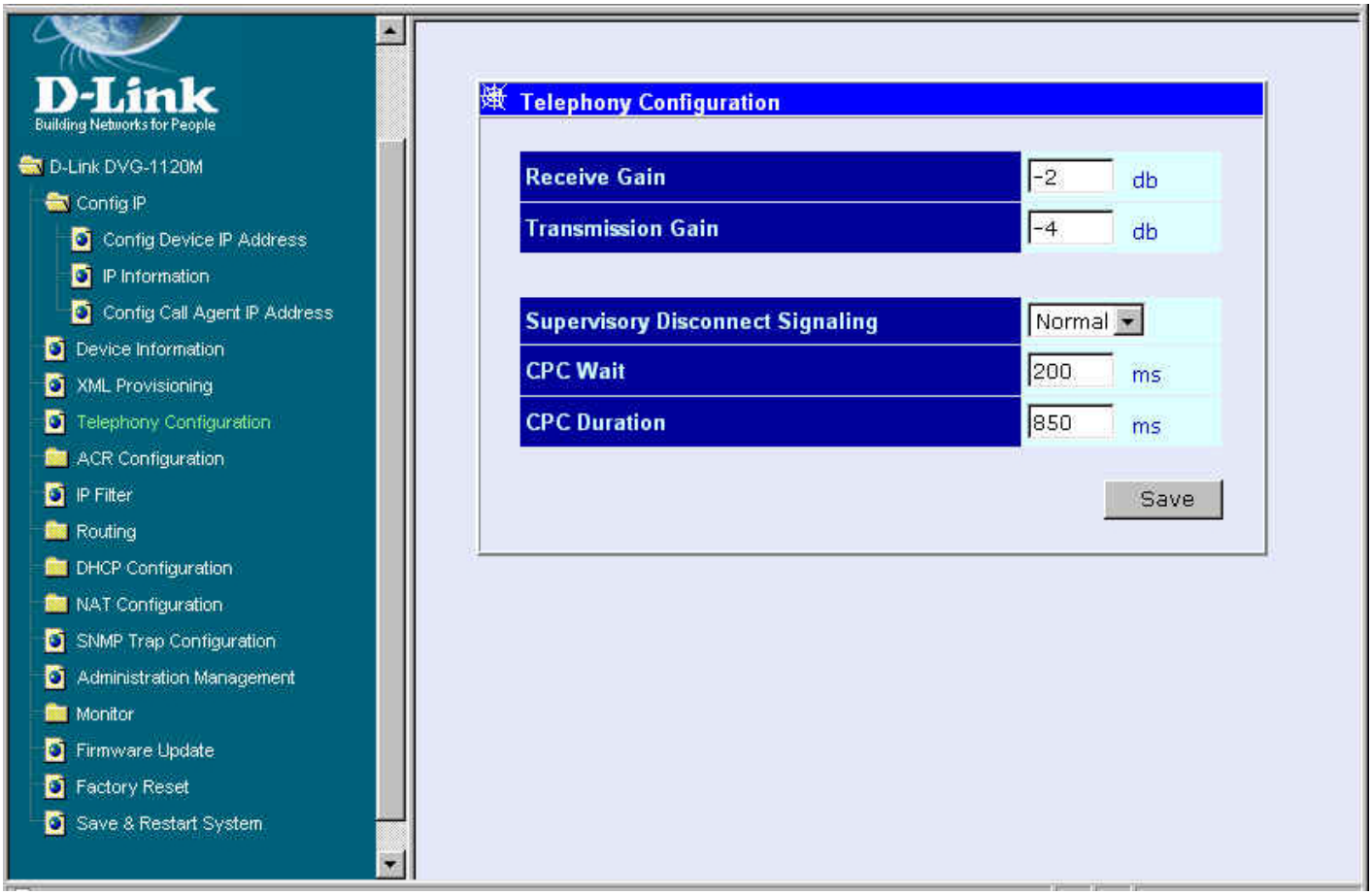
XML Provisioning



XML provisioning window

- **XML prov url** Enter XML provisioning server URL.
- **XML prov proxy** Enter XML provisioning proxy server.
- **Prov proxy_port** Enter XML provisioning proxy server port number.
- **XML State**
  - **Enable**: Enable XML provisioning.
  - **Disable**: Disable XML provisioning.
  - **Enable & Useproxy:** Enable XML provisioning and using XML proxy server.

Telephony Configuration

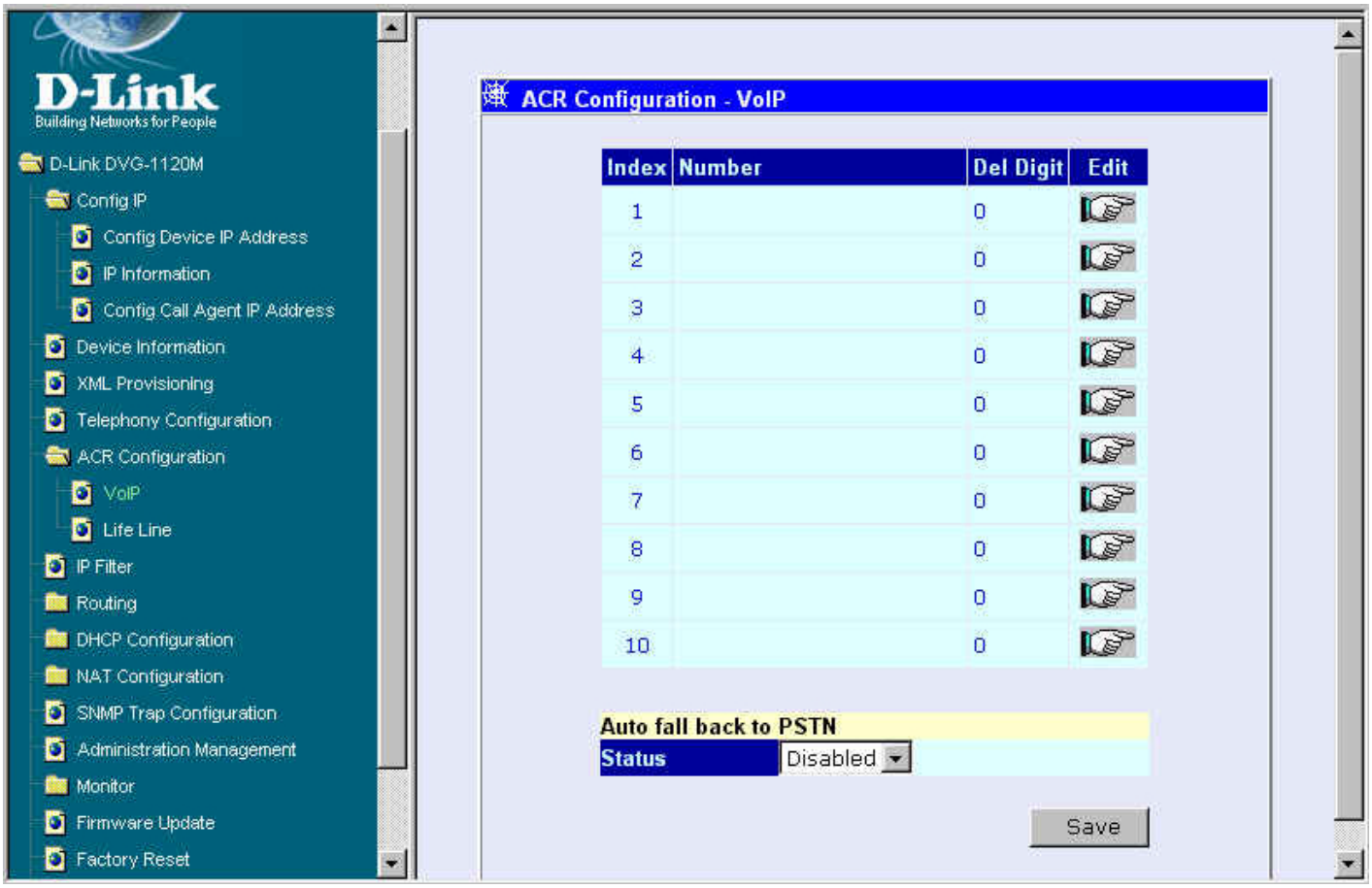


Telephony Configuration window

The items on this window are described below:

Enter the desired information on the window above and then click **Save** button to save the settings.

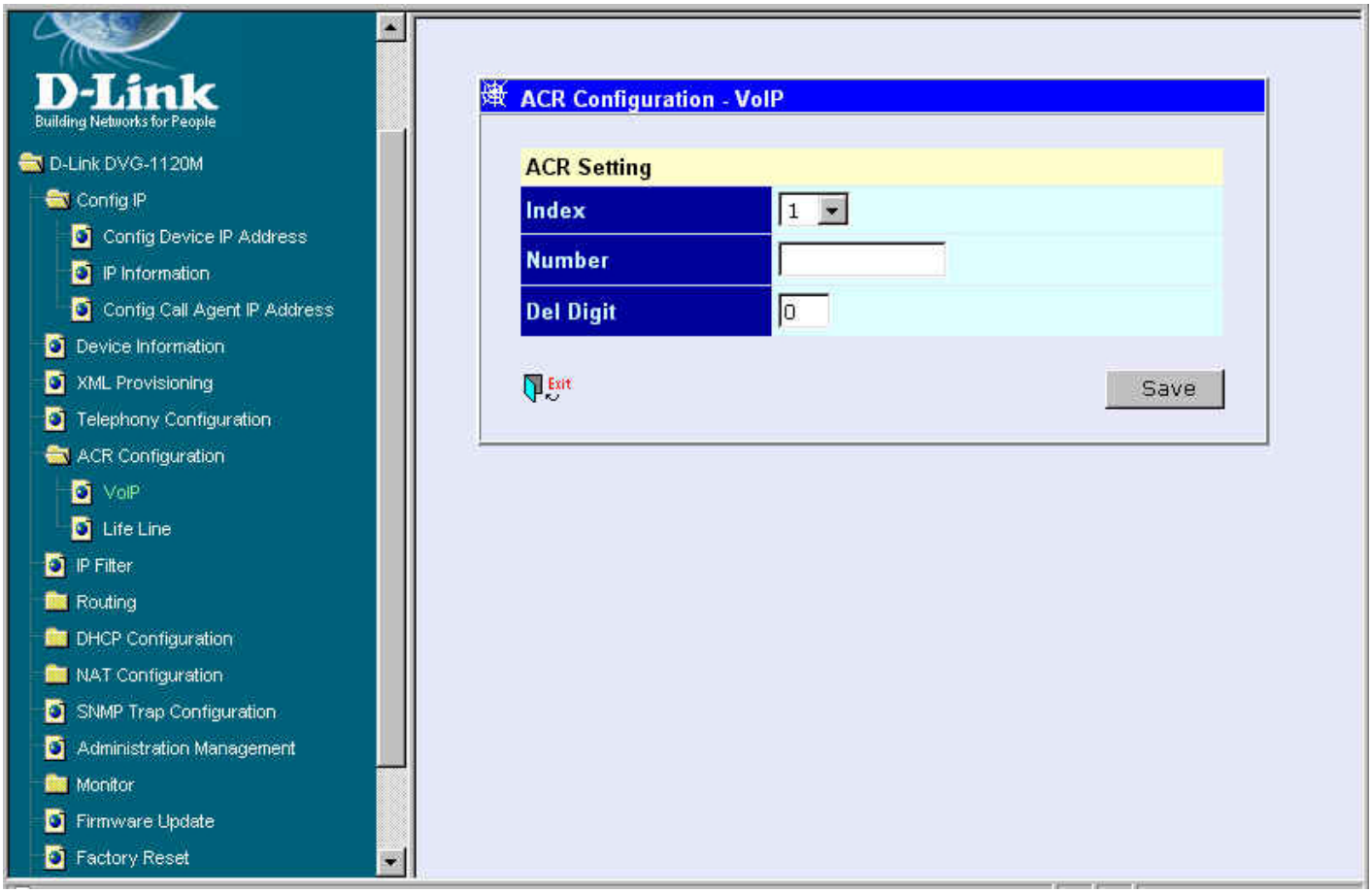
ACR Configuration-VoIP



First ACR Configuration-VoIP window

This is user-defined ACR table for VoIP Call

Click the pointer icon on the window above to access the second **ACR Configuration-VoIP** window:



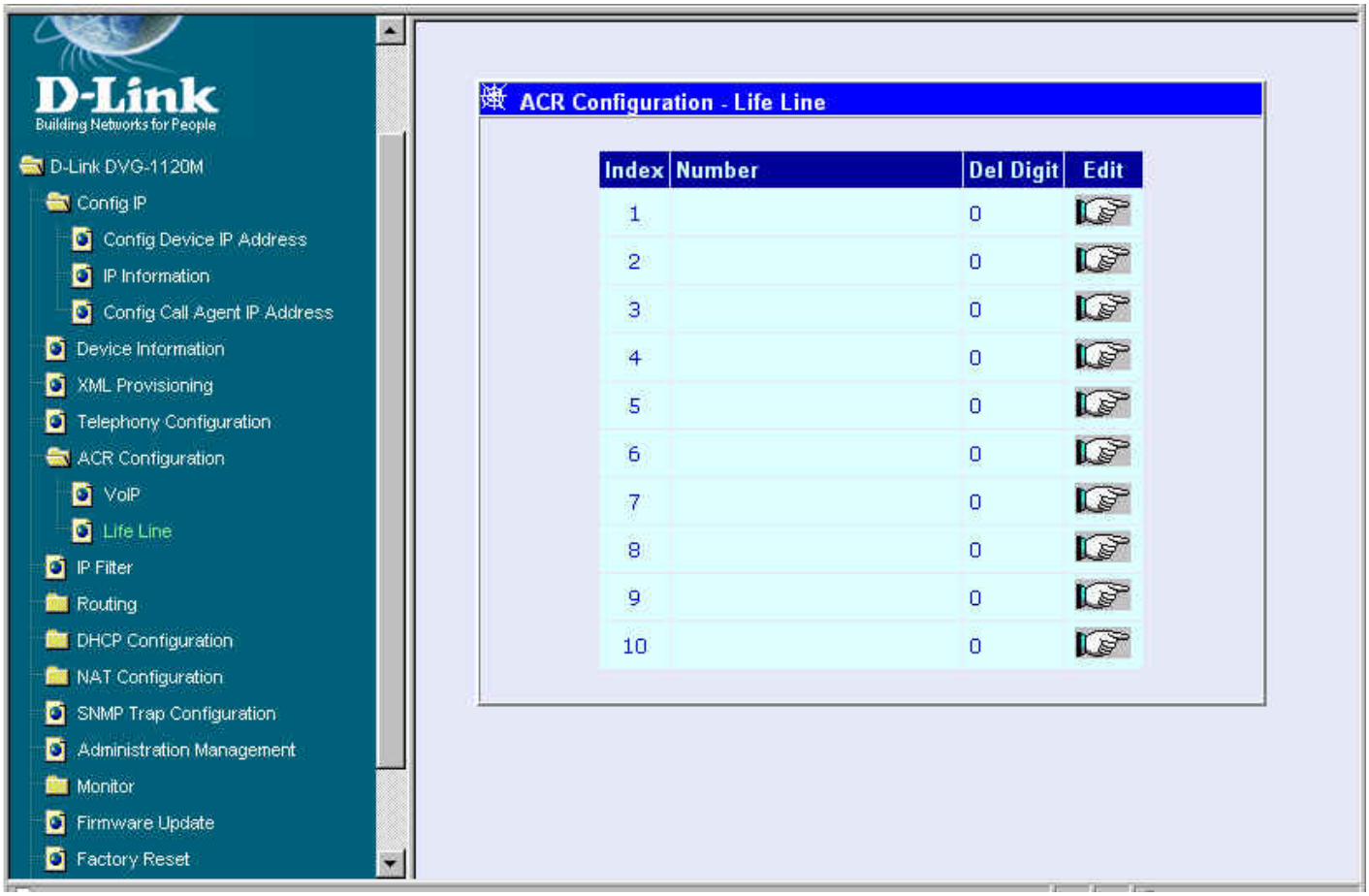
Second ACR Configuration-VoIP window

The items on this window are described below:

Index Choose the index number that you would like to edit (Form 1 to 10).
Number This is user-defined telephone number or prefix dialing number that you would like to make call through VoIP. There are three kind of number formats user can used:
A full telephone number, e.g.035636666: System will transmit the number when it is fully correct dialed by users.
Any combination of telephone number and "x" character. "x" means any one digit, e.g. 03xx: System will transmit all of the four number digits with prefix number 03 by users dialed (Ex: 0311, 0394…etc.)
Any combination of telephone number and "T" character. "T" must be capital and it means a random number, e.g. 03T: System will transmit all of the numbers with prefix number 03 by users dialed (Ex: 0311, 035636666…etc.)
Del Digit This is user-defined how many prefix digits user would like to delete when system transmit the number above. (Ex: Number is 035636666, Del Digit is 2. System will only transmit 5636666.)

