D-Link®

Microsoft® Response Point™


# USER MANUAL
## DVG-3104MS

VERSION 1.3

VoiceCenter™

# Table of Contents

# Package Contents

- D-Link DVG-3104MS 4-Port PSTN Gateway
- Power Adapter
- CAT5 Ethernet Cable
- Phone Cable
- CD-ROM with QIG and User Manual

**Note:** Using a power supply with a different voltage rating than the one included with the DVG-3104MS will cause damage and void the warranty for this product.

# System Requirements

- Computers with Windows® XP or Windows Vista™ operating systems with an installed Ethernet adapter
- Internet Explorer Version 6.0, Mozilla 1.7.12 (5.0), or Firefox 1.5 and above (for configuration)

# Introduction

D-Link® VoiceCenter™, a Microsoft® Response Point™ phone system, is designed for small to medium-sized businesses with support for up to 50 users. VoiceCenter is an IP-based phone system that provides numerous advantages over traditional PSTN (analog) phone systems. Unlike previous generations of complicated, hard-to-use IP-based products, VoiceCenter is easy to install, manage, and maintain. VoiceCenter is also portable - businesses that need to relocate offices can take the phone system along. In addition, VoiceCenter provides state-of-the-art features such as Voice-activated Dialing, built-in Automated Attendant for answering and routing calls, Call Logs for managing phone usage, and Automatic Phone and Gateway Discovery allowing for a simplified setup process.

VoiceCenter is a scalable solution that supports up to 50 IP Phones and Users on a network. There are no fees or licenses required for adding more phones to the system. Thus, as your company grows and hires new employees, you only need to purchases more phones.

The DVG-3104MS 4-Port PSTN Gateway plays a vital role in the D-LInk VoiceCenter phone solution because it is responsible for bridging and routing outside PSTN lines into the VoiceCenter internal IP-based phone system. The DVG-3104MS provides four PSTN (FXO) ports for connecting up to four phone lines* and one 10/100 Ethernet port for connecting to a network. A total of up to 50 landlines* can be added to a VoiceCenter phone system. Both the DVX-2000MS-5 and DVX-2000MS-10 VoiceCenter bundles include one DVG-3104MS and more units can be added to the system without paying additional fees or purchasing licenses. Simply add more DVG-3104MS Gateways as needed to support additional phone lines.

Because the entire phone system is designed with simplicity in mind, installing additional DVG-3104MS Gateways to an existing phone system is a breeze. Once a network and new phone lines are connected to the DVG-3104MS, you can use the Microsoft Response Point software to easily add and configure the new phone lines for VoiceCenter. The way the DVG-3104MS handles inbound and outbound call is transparent to VoiceCenter users. It is virtually the same as accepting or making calls from an analog telephone.

The D-Link DVG-3104MS 4-Port PSTN Gateway, which is part of VoiceCenter, is ideal for today's productivity and efficiency-minded small to medium-sized business that enables integration of reliable PSTN phone lines to a state-of-the-art IP-based phone system that is easy to install and use.

*Requires a third party local phone service plan. D-Link Systems, Inc. is not a Telephone Service Provider or VoIP Phone Service Provider.

# Features

- **Built for Integrating PSTN Phone Lines to a VoiceCenter™ IP-based Phone System**
- **Designed with Simplicity in Mind - Easy to Install, Use and Manage**
- **Scalable - Add up to 4 PSTN Phone Lines* per DVG-3104MS Unit**
- **No Licenses Required for Adding More DVG-3104MS Units to VoiceCenter**
- **Auto Gateway Discovery Feature Makes Installing Hardware Quick and Easy**
- **Transparent to Users - Automatically Routes Inbound and Outbound Calls**

*Requires a third party local phone service plan. D-Link Systems, Inc. is not a Telephone Service Provider or VoIP Phone Service Provider.

# Hardware Overview

## Front

**PSTN LEDs**
A solid green light indicates that outbound calls and incomming calls are available. If the LED light is off, the reason may be either the port is not connected or the line is inactive.


**Power LED**
A solid green light indicates a proper connection to the power supply.

**VoIP LED**
A solid Green light indicates the SIP is registered.

**Status LED**
A flashing green light indicates that the DVG-3104MS is ready, while an Off/Solid On light indicates an error or the device is not ready.

**LAN LED**
A solid green light indicates a connection to the Local Area Network. This LED blinks during data transmission.

# Rear


**LAN Port**
Used to connect the DVG-3104MS to the Local Area Network.

**Console Port**
Used to debug the device.

**PSTN Lines**
Used to connect phone cables to the PSTN lines.

**Reset Button**
Press and hold less than 3 seconds to reboot the system or press and hold more than 3 seconds to restore the factory default settings.

**Power Receptor**
Receptor for the supplied power adapter.

# Installation

This section will walk you through the installation process. To connect the DVG-3104MS Gateway, follow these steps:

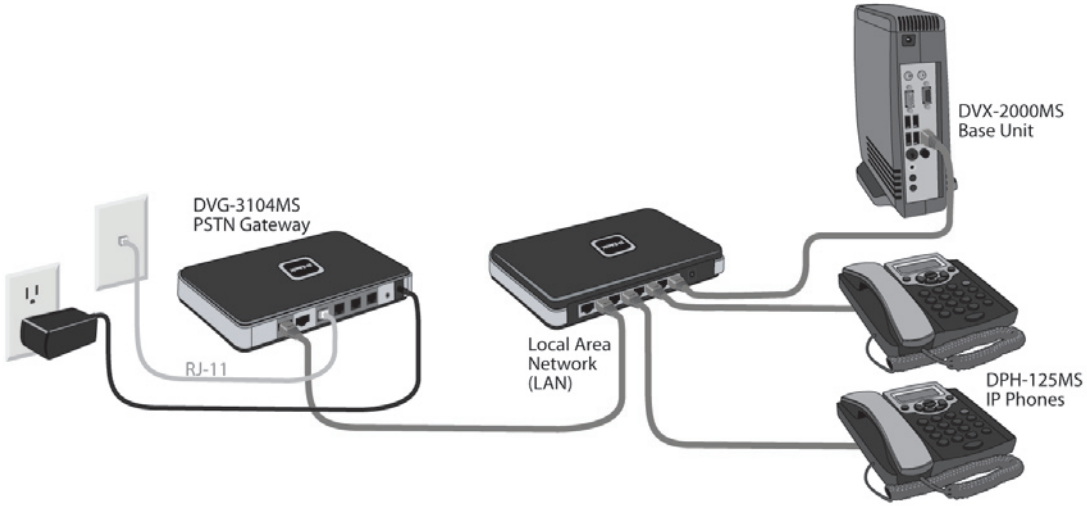
1. Plug the power adapter into an AC outlet or power strip and plug the other end into the AC input on the back of the gateway. The Power LED will light up to indicate proper connection.

2. Connect one end of the Ethernet cable to the LAN Port on the back of the gateway and connect the other end of the cable to your Local Area Network via switch or hub. The LAN LED will light up to indicate proper connection.

3. Connect the phone cable to an available PSTN (FXO) Port on the back of the gateway and connect the other end to a phone jack.

***Note:*** *Avoid disabling your existing phone service while setting up VoiceCenter™. If you have an alternative jack available, use it to set up and test VoiceCenter.*

When you have connected all the lines to the DVG-3104MS Gatewav. it should look like the diagram below.



# Setup Using Microsoft Response Point Administrator

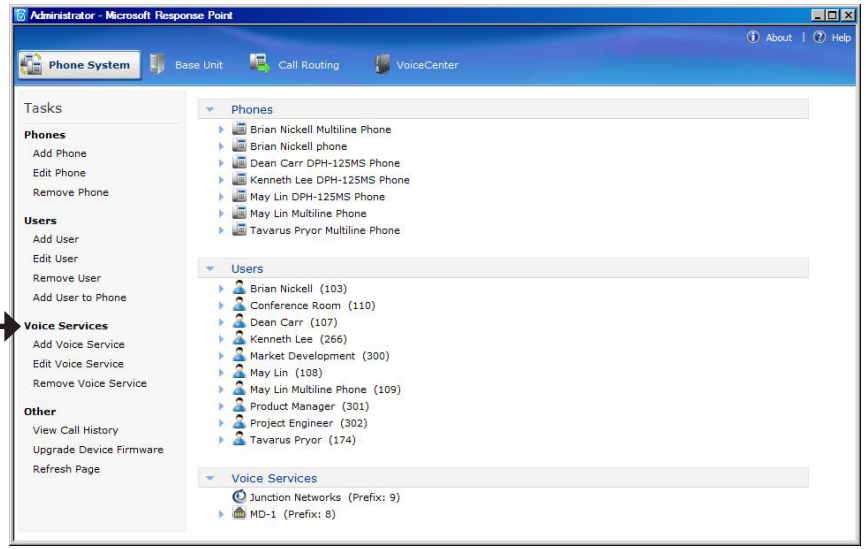
This section will show you how to configure your new D-Link DVG-3104MS Gateway. The Gateway can translate incoming phone calls so they can be sent over your organization's LAN, and translate outgoing calls into the format used by traditional phone service. Use the following steps to configure the gateway using Microsoft® Response Point™ Administrator.

***Note:*** *Microsoft Response Point Administrator only operates with Windows® XP SP2 or Windows Vista™.*

Open Microsoft Response Point Administrator and select the **Phone System** tab if necessary.

In the **Tasks** menu, under **Voice Service**, click **Add Voice Service** to launch the Configure Phone Service Wizard.

