Installation and Operation Manual

PENTAGRAM Cerberus P6381-3

PENTAGRAM
THE PERFECT SIMPLICITY

The latest versions of manual, drivers and applications are available on www.pentagram.eu

2009-07-05

NOTE! Any information and technical data are subject to change without prior notification and/or indication in this manual.

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PENTAGRAM
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Introduction

The Cerberus P 6381-3 Wireless Router integrates 4-port Switch, firewall, NAT-router and Wireless AP. Its design is dedicated to Small Office/Home Office (SOHO) wireless network solutions. The Cerberus P 6381-3 Wireless Router will allow you to connect your network wirelessly better than ever, sharing Internet Access, files and fun, easily and securely.

The Cerberus P 6381-3 Wireless Router complies with the IEEE 802.11g/b standards. It is compatible with all IEEE 802.11g and IEEE 802.11b products.

Package Contents

1. PENTAGRAM Cerberus P 6381-3 router
2. Power adapter 12 V, 1 A
3. Ethernet cable (RJ-45)
4. CD
5. Quick Installation Guide

Product Overview

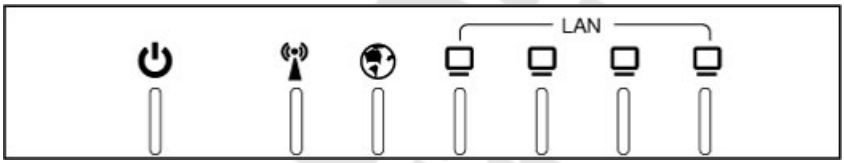
Important Notes

- Do not use the router in high humidity or high temperatures.
- Do not use the same power source for the router as other equipment.
- Do not open or repair the case yourself. If the router is too hot, turn off the power immediately and have it repaired at a qualified service center.
- Avoid using this product and all accessories outdoors.

- Place the router on a stable surface.
- Only use the power adapter that comes with the package. Using a different voltage rating power adaptor may damage the router.

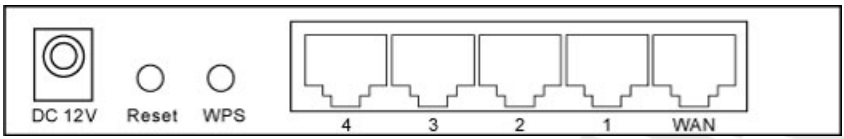
Front Panel

Front Panel



LED	Action	Description
PWR ⏻	Not lit	No Power
	Lit up	Power on
WLAN	Not lit	The Wireless function is disabled
	Lit up	The Wireless function is enabled
	Flashing	Data transfer
WAN LAN 1-4	Not lit	There is no device linked to the corresponding port
	Lit up	There is a device linked to the corresponding port but no activity
	Flashing	There is an active device linked to the corresponding port

Back Panel



Label	Used for...
DC 12V	Connecting with supplied power adapter
RESET	Resetting the device.
WPS	Connecting with wireless station via WPS. Press this button for about 2-3 seconds while you are connecting a PC of wireless adapter with WPS function (you must enable WPS' PBC function).
LAN 1-4 (RJ-45)	Connecting with computers/devices through Ethernet cable
WAN (RJ-45)	Connecting with DSL/cable modem through Ethernet cable

Default Settings

Before changing configuration familiarize yourself with these default settings.

IP Address	192.168.1.100
Subnet Mask	255.255.255.0
SSID	Pentagram P 6381-3
DHCP Server	Enabled
DHCP Server IP Address Pool	100 IP addresses from 192.168.1.101
IP Address Lease Time	86400 seconds (24 hours)
User Name	**admin**
Password	**pentagram**

It is recommended to change User Name and Password as soon as possible.
If you ever forget the password to log in, you may need to restore the factory default settings. This procedure is described in next section.

Resetting router

- Use the **Restore** function on **Administrator** -> **Restore/Save/Upload** page in the router's Web-based Utility, or
- Use the **RESET** button: While router is powered on, press and hold the Reset button for about 10 seconds. Release the reset button and wait for the router to reboot.

Connecting Cerberus to Computer.

Cerberus can be connected to computer via Ethernet or WLAN:

Connecting via Ethernet Port (Ethernet Card)

All Ethernet ports of router are made in the technology, which automatically activates Crossover if necessary. Thanks to autonegotiation of connection speed the router will automatically select the maximum available speed rate. Transfer at 10/100 Mbit/s rate requires the category 5 cable wired with RJ-45 connectors. In case of "straight" cable both connectors must be crimped in standard EIA/TIA 568B. In case of Crossover cable one connector must be in standard EIA/TIA 568A, and the second in EIA/TIA 568B. After connecting the device to one of the ports, corresponding LED will begin to blink. That signals the process of the auto-checking of port and the negotiation of connection speed rate.

Connecting via WLAN Interface (Wireless Card)

To connect PC to Cerberus via WLAN, Wireless Adapter must be properly installed and configured and both router and PC must be in the same subnet.

Configure TCP/IP

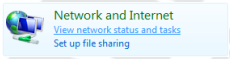
After connecting the computer to the router (by LAN adapter or WLAN interface) the TCP/IP protocol should be configured. The protocol should be automatically installed together with Network card drivers. It is advised that TCP/IP should be configured to receive IP address and all the necessary network parameters from DHCP server automatically. You can find step-by-step configuration for different Windows systems below.

Windows Vista

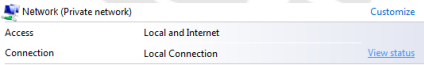
Note: Network configuration require administrator privileges. When *User Account Control* window pops up, either click Continue (Administrator user) or select Administrator user and enter valid password (Standard user).

1. Click **Start** → **Control Panel**.

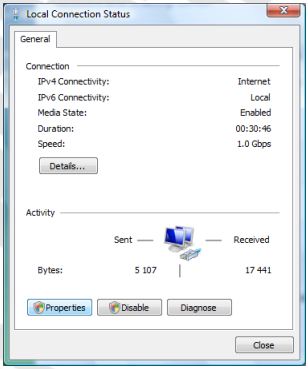
2. Click **View network status and tasks**.



