HUAWEI

Aolynk VDR824 ADSL2+ VoIP Broadband Router/
Aolynk VDR824g ADSL2+ VoIP Wireless Broadband Router
User Manual

FCC Caution:

1. 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.

2. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.
3. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.
4. 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.
5. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Aolynk VDR824 ADSL2+ VoIP Broadband Router/ Aolynk VDR824g ADSL2+ VoIP Wireless Broadband Router User Manual

Manual Version T2-08011X-20050730-C-3.00

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Environmental Protection

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

Table of Contents

1 Product Overview

This chapter focuses on the appearance and functionality of Aolynk VDR824/824g ADSL2+ VoIP Router for you to get familiar with this product.

1.1 Introduction

Aolynk VDR824 ADSL2+ VoIP Broadband Router and VDR824g ADSL2+ VoIP Wireless Broadband Router (hereinafter referred to as the VDR824/824g), developed by Huawei Technologies, are the latest VoIP routers that support SIP protocol. Besides all the VDR824 features, the VDR824g owns the built-in 802.11b/g wireless access point (AP), enabling you to easily establish a wireless network.

The VDR824/824g features built-in ADSL2+ technology, high-speed Internet access, and remote connectivity. It enables LAN users to share high speed broadband connection through the built-in NAT and DHCP server and provides complete network security solutions to prevent the hackers and invasions from the outside. In addition, it has the high network flexibility and meets the network requirements as it supports multiple connections such as PPPoE, PPPoA, IPoA, and bridging; it provides the voice feature, and you can place IP calls by connecting a common telephone to the VDR824/824g.

The VDR824/824g offers the Web configuration pages as the way to configure it via common Web browsers. Friendly built-in graphical user interface eases the configuration and management.

This user manual introduces how to install and configure the VDR824/824g.After guiding you through the device connection and basic configuration, the manual focuses on the advanced configuration for you to operate the VDR824/824g optimally.

1.2 Appearance

The VDR824 is very similar to the VDR824g in appearance. The difference lies in that the VDR824 has no antenna and the Wireless LED on the front panel. This manual describes the VDR824g appearance.

1.2.1 Front Panel

The LEDs on the front panel indicate the state of the VDR824/824g.

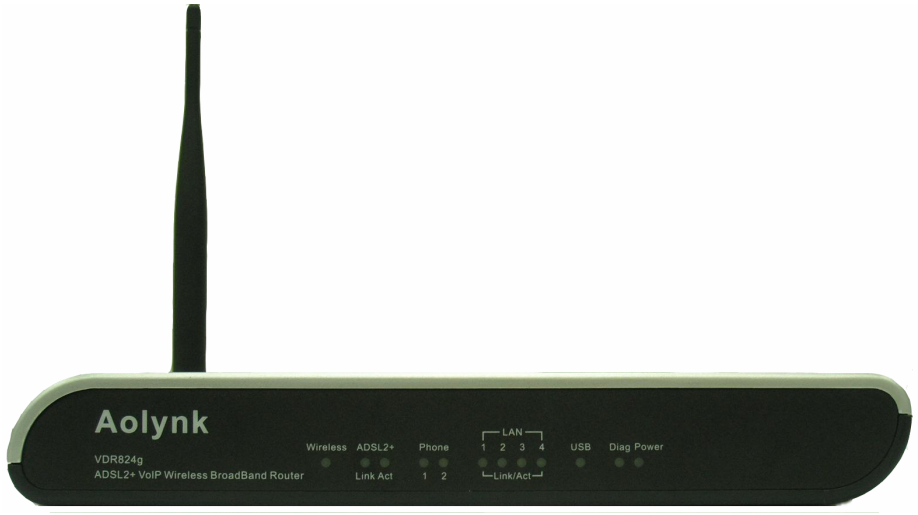


Figure 1-1 Front view

Table 1-1 LED state description of the VDR824/824g

LED	State	Description
Power	ON	The power is ON and the operation is normal.
	OFF	The power is off or fault occurs.
LAN1/2/3/4	ON	The Ethernet link is established.
	Blinking	Data is being transmitted and received on the Ethernet port.
	OFF	No link is present.
ADSL2+ Link	ON	The ADSL link is up.
	Blinking	The ADSL link is starting up.
	OFF	The ADSL link is down.
ADSL2+ Act	Blinking	Data is being transmitted and received on the ADSL link.
	OFF	No data transmission is present on the link.
Wireless (This is not available on the VDR824.)	ON	The wireless function is enabled.
	OFF	The wireless function is disabled
Phone 1/2	ON	The telephone is off-hook or in conversation.

LED	State	Description
	Blinking	The telephone is ringing.
	OFF	The port is not connected to the telephone or the telephone is on-hook.
USB	ON	The USB connection is established.
	OFF	No USB connection is present.
Diag	—	For manufactory test only.

1.2.2 Rear Panel

All ports of the VDR824/824g, a power port, and a reset button are located on the rear panel.

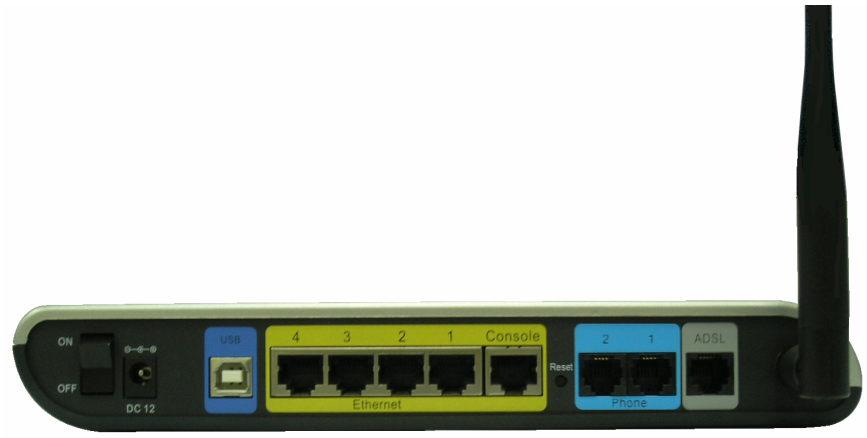


Figure 1-2 Rear view

Table 1-2 Description of the ports and reset button on the rear panel of the VDR824/824g

Item	Quantity	Port	Description	Usage
Ethernet port	4	RJ45	10/100Base-TX 10/100 Mbps auto-negotiation auto-MDI/MDIX IEEE802.3/802.3u	Connect with the Ethernet port of a PC, Hub or switch.
USB port	1	Series-B Receptacle	USB 1.1	Connect with the USB port of a PC.

Item	Quantity	Port	Description	Usage
ADSL port	1	RJ11	ANSI T1.413 Issue 2 ITU G.992.1 AnnexA G.dmt ITU G.992.2 G.lite ITU G.992.3 ADSL2 ITU G.992.5 ADSL2+	Connect with the telephone jack on the wall or the ADSL port of a splitter.
Phone port	2	RJ11	—	Connect with the common telephone to place IP calls.
Power port	1	—	—	Connect with the power adapter.
Reset button	1	—	—	Restore factory default settings (press and hold down the button for at least five seconds).

1.3 Features

Both VDR824 and VDR824g perform excellent network connection. Both have the following features:

- Asymmetrical data transmission technology with downstream speed of 20 Mbps and upstream speed of 1 Mbps.
- SIP protocol that enables you to place IP calls by connecting the common telephone to the phone port of the VDR824/824g.
- Binding of an Ethernet port to a PVC, which enables you to access Internet services through different LAN ports.
- NAT (network address translation) technology that allows all PCs on a network to access the Internet sharing a single IP address.
- PPPoE dialup connection to the ISP.
- Capability of a DHCP (dynamic host configuration protocol) client to obtain a fixed IP address from an ISP or a dynamically assigned IP address.
- Capability of a DHCP server to assign IP addresses to hosts in a LAN or configure clients through the DHCP server.
- DNS relay that allows you to specify the IP address of an Ethernet port on the VDR824/824g as a DNS server IP address of a PC.
- DHCP relay that allows one DHCP server available for multiple DHCP clients in different network segments.

- ZIPB (zero installation PPP bridge), NAT, firewall, and IP filtering that secure your LAN.
- UPnP (Universal plug-and-play) for LAN users to use all the functions provided by UPnP-supported software (such as MSN) without any further configuration.
- IP routing, DNS (domain name system) configuration, and the services such as the IP and DSL performance monitoring.
- Friendly built-in Web-based graphical user interface for ease of configuration and management through common Web browsers.

Besides, the VDR824g also has the following wireless features:

- The bridge from wireless to wired enabling Ethernet LAN and wireless LAN users to transmit data from each other.
- 64/128 bit WEP encryption to ensure the security of the wireless communication.
- Full support of 802.11 public and shared key authentication.

2 Installation

On the assumption that you have acquired DSL services from your ISP, the following sections describe how to set up the VDR824/824g and configure your PC.

2.1 Packing List

Unpack the shipping carton carefully and check the following items listed in Table 2-1.

Table 2-1 Packing list

Item	Quantity
Aolynk VDR824/824g ADSL2+ VoIP Router	1
Power adapter	1
Telephone cable	1
Straight-through cable	1
USB cable	1
Set of screw and anchor	2
Aolynk VDR824/824g ADSL2+ VoIP Router Quick Start	1
CD including the user manual and driver	1
Warranty Card	1
Certificate of Quality	1

If anything is broken or missing, contact your agent for help.

2.2 Precautions

To guarantee normal operation and longevity of the VDR824/824g, its installation site should meet the requirements described below:

- Use the VDR824/824g indoors and keep it far away from the heat sources and water/liquid.

- Keep the cabinet or desk stable enough to hold the VDR824/824g. Fix the VDR824/824g and power adapter well on the wall when wall-mounting it.
- Reserve more than 10 cm (4 in.) of clearance around the VDR824/824g chassis for heat dissipation.
- Keep the operation environment clean. Dust buildup on the chassis may result in static absorption, reducing the life span and causing communication failure.
- Use an earthing system or lightning protection grounding different from that for the power supply equipment and keep them as far as possible.
- Keep the VDR824/824g far away from high-power radio launchers, radar launchers, and equipment with high-frequency and high-current.
- Wire the port cable indoors. Outdoor cabling is prohibited, to prevent the signal port from damages that may be caused by overvoltage and overcurrent from lightning strike.

2.3 Device Connection

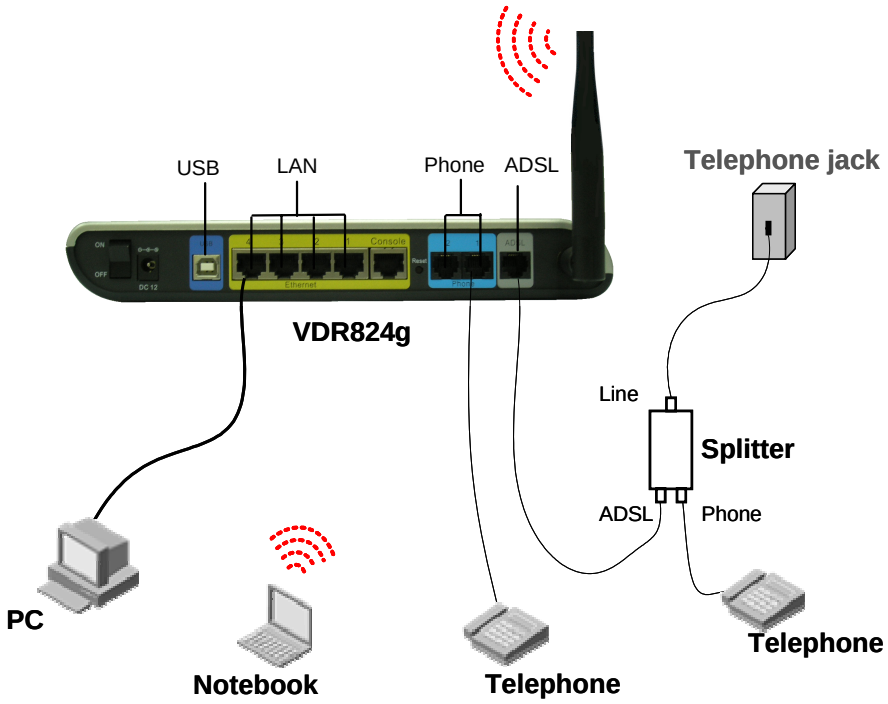


Figure 2-1 Connect the VDR824/824g

I. Connect to an ADSL line

To connect the VDR824/824g to an ADSL line, two options are available:

- Connect one end of the telephone cable to the ADSL port (similar to a common telephone port) on the VDR824/824g rear panel, and the other end to the telephone jack on the wall.

- As shown in Figure 2-1, connect both the ADSL port on the VDR824/824g and the telephone to a splitter, and then connect the splitter to the telephone jack on the wall. It allows you to use the telephone when you access the network.

II. Connect to a PC or Ethernet

To connect the VDR824/824g to a PC or Ethernet, two options are available:

- The Ethernet ports of the VDR824/824g are auto-MDI/MDIX, so you can use the crossover or straight-through cable to connect your PC, Hub, or switch to the Ethernet port (one among LAN1 through LAN4) of the VDR824/824g.
- Connect your PC to the VDR824/824g through the USB ports with a USB cable. It is suitable for the PC without NIC to access the Internet.

⚠ **Caution:**

To use the USB port on the VDR824/824g, you must install the USB driver and configure your PC (refer to section 8 "Appendix - USB Configuration" for detailed information).

III. Connect to the telephone

Use the telephone cable to connect the telephone with Phone 1 on the rear panel of the VDR824/824g. If both Phone 1 and Phone 2 are assigned with the registration accounts, connect another telephone with Phone 2.

IV. Connect to the power adapter

Attach one end of the power adapter to the VDR824/824g and the other end to the power outlet. Then turn on the power of the VDR824/824g.Approximately one minute after the power-on, the states of the LEDs on the front panel should be those listed in Table 2-2.

Table 2-2 Description of the LED states

LED	State	Description
Power	Green	—
Link	Green	—
Act	Blinking	Data is being transmitted and received.
	OFF	No data transmission is present.

LED	State	Description
LAN	Green	The Ethernet link is established.
	Blinking	Data is being transmitted and received on the Ethernet port.

3 Getting Started

The VDR824/824g offers a series of Web configuration pages as the way to manage it. You can configure the VDR824/824g as needed. This chapter guides you to be familiar with the Web configuration pages.

3.1 Prerequisite Tasks for Configuration

To configure the VDR824/824g through its built-in Web pages, you must configure your PC as the following.

I. System requirements

- An Ethernet NIC (10Base-T or 10/100Base-T/TX) or a USB port
- A Web browser (Microsoft Internet Explorer 5.5, Netscape 6.0 or later)
- TCP/IP protocol employed

II. IP address of your PC

You must assign an IP address to your PC to make it in the same network segment as the VDR824/824g before accessing the configuration page. The default IP address of the VDR824/824g Ethernet port is 192.168.1.1. Refer to section 7 “Appendix - TCP/IP Protocol”.

III. No proxy server

If your PC uses the proxy server to access the Internet, you must disable the proxy service.

1) Choose [Tool/Internet options] to open the [Internet options] window.
2) Select the [Connections] tab and click <LAN settings…>.
3) Make sure the Use a proxy server option is not selected.

3.2 Login

Run your Web browser and enter **http://192.168.1.1** in the address bar. A login dialog box appears as shown in Figure 3-1.

Figure 3-1 Login dialog box

For the first login, type in the default user name **admin** and password **admin**, and then click <OK> to enter the Web configuration page.

