Vonage™

User Manual

Get Ready to Enjoy - The New Way to Phone!

POWERED BY D-Link®

Welcome to Vonage!

It's easy to get started with your Vonage VWR Device!

For assistance with installation or troubleshooting common problems, please refer to this User Manual or Quick Start Guide.

Please visit www.vonage.com/vwr to obtain the most up-to-date User Manual and a description of the latest VWR features.

Record The Information Below For Easy Reference

Phone Number: _____

User Name: _____

Password: _____

Voicemail Local Access Number: _____

_____

Activation

If you purchased your Vonage VWR Device from a retail store, you must first activate your Vonage phone service by visiting www.vonage.com/activate.
After activation, wait 30 minutes before checking for a dial tone.

You will need your MAC ID, which is located on your Vonage VWR Device. The MAC ID is a combination of twelve letters and numbers. Be sure to enter all of the characters. After you have chosen a plan and activated, please follow the step-by-step installation guide to set up your equipment.

Table of Contents

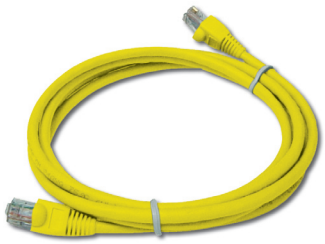
Welcome to Vonage! I
Chapter 1 - Product Overview 1
Package Contents 2
System Requirements 2
Front Panel 3
Rear Panel 3
Chapter 2 - Installation 4
Network Overview 5
Chapter 3 - Configuration 6
Login 7
WAN 8
Dynamic IP Address 8
Static IP Address 9
PPPoE 10
LAN 11
DHCP 12
Wireless 14
Wireless Security 15
WEP 15
802.1x 16
WPA/WPA2 17
Password 18
System 19
Virtual Server 20
Filters 22
Custom IP Filters 23
Performance 24
Routing 25
Dynamic Routing 26

DMZ 27
Misc 28
UPnP 29
DDNS 30
SSH Access Control 31
Web Access Control 32
Network Statistics 33
Connection Status 34
DDNS Status 35
DHCP Client 36
Product Info 37
Ping Test 38
Logout 39
Appendix A - Troubleshooting 40
IVR Messages 43
Appendix B - Technical Specifications 44

Product Overview 1

Package Contents

Vonage VWR
Wireless Router



Yellow Ethernet Cable

RJ-11 Phone Cable

Blue Ethernet Cable

CD-ROM with
User Guide

Power Adapter

System Requirements

- Any high speed DSL or Cable connection
- A valid Vonage account

If you purchased your D-Link VWR at a retail location, make sure to first activate your device at www.vonage.com/activate. Please wait 30 minutes before checking for a dial tone.

Front Panel

Power	Internet	Wireless	Ethernet (1-4)	Phone (1-2)
When the power light stops blinking and is a solid green, this indicates that your adapter has started up properly. Note that both the power light and the phone light must be solid in order to make a phone call.	A solid light indicates connection on the Internet port. This light blinks during data transmission.	A solid light indicates that the wireless segment is ready. This light blinks during wireless data transmission.	A solid light indicates a connection to an Ethernet-enabled computer on ports 1-4. This light blinks during data transmission.	Solid light indicates that the phone line is ready for Vonage Internet telephone or FAX calls. A slow blinking light indicates that voicemail is present. When the line is in use or ringing, the light will blink rapidly.

Note: When the Vonage Device is downloading/upgrading firmware from Vonage,the lights will blink rapidly in unison.

Rear Panel

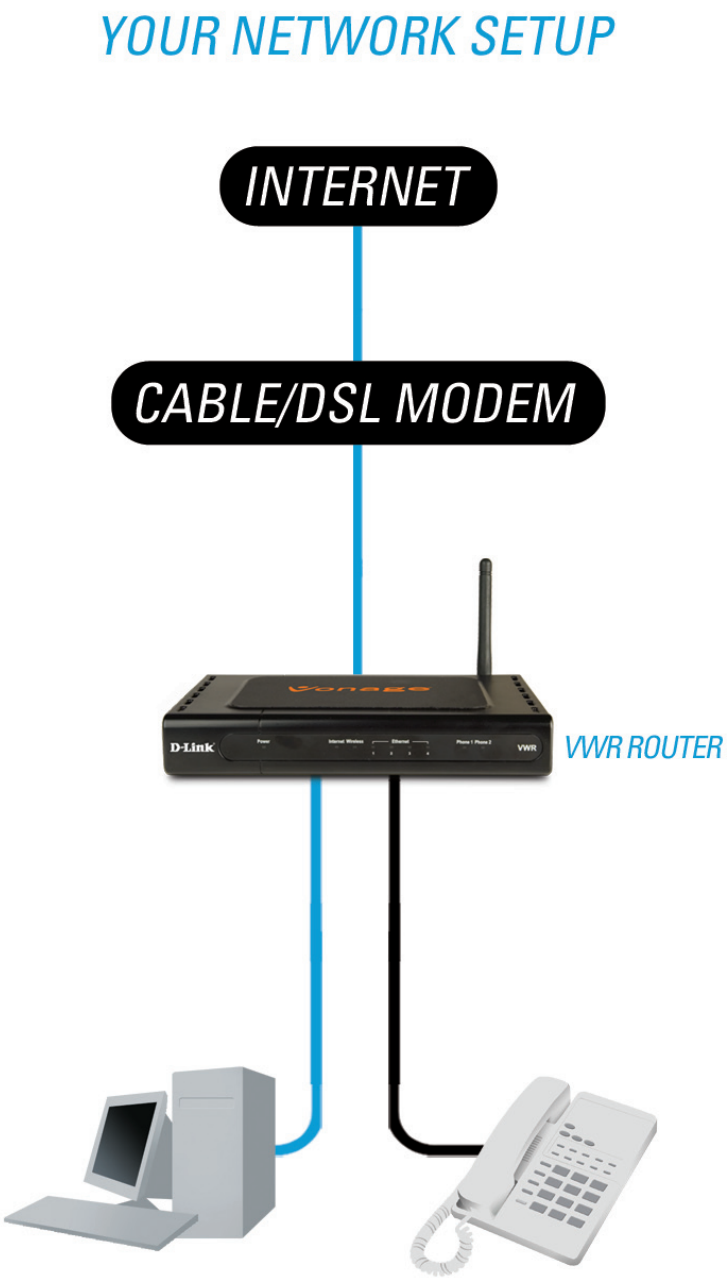
Phone (1 & 2)	Ethernet (1-4)	Internet	Reset	Power
Plug your phone into port #1 and if you've signed up for a second Vonage phone line, an optional phone or FAX machine into phone port #2.	Connect to other Ethernet devices such as computers using standard Ethernet cables.	This port is the connection for the Ethernet cable to the Cable or DSL modem.	Press the reset button for at least 10 seconds to reset the Vonage VWR Device back to the default settings.	Plug in the supplied power adapter.

Installation

2

Network Overview

Please refer to your Quick Start Guide included with your Vonage VWR Device for basic installation instructions.



Configuration

3

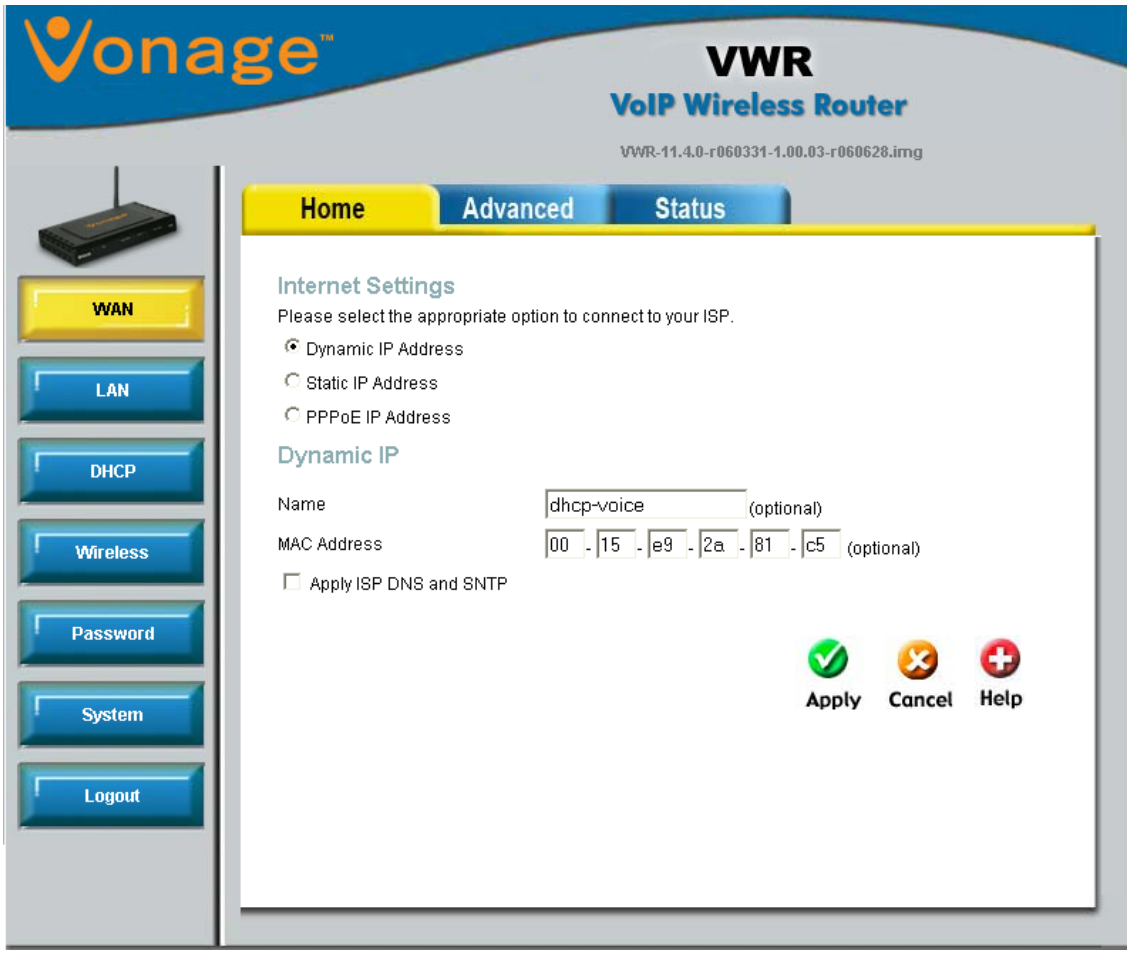
Login

Open a web browser such as Internet Explorer and enter the IP address (e.g. 192.168.15.1) of the Vonage VWR router.

Enter **user** for the username and your password (default password is **user**). Click the **Login** button.

WAN

Dynamic IP Address



Select **Dynamic IP Address** to obtain IP Address information automatically from your ISP. Select this option if your ISP does not give you any IP numbers to use. This option is commonly used for cable modem and satellite services.

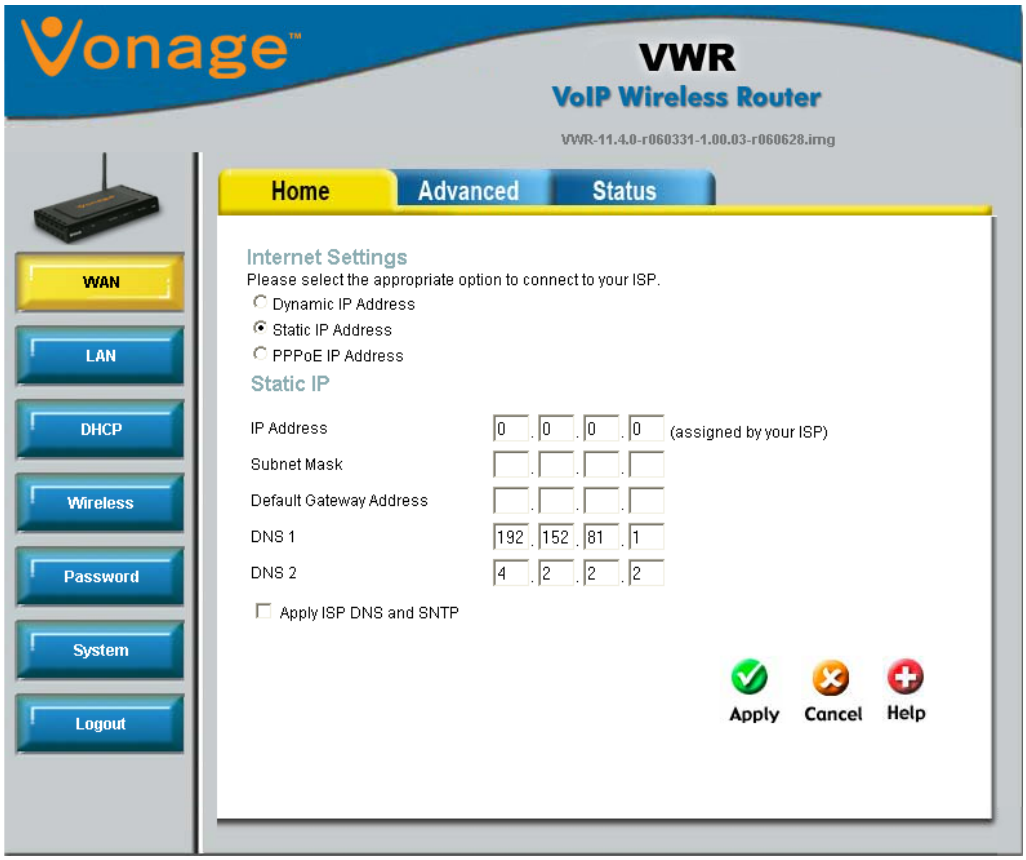
Name - The host name is optional but may be required by some ISPs.

MAC Address - The default MAC Address is set to the Internet port's physical interface MAC address on the Vonage Router. It is not recommended that you change the default MAC address unless required by your ISP. You can enter your PC's MAC Address manually to replace the Internet port's MAC address with the MAC address of your Ethernet card.

Apply ISP DNS and SNTP - Check this box to use the DNS servers and time server (SNTP) supplied by your ISP.

Static IP Address

If you want to statically assign an IP address, click **Static IP Address**.



Select **Static IP Address** if all the Internet port's IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address, and DNS address(es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Vonage VWR Device will not accept the IP address if it is not in this format.

IP Address - Enter the IP address assigned by your ISP.

Subnet Mask - Enter the Subnet Mask assigned by your ISP.