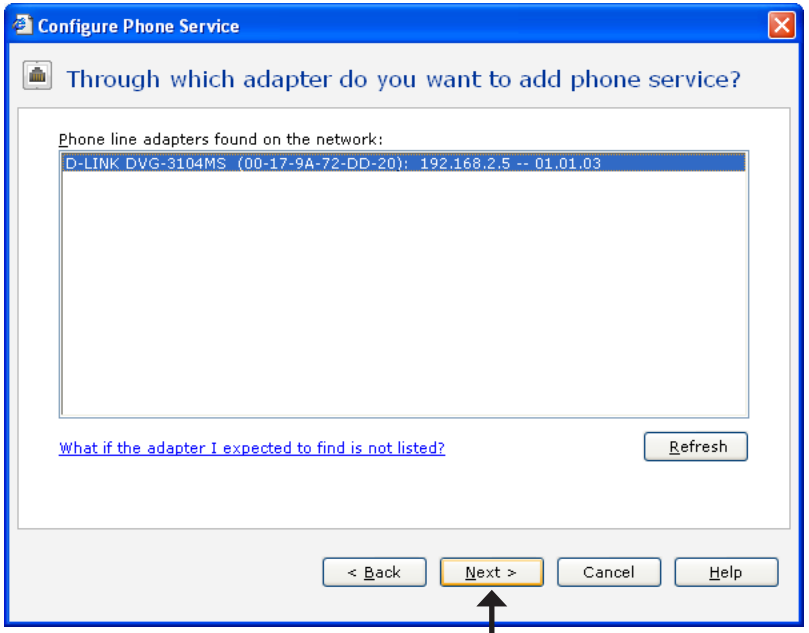
Click **Add Voice Service**



Select the check box confirming the gateway is connected and plugged in. Click **Next** to continue.

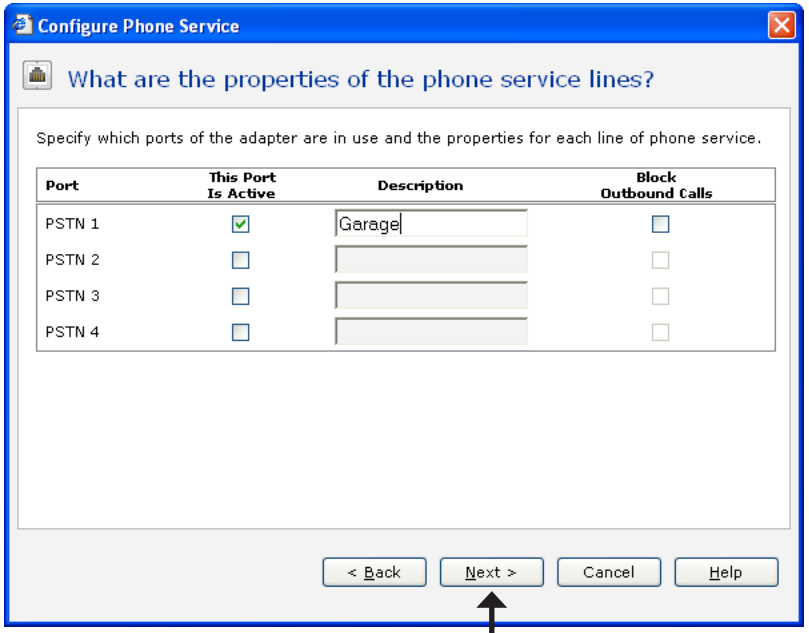

Click **Next**

Select the D-Link DVG-3104MS Gateway you just connected and click **Next** to continue.



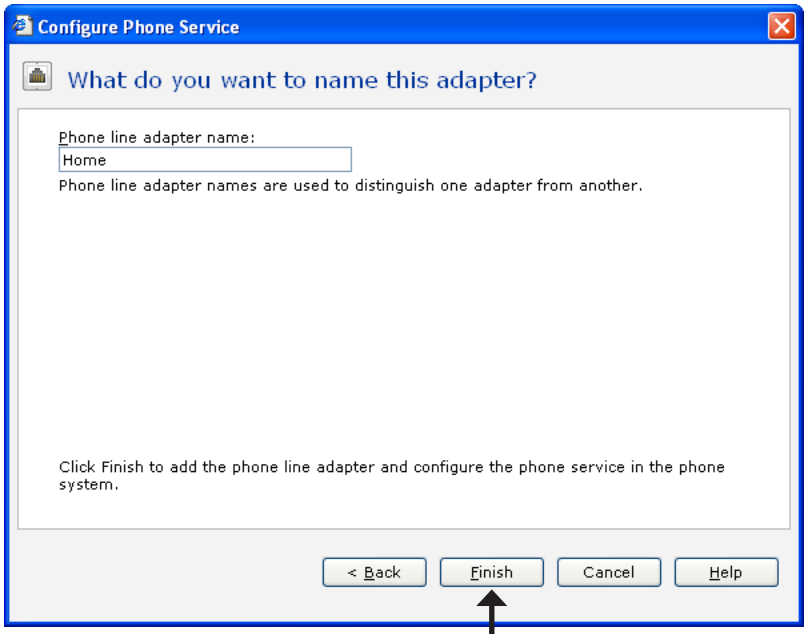

Click **Next**

Select the **This Port Is Active** check box. Enter a phone number or name associated with this line in the Description box. Click **Next** to continue.




Click **Next**

Enter a name for the phone line adapter and click **Finish** to complete the configuration.



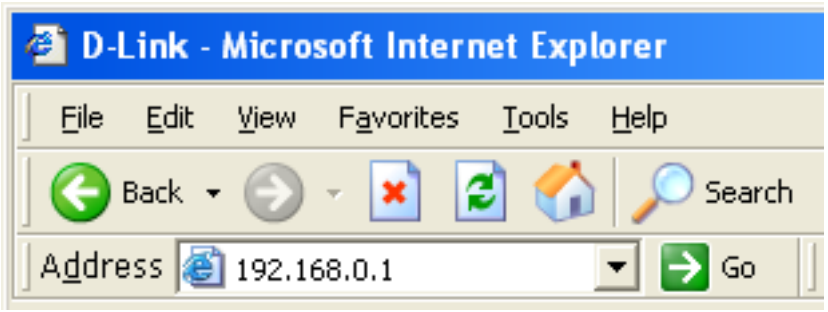

Click **Next**

# Configuration

This section will show you how to configure your new D-Link DVG-3104MS Gateway using the web-based configuration utility. Although this device has a built-in Web Interface, it is suggested that you do not make any changes manually. All configuration changes should be made through the Microsoft® Response Point™ software program only. In addition, some of the features listed in the Web Interface are not compatible with the DVX-2000MS Base Unit that this gateway is designed to work with.

# Web-based Configuration Utility

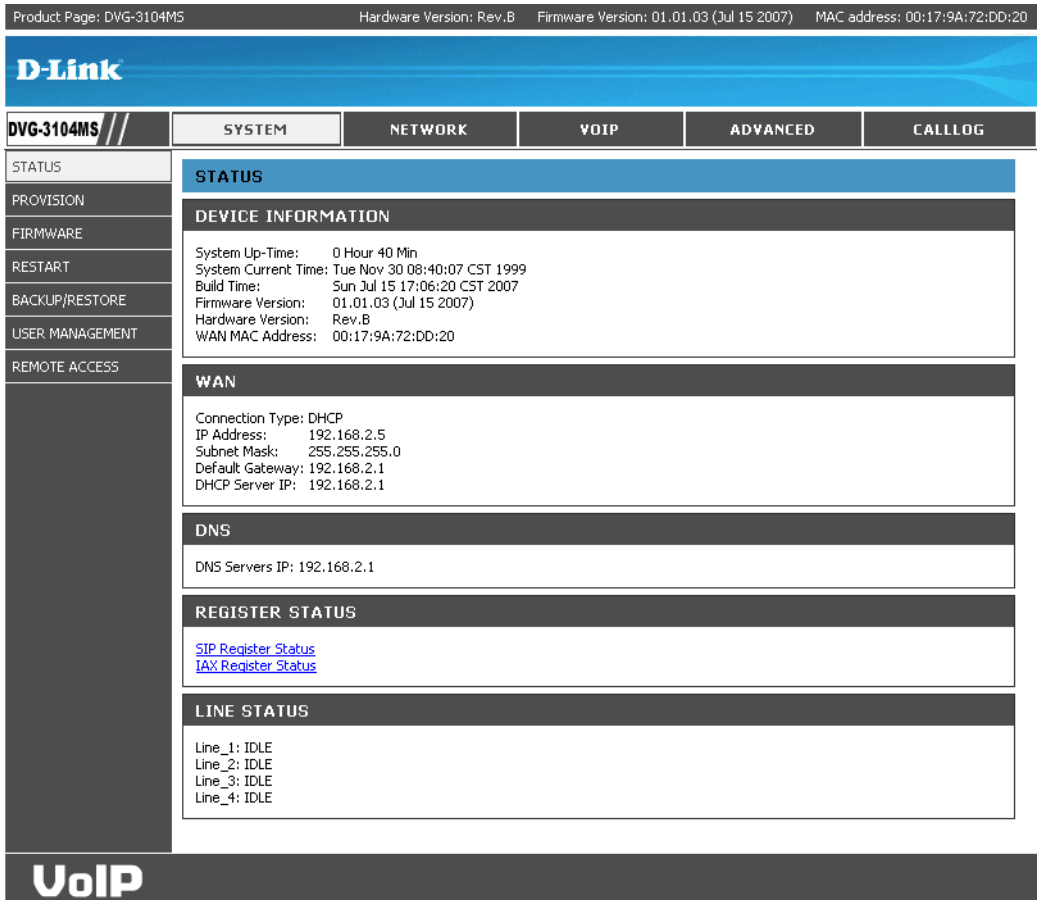
To access the configuration utility, open a web-browser such as Internet Explorer and enter the IP address of the gateway. The gateway should get a DHCP IP address automatically. You will need to add 9999 at the end of the IP Address. (i.e. 192.168.0.1:9999)




***Note:*** *The IP address will default to 192.168.0.20 when there is no DHCP server available.*

Enter **admin** as the default username and password. Click **OK** to continue.

