



LevelOne

**User Manual**

WBR-3601

54Mbps Wireless ADSL2+ Modem Router

Ver. 1.0

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## Product Overview

This section provides an overview of the WBR-3601 Router. It also describes the general applications available with the WBR-3601 Router.

**Note!** This section documents general product features available in the WBR-3601 Router product series. Please refer to the release notes for a current list of upgraded hardware and software specifications.

## Product Description

WBR-3601 Router is a low cost, high performance and high-speed device that provides a full rate ADSL2+ Router with the superb reliability and a complete solution for home and office router. WBR-3601 Router can have a maximum downstream data rate of up to 24Mbps and an upstream of up to 1Mbps. When configured as a DHCP server, it will assign IP address to every connected PC and acts as the only externally recognized Internet device on your local area network. With build-in NAT, WBR-3601 Router serves as an Internet firewall, protecting your network from being accessed by outside users. You can safely enjoy the new generation broadband Internet with WBR-3601 Router.

# Specification

## ADSL Standards supported

- Compliant to ITU-T G.992.1 (G.dmt), G.992.2 (G.lite), G.992.3 (ADSL2), G.992.4 (splitterless ADSL2), G.992.5 (ADSL2+) for Annex A, B
- G.lite (G.992.2) with line rate support of up to 1.5Mbps downstream and 512Kbps upstream.
- Supports Multi-Mode standard (ANSI T1.413, Issue 2; G.dmt (G.992.1); G.994.1 and G.996.1(for ISDN only); G.991.1;G.lite (G992.2)).
- Supports OAM F4/F5 loop-back, AIS and RDI OAM cells.
- ATM Forum UNI 3.1/4.0 PVC.
- Supports up to 8 PVCs (UBR, CBR, VBR).
- Multiple Protocols over AAL5 (RFC 1483).
- PPP over AAL5 (RFC 2364).
- PPP over Ethernet (RFC 2516).

## Wireless Ethernet 802.11g

With built-in 802.11g access point for extending the communication media to WLAN while providing the WEP and WPA/WPA2 for securing your wireless networks.

## Network Address Translation (NAT)

Network Address Translation (NAT) allows the translation of an Internet protocol address used within one network (for example a private IP address used in a local network) to a different IP address known within another network (for example a public IP address used on the Internet).

## Universal Plug and Play (UPnP)

Using the standard TCP/IP protocol, the WBR-3601 Router and other UPnP enabled devices can dynamically join a network, obtain an IP address and convey its capabilities to other devices on the network.

## 10/100M Auto-negotiation Ethernet / Fast Ethernet Interface

This auto-negotiation feature allows the WBR-3601 Router to detect the speed of incoming transmissions and adjust appropriately without manual intervention. It allows data transfer of either 10 Mbps or 100 Mbps in either half-duplex or full-duplex mode depending on your Ethernet network.

## Dynamic DNS Support

With Dynamic DNS support, you can have a static hostname alias for a dynamic IP address,

## Multiple PVC (Permanent Virtual Circuits) Support

Your WBR-3601 Router supports up to 8 PVC's.

## **DHCP Support**

DHCP (Dynamic Host Configuration Protocol) allows individual clients (computers) to obtain TCP/IP configuration at start-up from a centralized DHCP server. The WBR-3601 Router has built-in DHCP server capability enabled by default. It can assign IP addresses, an IP default gateway and DNS servers to DHCP clients. The WBR-3601 Router can now also act as a surrogate DHCP server (DHCP Relay) where it relays IP address assignment from the actual real DHCP server to the clients.

# LED Meaning

Your WBR-3601 Router has indicator lights on the front side. Please see below for an explanation of the function of each indicator light.



**Power indicator**



**ADSL Link indicator**



**Internet Active indicator**








**Wireless Active indicator**



**Ethernet Active indicator**



**Table 1. LED function**

Label	Color	On	Flash	Off
 Power	Green	Ready	Not Ready	Power Off
 Link	Green	Connect to DSLAM	Disconnect to DSLAM	N/A
 Internet	Green	Connect to Internet /IDLE	Transmit / Receive Data	Disconnect to Internet
 WLAN	Green	N/A	Wireless Activated	Deactivated
 1	Green	Ethernet Connected	Transmit / Receive Data	Ethernet Disconnected

## Back Panel Connectors

Table 2 shows the function of each connector and switch of the WLAN ADSL2+ Router's back panel. Figure 1 illustrated the connectors.

**Table 2. Function / Description of Connectors**

Connector	Description
<b>RESET</b>	Reset button, RESET the WBR-3601 Router to its default settings
<b>SWITCH</b>	Power Switch
<b>POWER</b>	Connects to your WBR-3601 Router 12V power adaptor
<b>LAN1~4</b>	RJ-45 Jack (Ethernet Cable) connection to your PC, or HUB
<b>LINE</b>	Connects to your ADSL2+ line – for ADSL2+ Line input

**Figure1. Rear View of the WBR-3601 Router**



# Factory Default Settings

Before configuration, please refer to following default settings,

## Web interface:

Username: admin

Password: password

## LAN IP Settings:

IP Address: 192.168.0.1

Subnet Mask: 255.255.255.0

## DHCP:

DHCP Server: Enable

# Hardware Requirements

To use WBR-3601 Router, please have following hardware / accessories ready.

A PC with Pre-installed Ethernet Adapter (Required)

12V power adaptor (Included in the package)

RJ-45 Ethernet cable (Included in the package)

RJ-11 cable (Included in the package)

# Setting up the Hardware Environment

**Note!** Be sure that you are well insulated from any power source to avoid electricity shock.

Please kindly refer to chapter 4.0 "Installation & Setup"



# Installation & Setup

Follow each STEP carefully and only go to the next step once you have complete the previous STEP.

1. Connect the ADSL activated Telephone line



2. Connect the Computer LAN cable to an available LAN port.



3. Plug in the Power Adapter



4. Press the Power ON switch on the rear of the router.



5. Wait until the PWR and ADSL Link lights remain lit green (not blinking) and the relevant LAN is lit.



**Note:** If the ADSL Link light continues to blink, it means that that router cannot find an active ADSL connection. Please contact your Internet Service Provider for support.

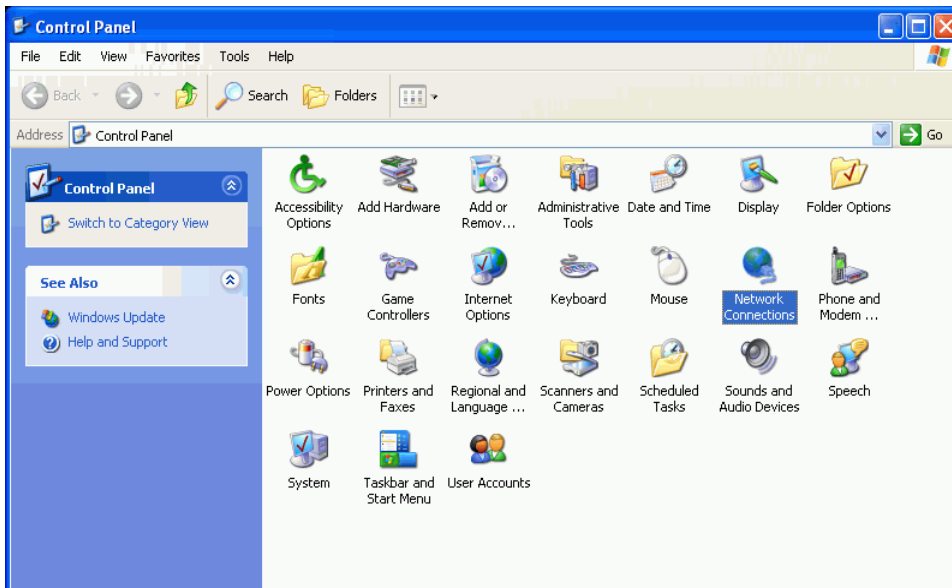
6. Installation is now complete. You can now begin to set up the device.

# Configuration Procedures

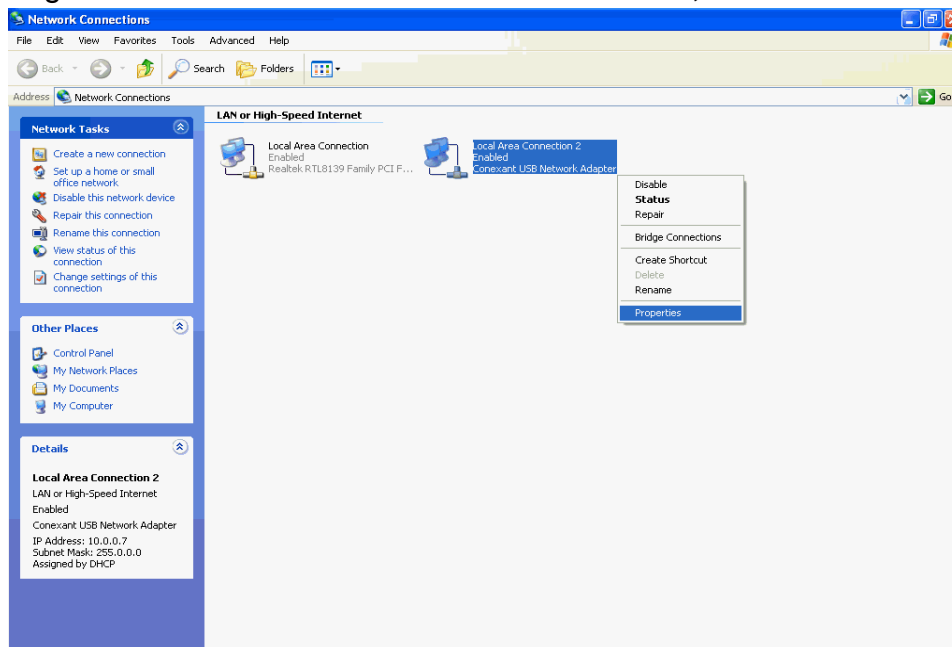
Before starting the WBR-3601 Router configuration, please kindly configure the PC computer as below, to have automatic IP address / DNS Server.

## For Windows 98SE/ME/2000/XP

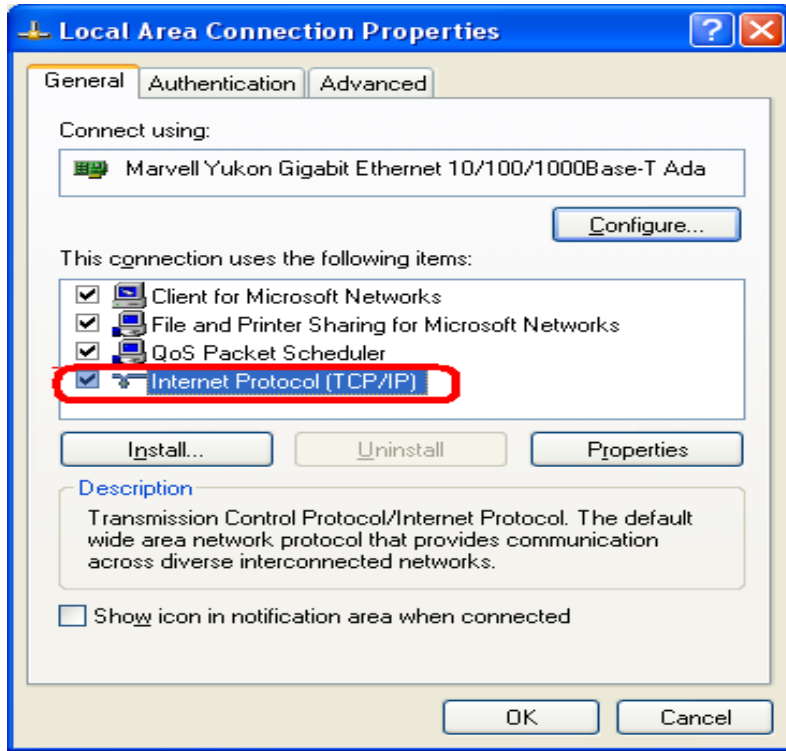
1. Click on **"Start" -> "Control Panel" (in Classic View)**. In the Control Panel; double click on **"Network Connections"** to continue.



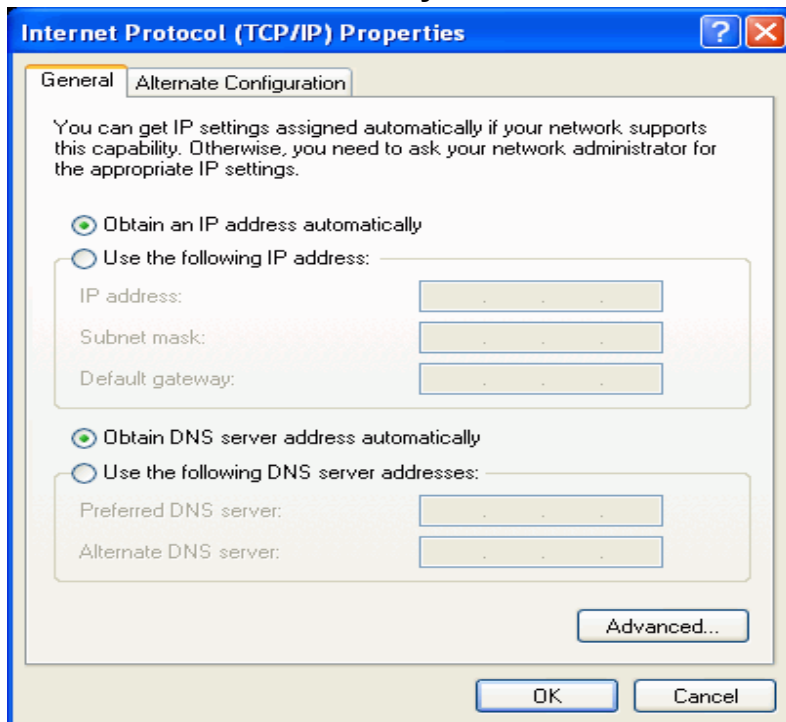
2. Single **RIGHT** click on **"Local Area connection"**, then click **"Properties"**.