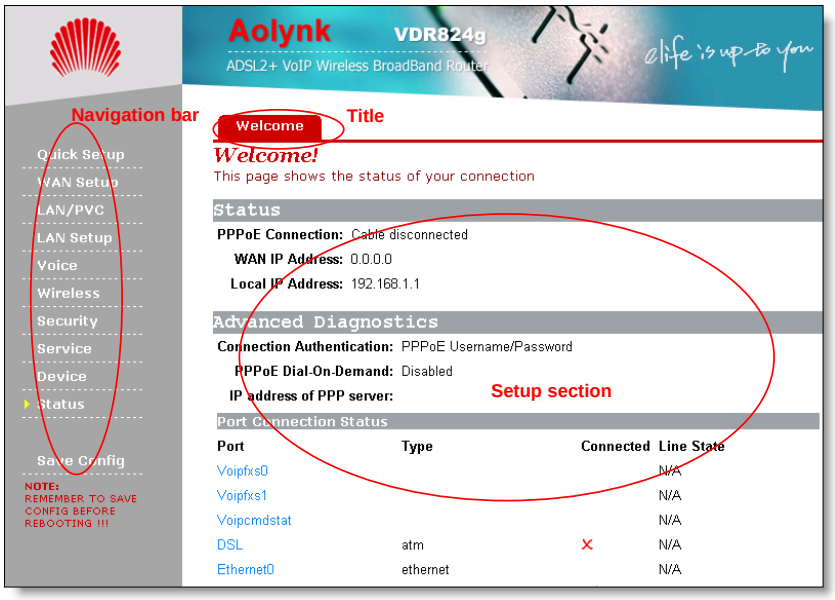


Figure 3-2 Welcome page

The Web configuration page of the VDR824/824g consists of three parts: Navigation bar, Title, and Setup section. Navigation bar is on the left pane, and the setup and management part is on the right pane where you can configure and display the device status. Click a link in the navigation bar or a tab from the title, the corresponding configuration page appears in the setup section.

🕮 **Note:**

- To change the login password, refer to section 4.6.1 "Password" for detailed information.
- If you receive an error message or the configuration page cannot be displayed, refer to section 6.1 "VDR824/824g Troubleshooting" for detailed instructions.

3.3 Description of the Factory Default Settings

The VDR824/824g is configured with factory default settings for SOHO users.

The table below lists some of the most important default settings and the subsequent chapters will cover all the features in detail. If you are familiar with network configuration, review these settings to verify that they meet the requirements of your network and follow the instructions to change them if necessary. If not, use the VDR824/824g with the default settings.

Table 3-1 Description of the factory default settings

Item	Default settings	Description
Default user name/password	Administrator: admin/admin Common user: user/user	You can log into the Web configuration page as an administrator or a common user. Different operation rights are available for different login users. Refer to 4.6.1 "Password" for detailed information.
IP address of the LAN port	Assigned static IP address: 192.168.1.1 Subnet mask: 255.255.255.0	This is the IP address of the VDR824/824g LAN port which connects the VDR824/824g to your Ethernet network. Generally, there is no need to change this address.
DHCP (dynamic host configuration protocol)	DHCP server enabled with the following pool of addresses: 192.168.1.2 to 192.168.1.51	The VDR824/824g provides a pool of private IP addresses for dynamic assignment to PCs in the LAN. To use this service, you must configure your PC to obtain an IP address dynamically. Refer to section 7.2.1 "Specifying to Obtain an IP Address Automatically".
NAT (network address translation)	NAT enabled	Your PC's private IP address is translated to the public IP address whenever it accesses the Internet. Refer to section 5.2.1 IV. "NAT configuration" for detailed information.

Item	Default settings	Description
DSL mode	Multimode	Applicable to multiple standard DSL line modes.

4 Web-based Basic Configuration

This chapter describes the basic configuration pages of the VDR824/824g for SOHO users to implement its basic functions. For details of advanced configuration, refer to section 5 “Advanced Configuration”.

4.1 Quick Setup

Click [Quick Setup] in the navigation bar to enter the [Quick Start] page on which you can perform some simple settings to access the Internet quickly. Here, two common login types are available: PPPoE and DHCP.

I. PPPoE

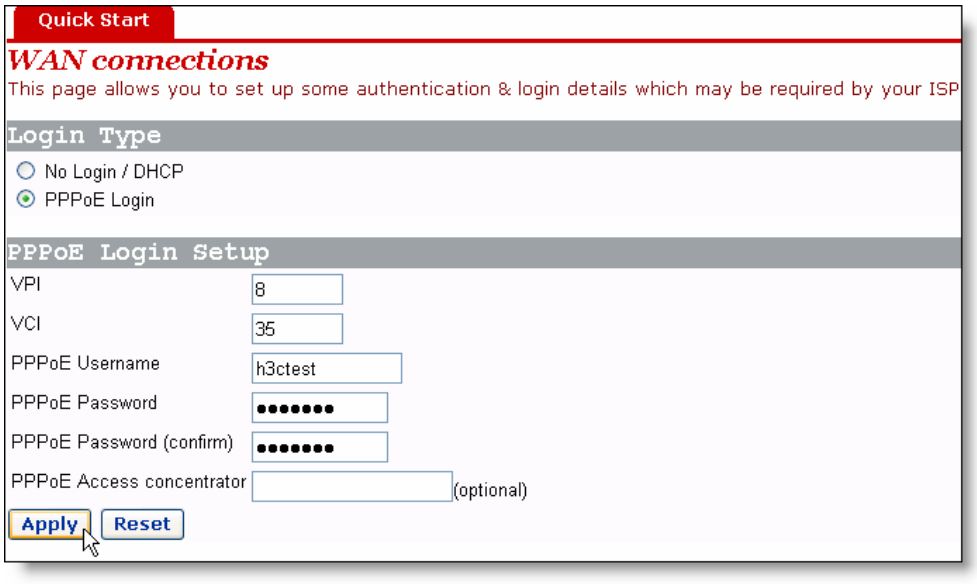


Figure 4-1 Quick Setup – PPPoE Login

The default login type on the page is PPPoE. This type requires you to type in the VPI and VCI values, PPPoE user name and PPPoE password specified by your ISP, and repeat the password for confirmation in the [PPPoE Password (confirm)] text box.

When there are multiple PPPoE servers in the network, you can specify the PPPoE server identifier through which the PPPoE client accesses in the [PPPoE Access concentrator] text box.

Click <Apply> after the configuration is complete.

II. DHCP

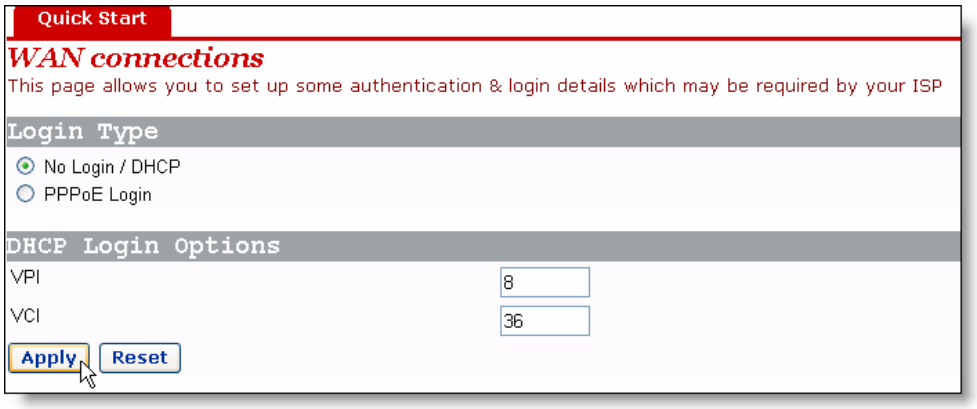


Figure 4-2 Quick Setup – No Login/DHCP

If you can obtain IP addresses from your ISP's DHCP server automatically, select the **No Login/DHCP** option on the [Quick Start] page (see Figure 4-1) and type in the VPI and VCI values specified by your ISP on the page (see Figure 4-2).

Click <Apply> after the configuration is complete.

⚠ **Caution:**

Do not set the same VPI and VCI values for DHCP and PPPoE login types.

4.2 WAN Setup

Click [WAN Setup] in the navigation bar to enter the corresponding page on which three tabs are available: WAN, DNS Relay, and DDNS. Click the desired tab to enter its configuration page.

4.2.1 WAN

This page allows you to set WAN connections in detail, or to modify the service attributes. You can access the Internet normally only when these attributes are set correctly.

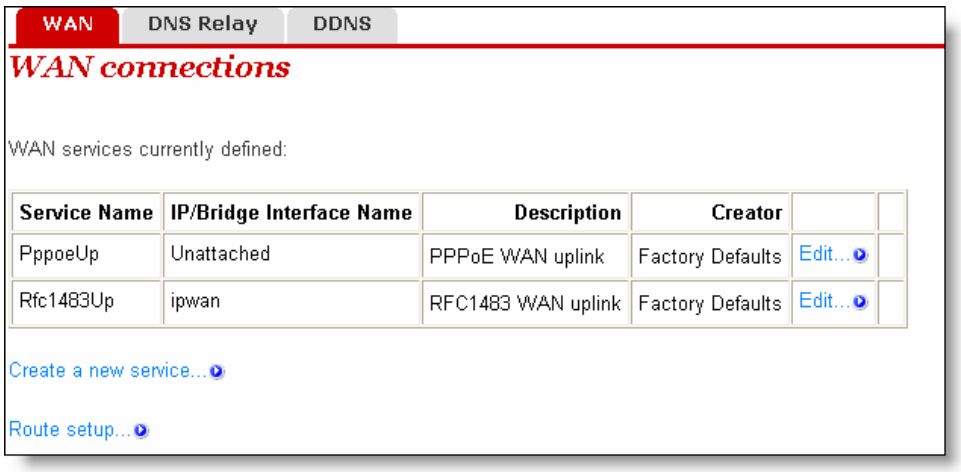


Figure 4-3 WAN

I. Create a new service

To create a new service, click <Create a new service…> to enter the [WAN connection: create service] page (see Figure 4-4).

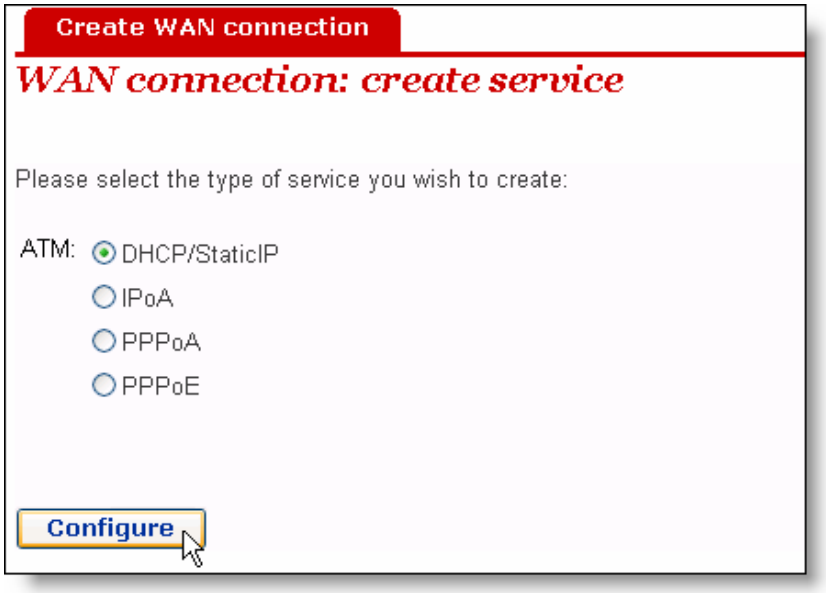


Figure 4-4 Create a WAN service

This page provides four modes for WAN connection: DHCP/StaticIP, IPoA, PPPoA and PPPoE. The following introduces their configurations respectively.

1) DHCP/Static IP

The IP address in this mode can be manually specified or automatically assigned by your ISP. The former requires you to manually specify the DNS server address on the [DNS Relay] page. For details, refer to section 4.2.2 “DNS Relay”.

To create a DHCP/Static IP WAN connection, select the **DHCP/StaticIP** option from the ATM mode list (see Figure 4-4), and then click <Configure> to enter the page (see Figure 4-5).

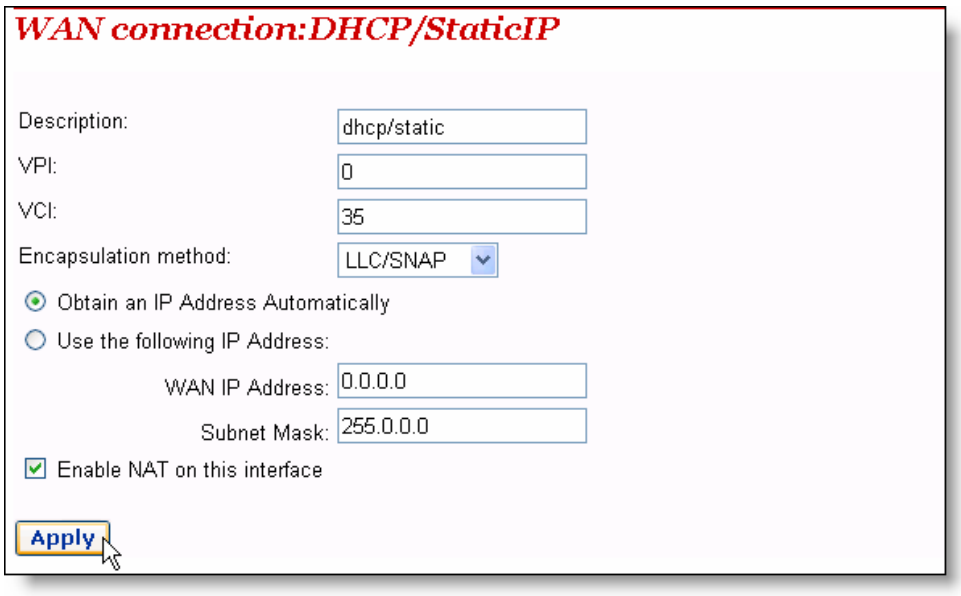


Figure 4-5 DHCP/Static IP

Table 4-1 Description of the DHCP/Static IP items

Item	Description
Description	Type in the distinctive description on this service.
VPI	Type in the VPI value provided by your ISP.
VCI	Type in the VCI value provided by your ISP.
Encapsulation method	Select the packet encapsulation method according to your ISP, LLC/SNAP or VcMux, from the drop-down lastly/SNAP is usually selected.
Obtain an IP Address Automatically	Select this option to obtain an IP address from your ISP's DHCP server automatically.
Use the following IP Address	Select this option if you have the static IP address provided by your ISP. You need also provide the IP address and subnet mask.
WAN IP Address	Type in the static IP address provided by your ISP.
Subnet Mask	Type in the subnet mask provided by your ISP.
Enable NAT on this interface	Select this check box to enable NAT. With it, SOHO users can make multiple hosts access network via a public IP address.

Click <Apply> after the configuration is complete.

2) IPoA

IPoA allows IP packets directly over the ADSL physical link at high transmission rate.

To create an IPoA WAN connection, select the **IPoA** option from the ATM mode list (see Figure 4-4), and then click <Configure> to enter the page as below.