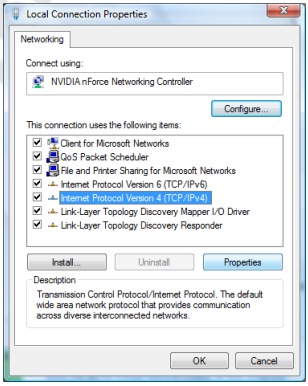
3. Click **View status** for appropriate connection.



4. On **General** tab, Click the **Properties** button.

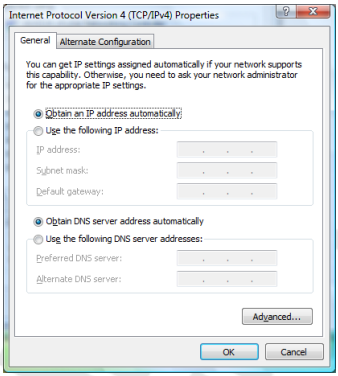


5. On **Networking** tab, select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.



6. On **General** tab, select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.

7. Click **OK** to save settings and close **Internet Protocol Version 4 (TCP/IPv4) Properties** window.



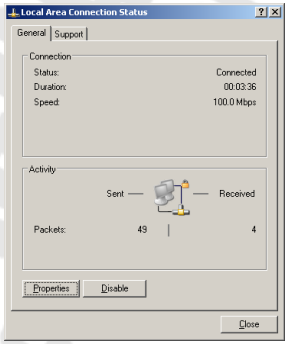
Note: In some cases Windows Vista cannot obtain an IP address from certain router's DHCP server. If you encounter this, follow this steps to resolve this problem (Microsoft Support page) http://support.microsoft.com/kb/928233/en-us

Windows 2000/XP

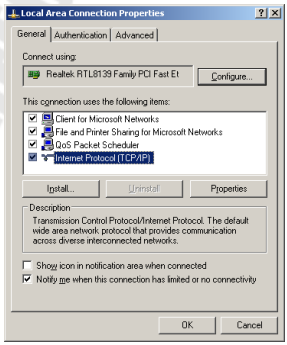
1. Click **Start** → **Settings** → **Control Panel**. Double-click the **Network Connections** icon (2000/XP Classic view) or click **Network and Internet Connections** icon and then **Network Connections** icon (XP Default view).

2. Double-click the **Local Area Connection** icon.

3. On **General** tab, Click the **Properties** button.

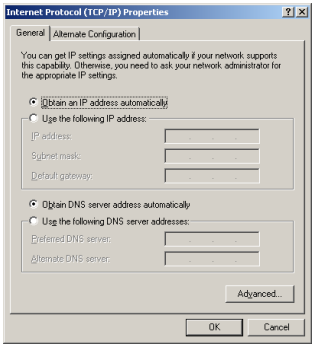


4. On **General** tab, select **Internet Protocol (TCP/IP)** and click **Properties**.



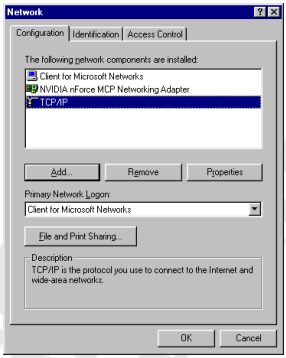
5. On **General** tab, select **Obtain an IP address automatically** and **DNS server address automatically**.

6. Click **OK** to save settings and close **Internet Protocol (TCP/IP) Properties** window.



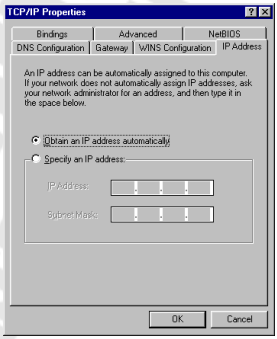
Windows 95/98/Me

1. Click **Start** → **Settings** → **Control Panel**. Double-click the **Network** icon.



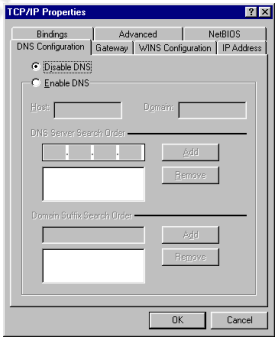
2. On **Configuration** tab, select **TCP/IP** for appropriate network adapter and click **Properties**.

3. On **IP Address** tab, select **Obtain an IP address automatically**.



4. On **DNS Configuration** tab, select **Disable DNS**

5. Click **OK** to save settings and close **TCP/IP Properties** window.



To make sure that network adapter properly obtained an IP address from router's DHCP server:

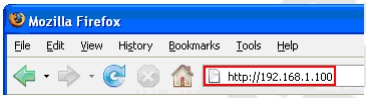
1. click **Start** > **Run**
2. type **cmd** (Win 2000/XP) or **command** (Win 95/98/ME) and press Enter
3. in command line type **ipconfig /all** and press Enter
4. check if the **IP Address** is **192.168.1.x**

Configure router via web browser

Cerberus P 6381-3 router can be configured via web browser, which is usually integrated with operating system. Router offers clear and simple interface.

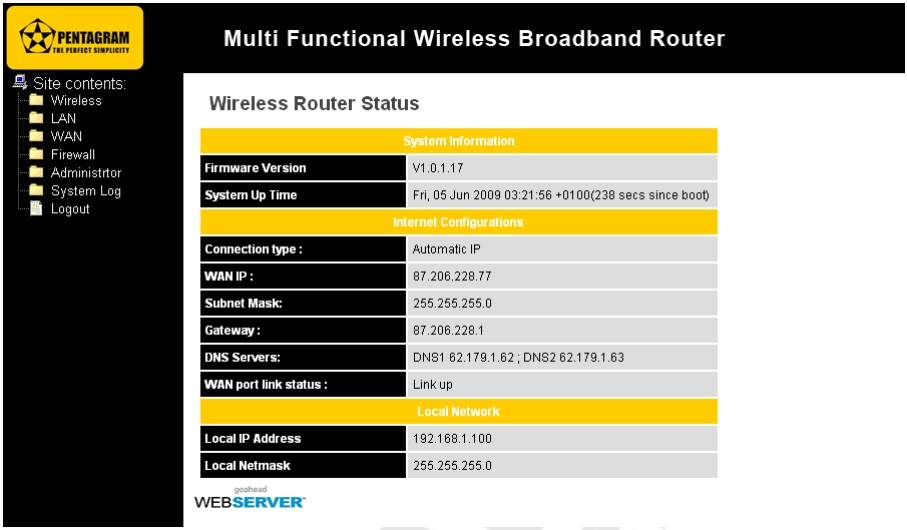
Login

1. Launch the Web browser
2. In address bar enter the default IP address: **http://192.168.1.100**



3. Enter username and password – default **admin** / **pentagram**

Navigation



Settings are grouped in six main categories:

- **Wireless**: Configure your wireless connection, security, and other advanced parameters.
- **LAN**: Configure LAN, DHCP, and Route settings.
- **WAN**: Configure the Internet connection, QoS, and Server settings.
- **Firewall**: Configure the firewall and filter mechanisms to protect your network.
- **Administration**: Configure the system and upgrade the firmware of Wireless Router.
- **System Log**: Monitor the status and various system logs.