3. Double click on "Internet Protocol (TCP/IP)".



4. Check "Obtain an IP address automatically" and "Obtain DNS server address automatically" then click on "OK" to continue.

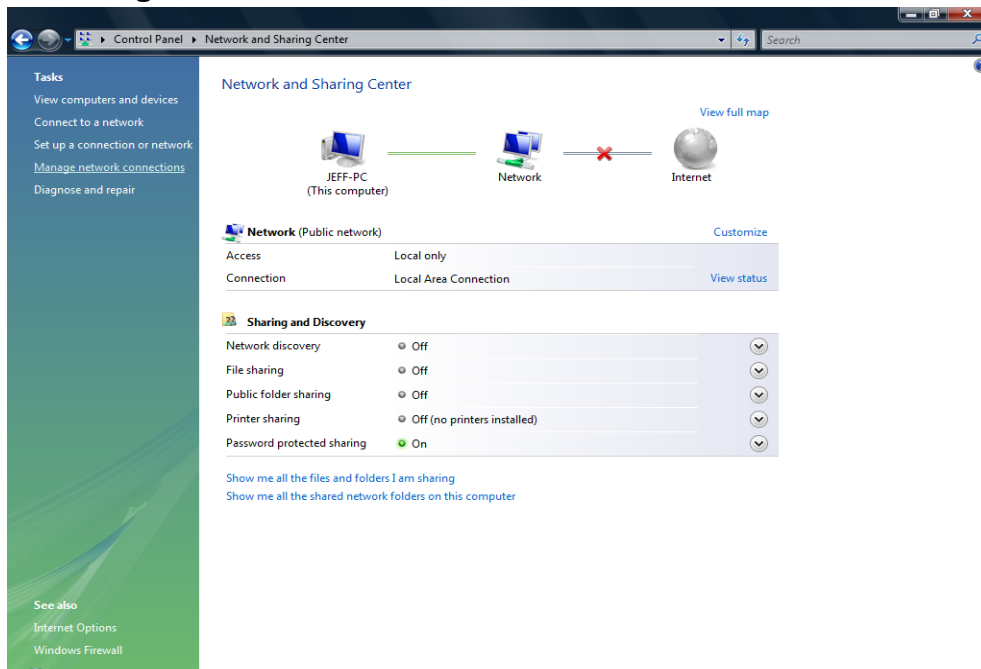


5. Click "Show icon in notification area when connected" (see screen image in 3. above) then Click on "OK" to complete the setup procedures.

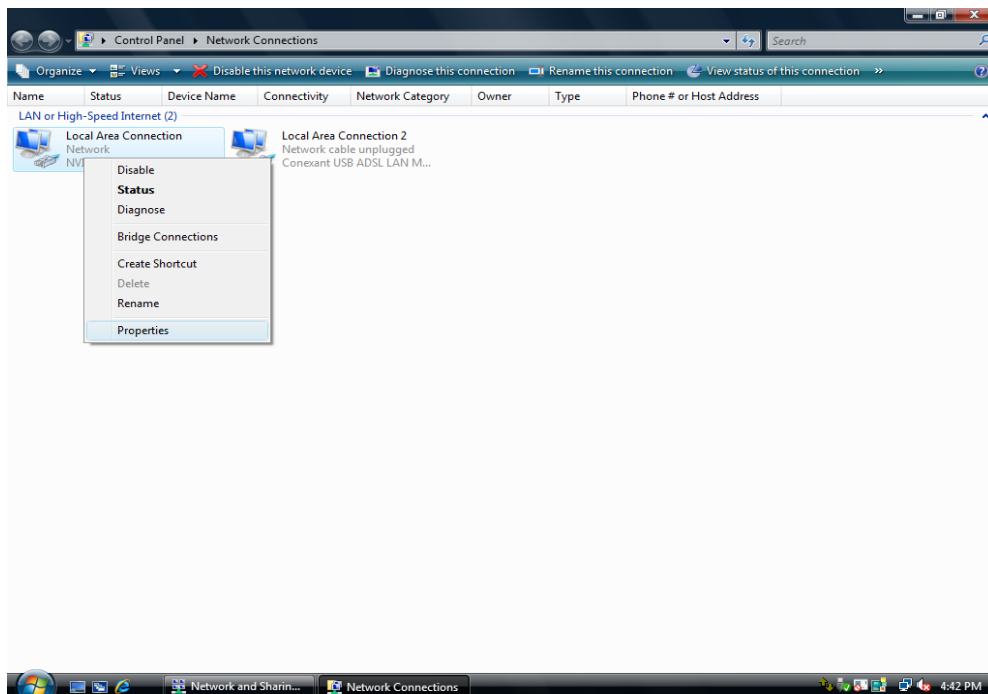
## For Windows Vista-32/64

1. Click on "**Start**" -> "**Control Panel**" (in Classic View) -> "**Network and Sharing Center**".

In the Manage network connections, double click on "**Manage Network Connections**" to continue.

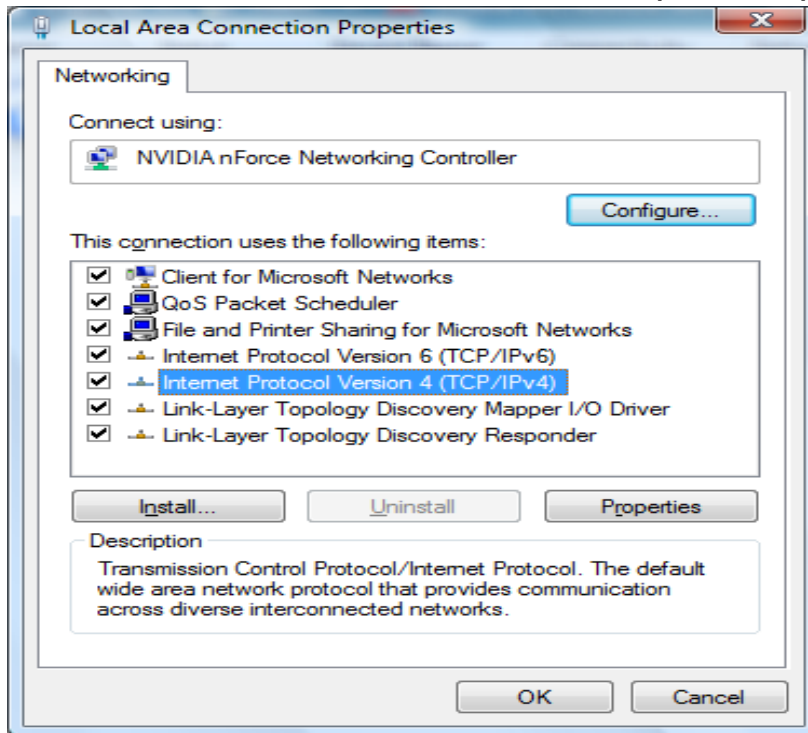


2. Single RIGHT click on "**Local Area connection**", then click "**Properties**".

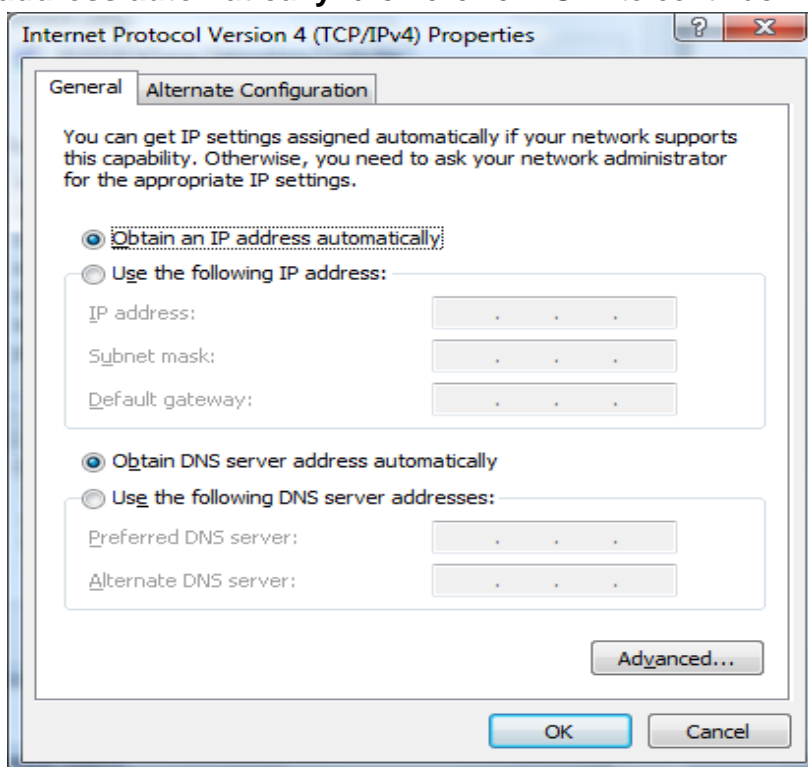


3. The screen will display the information "**User Account Control**" and click "**Continue**" to continue.

4. Double click on "Internet Protocol Version 4 (TCP/IPv4)"



5. Check "Obtain an IP address automatically" and "Obtain DNS server address automatically" then click on "OK" to continue.

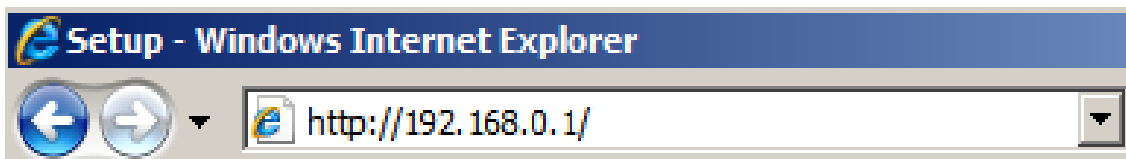


6. You can see the screen will appear as shown in Step 4. above, then click "OK" to complete the setup procedures.

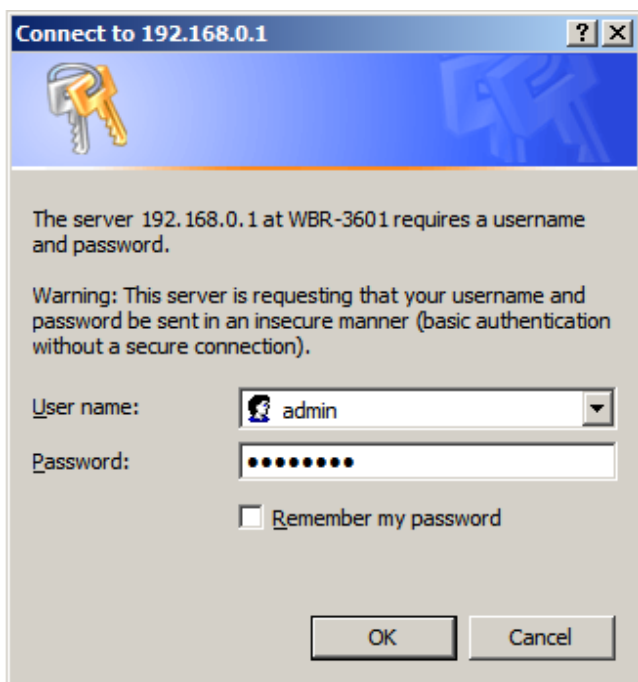
# WBR-3601 Router Configuration

1. Start your WEB browser. In the *Address* box, enter the following:

**http://192.168.0.1**



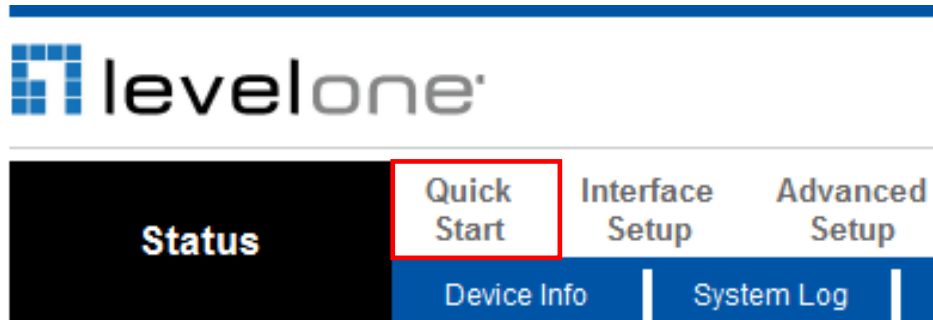
2. When prompted, use the following username and password.