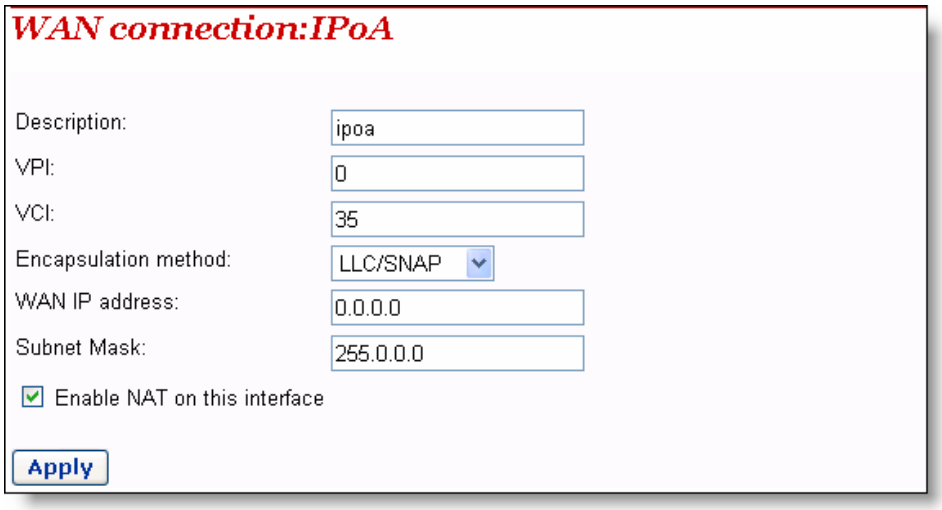


Figure 4-6 IPoA

Table 4-2 Description of the IPoA items

Item	Description
Description	Type in the distinctive description on this service.
VPI	Type in the VPI value provided by your ISP.
VCI	Type in the VCI value provided by your ISP.
Encapsulation method	Select the packet encapsulation method according to your ISP, LLC/SNAP or VcMux, from the drop-down lastly/SNAP is usually selected.
WAN IP Address	Type in the static IP address provided by your ISP.
Subnet Mask	Type in the subnet mask provided by your ISP.
Enable NAT on this interface	Select this check box to enable NAT. With it, SOHO users can make multiple hosts access network via a public IP address.

Click <Apply> after the configuration is complete.

3) PPPoA

To create a PPPoA WAN connection, select the **PPPoA** option from the ATM mode list (see Figure 4-4), and then click <Configure> to enter the page as below.

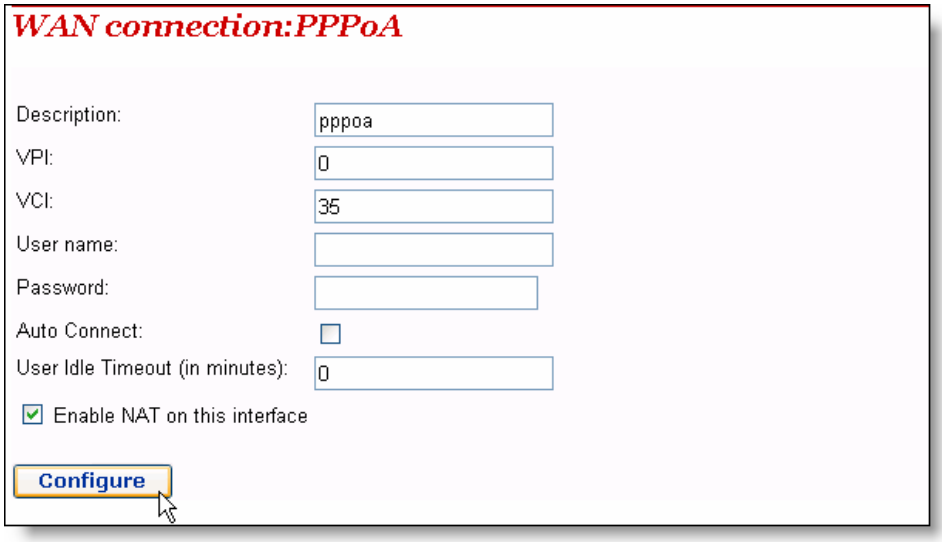


Figure 4-7 PPPoA

Table 4-3 Description of PPPoA items

Item	Description
Description	Type in the distinctive description on this service.
VPI	Type in the VPI value provided by your ISP.
VCI	Type in the VCI value provided by your ISP.
User nameUser name	Type in the user name provided by your ISP.
Password	Type in the password provided by your ISP.
Auto Connect	If this check box is selected, the device automatically performs the dialup connection again in response to a LAN access request when the network is disconnected.
User Idle Timeout	Type in the auto-disconnect idle time. Network connection is disconnected automatically in the case of no data transmission within the set time. This is suitable for time-based network accounting. If the time is set to 0, it indicates that the connection is never disconnected.
Enable NAT on this interface	Select this check box to enable NAT. With it, SOHO users can make multiple hosts access network via a public IP address.

Click <Configure> after the configuration is complete.

4) PPPoE

To create a PPPoA WAN connection, select the **PPPoA** option from the ATM mode list (see Figure 4-4), and then click <Configure> to enter the page as below.

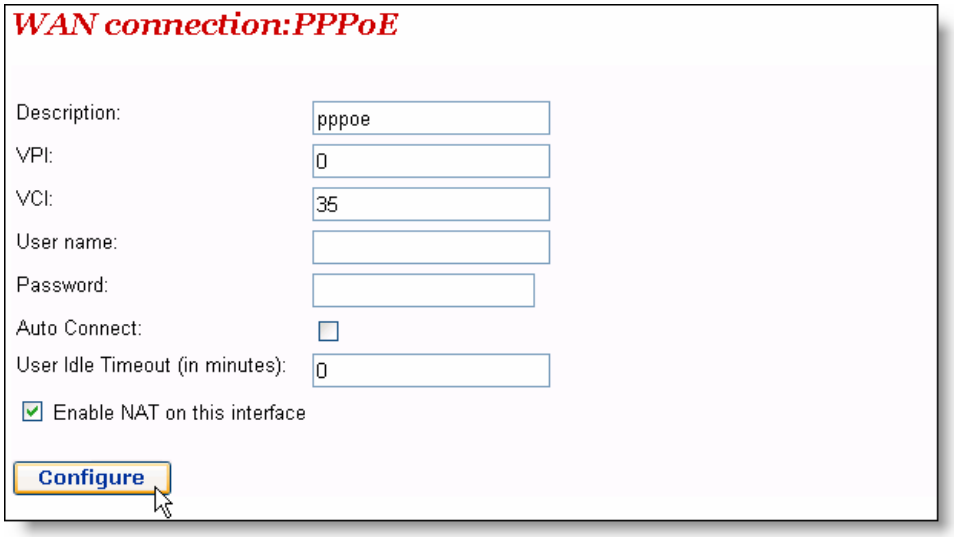


Figure 4-8 PPPoE

Table 4-4 Description of PPPoE items

Item	Description
Description	Type in the distinctive description on this service.
VPI	Type in the VPI value provided by your ISP.
VCI	Type in the VCI value provided by your ISP.
User name	Type in the user name provided by your ISP.
Password	Type in the password provided by your ISP.
Auto Connect	If this check box is selected, the device automatically performs the dialup connection again in response to a LAN access request when the network is disconnected.
User Idle Timeout	Type in the auto-disconnect idle time. Network connection is disconnected automatically in the case of no data transmission within the set time. This is suitable for time-based network accounting. If the time is set to 0, it indicates that the connection is never disconnected.
Enable NAT on this interface	Select this check box to enable NAT. With it, SOHO users can make multiple hosts access network via a public IP address.

Click <Configure> after the configuration is complete.

Caution:

Do not set the same VPI and VCI values for all services.

As shown in Figure 4-9, the service set up successfully will be added into the WAN service list.

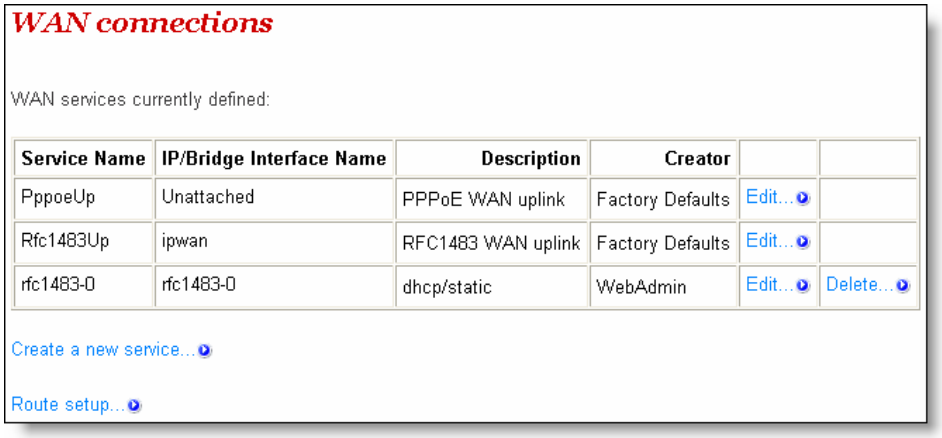


Figure 4-9 WAN service list

II. Edit a WAN service

To modify a service or perform advanced configuration, click the corresponding <Edit…> to enter the page. If necessary, modify the related values and then click <Change>.For details of the ATM Channel parameter configuration, refer to section 5.1 II. “QoS configuration”.

III. Delete a WAN service

To delete an existing WAN service, click the corresponding <Delete…> button to enter the page, and then click <Delete this connection>.

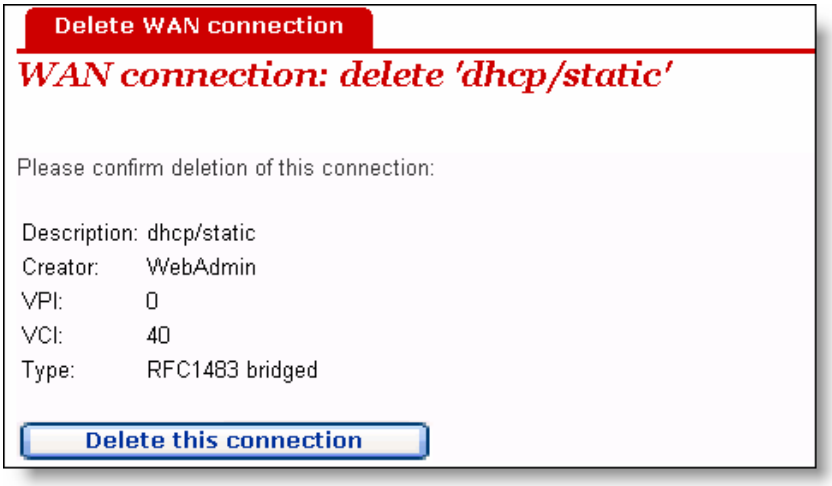


Figure 4-10 Delete a WAN connection

Caution:

The first two items in the WAN service list are default services and cannot be deleted.

4.2.2 DNS Relay

The VDR824/824g has the DNS relay function. Generally, the DNS server address obtained by your PC through DHCP is the IP address of the LAN port. You can also specify the DNS server address on your PC as the IP address of the LAN port. The VDR824/824g forwards the DNS query sent by your PC to the DNS server set on the VDR824/824g.

The configuration pages below are used to set the DNS server list. The DNS query sent by your PC is forwarded to the DNS server in the existing list. When your ISP changes the DNS server or you modify the connected ISP, there is no need to modify the IP address of the DNS server on your PC.

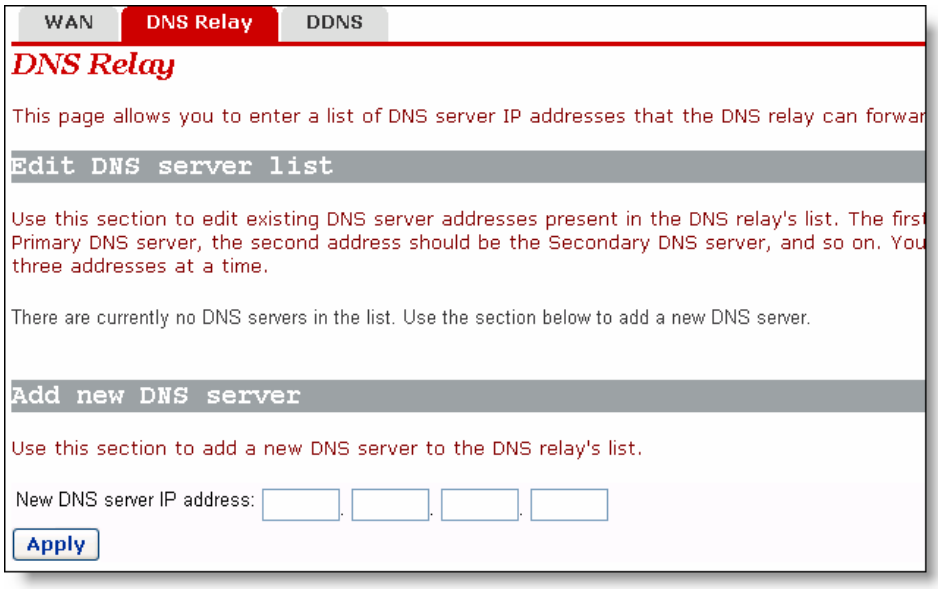


Figure 4-11 DNS Relay (1)

To create a new DNS server, type in its IP address, suppose 218.72.1.1, in the [New DNS server IP address] field, and then click <Apply>. This address will be added to the list of the DNS server IP address (see Figure 4-12).

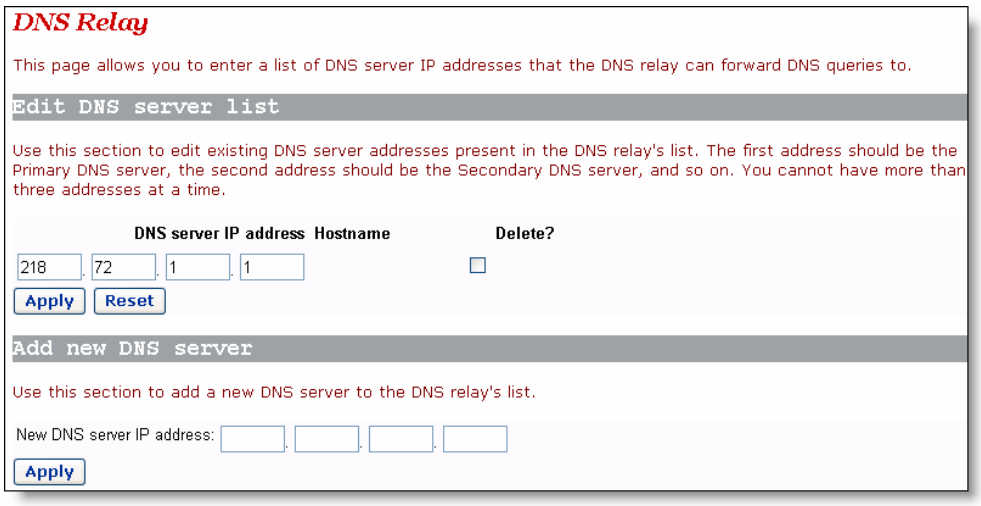


Figure 4-12 DNS Relay (2)

Caution:

In the list of DNS server IP addresses, the first address should be for the primary DNS server, the second for the secondary DNS server, and so on.

To modify the IP address of the DNS server in the list, modify it directly in the field and then click <Apply>.

To delete the existing DNS server, select the corresponding [Delete?] check box and then click <Apply>.

4.2.3 DDNS

Dynamic Domain Name Service (DDNS). By way of PPPoE or static IP, the IP address that the WAN port obtained is unfixed, making it inconvenient for the Internet users to access the LAN server. DDNS solves this problem. After you set the DDNS function, the VDR824/824g update the mapping between the domain name and the IP address automatically, ensuring the Internet users to access the LAN through the domain name.

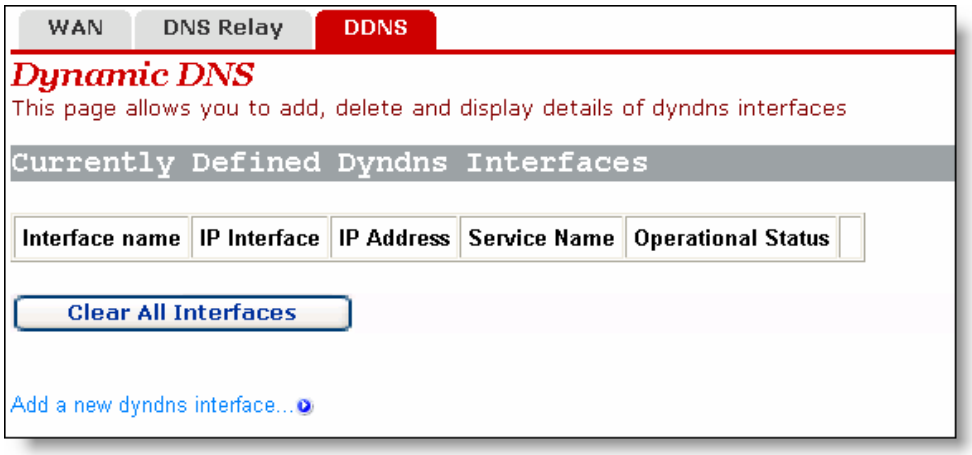


Figure 4-13 Dynamic DNS configuration (1)

Click <Add a new dyndns interface…> to enter the DDNS configuration page (see Figure 4-14).