Click on group name to expand it, and then on menu you wish to access. Clicking at any time on the **Logout** item will log you out of the configuration page.

Wireless / General Tab

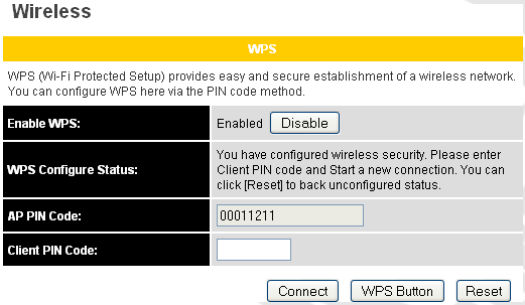
This page allows user to configure basic wireless settings.

SSID: Assign an identification string of up to 32 characters for your wireless connection.
Hide SSID: If **YES** is selected, your SSID does not show in site surveys by wireless mobile clients and they can only connect to your Wireless Router with your SSID of AP.
Country Code: The available channel differs from different countries. For example: United States is channel 1-11, European Union is channel 1-13.
Channel: The radio channel for wireless connection operation.
Wireless Mode: This field indicates the 802.11g interface mode. Select **Auto** to allow the connection to the Wireless Router of 802.11g and 802.11b wireless mobile clients. Select **54g Protection** to enable G-Mode protection for 802.11g traffic automatically in the presence of 11b traffic.
Authentication Method: This field enables the authentication methods for wireless clients.
WPA Encryption: Enable WPA Encryption to encrypt data.
WPA Pre-Shared Key: This field requires a password of 8 to 63 characters to start the encryption process. If you leave this field blank, the default **00000000** will be assigned as your password.
WEP Encryption: Enable WEP Encryption to encrypt data.
Key Index: Set the WEP key to transmit data on your wireless.
WEP Key 1~4: Only valid when using WEP encryption algorithm. The key must match with the AP's Key.
Passphrase: Select **WEP-64bits** or **WEP-128bits** in WEP encryption field to generate four WEP keys automatically.

Network Key Rotation Interval: This field specifies the interval (in seconds) after which a WPA group key is changed. Enter **0** (zero) to indicate that a periodic key-change is not required.

Wireless / WPS Tab

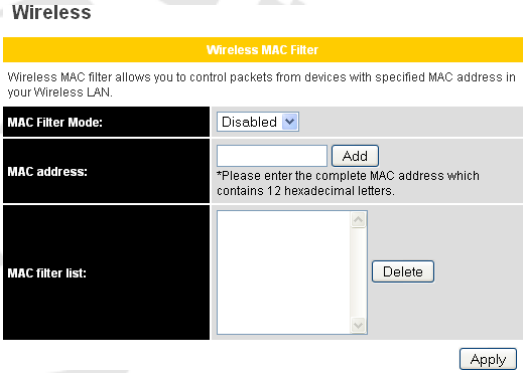
WPS (Wi-Fi Protected Setup) provides easy and secure establishment of a wireless network. You can configured WPS here via the by PIN code method.



Enable WPS: Allowing Wi-Fi Protected Setup (WPS) to simplify the process of connecting any device to the wireless network. WPS support the authentication of Open system, Share key, WPA-Personal, WPA2-Personal. Not support WPA-Enterprise, WPA2-Enterprise and Radius.
AP PIN Code: Remember the PIN code of AP (the same as PIN code in the bottom of Wireless Router). Input this PIN code in client's WPS utility and utility will configure the wireless security setting of Wireless Router.
Client PIN Code: Key in an eight-digit number for the PIN code.

Wireless / Wireless MAC Filter Tab

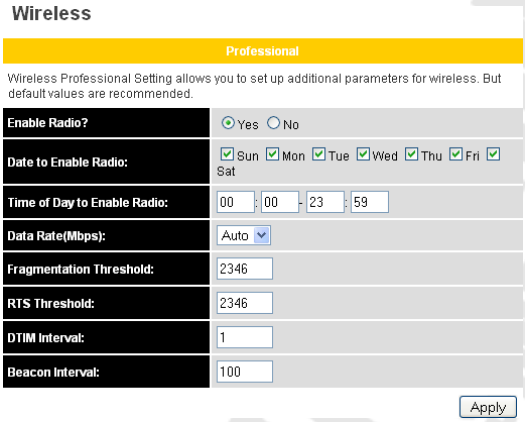
Wireless MAC filter allows you to control packets from devices with specified MAC address in your Wireless LAN.



MAC Filter Mode: In **Accept** mode, Wireless Router only accepts clients with MAC address in the list. In **Reject** mode, Wireless Router will reject clients with MAC address in the list.
MAC Address: Enter the complete MAC address which contains 12 hexadecimal letters.

Wireless / Professional Tab

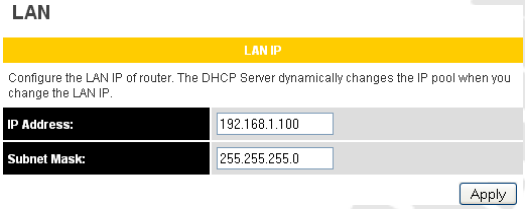
Wireless Professional Setting allows you to set up additional parameters for wireless. But default values are recommended.