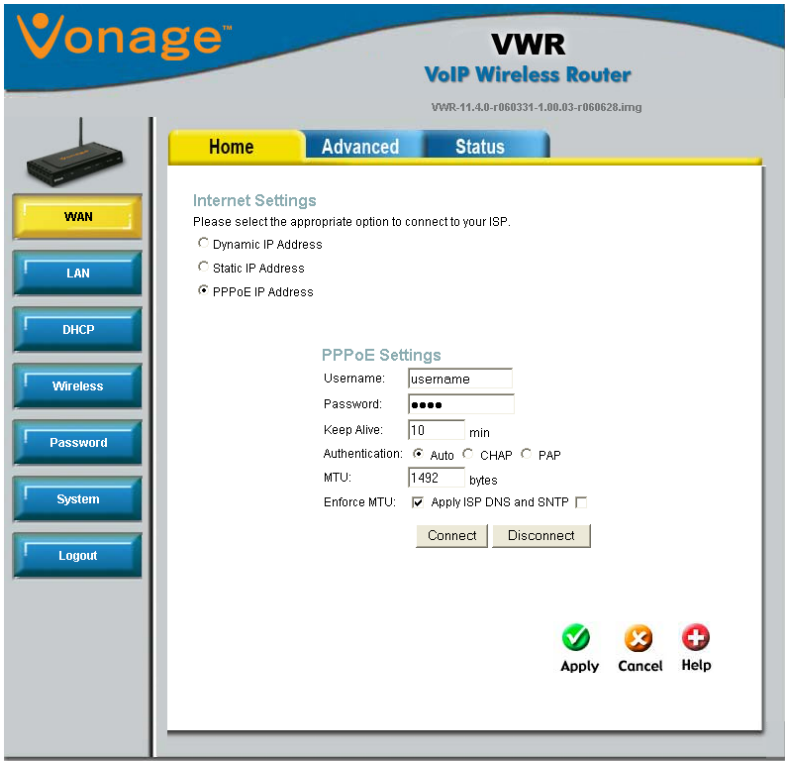
Default Gateway Address - Enter the Gateway assigned by your ISP.

DNS1/DNS2 - The DNS server information will be supplied by your ISP.

Apply ISP DNS and SNTP - Check this box to use the DNS servers and time server (SNTP) supplied by your ISP.

PPPoE

Select PPPoE (Point to Point Protocol over Ethernet) if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.



Username - Enter your PPPoE username.

Password - Enter your PPPoE password.

Keep Alive - The amount of time of inactivity before disconnecting your PPPoE session. Enter a Keep Alive time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the defined time, then the connection will be dropped. Enter 0 to ensure that your DSL connection is always active.

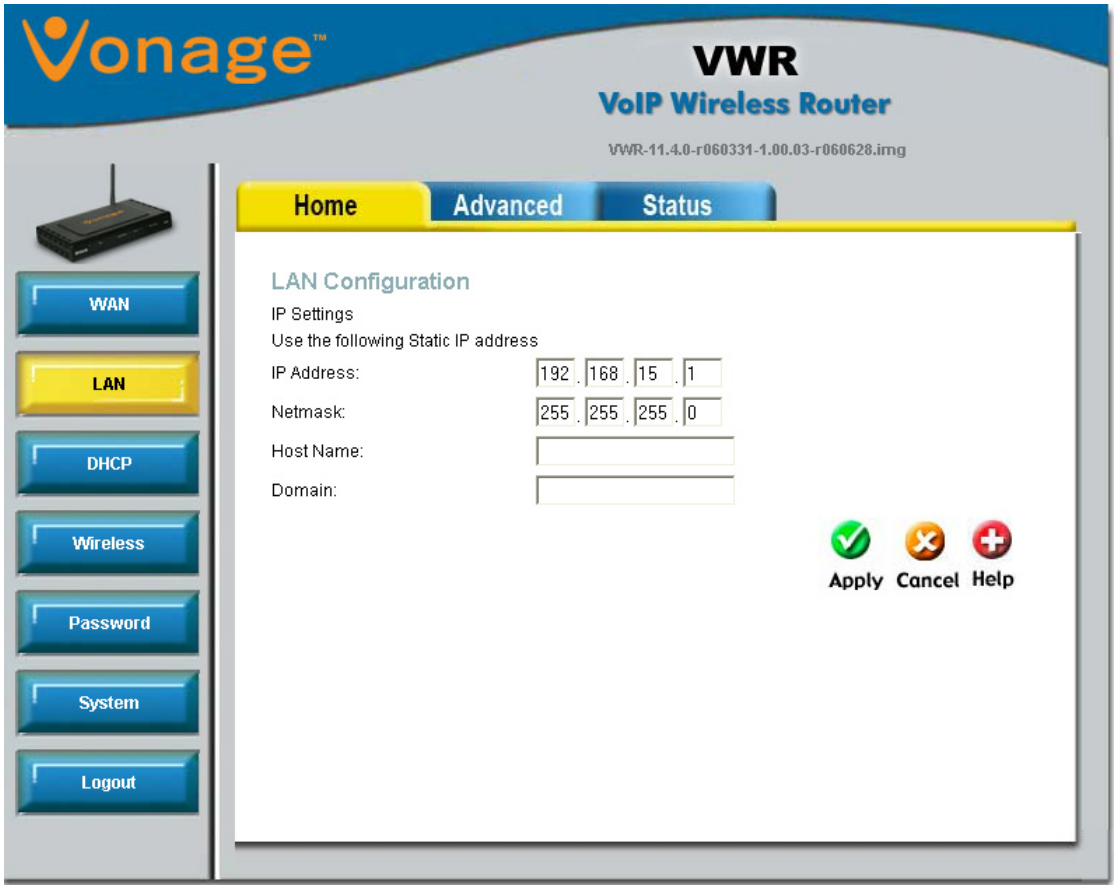
Authentication - Select the authentication type for your ISP (Auto, CHAP, or PAP).

MTU - Enter the MTU value. The default is 1492.

Enforce MTU - Check this box to force all TCP traffic to conform with PPP MTU by changing TCP maximum segment size to PPP MTU. If it is disabled, you may have issues accessing some Internet sites.

Apply ISP DNS and SNTP - Check this box to use the DNS servers and time server (SNTP) supplied by your ISP.

LAN



IP Address - Enter the IP address of the Vonage VWR Device. The default IP address is 192.168.15.1. If you statically assign the IP settings on your computer(s), this IP address must be the default gateway address and a DNS server address on your computer(s).

Note: If you change the IP address, once you click **Apply**, you will need to enter the new IP address in your browser to get back into the configuration utility.

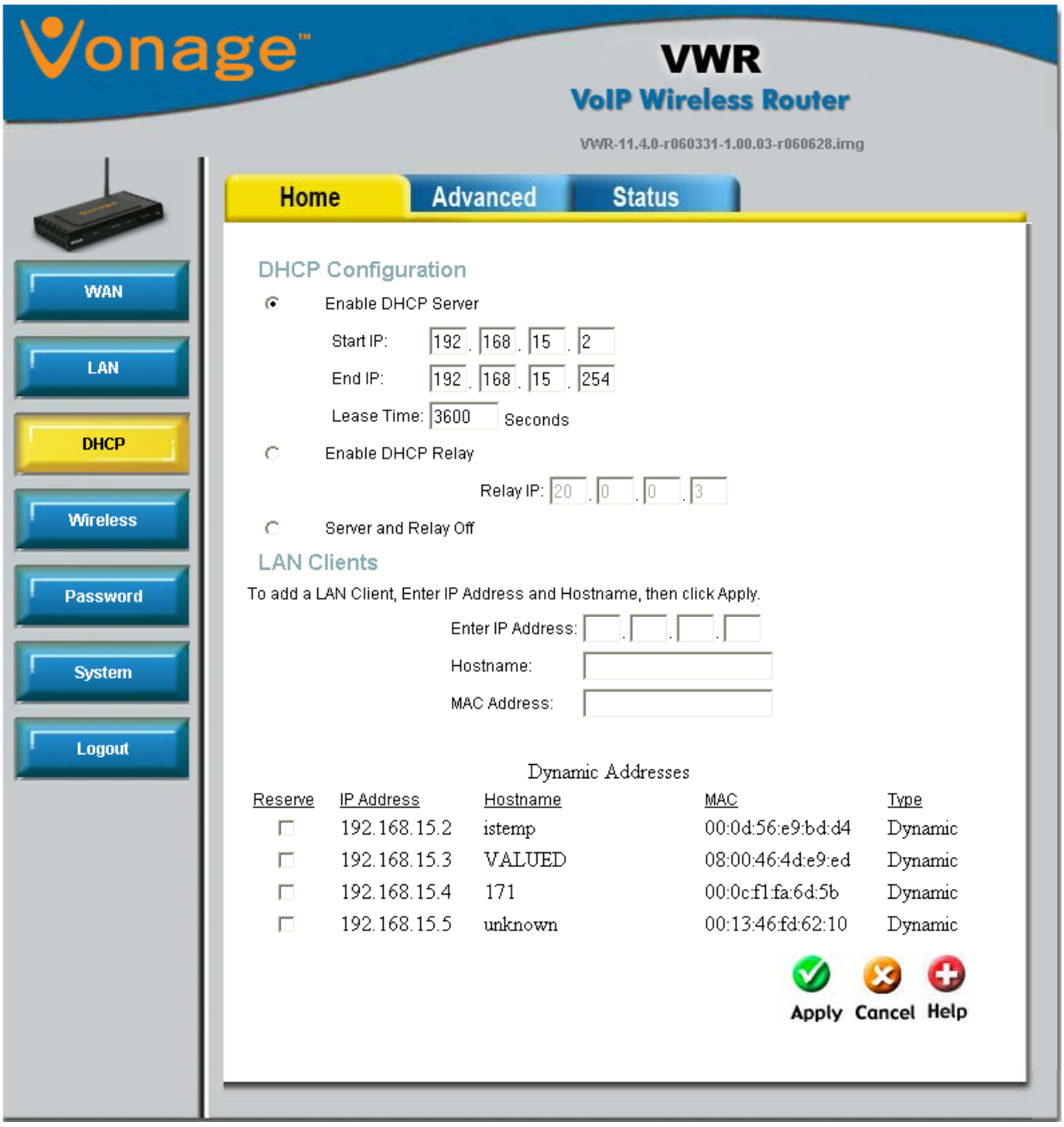
Subnet Mask - Enter the Subnet Mask. The default subnet mask is 255.255.255.0.

HostName - Enter a host name (Optional).

Domain - Enter your network domain name (Optional).

DHCP

DHCP stands for Dynamic Host Control Protocol. The Vonage VWR Device has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. Be sure to set your computers to be DHCP clients by setting their TCP/IP settings to "Obtain an IP Address Automatically." When you turn your computers on, they will automatically load the proper TCP/IP settings provided by the Vonage VWR Device. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.



Enable DHCP Server - Click this to allow the Vonage VWR Device to assign your computers the IP settings automatically.

Start IP - Enter the starting address for the DHCP server's IP assignment.

End IP - Enter the ending IP address for the DHCP server's IP assignment.

> **Note:** If you statically (manually) assign IP addresses to your computers or devices, make sure the IP addresses are outside of this range or you may have an IP conflict.

Lease Time - The length of time for the IP address lease. Enter the Lease time in seconds.

Enable DHCP Relay - Select this option to enable DHCP Relay. When DHCP relay is enabled, the Vonage VWR Device is responsible for forwarding DHCP requests and responses between network clients and a specified DHCP server.

Relay IP - Enter the IP address of the DHCP server that client DHCP requests will be relayed to.

Server and Relay Off - When the DHCP server and relay functions are turned off, the network administrator must statically configure the IP address, subnet mask and DNS settings of every host on the network. The same IP address cannot be assigned to more than one host, and the Vonage VWR Device must reside on the same subnet as the other hosts.

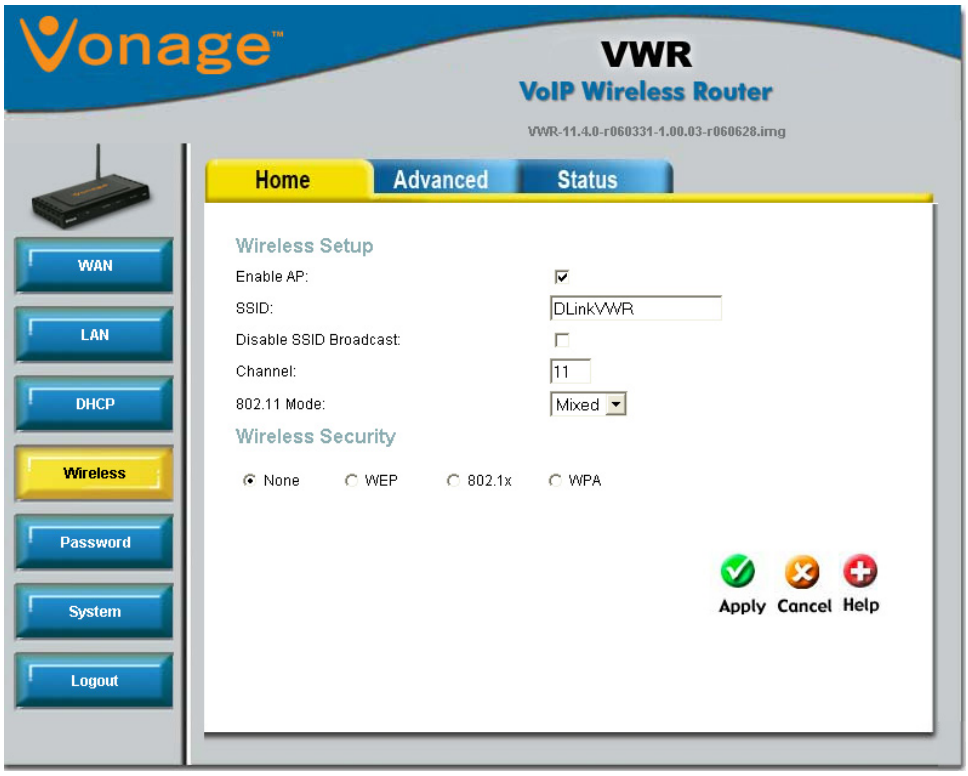
LAN Clients - If you want a computer or device to always have the same IP address assigned, you can create a DHCP reservation. The Vonage VWR Device will assign the IP address only to that computer or device.

Note: This IP address must be within the DHCP IP Address Range.

> **Enter IP Address -** Enter the IP address you want to reserve.
>
> **Hostname -** Enter a name of the computer.
>
> **MAC Address -** Enter the MAC address of the computer you want to assign the IP address to.

If your computer is already listed, simply check the reserve box and click **Apply**.

Wireless



Enable AP - Check this box to enable the wireless function.

SSID - Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **DLinkVWR**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

Disable SSID Broadcast - Uncheck the box to broadcast the SSID across the network. All devices on a network must share the same SSID (Service Set Identifier) to establish communication. Check the box if you do not wish to broadcast the SSID over the network.

Channel - All devices on the network must share the same channel. (Note: The wireless adapters will automatically scan and match the wireless setting.) For best results, use channels 1, 6, or 11.

802.11 Mode - Select the mode from the drop-down menu.

Mixed - Select if using both 802.11b and 802.11g wireless devices.

B Only - Select if using all 802.11b wireless devices.

B+ - Select if using both 802.11b and b+ wireless devices.