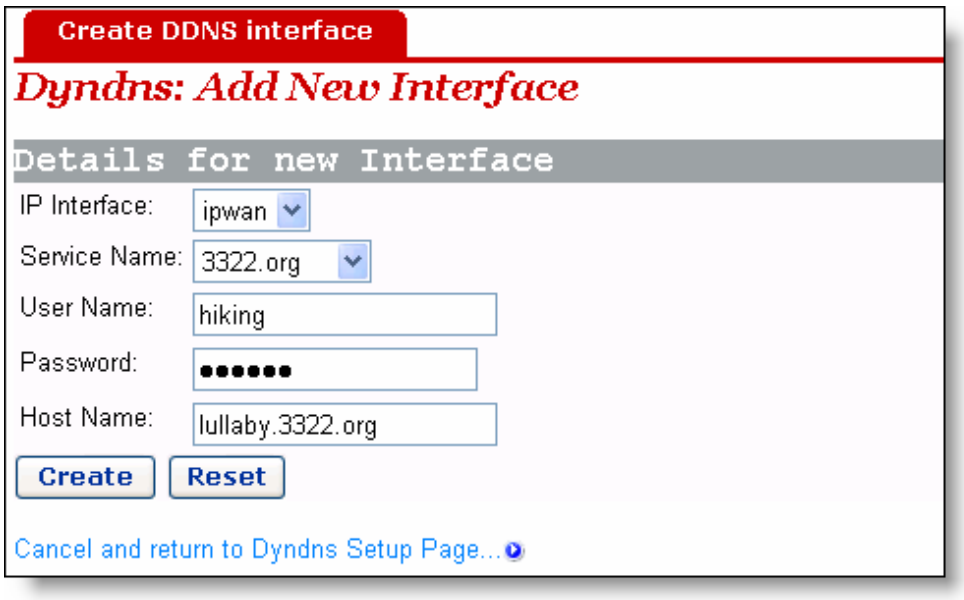


Figure 4-14 Dynamic DNS configuration (2)

Table 4-5 Description of the DDNS items

Item	Description
IP interface	Select the interface on which you want to enable the DDNS function.
Service Name	Select the web site where to obtain the DDNS service.
User Name	Type in the user name you register with the DDNS server.
Password	Type in the password you register with the DDNS server.
Host Name	Type in the domain name you apply from the DDNS server.

Note:

As the client tool of the DDNS service, the DDNS function must cooperate with the DDNS server. Visit **www.3322.org**, www.dyndns.org or **www.tzo.com** to apply for a domain name before you enable the DDNS function. After you complete the DDNS settings on the VDR824/824g, the mapping between the domain name and the IP address of the WAN port is established.

Example: If you have applied for the domain name lullaby from **www.3322.org**, see Figure 4-14 for the settings to make the mapping between the domain name and the IP address of the WAN port on the VDR824/824g. Click <Create> and you can view the DDNS configurations as below.

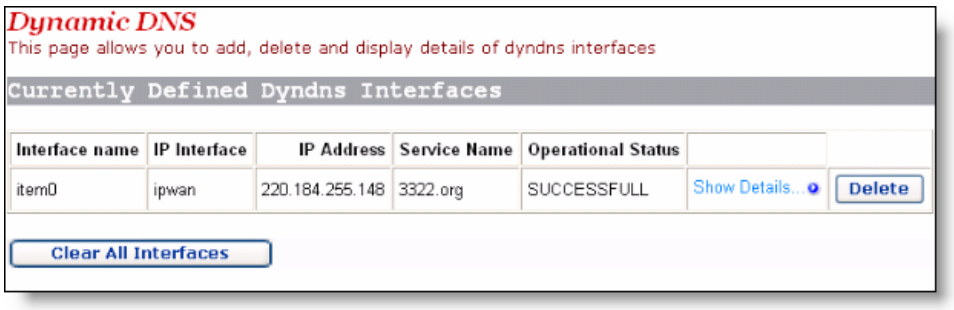


Figure 4-15 DDNS configuration succeeds

To delete the DDNS configuration, click <Delete>. To clear all the DDNS configuration, click <Clear All Interfaces>. To view the detailed configuration of the current DDNS interface, click <Show Details…>.

4.3 LAN Setup

Click [LAN Setup] in the navigation bar to enter the corresponding page where three tabs are available: LAN, DHCP Server, and DHCP Relay. Click any tab to enter your desired configuration page.

4.3.1 LAN

This page allows you to set attribute values for the Ethernet port and to configure virtual interfaces.

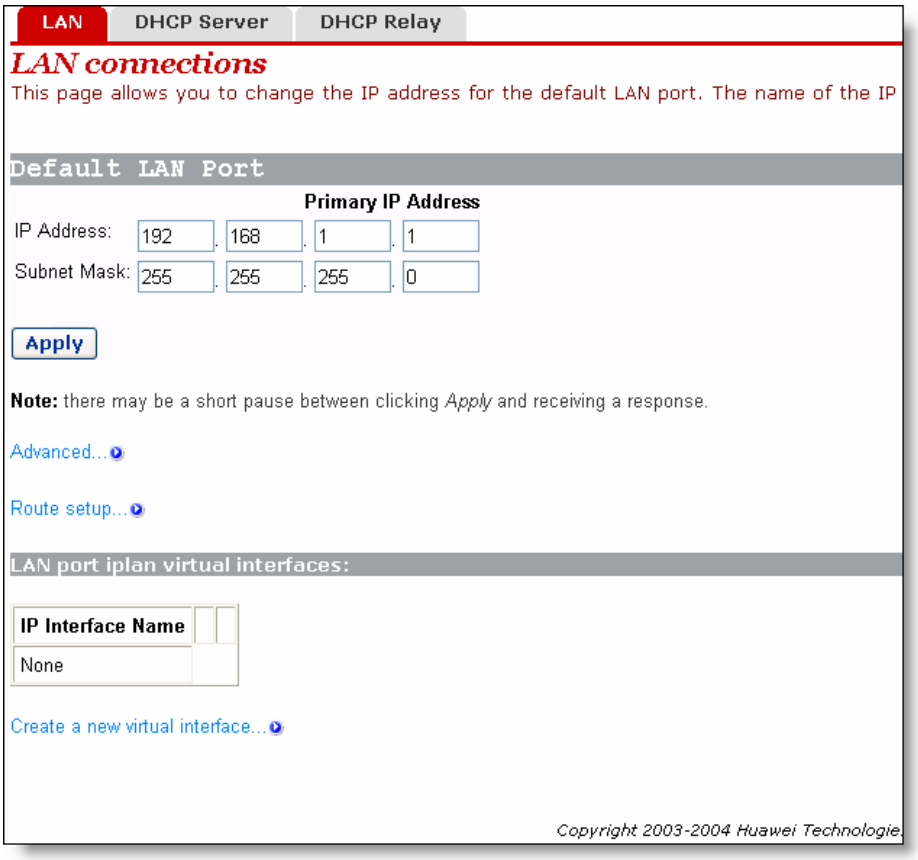


Figure 4-16 LAN connections

I. Set a LAN port

To change the IP address of the LAN port, type in the IP address and/or subnet mask directly in the corresponding field, and then click <Apply>.For related introduction to the IP address, refer to section 9 “Appendix - IP Address and Subnet Mask”

To perform advanced configuration on the attribute of LAN port, click <Advanced…> to enter the [Edit iplan] page as shown in Figure 4-17.If necessary, modify the values of options and click <Change>.

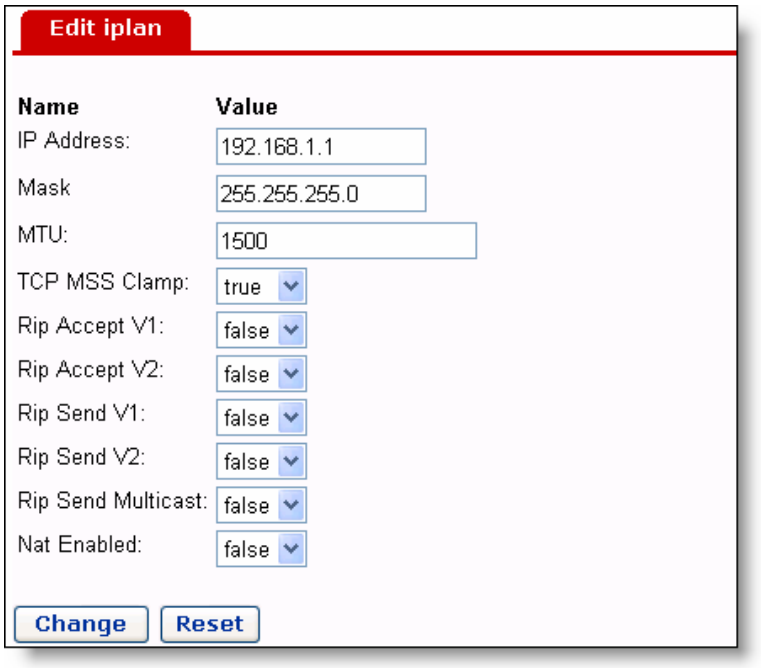


Figure 4-17 Modify the iplan interface

II. Create a new virtual interface

To create a new virtual interface, click <Create a new virtual interface…> on the [LAN connections] page (see Figure 4-16) to enter the page as below.

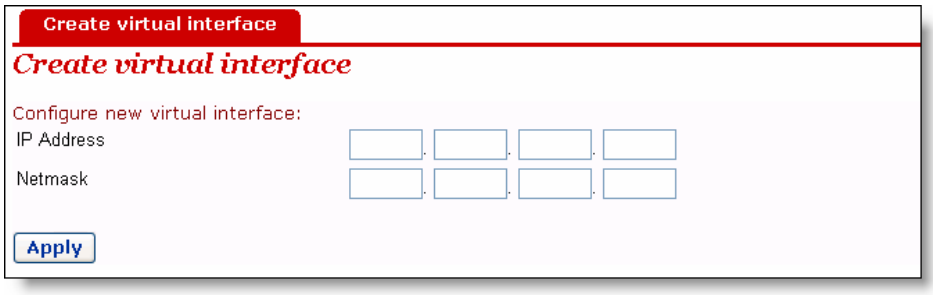


Figure 4-18 Create a virtual interface

Type in the IP address and subnet mask (you cannot configure the IP address of the virtual interface and that of the LAN port to be in the same subnet) and click <Apply>. The information on this virtual interface is displayed on the page as below.

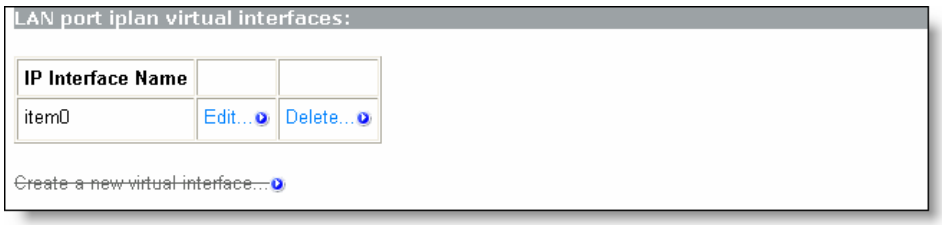


Figure 4-19 Virtual interface

The created virtual interface can be used for DMZ configuration. For details, refer to section 5.3 "DMZ Configuration".

To modify the information on the current virtual interface or perform advanced configuration, click the corresponding <Edit…> button to enter the page. If necessary, modify the values of options and click <Change>.

To delete the current virtual interface, click the corresponding <Delete…> button to enter the page, and then click <Delete this connection…>.

4.3.2 DHCP Server

The VDR824/824g can act as a DHCP server to automatically assign IP addresses within a certain range to any PC running in the LAN.

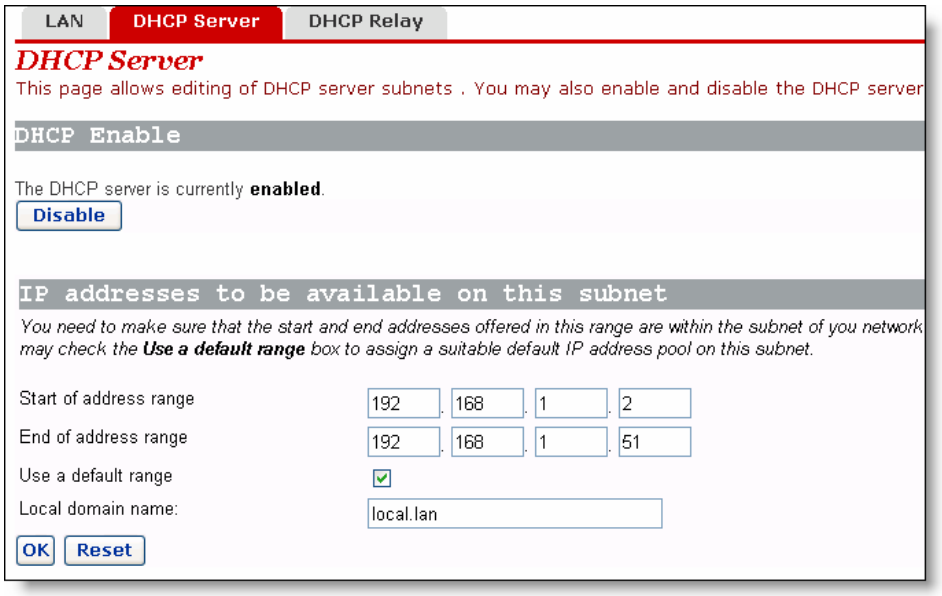


Figure 4-20 DHCP Server

I. Enable/disable the DHCP server

If the DHCP server is disabled currently, you can click <Enable> to enable it. Conversely, you can also click <Disable> to disable the DHCP server.

II. Set a DHCP server

The enabled DHCP server can assign the IP addresses, according to the defined address range on this page, to the DHCP client sending a request. It is recommended that you select the [Use a default range] check box to assign a suitable default IP address pool for the current subnet.

If necessary, you can also set the DHCP address range manually. In this case, do not select the [Use a default range] check box (by removing the tick). Type in the start and end IP addresses in the corresponding fields, and then click <OK>.

If necessary, you can type in commonly used DNS suffixes such as **google.com** in the [Local domain name] text box. Thus, you can access the Google homepage by entering **http://www/** in the Web browser. Small and medium-sized enterprises can also set their own DNS suffixes here while home users need not.

4.3.3 DHCP Relay

The VDR824/824g has the DHCP relay function to transmit packets between the DHCP client and server in different network segments, thereby making the DHCP client on multiple networks use the DHCP server across these segments.