Enable Radio?: Select **Yes** to enable Radio function.
Date to Enable Radio: This field defines the dates that wireless function is enabled.
Time of Day to Enable Radio: This field defines the time interval that wireless function is enabled.
Data Rate (Mbps): This field allows you to select the transmission rate. **Auto** is recommended to maximize performance.
Fragmentation Threshold: Fragmentation Threshold sets the frame size of incoming messages (ranging from 256 to 2346 bytes) used as fragmentation boundary. If the frame size is too big, the heavy interference affects transmission reliability. If the frame size is too small, it decreases transmission efficiency.
RTS Threshold: Lower the signal RTS (Request To Send) to promote the transmission efficiency in condition of noisy environment or too many clients.
DTIM Interval: DTIM (Delivery Traffic Indication Message) is included in Beacon packet. The DTIM Interval (1-255) means the period of time to wake up wireless clients from Sleep Mode. The default value is 1.
Beacon Interval: Beacon Interval means the period of time between one beacon and the next one. The default value is 100 (the unit is millisecond, or 1/1000 second). Lower the Beacon Interval to improve transmission performance in unstable environment or for roaming clients, but it will be power consuming.

LAN / LAN IP Tab

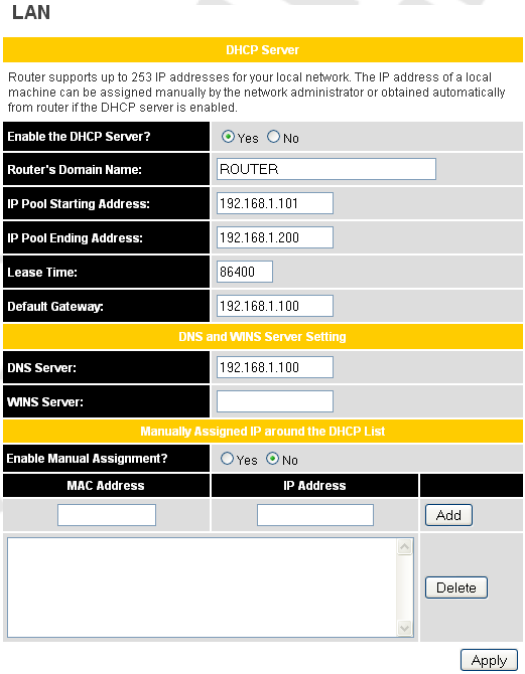
Configure the LAN IP of Wireless Router. The DHCP Server dynamically changes the IP pool when you change the LAN IP.



IP Address: The LAN IP address of Wireless Router. The Default value is 192.168.1.100.
Subnet Mask: The LAN subnet mask of Wireless Router. The Default value is 255.255.255.0

LAN / DHCP Server Tab

Wireless Router supports up to 253 IP address for your local network. The IP address of a local machine can be is assigned manually by the network administrator or obtained automatically from Wireless Router if the DHCP server is enabled.

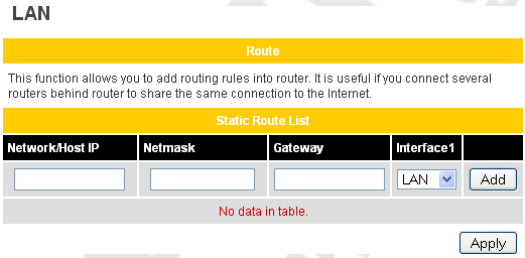


Enable the DHCP Server?: DHCP server administers and assigns IP addresses for LAN clients automatically.

Wireless Router's Domain Name: The Domain Name for client who requests IP address from the DHCP server.
IP Pool Starting Address: The first address in the pool to be assigned by the DHCP server in LAN.
IP Pool Ending Address: This field indicates the last address in the pool to be assigned by the DHCP server in LAN.
Lease Time: The amount of connection time with the current dynamic IP address.
Default Gateway: This field indicates the IP address of gateway in your LAN.
DHCP's IP address: This field indicates the IP address of DNS to provide to clients that request IP address from DHCP server.
WINS Server: The Windows Internet Naming Service manages interaction of each PC with the Internet. If you use a WINS server, enter IP address of server here.
Enable Manual Assignment?: Enable this function to assign static IP address by manually.
MAC Address: Enter the MAC Address of each DHCP client.
IP Address: Assign an IP address for each DHCP client. The IP address should comply with the DHCP address pool you specified. The DHCP address pool contains the range of the IP address that will automatically be assigned to the clients on the network.

LAN / Route Tab

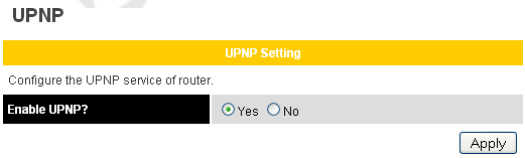
This function allows you to add routing rules into Wireless Router. It is useful if you connect several routers behind Wireless Router to share the same connection to the Internet.



Network/Host IP: It stands for the destination network or host of a route rule. So it could be a host address, such as 192.168.123.11 or a network address, such as 192.168.0.0.
Netmask: It indicates how many bits are for network ID and subnet ID. For example: if the dotted-decimal netmask is 255.255.255.0, then it's netmask bits is 24. If the destination is a host, its netmask bits should be 32.
Gateway: It stands for the IP address of gateway where packets are routed to. The specified gateway must be reachable first. It means you have to set up a static route to the gateway beforehand.
Metric: Metric is a value of distance for the network
Interface: Network interface that the route rule applies to.

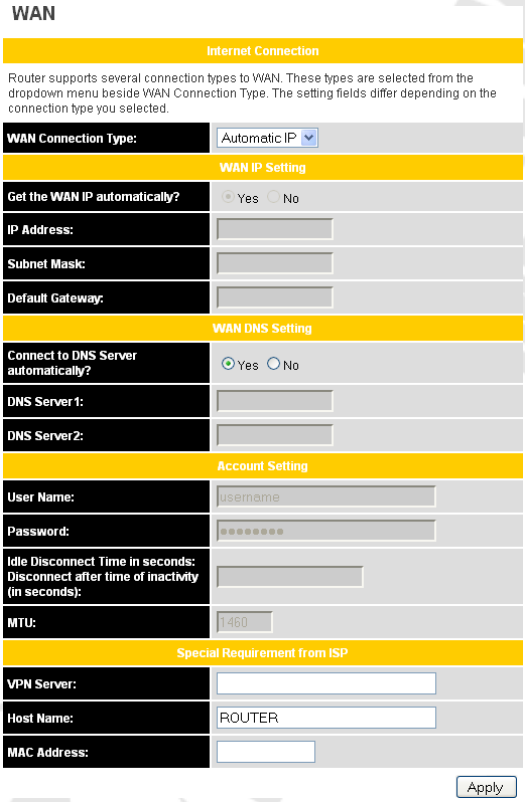
LAN / UPNP Tab

This tab allows you to enable or disable UPnP function of the router.



