



DIR-615

Wireless Router with Built-in 4-port Switch

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CHAPTER 1. INTRODUCTION

Contents and Audience

This manual describes the router DIR-615 and explains how to configure and operate it.

This manual is intended for users familiar with basic networking concepts, who create an in-home local area network, and system administrators, who install and configure networks in offices.

Conventions

Example	Description
text	The body text of the manual.
<i>Before You Begin</i>	A reference to a chapter or section of this manual.
<i>“Quick Installation Guide”</i>	A reference to a document.
Change	A name of a menu, menu item, control (field, checkbox, drop-down list, button, etc.).
192.168.0.1	Data that you should enter in the specified field.
 <u>Information</u>	An important note.

Document Structure

Chapter 1 describes the purpose and structure of the document.

Chapter 2 gives an overview of the router's hardware and software features, describes its appearance and the package contents.

Chapter 3 explains how to install the router DIR-615 and configure a PC in order to access its web-based interface.

Chapter 4 describes all pages of the web-based interface in detail.

Chapter 5 includes safety instructions and tips for networking and connecting additional equipment.

Chapter 6 introduces abbreviations and acronyms used in this manual.

CHAPTER 2. OVERVIEW

General Information

The DIR-615 device is a wireless router with a built-in 4-port switch. It provides a fast and simple way to create a wireless and wired network at home or in an office.

You are able to connect the wireless router DIR-615 to a cable or DSL modem or to a private Ethernet line and use a high-speed Internet connection to successfully fulfill a wide range of professional tasks. The built-in 4-port switch enables you to connect Ethernet-enabled computers, game consoles, and other devices to your network.

Using the DIR-615 device, you are able to quickly create a wireless network at home or in your office, which lets your relatives or employees connect to your wireless network virtually anywhere (within the operational range of your wireless network). The router can operate as a base station for connecting wireless devices of the standards 802.11b, 802.11g, and 802.11n (at the rate up to 300Mbps).

The router supports several security standards (WEP, WPA-PSK/WPA2-PSK) and MAC address filtering for the wireless interface.

The wireless router DIR-615 includes a built-in firewall. The advanced security functions minimize threats of hacker attacks, prevent unwanted intrusions to your network, and block access to unwanted websites for users of your LAN.

You can configure and manage the settings of the wireless router DIR-615 via the user-friendly web-based interface (the interface is available in several languages).

Specifications*

WAN Interface:

- 1 10/100BASE-TX Ethernet port for cable or DSL modem or private Ethernet line.

LAN Interface:

- 4 10/100BASE-TX Ethernet ports.

WLAN Interface:

- IEEE 802.11n (up to 300Mbps)
- IEEE 802.11b/g.

Network Functions:

- WAN connection types:
 - PPPoE
 - Static IP
 - Dynamic IP
 - PPTP/L2TP + Static IP
 - PPTP/L2TP + Dynamic IP
- DHCP server and client
- DNS relay
- VPN pass-through (PPTP/L2TP)
- Dynamic DNS
- Static IP routing
- Remote management
- Network statistics for each interface
- IGMP Proxy
- RIP
- UPnP.

* The device features are subject to change without notice. For the latest versions of the firmware and relevant documentation, visit www.dlink.ru.

Wireless Connection:

- Supported security settings:
 - WEP
 - WPA/WPA2 Personal
- MAC filter
- Advanced settings.

Firewall Functions:

- Network Address Translation (NAT)
- Stateful Packet Inspection (SPI)
- IP filters
- URL filter
- MAC filter
- DMZ
- Prevention of ARP and DDoS attacks
- Virtual servers.

Configuration and Management:

- Multilingual web-based interface for configuration and management
- Access via TELNET
- Ping function
- Firmware update via web-based interface
- Saving/restoring configuration to/from file
- Support of remote logging
- Automatic synchronization of system time with NTP server.

LEDs:

- Power
- Internet
- WLAN
- 4 LAN LEDs.