# System
## Status




**System Up Time:** Records the system up time.

**System Current Time:** Shows the current time for the system.

**Build Time:** Shows the build time for the firmware.

**Firmware Version:** Shows the firmware version.

**Hardware Version:** Shows the hardware version.

**WAN MAC Address:** Shows the WAN MAC Address.

**Connection Type:** Shows the network connection type on the LAN port.

**IP Address:** Shows the LAN port IP address.

**Subnet Mask:** Shows the LAN port subnet mask.

**Default Gateway:** Shows the IP address of the default gateway.

**DHCP Server IP:** Shows the DHCP server IP address.

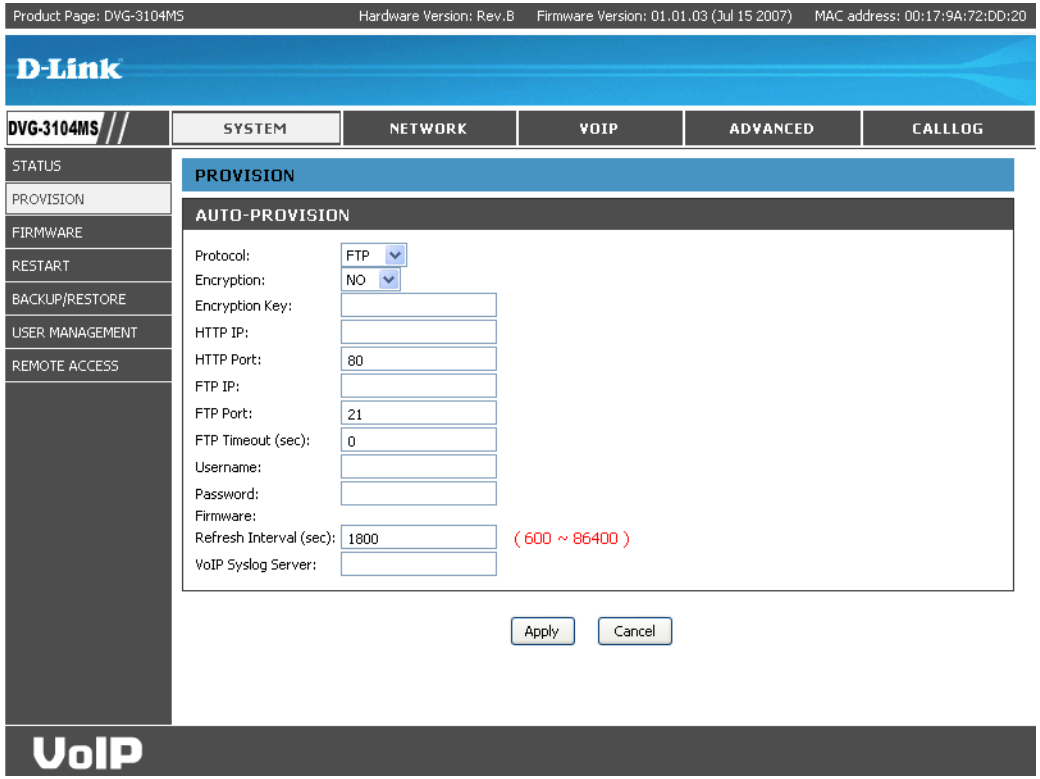
**DNS Server IP:** Shows the DNS server IP address.

**SIP Register Status:** A hyperlink to show the SIP Register status in “SIP Settings”.

**IAX Register Status:** A hyperlink to show the IAX Register status in “IAX Settings”.

Shows the line status.

# Provision




**Protocol:** There are two kinds of protocol for auto-provision. Select **FTP** or **HTTP** from the drop-down menu.

**Encryption:** Choose if you want to use RC4 encryption.

**Encryption Key:** Enter in the encryption key.

**HTTP IP:** Enter the HTTP IP address.

**FTP IP:** Enter the FTP IP address.

**FTP Ports:** Define which FTP port to use.

**FTP Timeout (sec):** Define how many seconds before the FTP will timeout.

**Username:** Enter the username.

**Password:** Enter the password.

**Firmware:** Displays the firmware version.

**Refresh Interval (sec):** Define how many seconds for the Refresh Interval.

**VoIP Syslog Server:** Enter the server for the VoIP Syslog.

**Apply:** Click **Apply** to update the settings.

# Firmware

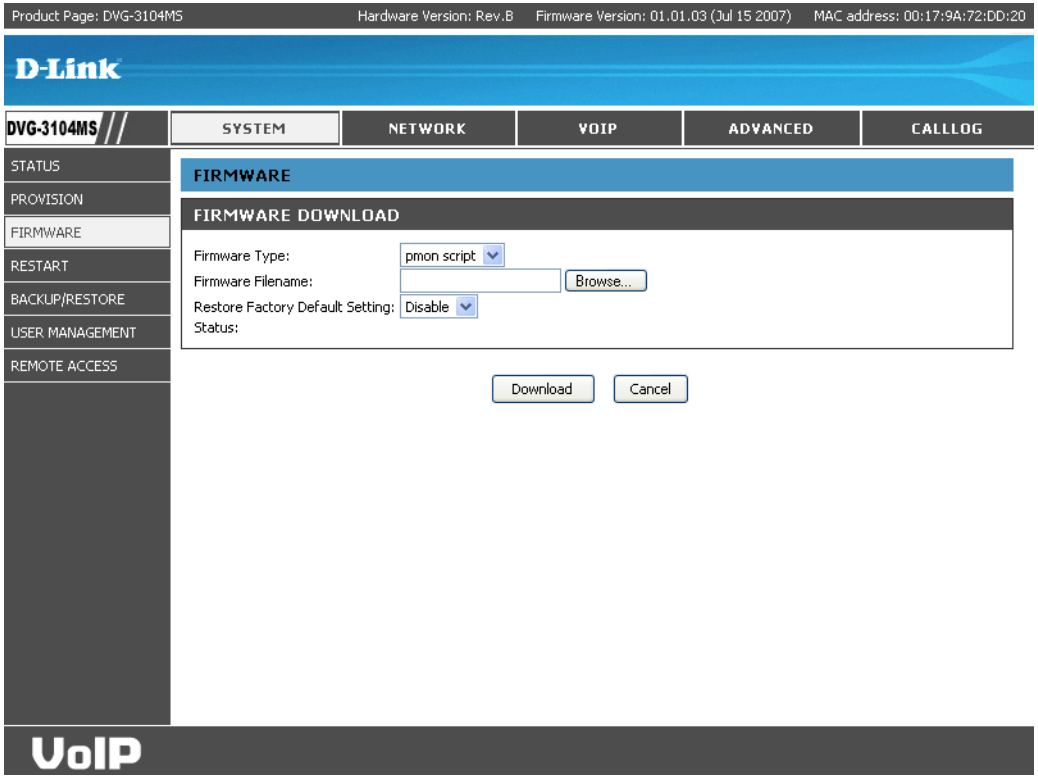
**Firmware Type:** Select which type of firmware to use.

**Firmware Filename:** Click **Browse** to locate the firmware on your PC.

**Restore Factory Default Setting:** Select **Enable** and click Download to begin uploading the firmware. The firmware will upgrade and restore the device to its factory settings.

**Status:** Shows the status of the firmware upgrade.

**Download:** Click **Download** to upload the firmware.

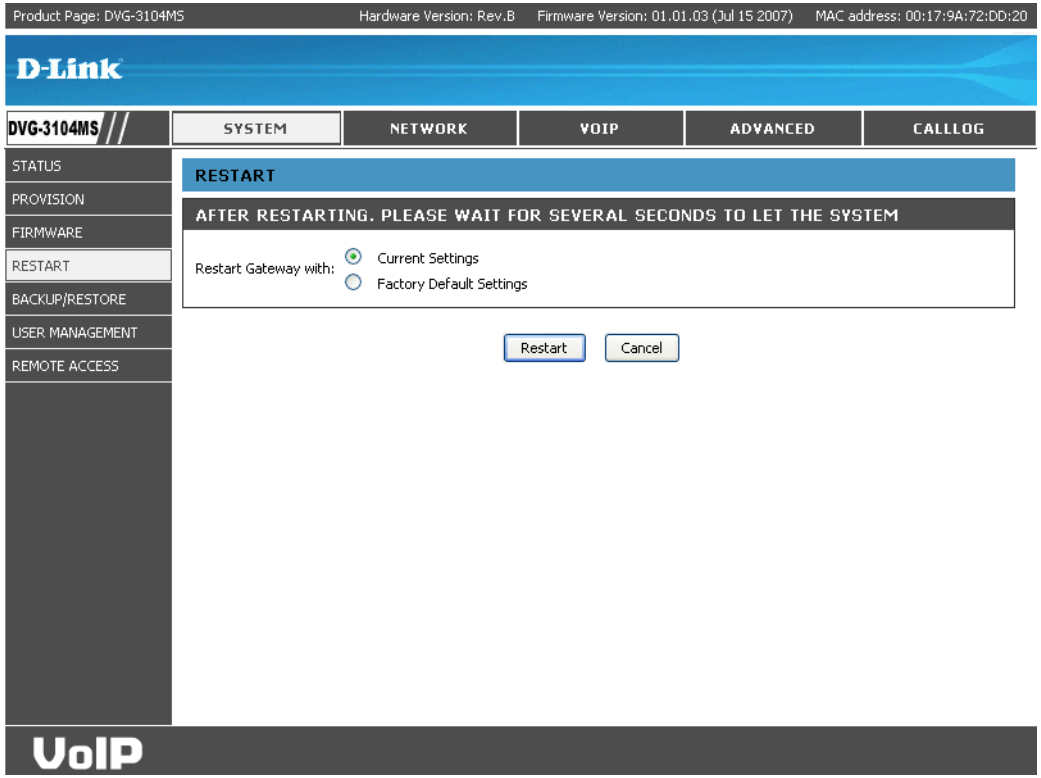


# Restart

**Restart Gateway with Current Settings:** Select the setting to restart the gateway with its current settings.

**Restart Gateway with Factory Default Settings:** Select this setting to restart the gateway with is factory default settings.