WAN / Internet Connection Tab

Wireless Router supports several connection types to WAN. These types are selected from the dropdown menu beside WAN Connection Type. The setting fields differ depending on the connection type you selected.



WAN Connection Type: Wireless Router supports 5 methods of obtaining the WAN IP Address:

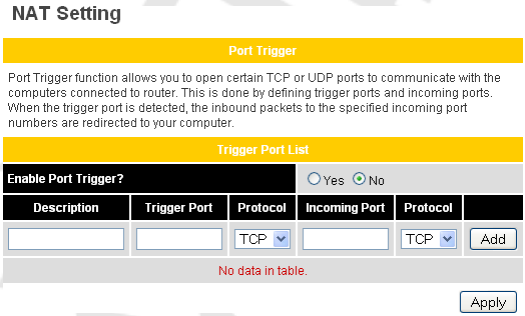
- **Automatic IP (DHCP)**: Automatic gets IP address from your ISP.
- **PPPoE**: PPPoE is a common connection type used for xDSL.
- **PPTP**: PPP Tunneling Protocol can support multi-protocol Virtual Private Network (VPN).
- **L2TP**: Layer 2 Tunneling Protocol can support multi-protocol Virtual Private Networks (VPN)
- **Static IP (fixed IP)**: Use static IP address to access Network.

Get the WAN IP automatically?: This field allows you to get the WAN IP address automatically.
IP Address: This is the IP address of Wireless Router as seen on the remote network. If you set it to 0.0.0.0, Wireless Router will get IP address from DHCP Server automatically.
Subnet Mask: This is the Subnet Mask of Wireless Router as seen on the remote network.

Default Gateway: This is the IP address of the default gateway that allows for contact between Wireless Router and the remote network or host.
Connect to DNS Server automatically: This field allows you to get the DNS IP address from the remote network automatically.
DNS Server: This field indicates the IP address of DNS that Wireless Router contacts to.
User Name: This field is only available when you set WAN Connection Type as PPPoE or PPTP.
Password: This field is only available when you set WAN Connection Type as PPPoE.
Idle Disconnect Time in seconds: Disconnect After time of inactivity (in seconds): This field is optional and allows you to configure to terminate your ISP connection after a specified period of time. This field is optional and allows you to end your ISP connection after the specified time of inactivity. A value of zero allows infinite idle time. If Tx Only is checked, the data from Internet will be skipped for counting idle time. If Tx Only is checked, Internet activity such as downloading data, is not counted as idle time.
MTU: It means Maximum Transmission Unit (MTU) of PPPoE packet.
Heart-Beat or PPTP/L2TP (VPN) Server: Please enter the server name or server IP of the authentication server of BigPond server.
Host Name: This field allows you to provide a host name for Wireless Router. It is usually requested by your ISP.
MAC Address: This field allows you to provide a unique MAC address for Wireless Router to connect Internet. It is usually requested by your ISP.

WAN / Port Trigger Tab

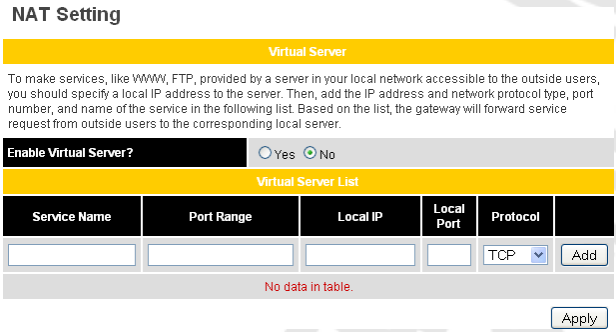
Port Trigger function allows you to open certain TCP or UDP ports to communicate with the computers connected to Wireless Router. This is done by defining trigger ports and incoming ports. When the trigger port is detected, the inbound packets to the specified incoming port numbers are redirected to your computer.



Enable Port Trigger: Enable/Disable the port trigger.
Description: Enter the name of port trigger.
Trigger Port: This is the port used to trigger the application. It can be either a single port or a range of ports.
(Trigger) Protocol: This is the protocol used to trigger the special application.
Incoming Port: This is the port number on the WAN side that will be used to access the application. You may define a single port or a range of ports. You can use a comma to add multiple ports or port ranges.
(Incoming) protocol: This is the protocol used for the special application.

WAN / Virtual Server Tab

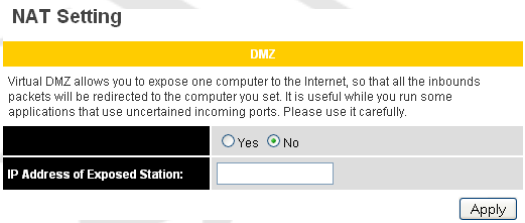
To make services, like WWW, FTP, provided by a server in your local network accessible to the outside users, you should specify a local IP address to the server. Then, add the IP address and network protocol type, port number, and name of the service in the following list. Based on the list, the gateway will forward service request from outside users to the corresponding local server.



Port Range: Enter the Port range for WAN side.
Local IP: Enter the IP Address for the Virtual Server in LAN side.
Local Port: Enter the specific Local Port number you want to forward
Protocol: This is the protocol used to Virtual server.

WAN / DMZ Tab

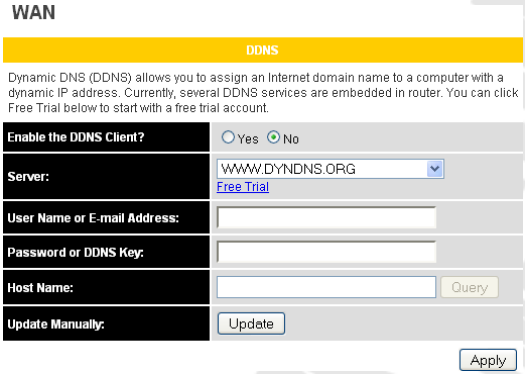
DMZ (De-Militarized Zone) allows you to expose one computer to the Internet, so that all the inbounds packets will be redirected to the computer you set. It is useful while you run some applications that use uncertain incoming ports.