Click on the **Save** button at the bottom right of the window to save the settings.

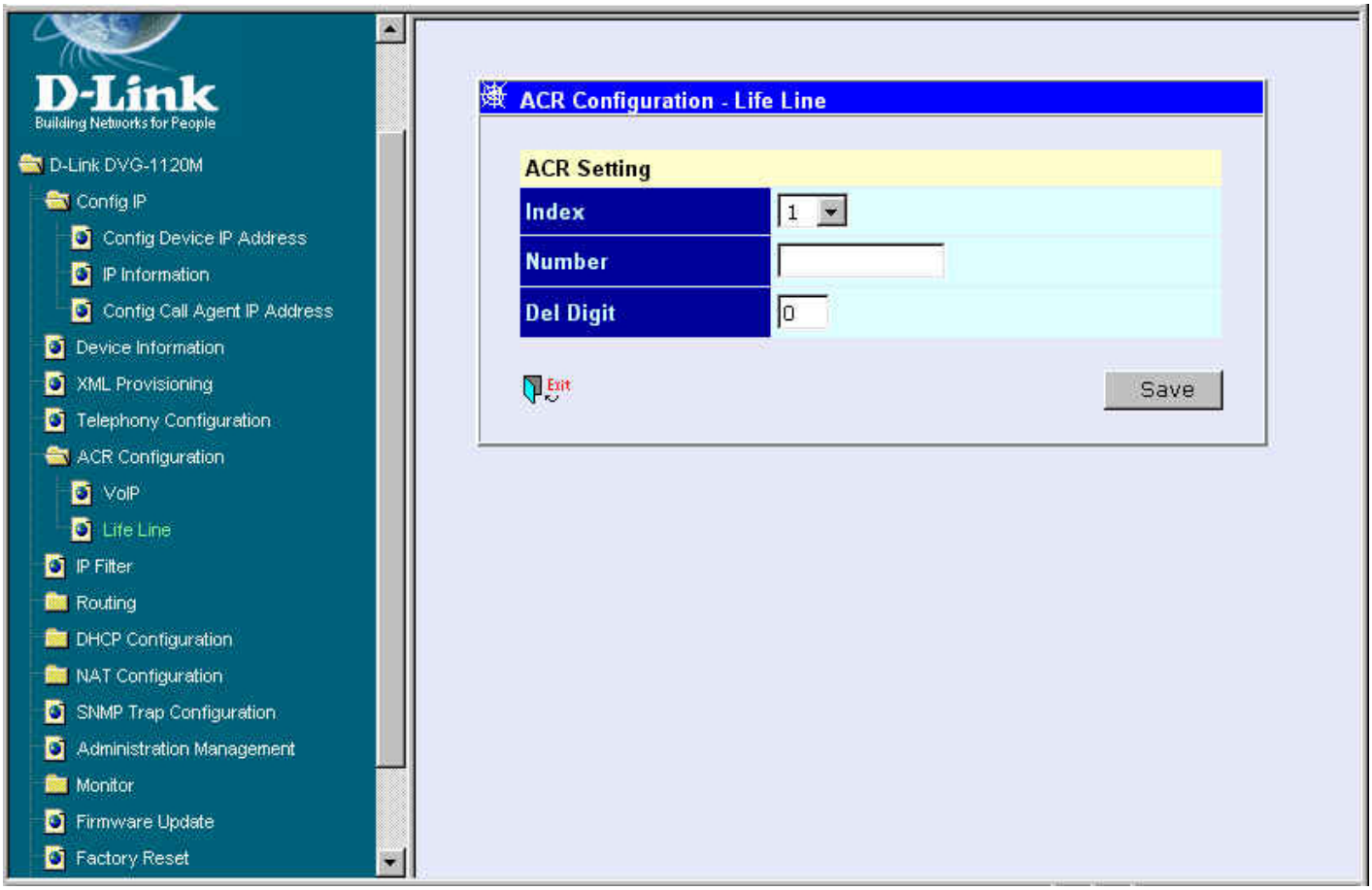
ACR Configuration-Life Line



First ACR Configuration-Life Line window

This is user-defined ACR table for PSTN Call

Click the pointer icon on the window above to access the second **ACR Configuration-Life Line** window:



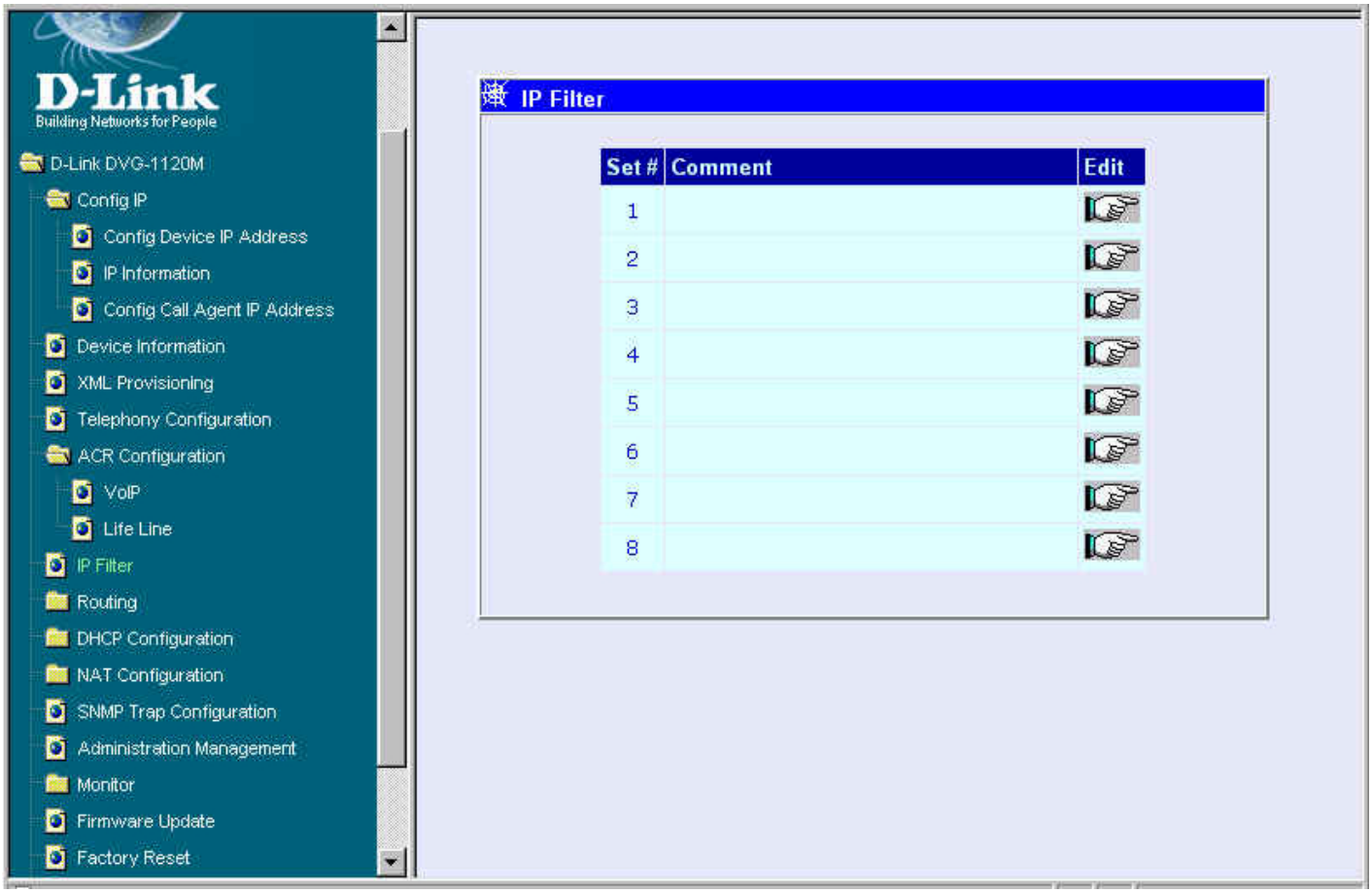
Second ACR Configuration-Life Line window

The items on this window are described below:

Index Choose the index number that you would like to edit (Form 1 to 10).
Number This is user-defined telephone number or prefix dialing number that you would like to make call through PSTN. There are three kind of number formats user can used:
A full telephone number, e.g.035636666: System will transmit the number when it is fully correct dialed by users.
Any combination of telephone number and "x" character. "x" means any one digit, e.g. 03xx: System will transmit all of the four number digits with prefix number 03 by users dialed (Ex: 0311, 0394…etc.)
Any combination of telephone number and "T" character. "T" must be capital and it means a random number, e.g. 03T: System will transmit all of the numbers with prefix number 03 by users dialed (Ex: 0311, 035636666…etc.)
Del Digit This is user-defined how many prefix digits user would like to delete when system transmit the number above. (Ex: Number is 035636666, Del Digit is 2. System will only transmit 5636666.)

Click on the **Save** button at the bottom right of the window to save the settings.

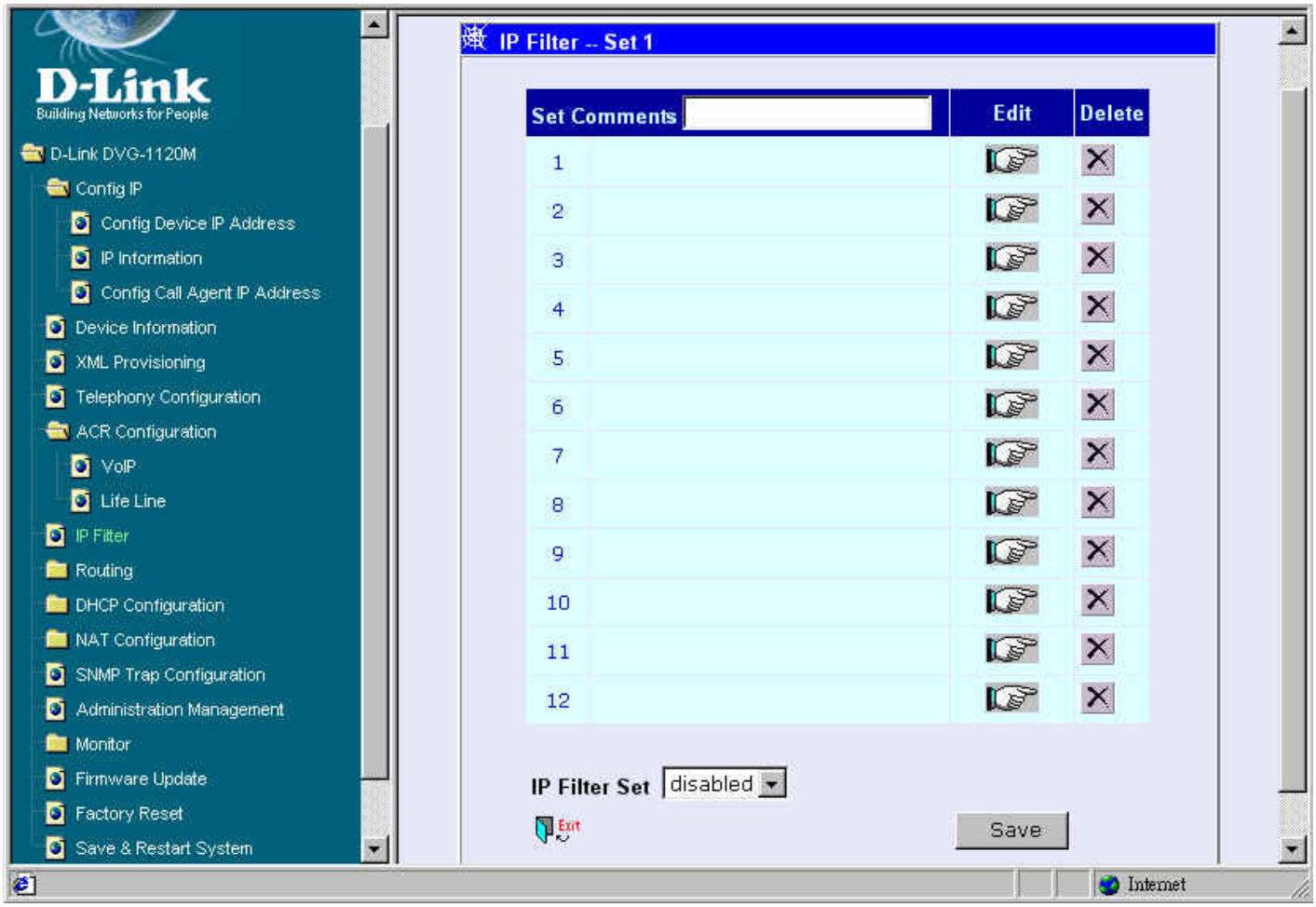
IP Filter



First IP Filter window

The first IP Filter window lists the eight filtering sets, each followed by an identifying comment. Below the list are two drop-down menus. The filtering sets are sets of filtering rules defined in the menus shown below.

Click the pointer icon on the window above to access the second **IP Filter** window:



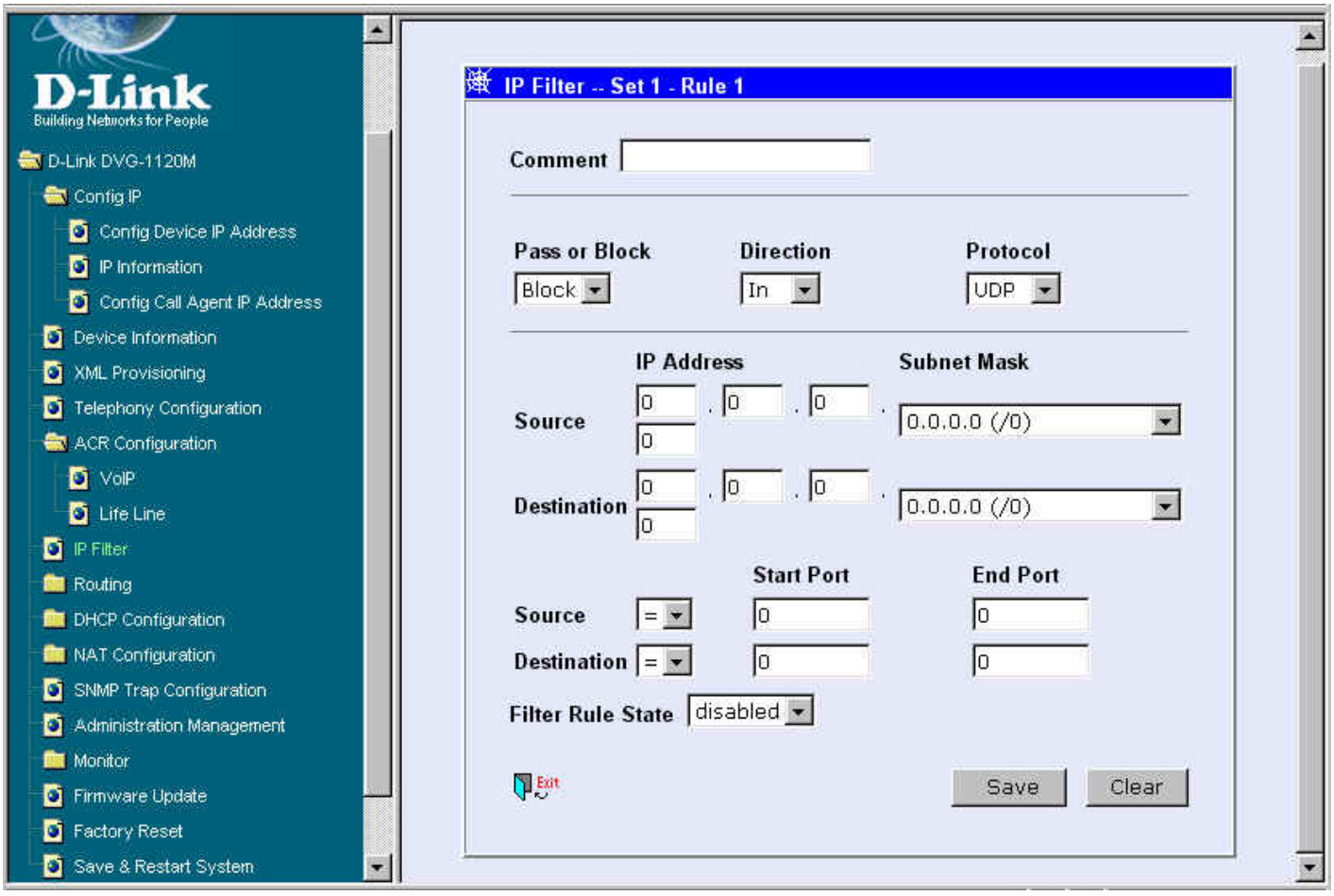
Second IP Filter window

Type in an appropriate identifying comment for the IP Filter set.