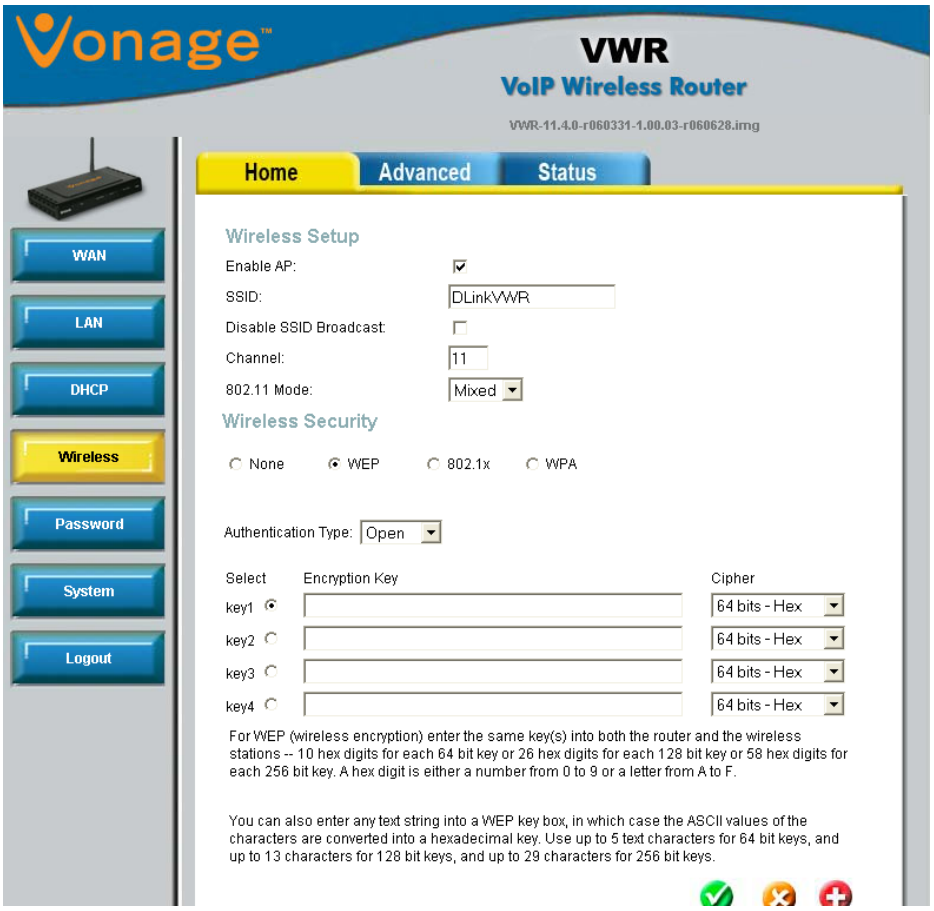
G Only - Select if using all 802.11g wireless devices.

Wireless Security

WEP

Wired Equivalent Privacy (WEP) is a wireless security protocol for Wireless Local Area Networks (WLAN). WEP provides security by encrypting the data that is sent over the WLAN.

Note: If you enable encryption on the Vonage VWR Device make sure to also enable encryption on all the wireless clients or wireless connection will not be established.



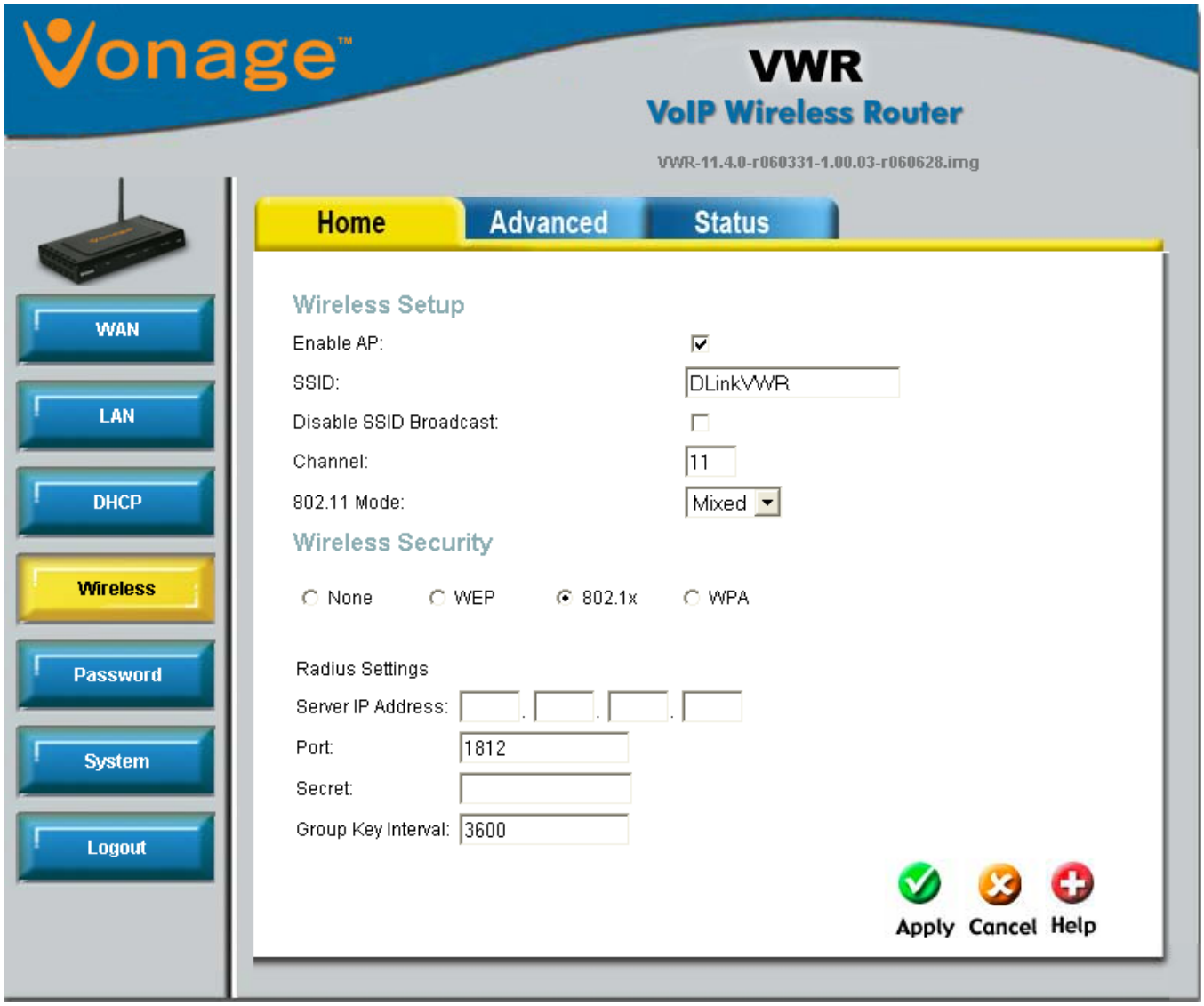
Authentication Type - Select **Open** or **Shared**.

Cipher - Select the level of encryption desired: 64, 128, or 256-bit.

Encryption Key - Enter a WEP key. You may enter up to 4 different keys.

802.1x

Select 802.1x when authenticating to a RADIUS server.



Server IP Address - Enter the IP address of your RADIUS server.

Port - Enter the port your RADIUS server is using. 1812 is the default setting.

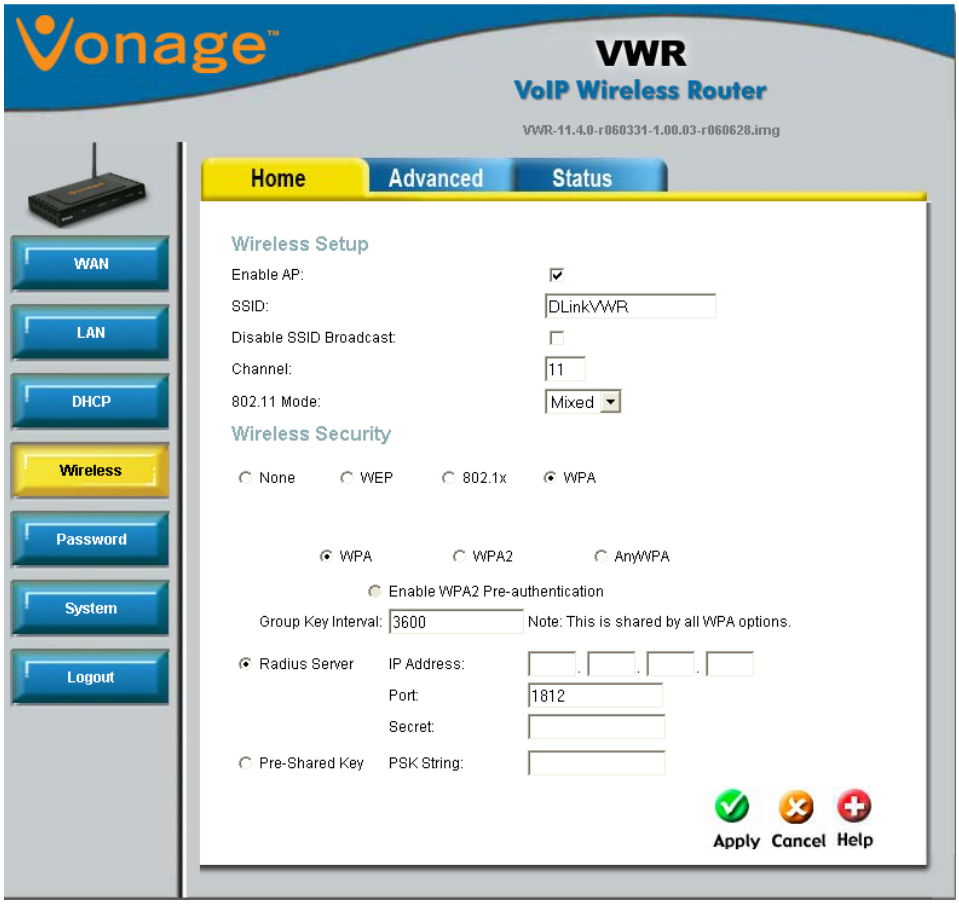
Secret - Enter the secret or key. This secret must be used by your wireless clients.

Group Key Interval - Enter the Group Key Interval. 3600 is the default setting.

WPA/WPA2

Wi-Fi Protected Access (WPA) is a wireless security protocol for Wireless Local Area Networks (WLAN). WPA and WPA2 provide inproved security over WEP through the temporal key integrity protocol (TKIP) and Advanced Encryption Standard (AES).

Note: If you enable encryption on the Vonage VWR Device make sure to also enable encryption on all the wireless clients or wireless connection will not be established.



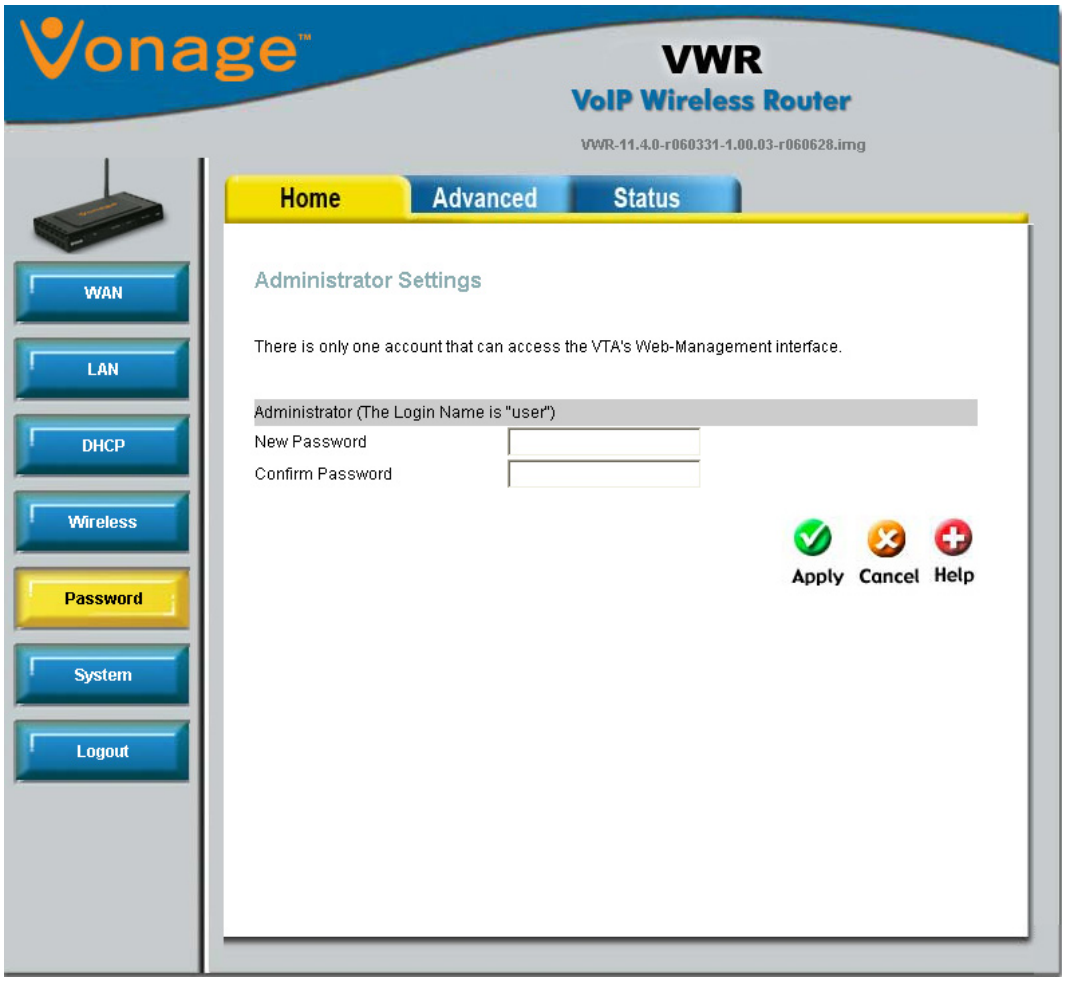
Group Key Interval - Enter the Group Key Interval. 3600 is the default setting.

RADIUS Server - If you are using a RADIUS server for authentication, click the radio button and enter the RADIUS server's IP address, Port, and Secret (key).