**Restart:** Click **Restart** to update the gateway.

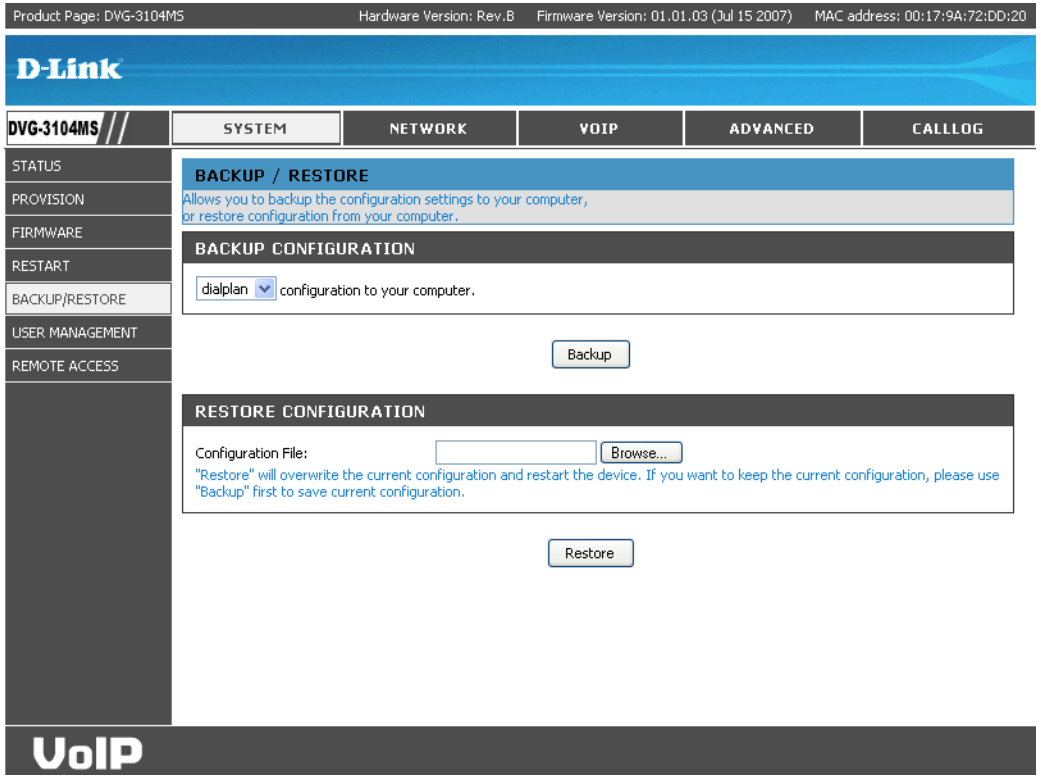


# Backup/Restore

**Backup:** Click **Backup** to save a backup configuration file to your computer.

**Browse:** Click **Browse** to locate a backup configuration file on you computer.

**Restore:** Click **Restore** to restore a saved backup configuration file on your computer.



# User Management

**Admin ID:** Enter the admin ID.

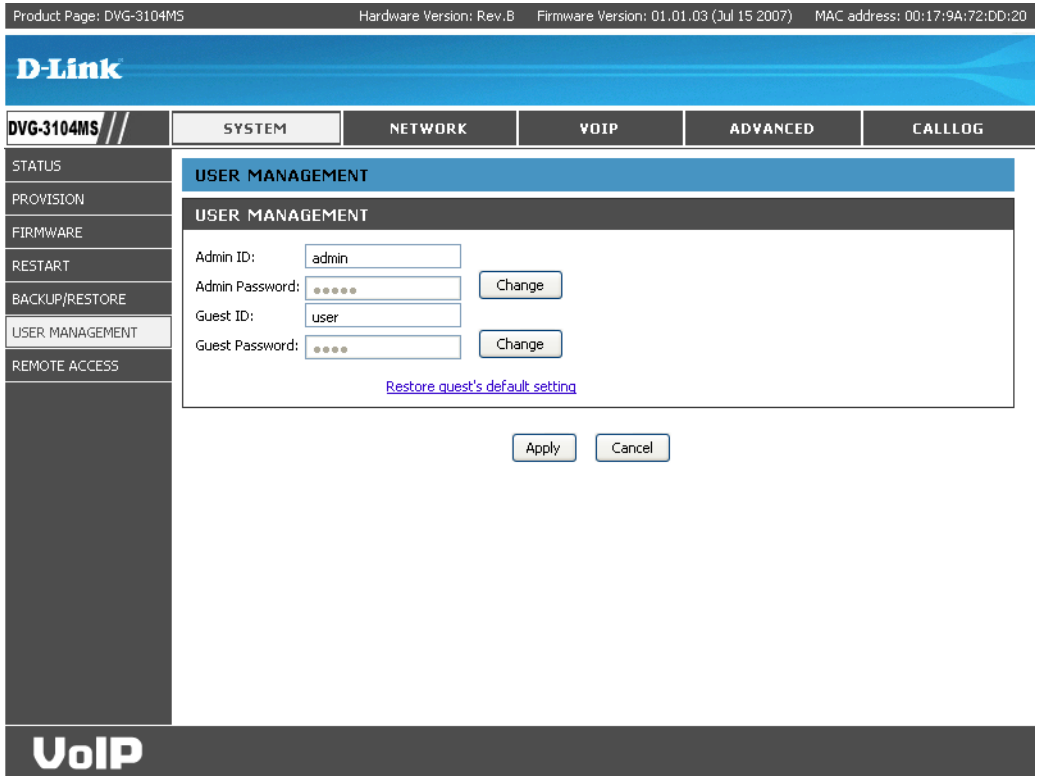
**Admin Password:** Enter or change the admin password.

**Guest ID:** Enter the guest ID.

**Guest Password:** Enter or change the guest password.

**Change:** Click **Change** to change either the Admin or Guest password.

**Apply:** Click **Apply** to update the settings.

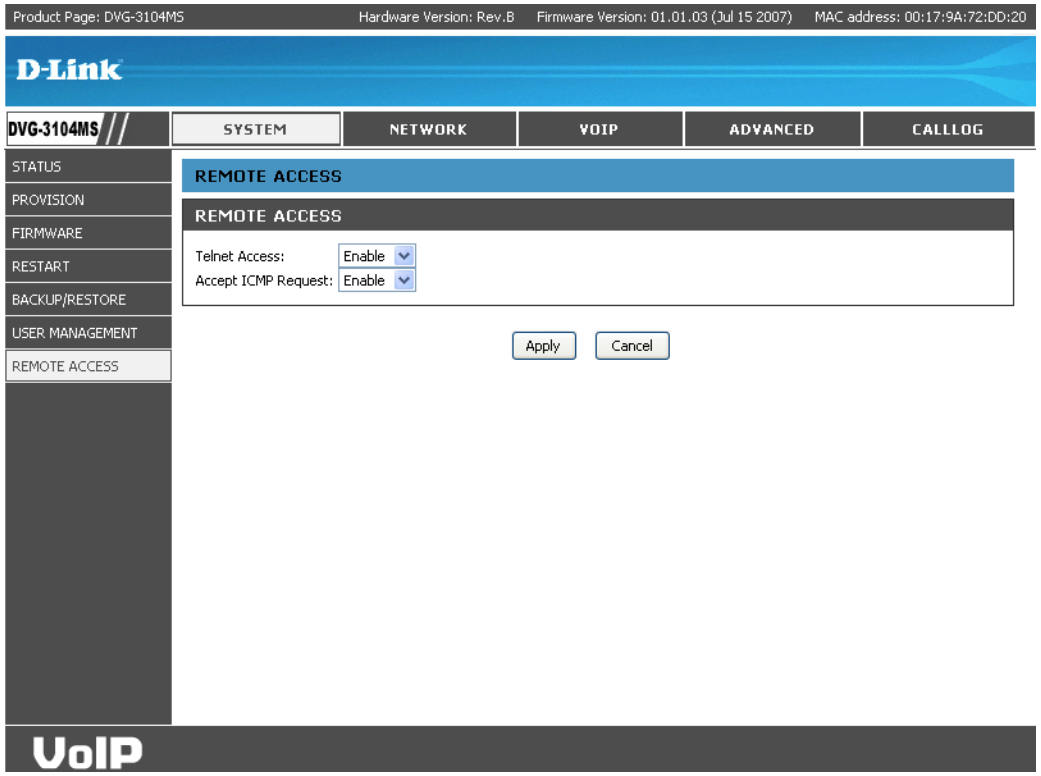


# Remote Access

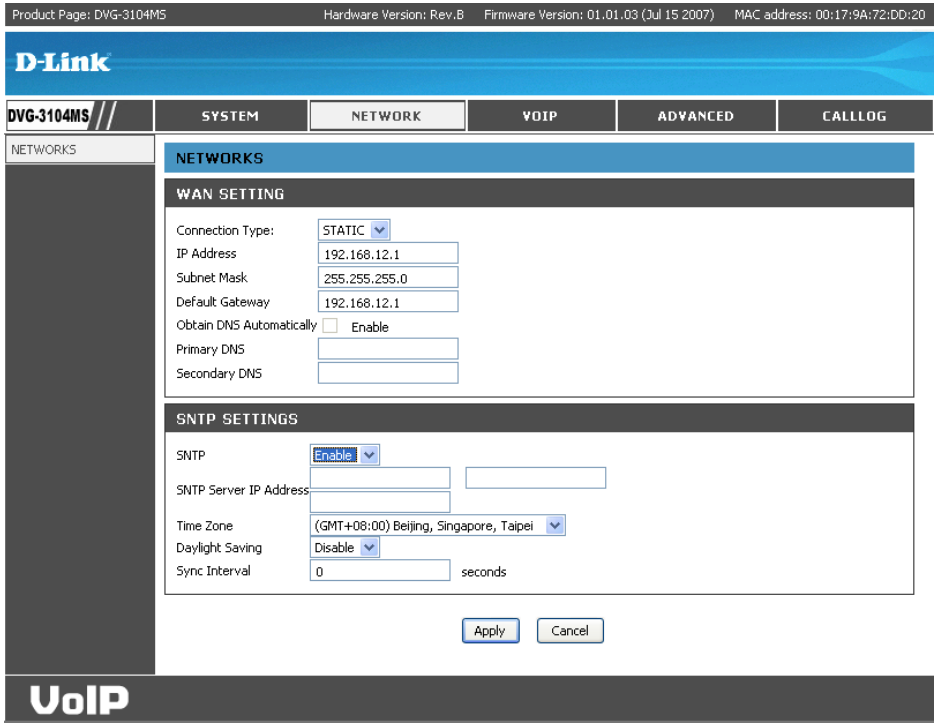
**Telnet Access:** Used for system debugging only. A customer can not logon to the Telnet server.

**Accept ICMP Request:** Enable or Disable to reject the echo requests.

**Apply:** Click **Apply** to update the settings.



# Network
## Networks




**Connection Type:** Select **Static** as a network connection if all the WAN IP address are provided to you by your ISP.

**IP Address:** Enter the IP address assigned to you by your ISP.

**Subnet Mask:** Enter the Subnet mask address.

**Default Gateway:** Enter the Default Gateway IP address.

**Obtain DNS Automatically:** Enable this option to obtain DNS automatically.

**Primary DNS:** Enter the primary DNS server IP address.

**Secondary DNS:** Enter the secondary DNS server IP address.

**SNTP:** Enable or disable the SNTP protocol.

**SNTP Server IP Address:** Enter the SNTP server IP address. SNTP server allows the gateway to synchronize the local time with a remote server.