When you are finished defining the rules for each set, select enabled or disabled to enable or disable the listed filtering sets.

Click on the **Save** button at the bottom right of the window to save the settings.

Click the pointer icon on the window above to access the third **IP Filter** window:



Third IP Filter window

The items on this window are described below:

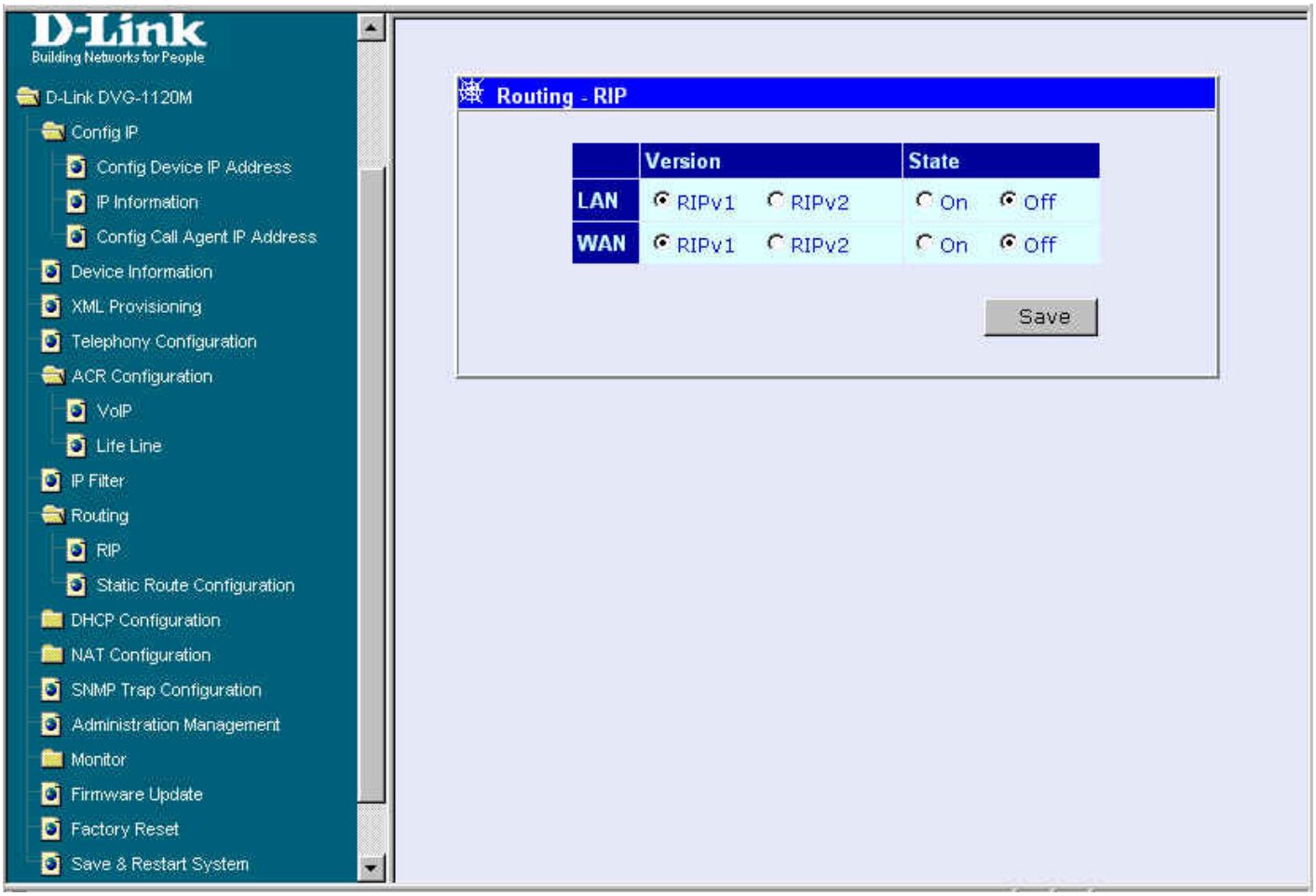
Comment Type in an appropriate identifying comment for the rule.
Pass or Block Select Pass or Block to perform this action on packets as defined below.
Direction Select In or Out to pass or block packets coming in or going out of the network.
Protocol Select IGMP, TCP, UDP or All to pass or block packets of that protocol type.
IP Address Filter Rule
Source Type in the source IP address and select the Subnet Mask to pass or block packets form that IP address.
Destination Type in the destination IP address and select the Subnet Mask to pass or block packets destined to that IP address.
Port Filter Rule UDP and TCP packets only. Select a range of ports to pass or block.
Use the following guide to define the port or port range (Start Port and End Port):
< : specifies the port numbers less than and equal to the Start Port number
> : specifies the port numbers greater than and equal to the Start Port number

= : sets the port number equal to the Start Port if there is no End Port specified; if an End Port number is specified, this defines a range of ports to filter. The range is defined as the port numbers between the Start Port and End Port, including the Start and End Port numbers.

≠ : the port number does not equal to the Start Port if there is no End Port specified; if an End Port number is specified, this defines a range of ports not to filter. The range is defined as the port numbers between the Start Port and End Port, including the Start and End Port numbers.
Filter Rule State Select enabled or disabled to enable or disable the filter rule as defined in the menu
Click on the **Save** button at the bottom right of the window to save the settings.

Click on the **Clear** button at the bottom right of the window to clear the settings.

Routing - RIP

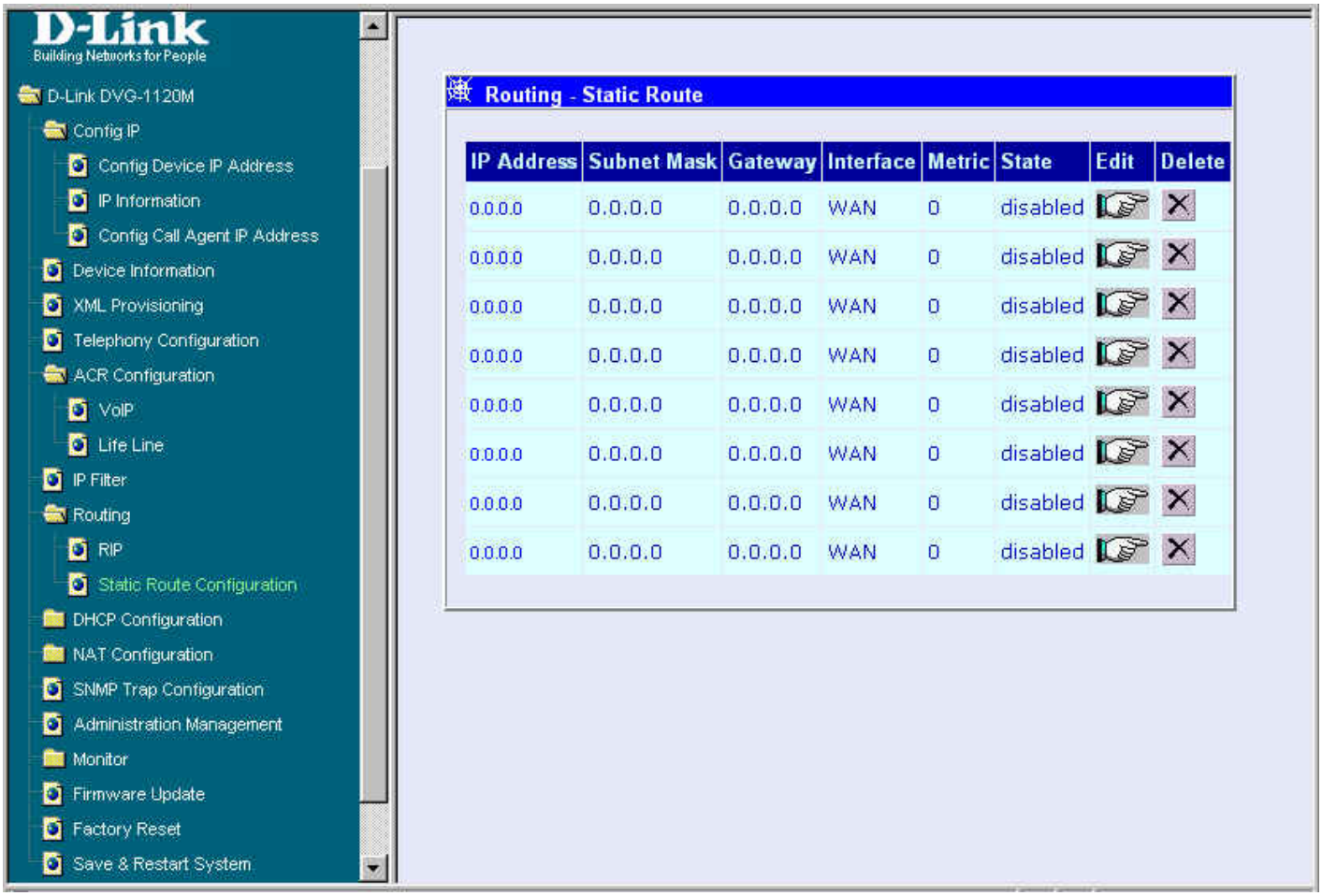


RIP window

Select to use RIPv1, RIPv2 or On (both versions) for the LAN and WAN interface. To disable both versions of RIP select Off.

Click on the **Save** button at the bottom right of the window to save the settings.

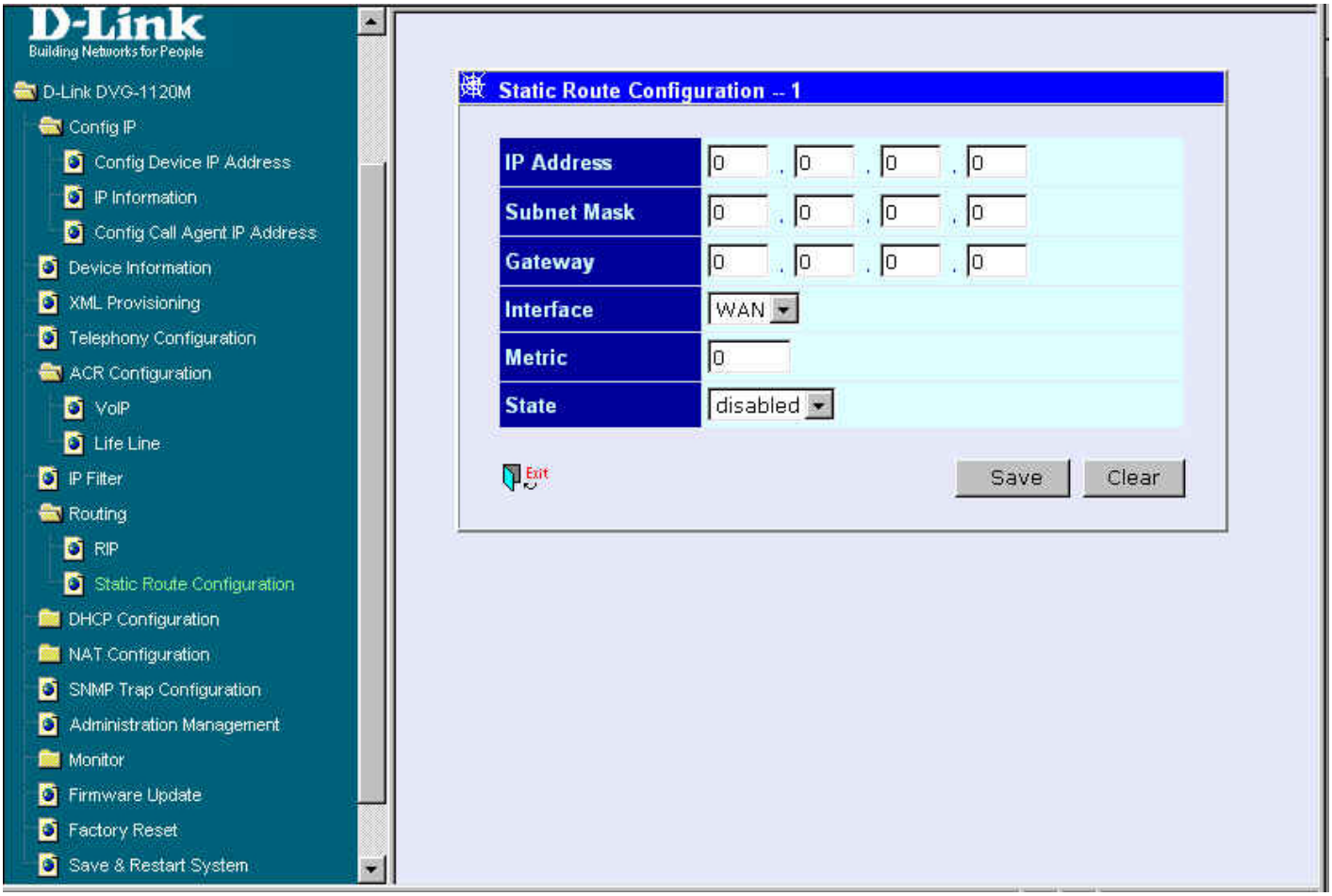
Routing - Static Route Configuration



First Static Route Configuration window

Use Static Routing to specify a route used for data traffic within your WAN or LAN. This can be used to specify that all packets destined for a particular subnet use a predetermined gateway.

Click the pointer icon on the window above to access the second **Static Route Configuration** window:

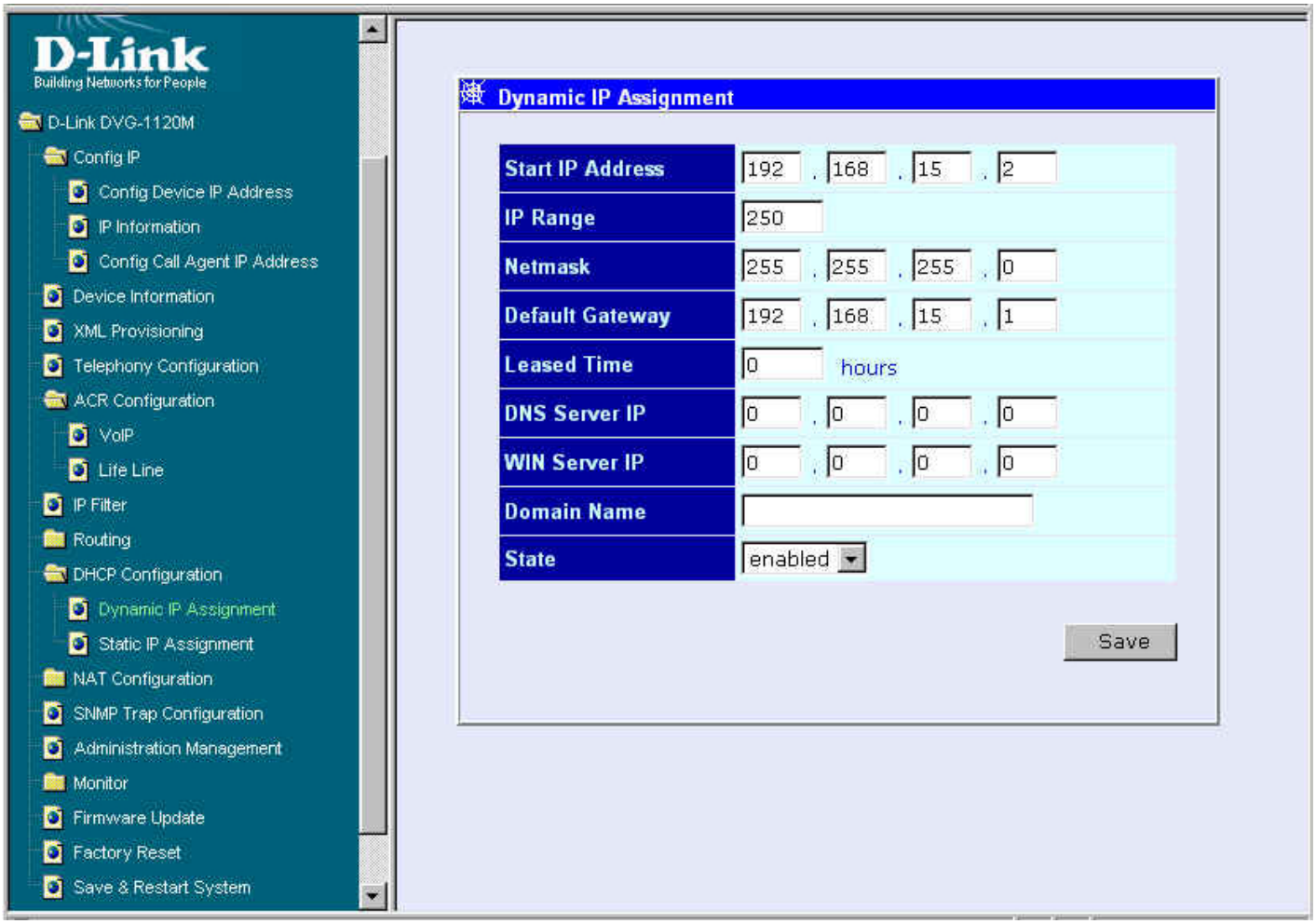


Second Static Route Configuration window

The items on this window are described below:

IP Address Type in the IP address of the subnet or device where packets are routed.
Subnet Mask Type in an appropriate subnet mask that allows the static route to function..
Gateway Type in the IP address of the gateway used for traffic destined for the specified subnet or device.
Interface Select WAN or LAN Interface
Metric Type in the maximum number of hops allowed for the static route.
State Enable of disable the route
Click on the **Save** button at the bottom right of the window to save the settings.
Click on the **Clear** button at the bottom right of the window to clear the settings.