Power:

- External power adapter DC 12V/0.5A
- Reset to Factory Defaults button.

Operating Temperature:

- from 0 to 40 °C (from 32 to 104 °F).

Storage Temperature:

- from -20 to 65 °C (from -4 to 149 °F).

Operating Humidity:

- from 10% to 90% non-condensing.

Storage Humidity:

- from 5% to 95% non-condensing.

Product Appearance

Top Panel

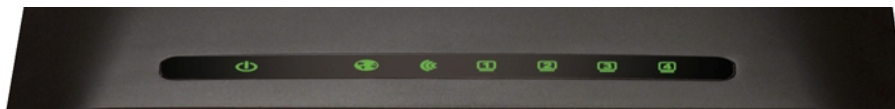


Figure 1. Top panel view.

LED	Mode	Description
Power	<i>Solid green</i>	The router is powered on and ready.
	<i>No light</i>	The router is powered off or is being loaded.
Internet	<i>Solid green</i>	An Ethernet cable is connected to the INTERNET port of the router.
	<i>Blinking green</i>	The WAN interface is active (upstream or downstream traffic).
	<i>No light</i>	No Ethernet cable is connected to the INTERNET port of the router.
WLAN	<i>Solid green</i>	The router's WLAN is on.
	<i>Blinking green</i>	The WLAN interface is active (upstream or downstream traffic).
	<i>No light</i>	The router's WLAN is off.
LAN 1-4	<i>Solid green</i>	A device (computer) is connected to the relevant port, the connection is on.
	<i>Blinking green</i>	The LAN port is active (upstream or downstream traffic).
	<i>No light</i>	The connection is off.

Back Panel



Figure 2. Back panel view.

Port	Description
LAN 1-4	4 Ethernet ports to connect computers or network devices.
INTERNET	A port to connect to a cable or DSL modem or to a private Ethernet line (it is recommended to use the cable included in the delivery package).
12V=0.5A	Power connector.
RESET	A button to restore the factory default settings. To restore the factory defaults, push the button (with the device turned on), hold it for 10 seconds, and then release the button.

The device is also equipped with two non-detachable antennas.

Delivery Package

The following should be included:

- Wireless router DIR-615
- Power adapter DC 12V/0,5A
- Ethernet cable (CAT 5E)
- CD-ROM with “*User Manual*” and “*Quick Installation Guide*”
- “*Quick Installation Guide*” (brochure).



Using a power supply with a different voltage rating than the one included will cause damage and void the warranty for this product.

CHAPTER 3. INSTALLATION AND CONNECTION

Before You Begin

Please, read this manual prior to installing the device. Make sure that you have all the necessary information and equipment.

Operating System

Configuration of the wireless router DIR-615 with a built-in 4-port switch (hereinafter referred to as “the router”) is performed via the built-in web-based interface. The web-based interface is available from any operating system that supports a web browser.

Web Browser

The following web browsers are recommended: Windows Internet Explorer, Mozilla Firefox, or Opera.

For successful operation, JavaScript should be enabled on the web browser. Make sure that JavaScript has not been disabled by other software (such as virus protection or web user security packages) running on your computer.

Wired or Wireless NIC (Ethernet or Wi-Fi Adapter)

Any computer that uses the router should be equipped with an Ethernet or Wi-Fi adapter (NIC). If your computer is not equipped with such a device, install an Ethernet or Wi-Fi adapter prior to using the router.

Wireless Connection

Wireless workstations from your network should be equipped with a wireless 802.11b, g, or n NIC (Wi-Fi adapter). In addition, you should specify the values of SSID, channel number and security settings defined in the web-based interface of the router for all these wireless workstations.

Connecting to PC

PC with Ethernet Adapter

1. Make sure that your PC is powered off.
2. Connect an Ethernet cable between any of LAN ports located on the back panel of the router and the Ethernet port of your PC.
3. Connect the power cord to the power connector port on the back panel of the router, then plug the power adapter into an electrical outlet or power strip.
4. Turn on your PC and wait until your operating system is completely loaded.