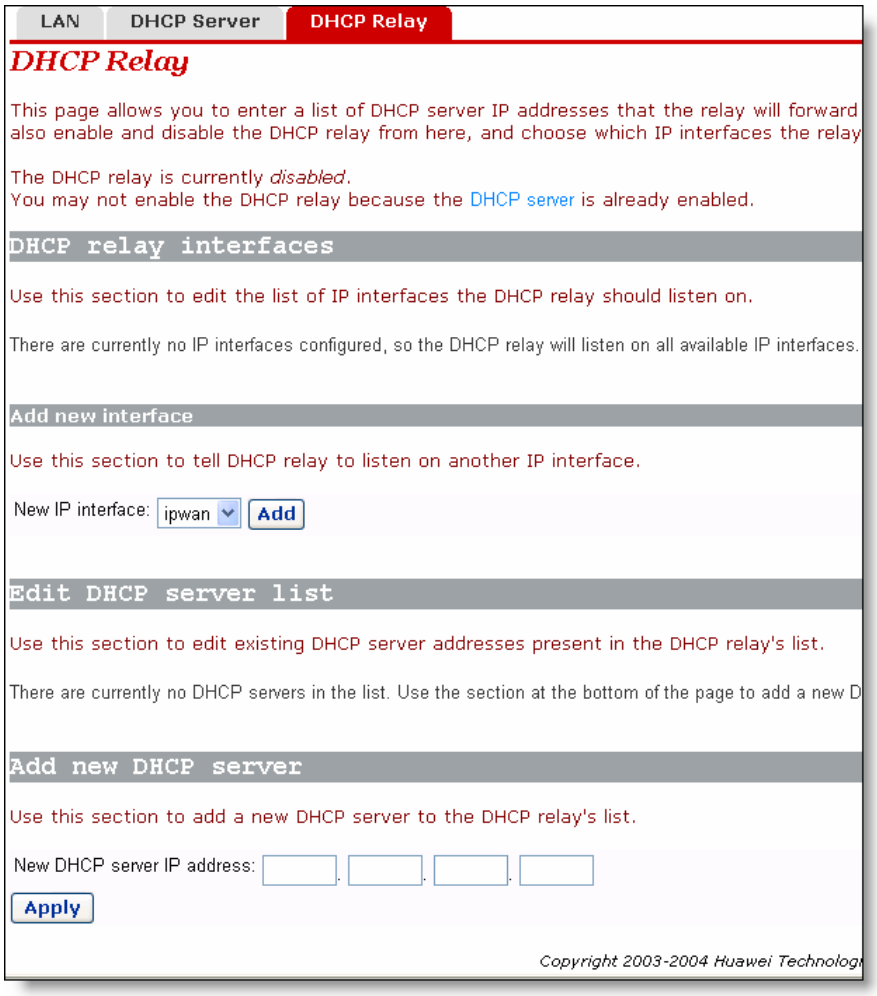


Figure 4-21 DHCP Relay page

I. Specify a DHCP relay interface

On the [DHCP Relay] page (see Figure 4-21), select an interface (suppose iplan) from the [New IP interface] drop-down list to apply the DHCP relay function, and then click <Add>. This interface will appear on the page as below.

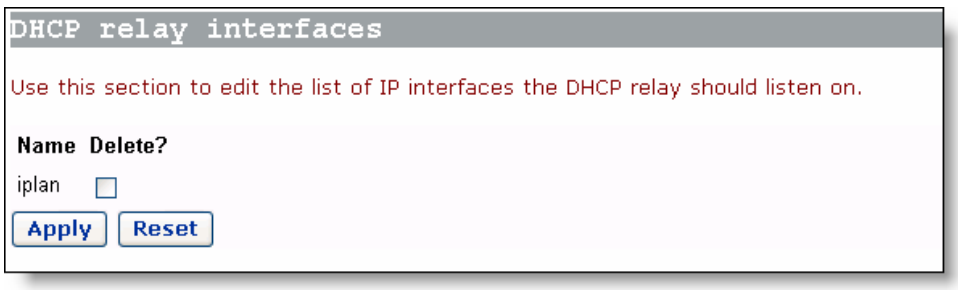


Figure 4-22 New IP interface

Click <Apply> in Figure 4-22 to apply this configuration, and the “Changes successfully applied” information appear on the page as below.

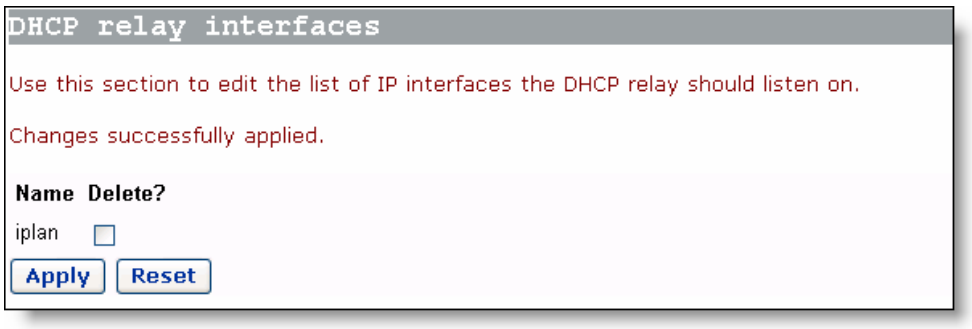


Figure 4-23 The applied new IP interface

Follow the above instructions to specify other interfaces.

To delete this interface, select the corresponding [Delete?] check box and click <Apply>.

⚠ **Caution:**

- You should configure two interfaces (sending and receiving packets respectively) of DHCP relay in pair. For example, to set the host connected to the LAN port to communicate with the DHCP server on the WAN side, you need to configure the iplan and ipwan to be the DHCP relay interfaces concurrently.
- If no interface is specified, the VDR824/824g enables the DHCP relay function on all interfaces by default.

II. Set a DHCP server

To add a DHCP server, type in the IP address (suppose 20.2.0.100) of the DHCP server in the [New DHCP server IP address] field (see Figure 4-21). This address will be added to the list of DHCP server IP addresses as below.

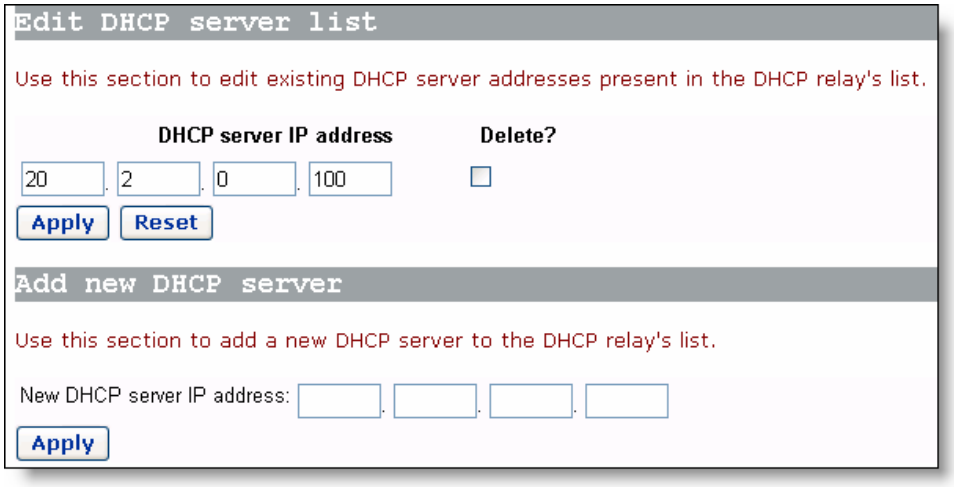


Figure 4-24 Set a DHCP server

To modify the IP address of the DHCP server in the list, modify it directly in the field and then click <Apply>.

To delete the existing DHCP server, select the corresponding [Delete?] check box and then click <Apply>.

III. Enable/disable DHCP relay

You need to enable the DHCP relay function after the configuration is complete. The functions of DHCP server and DHCP relay of the VDR824/824g cannot be enabled concurrently. By default, you cannot enable the DHCP relay because the DHCP server is already enabled. The prompt is display as shown in Figure 4-21.

Click <DHCP Server> on the above page (see Figure 4-24) to enter the DHCP server page, click <Disable> and thus <Enable> appears on the page (see Figure 4-25). If the DHCP relay is disabled currently, you can click <Enable> to enable it. Conversely, click <Disable> to disable it.

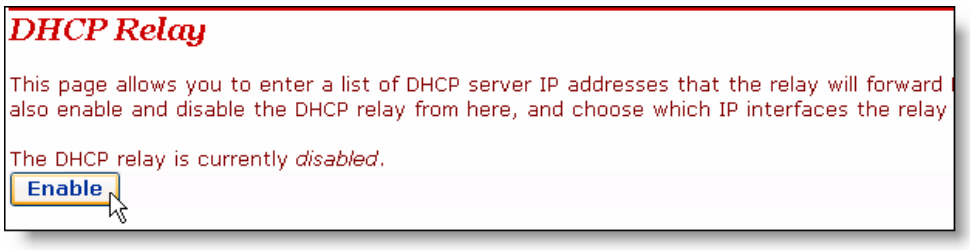


Figure 4-25 Enable/disable the DHCP relay

Caution:

To ensure the DHCP relay to be effective, you need to disable NAT between the specified interface and the interface corresponding to the network where the DHCP server resides. For example, to specify the host connected to the LAN port to communicate with the DHCP server on the ipwan interface, you must disable NAT between the internal interface (iplan) and the external interface (ipwan).

4.4 Voice

Click [Voice] in the navigation bar to enter the corresponding page where two tabs are available: Setting and SpeedDial. Click any tab to enter your desired configuration page.

4.4.1 Phone Port Setting

Before using the telephone connected to the VDR824/824g to place IP calls, you need to set here the registration information about phone port provided by your ISP, and register Phone 2 of the device with the SIP server.

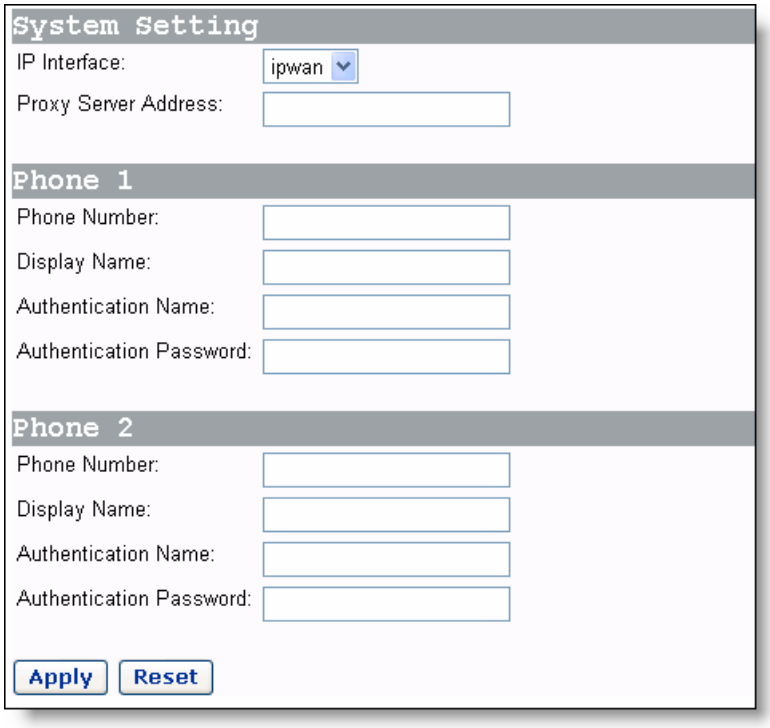


Figure 4-26 Set the phone ports

Table 4-6 Description of the phone port items

Item	Description
IP interface	Select the interface to which you want to bind the voice function.
Proxy Server Address	Type in the IP address or domain name of the SIP server provided by your SIP.
Display Name	Optional. Set this item to display the name of the caller of the an incoming call.
Phone Number	Type in the telephone number provided by your ISP.
Authentication Name	Type in the authentication user name provided by your ISP.
Authentication Password	Type in the authentication password provided by your ISP.

4.4.2 SpeedDial

The VDR824/824g supports the speed dial function. Press any number key from 2 to 9 (Key 1 is reserved for the system), you can dial out the corresponding telephone number. As shown in Figure 4-27, the page is used to set the one-to-one relationship between the number key and the telephone number.

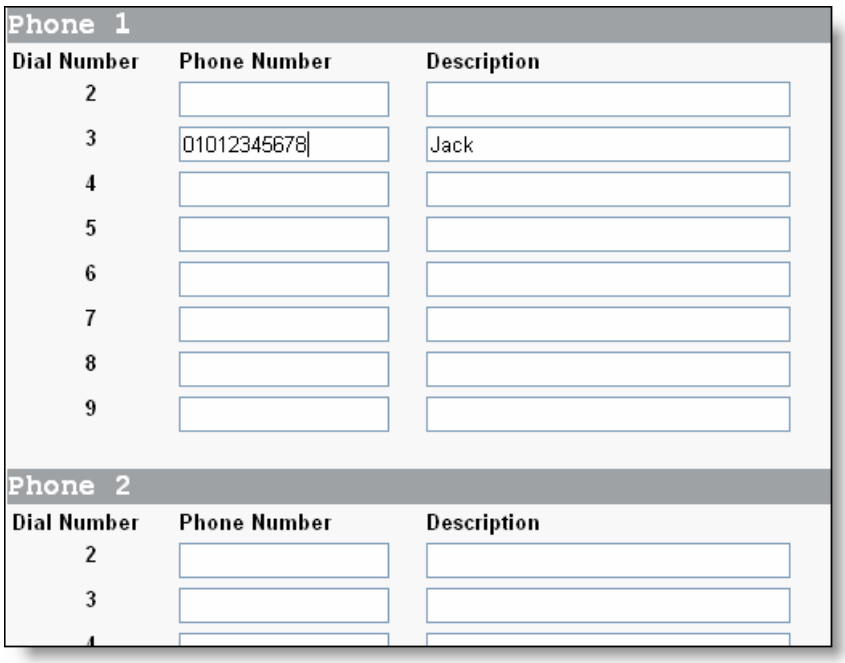


Figure 4-27 Set the speed dial

The page includes the following items:

- Dial Number: Key number of the telephone. It corresponds to the phone number set next to it.
- Phone Number: Telephone number of a contact.
- Description: Related information about the number, for example, name of the contact.

For example, after the setting as shown in Figure 4-27 (suppose that the telephone is connected to Phone 1), you can just press Key 3 to quickly call Jack's number 01012345678. Click <Apply> after the setting you have made.

4.5 Wireless

Note:

No wireless function is available on the VDR824. What describes in this section is only for the VDR824g users.

Click [Wireless] in the navigation bar to enter the corresponding page where four tabs are available: Basic, Security, Access and Advanced. Click any tab to enter your desired configuration page.

4.5.1 Wireless Basic Setting

This page allows you to set the basic wireless network parameters.

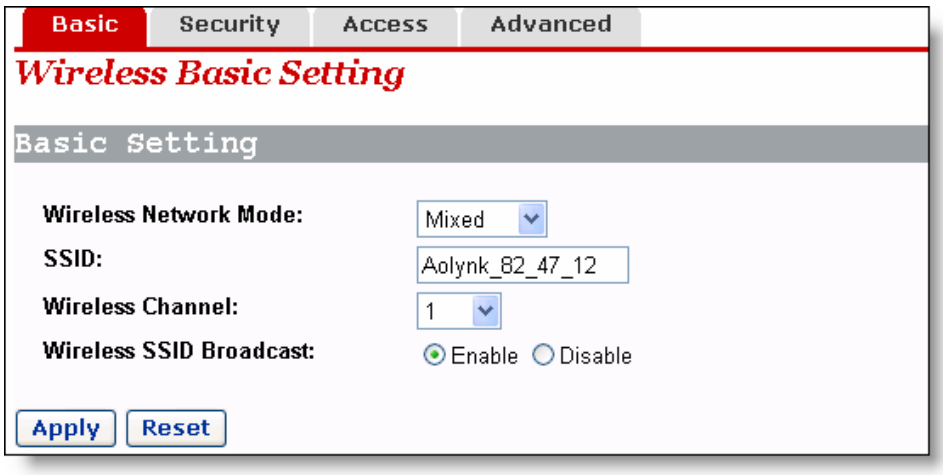


Figure 4-28 Wireless basic setting

Table 4-7 Description of the wireless basic setting items

Item	Description
Wireless Network Mode	Select the wireless network mode from the drop-down list. If both 802.11g-based and 802.11b-based devices are available in your network, keep the default **Mixed** option unchanged; if only the 802.11g-based device is available in your network, select the **G-Only** option; if only the 802.11b-based device is available in your network, select the **B-Only** option. To disable the wireless network, select the **Disable** option.
SSID	Service set identifier, the unique identifier shared by the VDR824g and other clients in the same wireless network. The SSID of all the nodes must be the same and cannot exceed 32 characters.
Wireless Channel	Select the appropriate wireless channel from the drop-down list. The channel beyond the control range can be accepted. Ensure that the nodes in the same wireless LAN use the same channel, or automatically select the channel when clients are connected to the access point.
Wireless SSID Broadcast	The wireless client detects the VDR824g SSID when searching for the local accessible wireless network. To make the VDR824g broadcast the SSID, select the **Enable** option, otherwise, select the **Disable** option.