DHCP Configuration - Dynamic IP Assignment



Dynamic IP Assignment window

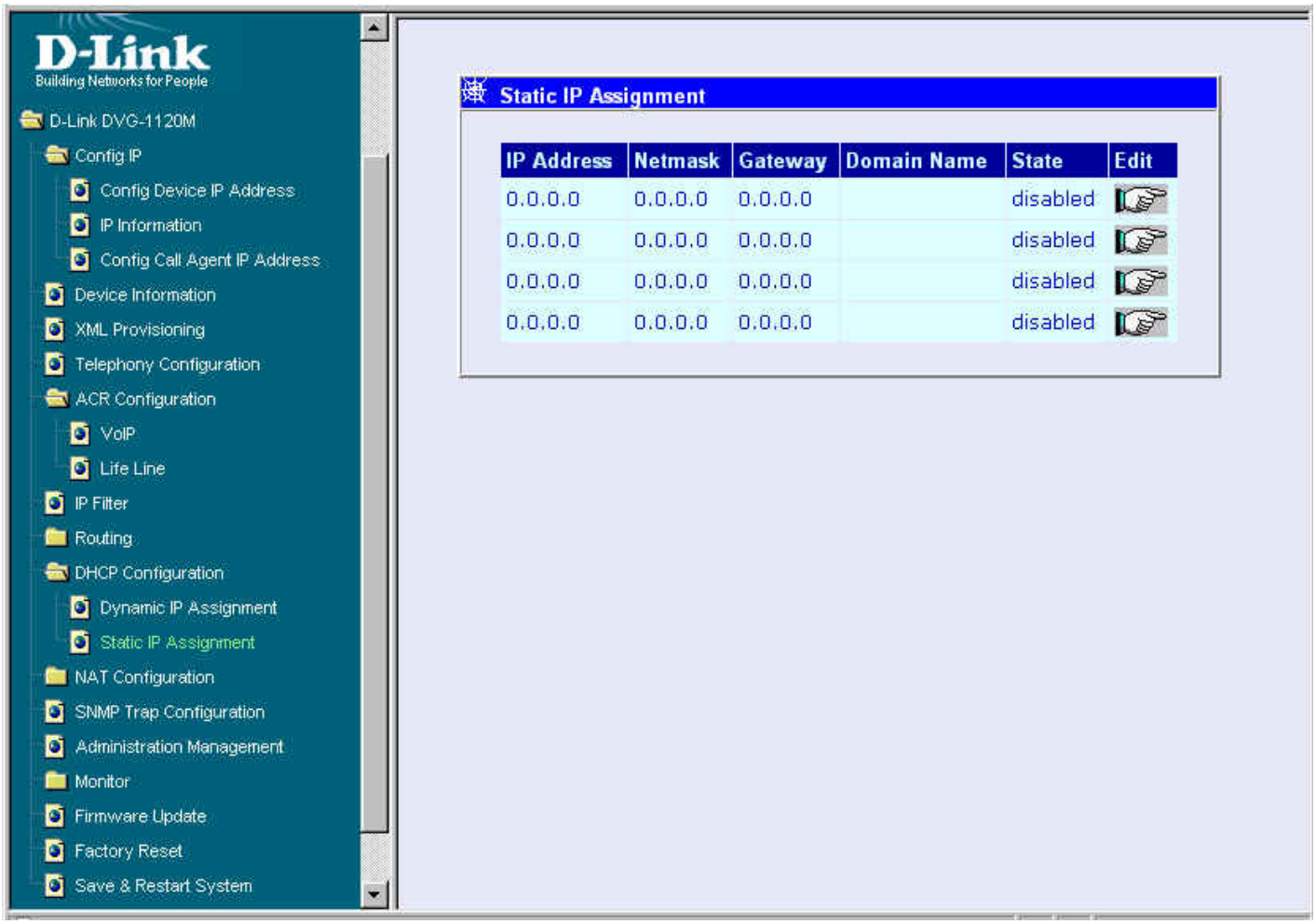
Use the **Dynamic IP Assignment** to configure the device to act as a DHCP server for the LAN.

The items on this window are described below:

Start IP Address This the base (starting) address for the IP pool of unassigned IP addresses.
IP Range This is the range of contiguous, IP addresses, above the base IP Address above.
Netmask This mask informs the client, how the destination IP address is to be divided into network, subnet, and host parts. The netmask has ones in the bit positions in the 32-bit address which are to be used for the network and subnet parts, and zeros for the host part.
Default Gateway This specifies the Gateway IP Address that will be assigned to and used by the DHCP clients.
Leased Time This specifies the amount of time (in seconds) a client can lease an IP address, from the dynamically allocated IP pool.
DNS Server IP This specifies the Domain Name System server, used by the DHCP clients using leased IP addresses, to translate hostnames into IP addresses or vice-versa.
WIN Server IP Some LANs may require using WINS servers, enter the IP address of the WINS server or leave blank.
Domain Name Enter a domain name for the network group or leave blank.
State This toggles Disable and Enable for DHCP function.

Click on the **Save** button at the bottom right of the window to save the settings.

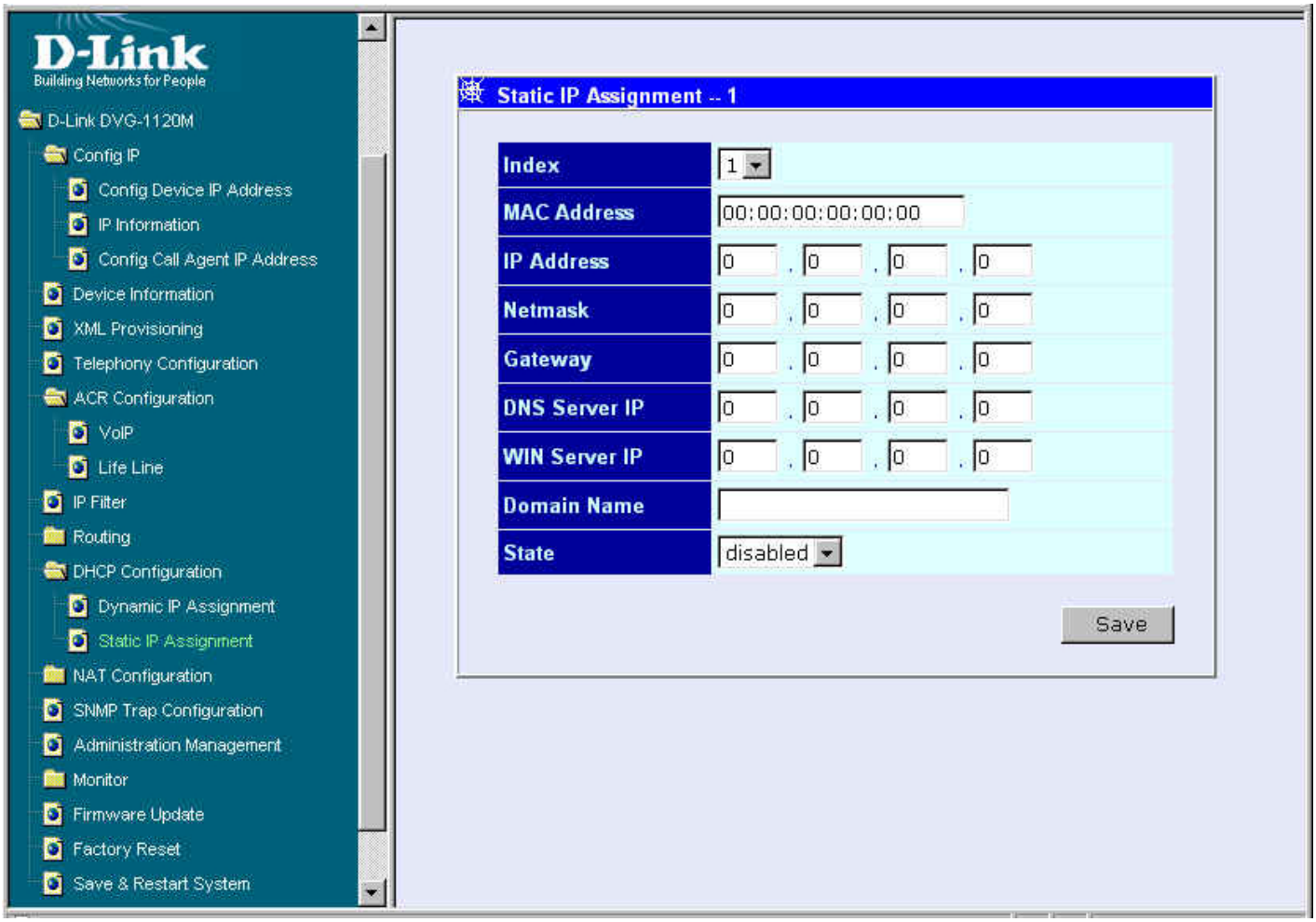
DHCP Configuration - Static IP Assignment



First Static IP Assignment window

The Static IP Assignment functions in much the same way as the Dynamic IP Assignment. The only difference is that a particular IP address can be assigned to a particular host. The host is identified by the MAC Address of its NIC which must be entered on next screen.

Click the pointer icon on the window above to access the second **Static IP Assignment** window:



Second Static IP Assignment window

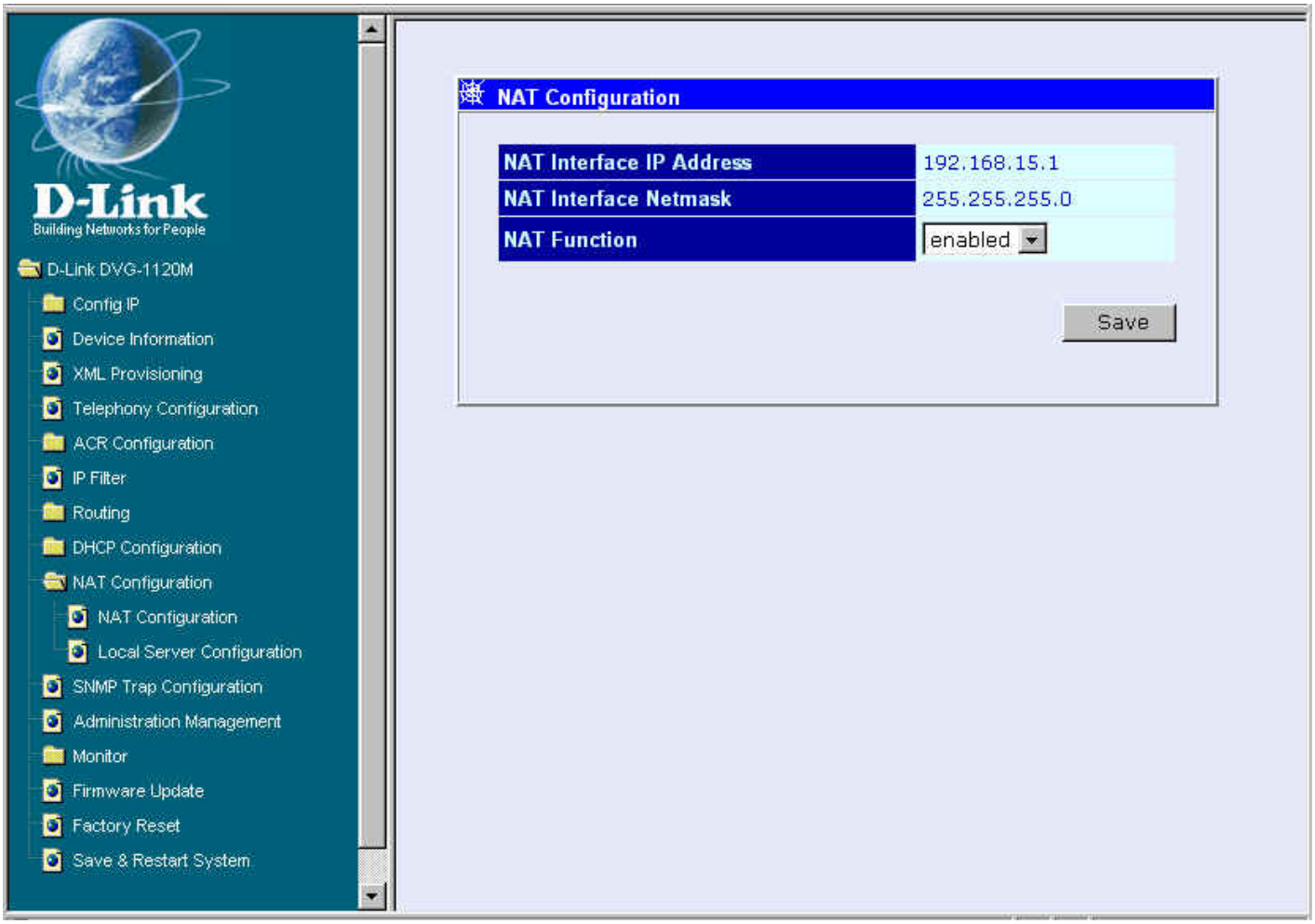
The items on this window are described below:

Index Choose the index number that you would like to edit (Form 1 to 4).
MAC Address This specifies the physical address of the particular host that will receive the below IP address.
IP Address This is the static IP address to be assigned.

All other parameters (Netmask, Gateway, DNS Server IP, WINS Server IP, Domain Name and State) are identical to those in the Dynamic IP Assignment, in the previous section.

Click on the **Save** button at the bottom right of the window to save the settings.

NAT Configuration - NAT Configuration

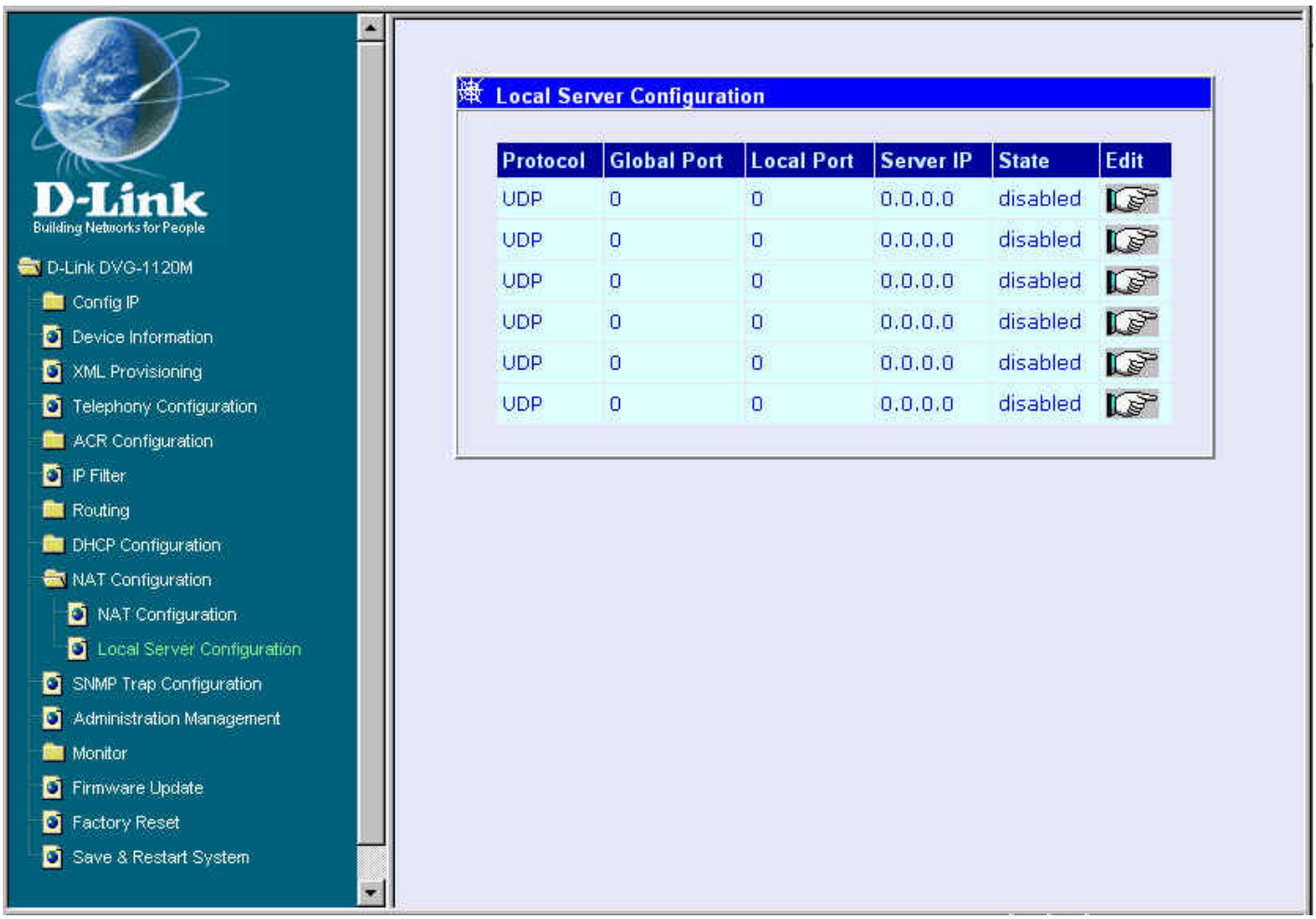


NAT Configuration window

Select enabled or disabled the NAT function.