Obtaining IP Address Automatically in OS Windows XP

1. Click the **Start** button and proceed to the **Control Panel > Network and Internet Connections > Network Connections** window.
2. In the **Network Connections** window, right-click the relevant **Local Area Connection** icon and select the **Properties** line in the menu displayed.

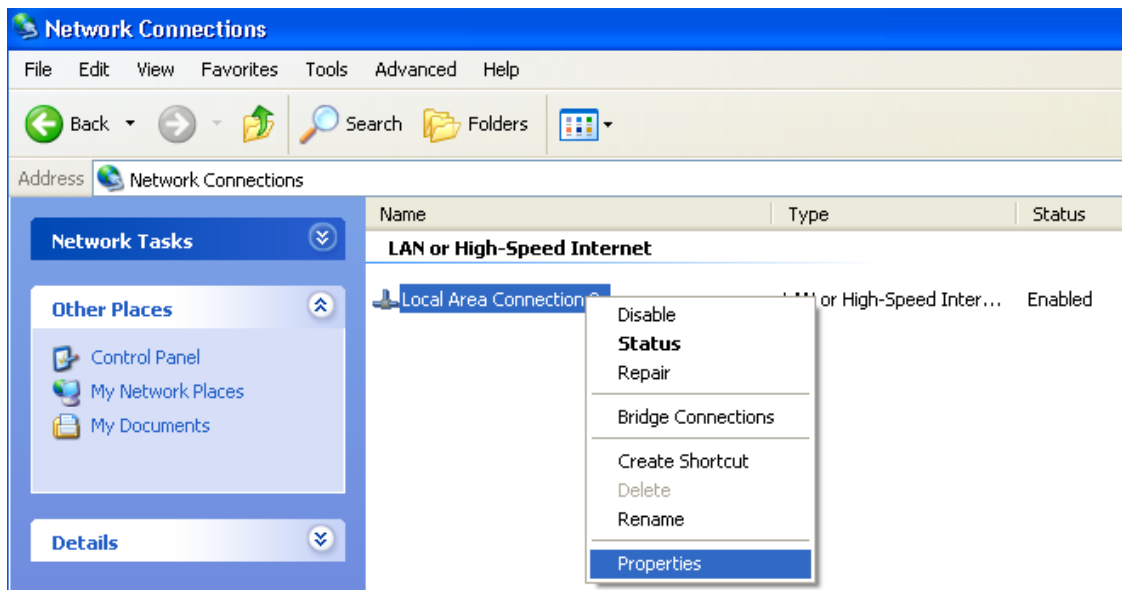


Figure 3. The **Network Connections** window.

3. In the **Local Area Connection Properties** window, on the **General** tab, select the **Internet Protocol (TCP/IP)** line. Click the **Properties** button.