IP Address of Exposed Station: Enter the IP address of a particular host in your LAN that will receive all the packets originally going to the WAN port/Public IP address above. Note: You need to give your LAN PC clients a fixed/static IP address for DMZ to work properly.

WAN / DDNS Tab

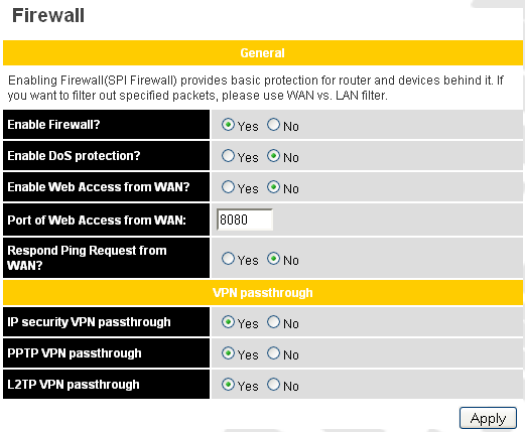
Dynamic DNS (DDNS) allows you to assign an Internet domain name to a computer with a dynamic IP address. Currently, several DDNS services are embedded in Wireless Router.



Enable the DDNS Client: Enable/Disable the DDNS server. Default setting is Disable.
Server: AP Router supports type: DynDns.org.
User Name or E-mail address: Enter the user name or e-mail address that you register in DynDns.org website.
Password or DDNS Key: Enter the password or DDNS Key that you register in DynDns.org Website.
Host Name: Enter the hostname that you register in DynDns.org website.
Update Manually: Click **Update** button to update the DDNS manually.

Firewall / General Tab

Enabling Firewall provides basic protection for Wireless Router and devices behind it. If you want to filter out specified packets, please use WAN vs. LAN filter in next page.



General

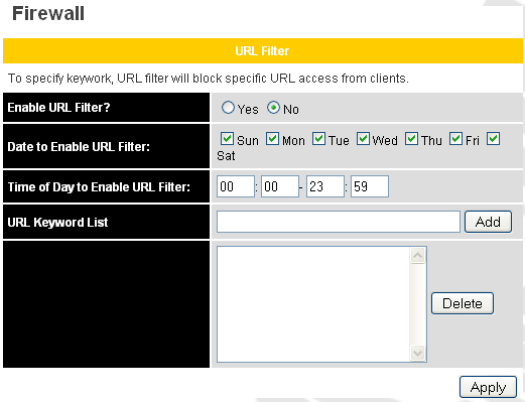
Enable Web Access from WAN?: This feature allows you to configure Wireless Router from the Internet. If you are under Home Gateway mode, please access Wireless Router with 8080 port (i.e. http://Your WAN IP: 8080).
Port of Web Access from WAN: To specify the port used to configure Wireless Router from the Internet. The default port is 8080.
Respond Ping Request from WAN?: This feature allows you to respond to ping request from WAN.

VPN Passthorugh

IP security VPN Passthrough: IP Security (IPSec) is a framework for a set of protocols for security at the network or packet processing layer of network verification.
PPTP VPN Passthrough: PPTP is a protocol that allows corporations to extend their own corporate network through private “tunnels” over the public Internet. Click **Yes** to Enable this protocol verification.
L2TP VPN Passthrough: L2TP is an extension to the Point-to-Point Protocol, which is an important component for VPNs. VPNs allow users and telecommuters to connect to their corporate intranets or extranets.

Firewall / URL Filter Tab

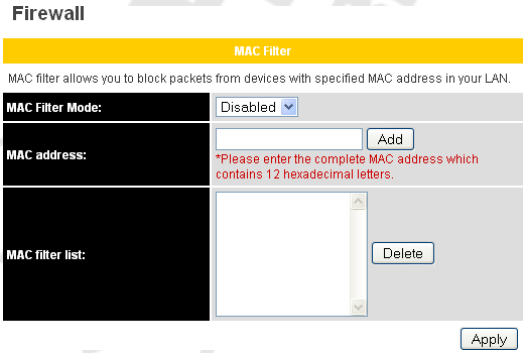
To specify keyword, URL filter will block specific URL access from clients.



Date to Enable URL Filter: This field defines the dates that URL filter will be enabled.
Time of Day to Enable URL Filter: This field defines the time interval that URL filter will be enabled.

Firewall / MAC Filter Tab

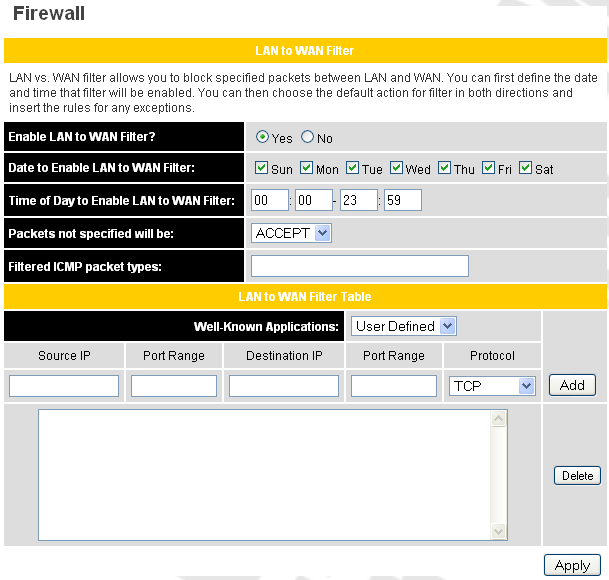
MAC filter allows you to block packets from devices with specified MAC address in your LAN.



MAC Filter Mode: In **Accept** mode, Wireless Router only accepts clients with MAC address in the list. In **Reject** mode, Wireless Router will reject clients with MAC address in the list.
MAC Address: Please enter the complete MAC address which contains 12 hexadecimal letters.