User Name: **admin**  
Password: **password**



3. The first time you connect to the WBR-3601, you should run the Quick Start Wizard to configure the ADSL and Internet Connection. Click **Quick Start** on the menu.



4. Please create a new password for the router.  
Leaving it as default could be a security risk.

### Quick Start - Password

You may change the **admin** account password by entering in a new password. Click **NEXT** to continue.

New Password :	<input type="text"/>
Confirmed Password :	<input type="text"/>

5. Select your Time Zone.

### Quick Start - Time Zone

Select the appropriate time zone for your location and click **NEXT** to continue.

(GMT+08:00) Beijing, Hong Kong, Perth, Singapore, Taipei	▼
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6. There are many ways to connect to your Internet Service Provider. Please refer to the table below to ensure your choices are correct.

In all cases, you will be required to enter the **VPI** and **VCI** settings. This must be provided to you by your Internet Service Provider.

<b>Connection Type</b>	<b>Data required.</b>
Dynamic IP Address	Usually, none.
Static (Fixed) IP Address	IP Address allocated to you, and related information, such as Network Mask, Gateway IP address, and DNS address.
PPPoE, PPPoA	a) User name and password are always required. b) If using a Static (Fixed) IP address, you need the IP address and related information (Network Mask, Gateway IP address, and DNS address)
Bridge Mode	The authentication process is not done by the WBR-3601, but by another device or PC. Note that the router and firewall functions do not apply under this mode.

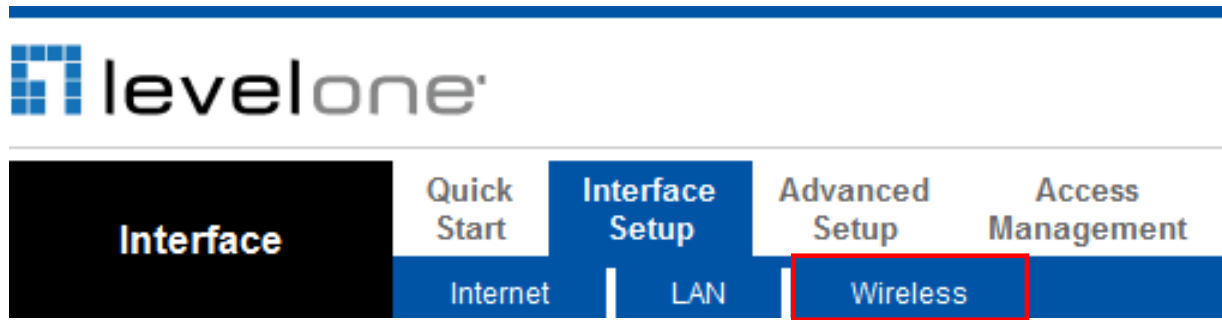
7. When the Quick Start Wizard is complete, click **“Next”** to save the settings and restart the router. You will be required to enter your *new* password.

Click **“Close”** to exit the Quick Start Wizard.

If successful, the Internet light should now be on.  
Now you can access the Internet.



8. Finally, to set up your wireless settings, please click “**Interface Setup**” and then “**Wireless**”.



Here you can select your Wireless ID (SSID) and the security encryption.

**Note:** LevelOne recommends WPA2-PSK (AES) for maximum security.

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SSID Index :

Broadcast SSID :  Yes  No

SSID :

Authentication Type :

---

Encryption :

Pre-Shared Key :  (8~63 ASCII characters or 64 hexadecimal characters)

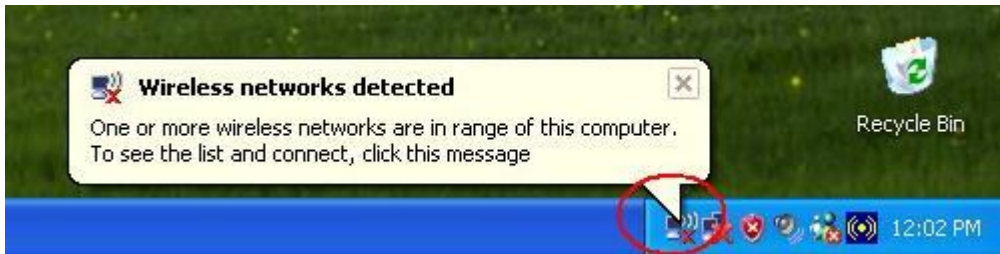
Congratulations! Setup of WBR-3601 is now complete.

# Connect Wirelessly

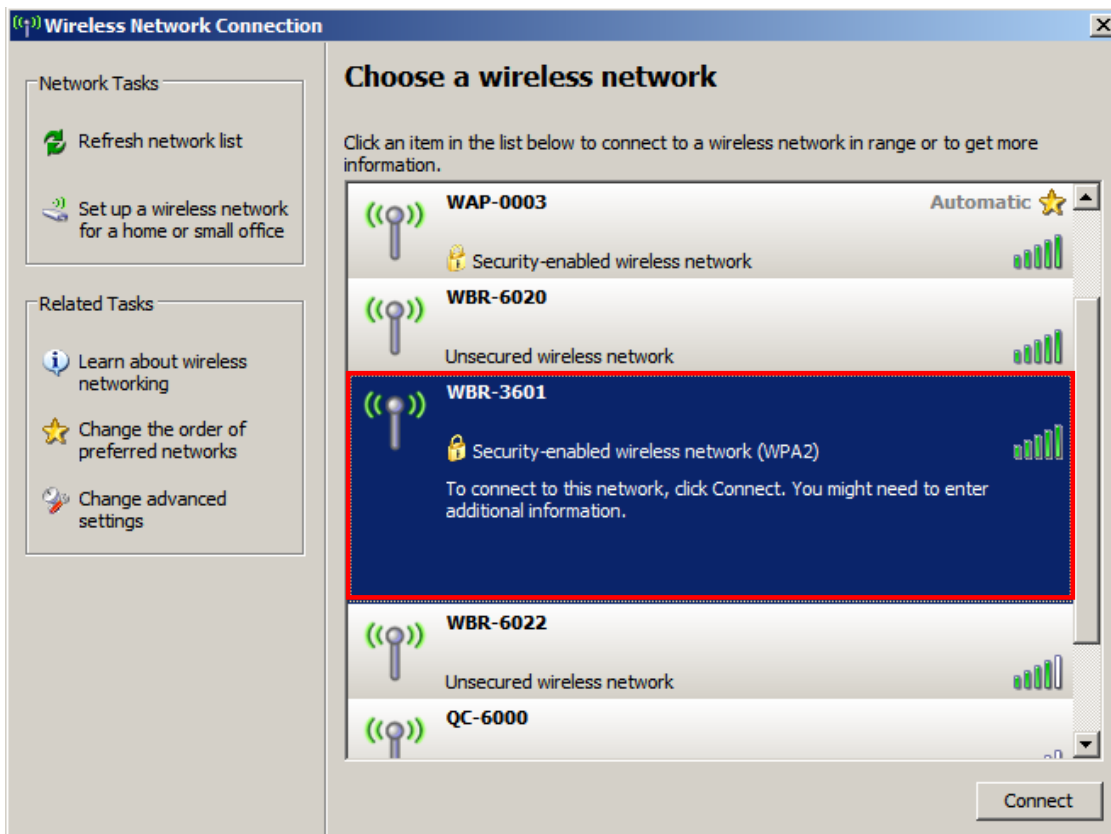
Here is an example of how to connect wirelessly to the WBR-3601.

You can change the wireless settings via the wireless configuration menu. (Chapter 8)

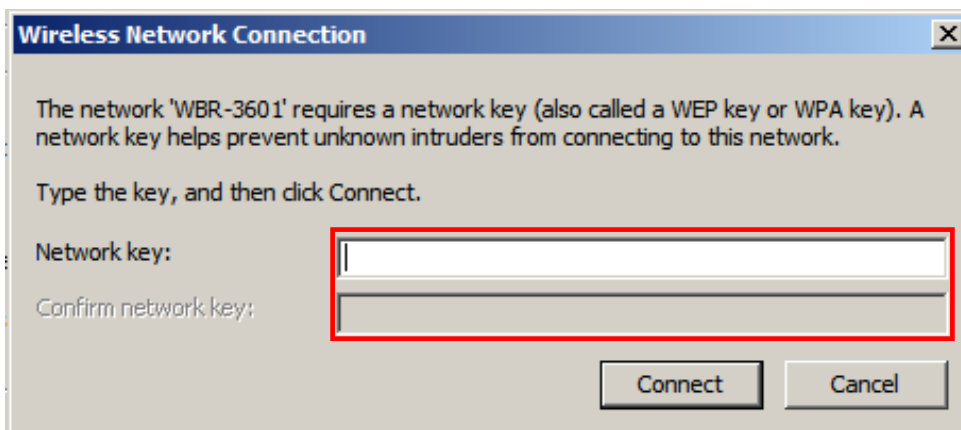
1. Double click on the wireless icon on your computer and search for the wireless network that you enter SSID name.



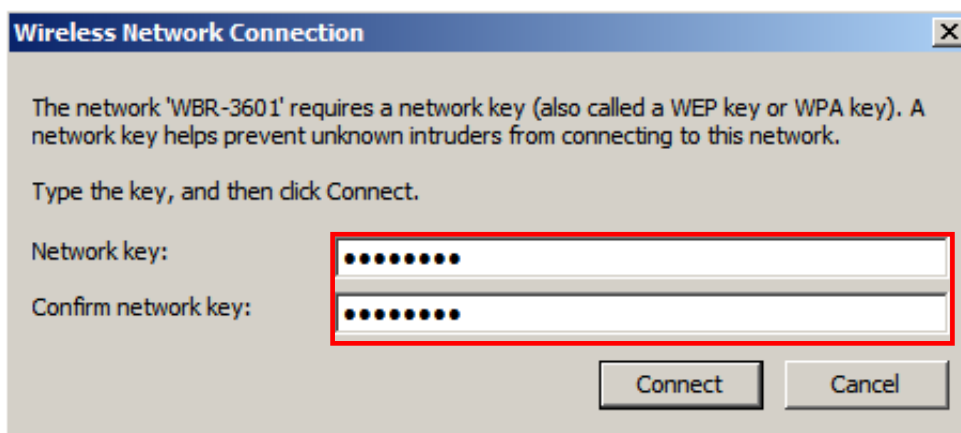
2. Click on the wireless network that you enter SSID name to connect



Enter the network key that belongs to your authentication type and key. You can later change this network key via the wireless configuration menu. (see user manual on the CD – Chapter 8 and other)



1. Click on **Connect** or Apply



Now, the WBR-3601 Router has been configured, and able to connect to the Internet.

# Technology Glossary

## **10Base-T**

An adaptation of the Ethernet standard for Local Area Network (LAN). 10Base-T uses a twisted pair cable with maximum length of 100 meters.

## **AAL**

ATM Adaptation Layer that defines the rules governing segmentation and reassembly of data into cells. Different AAL types are suited to different traffic classes.

## **Address mask**

A bit mask used to select bits from an Internet address for subnet addressing. The mask is 32 bits long and selects the network portion of the Internet address and one or more bits of the local portion. Sometimes called subnet mask.

## **ADSL**

Asymmetric Digital Subscriber Line, as it's name showing, is an asymmetrical data transmission technology with high traffic rate downstream and low traffic rate upstream. ADSL technology satisfies the bandwidth requirement of applications, which demand "asymmetric" traffic, such as web surfing, file download and Video-on-demand (VOD).

## **ATM**

Asynchronous Transfer Mode is a layer 2 protocol supporting high-speed asynchronous data with advanced traffic management and quality of service features.

## **bps**

Bits per second. A standard measurement of digital transmission speeds.

## **Bridge**

A device that connects two or more physical networks and forwards packets between them. Bridges can usually be made to filter packets, that is, to forward only certain traffic. Related devices are: repeaters which simply forward electrical signals from one cable to the other, and full-fledged routers which make routing decisions based on several criteria.

## **CPE**

Customer Premises Equipment, such as ADSL router, USB modem.

## **DHCP**

Dynamic Host Configuration Protocol. Used for assigning dynamic IP address to devices on a network. Used by ISPs for dialup users.

## **DNS**

Domain Name Server, translates domain names into IP addresses to help user recognize and remember. However, the Internet actually runs on numbered IP addresses, DNS servers needs to translate domain names back to their respective IP addresses.

## **DSL**

Digital Line Subscriber (DSL) technology provides high-speed access over twisted copper pair for connection to the Internet, LAN interfaces, and to broadband services such as video-on-demand,

distance learning, and video conferencing.

## **FTP**

File Transfer Protocol. The Internet protocol (and program) used to transfer files between hosts.

## **IPoA (RFC 1577)**

Classical IP and ARP over ATM. Considers ATM configured as a Logic IP Sub-network(LIS) to replace Ethernet local LAN segments.

## **ISP**

Internet service provider. A company that allows home and corporate users to connect to the Internet.

## **LAN**

Local area network. A limited distance (typically under a few kilometers or a couple of miles) high-speed network (typically 4 to 100 Mbps) that supports many computers.

## **MAC**

Media Access Control Layer. A sub-layer of the Data Link Layer (Layer 2) of the ISO OSI Model responsible for media control.

## **MTU**

Maximum Transmission Unit

## **NAT**

Network Address Translator as defined by RFC 1631. Enables a LAN to use one set of IP address for internal traffic. A NAT box located where the LAN meets the Internet provides the necessary IP address translation. This helps provide a sort of firewall and allow for a wider address range to be used internally without danger of conflict.