4.5.2 Wireless Security Setting

This page allows you to set the wireless data encryption to ensure the security.

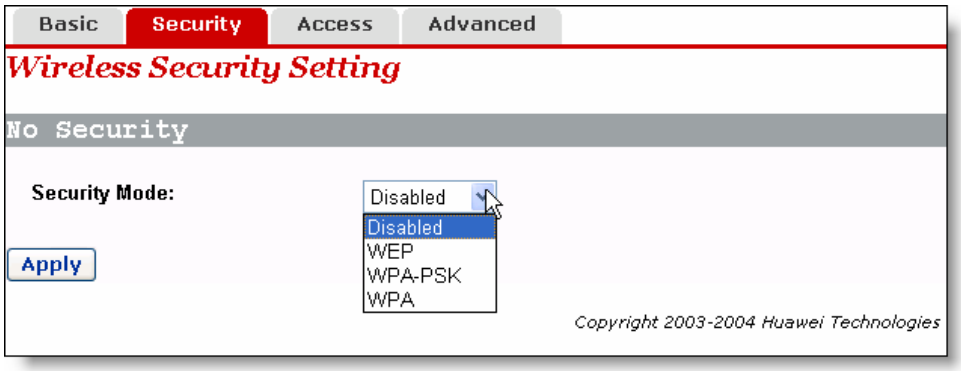


Figure 4-29 Wireless security setting

Three encryption options are available from the [Security Mode] drop-down list: WEP, WPA-PSK, and WPA. Select any option to display the corresponding configuration items. To disable the encryption, select the **Disabled** option. The following introduces their configurations respectively.

I. WEP

Wired equivalent privacy (WEP) is an encryption mechanism to protect the wireless data communication. WEP uses the 64-bit or 128-bit key to encrypt data transmitted among all the nodes of the wireless LAN, ensuring data security. To encode/decode data transmission, all the nodes must use the same key.

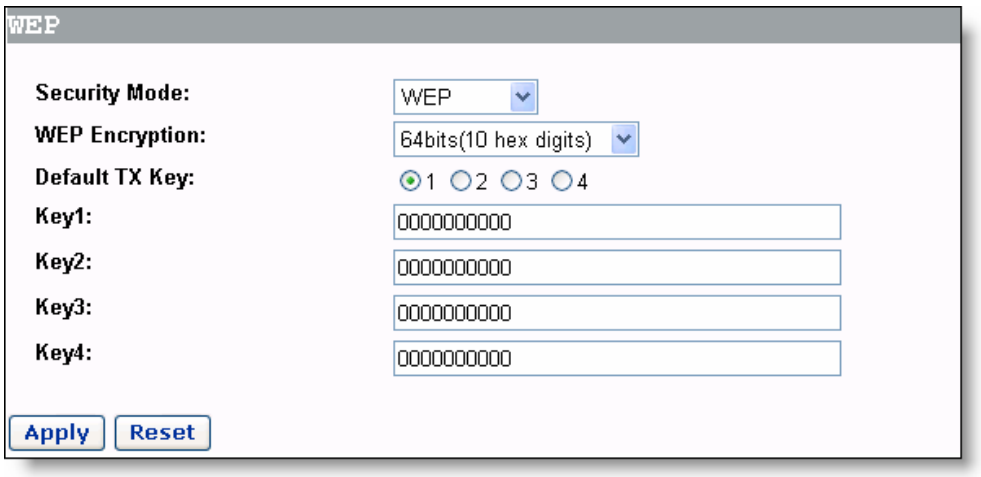


Figure 4-30 WEP settings

Table 4-8 Description of the WEP items

Item	Description
WEP Encryption	Select 64bits or 128bits from the drop-down list.
Default TX Key	Select one from four keys as the encryption key used in the wireless network. The options from 1 to 4 correspond to Key1 to Key4 respectively. For example, select 1 to make Key1 as the encryption key.
Key(1 to 4)	Type in the WEP key in the corresponding text box to join the existing wireless network. For the 640bit encryption algorithm, 10 hex digits are needed; for the 128-bit encryption algorithm, 26 hex digits are needed.

II. WPA-PSK

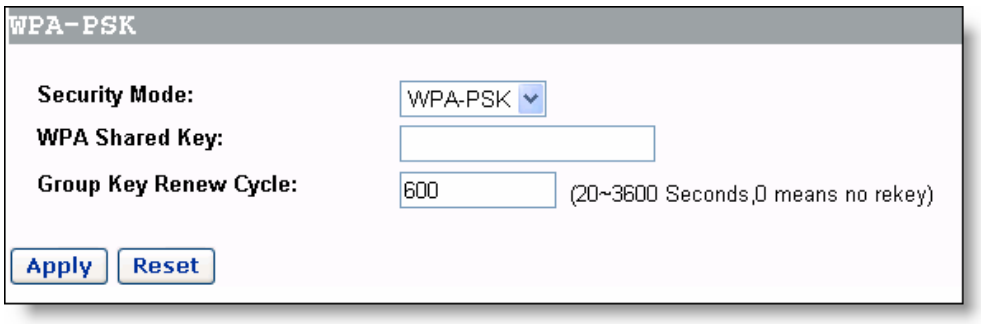


Figure 4-31 WPA-PSK settings

Table 4-9 Description of the WPA-PSK setting items

Item	Description
WPA Shared Key	Type in a standard key ranging from 8 to 32 characters.
Group Key Renew Cycle	When the set time times out, the VDR824/824g renews the key. The time ranges from 20 seconds to 3600 seconds. If it is set to 0, the VDR824/824g never renews the key.

III. WPA

WPA is used together with the Radius server. Note that the Radius server and the VDR824/824g must communicate with each other.

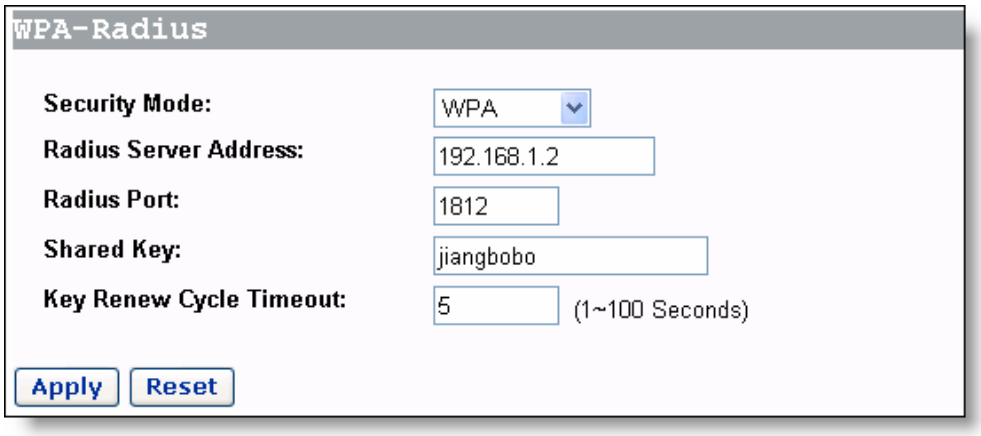


Figure 4-32 WPA-Radius settings

Table 4-10 Description of the WPA-Radius setting items

Item	Description
Radius Server Address	Type in the IP address of the Radius server.

Item	Description
Radius Port	Type in the port number of the Radius server.
Shared Key	Type in the shared key between the VDR824/824g and the server
Key Renew Cycle Timeout	When the set time times out, the VDR824/824g renews the key. The time ranges from 1 second to 100 seconds.

4.5.3 Wireless Access Control

Wireless access control can restrict the PC in the LAN to access the wireless network. This page allows you to block or permit some PCs to access the wireless network by specifying the MAC addresses.

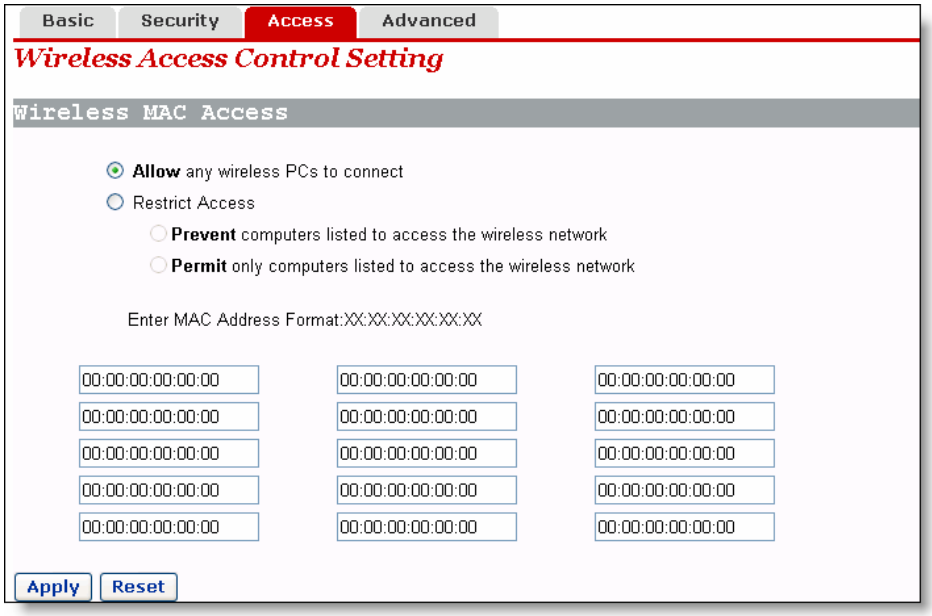


Figure 4-33 Wireless access control setting

To restrict the PC that accesses the wireless network, three options are available:

I. Allow all the PCs to access the wireless network

Keep the default setting unchanged. Select the **Allow** any wireless PCs to connect option, as shown in Figure 4-33.

II. Block only the PCs listed in the MAC address list to access the wireless network

Select the Restrict Access option first, then the **Prevent** computers listed to access the wireless network option, and finally type in the MAC addresses of the PCs to be blocked in the corresponding text box (the format is xx:xx:xx:xx:xx:xx).

III. Permit only the PCs listed in the MAC address list to access the wireless network

Select the Restrict Access option first, then the **Permit** only computers listed to access the wireless network option, and finally type in the MAC addresses of the PCs to be permitted in the corresponding text box. In this case, only the PCs whose addresses match those listed in the MAC address list can access the wireless network.

Example: Perform the following settings to block only the PCs whose MAC addresses are 00-0F-1F-80-65-25 and 00-0F-83-16-35-4D to access the wireless network.

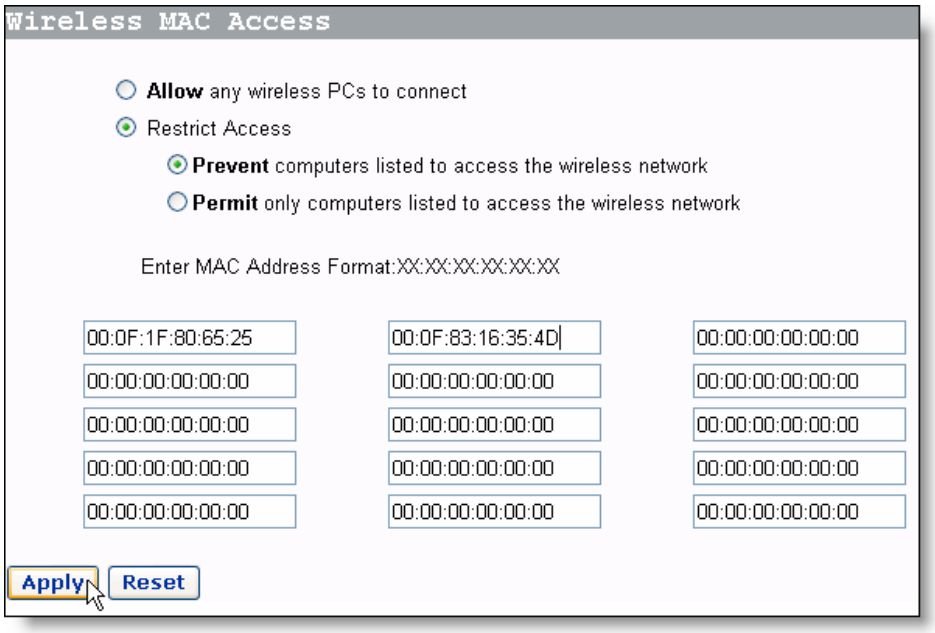


Figure 4-34 Example of wireless access control setting

4.5.4 Wireless Advanced Setting

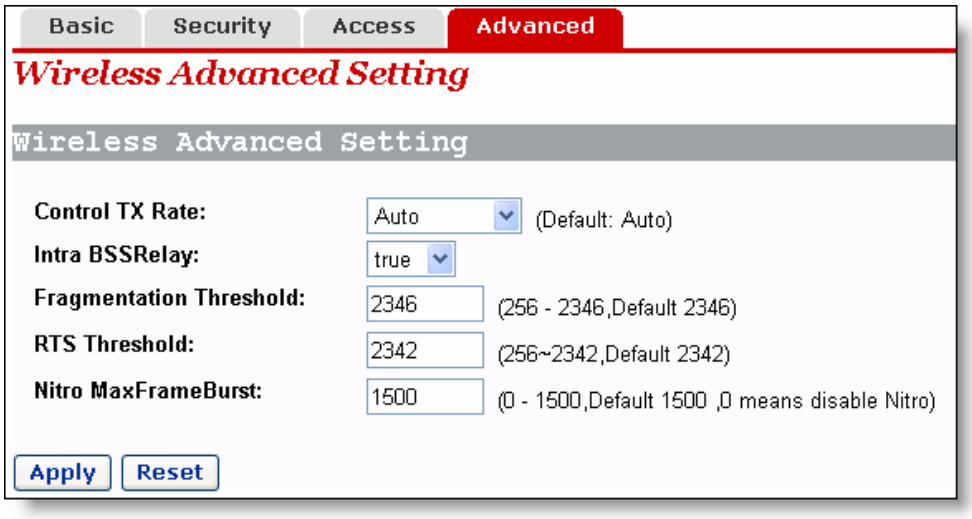


Figure 4-35 Wireless advanced setting

Table 4-11 Description of the wireless advanced setting items

Item	Description
Control TX Rate	Select the default Auto option or other options.
Intra BSSRelay	Select the true option to permit the communication among the wireless clients related to the AP of the VDR824/824g; select the false option to block the communication among these wireless clients.
Fragmentation Threshold	If the data frame to be transmitted exceeds the set fragmentation threshold, the data frame is fragmented. For a wireless network with great interference or high utilization, smaller fragmentation threshold can add the transmission reliability, while larger fragmentation threshold can improve the efficiency.
RTS Threshold	Request To Send threshold used to set the size of RTS packets.
Nitro MaxFrameBurst	Number of packets during the uninterrupted transmission. The larger value can improve the transmission efficiency, but require high-quality network connection. Also, the client needs to support the Nitro technology. When the value is set to 0, this function is disabled.

4.6 Device

Click [Device] in the navigation bar to enter the corresponding page where five tabs are available: Password, Remote, Restart, Backup and Upgrade. Click any tab to enter your desired configuration page.