Firewall / LAN to WAN Filter Tab

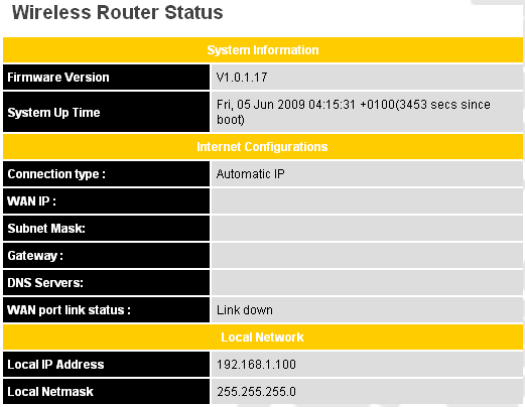
LAN vs. WAN filter allows you to block specified packets between LAN and WAN. You can first define the date and time that filter will be enabled. You can then choose the default action for filter in both directions and insert the rules for any exceptions.



Enable LAN to WAN Filter?: Select **Yes** to enable filter that specify IP or port for control incoming and outgoing packets.
Date to Enable LAN to WAN Filter: This field defines the dates that LAN to WAN filter will be enabled.
Time of Day to Enable LAN to WAN Filter: This field defines the time interval that LAN to WAN filter will be enabled.
Packets not specified will be: This field defines those LAN to WAN packets which are not specified in IP Filter Table will be accepted or dropped.
Filtered ICMP packet types: This field defines a list of LAN to WAN ICMP packets type that will be filtered. For example, if you would like to filter Echo (type 8) and Echo Reply (type 0) ICMP packets, you need to enter a string with numbers separated by blank, such as, 0 5.
Well-Known Applications: User Defined, WWW, Telnet, FTP

Administration / Status Tab

This page is to view the Wireless system status, such as System Information, Internet Configurations and Local Network information.

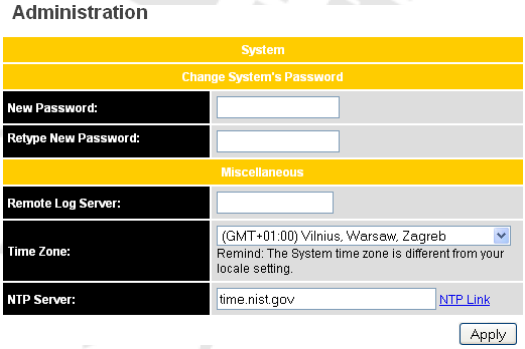


Wireless Router Status

System Information	
Firmware Version	V1.0.1.17
System Up Time	Fri, 05 Jun 2009 04:15:31 +0100(3453 secs since boot)
Internet Configurations	
Connection type :	Automatic IP
WAN IP :	
Subnet Mask:	
Gateway :	
DNS Servers:	
WAN port link status :	Link down
Local Network	
Local IP Address	192.168.1.100
Local Netmask	255.255.255.0

Administration / System Tab

Remote Log Server: This field allows assigning a remote server to record log messages of Wireless Router. If you leave it blank, the system will record up to 1024 messages on Wireless Router.



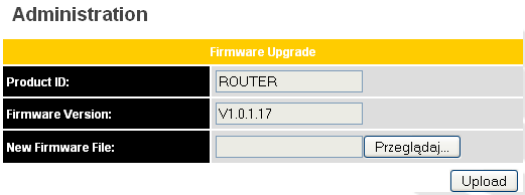
Administration

System	
Change System's Password	
New Password:	
Retype New Password:	
Miscellaneous	
Remote Log Server:	
Time Zone:	(GMT+01:00) Vilnius, Warsaw, Zagreb Remind: The System time zone is different from your locale setting.
NTP Server:	time.nist.gov NTP Link

Apply

Time Zone: The standard time in your area or locality.
NTP Server: To synchronize your system time with NTP Server.

Administration / Firmware Upgrade Tab



Follow instructions listed below:

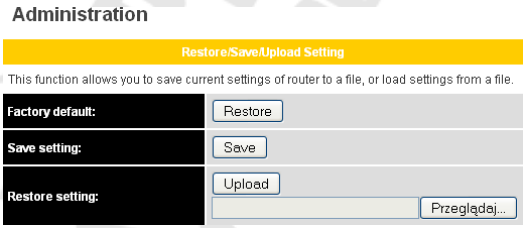
1. Check if any new version of firmware is available on website.
2. Download a proper version to your local machine.
3. Specify the path of and name of the downloaded file in the **New Firmware File**.
4. Click **Upload** to upload the file to Wireless Router. Uploading process takes about three minutes.
5. After receiving a correct firmware file, Wireless Router will automatically start the upgrade process. The system reboots after the upgrading process is finished.

Note:

1. For a configuration parameter existing both in the old and new firmware, its setting will be kept during the upgrade process.
2. In case the upgrade process fails, Wireless Router enters the emergency mode automatically. The LED signals at the front of Wireless Router will indicate such situation.

Administration / Restore/Save/Upload Setting Tab

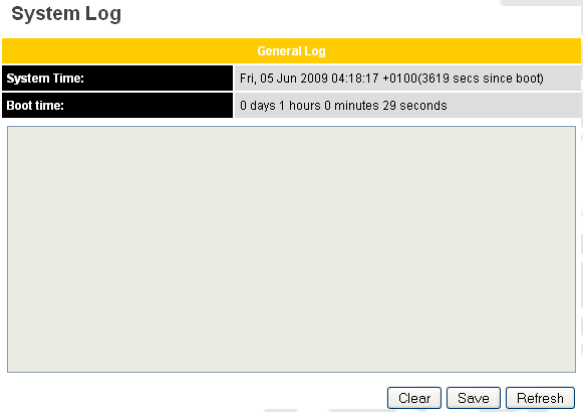
This function allows you to save current settings of Wireless Router to a file, or load settings from a file.



Factory default: Click **Factory default** to restore the router to its factory default settings and delete all the current settings. Wait for a while until the router reboots.
Save settings: Click the **Save** button to save current setting of Wireless Router into a file. (Note: While you save current settings to a file, it will be saved to flash as well.)
Restore settings: Specify the path and name of setting file. Then click **Upload** to write the file to Wireless Router. Please wait 30 seconds until Wireless Router reboots.

System Log / General Log Tab

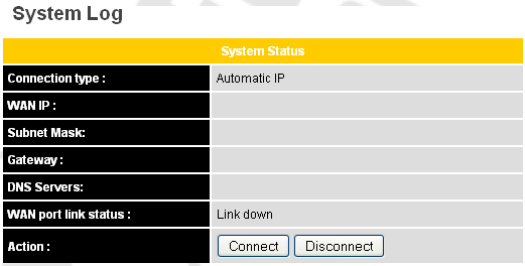
The log file keeps a running log of events and activities occurring on the device. The log always displays recent logs. When the device is rebooted, the log would not be cleared.