Click on the **Save** button at the bottom right of the window to save the settings.

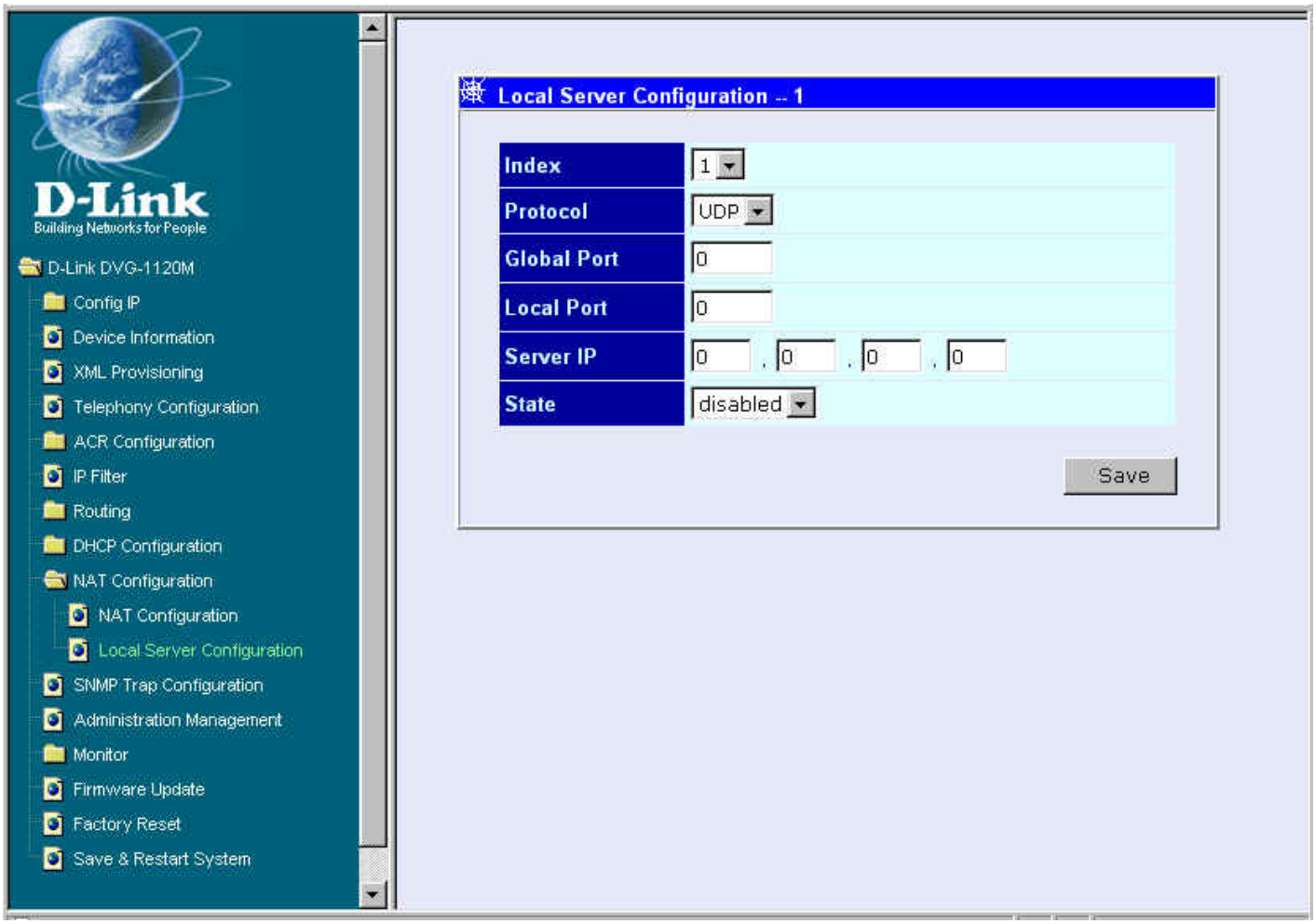
NAT Configuration - Local Server Configuration



First Local Server Configuration window

This window allows you to view the current local server configuration settings.

Click the pointer icon on the window above to access the second **Local Server Configuration** window:



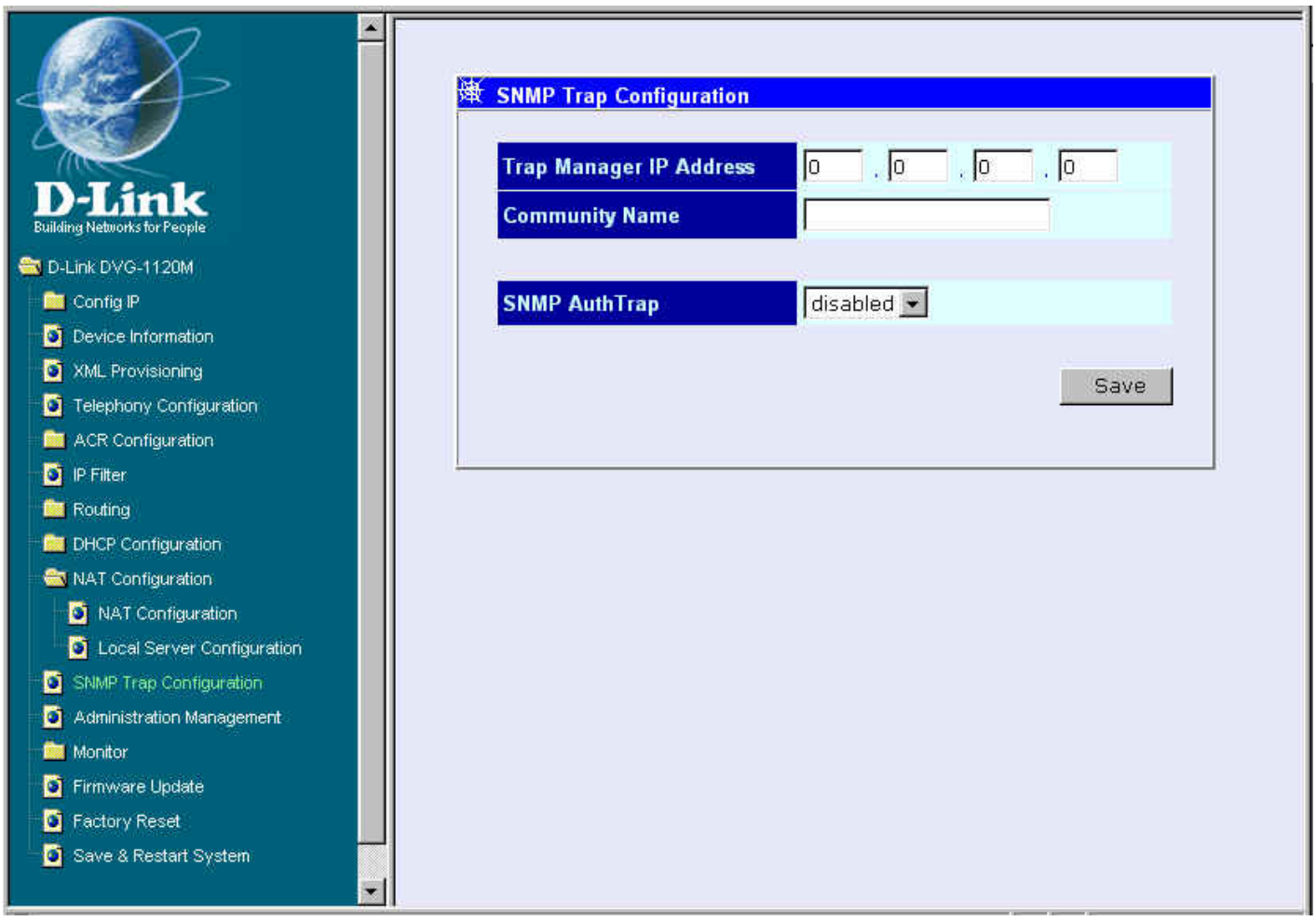
Second Local Server Configuration window

The items on this window are described below:

Index Choose the index number that you would like to edit (Form 1 to 6).
Protocol Choose the protocol either TCP or UDP.
Global Port Enter the designated TCP or UDP protocol port number for the particular protocol packet you wish to redirect.
Local Port Enter the port number used by the designated host on the LAN or use a well-known port.
Server IP Enter the IP address of the local designated host computer or device.
State This toggles Disable and Enable for Local Server Configuration function.

Click on the **Save** button at the bottom right of the window to save the settings.

SNMP Trap Configuration



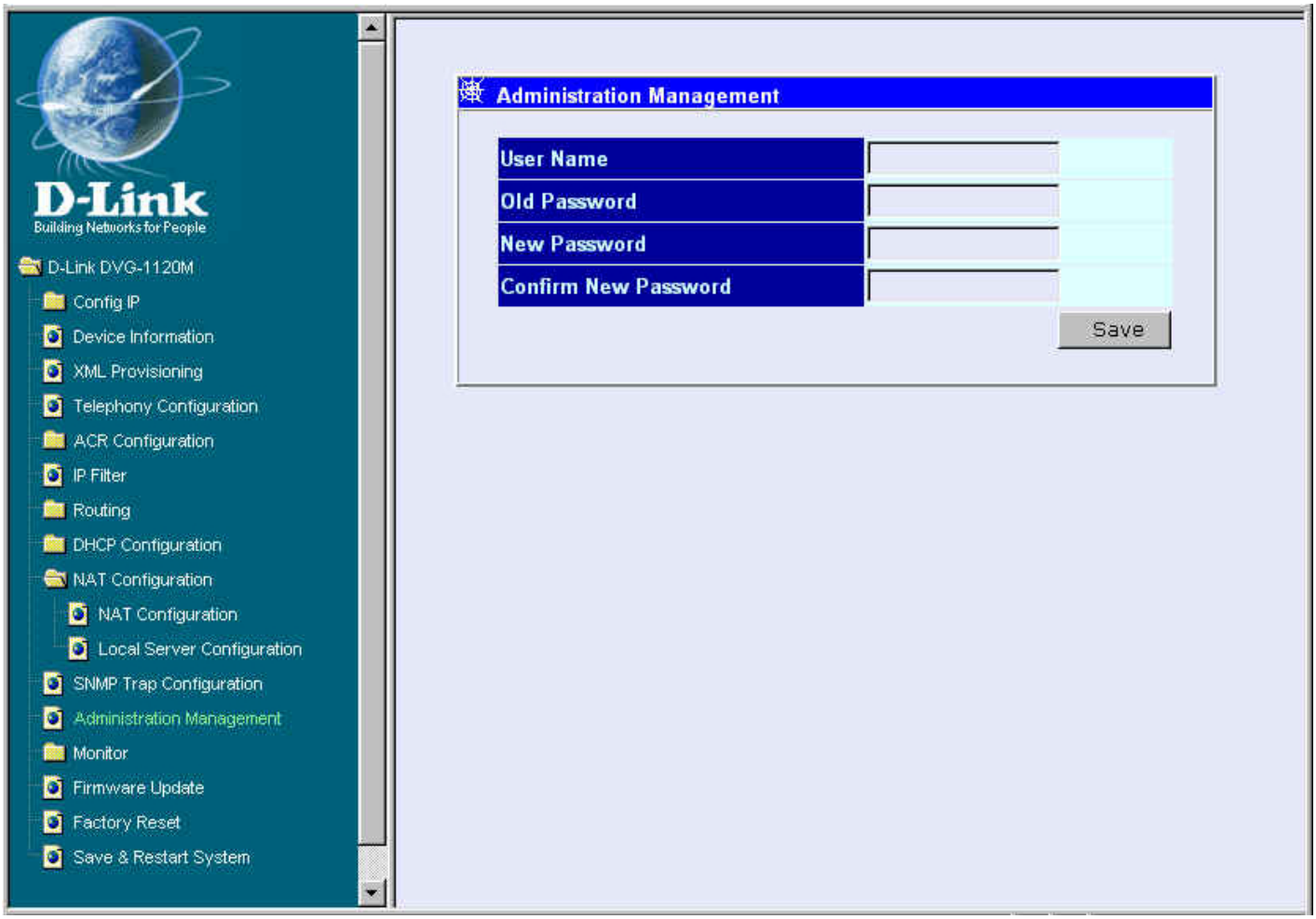
SNMP Trap Configuration window

The items on this window are described below:

Trap Manager IP Address The IP address of the trap receiving station.
Community Name A user-defined SNMP community name.
SNMP AuthTrap Enable or disable the SNMP trap.

Click on the **Save** button at the bottom right of the window to save the settings.

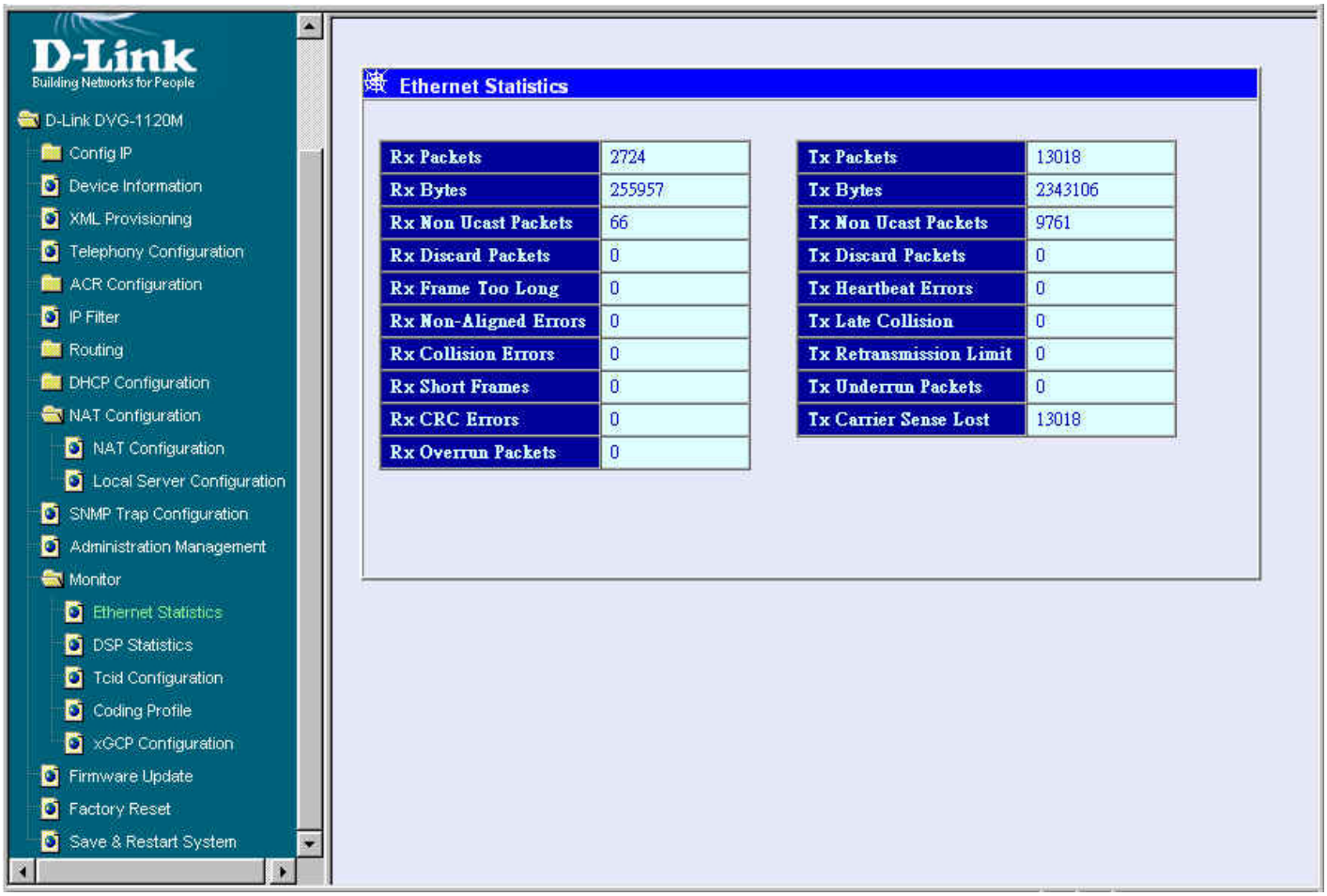
Administration Management



Administration Management window

To add or change a User Account, fill in the appropriate information in the User Name, Old Password (if applicable), New Password, and Confirm New Password fields. Click on the **Save** button to keep the settings.