## **PPP**

Point-to-Point-Protocol. The successor to SLIP, PPP provides router-to-router and host-to-network connections over both synchronous and asynchronous circuits.

## **PPPoA (RFC 2364)**

The Point-to-Point Protocol(PPP) provides a standard method for transporting multi-protocol datagrams over point-to-point links. This document describes the use of ATM Adaptation Layer 5 (AAL5) for framing PPP encapsulated packets.



## **PPPoE (RFC 2516)**

This document describes how to build PPP sessions and encapsulate PPP packets over Ethernet. PPP over Ethernet (PPPoE) provides the ability to connect a network of hosts over a simple bridging access device to a remote Access Concentrator.

## **PVC**

Permanent Virtual Circuit. Connection-oriented permanent leased line circuit between end-stations on a network over a separate ATM circuit.

## **RFC**

Request for Comments. The document series, begun in 1969, which describes the Internet suite of protocols and related experiments. Not all RFCs describe Internet standards, but all Internet standards are written up as RFCs

## **RFC 1483**

Multi-protocol encapsulation over AAL-5. Two encapsulation methods for carrying network interconnect traffic over ATM AAL-5. The first method allows multiplexing of multiple protocols over a single ATM virtual circuit. The protocol of a carried PDU is identified by prefixing the PDU by an IEEE 802.2 Logical Link Control (LLC) header. This method is in the following called "LLC Encapsulation". The second method does higher-layer protocol multiplexing implicitly by ATM Virtual Circuits (VCs). It is in the following called "VC Based Multiplexing".

## **Router**

A system responsible for making decisions about which of several paths network (or Internet) traffic will follow. To do this, it uses a routing protocol to gain information about the network and algorithms to choose the best route based on several criteria known as "routing metrics.

## **Spanning Tree**

Spanning-Tree Bridge Protocol (STP). Part of an IEEE standard. A mechanism for detecting and preventing loops from occurring in a multi-bridged environment. When bridges connect three or more LAN segments, a loop can occur. Because a bridge forwards all packets that are not recognized as being local, some packets can circulate for long periods of time, eventually degrading system performance. This algorithm ensures only one path connects any pair of stations, selecting one bridge as the 'root' bridge, with the highest priority one as identifier, from which all paths should radiate.

## **TELNET**

The virtual terminal protocol in the Internet suite of protocols. Allows users of one host to log into a remote host and act as normal terminal users of that host.

## **VCI**

Virtual Circuit Identifier. Part of the ATM cell header, a VCI is a tag indicating the channel over which a cell will travel. The VCI of a cell can be changed as it moves between switches via Signaling.

**VPI**

Virtual Path Identifier. Part of the ATM cell header, a VPI is a pipe for a number of Virtual Circuits.

**WAN**

Wide area network. A data communications network that spans any distance and is usually provided by a public carrier (such as a telephone company or service provider)

# Introduction of the Web Configuration

## Web Configuration Overview

The embedded web configuration allows you to manage WBR-3601 Router from anywhere through a browser such as Microsoft Internet Explorer or Netscape Navigator. Use Internet Explorer 6.0 and later or Netscape Navigator 7.0 and later versions with JavaScript enabled. It is recommended that you set your screen resolution to 1024 by 768 pixels

## Accessing WBR-3601 Router Web Configuration

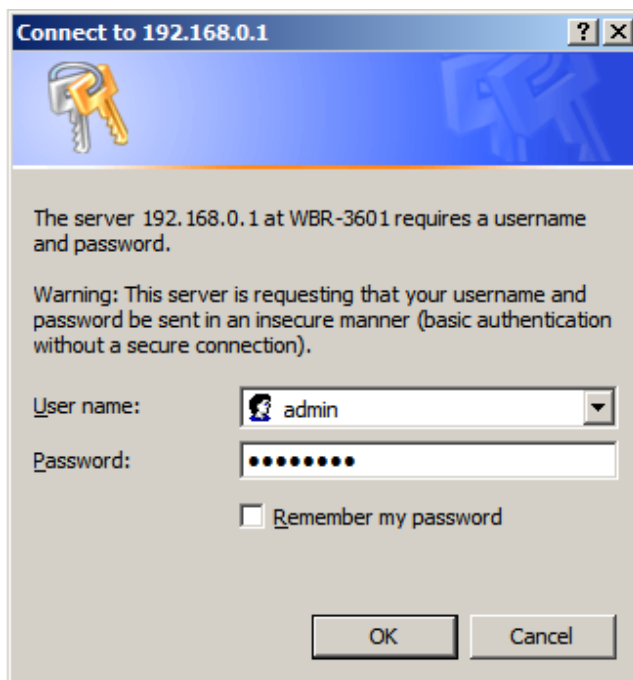
**Step 1.** Make sure your WBR-3601 Router is properly connected

**Step 2.** Prepare your computer/computer network to connect to the Router

**Step 3.** Launch your web browser.

**Step 4.** Type "192.168.0.1" .

**Step 5.** Enter the user name ("admin" is the default), password ("password" is the default) and click OK.



Step 6. You should now see the **Status** screen.

**levelone** WBR-3601

**Status** | Quick Start | Interface Setup | Advanced Setup | Access Management | Maintenance | **Status** | Help

Device Info | System Log | Statistics

---

**Device Information**

Firmware Version : LevelOne(P2F\_85)\_A01\_(211650\_310250)  
 MAC Address : 00:aa:bb:01:23:45

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**LAN**

IP Address : 192.168.0.1  
 Subnet Mask : 255.255.255.0  
 DHCP Server : Enabled

---

**WAN**

Virtual Circuit :    
 Status : Not Connected  
 Connection Type : PPPoE  
 IP Address : 0.0.0.0  
 Subnet Mask : 0.0.0.0  
 Default Gateway : 0.0.0.0  
 DNS Server : 0.0.0.0  
 NAT : Enabled

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**ADSL**

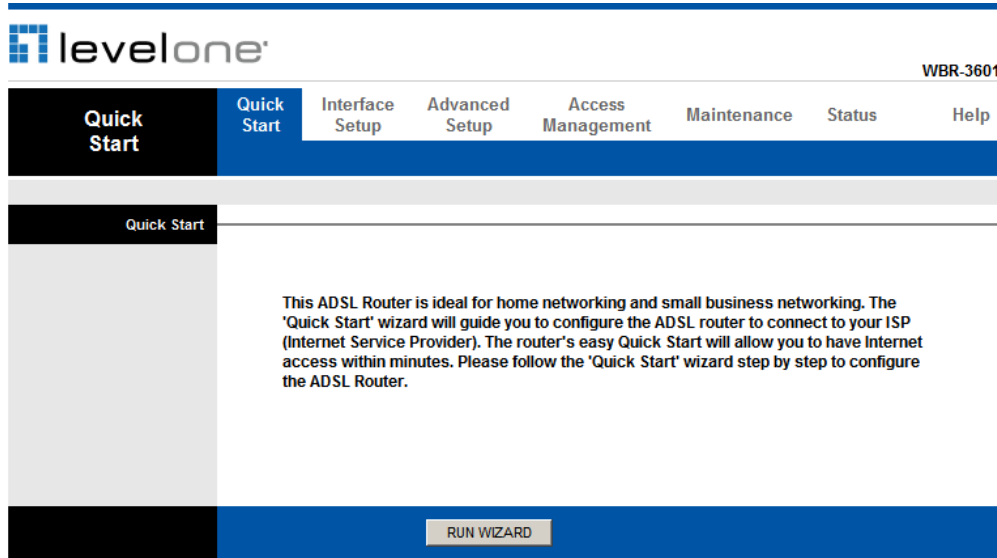
ADSL Firmware Version : FwVer:3.10.25.0\_TC3085 HwVer:T14.F7\_3.0  
 Line State : Down  
 Modulation : N/A  
 Annex Mode : N/A

	Downstream	Upstream	
SNR Margin :	N/A	N/A	db
Line Attenuation :	N/A	N/A	db
Data Rate :	N/A	N/A	kbps

## Quick Start Guide

You can use "**Quick Start**" to setup the router as follows, and the router will connect to the Internet via ADSL line.

Click "**Quick Start**" to get into the quick setup procedures.



The screenshot shows the LevelOne WBR-3601 web interface. At the top left is the LevelOne logo. To the right of the logo is the model number "WBR-3601". Below the logo is a navigation menu with the following items: "Quick Start", "Interface Setup", "Advanced Setup", "Access Management", "Maintenance", "Status", and "Help". The "Quick Start" item is highlighted in a dark blue box. Below the navigation menu is a large grey area with the following text: "This ADSL Router is ideal for home networking and small business networking. The 'Quick Start' wizard will guide you to configure the ADSL router to connect to your ISP (Internet Service Provider). The router's easy Quick Start will allow you to have Internet access within minutes. Please follow the 'Quick Start' wizard step by step to configure the ADSL Router." At the bottom of the page is a blue bar with a "RUN WIZARD" button.

Click "**RUN WIZARD**" to start up this procedure.



### Quick Start

The Wizard will guide you through these four quick steps. Begin by clicking on **NEXT**.

- Step 1. Set your new password
- Step 2. Choose your time zone
- Step 3. Set your Internet connection
- Step 4. Save settings of this ADSL Router

**NEXT** **EXIT**

**Step 1** – Please click "**Next**" to setup your new administrator's password.



### Quick Start - Password

You may change the **admin** account password by entering in a new password. Click **NEXT** to continue.

New Password :

Confirmed Password :

**Step 2** – Please click "**Next**" to setup your time zone.



### Quick Start - Time Zone

Select the appropriate time zone for your location and click **NEXT** to continue.

**Step 3** – Please click "**Next**" to setup your Internet connection type. You can have this information from your Internet Service Provider.



### Quick Start - ISP Connection Type

Select the Internet connection type to connect to your ISP. Click **NEXT** to continue.

- Dynamic IP Address      Choose this option to obtain a IP address automatically from your ISP.
- Static IP Address      Choose this option to set static IP information provided to you by your ISP.
- PPPoE/PPPoA      Choose this option if your ISP uses PPPoE/PPPoA. (For most DSL users)
- Bridge Mode      Choose this option if your ISP uses Bridge Mode.

BACK NEXT EXIT

**Step 4** - Enter the connection information provided by your ISP and click "**Next**".



### Quick Start - PPPoE/PPPoA

Enter the PPPoE/PPPoA information provided to you by your ISP. Click **NEXT** to continue.

Username:

Password:

VPI:  (0~255)

VCI:  (1~65535)

Connection Type:  ▼

BACK NEXT EXIT

**Step 5** - Enter the connection information provided by your ISP and click "**Next**".



### Quick Start Complete !!

The Setup Wizard has completed. Click on **BACK** to modify changes or mistakes. Click **NEXT** to save the current settings.

BACK NEXT EXIT

**Step 6** – Please click "**CLOSE**" to finish Quick Start.



### Quick Start Completed !!

Saved Changes.

CLOSE



# Interface Setup

## Internet Configuration

Go to **Interface Setup -> Internet**. To add or delete Internet connection settings, these information are provided by the ISP.

The screenshot shows the LevelOne network management interface. At the top left is the LevelOne logo. On the right, the device ID 'WBR-3601' is displayed. Below the logo is a navigation menu with tabs: 'Interface' (selected), 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Access Management', 'Maintenance', 'Status', and 'Help'. Under the 'Interface Setup' tab, there are sub-tabs for 'Internet', 'LAN', and 'Wireless'. The main content area is divided into three sections: 'ATM VC', 'QoS', and 'Encapsulation'. The 'ATM VC' section includes a 'Virtual Circuit' dropdown set to 'PVC0', a 'PVCs Summary' button, and a 'Status' section with 'Activated' selected. Below this are input fields for 'VPI' (8) and 'VCI' (35). The 'QoS' section has an 'ATM QoS' dropdown set to 'UBR', and input fields for 'PCR' (0), 'SCR' (0), and 'MBS' (0). The 'Encapsulation' section contains radio buttons for 'ISP' configuration: 'Dynamic IP Address', 'Static IP Address', 'PPPoA/PPPoE' (selected), and 'Bridge Mode'.

levelone WBR-3601

Interface Quick Start Interface Setup Advanced Setup Access Management Maintenance Status Help

Internet LAN Wireless

ATM VC

Virtual Circuit : PVC0 PVCs Summary

Status :  Activated  Deactivated

VPI : 8 (range: 0~255)

VCI : 35 (range: 1~65535)

QoS

ATM QoS : UBR

PCR : 0 cells/second

SCR : 0 cells/second

MBS : 0 cells

Encapsulation

ISP :  Dynamic IP Address  
 Static IP Address  
 PPPoA/PPPoE  
 Bridge Mode

## WAN Configuration

Go to **Interface Setup -> Internet**. The router can be connected to your service provider in any of the following ways.

**Dynamic IP Address:** Obtain an IP address automatically from your service provider.

**Static IP Address:** Uses a static IP address. Your service provider gives a static IP address to access Internet services.