Boot time: Elapsed time since system boot.

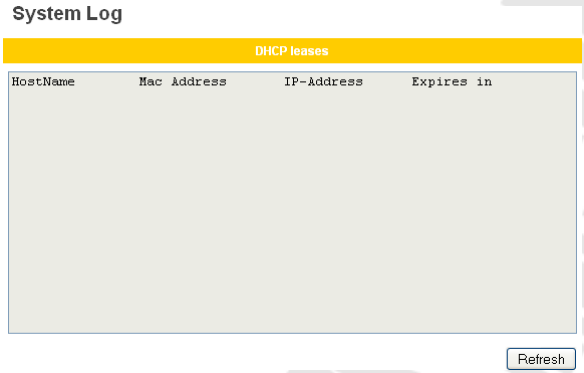
System Log / System Status Tab

This page is to view the Wireless system status.



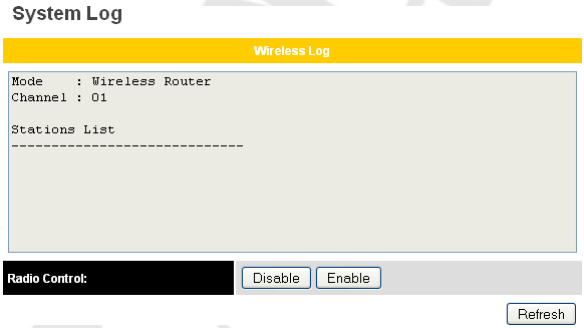
System Log / DHCP Leases Tab

This page displays the DHCP leases log, such as Host Name, MAC Address, IP address, and Expires In information.



System Log / Wireless Log Tab

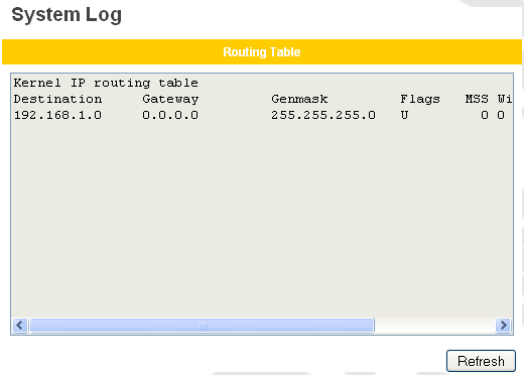
This page displays wireless system log, such as wireless mode, channel, and Stations list.



Radio Control: To enable wireless radio or disable.

System Log / Routing Table Tab

A routing table contains the information necessary to forward a packet along the best path toward its destination. Each packet contains information about its origin and destination. When a packet is received, a network device examines the packet and matches it to the routing table entry providing the best match for its destination. The table then provides the device with instructions for sending the packet to the next hop on its route across the network.



Destination: The IP address of the packet's final destination. The destination can be an IP address or a class-based, sub-netted, or super-netted network ID.
Gateway: The IP address to which the packet is forward.
Netmask: Includes directly-attached subnets, indirect subnets that are not attached to the device but can be accessed through one or more hops, and default routes to use for certain types of traffic or when information is lacking.
Flags: Possible flags include:

- **U**: Route is up.
- **H**: Target is a host.
- **G**: Use Gateway
- **C**: Cache entry
- **!**:Reject route

Metric: A number used to indicate the cost of the route so that the best route, among potentially multiple routes to the same destination, can be selected.
Ref: Number of reference to this route.
Use: Count of lookups for the route.
Iface: Interface to which packets for this route will be sent.

Troubleshooting

If the router is not function properly, first check this session for simple troubleshooting before contacting your Internet service provider (ISP) for support.

Using LEDs to Diagnose Problems

The **LEDs** are useful aides for finding possible problem causes.

Power LED

The **POWER LED** on the front panel does not light up.:

1. Make sure that the power adaptor is connected to the router and plugged in to an appropriate power source. Use only the supplied power adaptor;
2. Check that the router and the power source are both turned on and the router is receiving sufficient power;
3. Turn the 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.:

1. Check the Ethernet cable connections between your 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.

WAN LED

The WAN LED on the front panel does not light up:

1. Check the Ethernet cable connections between your router and ISP's access device;
2. Check that the ISP's access device is turned on and receiving sufficient power;

Problems with resolving IP Address from the router's DHCP Server in Windows Vista

In some cases Windows Vista cannot obtain an IP address from certain router's DHCP server. If you encounter this, follow this steps to resolve this problem (Microsoft Support page) http://support.microsoft.com/kb/928233/en-us

Problems with the Web Interface

I cannot access the web Interface:

1. Make sure you are using the correct IP address of the router. Check the IP address of the router;
2. Your computer's and the router's IP addresses must be on the same subnet for LAN access;
3. If you changed the router's LAN IP address, then enter the new one as the URL;
4. Remove any filters in LAN or WAN that block web service.

Problems with the Login Username and Password

I forgot my login username and/or password:

1. The default username is "**admin**". The default password is "**pentagram**". The Password and Username fields are case-sensitive. Make sure that you enter the correct password and username using the proper casing;
2. If you ever forget the password to log in, you may need to restore the factory default settings. Use the **RESET** button: While router is powered on, press and hold the Reset button for about 10 seconds. Release the reset button and wait for the router to reboot.

Problems with LAN Interface

I cannot access the router from the LAN or ping any computer on the LAN:

1. Check the Ethernet LEDs on the front panel. A LAN LED should be on for a port that has a PC connected. If it is off, check the cables between your router and the PC. Make sure you have uninstalled any software firewall for troubleshooting;
2. Make sure that the IP address and the subnet mask is consistent between the router and the workstation.

Problems with the Internet Access

I cannot access the Internet:

1. Make sure the router is turned on and connected to the network;
2. If the WAN LED is off, refer to Section **WAN LED** of this troubleshooting;
3. Verify your WAN settings;
4. Make sure you entered the correct user name and password;
5. For wireless stations, check that both the router and wireless station(s) are using the same SSID, channel and encryption keys (if encryption is activated).

Internet connection disconnects:

1. If you use PPPoE, check the idle time-out setting;
2. Contact your ISP.

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