**Time Zone:** Select the appropriate time zone.

**Daylight Saving:** Enable or disable daylight saving.

**Sync Interval:** Show the periodic interval the gateway waits before it re-synchronizes the gateway's time with that of the specified SNTP server.

**Apply:** Click **Apply** to update the settings.

## DHCP

**Connection Type:** Select DHCP as a network connection to allow the network administrator to distribute the IP address when the gateway is plugged into a different network.

**Obtain DNS Automatically:** Enable this option to obtain DNS automatically.

**Primary DNS:** Enter the primary DNS server IP address.

**Secondary DNS:** Enter the secondary DNS server IP address.

**SNTP:** Enable or disable the SNTP protocol.

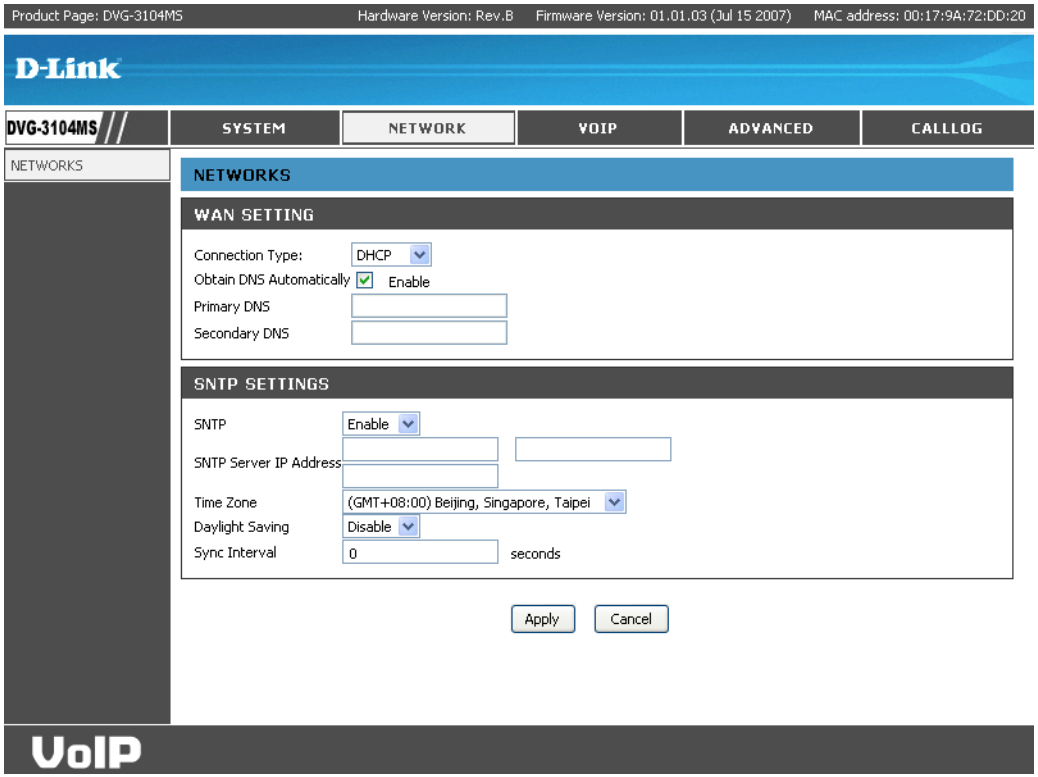
**SNTP Server IP Address:** Enter the SNTP server IP address. SNTP server allows the gateway to synchronize the local time with a remote server.

**Time Zone:** Select the appropriate time zone.

**Daylight Saving:** Enable or disable daylight saving.

**Sync Interval:** Show the periodic interval the gateway waits before is re-synchronizes the gateway's time with that of the specified SNTP server.

**Apply:** Click **Apply** to update the settings.



## PPPoE

**Connection Type:** Select PPPoE as a network connection type if your ISP uses PPPoE. Most DSL users use PPPoE.

**Obtain DNS Automatically:** Enable this option to obtain DNS automatically.

**Primary DNS:** Enter the primary DNS server IP address.

**Secondary DNS:** Enter the secondary DNS server IP address.

**Username:** Enter the PPPoE username provided by your ISP.

**Password:** Enter the PPPoE password provided by your ISP.

**SNTP:** Enable or disable the SNTP protocol.

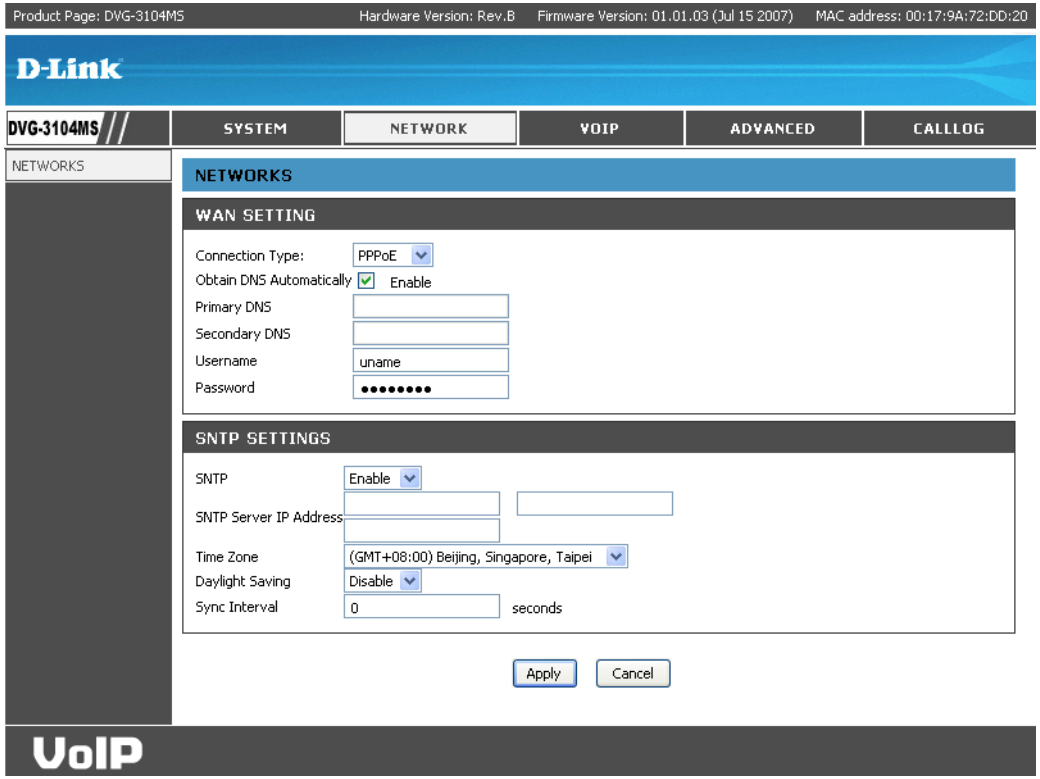
**SNTP Server IP Address:** Enter the SNTP server IP address. SNTP server allows the gateway to synchronize the local time with a remote server.

**Time Zone:** Select the appropriate time zone.

**Daylight Saving:** Enable or disable daylight saving.

**Sync Interval:** Shows the periodic interval in which the gateway waits before it re-synchronizes the gateway's time with the specified SNTP server.

**Apply:** Click **Apply** to update the settings.



# VoIP
## SIP Settings

**Display:** Name displayed on the LCD for the caller.

**Number:** The number in the URI displayed on the LCD for the caller.

**Username:** Username required to log into the SIP server.

**Password:** User password required to log into the SIP server.

**Register Status:** Shows the registration status in the Register Server.

**Local Port:** Local SIP signalling port of Gateway.

**Outbound Proxy Server:** Outbound Proxy server IP address.

**Outbound Proxy Port:** Port number of Outbound Proxy Server.

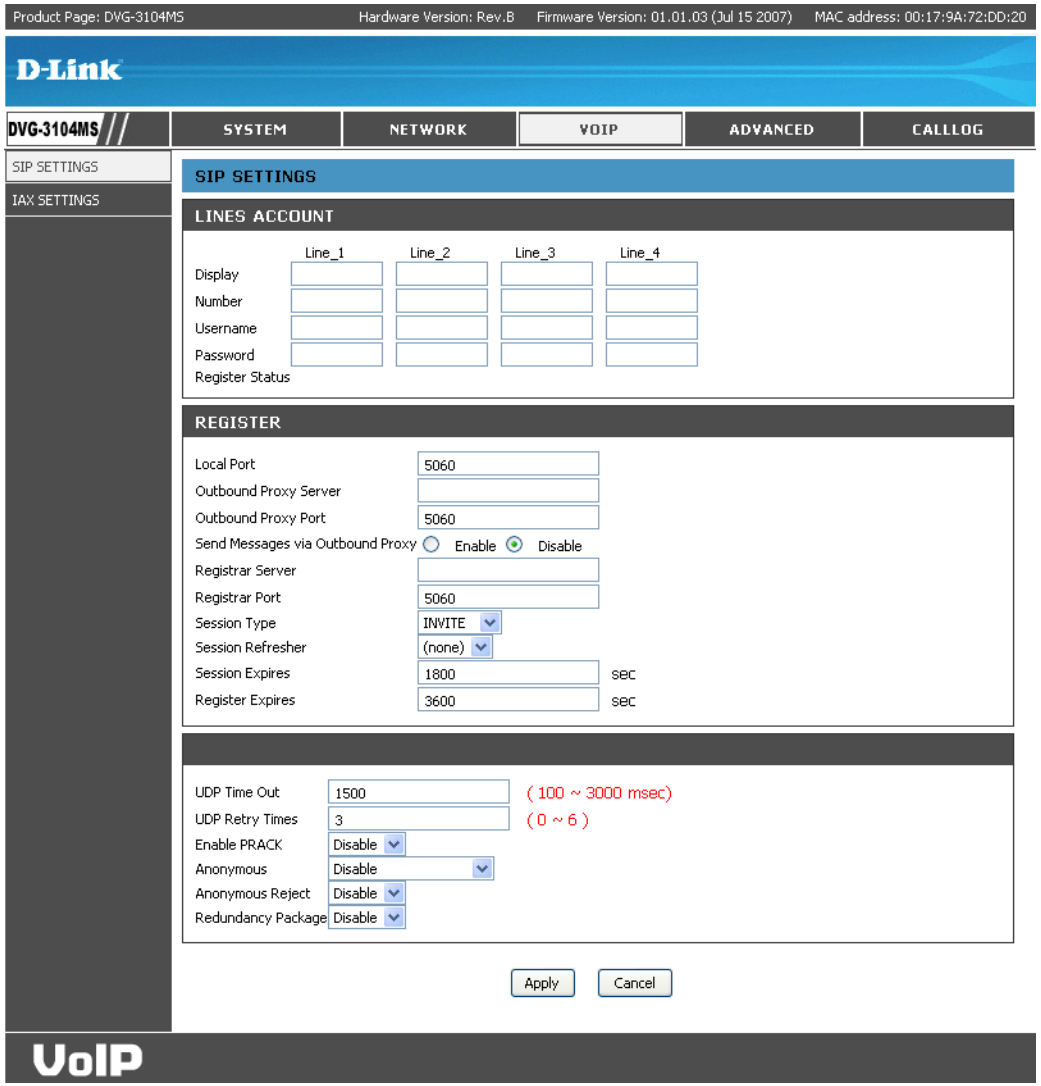
**Send Messages via Outbound Proxy:** If this feature is enabled, all messages will be routed through the Outbound Proxy.