**PPPoE:** PPP over Ethernet is a common connection method used for xDSL

**PPPoA:** PPP over ATM is a common connection method used for xDSL

**Bridge:** Bridge mode is a common connection method used for xDSL modem.

	ISP : <input type="radio"/> Dynamic IP Address <input type="radio"/> Static IP Address <input checked="" type="radio"/> PPPoA/PPPoE <input type="radio"/> Bridge Mode
<b>PPPoE/PPPoA</b>	
<b>Connection Setting</b>	Servicename : <input type="text"/> Username : <input type="text" value="admin"/> Password : <input type="password" value="****"/> Encapsulation : <input type="text" value="PPPoE LLC"/> Bridge Interface : <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated
	Connection : <input checked="" type="radio"/> Always On (Recommended) <input type="radio"/> Connect On-Demand (Close if idle for <input type="text" value="0"/> minutes) <input type="radio"/> Connect Manually TCP MSS Option : TCP MSS(0:default) <input type="text" value="0"/> bytes
<b>IP Address</b>	Get IP Address : <input type="radio"/> Static <input checked="" type="radio"/> Dynamic Static IP Address : <input type="text" value="0.0.0.0"/> IP Subnet Mask : <input type="text" value="0.0.0.0"/> Gateway : <input type="text" value="0.0.0.0"/> NAT : <input type="text" value="Enable"/> Default Route : <input checked="" type="radio"/> Yes <input type="radio"/> No TCP MTU Option : TCP MTU(0:default) <input type="text" value="0"/> bytes Dynamic Route : <input type="text" value="RIP1"/> Direction : <input type="text" value="Both"/> Multicast : <input type="text" value="Disabled"/> MAC Spoofing : <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled <input type="text" value="00:00:00:00:00:00"/>
	<input type="button" value="SAVE"/>

## LAN Configuration

Go to **Interface -> LAN** to set up your LAN configurations.

**IP Address:** The local IP address of this device. The computers on your network must use the LAN IP address of your product as their Default Gateway. You can change it if necessary.

**DHCP:** Set the DHCP mode of the WBR-3601.

**Starting IP Address:** If DHCP is Enabled, then the IP address range that will be allocated by the WBR-3601.

The screenshot displays the LevelOne WBR-3601 web interface for LAN configuration. The top navigation bar includes 'Interface', 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Access Management', 'Maintenance', 'Status', and 'Help'. The 'Interface Setup' tab is active, with sub-tabs for 'Internet', 'LAN', and 'Wireless'. The 'LAN' sub-tab is selected.

The configuration is organized into sections:

- Router Local IP:** IP Address: 192.168.0.1; IP Subnet Mask: 255.255.255.0; Dynamic Route: RIP2-B (Direction: None); Multicast: Disabled; IGMP Snoop: Disabled (radio button).
- DHCP:** DHCP: Enabled (radio button).
- DHCP Server:** Starting IP Address: 192.168.0.100; IP Pool Count: 32; Lease Time: 259200 seconds (0 sets to default value of 259200). A 'Current Pool Summary' button is present.
- DNS:** DNS Relay: Use Auto Discovered DNS Server Only (dropdown); Primary DNS Server: N/A; Secondary DNS Server: N/A.

At the bottom, there are 'SAVE' and 'CANCEL' buttons.

## Wireless Settings

Go to **Interface -> Wireless** to setup the wireless parameters.

### SSID

The identifier for the network. You can change the SSID. Only devices with the same SSID can interconnect.

### Channel ID

The channel number is used for wireless networking. The channel setting of the wireless devices within a network should be the same.

**levelone** WBR-3601

**Interface** | Quick Start | **Interface Setup** | Advanced Setup | Access Management | Maintenance | Status | Help

Internet | LAN | **Wireless**

---

**Access Point Settings**

Access Point :  Activated  Deactivated

Channel : MALAYSIA 06 Current Channel: 6

Transmit Power : High

Beacon Interval(ms) : 100 (range: 20~1000)

RTS/CTS Threshold : 2347 (range: 1500~2347)

Fragmentation Threshold (bytes) : 2346 (range: 256~2346, even numbers only)

DTIM(ms) : 1 (range: 1~255)

802.11 b/g : 802.11b+g

---

**Multiple SSIDs Settings**

SSID Index : 1

Broadcast SSID :  Yes  No

SSID : WBR-3601

Authentication Type : WPA2-PSK

---

**WPA-PSK**

Encryption : AES

Pre-Shared Key : levelone (8~63 ASCII characters or 64 hexadecimal characters)

---

**Wireless MAC Address Filter**

Active :  Activated  Deactivated

Action : Allow Association the follow Wireless LAN station(s) association.

Mac Address #1 : 00:00:00:00:00:00

Mac Address #2 : 00:00:00:00:00:00

Mac Address #3 : 00:00:00:00:00:00

Mac Address #4 : 00:00:00:00:00:00

Mac Address #5 : 00:00:00:00:00:00

Mac Address #6 : 00:00:00:00:00:00

Mac Address #7 : 00:00:00:00:00:00

Mac Address #8 : 00:00:00:00:00:00

SAVE CANCEL

## Wireless Security

Go to **Interface -> Wireless** to setup the wireless security.

The Authentication type supports “shared key WEP 64bits”, “shared key WEP 128bits”, “WPA-PSK” and “WPA2-PSK”.

<b>Multiple SSIDs Settings</b>	
SSID Index :	1
Broadcast SSID :	<input checked="" type="radio"/> Yes <input type="radio"/> No
SSID :	WBR-3601
Authentication Type :	WEP-128Bits
<b>WEP</b>	
WEP 64-bits :	For each key, please enter either (1) 5 characters excluding symbols, or (2) 10 characters ranging from 0-9, a, b, c, d, e, f.
WEP 128-bits :	For each key, please enter either (1) 13 characters excluding symbols, or (2) 26 characters ranging from 0-9, a, b, c, d, e, f.
<input checked="" type="radio"/> Key#1 :	0x00000000000000000000000000000000
<input type="radio"/> Key#2 :	0x00000000000000000000000000000000
<input type="radio"/> Key#3 :	0x00000000000000000000000000000000
<input type="radio"/> Key#4 :	0x00000000000000000000000000000000

<b>Multiple SSIDs Settings</b>	
SSID Index :	1
Broadcast SSID :	<input checked="" type="radio"/> Yes <input type="radio"/> No
SSID :	WBR-3601
Authentication Type :	WPA2-PSK
<b>WPA-PSK</b>	
Encryption :	AES
Pre-Shared Key :	levelone (8-63 ASCII characters or 64 hexadecimal characters)

## Wireless MAC Address Filter

Go to **Interface -> Wireless** to setup the wireless MAC Address Filter.

This function can be used to allow or deny access to certain wireless clients based on their MAC Address.

# Advanced Setup

## Routing Table

Go to **Advanced Setup -> Routing** to see the Routing Table.

The Routing table allows you to see how many routings on your routing table and interface information.

The screenshot shows the LevelOne WBR-3601 web interface. The top navigation bar includes 'Advanced', 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Access Management', 'Maintenance', 'Status', and 'Help'. Under 'Advanced Setup', there are sub-menus for 'Routing', 'NAT', 'QoS', 'VLAN', 'ADSL', and 'Firewall'. The 'Routing Table List' section contains a table with the following data:

#	Dest IP	Mask	Gateway IP	Metric	Device	Use	Edit	Drop
1	192.168.0.0	24	192.168.0.1	1	enet0	9504		
2	default	0	Node1	2	Idle	0		

Below the table is an 'ADD ROUTE' button.

## Static Routing

Go to **Advanced Setup -> Routing -> Add Route** to setup static route features.

The static routing function determines the path that router follows over your network before and after it passes through your router. You can use static routing to allow different IP domain users to access the Internet through this device.

The screenshot shows the LevelOne WBR-3601 web interface for configuring a static route. The navigation bar is the same as in the previous screenshot. The 'Static Route' section contains the following configuration fields:

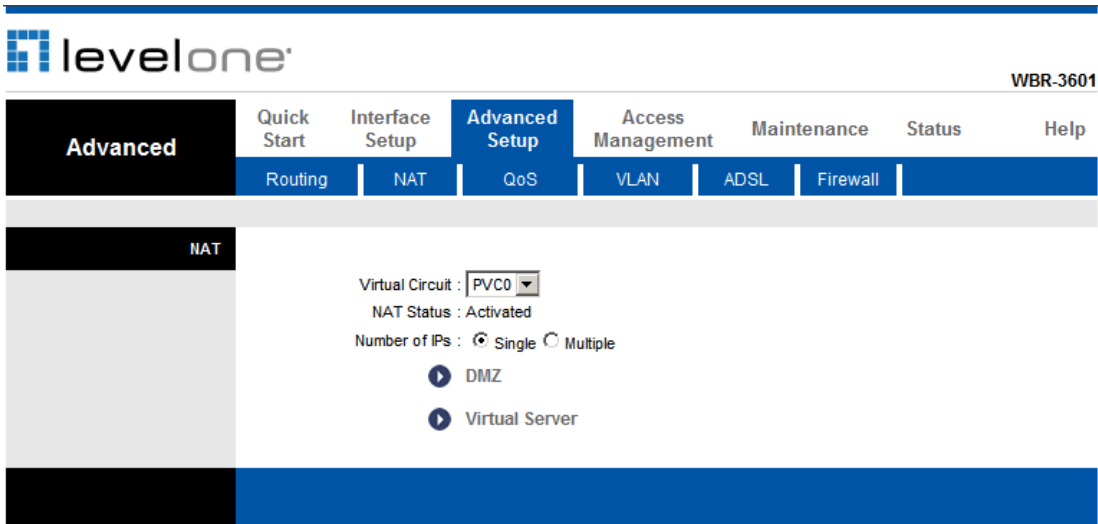
- Destination IP Address: 0.0.0.0
- IP Subnet Mask: 0.0.0.0
- Gateway IP Address: 0.0.0.0 (with a dropdown menu set to PVC0)
- Metric: 0
- Announced in RIP: Yes

At the bottom of the configuration area are buttons for 'SAVE', 'DELETE', 'BACK', and 'CANCEL'.

## NAT Setting

Go to **Advanced Setup->NAT** to setup the NAT features.

Network Address Translation (NAT) allows multiple users at your local site to access the Internet through a single public IP address or multiple public IP addresses. NAT can also prevent hacker attacks by mapping local addresses to public addresses for key services such as the Web or FTP.



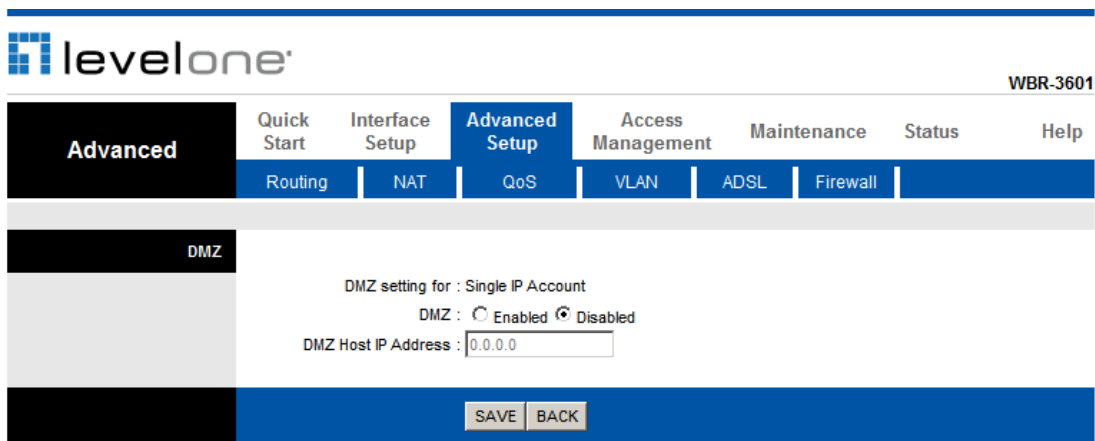
The screenshot shows the LevelOne web interface. At the top left is the LevelOne logo, and at the top right is the model number WBR-3601. Below the logo is a navigation menu with tabs for 'Advanced', 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Access Management', 'Maintenance', 'Status', and 'Help'. The 'Advanced Setup' tab is selected, and within it, the 'NAT' sub-tab is active. The main content area is titled 'NAT' and contains the following settings: 'Virtual Circuit' is set to 'PVC0' (indicated by a dropdown arrow), 'NAT Status' is 'Activated', and 'Number of IPs' has 'Single' selected with a radio button. Below these are two expandable sections: 'DMZ' and 'Virtual Server', each with a right-pointing arrow icon.

## DMZ Setting

Go to **Advanced Setup ->NAT -> DMZ** to set DMZ parameters.

If you have a local client PC that cannot run an Internet application properly from behind the NAT firewall, you can open the client up to unrestricted two-way Internet access by defining a virtual DMZ Host.

Note that this DMZ Host will not be protected by the router's firewall.



The screenshot shows the LevelOne web interface with the 'DMZ' sub-tab selected under 'Advanced Setup'. The main content area is titled 'DMZ' and contains the following settings: 'DMZ setting for : Single IP Account', 'DMZ' is set to 'Disabled' (indicated by a selected radio button), and 'DMZ Host IP Address' is set to '0.0.0.0' in a text input field. At the bottom of the page, there are two buttons: 'SAVE' and 'BACK'.

## Virtual Server

Go to **Advanced Setup** ->**NAT** -> **Virtual Server** to set virtual server (also known as Port Mapping).