Monitor - Ethernet Statistics



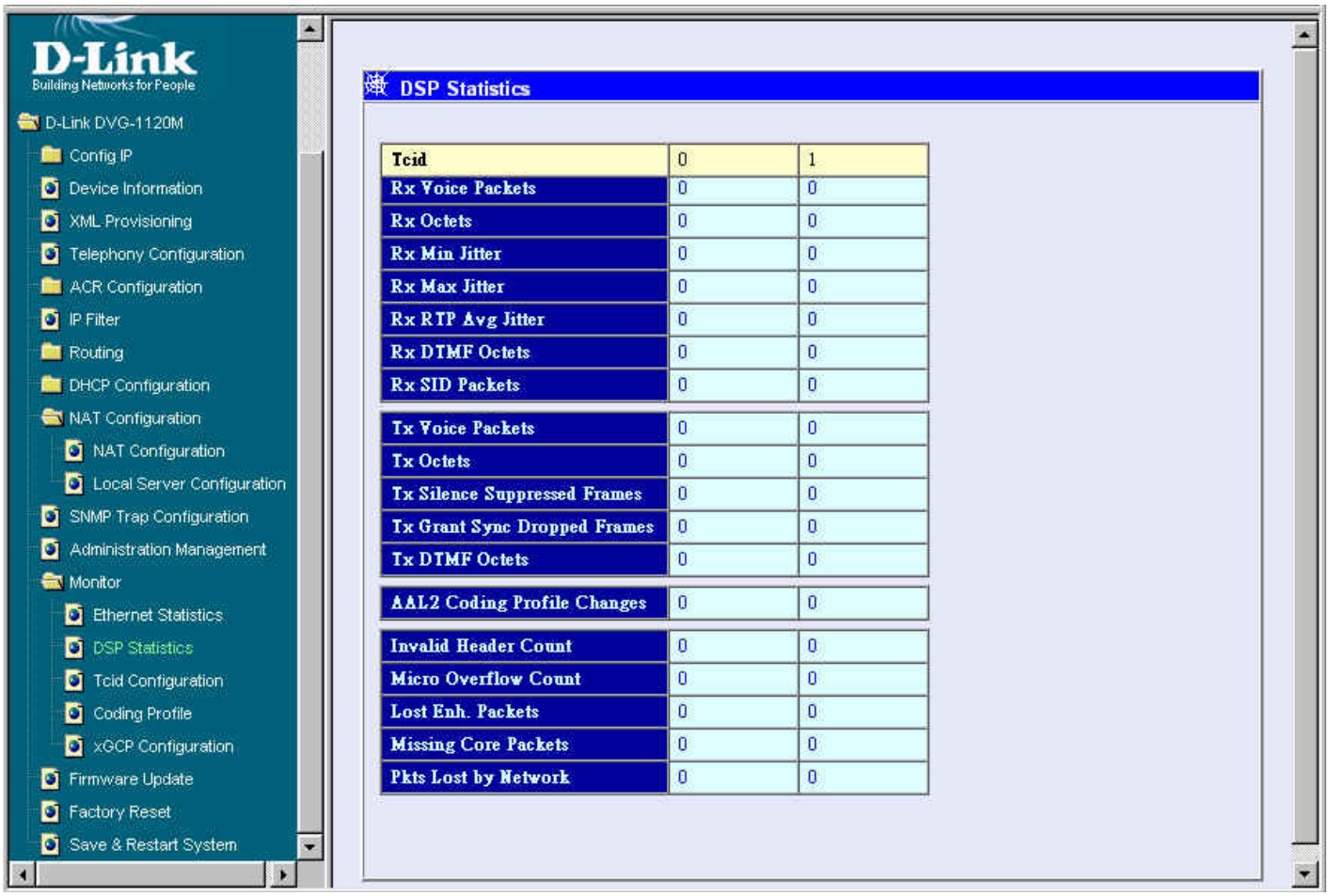
Ethernet Statistics window

Items in the window are described as follows:

- **Rx Packets** The total number of packets received by the device.
- **Rx Bytes** The total number of bytes contained in packets received by the device.
- **Rx Non Ucast Packets** The number of non-unicast packets received by the device.
- **Rx Discard Packets** The number of packets dropped by the device.
- **Rx Frame Too Long** The number of packets that are larger than the 1514 Ethernet packet limit.
- **Rx Non-Aligned Errors** The number of packets that are not aligned properly.
- **Rx Collision Errors** The number of collision errors.
- **Rx Short Frames** The number of packets smaller than the 64-octet minimum.
- **Rx CRC Errors** The number of packets received that failed the CRC checksum test.
- **Rx Overrun Packets** The number of packets received that exceed the 1518 octet maximum length imposed on Ethernet packets. Overrun packets are generated by some proprietary software applications.
- **Tx Packets** The total number of valid packets transmitted by the device since the last reset.
- **Tx Bytes** The total number of bytes transmitted by the device.
- **Tx Non Ucast Packets** The number of non-unicast packets sent.

- **Tx Discard Packets** The number of packets dropped by the device.
- **Tx Heartbeat Errors** The number of heartbeat errors. This relates to an internal timing function.
- **Tx Late Collision** The number of late collisions.
- **Tx Retransmission Limit** The number of times the device had to retransmit packets.
- **Tx Underrun Packets** This counter shows the number of runt packets transmitted by the device that are less than the allowed 64-octet minimum length. Underrun packets occur due to jam signals generated by collisions, backpressure, etc.
- **Tx Carrier Sense Lost** The number of times packets were lost due to carrier sense lost.

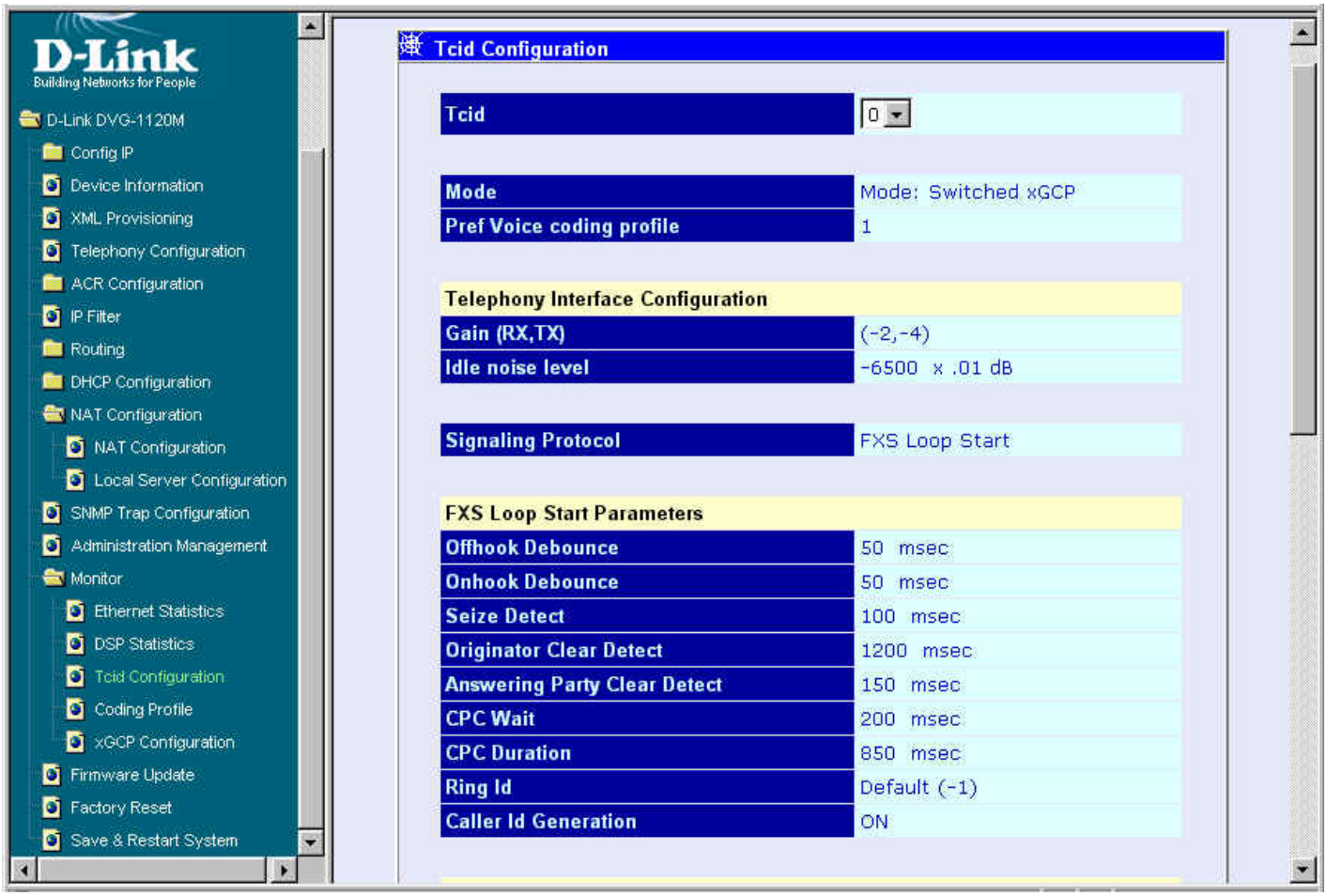
Monitor - DSP Statistics



DSP Statistics window

This window displays a variety of DSP statistics.

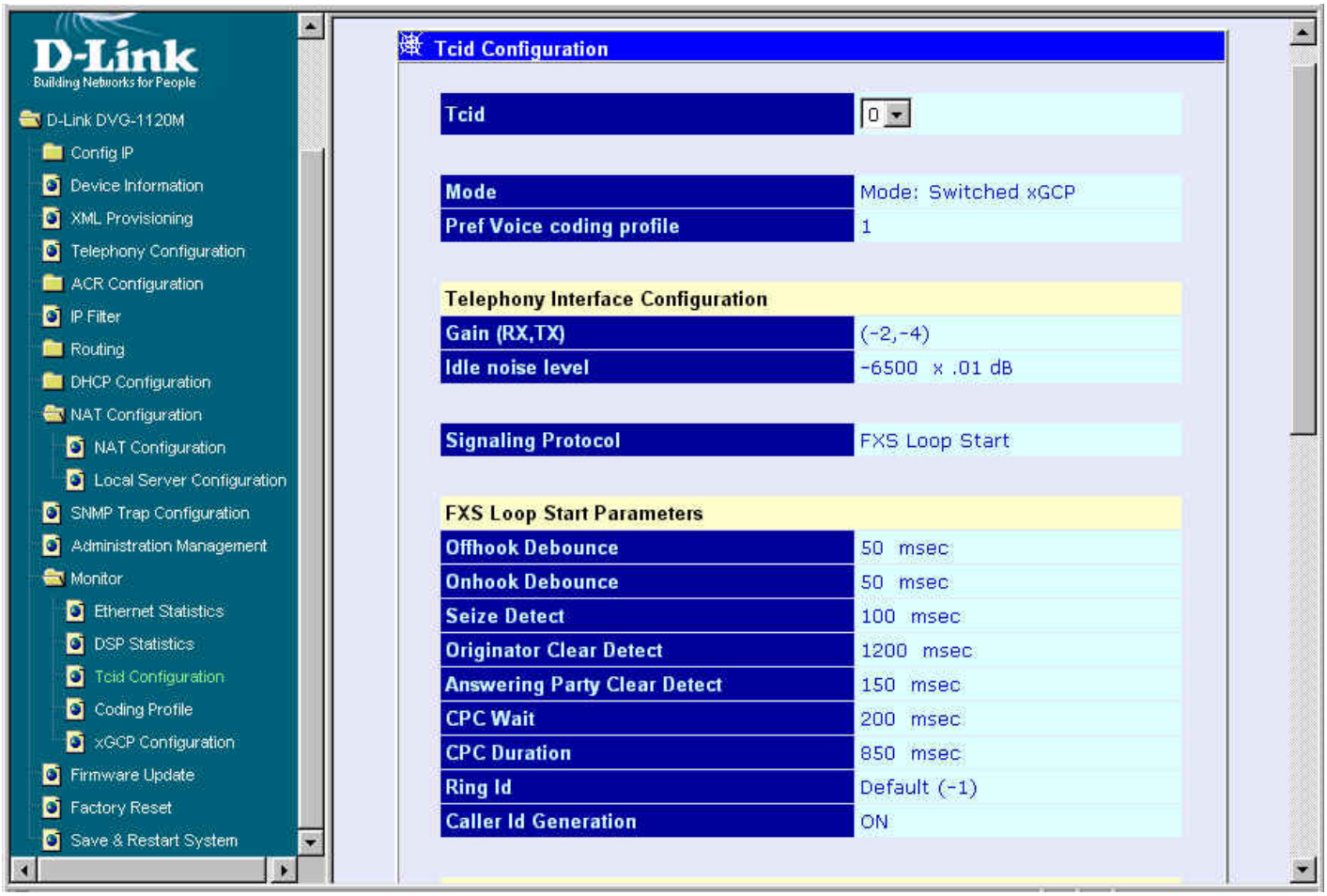
Monitor - Tcid Configuration



Tcid Configuration window

This read-only window displays a variety of Tcid configuration settings.

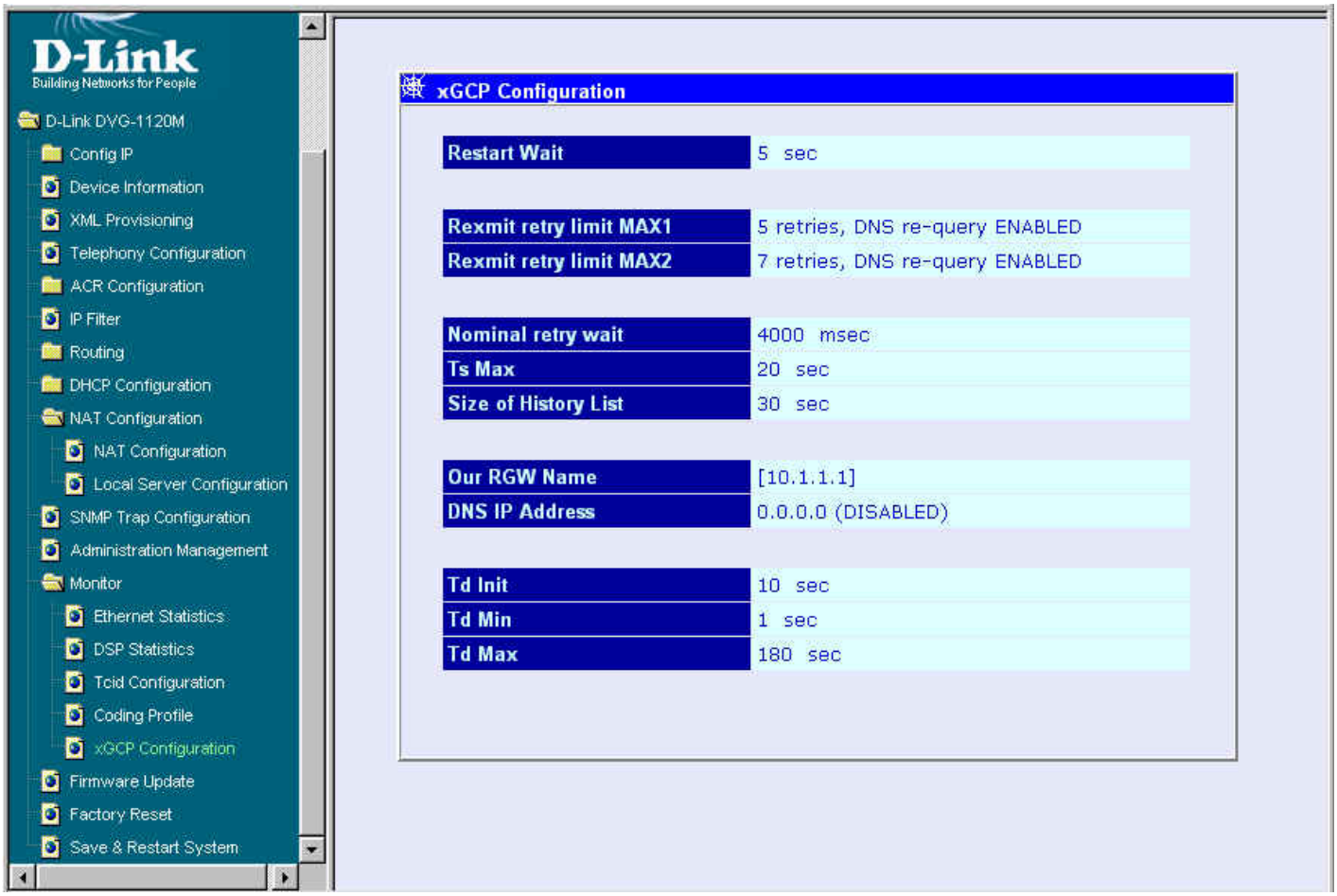
Monitor - Coding Profile



Coding Profile window

This read-only window displays various Coding Profile settings.