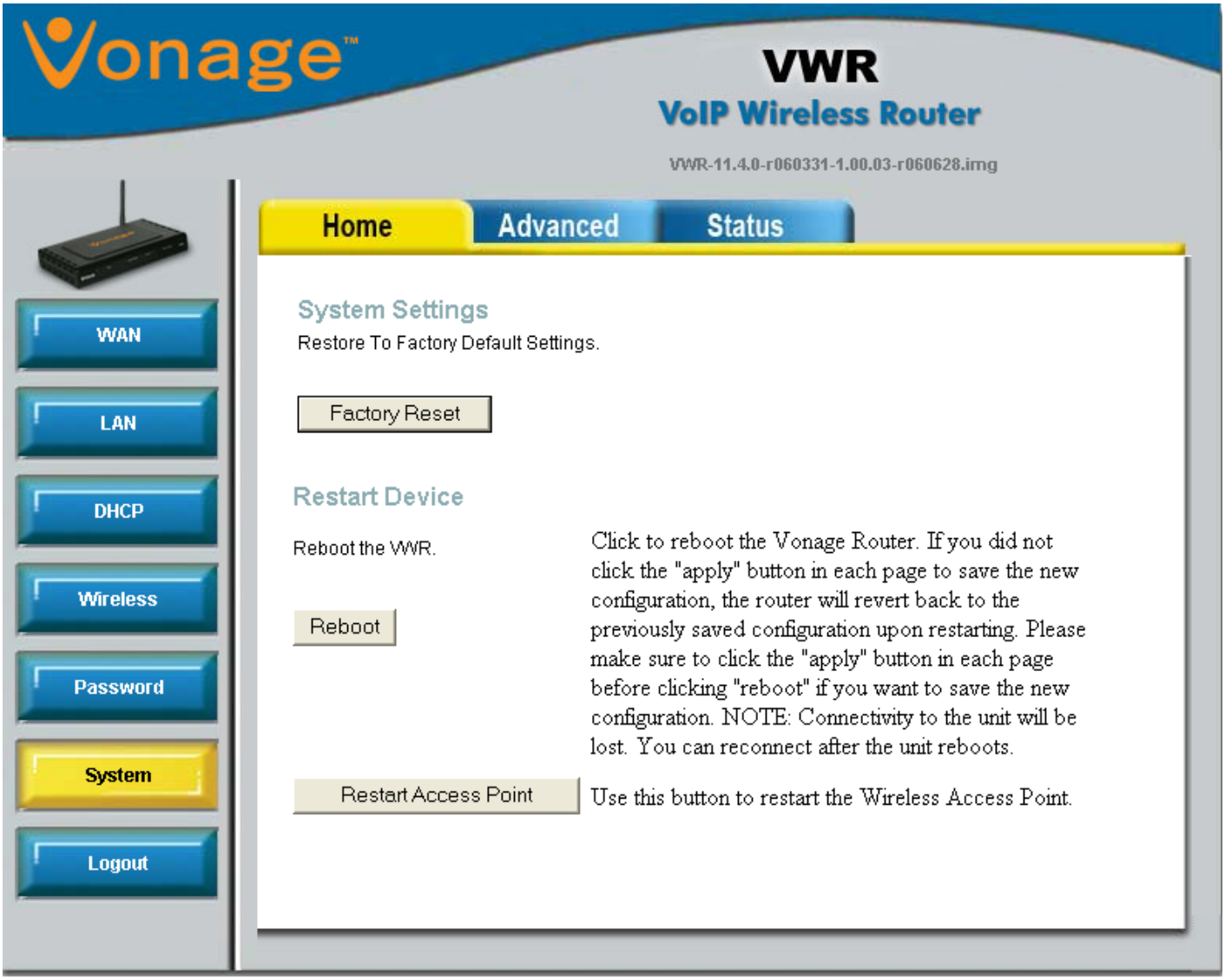
Pre-Shared Key - To use a passphrase for authentication, click the radio button and then enter the PSK String (WPA passphrase).

Password

You may change the User password on this page. Enter a new password and click **Apply** to save.



System



Factory Reset - Click to reset the Vonage VWR Device back to the default settings.

Reboot - Click to reboot or restart the Vonage VWR Device.

Restart Access Point - Click to restart the wireless function.

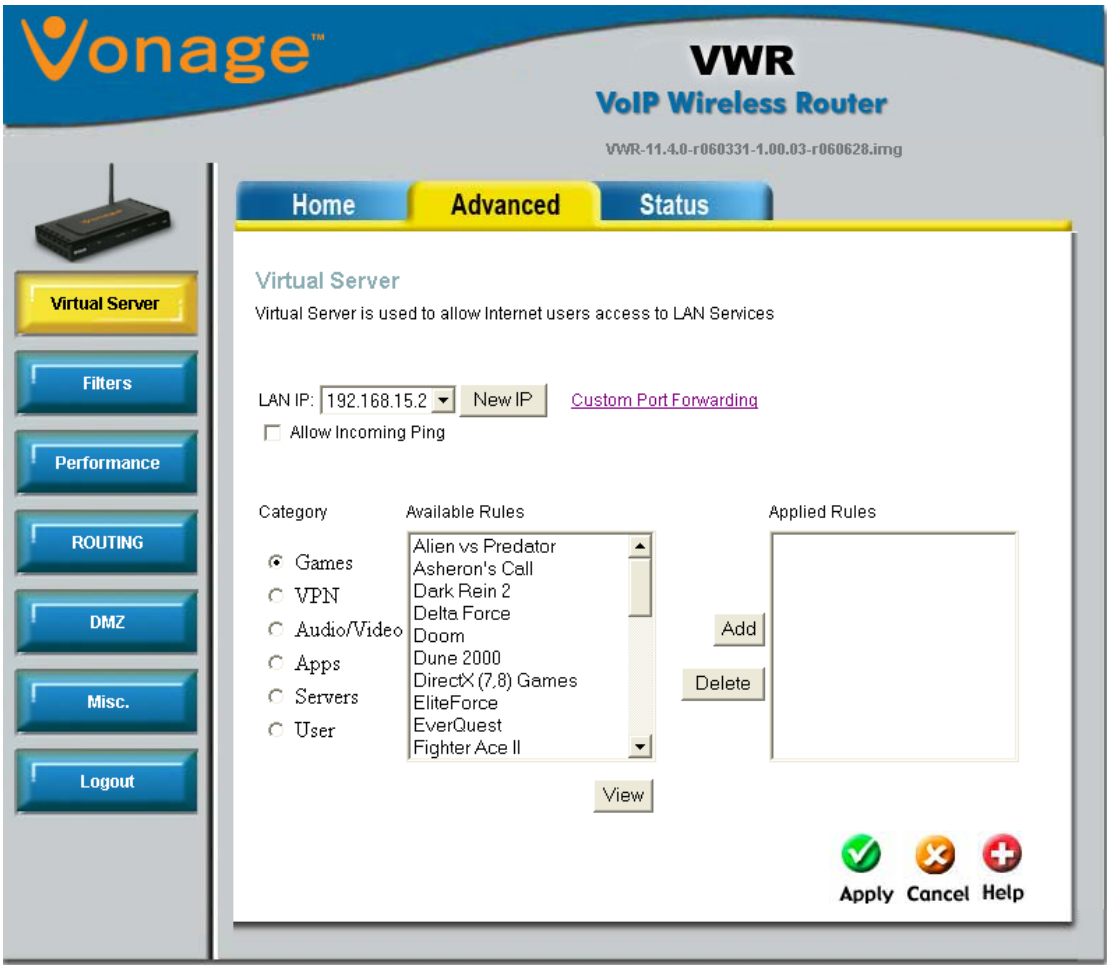
Virtual Server

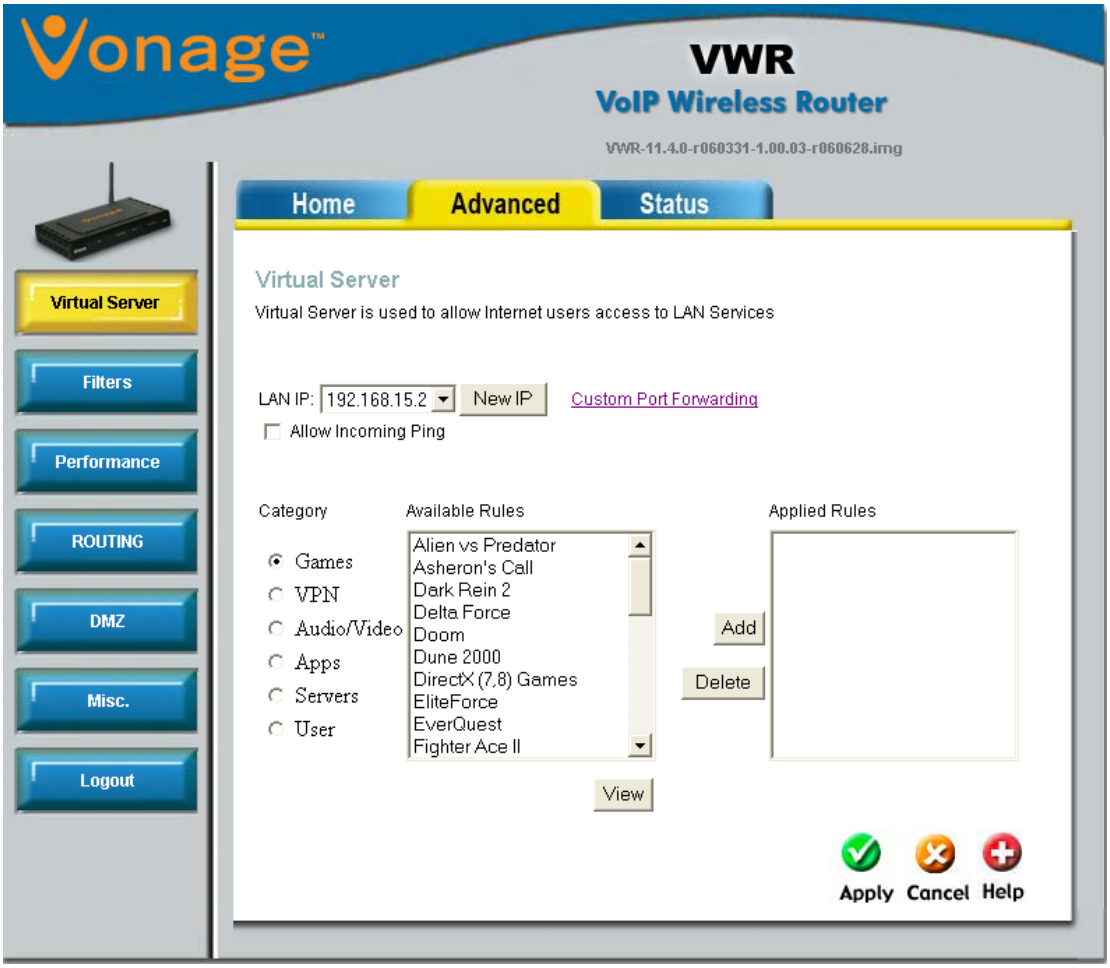
The Vonage VWR Device can be configured as a virtual server so that remote users accessing Web or FTP services via the public IP address can be automatically redirected to local servers in the LAN (Local Area Network).

The Vonage VWR Device firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the Vonage VWR Device are invisible to the outside world. If you wish, you can make some of the LAN computers accessible from the Internet by enabling Virtual Server. Depending on the requested service, the Vonage VWR Device redirects the external service request to the appropriate server within the LAN network.

The Vonage VWR Device is also capable of port-redirection meaning incoming traffic to a particular port may be redirected to a different port on the server computer.

Each virtual service that is created will be listed at the bottom of the screen in the Virtual Servers List. There are pre-defined virtual services already in the table. You may use them by enabling them and assigning the server IP to use that particular virtual service.





LAN IP - Select a computer on your network to apply the rules to from the drop-down menu.

New IP - Click **New IP** if your computer is not in the drop-down menu.

Allow Incoming Ping - Check this box to allow the application to allow incoming ping. Some games and chat programs require this option to be enabled.

Category - Select the type of program.

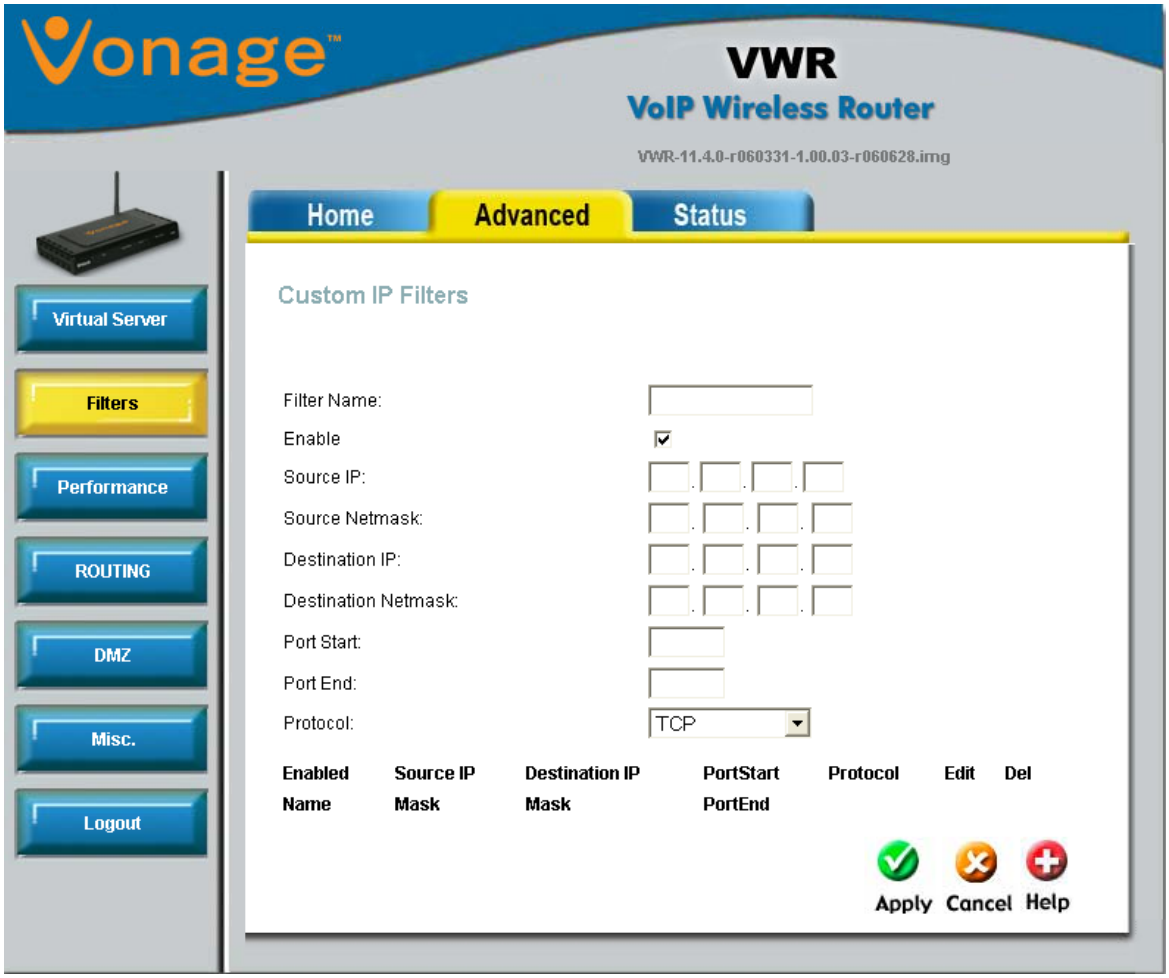
Available Rules - Select the built-in application and click **Add**.

Applied Rules - This will list the applications that are active to the LAN IP address you have selected from the **LAN IP** list.

Delete - Highlight an application from the **Applied Rules** list and click **Delete** to remove it.

View - Highlight an application and click **View** to review its settings.

Filters



Use IP (Internet Protocol) filters to allow or deny computers access to the Internet based on their IP address.