You can configure the router as a virtual server so that remote users accessing services such as the Web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port numbers), the router redirects the external service request to the appropriate server (located at another internal IP address). For some applications, you need to assign a set or a range of ports (example 4000-5000) to a specified local machine to route the packets. The router allows the user to configure the needed port mappings to suit such applications.



WBR-3601

Advanced

Quick Start
Interface Setup
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Routing
NAT
QoS
VLAN
ADSL
Firewall

Virtual Server

Virtual Server for : Single IP Account

Rule Index :

Application :

Protocol :

Start Port Number :

End Port Number :

Local IP Address :

Virtual Server Listing

Rule	Application	Protocol	Start Port	End Port	Local IP Address
1	-	-	0	0	0.0.0.0
2	-	-	0	0	0.0.0.0
3	-	-	0	0	0.0.0.0
4	-	-	0	0	0.0.0.0
5	-	-	0	0	0.0.0.0
6	-	-	0	0	0.0.0.0
7	-	-	0	0	0.0.0.0
8	-	-	0	0	0.0.0.0
9	-	-	0	0	0.0.0.0
10	-	-	0	0	0.0.0.0
11	-	-	0	0	0.0.0.0
12	-	-	0	0	0.0.0.0
13	-	-	0	0	0.0.0.0
14	-	-	0	0	0.0.0.0
15	-	-	0	0	0.0.0.0
16	-	-	0	0	0.0.0.0

SAVE
DELETE
BACK
CANCEL



## QoS Setting

Go to **Advanced Setup** -> **QoS** to setup QoS features.

This option will provide better service of selected network traffic over various technologies by setting their priority on the network.

The QoS can be set based on the physical LAN ports or wireless interfaces.

Another method is based on the IP Address, Port or MAC Address of the network devices.



WBR-3601

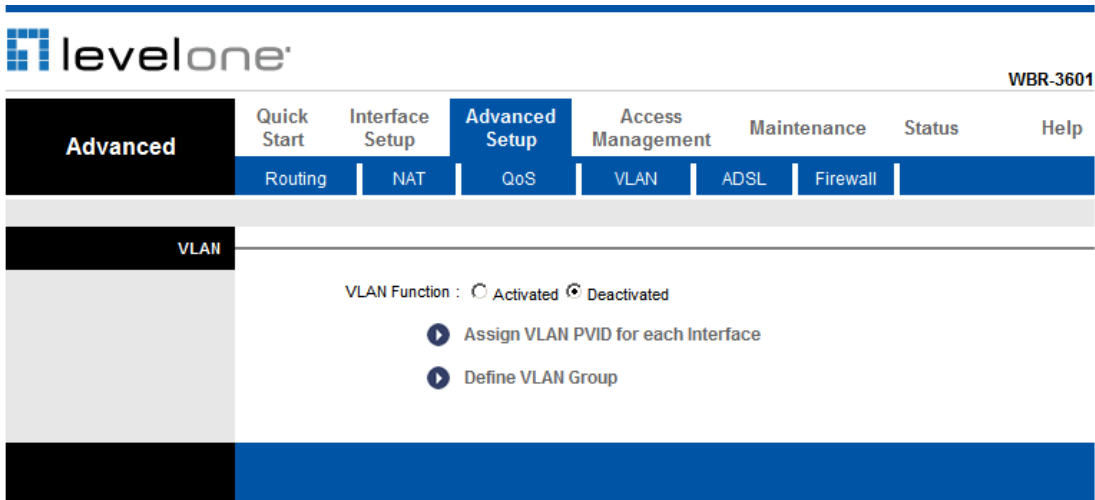
<b>Advanced</b>	Quick Start	Interface Setup	<b>Advanced Setup</b>	Access Management	Maintenance	Status	Help
	Routing	NAT	<b>QoS</b>	VLAN	ADSL	Firewall	

---

<b>Quality of Service</b>	
QoS : <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated	
Summary : <a href="#">QoS Settings Summary</a>	
<b>Rule</b>	<p>Rule Index : <input type="text" value="1"/></p> <p>Active : <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated</p> <p>Application : <input type="text"/></p> <p>Physical Ports : <input type="checkbox"/> WLAN <input type="checkbox"/> Enet1 <input type="checkbox"/> Enet2 <input type="checkbox"/> Enet3 <input type="checkbox"/> Enet4</p> <p>Destination MAC : <input type="text"/></p> <p>IP : <input type="text"/></p> <p>Mask : <input type="text"/></p> <p>Port Range : <input type="text"/> ~ <input type="text"/></p> <p>Source MAC : <input type="text"/></p> <p>IP : <input type="text"/></p> <p>Mask : <input type="text"/></p> <p>Port Range : <input type="text"/> ~ <input type="text"/></p> <p>Protocol ID : <input type="text"/></p> <p>Vlan ID Range : <input type="text"/> ~ <input type="text"/></p> <p>IPP/DS Field : <input checked="" type="radio"/> IPP/TOS <input type="radio"/> DSCP</p> <p>IP Precedence Range : <input type="text"/> ~ <input type="text"/></p> <p>Type of Service : <input type="text"/></p> <p>DSCP Range : <input type="text"/> ~ <input type="text"/> (Value Range: 0 ~ 63)</p> <p>802.1p : <input type="text"/> ~ <input type="text"/></p>
<b>Action</b>	<p>IPP/DS Field : <input type="radio"/> IPP/TOS <input checked="" type="radio"/> DSCP</p> <p>IP Precedence Remarking : <input type="text"/></p> <p>Type of Service Remarking : <input type="text"/></p> <p>DSCP Remarking : <input type="text"/> (Value Range: 0 ~ 63)</p> <p>802.1p Remarking : <input type="text"/></p> <p>Queue # : <input type="text"/></p>
<p><input type="button" value="ADD"/> <input type="button" value="DELETE"/> <input type="button" value="CANCEL"/></p>	

## VLAN

Go to **Advanced Setup -> VLAN** to enable VLAN features. Virtual LAN (VLAN) is a group of devices on one or more LANs that are configured so that they can communicate as if they were attached to the same wire, when in fact they are located on a number of different LAN segments. Because VLANs are based on logical instead of physical connections, it is very flexible for user/host management, bandwidth allocation and resource optimization..

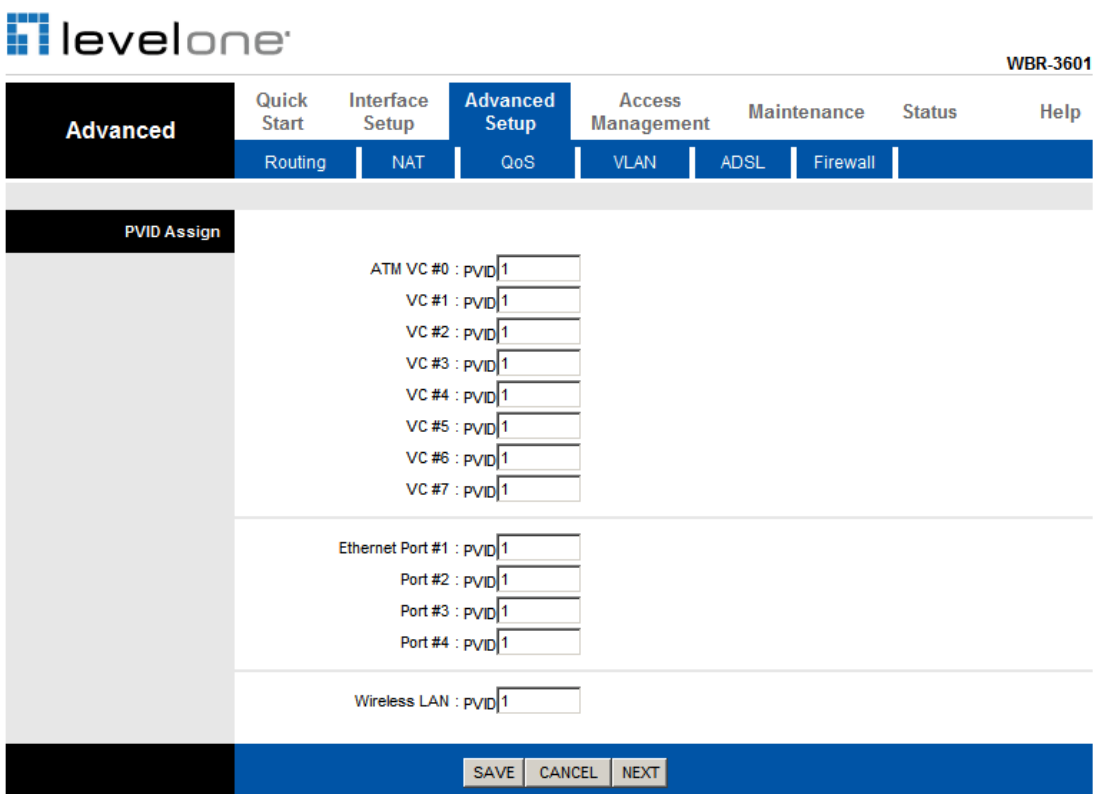


The screenshot shows the LevelOne WBR-3601 web interface. The top navigation bar includes 'Advanced', 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Access Management', 'Maintenance', 'Status', and 'Help'. Under 'Advanced Setup', there are sub-menus for 'Routing', 'NAT', 'QoS', 'VLAN', 'ADSL', and 'Firewall'. The 'VLAN' sub-menu is selected. The main content area is titled 'VLAN' and shows 'VLAN Function :  Activated  Deactivated'. Below this, there are two links: 'Assign VLAN PVID for each Interface' and 'Define VLAN Group'.

## VLAN PVID

Go to **Advanced Setup -> VLAN-> Assign VLAN PVID for each interface** to setup VLAN PVID features. Each physical port has a default VID called PVID (Port VID). PVID is assigned to untagged frames or priority tagged frames (frames with null (0) VID) received on this port.

Network devices on different VLAN groups will not be able to connect to each other.



The screenshot shows the LevelOne WBR-3601 web interface with the 'PVID Assign' configuration page. The navigation bar is the same as in the previous screenshot. The main content area is titled 'PVID Assign' and contains several input fields for assigning PVID values to different interfaces. The fields are: 'ATM VC #0 : PVID' (value: 1), 'VC #1 : PVID' (value: 1), 'VC #2 : PVID' (value: 1), 'VC #3 : PVID' (value: 1), 'VC #4 : PVID' (value: 1), 'VC #5 : PVID' (value: 1), 'VC #6 : PVID' (value: 1), 'VC #7 : PVID' (value: 1), 'Ethernet Port #1 : PVID' (value: 1), 'Port #2 : PVID' (value: 1), 'Port #3 : PVID' (value: 1), 'Port #4 : PVID' (value: 1), and 'Wireless LAN : PVID' (value: 1). At the bottom of the page, there are three buttons: 'SAVE', 'CANCEL', and 'NEXT'.

## VLAN Group

Go to **Advanced Setup -> VLAN-> Define VLAN Group** to setup VLAN group features.

Network devices on different VLAN Groups will not be able to connect to each other.



WBR-3601

<b>Advanced</b>	Quick Start	Interface Setup	<b>Advanced Setup</b>	Access Management	Maintenance	Status	Help
	Routing	NAT	QoS	VLAN	ADSL	Firewall	

---

**VLAN Group Setting**

VLAN Index :

Active :  Yes  No

VLAN ID :  (Decimal)

Tagged

ATM VCs :

Port #	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0	1	2	3	4	5	6	7

Ethernet :

Port #	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	3	4	

Wireless LAN :

Tagged

Port #	<input checked="" type="checkbox"/>
0	

---

**VLAN Group Summary**

Group	Active	ID	VLAN Group Ports	VLAN Tagged Ports
1	Yes	1	e1,e2,e3,e4,w0,p0,p1,p2,p3,p4,p5,p6,p7	

p:pvc, e:ethernet, and w:wlan

## Firewall

Go to **Advanced Setup ->Firewall** to setup Firewall features. Select this option can automatically detect and block Denial of Service (DoS) attacks, such as Ping of Death, SYN Flood, Port Scan and Land Attack.



WBR-3601

<b>Advanced</b>	Quick Start	Interface Setup	<b>Advanced Setup</b>	Access Management	Maintenance	Status	Help
	Routing	NAT	QoS	VLAN	ADSL	Firewall	

---

**Firewall**

Firewall :  Enabled  Disabled

SPI :  Enabled  Disabled

(WARNING: If You enabled SPI, all traffics initiated from WAN would be blocked, including DMZ, Virtual Server, and ACL WAN side.)

# Access Management

## ACL Setting

Go to **Access Management -> ACL** to enable remote management.

The user may remotely access the WBR-3601 Router once setting his IP as a Secure IP Address through selected applications. With the default IP 0.0.0.0, any client would be allowed to remotely access the WBR-3601 Router.

The screenshot shows the LevelOne WBR-3601 web interface. The top navigation bar includes 'Access Management', 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Access Management', 'Maintenance', 'Status', and 'Help'. The 'Access Management' menu is expanded, showing 'ACL', 'Filter', 'SNMP', 'UPnP', 'DDNS', and 'CWMP'. The 'ACL' option is selected. The main content area is titled 'Access Control Setup' and shows the following configuration:

ACL :  Activated  Deactivated

Access Control Editing

ACL Rule Index : 1

Active :  Yes  No

Secure IP Address : 0.0.0.0 ~ 0.0.0.0 (0.0.0.0 ~ 0.0.0.0 means all IPs)

Application : Web

Interface : Both

Access Control Listing


Index	Active	Secure IP Address	Application	Interface
-------	--------	-------------------	-------------	-----------

At the bottom, there are buttons for 'SAVE', 'DELETE', and 'CANCEL'.