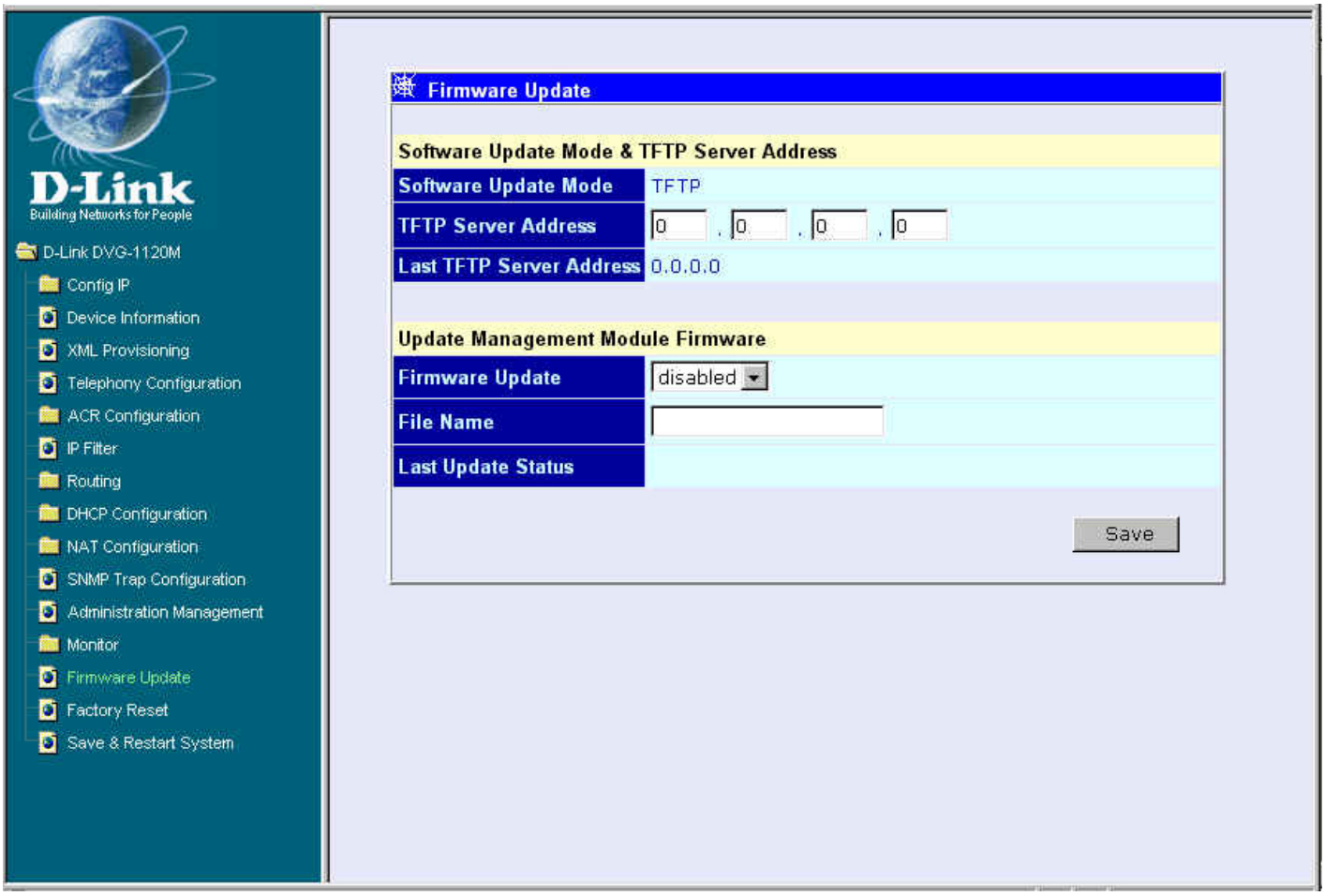
Monitor - XGCP Configuration



XGCP configuration window

This read-only window displays settings related to xCGP Configuration.

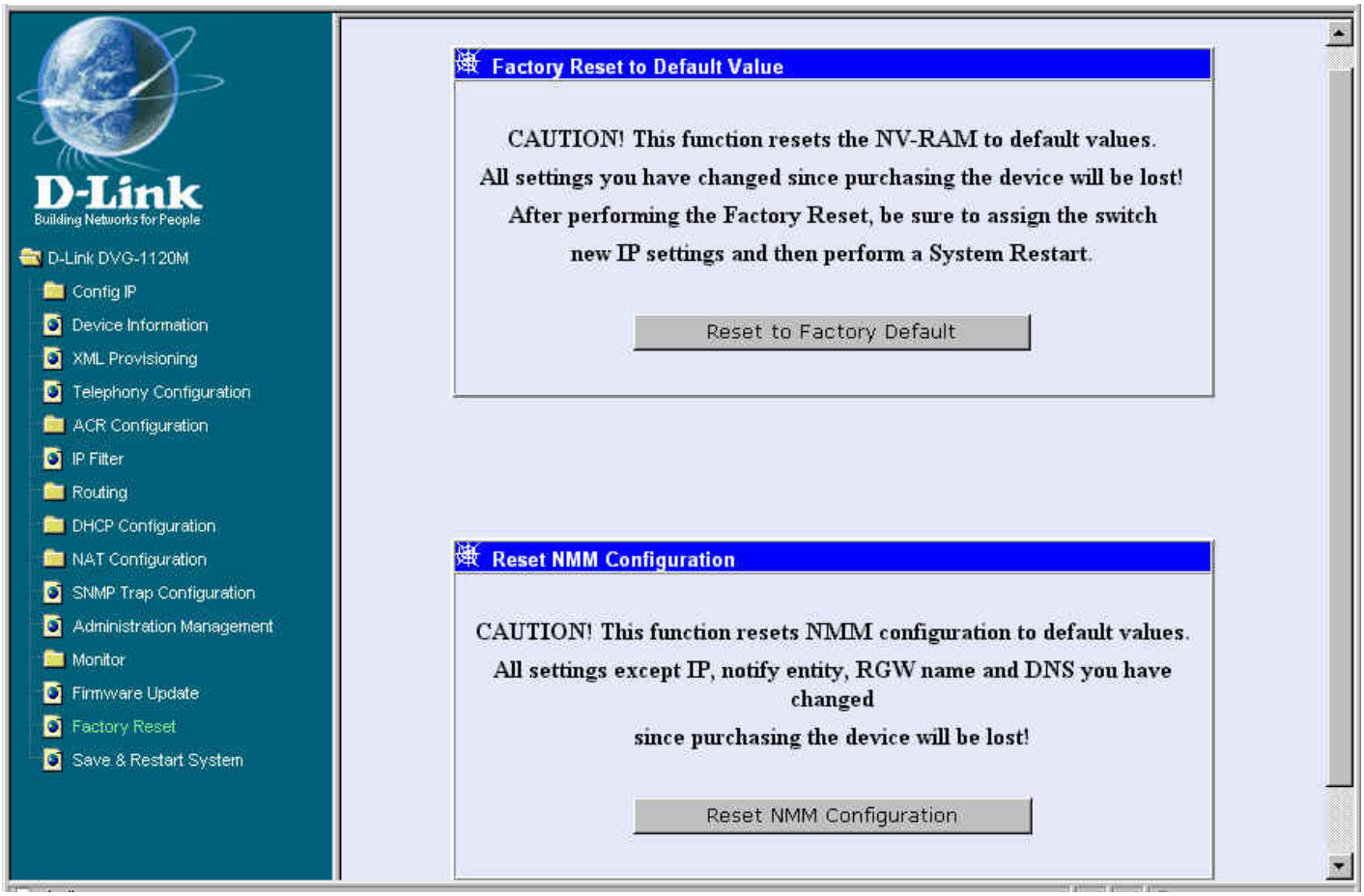
Firmware Update



The items on this window are described below:

Software Update Mode Software upgrade through TFTP on the VoIP gateway
TFTP Server Address The IP address of the TFTP server where the runtime or configuration file is located. This entry is used only if the Firmware Update is set to Enable.
Last TFTP Server Address This is a read-only field that displays the IP address of the last TFTP server to be accessed.
Firmware Update Determines whether or not the device will try to look for a runtime image file on the TFTP server.
File Name The complete path and filename of the runtime image file on your TFTP server to be uploaded to the device.
Last Update Status This is a read-only field that displays the last update status of the last upgrade. Click on the **Save** button at the bottom right of the window to save the settings.

Factory Reset



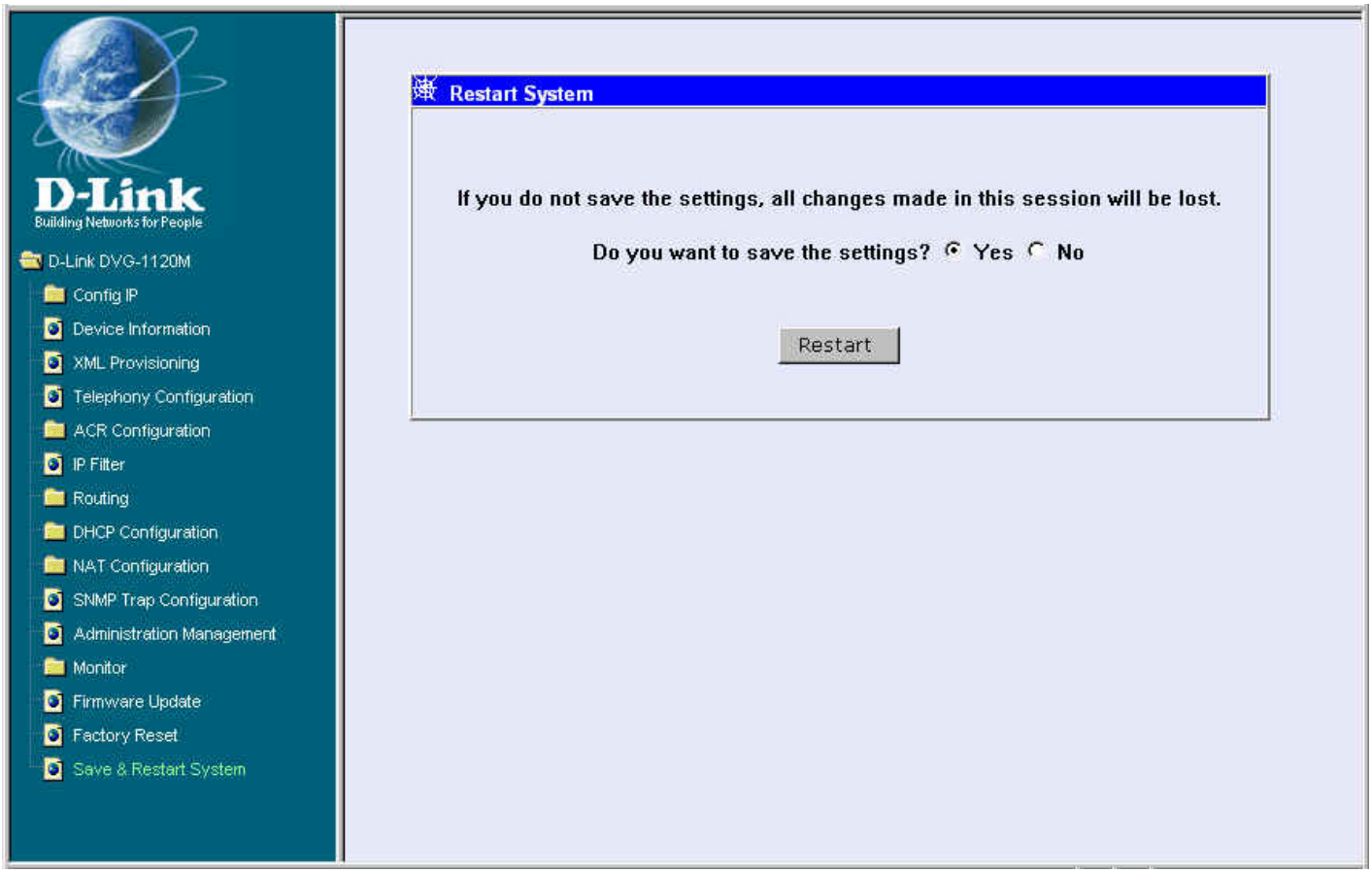
Factory Reset to Default Value window

Before performing a Factory Reset, be absolutely certain that this is what you want to do. Once the reset is done, all of the device's settings stored in NV-RAM will be erased and restored to values present when the device was purchased.

Note: After performing the Factory Reset, make sure to redefine the IP settings for the device in the **IP Configuration** menu. Then perform a Restart System on the device. After these three procedures are performed, your Factory Reset is complete.

Click on the **Reset to Factory Default** button at the bottom of the window to reset the NV-RAM to the default values that were present when you purchased the device.

Save Changes



Save Changes window

After the settings have been saved to NV-RAM, they will become the default settings for the device, and they will be used every time it is powered on, reset or rebooted. The only exception to this is a factory reset, which will clear all settings and restore them to their initial values, which were present when the device was purchased.

Click on the **Save Configuration** button at the bottom of the window to save the system settings to NV-RAM.

7

Command Line Interface

The DVG-1120M VoIP gateway offers a line-at-a-time prompt and response scheme to execute various configuration instructions. The interface displays a single prompt character **ggdbg>** when it is ready to accept a command (ex. **ggdbg>set** or **ggdbg>show**).

Typing a question mark after the **ggdbg>** prompt will display a list of helpful user commands. Please note that all characters must be entered in lower case. For the sake of explanation, all command line examples in this chapter are in **bold** type.

See below for a list of some of the most commonly used commands, parameter(s), and examples of their usage.