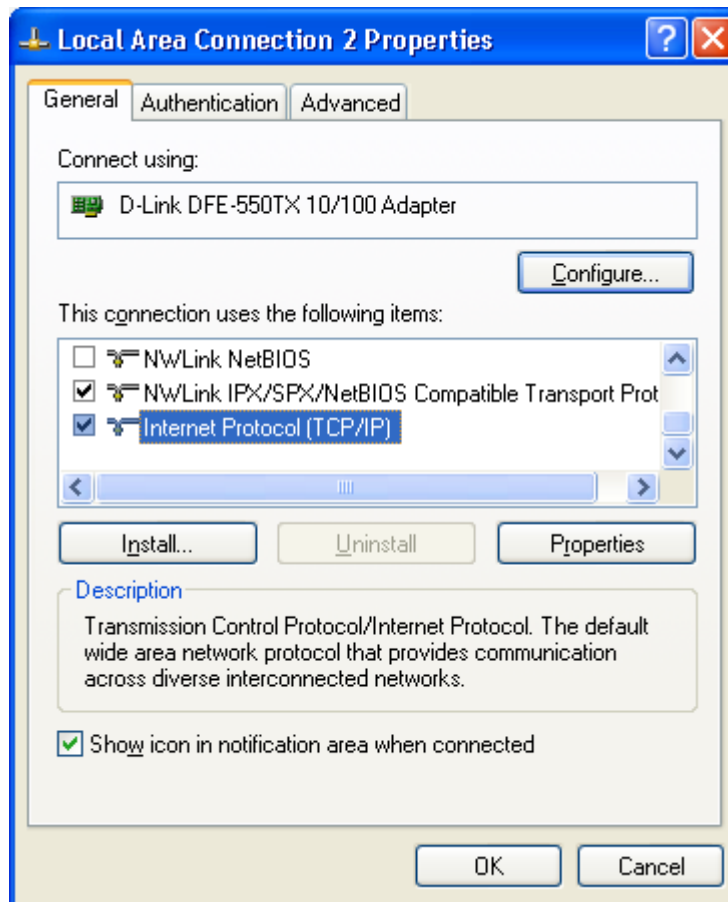


Figure 4. The **Local Area Connection Properties** window.

4. Select the **Obtain an IP address automatically** and **Obtain DNS server address automatically** radio buttons. Click the **OK** button.

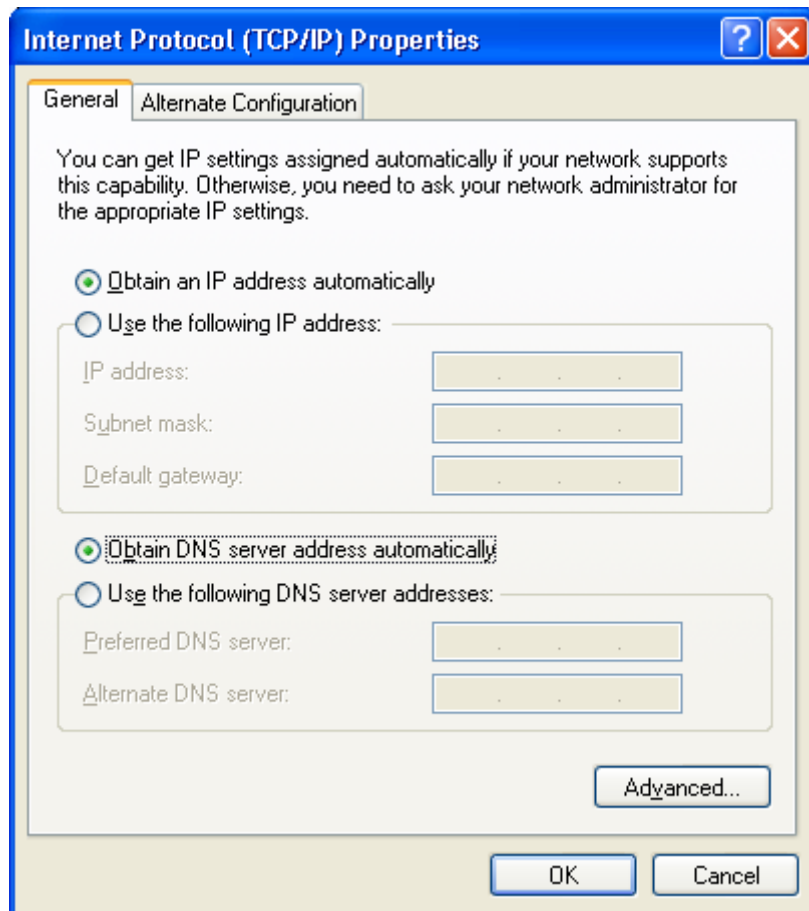


Figure 5. The **Internet Protocol (TCP/IP) Properties** window.

5. Click the **OK** button in the connection properties window.

Now your computer is configured to obtain an IP address automatically.

Obtaining IP Address Automatically in OS Windows 7

1. Click the **Start** button and proceed to the **Control Panel** window.
2. Select the **Network and Sharing Center** section. (If the Control Panel has the category view (the **Category** value is selected from the **View by** drop-down list in the top right corner of the window), choose the **View network status and tasks** line under the **Network and Internet** section.)