## IP Filtering

Go to **Access Management -> Filter** to block packets from the WAN interface.

The router provides extensive firewall protection by restricting connection parameters to limit the risk of intrusion and defending against a wide array of common hacker attacks. The user can set different IP filter rules of a given protocol (TCP, UDP or ICMP) and a specific direction (incoming, outgoing, or both) to filter the packets.


WBR-3601

Access Management
Quick Start
Interface Setup
Advanced Setup
Access Management
Maintenance
Status
Help

ACL
Filter
SNMP
UPnP
DDNS
CWMP

Filter

Filter Type

Filter Type Selection : IP / MAC Filter

---

IP / MAC Filter Set Editing

IP / MAC Filter Set Index : 1

Interface : PVC0

Direction : Both

---

IP / MAC Filter Rule Editing

IP / MAC Filter Rule Index : 1

Rule Type : IP

Active :  Yes  No

---

Source IP Address :  (0.0.0.0 means Don't care)

Subnet Mask :

Port Number :  (0 means Don't care)

---

Destination IP Address :  (0.0.0.0 means Don't care)

Subnet Mask :

Port Number :  (0 means Don't care)

---

Protocol : TCP

Rule Unmatched : Forward

---

IP / MAC Filter Listing

IP / MAC Filter Set Index 1      Interface -      Direction -

#	Active	Src Address/Mask	Dest IP/Mask	Src Port	Dest Port	Protocol	Unmatched
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-

SAVE
DELETE
CANCEL

## SNMP

Go to **Access Management** -> **SNMP** to setup SNMP feature **S**imple **N**etwork **M**anagement Protocol is used for exchanging information between network device.

**Get Community** : Select to set the password for the incoming Get- and GetNext requests from the management station.

**Set Community** : Select to set the password for incoming Set requests from the management station.

levelone WBR-3601

Access Management	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	ACL	Filter	SNMP	UPnP	DDNS	CWMP	

SNMP

Get Community :

Set Community :

SAVE

## DDNS

Go to **Access Management -> DDNS** to setup your DDNS parameters. Dynamic DNS allows you to update your dynamic IP address with one or many dynamic DNS services. So anyone can access your FTP or Web service on your computer using DNS-like address.

You will need to first create an account at a DDNS provider such as DynDNS ([www.dyndns.org](http://www.dyndns.org)).

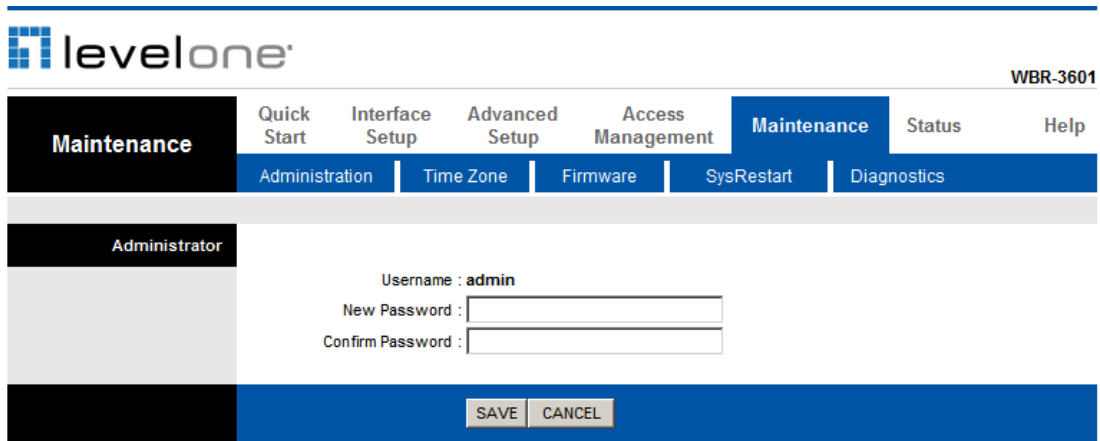
The screenshot shows the LevelOne web interface. At the top left is the LevelOne logo. At the top right is the text "WBR-3601". Below the logo is a navigation menu with the following items: "Access Management" (highlighted in black), "Quick Start", "Interface Setup", "Advanced Setup", "Access Management" (highlighted in blue), "Maintenance", "Status", and "Help". Below the navigation menu is a sub-menu with the following items: "ACL", "Filter", "SNMP", "UPnP", "DDNS" (highlighted in blue), and "CWMP". Below the sub-menu is a section titled "Dynamic DNS". The "Dynamic DNS" section contains the following configuration options: "Dynamic DNS :  Activated  Deactivated", "Service Provider : www.dyndns.org", "My Host Name :  Yes  No". At the bottom of the "Dynamic DNS" section is a "SAVE" button.

# Maintenance

## Admin Setting

Go to **Maintenance-> Administration** to set a new username and password to restrict management access to the router.

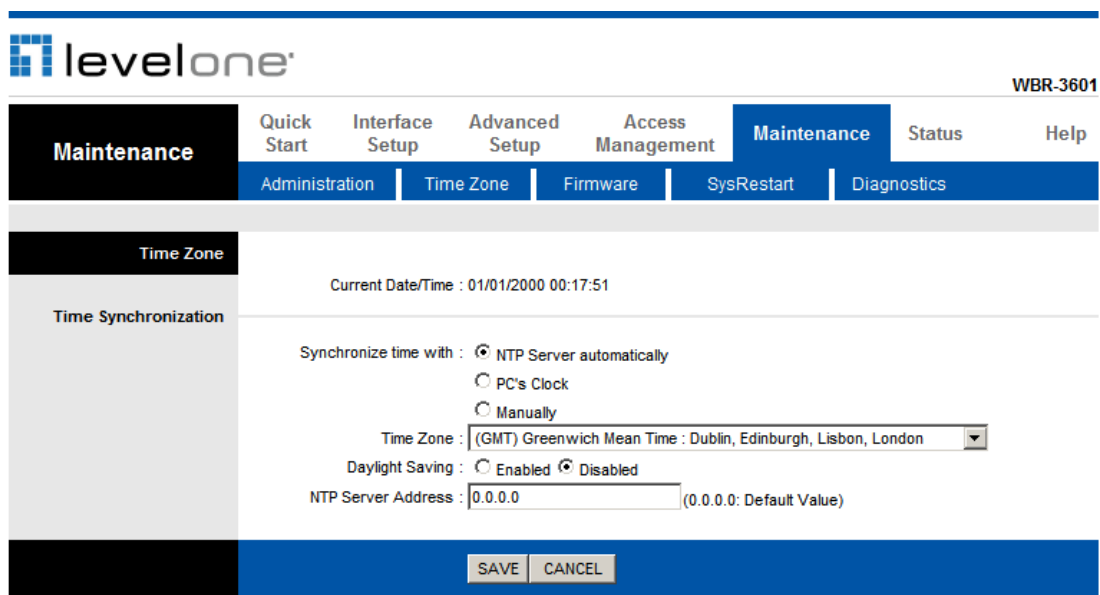
The default is **admin (Username)** and **password (Password)**



The screenshot shows the LevelOne WBR-3601 web interface. The top navigation bar includes 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Access Management', 'Maintenance', 'Status', and 'Help'. The 'Maintenance' menu is expanded to show 'Administration', 'Time Zone', 'Firmware', 'SysRestart', and 'Diagnostics'. The 'Administration' sub-menu is selected, leading to the 'Administrator' settings page. The page displays the current 'Username : admin' and two input fields for 'New Password' and 'Confirm Password'. At the bottom, there are 'SAVE' and 'CANCEL' buttons.

## System Time

Go to **Maintenance->Time Zone** and select system time as you wish.



The screenshot shows the LevelOne WBR-3601 web interface. The top navigation bar is the same as in the previous screenshot. The 'Maintenance' menu is expanded to show 'Administration', 'Time Zone', 'Firmware', 'SysRestart', and 'Diagnostics'. The 'Time Zone' sub-menu is selected, leading to the 'Time Zone' settings page. The page displays the 'Current Date/Time : 01/01/2000 00:17:51'. Under 'Time Synchronization', there are three radio button options: 'NTP Server automatically' (selected), 'PC's Clock', and 'Manually'. Below these is a 'Time Zone' dropdown menu showing '(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London'. There are also radio button options for 'Daylight Saving' with 'Enabled' and 'Disabled' (selected). At the bottom, there is an 'NTP Server Address' input field with the value '0.0.0.0' and a note '(0.0.0.0: Default Value)'. At the bottom of the page, there are 'SAVE' and 'CANCEL' buttons.

Connecting to a Network Time Protocol (NTP) server allows the router to synchronize the system clock to the global Internet. The synchronized clock in the router is used to record the security log and control client filtering.



## Firmware Update

Go to **Maintenance -> Firmware** to upgrade the firmware. The new firmware for your router can improve functionality and performance.

Enter the path and name of the upgrade file then click the **UPGRADE** button below. You will be prompted to confirm the upgrade.

The screenshot shows the LevelOne WBR-3601 web interface. The top navigation bar includes 'Maintenance', 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Access Management', 'Maintenance', 'Status', and 'Help'. Below this, a sub-menu shows 'Administration', 'Time Zone', 'Firmware', 'SysRestart', and 'Diagnostics'. The main content area is titled 'Firmware/Romfile Upgrade'. It displays the current firmware version as 'LevelOne(P2F\_85)\_A01\_(211650\_310250)'. There are two 'Browse...' buttons for 'New Firmware Location' and 'New Romfile Location'. A 'Romfile Backup' button is labeled 'ROMFILE SAVE'. A status message with a red warning icon states: 'Status : It might take several minutes, don't power off it during upgrading. Device will restart after the upgrade.' At the bottom, there is a large blue 'UPGRADE' button.

## System Restart

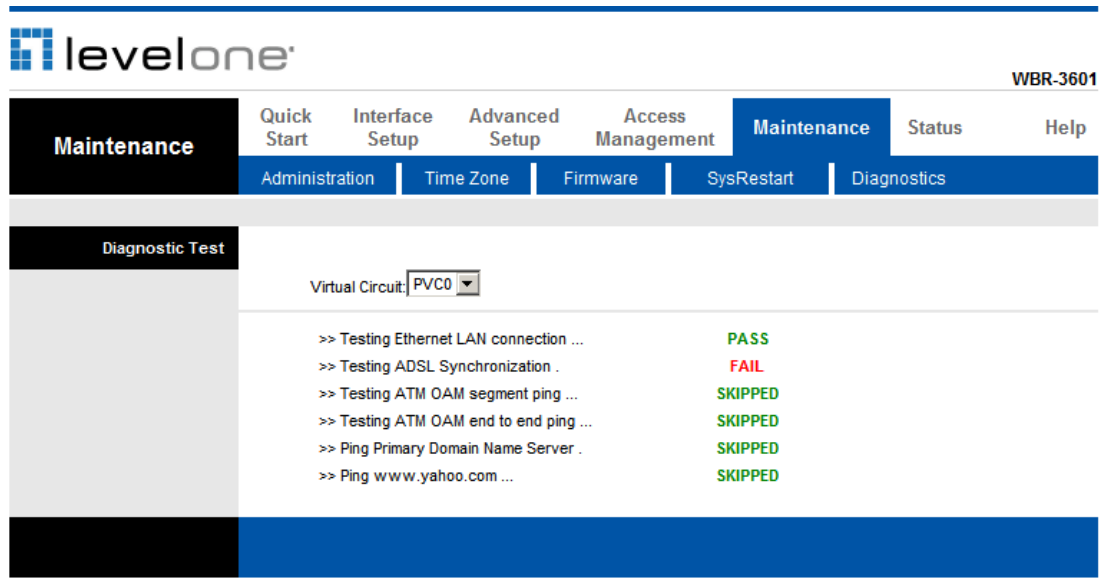
Go to **Maintenance -> SysRestart** restart the WBR-3601.

You can choose to restart with current saved settings, or reset to factory default settings.

The screenshot shows the LevelOne WBR-3601 web interface. The top navigation bar is identical to the previous screenshot. The sub-menu shows 'Administration', 'Time Zone', 'Firmware', 'SysRestart', and 'Diagnostics'. The main content area is titled 'System Restart'. It displays 'System Restart with :  Current Settings' and ' Factory Default Settings'. At the bottom, there is a large blue 'RESTART' button.

## Diagnostics

Go to **Maintenance -> Diagnostics** to do some basic tests to determine problems with your Internet connection.



levelone<sup>®</sup> WBR-3601

**Maintenance** | Quick Start | Interface Setup | Advanced Setup | Access Management | **Maintenance** | Status | Help

Administration | Time Zone | Firmware | SysRestart | Diagnostics

**Diagnostic Test**

Virtual Circuit: PVC0

>> Testing Ethernet LAN connection ...	PASS
>> Testing ADSL Synchronization .	FAIL
>> Testing ATM OAM segment ping ...	SKIPPED
>> Testing ATM OAM end to end ping ...	SKIPPED
>> Ping Primary Domain Name Server .	SKIPPED
>> Ping www.yahoo.com ...	SKIPPED

# Status

## Device Information

Go to **Status -> Device Info** and you can see the system information of the WBR-3601.