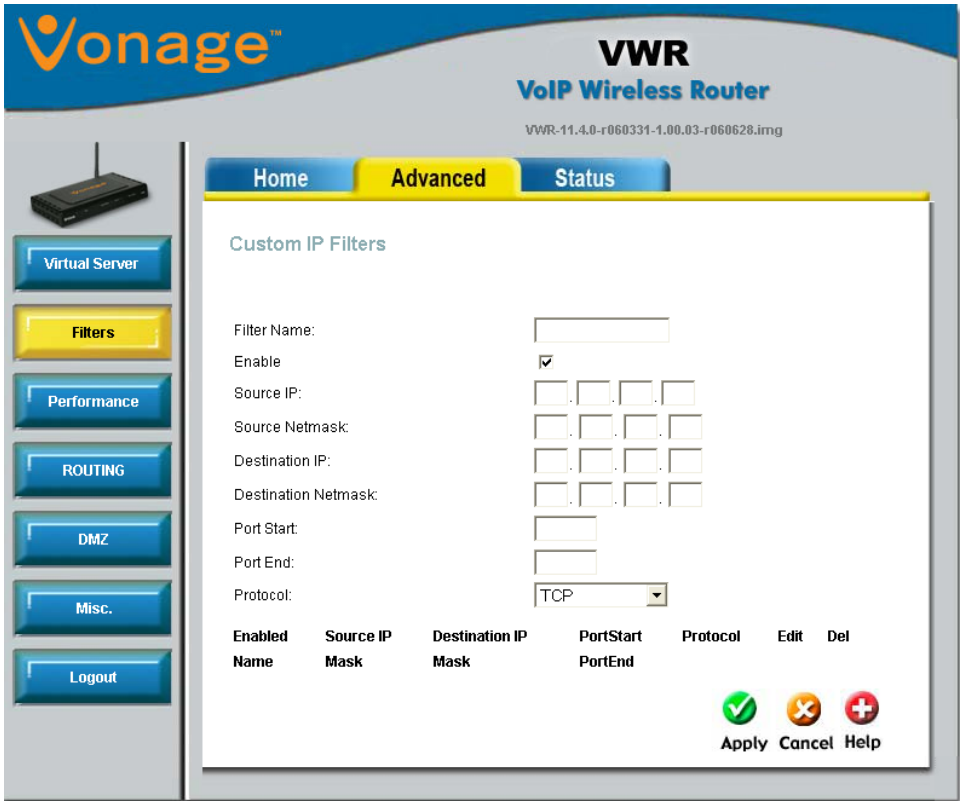
LAN IP Address - Select the IP address from the drop-down menu to apply the rule to.

Block All Traffic - Check to block all traffic to and from the selected IP address.

Block Outgoing Ping - Check to block outgoing ICMP traffic from the selected IP address. This is useful if your host has a virus that attempts a Ping-of-Death Denial of Service attack.

Custom IP Filters - Click to create your own filter rules (see next page).

Custom IP Filters



Filter Name - Enter a name of your filter rule.

Enable - Check to enable the filter rule.

Source IP - Enter the LAN-side IP address.

Source Netmask - Enter the LAN-side subnet mask.

Destination IP - Enter the destination IP address (0.0.0.0 for all).

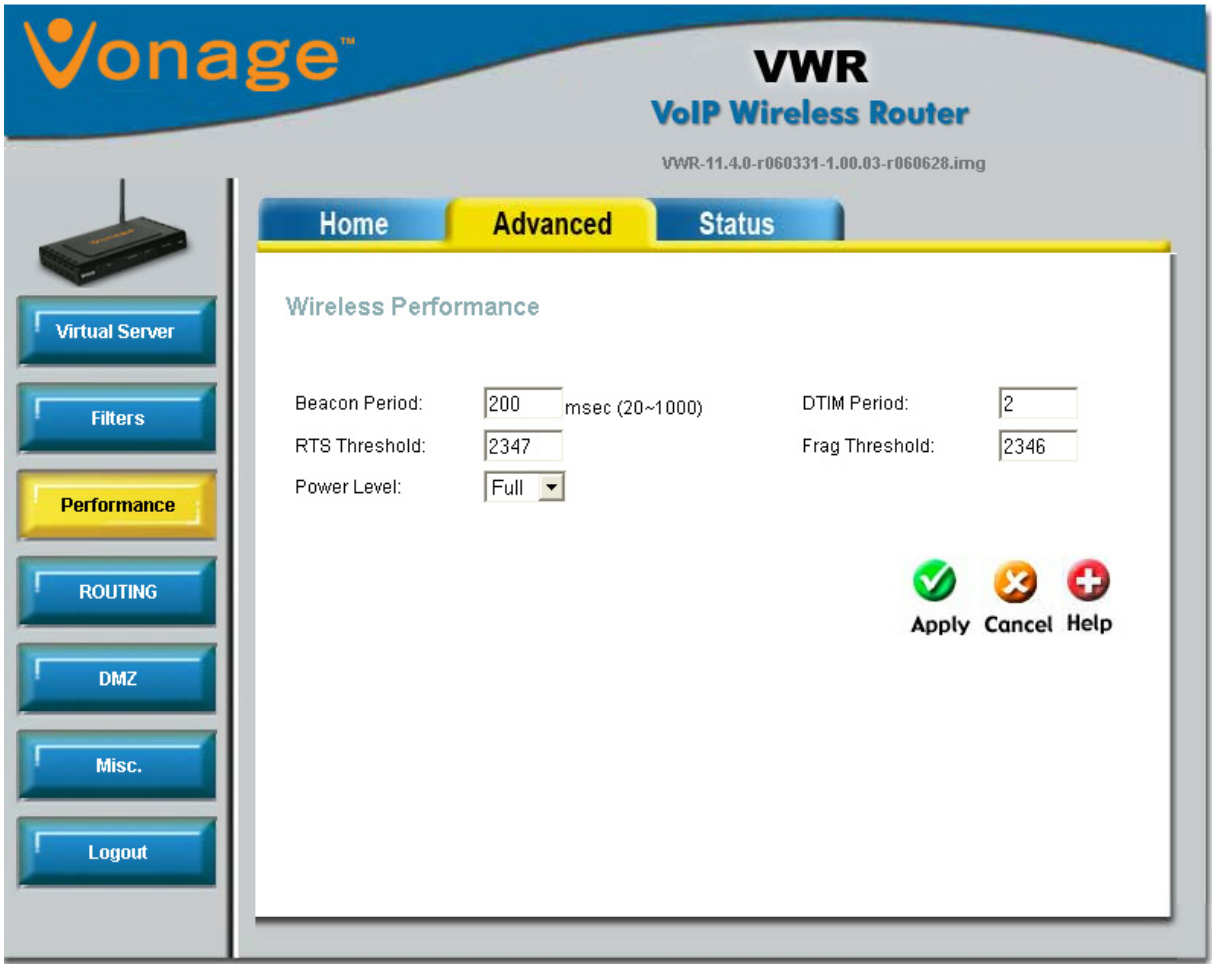
Destination Netmask - Enter the destination subnet mask (255.255.255.255 for all).

Port Start - Enter the starting port to block.

Port End - Enter the ending port to block.

Protocol - Select the protocol (TCP, UDP, TCP and UDP, ICMP, and ANY).

Performance



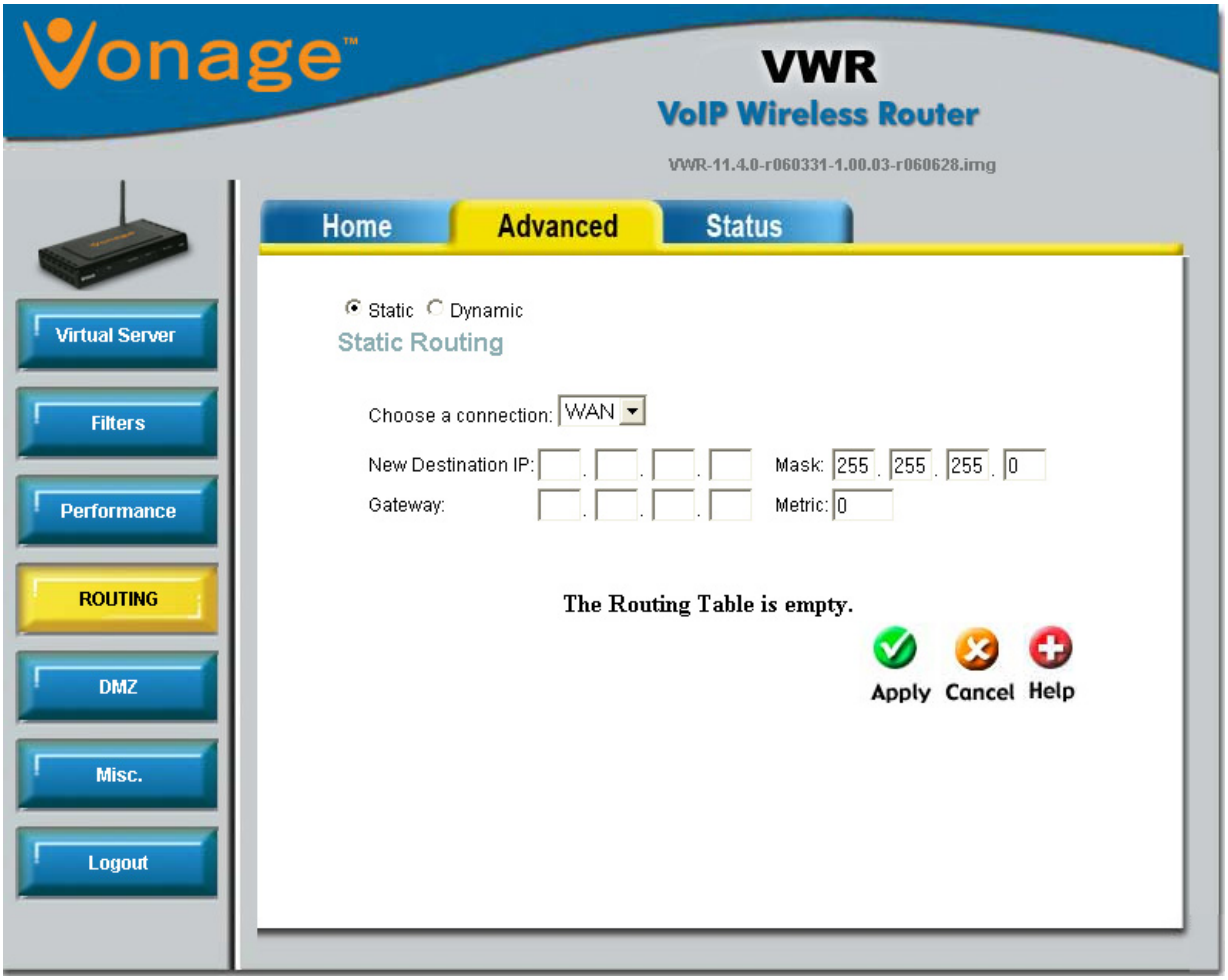
Beacon Interval - Beacons are packets sent by an Access Point to synchronize a wireless network. Specify a value. 100 is the default setting and is recommended.

RTS Threshold - This value should remain at its default setting of 2432. If inconsistent data flow is a problem, only a minor modification should be made.

DTIM interval - (Delivery Traffic Indication Message) 3 is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

Fragmentation - The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission. 2346 is the default setting.

Routing



Static Routing - Static routes can be added if you require specific routes within your internal network.

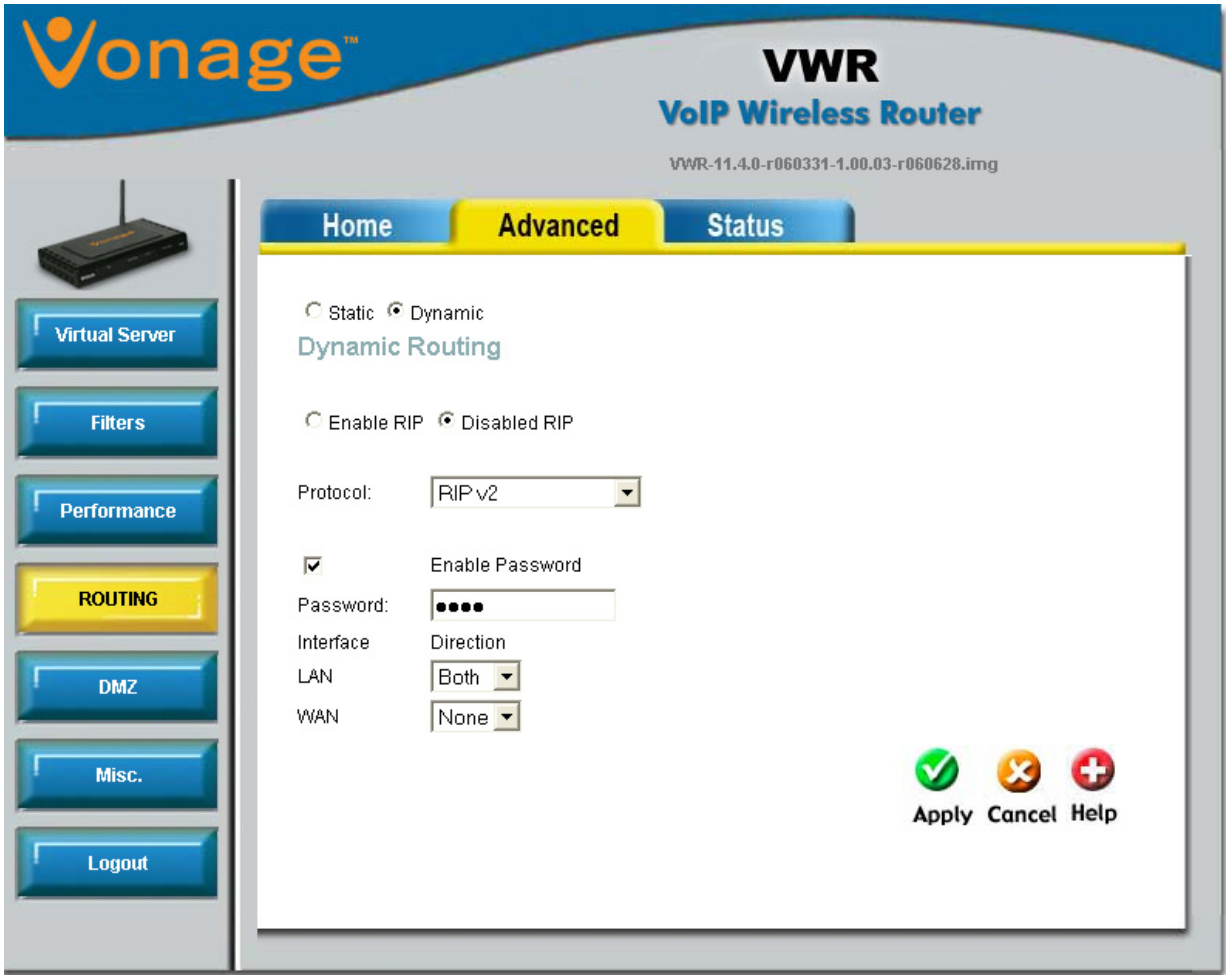
New Destination IP - Enter the network IP.

Mask - Enter the network subnet mask.