**Register Server:** SIP Register Server IP address.

**Registrar Port:** Port number of SIP Register Server.

**Session Type:** Select Re-invite or Update for this function.

**Session Refresher:** Select UAC (User agent client) or UAS (User agent server) for this function.



**Session Expires:** The time interval in which the Gateway periodically refreshes SIP sessions by sending repeated INVITE or Update request, depending on session type.

**Register Expires:** Timer for re-registration.

**UDP Time Out:** Timeout for an INVITE request (it is set as 100 - 3000 msec.).

**UDP Retry Times:** The number of times to send INVITE requests.

**Enable PRACK:** Ensures correct signal transmissions.

**Anonymous:** This is an advanced VoIP function that lets you decide whether you want to block your phone number or not from showing on the receiver's phone.

**Anonymous Reject:** Anonymous Callers Rejection is an advanced VoIP function that rejects callers with anonymous name/phone number automatically.

**Redundancy Package:** Enable or Disable the redundancy package. It is an additional function for some VoIP platforms which supplies the Redundancy Package feature. Generally, selecting Disable can properly work with most VoIP platforms.

**Apply:** Click **Apply** to update the settings.

# IAX Settings

IAX- Inter Asterisk exchange protocol is a proprietary protocol of Asterisk by Digium. It is a simple protocol like SIP. Yet, it can pass through any kind of NAT.

**Display:** Name displayed on the LCD for the caller.

**Number:** The number in the URI displayed on the LCD for the caller.

**Username:** User name to log on the Asterisk server.

**Password:** User password to log on the Asterisk server.

**Register Status:** Shows the registration status in the Asterisk Server.

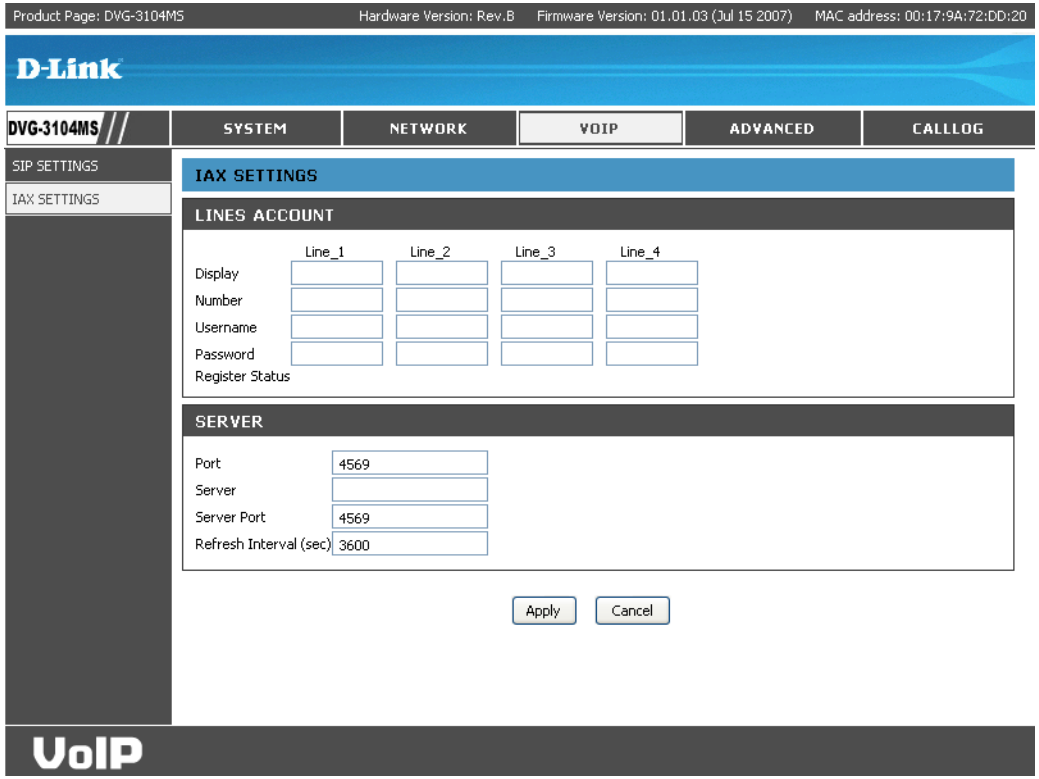
**Port:** Gateway supports IAX2 protocol. Normally IAX2 uses Port 4569.

**Server:** The Asterisk server's IP address

**Server Port:** The port number for the Asterisk server. Default is 4569

**Refresh Interval (sec):** The time interval in which the phone periodically refresh IAX sessions by sending repeated INVITE or Update request.

**Apply:** Click **Apply** to upload the settings.



# Advanced
## Line Settings

**Do Not Disturb:** Set the specific line to reject incoming calls.

**Line Type:** Set a specific sound intensity for transmitting sound

**Pulse Rate:** Set a specific volume intensity for receiving sound.

**VoIP to PSTN (TX):** Choose DTMF or Pulse for the signalling type on PSTN lines.

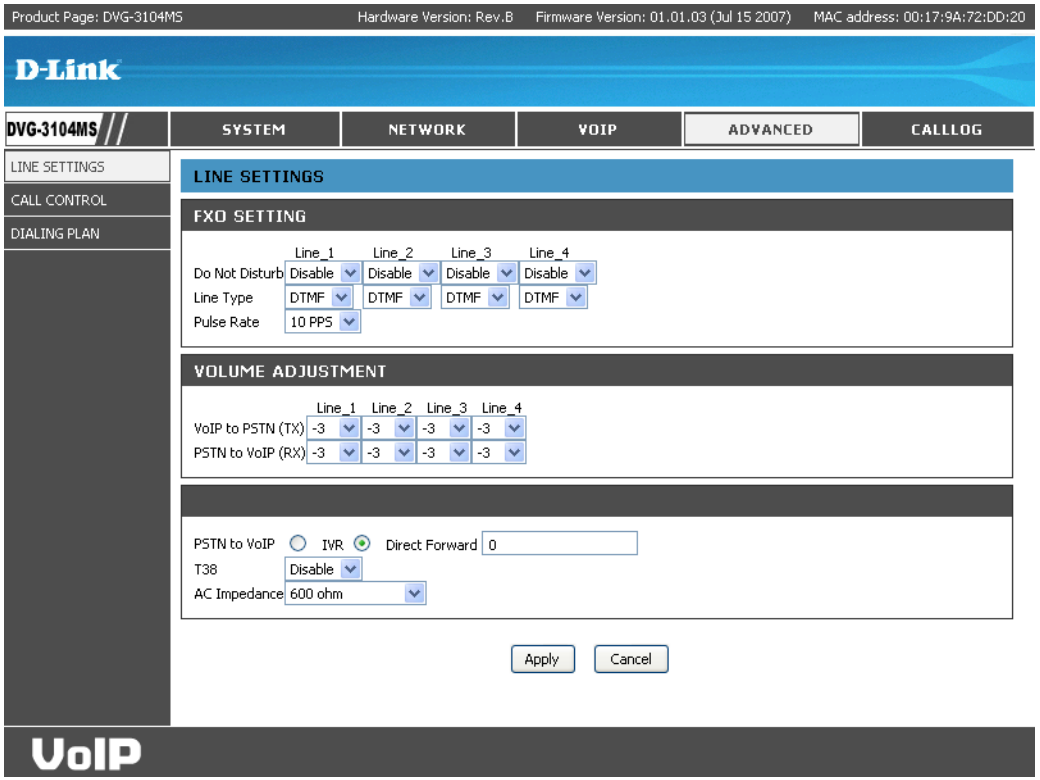
**PSTN to VoIP (RX):** The rate for pulse dialing (10 or 20 PPS)

**PSTN to VoIP:** When **Direct Forward** is selected and a phone number is entered (e.g. the number of the attendant), all incoming calls which come from PSTN will be directly forwarded to the pre-entered number. If **IVR** is selected, it plays a greeting to direct the caller to the right extension.

**T38:** Enable / disable T.38 support, normally for FAX users.

**AC Impedance:** The type of impedance which is the characteristic of the connecting PSTN line. Generally, 600 ohm is suitable in most areas and 900 ohm is used in Europe. Please contact your ISP for detail.

**Apply:** Click **Apply** to upload the settings.



# Call Control

**Dial Timeout (sec):** The gateway will automatically cancel a call out if the callee does not pick up the phone within the set amount of time.

**Ring Timeout (sec):** The gateway will automatically reject a call in if the call is not picked up within the set amount of time.

**First Digit Timeout (sec):** Specifying the maximum duration for the first digit to be keyed in.

**Inter Digit Timeout (sec):** Specifying the maximum duration between successive digits before the dialled in numbers are sent out.