General Setup Commands

nwdbg system reboot
Definition: This command is used to restart the device.
Parameter(s): None.
Example: **nwdbg system reboot**

nwdbg save changes
Definition: This command is used to save configuration changes into flash and then restart the device.
Parameter(s): None.
Example: **nwdbg save changes**

nwdbg factory reset
Definition: This command is used to change all of the configuration data to the default values, save the new configuration data into flash, and then restart the device.
Parameter(s): None.
Example: **nwdbg factory reset**

nwdbg un <USERNAME>
Definition: This command sets the username if there is a username string, or shows the username/password if only **nwdbg un** is typed.
Parameter(s): <USERNAME, maximum string length is 12 characters>
Example: **nwdbg un 123456789012**

nwdbg pw <PASSWORD>
Definition: This command sets the password if there is a password string, or shows the username/password if only **nwdbg pw** is typed.
Parameter(s): <PASSWORD, maximum string length is 12 characters>
Example: **nwdbg pw**

nwdbg slic <0 | 1>
Definition: This command changes the Subscriber Line Interface Circuit (SLIC) state to standby or active, or shows the SLIC state if only **nwdbg slic** is typed.
Parameter(s): <slic state, 0 : standby, 1 : active >
Example: **nwdbg slic 0**

nwdbg dtmf_relay <0 | 1>
Definition: This command turns the Dual Tone Multiple Frequency (DTMF) relay function on or off, or shows the DTMF relay state if only **nwdbg dtmf_relay** is typed.
Parameter(s): <0 : off, 1 : on>
Example: **nwdbg dtmf_relay 0**

nwdbg mac <MAC ADDRESS>
Definition: This command sets the MAC address of the voice link, or shows the MAC address if only **nwdbg mac** is typed.
Parameter(s): <MAC ADDRESS, the format is XX:XX:XX:XX:XX:XX>
Example: **nwdbg mac 00:50:ba:08:24:56**

nwdbg ip <dhcp | bootp | manual>
Definition: This command sets the software boot mode to DHCP or BOOTP or Manual mode.
If only **nwdbg ip** is typed, this command shows the IP configuration.
DHCP: While the system is booting, the system acts as a DHCP client.
BOOTP: While the system is booting, the system acts as a BOOTP client. This mode is used to set the device's IP address and upgrade the software.
Manual: While the system is booting, the system uses a fixed IP address. The fixed IP address can be set by **nwdbg ip** <IP ADDRESS>.
Parameter(s): <dhcp | bootp | manual>
Example: **nwdbg ip dhcp**

nwdbg ip <IP ADDRESS>
Definition: This command sets the fixed IP address, which is used as the system's IP address if the software boot mode is Manual mode.
If only **nwdbg ip** is typed, this command shows the IP configuration.
Parameter(s): <IP ADDRESS>
Example: **nwdbg ip 10.1.1.120**

nwdbg mask <SUBNET MASK>
Definition: This command sets the fixed subnet mask, which is used as the system's subnet mask if the software boot mode is Manual mode.
If only **nwdbg mask** is typed, this command shows the IP configuration.
Parameter(s): <SUBNET MASK>
Example: **nwdbg mask 255.0.0.0**

nwdbg gw <GATEWAY IP>
Definition: This command sets the fixed GW address, which is used as the system's GW address if the software boot mode is Manual mode.
If only **nwdbg mask** is typed, this command shows the IP configuration.
Parameter(s): <GATEWAY IP>
Example: **nwdbg gw 10.1.1.254**

nwdbg tftp <0 | 1>
Definition: This command sets the software download link to either a WAN link or a LAN link.
If only **nwdbg tftp** is typed, this command shows the download link.
Parameter(s): <0:WAN link, 1:LAN link>
Example: **nwdbg tftp 0**

nwdbg ca <NOTIFY ENTITY>
Definition: This command sets the address of notify entity.

If only **nwdbg ca** is typed, this command shows the address.
Parameter(s): <NOTIFY ENTITY, the format can be: localName@[domainName|ip]:port or [domainName|ip]:port or [domainName|ip]>
Example: **nwdbg ca 10.1.40.100:2427**

nwdbg rgw <RGW NAME>
Definition: This command sets the Residential Gateway Name.
If only **nwdbg rgw** is typed, this command shows the RGW NAME.
Parameter(s): <RGW NAME>
Example: **nwdbg rgw [RGW_1]**

nwdbg dns <DNS IP>
Definition: This command sets the Domain Name Server's IP address.
If only **nwdbg dns** is typed, this command shows the DNS IP/STATE.
Parameter(s): <DNS IP>
Example: **nwdbg dns 10.1.1.5**

nwdbg dns <disable|enable>
Definition: This command turns on/off the DNS function.
If only **nwdbg dns** is typed, this command shows the DNS IP/STATE
Parameter(s): [disable | enable]
Example: **nwdbg dns disable**

nwdbg country <code>
Definition: This command provides country code setting interface to config the tone frequency for different country.
If only **nwdbg country** is typed, this command shows the COUNTRY CODE
Parameter(s): <0:USA (Default), 1:Japan, 2:Hong Kong, 3:Sweden>
Example: **nwdbg country 1**

nwdbg config
Definition: This command shows all the configuration settings made by **nwdbg** commands.
Parameter(s): None.
Example: **nwdbg config**

ping <DEST IP> <OPTIONS>
Definition: This command lets the user ping an IP address from the device.
Parameter(s): <DEST IP: The host ip address>
<OPTIONS, -t : Ping the specifed host until stopped (type SPACE).
-n count: Number of echo requests to send.
-w timeout: Timeout in seconds to wait for each reply.
-i interval: The interval in half-seconds between two echo requests.>
Example: **ping 10.1.1.6 -n 100 -w 2 -i 1**

TFTP Client Setup Commands

When the user enters **tftp**, the screen will show all commands about the TFTP client:

ggdbg>tftp
tftp srvip <IP ADDRESS> – set the IP address of TFTP server
tftp get <FILENAME> – get the remote image file

if <FILENMAE> is not specified, the image file name in EEPROM will be employed.

tftp update – update the image in flash

Current Settings :

TFTP Server IP Address : 172.16.6.245

Image File Name : 102nmm01.tfp

tftp srvip <IP ADDRESS>

Definition: This command sets the IP address of the TFTP server. The image must be resident on that TFTP server. If the IP address is invalid, the message **ERROR** will be displayed.

Example: **ggdbg>tftp srvip 172.16.6.245**
OK

tftp get <FILENAME>

Definition: Gets the image from the TFTP server. The <FILENAME> is the name of the image on the TFTP server. If any error happened during downloading image, the message **ERROR** will be displayed. When the user enters **tftp get**, the file name in EEPROM will be employed.

Example: **ggdbg>tftp get c:\102nmm.tfp**
Download d:\project\dg102\102nmm.tfp ...
OK

tftp update

Definition: This command updates the image in FLASH. The image is downloaded for storage in DRAM. If any error happens during the update of the image, the message **ERROR** will be displayed.

Example: **ggdbg>tftp update**
.. Erase Runtime Flash Memory ... Done
.. Program Runtime Flash Memory ... Done
OK

A

Specifications

Call Control Protocols Compliance:

MGCP

Voice Compression:

G.711 (A-law and u-law), G.723.1, G.729a

Analog Voice Ports:

Type: Loop-Start FXS interfaces

DTMF tone detection/generation

V.21/V.25 Modem/Fax tone detection

Echo Cancellation: G.165/G.168

Ethernet Ports

WAN: 10BASE-T Ethernet port (MDI-II)

LAN: NWay 10/100BASE-TX Fast Ethernet ports (MDI-X)

IEEE 802.3 10BASE-T Ethernet compliance

IEEE 802.3u 100BASE-TX Fast Ethernet compliant

Quality of Service:

Voice service is prioritized over the data traffic

FAX Support:

V.21, V.27ter, V.29, V.17 Modulation/Demodulation.

Network Protocols:

TCP/IP, UDP, ARP, ICMP, TFTP, Telnet, SNMP, HTTP, RIP1/RIP2

DHCP: Dynamic Host Configuration Protocol server and client

NAT: Network Address Translation

PPP over Ethernet Client

Network Management:

SNMP management agent base MIB II

Telnet provisioning

Manage functions through an intuitive web-based graphical user interface

Local management console

TFTP: The built–in Trivial File Transfer Protocol provides firmware upgrade

Security:

Password Authentication Protocol/Challenge Handshake Authentication Protocol (PAP/CHAP)

Administrative password through Telnet, Console, Web and SNMP

Packet filter by IP address, port number and protocol

LEDs

General

Power

Status/Alarm

Ethernet

WAN: Link/Act

LAN: 10/100M, Link/Act

Phone 1 to 2

PSTN

Hook/Ringing

Dimensions

TBD

Number of Ports

One 10BASE-T Ethernet port (WAN)

One 10/100BASE-TX Fast Ethernet port (LAN)

Two loop-start FXS RJ-11 ports

One PSTN POTS RJ-11 port for Life Line

One RJ-14 Console port

Power Supply

AC-to-DC power adapter (provided)

DC Input: 12VDC/1A

Operating Temperature

0 - 50 °C

Storage Temperature

-10 - 55 °C

Humidity

5% - 95% non-condensing

Safety

UL/CUL

Emission (EMI)

FCC Class B

VCCI Class B

BSMI Class B

CE Class B

C-Tick Class B

D-Link® Offices

AUSTRALIA — **D-LINK AUSTRALASIA**
Unit 16, 390 Eastern Valley Way Roseville, NSW 2069 Australia
TEL: 61-2-9417-7100 FAX: 61-2-9417-1077 TOLL FREE (Australia): 1800 177 100 TOLL FREE (New Zealand): 0800-900900
URL: www.dlink.com.au E-MAIL: support@dlink.com.au & info@dlink.com.au

CANADA — **D-LINK CANADA**
2180 Winston Park Drive, Oakville, Ontario, L6H 5W1 Canada
TEL: 1-905-829-5033 FAX: 1-905-829-5223 BBS: 1-965-279-8732 TOLL FREE: 1-800-354-6522
URL: www.dlink.ca FTP: ftp.dlinknet.com E-MAIL: techsup@dlink.ca

DENMARK — **D-LINK DENMARK**
Naverland 2 DK-2600 Glostrup Copenhagen, Denmark
TEL:45-43-969040 FAX:45-43-424347 URL: www.dlink.dk E-MAIL: info@dlink.dk

EGYPT — **D-LINK MIDDLE EAST**
7 Assem Ben Sabet Street, Heliopolis Cairo, Egypt
TEL: 202-245-6176 FAX: 202-245-6192 URL: www.dlink-me.com E-MAIL: support@dlink-me.com & fateen@dlink-me.com

FRANCE — **D-LINK FRANCE**
Le Florilege #2, Allee de la Fresnerie, 78330 Fontenay le Fleury, France
TEL: 33-1-3023-8688 FAX: 33-1-3023-8689 URL: www.dlink-france.com E-MAIL: info@dlink-france.fr

GERMANY — **D-LINK GERMANY**
Bachstrae 22, D-65830 Kriftel, Germany
TEL: 49-(0)6192-97110 FAX: 49-(0)6192-9711-11 URL: www.dlink.de BBS: 49-(0)6192-971199 (analog)
BBS: 49-(0)6192-971198 (ISDN) INFO: 00800-7250-0000 (toll free) HELP: 00800-7250-4000 (toll free)
REPAIR: 00800-7250-8000 E-MAIL: mbischoff@dlink.de & mboerner@dlink.de

INDIA — **D-LINK INDIA**
Plot No.5, Kurla-Bandra Complex Rd., Off Cst Rd., Santacruz (E) Bombay - 400 098 India
TEL: 91-22-652-6696 FAX: 91-22-652-8914 URL: www.dlink-india.com E-MAIL: service@dlink.india.com

ITALY — **D-LINK ITALY**
Via Nino Bonnet n.6/b, 20154 Milano, Italy
TEL: 39-02-2900-0676 FAX: 39-02-2900-1723 URL: www.dlink.it E-MAIL: info@dlink.it

JAPAN — **D-LINK TOKYO**
10F, 8-8-15 Nishi-Gotanda, Shinagawa-ku, Tokyo 141 Japan
TEL: 81-3-5434-9678 FAX: 81-3-5434-9868 URL: www.d-link.co.jp E-MAIL: kida@d-link.co.jp

SINGAPORE — **D-LINK INTERNATIONAL/D-LINK SINGAPORE**
1 International Business Park, #03-12 The Synergy, Singapore 609917
TEL : 65-774-6233 FAX: 65-774-6322 E-MAIL: info@dlink.com.sg URL: www.dlink-intl.com

SWEDEN — **D-LINK SWEDEN**
P. O. Box 15036, S-167 15 Bromma, Sweden
TEL: 46-(0)8564-61900 FAX: 46-(0)8564-61901 E-MAIL: info@dlink.se URL: www.dlink.dk

TAIWAN — **D-LINK TAIWAN**
2F, No. 119 Pao-Chung Rd, Hsin-Tien, Taipei, Taiwan
TEL: 886-2-2910-2626 FAX: 886-2-2910-1515 URL: www.dlinktw.com.tw E-MAIL: dssqa@tsc.dlinktw.com.tw

U.K. — **D-LINK EUROPE/D-LINK U.K.**
4th Floor, Merit House, Edgeware Road, Colindale, London NW9 5AB U.K.
TEL: 44 (0) 20-8731-5555 FAX: 44 (0) 20-8731-5511 URL: www.dlink.co.uk E-MAIL: info@dlink.co.uk

U.S.A. — **D-LINK U.S.A.**
53 Discovery Drive, Irvine, CA 92618, USA
TEL: 1-949-788-0805 FAX: 1-949-753-7033 BBS: 1-949-455-1779 & 1-949-455-9616 INFO: 1-800-326-1688
URL: www.dlink.com E-MAIL: tech@dlink.com & support@dlink.com

Registration Card

Print, type or use block letters.

Your name: Mr./Ms_____
Organization:_____ Dept. _____
Your title at organization: _____
Telephone:_____ Fax:_____
Organization's full address: _____
_____
Country:_____ Date of purchase (Month/Day/Year):_____

Product Model	Product Serial No.	* Product installed in type of computer (e.g., Compaq 486)	* Product installed Computer serial No.

(* Applies to adapters only)

Product was purchased from:

Reseller's name: _____
Telephone:_____ Fax:_____
Reseller's full address: _____
_____

1. Where and how will the product primarily be used?
☐Home ☐Office ☐Travel ☐Company Business ☐Home Business ☐Personal

2. How many employees work at installation site?
☐1 employee ☐2-9 ☐10-49 ☐50-99 ☐100-499 ☐500-999 ☐1000 or more

3. What network protocol(s) does your organization use ?
☐XNS/IPX ☐TCP/IP ☐DECnet ☐Other_____

4. What network operating system(s) does your organization use ?
☐D-Link LANsmart ☐Novell NetWare ☐NetWare Lite ☐SCO Unix/Xenix
☐PC NFS ☐3Com 3+Open ☐Banyan Vines ☐DECnet Pathwork
☐Windows NT ☐Windows NTAS ☐Windows '95 ☐Other_____

5. What network management program does your organization use ?
☐D-View ☐HP OpenView/Windows ☐HP OpenView/Unix ☐SunNet Manager ☐Novell NMS
☐NetView 6000 ☐Other_____

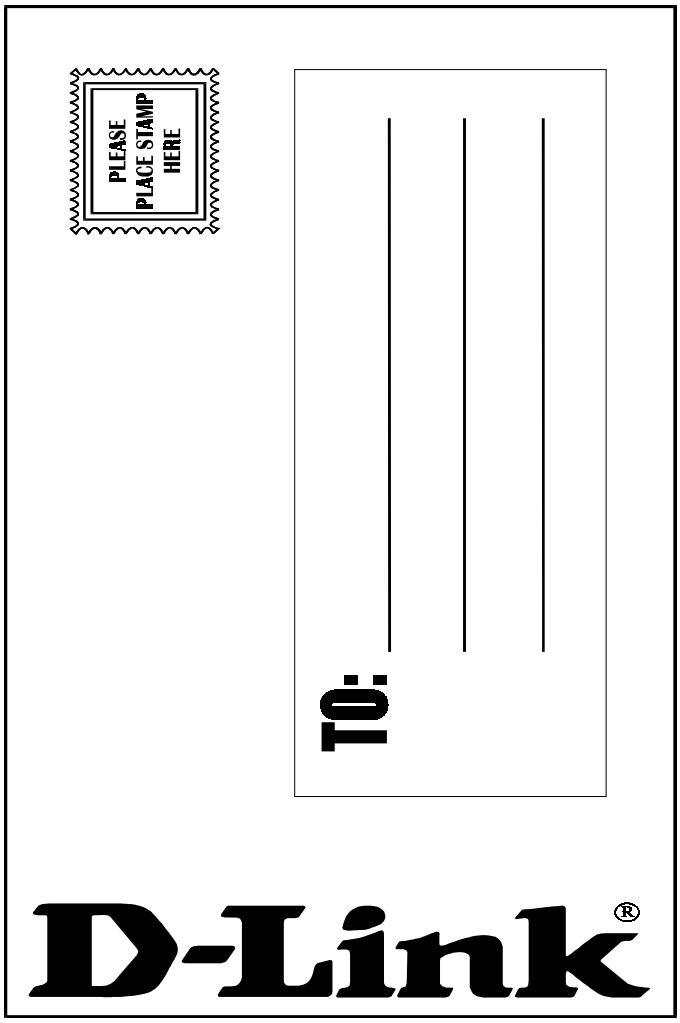
6. What network medium/media does your organization use ?
☐Fiber-optics ☐Thick coax Ethernet ☐Thin coax Ethernet
☐10BASE-T UTP/STP ☐100BASE-TX ☐100BASE-T4 ☐100VGAnyLAN ☐Other_____

7. What applications are used on your network?
☐Desktop publishing ☐Spreadsheet ☐Word processing ☐CAD/CAM
☐Database management ☐Accounting ☐Other_____

8. What category best describes your company?
☐Aerospace ☐Engineering ☐Education ☐Finance ☐Hospital ☐Legal ☐Insurance/Real Estate ☐Manufacturing
☐Retail/Chainstore/Wholesale ☐Government ☐Transportation/Utilities/Communication ☐VAR
☐Systemhouse/company☐Other_____

9. Would you recommend your D-Link product to a friend?
☐Yes ☐No (why?) _____ ☐I don know yet

10. Your comments on this product:_____


PLEASE
PLACE STAMP
HERE
TO:
D-Link®