Gateway - Enter the gateway IP address. This is the gateway or router WAN IP address on the destination network.

Metric - The Metric is the number of hops to the destination network.

Dynamic Routing



Dynamic Routing - Allows the Vonage VWR Device to route IP packets to another network automatically. The RIP protocol is applied, and broadcasts the routing information to other routers on the network regularly.

Protocol - Select the version of RIP.

Enable Password - Check to use a password.

Password - Enter your password.

Interface/Direction - You may control the ports and direction that the Vonage VWR Device will route to and from.

LAN - Select None, To, From, or Both.

WAN - Select None, To, From, or Both.

DMZ

If you have a client PC that cannot run Internet applications properly from behind the Vonage VWR Device, then you can set the client up for unrestricted Internet access. It allows a computer to be exposed to the Internet. This feature is useful for gaming purposes.

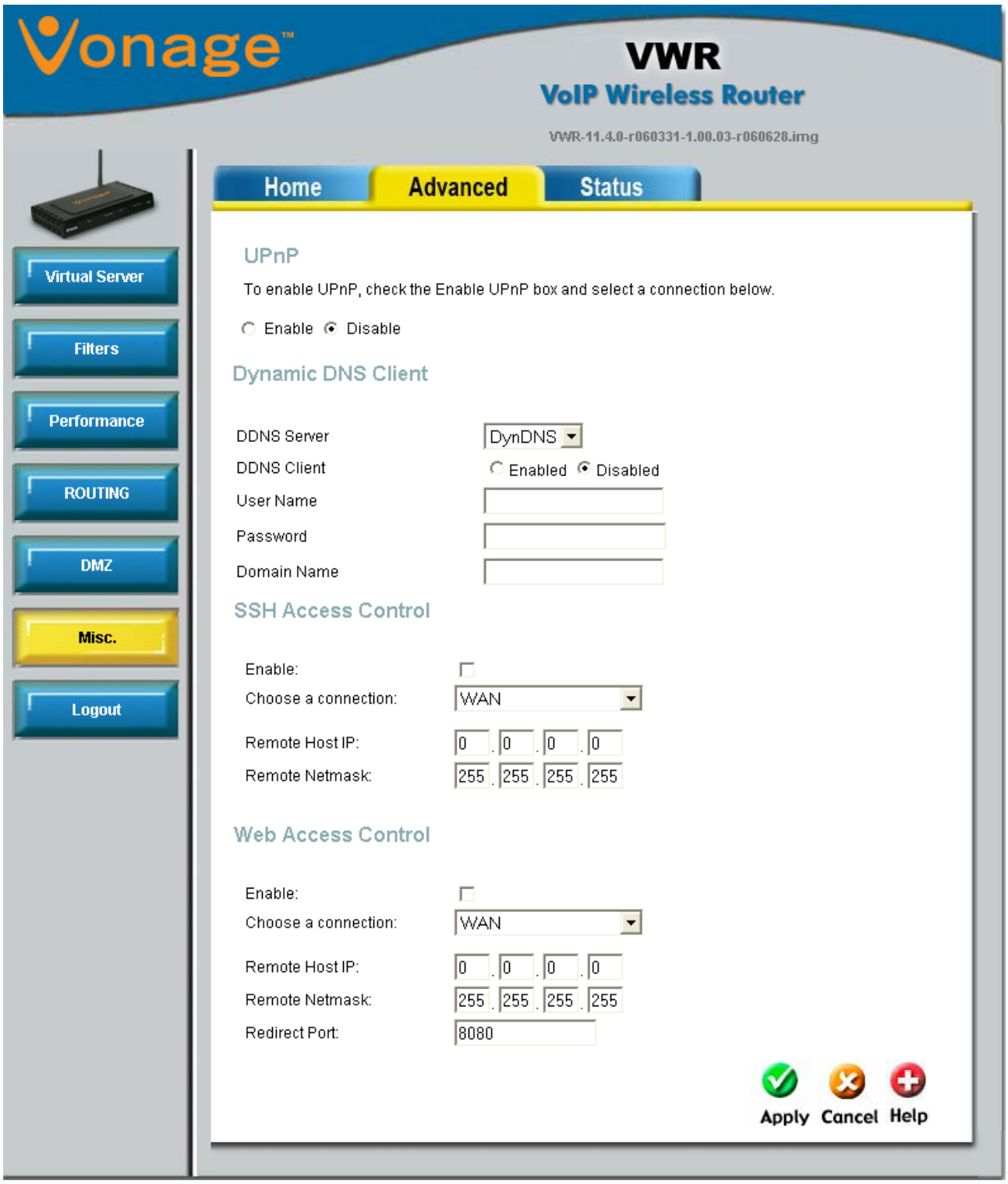
Enter the IP address of the internal computer that will be the DMZ host. Adding a client to the DMZ (Demilitarized Zone) may expose your local network to a variety of security risks, so only use this option as a last resort.

DMZ - Select **Enabled** or **Disabled**. By default the DMZ is disabled.

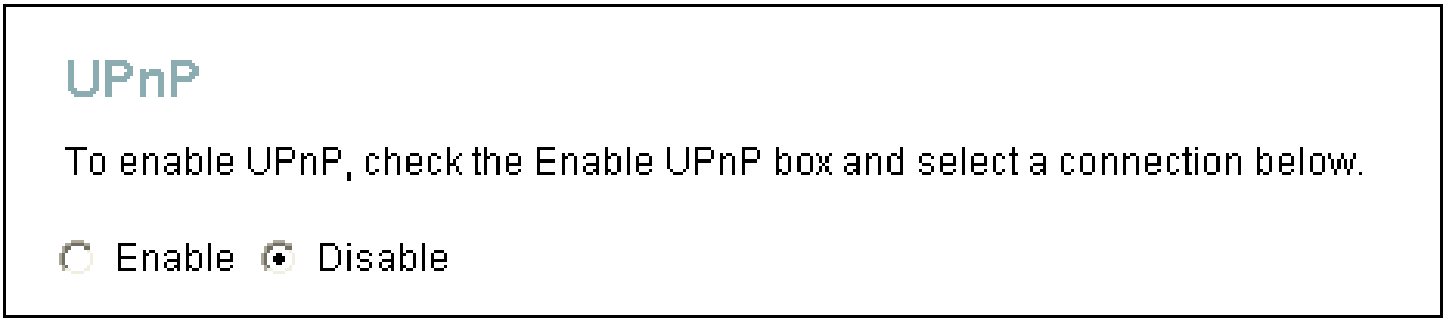
IP Address - Enter the IP Address of the computer to be in the DMZ.

Misc

The Misc page will allow you to configure UPnP, DDNS, SSH Access Control, and Web Access Control.

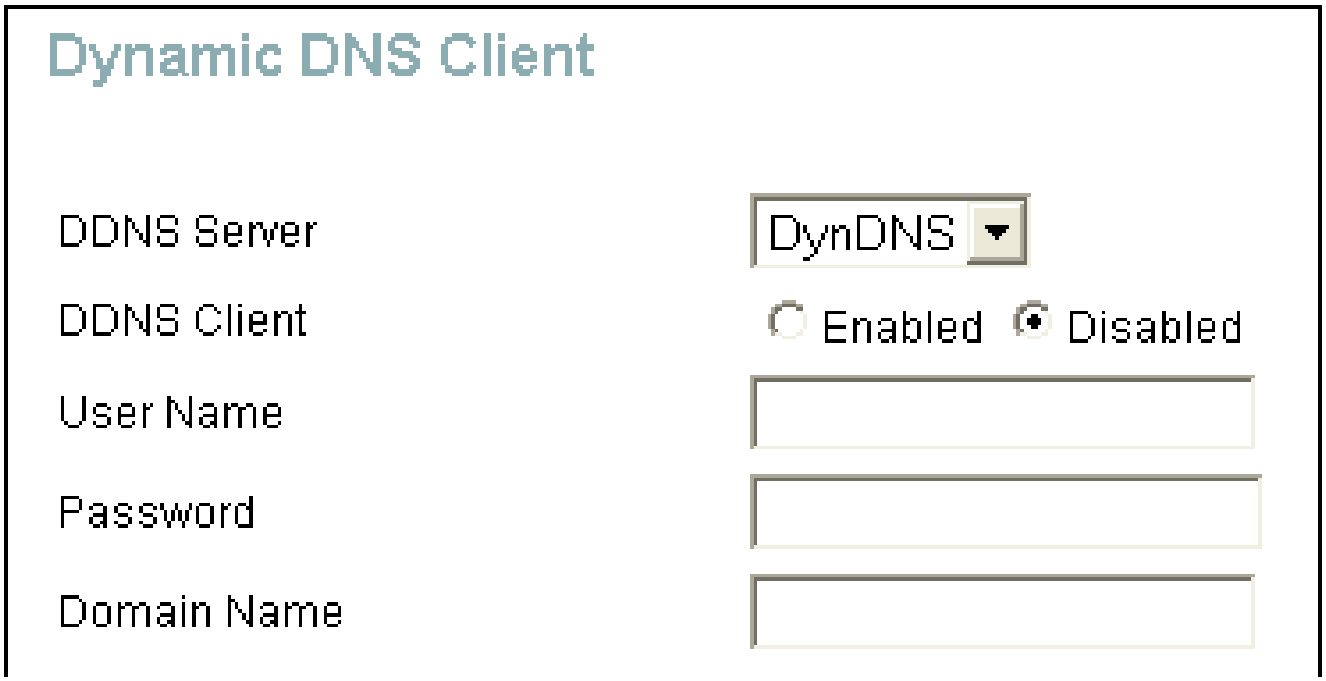


UPnP



Click **Enable** to use UPnP (Universal Plug and Play). UPnP provides compatibility with networking equipment, software and peripherals.

DDNS



Dynamic Domain Name System is a method of keeping a domain name linked to a changing IP Address. This is a useful feature since many computers do not use a static IP address.

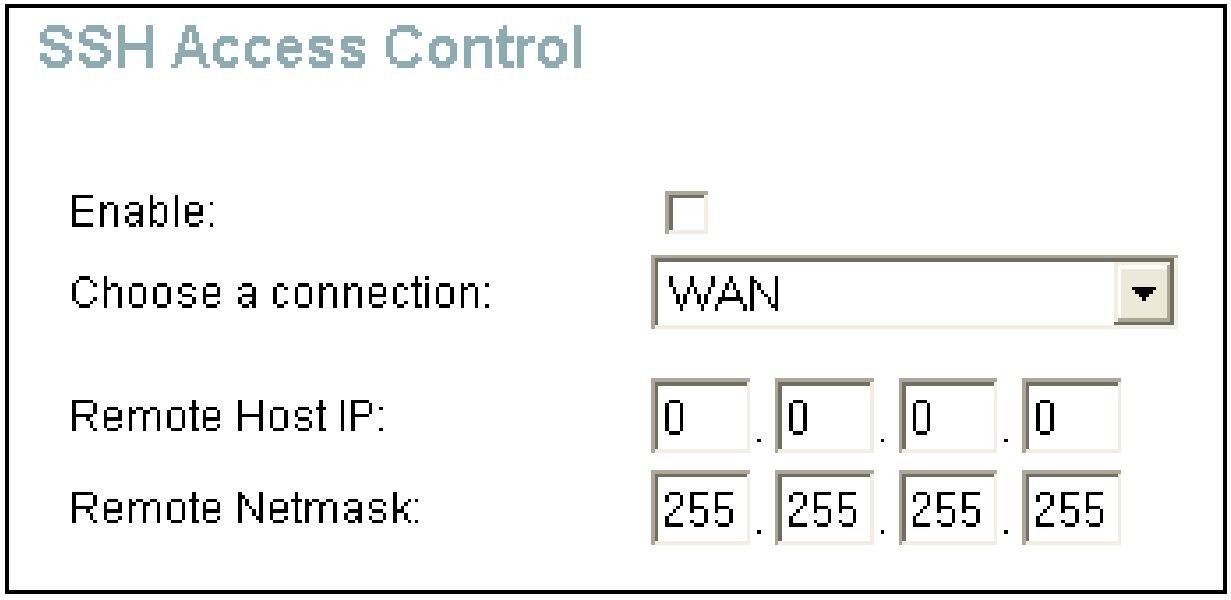
To use the DDNS update client built into the Vonage VWR Device, select your DDNS provider from the drop-down menu and then click **Enabled**.

Username - Enter the username for your DDNS account.

Password - Enter the password for your DDNS account.

Domain Name - Enter the domain or host name for your DDNS account.

SSH Access Control



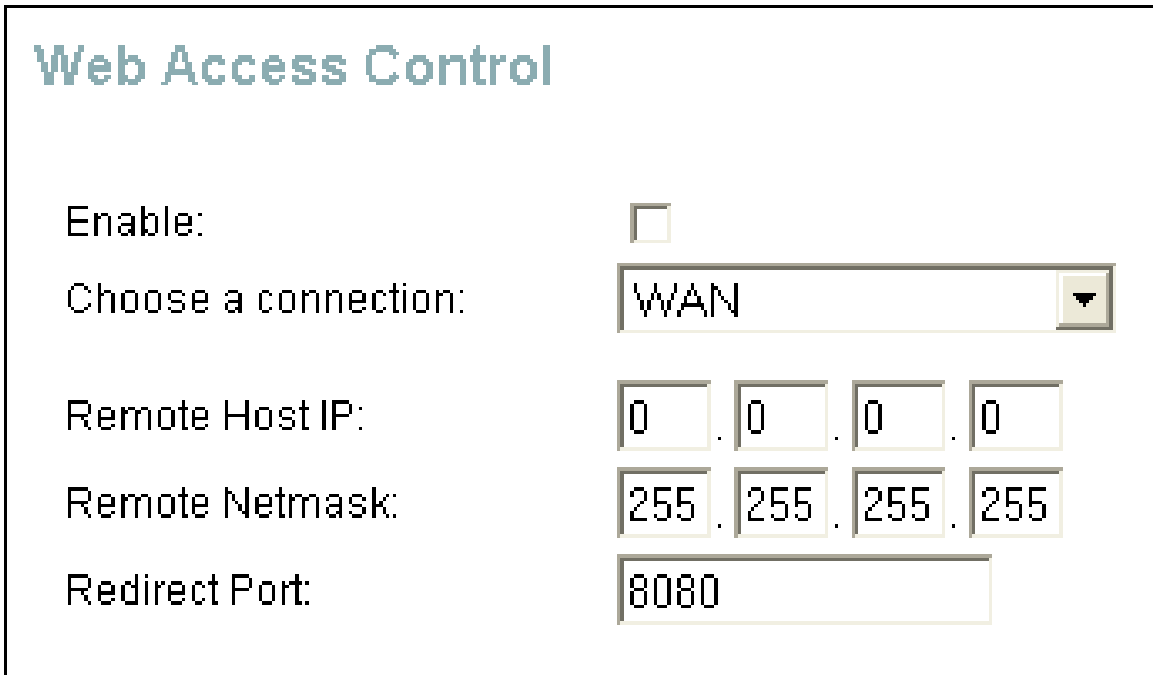
To configure the Vonage VWR Device from a remote computer using SSH, check **Enable** and enter the following:

Choose Connection - Select **WAN**.