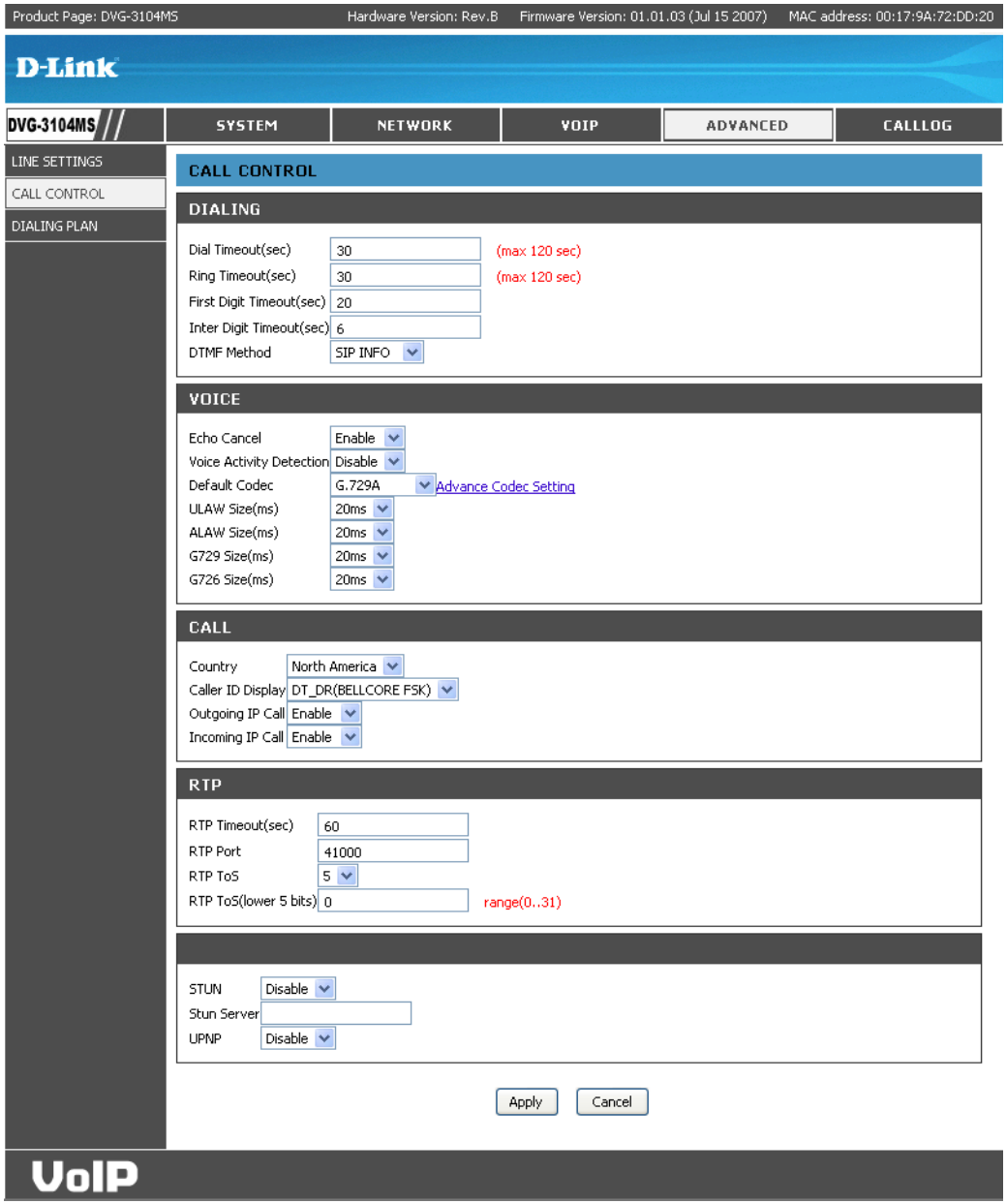
**DTMF Method:** Please choose RTP Relay, Voice or SIP Info.

**Echo Cancel:** Enable the echo-cancel to activate a special function of cancelling the echo on the PSTN line (G.168)

**Voice Activity Detection:** The voice activity detection (VAD) is a component in the DSP software that examines a caller's incoming signal and determines if the signal contains significant energy and is likely to be speech rather than a click.

**Default Codec:** Default voice codec.

**ULAW, ALAW, G.729, G.726 Size (ms):** One RTP packet is sent out on every specified time cycle.



**Country:** Define user location to fit the local Telco system requirements.

**Caller ID Display:** Enable / Disable Caller ID.

**Outgoing IP Call:** Enable/Disable the outgoing call by dialling IP address or URL without SIP server.

**Incoming IP Call:** Enable/Disable the incoming call dialled by IP address or URL without SIP server.

**RTP Timeout (sec):** The time interval in which the Gateway disconnects an active call if no RTP is received.

**RTP Port:** Initial port number for sending RTP packets.

**RTP ToS:** Type of Service value for Quality of Service.

**RTP ToS (lower 5 bits):** The lower 5 bits of ToS

**STUN:** To enable / disable the STUN function

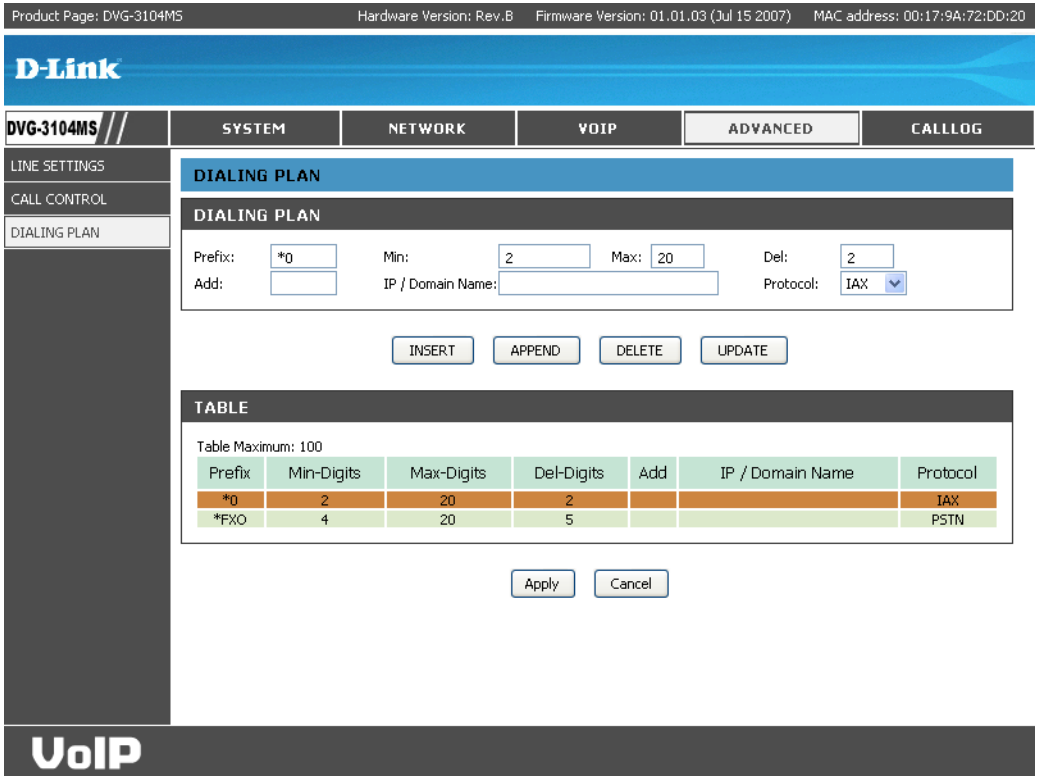
**Stun Server:** Simple Traversal of UDP through NAT. This function is used for NAT traversal.

**UPnP:** Universal Plug and Play. This function is used for NAT traversal.

**Apply:** Click **Apply** to upload the settings.

# Dialing Plan

Local dialling plan allows users to dial out to a VoIP Device using a pre-defined number. Users do not have to change their dialling habit.




**Prefix:** Numbers defined in this field will be inserted at the beginning of the dialling pattern. Maximum input length is 6 digits.

**Min:** Minimum digits user can key in.

**Max:** Maximum digits user can key in.

**Del:** Number of digit defined in this field will be removed from the dialling pattern. For example, if we dialled 81352109378 and the delete digit is 2, then the actual dialled number is 352109378. First 2 digits are removed. Maximum delete digit is 3 digits.

**Add:** Numbers in this field are added at the beginning of the dialling pattern. For example, if 001 is in this field, the number dialled is 001+the rest of the numbers. The input length is limited to 6 digits.

**IP / Domain Name:** Remote side gateway IP addresses / Domain Name. When the prefix number is matched, this call will go to the gateway with this IP address / Domain Name.

**Protocol:** Choose the dialling plan for SIP or IAX.

**Insert:** Insert a record where the current record is located (Current record is marked as different color).

**Append:** Add a new record to the bottom of the list.

**Delete:** Delete a record.

**Update:** Modify the value of the selected record in the Dialing Plan.

**Apply:** Click **Apply** to upload the settings.

**Note**: There are two default records in the Dialing Plan.

TABLE

Table Maximum: 100

| Prefix | Min-Digits | Max-Digits | Del-Digits | Add | IP / Domain Name | Protocol |
|---|---|---|---|---|---|---|
| *0 | 2 | 20 | 2 | | | IAX |
| *FXO | 4 | 20 | 5 | | | PSTN |

1. **Prefix is *0**: The DVG-3104MS Gateway supports two VoIP protocols (SIP and IAX) and it can register with the two different VoIP systems simultaneously. If a caller, who comes from PSTN, dials a number with prefix "*0" as the first record, the gateway initiates a VoIP call in IAX protocol. If not, it initiates calls in SIP protocol.

2. **Prefix is *FXO**: It is the necessary rule to forward all calls from IP network to PSTN. For example, a VoIP phone dials 886287681878 and the call is routed to this gateway (it depends on the configuration on the SIP or IAX server), the gateway generates the same dial sequence on the PSTN line to reach the destination.