4.6.1 Password

You can access log into the Web configuration page of VDR824/824g via two user name: admin and user. The administrator has the maximum rights while the common user can only access part of the configuration pages. Only the administrator can enter the following [Password] page to change the login passwords for two users. The common user can only change its own password.

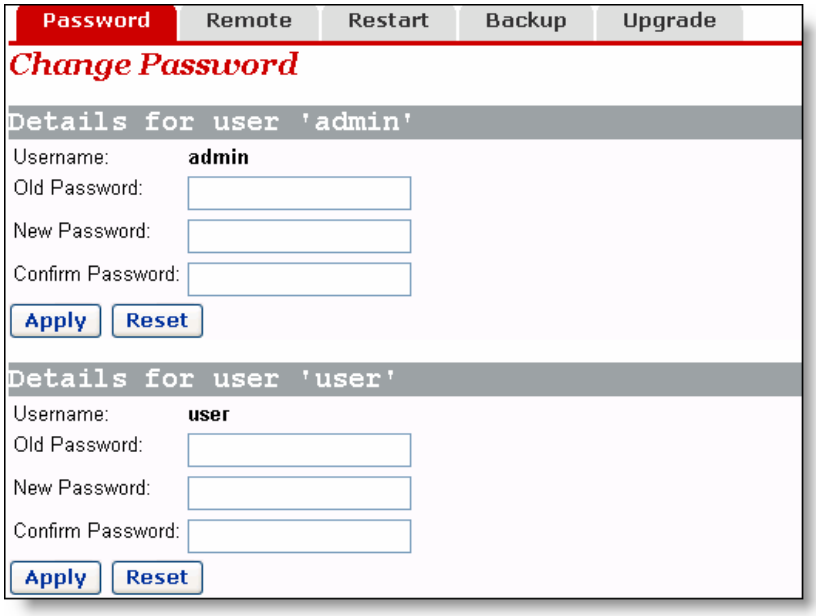


Figure 4-36 Change the password

By default, admin and user are the passwords for administrator and common user respectively.

To change the password, type in the related information in the [Old Password], [New Password] and [Confirm Password] text boxes, and then click <Apply>.

4.6.2 Remote Access

If remote access is enabled, you can view the current configuration page and manage the VDR824/824g remotely.

By default, the remote access is enabled and the idle timeout time is set to 0 (see Figure 4-37). In this case, remote access is kept alive.

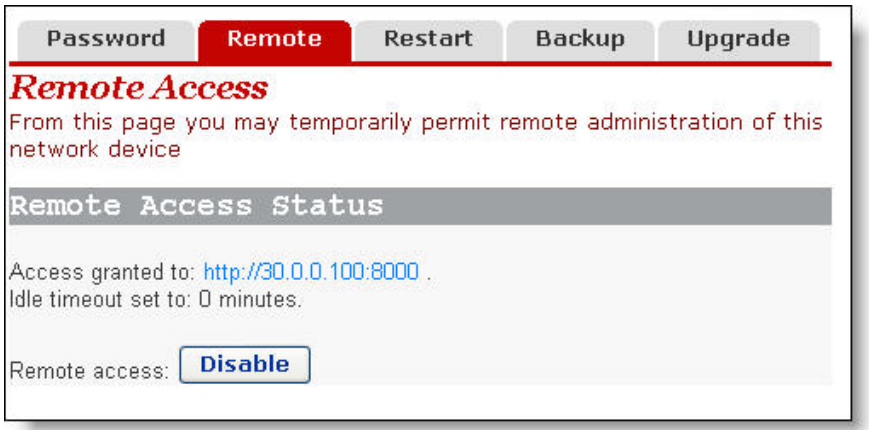


Figure 4-37 Remote access page – remote access enabled

Figure 4-37 indicates the port for remote management is 8000, so you can manage the VDR824/824g remotely by entering **http://xxx.xxx.xxx.xxx:8000** in your Web browser. The xxx.xxx.xxx.xxx is the IP address of the WAN port on the VDR824/824g. If multiple WAN services are configured and all of them obtain the IP addresses, the IP address of any service can be used for remote access.

To disable the remote access, click <Disable> on the [Remote Access] page to open the page as below.

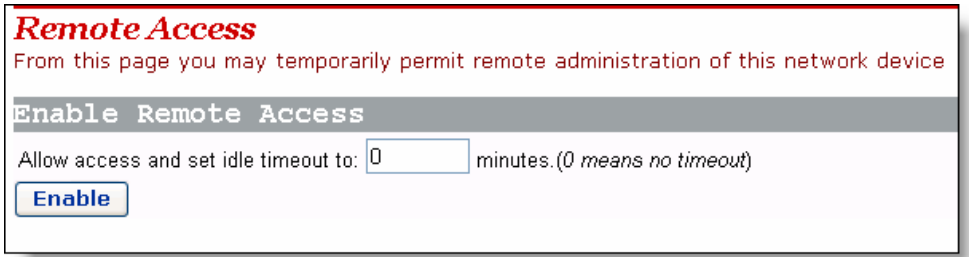


Figure 4-38 Remote access page – remote access disabled

In this case, you can set the idle timeout time to a desired value other than 0 in the text box on the page. Thus, when you click <Enable> to enable the remote access next time, the VDR824/824g tracks the elapsed idle time and terminates the remote connection to avoid remote attacks when the elapsed idle time exceeds the set idle time.

Caution:

A remote connection is maintained only when the idle timeout time is set to 0. If you set the timeout time to another value, remote access is disabled automatically whenever the VDR824/824g restarts.
Because remote access is enabled by default, you need to configure the password to prevent network invasion by the Internet users.

4.6.3 Restarting/Restoring Factory Default Settings

This page allows you to restart the VDR824/824g, or reset all configurations to factory default settings.

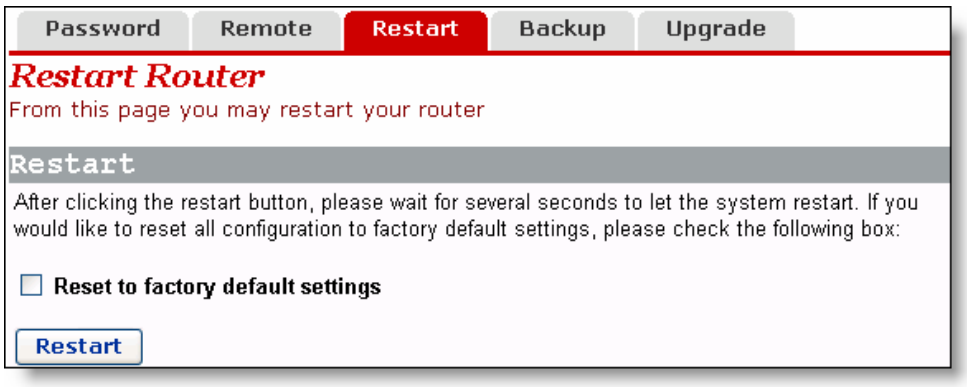


Figure 4-39 Restart Router page

To restart the VDR824/824g, click <Restart>.

To reset all configurations to the factory default settings, select the [Reset to factory default settings] check box and click <Restart>.

Caution:

It may take several seconds to restart the VDR824/824g.

4.6.4 Backing Up/Restoring Configuration

This page allows you to back up the current configuration to your PC, or restore the configuration from a previously saved file.

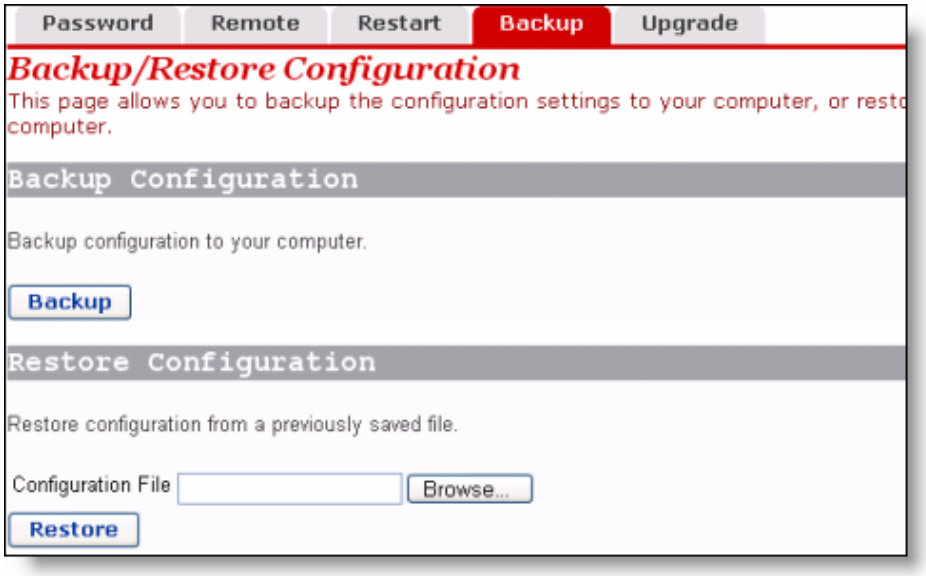


Figure 4-40 Backup/Restore Configuration page

I. Back up the current configuration

Click <Backup> to open the [File Download] dialog box as below.

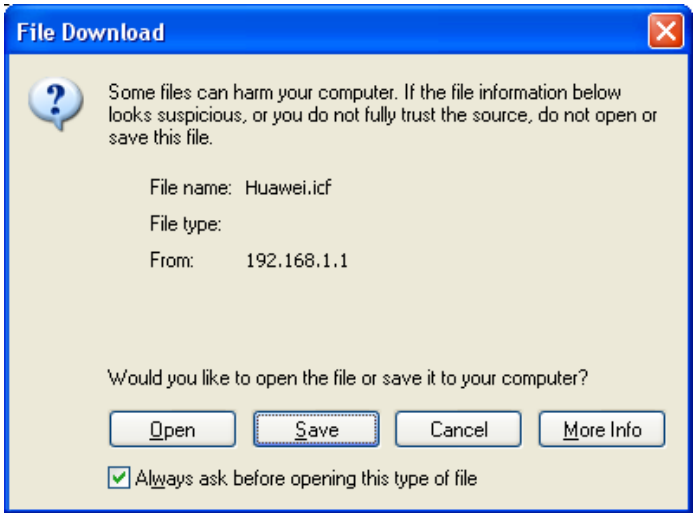


Figure 4-41 File Download dialog box

Click <Save> to open the [Save As] window as below.

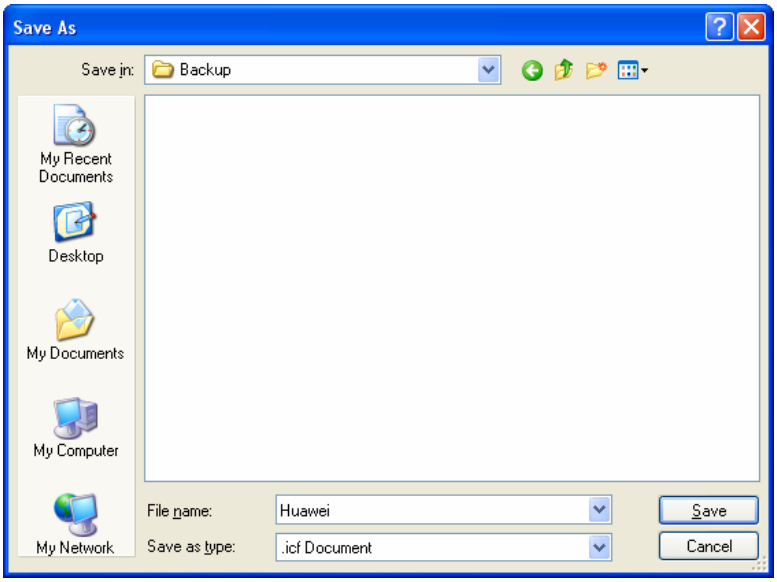


Figure 4-42 Save the configuration file

Select a directory to save the file and type in a valid file name (with the .icf suffix), and then click <Save> to back up the current configuration to the file.

II. Use the file to restore the configuration

To use the previously saved file to restore the configuration, click <Browse…> in Figure 4-40 to open the [Choose file] window as below.

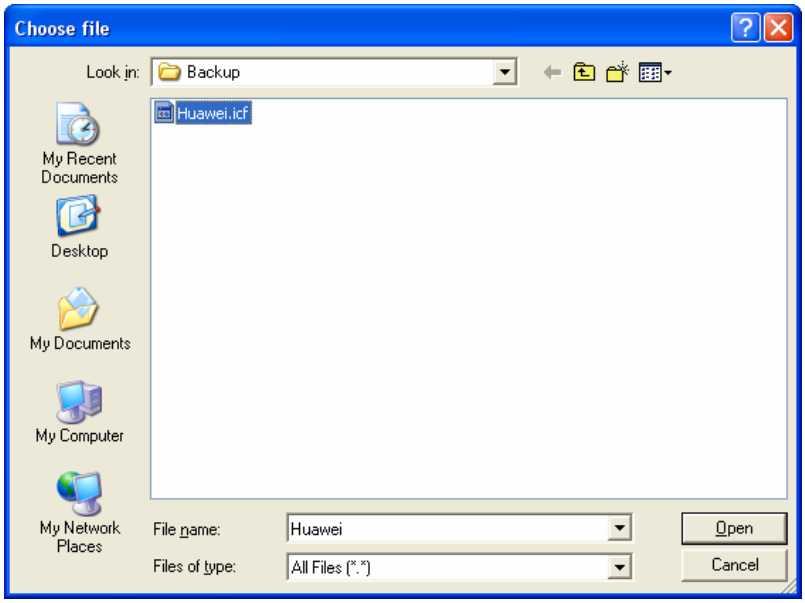


Figure 4-43 Choose the backup file

Find the configuration file and then click <Open> to open the page as below. Click <Restore> to use the file to restore the configuration.

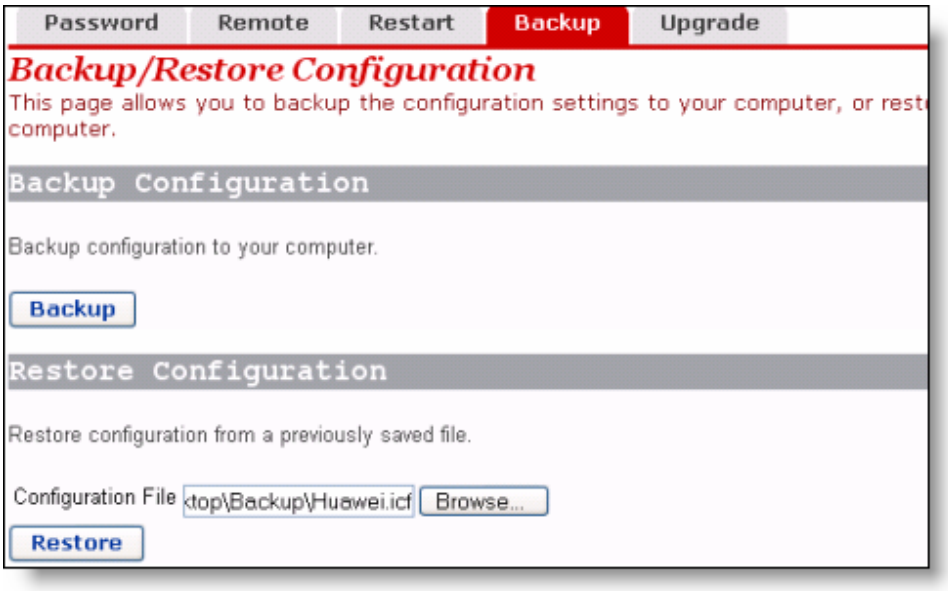


Figure 4-44 Restore the configuration

4.6.5 Upgrade

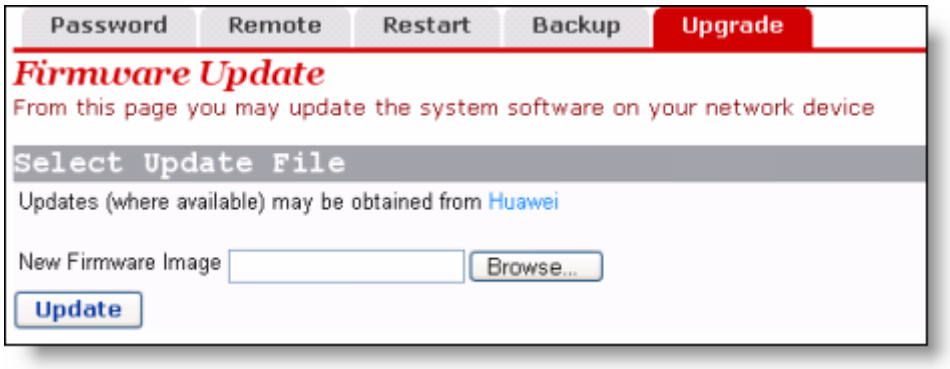


Figure 4-45 Software upgrade

This page allows you to upgrade the software of the VDR824/824g.Type in the local path of the software update file downloaded from Huawei technical support website, or click <Browse…> to select this file on your PC and then click <Update>.