Remote Host IP - Enter the IP address of the remote computer. Enter 0.0.0.0 to allow any remote computer to connect.

Remote Netmask - Enter the subnet mask of the remote computer. Enter 255.255.255.255 to allow any remote computer to connect.

Web Access Control



To configure the Vonage VWR Device from a remote computer using a web browser, check **Enable** and enter the following:

Choose Connection - Select **WAN**.

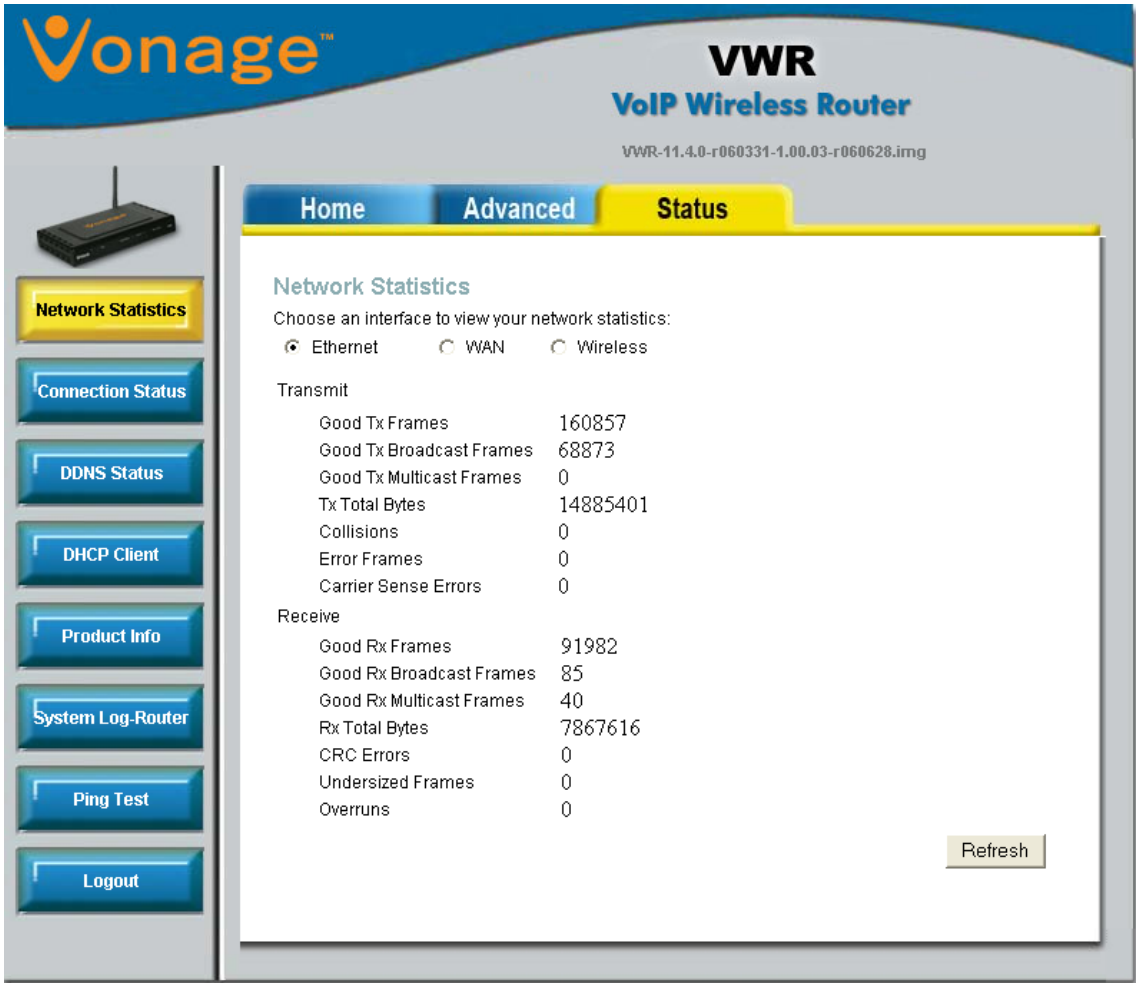
Remote Host IP - Enter the IP address of the remote computer. Enter 0.0.0.0 to allow any remote computer to connect.

Remote Netmask - Enter the subnet mask of the remote computer. Enter 255.255.255.255 to allow any remote computer to connect.

Redirect Port - Enter the port number you would like to use.

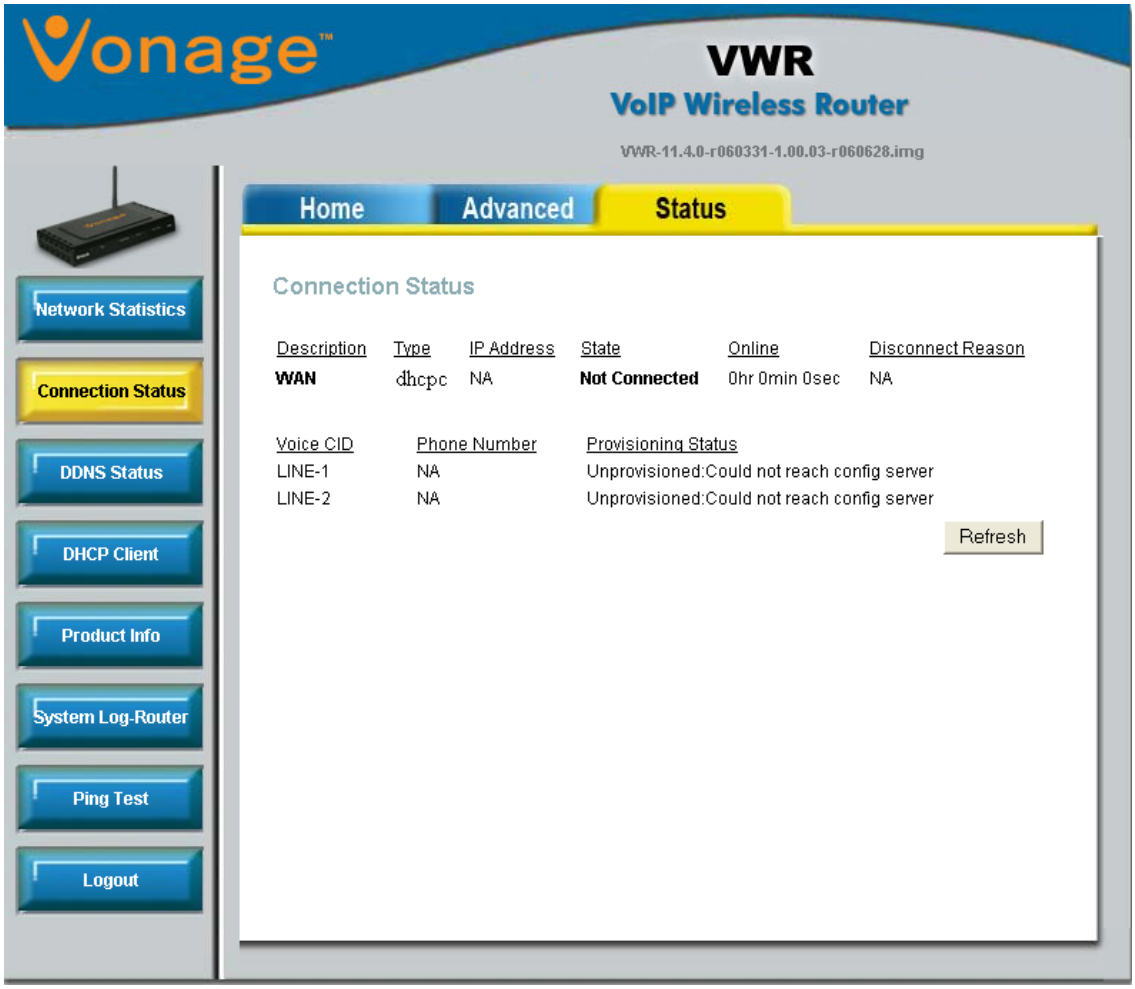
Network Statistics

The Network Statistics page will display traffic statistics of the Vonage VWR device.



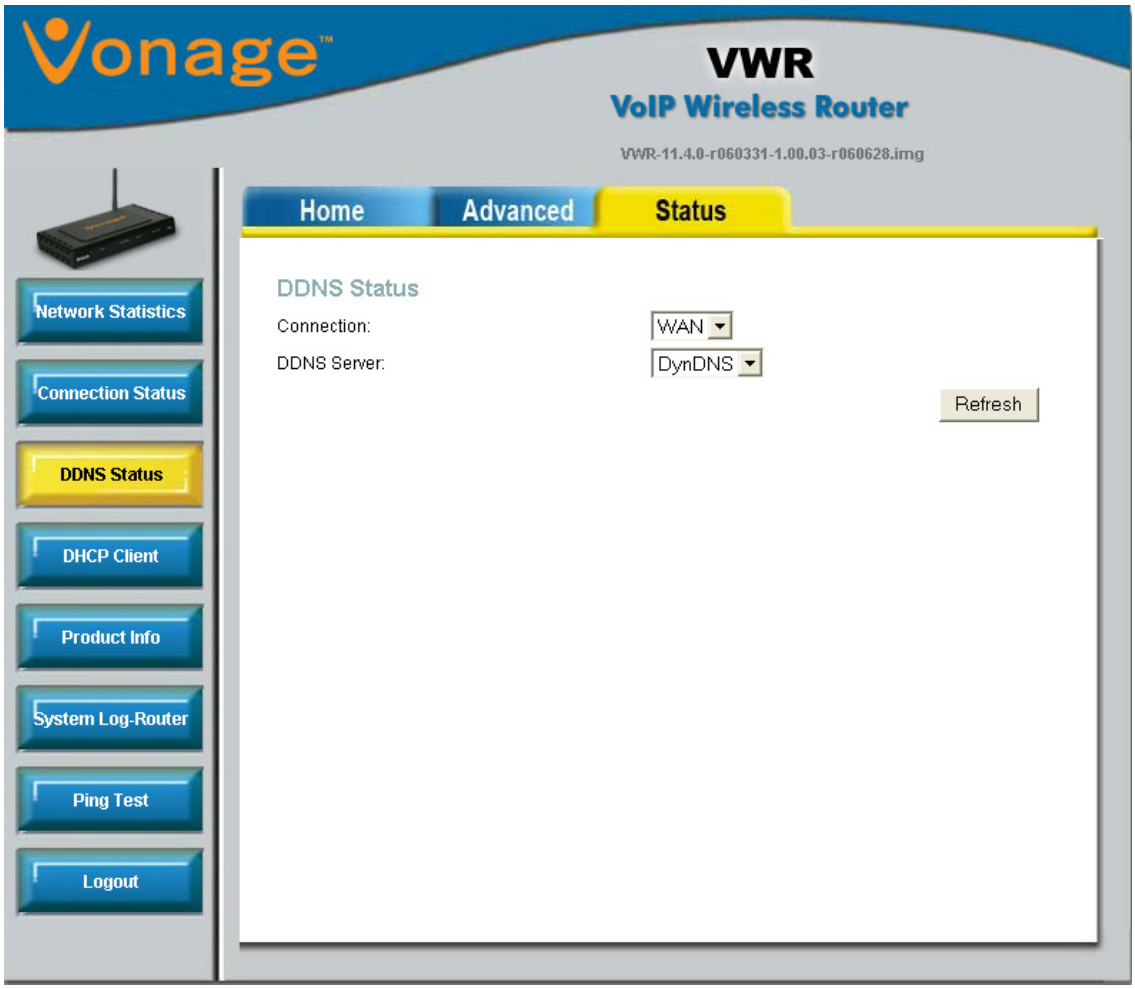
Connection Status

The Connection Status page will display traffic statistics of the Vonage VWR device.



DDNS Status

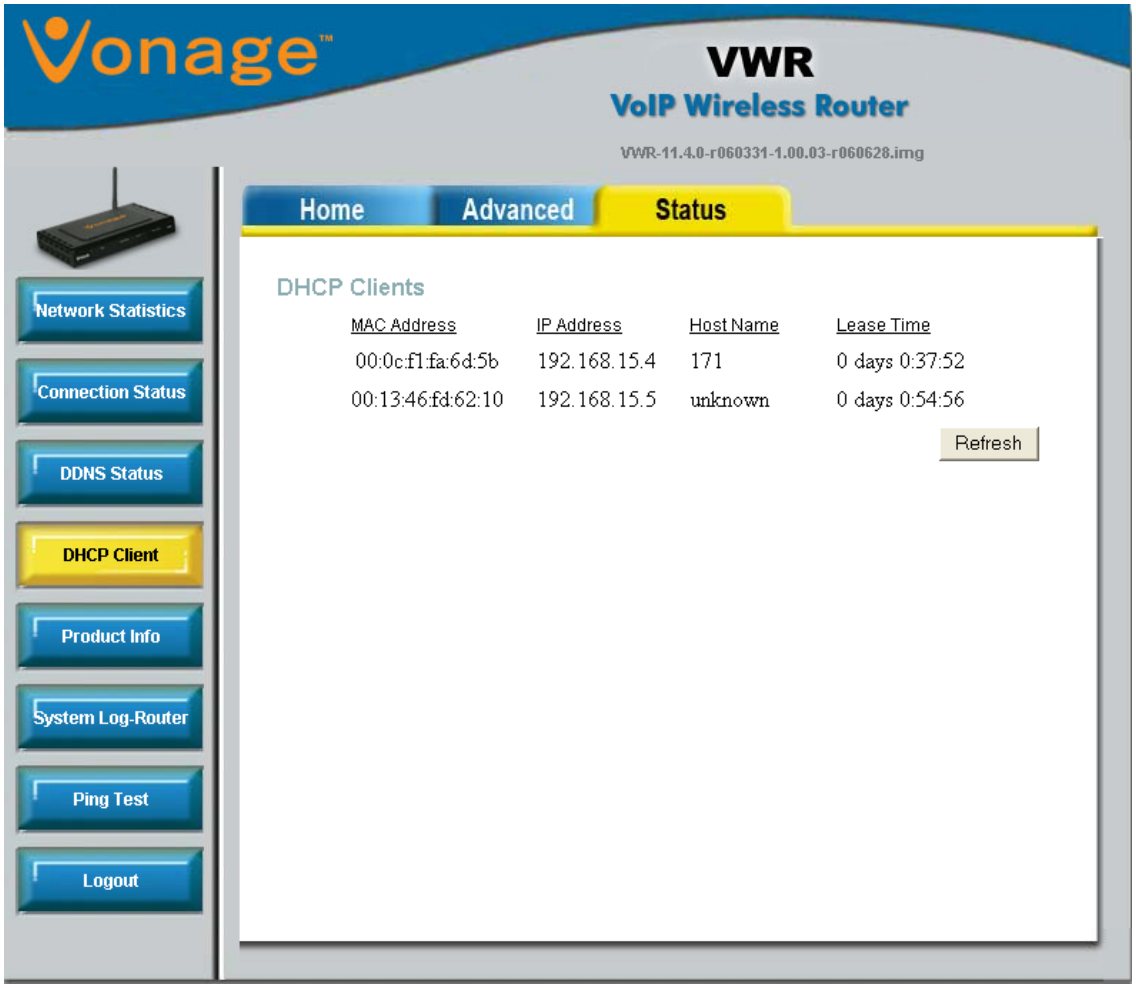
The DDNS Status page will display Dynamic DNS statistics.