Users can also have their own rules to decide how to route calls. For example, the DVG-3104MS Gateway is connecting to the internal lines of a traditional PBX and there is one new record as follows:

| Prefix | Min-Digits | Max-Digits | Del-Digits | Add | IP / Domain Name | Protocol |
|---|---|---|---|---|---|---|
| *FXO8862 | 8 | 20 | 8 | 0:: | | PSTN |

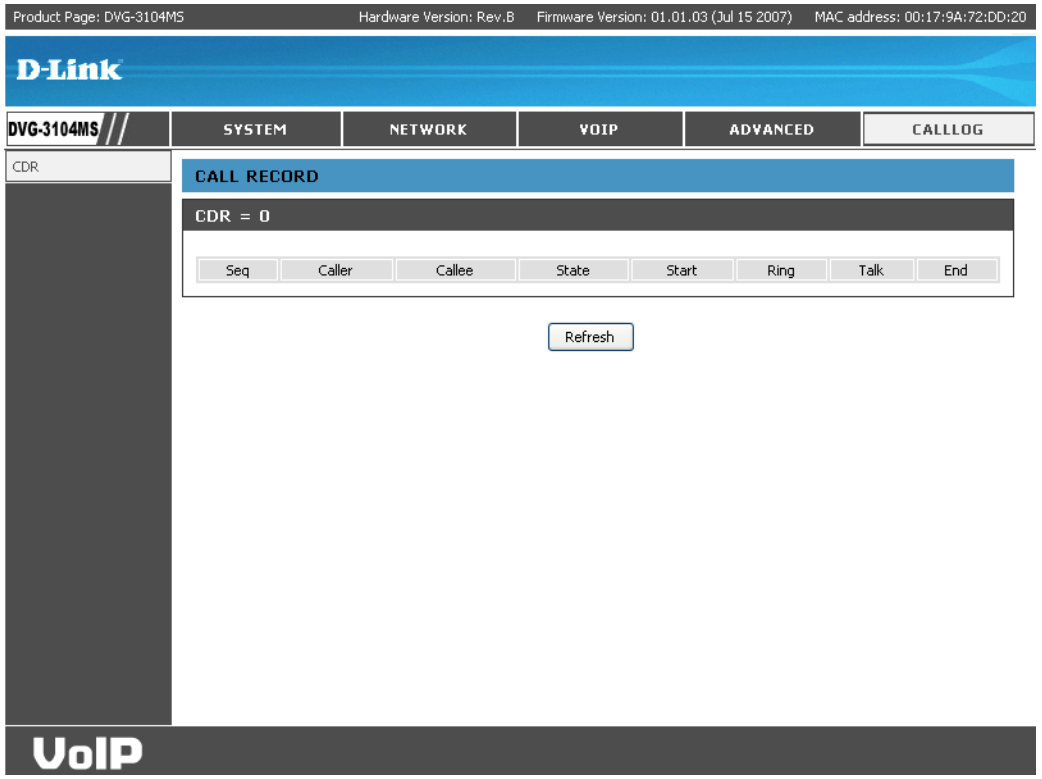
When the gateway receives a call request with dial sequence "886287681878", it will:

- Reconstruct the dial sequence to "0::87681878" (delete first four digits and add "0::")
- Find a FXO port which is not in use
- Send "0" (It's often a DTMF signal) to the PBX to access an external PSTN line and wait for one second (one ":" means to delay 0.5 second)
- Then, send the remaining number 87681878 to PSTN through the connecting PBX

It is useful for the gateway which is connecting with the PBX system.

# Call Log
## CDR

This section displays a call record for all calls. Click the Refresh button to see the updated CDR.



# Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DVG-3104MS. Read the following descriptions if you are having problems.

**I forgot my login and/or password.**

- Restore the Gateway to its factory default settings by holding the Reset button on the back of the Gateway for 3 seconds or more.

**None of the LEDs are on when I turn on the DVG-3104MS Gateway.**

- Check if the power cord is connected properly.
- Check if there is proper AC power coming from the power outlet.

**Why can't I ping the DVG-3104MS Gateway?**

- Check the LAN LED on the front panel. The LED should be on. If it is off, check the cables between your DVG-3104MS Gateway and the LAN switch or DSL modem.
- Verify the IP address and subnet mask are consistent between the Gateway and the workstations.
- Check the setting of "Block ICMP Request" in "Advanced - Remote Access" whether its enabled.

**Why can't I dial my friend's SIP number?**

- Check the Registrar Server Domain Name/IP address and Outbound Proxy Domain Name/IP address under "VoIP - SIP Settings" in the Configuration menu. Make sure you have the right name or IP Address.
- Check the LED display on the front panel of the Gateway to see if the VoIP LED is on. If it's off, access the configuration menu and make sure that the Registrar Server Domain Name/IP Address is correct.
- Check the register status under SIP Settings in the configuration menu. If your status is unregistered, it means you do not have a SIP account. Contact your SIP service provider to get an account.

# Networking Basics

## Check your IP address

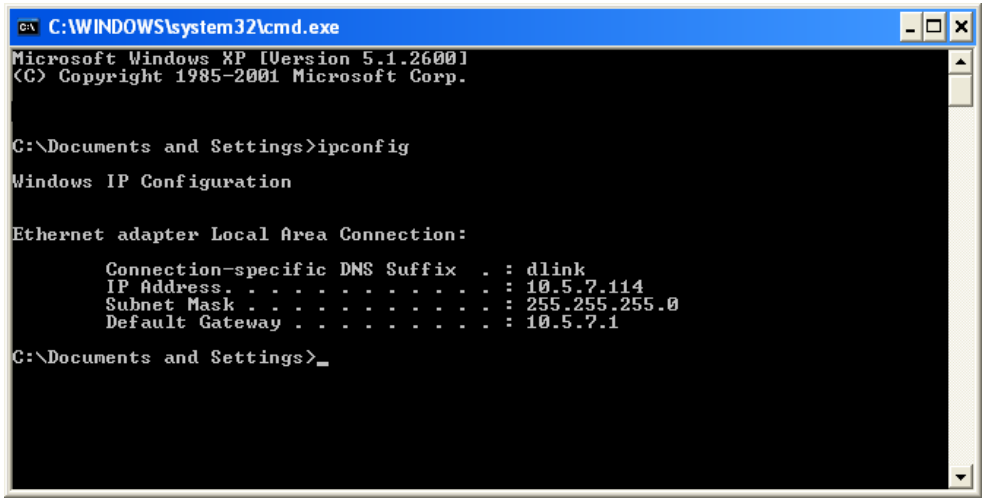
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start** > **Run**. In the run box type ***cmd*** and click **OK**.

At the prompt, type ***ipconfig*** and press **Enter**.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.



# Statically Assign an IP address

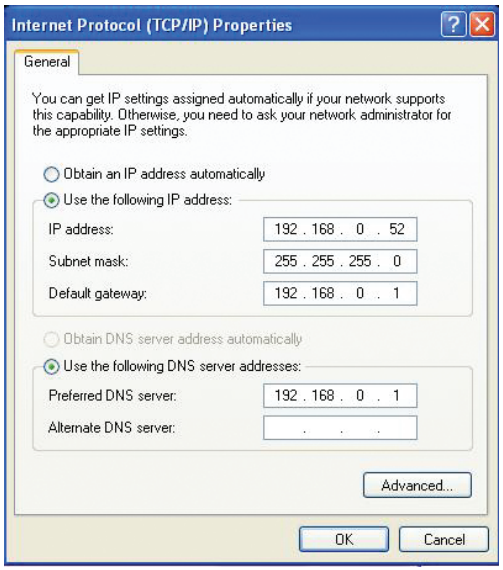
If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

**Step 1**
Windows® XP - Click on **Start** > **Control Panel** > **Network Connections**.
Windows® 2000 - From the desktop, right-click **My Network Places** > **Properties**.

**Step 2**
Right-click on the **Local Area Connection** which represents your D-Link network adapter and select **Properties**.

**Step 3**
Highlight **Internet Protocol (TCP/IP)** and click **Properties**.

**Step 4**
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.




Example: If the router´s LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your router (192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

**Step 5**
Click **OK** twice to save your settings.

# Technical Specifications

**Key Features**

- Auto-discovery
- Auto-provisioning Ability
- Route PSTN Lines to an IP Network

**Network Features**

- SIP (RFC 3261) Compliant
- 10/100Base-TX Connection
- PSTN Port: Four Analog FXO Ports
- COM Port: RJ-45 Console Port
- QoS by ToS (Type of Service)
- SNTP (Simple Network Time Protocol)

**Telephony Features Supported**

- Caller ID
- Line Hunting
- VAD (Voice Activity Detection)
- CNG (Comfort Noise Generator)
- Dynamic Jitter Buffer
- Completed Voice Band Signaling Support
- Bad Frame Interpolation
- Provide Inbound and Outbound DTMF Generation/Detection between LAN and PSTN Interface
- Gain/Attenuation Settings
- G.168 Echo Cancellation

**Device Management**

- Secure Web-GUI Configuration
- FTP Software Upgrade
- Remote Configuration
- RJ-45 Console

**LEDs**

- Indicator for PSTN Port Status
- Power ON/OFF
- Link/ACT Status
- READY Work Status
- VoIP Status

**Power**

- 12V, 1.5A

**Environmental**

- Operating Temperature: 32°F to 122°F
- Storage Temperature: -13°F to 131°F
- Humidity: 5% to 95% (Non-condensing)

**Security**

- HTTP 1.1 basic/digest authentication for Web Setup
- MD5 for SIP authentication (RFC 2069/ RFC 2617)

**Certifications**

- FCC Class A
- FCC Part 68
- UL

**Physical**

- Item Dimensions (WxHxD): 6.0” x 1.5” x 9.0”
- Packaging Dimensions (WxHxD): 8.3” x 3.5” x 12.0”
- Item Weight: 1.1 lbs
- Packaging: 3.3lbs

**Warranty***

1-Year Limited

# Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. (“D-Link”) provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

## Limited Warranty:

D-Link warrants that the hardware portion of the D-Link product described below (“Hardware”) will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below (“Warranty Period”), except as otherwise stated herein.

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer’s sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link’s option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

## Limited Software Warranty:

D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by DLink in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

## Non-Applicability of Warranty:

The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

**Submitting A Claim:**

The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow DLink to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.

- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at https://rma.dlink.com/.

- 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. Do not include any manuals or accessories in the shipping package. DLink will only replace the defective portion of the product and will not ship back any accessories.

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

## What Is Not Covered:

The Limited Warranty provided herein by D-Link does not cover:
Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

## Disclaimer of Other Warranties:

EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

## Limitation of Liability:

TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NONCONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

## Governing Law:

This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

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## FCC Statement:

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 communication. 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.

**FCC Caution:**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## IMPORTANT NOTICE:

**FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

This class B digital apparatus complies with Canada ICE-003