The screenshot displays the LevelOne WBR-3601 web interface. At the top left is the LevelOne logo. The top right corner shows the device model 'WBR-3601'. A navigation bar contains several tabs: 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Access Management', 'Maintenance', 'Status', and 'Help'. The 'Status' tab is active, and within it, the 'Device Info' sub-tab is selected. The main content area is divided into sections for different network interfaces:

- Device Information:** Shows 'Firmware Version : LevelOne(P2F\_85)\_A01\_(211650\_310250)' and 'MAC Address : 00:aa:bb:01:23:45'.
- LAN:** Shows 'IP Address : 192.168.0.1', 'Subnet Mask : 255.255.255.0', and 'DHCP Server : Enabled'.
- WAN:** Shows 'Virtual Circuit : PVC0', 'Status : Not Connected', 'Connection Type : PPPoE', 'IP Address : 0.0.0.0', 'Subnet Mask : 0.0.0.0', 'Default Gateway : 0.0.0.0', 'DNS Server : 0.0.0.0', and 'NAT : Enabled'.
- ADSL:** Shows 'ADSL Firmware Version : FwVer:3.10.25.0\_TC3085 HwVer:T14.F7\_3.0', 'Line State : Down', 'Modulation : N/A', and 'Annex Mode : N/A'. Below this, a table provides performance metrics:

	Downstream	Upstream	
SNR Margin :	N/A	N/A	db
Line Attenuation :	N/A	N/A	db
Data Rate :	N/A	N/A	kbps

## System Log

Go to **Status -> System Log** and you can see the system log file. Click **“Save Log”** to save system log file.

levelone<sup>®</sup> WBR-3601

**Status** Quick Start Interface Setup Advanced Setup Access Management Maintenance **Status** Help

Device Info System Log Statistics

**System Log**

```
1/1/2000 0:30:36> netMakeChannDial: err=-3001
rn_p=804fa120
1/1/2000 0:30:39> Last errorlog repeat 8 Times
1/1/2000 0:30:39> netMakeChannDial: err=-3001
rn_p=804fa120
1/1/2000 0:30:39> netMakeChannDial: err=-3001
rn_p=804fa120
1/1/2000 0:30:39> netMakeChannDial: err=-3001
rn_p=804fa120
1/1/2000 0:30:39> netMakeChannDial: err=-3001
rn_p=804fa120
1/1/2000 0:30:40> Last errorlog repeat 2 Times
1/1/2000 0:30:40> netMakeChannDial: err=-3001
rn_p=804fa120
```

CLEAR LOG SAVE LOG

## Statistics

Go to **Status-> Statistics** and select **Ethernet, ADSL or WLAN** interface. You can see the traffic Statistics of the selected interface.

levelone<sup>®</sup> WBR-3601

**Status** Quick Start Interface Setup Advanced Setup Access Management Maintenance **Status** Help

Device Info System Log Statistics

**Traffic Statistics**

Interface :  Ethernet  ADSL  WLAN

Transmit Statistics		Receive Statistics	
Transmit Frames	4049	Receive Frames	3655
Transmit Multicast Frames	107	Receive Multicast Frames	94
Transmit total Bytes	1285493	Receive total Bytes	456661
Transmit Collision	0	Receive CRC Errors	0
Transmit Error Frames	0	Receive Under-size Frames	0

REFRESH

# **Universal Plug-and-Play (UPnP)**

## **Universal Plug and Play Overview**

Universal Plug and Play (UPnP) is a distributed, open networking standard that uses TCP/IP for simple peer-to-peer network connectivity between devices. An UPnP device can dynamically join a network, obtain an IP address, convey its capabilities and learn about other devices on the network. In turn, a device can leave a network smoothly and automatically when it is no longer in use.

## **How do I know if I'm using UPnP?**

UPnP hardware is identified as an icon in the Network Connections folder (Windows XP). Each UPnP compatible device installed on your network will appear as a separate icon. Selecting the icon of a UPnP device will allow you to access the information and properties of that device.

## **NAT Traversal**

UPnP NAT traversal automates the process of allowing an application to operate through NAT. UPnP network devices can automatically configure network addressing, announce their presence in the network to other UPnP devices and enable exchange of simple product and service descriptions. NAT traversal allows the following:

- Dynamic port mapping
- Learning public IP addresses
- Assigning lease times to mappings

Windows Messenger is an example of an application that supports NAT traversal and UPnP. See the *Network Address Translation (NAT)* chapter for further information about NAT.

## **Cautions with UPnP**

The automated nature of NAT traversal applications in establishing their own services may present network security issues. Network information and configuration may also be obtained and modified by users in some network environments.

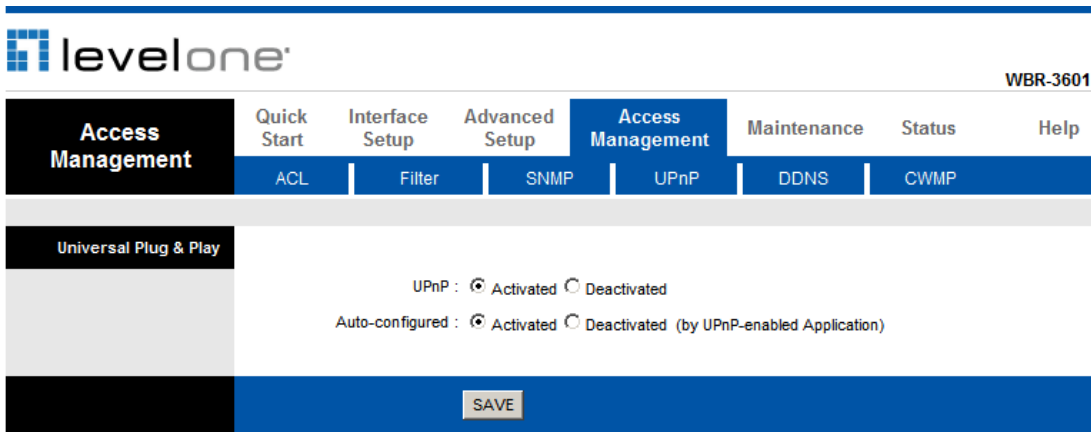
All UPnP-enabled devices may communicate freely with each other without additional configuration. Disable UPnP if this is not your intention.

*UPnP broadcasts are only allowed on the LAN.*

*See later sections for examples of installing UPnP in Windows XP and Windows Me as well as an example of using UPnP in Windows.*

## Configuring UPnP

From the Site Map in the main menu, click UPnP under Access Management to display the screen shown next.



The following table describes the labels in this screen.

LABEL	DESCRIPTION
UPnP	Select this checkbox to activate UPnP. Be aware that anyone could use a UPnP application to open the web configuration's login screen without entering  WBR-3601 Router's IP address (although you must still enter the password to access the web configuration).
Auto configured	Select this check box to allow UPnP-enabled applications to automatically configure WBR-3601 Router so that they can communicate through WBR-3601 Router, for example by using NAT traversal, UPnP applications automatically reserve a NAT forwarding port in order to communicate with another UPnP enabled device; this eliminates the need to manually configure port forwarding for the UPnP enabled application.
Apply	Click <b>Apply</b> to save your settings back to home screen.

# Troubleshooting

## Using LEDs to Diagnose Problems

The LEDs are useful aides for finding possible problem causes.

### Power LED

The PWR LED on the front panel does not light up.

STEPS	CORRECTIVE ACTION
1	Make sure that WBR-3601 Router's power adaptor is connected to WBR-3601 Router and plugged in to an appropriate power source. Use only the supplied power adaptor.
2	Check that WBR-3601 Router and the power source are both turned on and WBR-3601 Router is receiving sufficient power.
3	Turn the WBR-3601 Router off and on.
4	If the error persists, you may have a hardware problem. In this case, you should contact your vendor.

### LAN LED

The LAN LED on the front panel does not light up.

STEPS	CORRECTIVE ACTION
1	Check the Ethernet cable connections between your WBR-3601 Router and the computer or hub.
2	Check for faulty Ethernet cables.
3	Make sure your computer's Ethernet card is working properly.
4	If these steps fail to correct the problem, contact your local distributor for assistance.

### DSL LED ( ACT & LINK)

The DSL LED on the front panel does not light up.

STEPS	CORRECTIVE ACTION
1	Check the telephone wire and connections between the ADSL2+ Router DSL port and the wall jack.
2	Make sure that the telephone company has checked your phone line and set it up for DSL service.
3	Reset your ADSL line to reinitialize your link to the DSLAM.
4	If these steps fail to correct the problem, contact your local distributor for assistance.

### Telnet

I cannot telnet into WBR-3601 Router.

STEPS	CORRECTIVE ACTION
1	Check the LAN port and the other Ethernet connections.
2	Make sure you are using the correct IP address of WBR-3601 Router. Check the IP address of WBR-3601 Router.
3	Ping WBR-3601 Router from your computer. If you cannot ping WBR-3601 Router, check the IP addresses of WBR-3601 Router and your computer. Make sure your computer is set to get a dynamic IP address; or if you want to use a static IP address on your computer, make sure that it is on the same subnet as WBR-3601 Router.
4	Make sure you entered the correct password. The default password is "password".
5	If these steps fail to correct the problem, contact the distributor.

## Web Configuration

I cannot access the web configuration.

STEPS	CORRECTIVE ACTION
1	Make sure you are using the correct IP address of WBR-3601 Router. Check the IP address of WBR-3601 Router.
2	Make sure that there is not a console session running.
3	Check that you have enabled web service access. If you have configured a secured client IP address, your computer's IP address must match it.
4	For WAN access, you must configure remote management to allow server access from the Wan (or all).
5	Your computer's and WBR-3601 Router's IP addresses must be on the same subnet for LAN access.
6	If you changed WBR-3601 Router's LAN IP address, then enter the new one as the URL.
7	Remove any filters in LAN or WAN that block web service.

The web configuration does not display properly.

STEPS	CORRECTIVE ACTION
1	Make sure you are using Internet Explorer 5.0 and later versions.
2	Delete the temporary web files and log in again. In Internet Explorer, click <b>Tools, Internet Options</b> and then click the <b>Delete Files ...</b> button. When a <b>Delete Files</b> window displays, select <b>Delete all offline content</b> and click <b>OK</b> . (Steps may vary depending on the version of your Internet browser.)

## Login Username and Password

I forgot my login username and/or password.

STEPS	CORRECTIVE ACTION
1	If you have changed the password and have now forgotten it, you will need to upload the default configuration file. This will erase all custom configurations and restore all of the factory defaults including the password.
2	Press the <b>RST</b> button for five seconds, and then release it. When the <b>LINK</b> LED begins to blink, the defaults have been restored and WBR-3601 Router restarts.
3	The default username is "admin". The default password is "password". The <b>Password</b> and <b>Username</b> fields are case-sensitive. Make sure that you enter the correct password and username using the proper casing.
4	It is highly recommended to change the default username and password. Make sure you store the username and password in a save place.

## LAN Interface

I cannot access WBR-3601 Router from the LAN or ping any computer on the LAN.

STEPS	CORRECTIVE ACTION
1	Check the Ethernet LEDs on the front panel. A LAN LED should be on if the port is connected to a computer or hub. If the LAN LEDs on the front panel are off, refer to <i>Section A.1.2</i> .
2	Make sure that the IP address and the subnet mask of WBR-3601 Router and your computer(s) are on the same subnet.



## WAN Interface

Initialization of the ADSL connection failed.

STEPS	CORRECTIVE ACTION
1	Check the cable connections between the ADSL port and the wall jack. The DSL LEDs on the front panel of WBR-3601 Router should be on.
2	Check that your VPI, VCI, type of encapsulation and type of multiplexing settings are the same as what you collected from your telephone company and ISP.
3	Restart WBR-3601 Router. If you still have problems, you may need to verify your VPI, VCI, type of encapsulation and type of multiplexing settings with the telephone company and ISP.

I cannot get a WAN IP address from the ISP.

STEPS	CORRECTIVE ACTION
1	The ISP provides the WAN IP address after authenticating you. Authentication may be through the user name and password, the MAC address or the host name.
2	The username and password apply to PPPoE and PPOA encapsulation only. Make sure that you have entered the correct <b>Service Type</b> , <b>User Name</b> and <b>Password</b> (be sure to use the correct casing).

## Internet Access

I cannot access the Internet.

STEPS	CORRECTIVE ACTION
1	Make sure WBR-3601 Router is turned on and connected to the network.
2	If the DSL LEDs are off, refer to <i>Section A.1.3</i> .
3	Verify your WAN settings.
4	Make sure you entered the correct user name and password.

Internet connection disconnects.

STEPS	CORRECTIVE ACTION
1	Check the schedule rules.
2	If you use PPPoA or PPPoE encapsulation, check the idle time-out setting.
3	Contact your ISP.

## Remote Node Connection

I cannot connect to a remote node or ISP.

STEPS	CORRECTIVE ACTION
1	Check WAN screen to verify that the username and password are entered properly.
2	Verify your login name and password for the remote node.
3	If these steps fail, you may need to verify your login and password with your ISP.