During the update, a progress bar appears on the page as below.

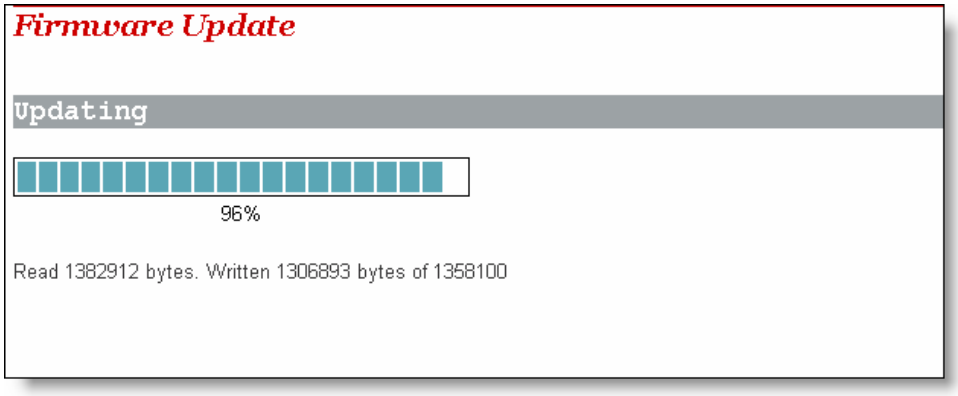


Figure 4-46 Update progress

Figure 4-47 shows that the update is complete. Now, you need to restart the VDR824/824g by clicking <Restart>.

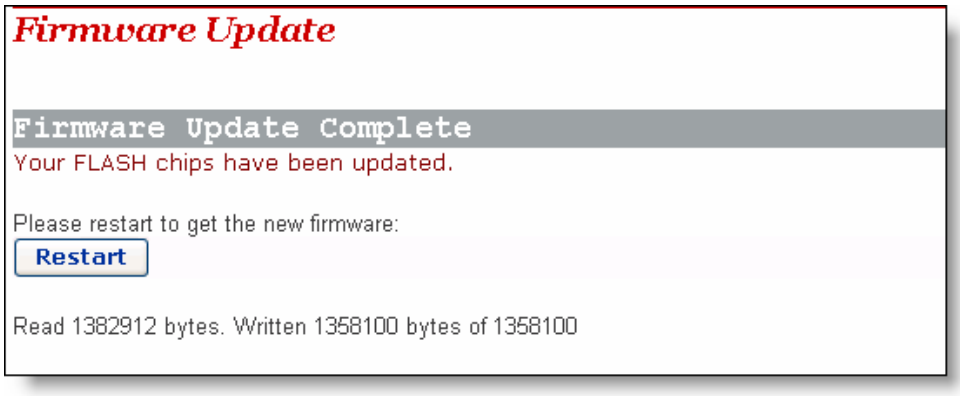


Figure 4-47 Complete the update

⚠ **Caution:**

After the upgrade and restart, you need to restore factory default settings to ensure the normal configuration.

Click <Huawei> to access Huawei technical support website to obtain the latest software version.

4.7 Status

Click [Status] in the navigation bar to enter the corresponding page where three tabs are available: Status, Log, and Search Service. Click any tab to enter your desired configuration page.

4.7.1 Status

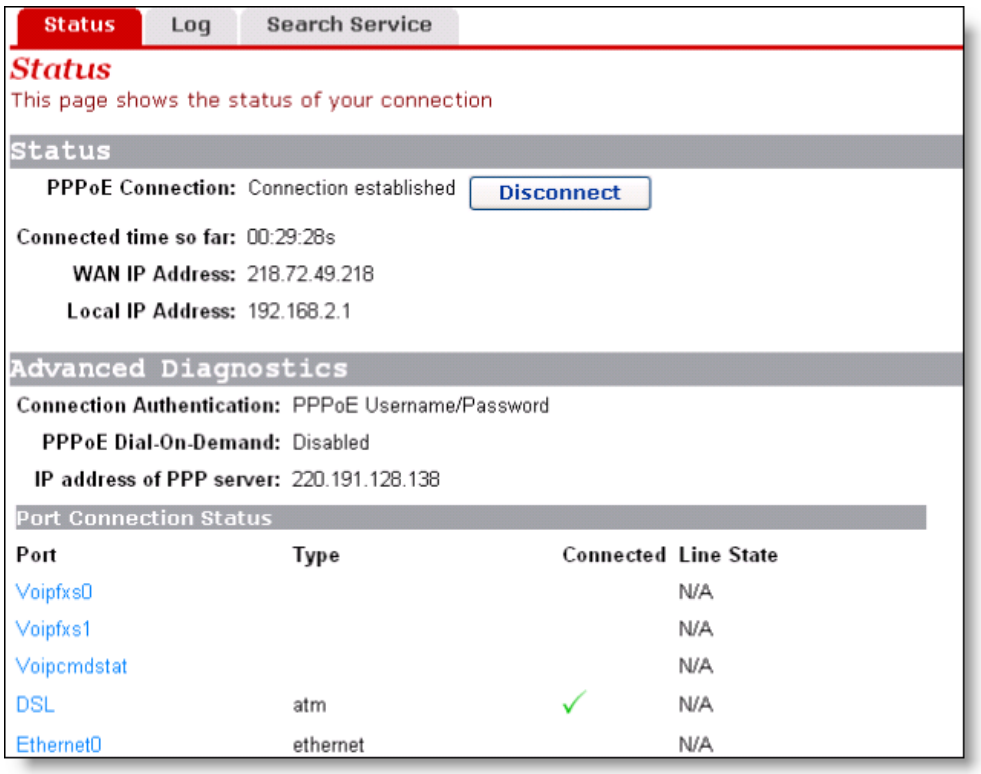


Figure 4-48 Status configuration page

This page displays useful information about the configuration of the VDR824/824g, including:

- Details of network connection
- Some important system information (hardware and version information)
- Routing table
- Connection status of current DSL, Ethernet and USB port
- WAN port status
- LAN port status
- Statistics on all interfaces

4.7.2 Log

This page records all types of events occurring during the running of the DR811/814.

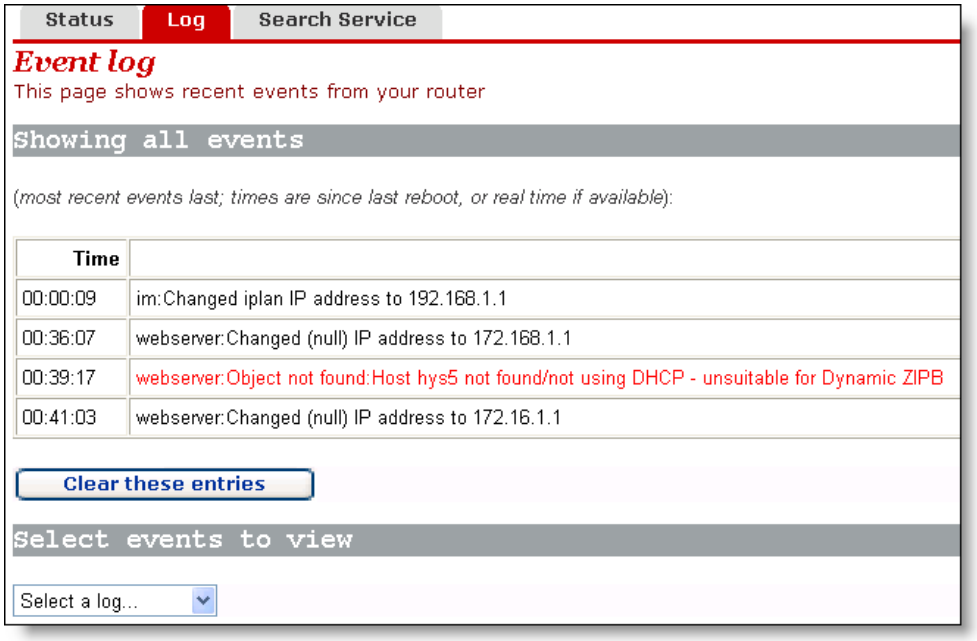
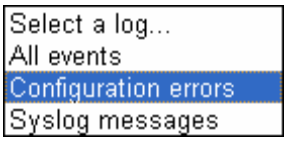


Figure 4-49 Log

The drop-down list in the [Select events to view] section includes the options as shown in the figure below. Select an event type to view the corresponding event information.



Click <Clear these entries> to clear the currently displayed events.

4.7.3 PVC Search

The [Edit Scan PVC] page allows you to search the currently unused PVC settings. If your ISP has configured PVC services within the searchable range, after the search, these PVC services will be automatically configured to the service list on the [WAN Connections] page until the number of services reaches eight in this list.

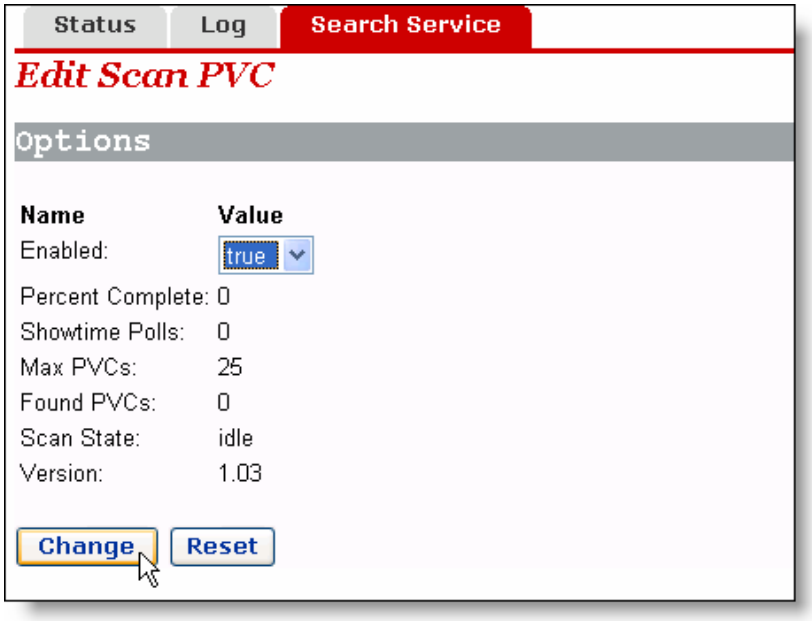


Figure 4-50 PVC Scan page

Select the **true** option from the drop-down list in Figure 4-50, and then click <Change> to start the search. It may take about five minutes.

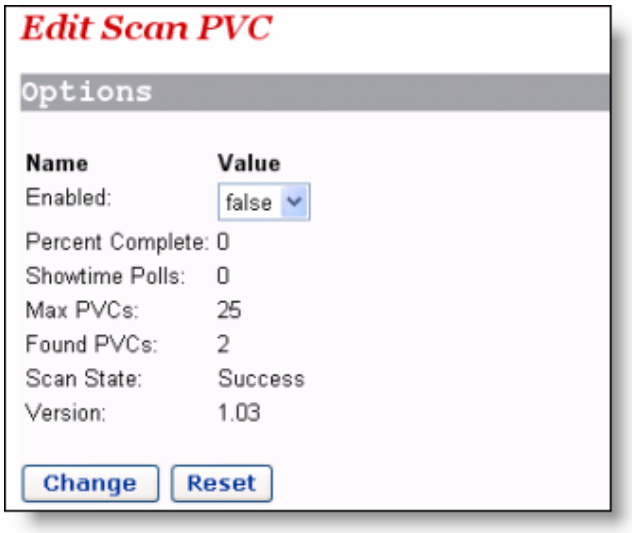


Figure 4-51 Search PVC

As shown in Figure 4-51, two PVCs are found. Click [WAN Setup] in the navigation bar, you will find that two services found by the VDR824/824g are automatically added to the WAN service list as below.

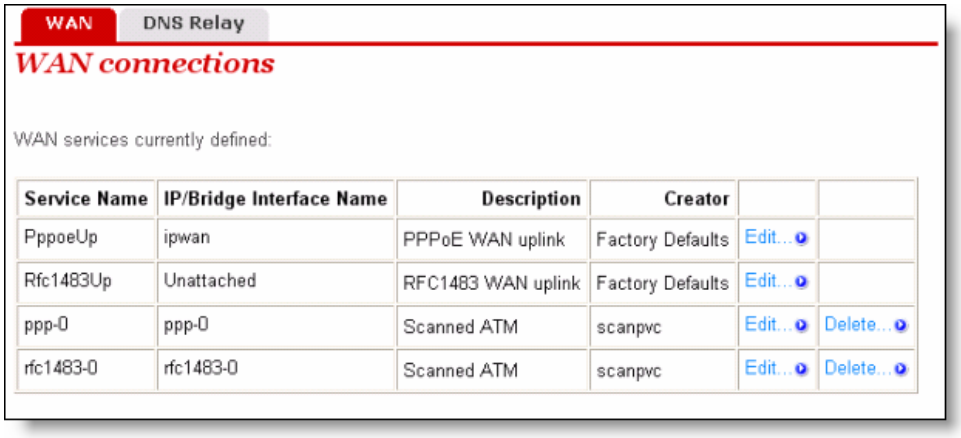


Figure 4-52 Add the found services automatically

If the PPPoE or PPPoA service is found, you need to edit these automatically added services by typing in a user name and a password.

4.8 Save the Configuration

Enter the [Save configuration] page after all the configurations are complete. Click <Save> to save your configurations so that they take effect when the VDR824/824g restarts.

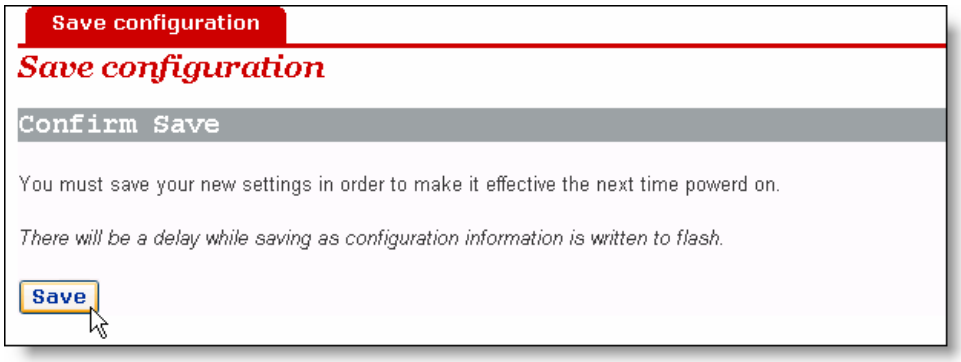


Figure 4-53 Save the configuration

Caution:

Do save your settings, otherwise, they will be lost after the VDR824/824g restarts.