Connection - WAN is selected.

DDNS Server - Select the DDNS service to display statistics for.

DHCP Client



The DHCP Client page will display the following information:

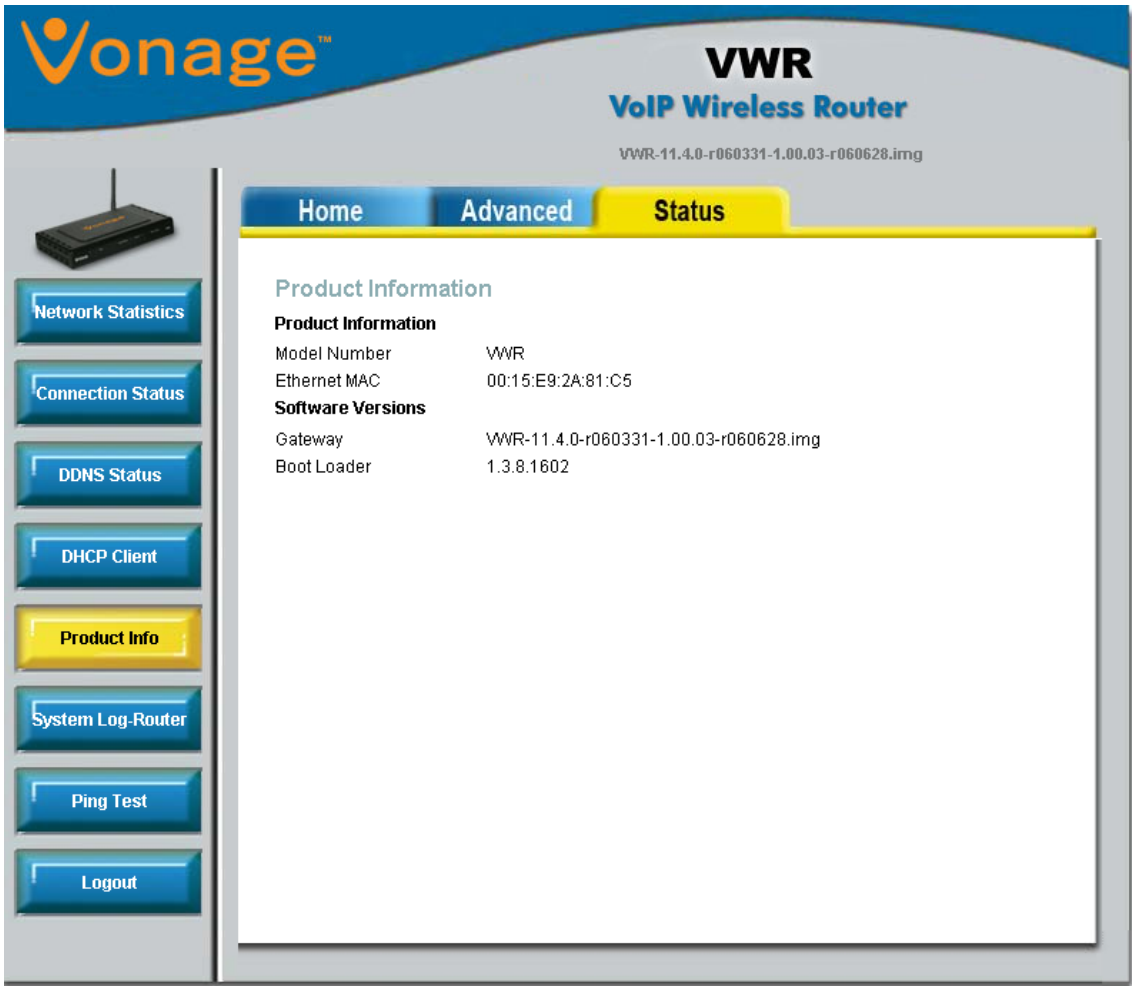
MAC Address - The MAC address of the device.

IP Address - The IP address that the Vonage VWR Device assigned the device.

Host Name - The host name of the device. If the device does not have a host name, it will be displayed as *Unknown*.

Lease Time - The remaining DHCP lease time.

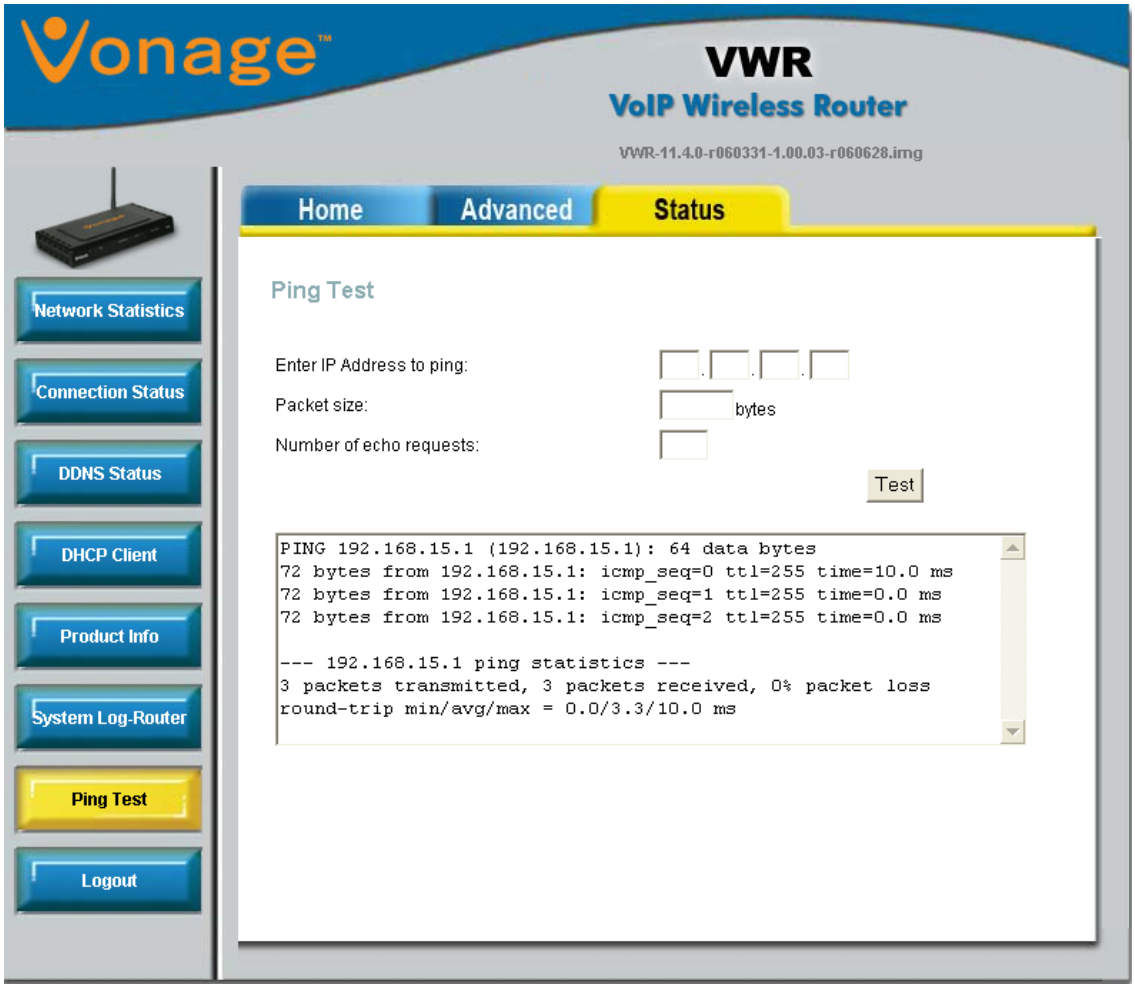
Product Info



The Product Info page will display the following:

- Model Number
- Ethernet MAC Address
- Gateway - Software Version
- Bootloader - Firmware Version

Ping Test



The Ping Test page will allow you to test your connection to computers.

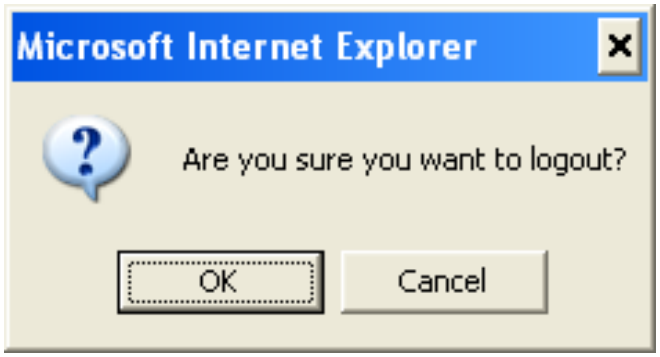
Enter IP Address to Ping - Type in the IP address you want to ping.

Packet Size - Enter the size of the packet (32 is the default size).

Number of Echo Requests - Enter the number of requests (4 is default).

Logout

Click **Logout** to exit the configuration utility. Click **OK** to verify.



Troubleshooting

If your Internet connection doesn't work:

You can solve many installation issues by resetting all of your equipment:

1. First, power down in this order:
   a. Computer (shut down properly, it is not necessary to disconnect power to your computer)
   b. Vonage Device (unplug power cord from back of device)
   c. Router, if you have one (unplug power cord from back of device)
   d. DSL or Cable Modem (unplug power cord from back of device)

NOTE: Leave the modem unplugged for at least 60 seconds. (The 60 seconds is to ensure the modem doesn't "remember" old information). Confirm that all cables are snapped firmly into place.

2. Turn the devices on one at a time in this order:
   a. DSL or Cable Modem - Wait for the lights to come back on before continuing. This may take several minutes. Most modems have a light that should be lit solid when start-up is complete. If necessary, refer to the information that came with your modem.
   b. Router, if you have one - Wait for the lights to come back on (consult router manual for sequence) before continuing. Wait at least 30 seconds after the lights have stopped blinking.
   c. Vonage Device - Wait for the power and phone(s) lights to be a solid green. (The Internet light will blink whenever there is activity.)
   d. Computer

• For more troubleshooting tips, visit www.vonage.com/help.

At this point, you should have both a dial tone and Internet connectivity.

3. Try opening your web browser to view a web page. If you cannot view a web page, check to see whether your Cable or DSL prover is having connection problems in your area.

If your Internet connection works, but you don't hear a dial tone or a voice recording:

1. Be sure your phone is plugged in to the Green Phone Port 1 on the rear panel of the Vonage Device, and that it is disconnected from the wall jack that a traditional phone uses.

2. Reset all of your equipment, following the steps described on page 41. After you reset all your equipment, pickup your telephone handset to listen again for a dial tone.

If you hear a voice recording instructing you to connect your phone to the Green Phone 1 Port:

1. Hang up your phone.
2. Confirm that the phone cord is firmly plugged into the Green Phone Port 1, and listen again for a dial tone.

If you're still having trouble, please call 1-866-243-4357
In Canada, call 1-877-272-0528

During the startup process you may notice that the Power light on the front of the VWR is blinking. These blinks indicate that the VWR is booting up with Vonage service. You may find the following blink sequences helpful to you:

1 blink (blink, pause, repeat)	VWR is powering up
2 blinks (2 blinks, pause, repeat)	VWR is obtaining an IP address
3 blinks (3 blinks, pause, repeat)	VWR is obtaining configuration from Vonage
4 blinks (4 blinks, pause, repeat)	VWR is registering with Vonage
Rapid Blinking	Downloading/upgrading firmware (do not power down)
Solid	Startup process is complete

Your Vonage VWR Device comes equipped with some pre-programmed voice messages to help troubleshoot issues with your device. The errors are listed below and will automatically be played in the case there is an error when you lift the receiver of a phone attached to your device.

The following IVR messages are played on the Vonage VWR Device:

1. "The Vonage device has no network connectivity."

You will hear this message when your phone line is properly set up and ready for calls, but your Internet connection is down. Check to see if you are able to access the Internet from your computer that is connected to your router. If not, check with your Internet Service Provider to determine if they are having connection issues in your area.

2. "The Vonage device has no network settings."

You will hear this message when your phone line is properly set up, but there are insufficient or incorrect network settings. If you have set a static IP address, verify that the Default Gateway and the DNS server address is the IP address of your router. Network issues may be resolved by resetting your equipment.

3. "The Vonage device cannot contact the Vonage network."

You will hear this message when your phone line is properly set up but cannot connect to the Vonage network. This may be due to a change to the network settings. For example you may be experiencing firewall issues. Check if your network setup has changed since you last connected to the Vonage network.

4. "This telephone line cannot register to the Vonage network."

You will hear this message when your phone line is properly set up and can connect to the Vonage network, but cannot register to Vonage. Please verify that your router in front of the Vonage VWR Device is not blocking any incoming traffic. If SPI is enabled on the router, disable it.

5. "Your phone maybe plugged into the incorrect phone port. Please try the other port. If you believe that you are connected to the correct phone port, please log into your web account to check the status of your service."

You will hear this message when your telephone is connected into a phone port that is not set up for Vonage service. If you are plugged into Port 2, try moving to Port 1. In addition, you can check the status of your Vonage service by logging into your web account.

For more troubleshooting tips, visit www.vonage.com/help.

Technical Specs

B

Standards

- IP
- TCP
- UDP
- ARP
- HTTP

Connection Port

- RJ-11, 2 FXS Ports
- RJ-45, 4 Ethernet Ports

Ethernet Port

- IEEE 802.3 for 10M Ethernet
- IEEE 802.3u for 100M Ethernet

Telephony Support

- SIP Call Control Protocol
- Supports Audio CODEC
    - G.711 (A-law and U-law)
    - G.723.1
    - G.726
    - G.729A
    - G.168 (Echo Cancellation)
    - DTMF Relay
    - G.711 (In Band)
    - RFC2833

Quality of Service (QoS)

- TOS-Type of Service Supports 3 Levels:
    - Normal
    - Signaling
    - RTP Packets

Fax Support

- FAX Relay
- PCM (G.711)

LEDs

- Power ON/OFF
- LAN Link & Activity
- Phone ON/OFF Hook & Ringing

Power

- External AC Power Adapter
- Output: 12V AC, 1.25A

Temperature	• Operating:0°C to 40°C • Storing: -10°C to 55°C
Humidity	• 5%-95% Non-Condensing
Certifications	• EMC: FCC Class B, CE Class B, CSA international, CB
Dimensions	• 90mm x 82.46mm x 31mm (WxDxH)
Warranty	• 1 Year Limited Warranty

Vonage USA
Manual Version 1.0
August 3, 2006

Copyright ©2006 D-Link Corporation/D-Link Systems, Inc. All rights reserved. D-Link and the D-Link logo are registered trademarks of D-Link Corporation or its subsidiaries in the United States and other countries. Other trademarks are the property of their respective owners.