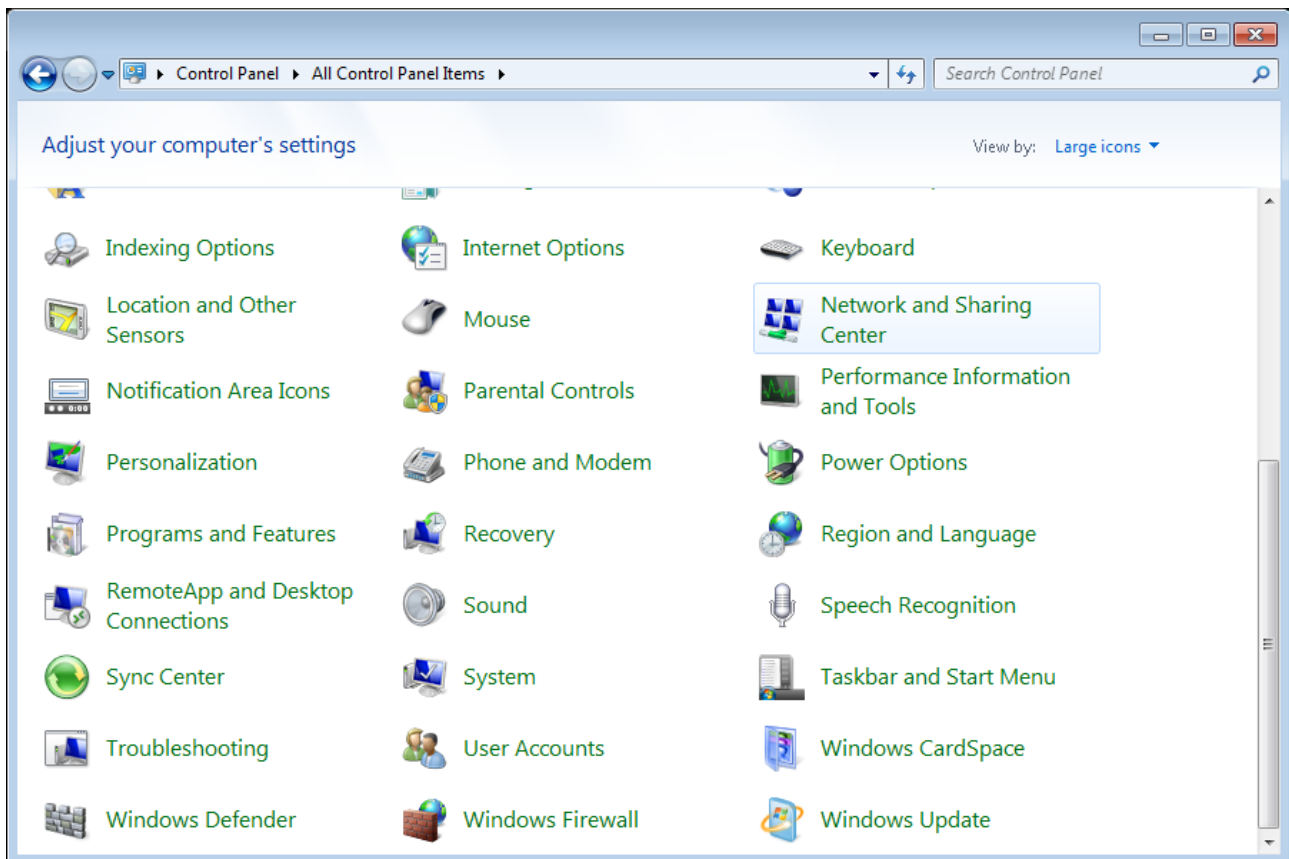


Figure 6. The **Control Panel** window.

3. In the menu located on the left part of the window, select the **Change adapter settings** line.

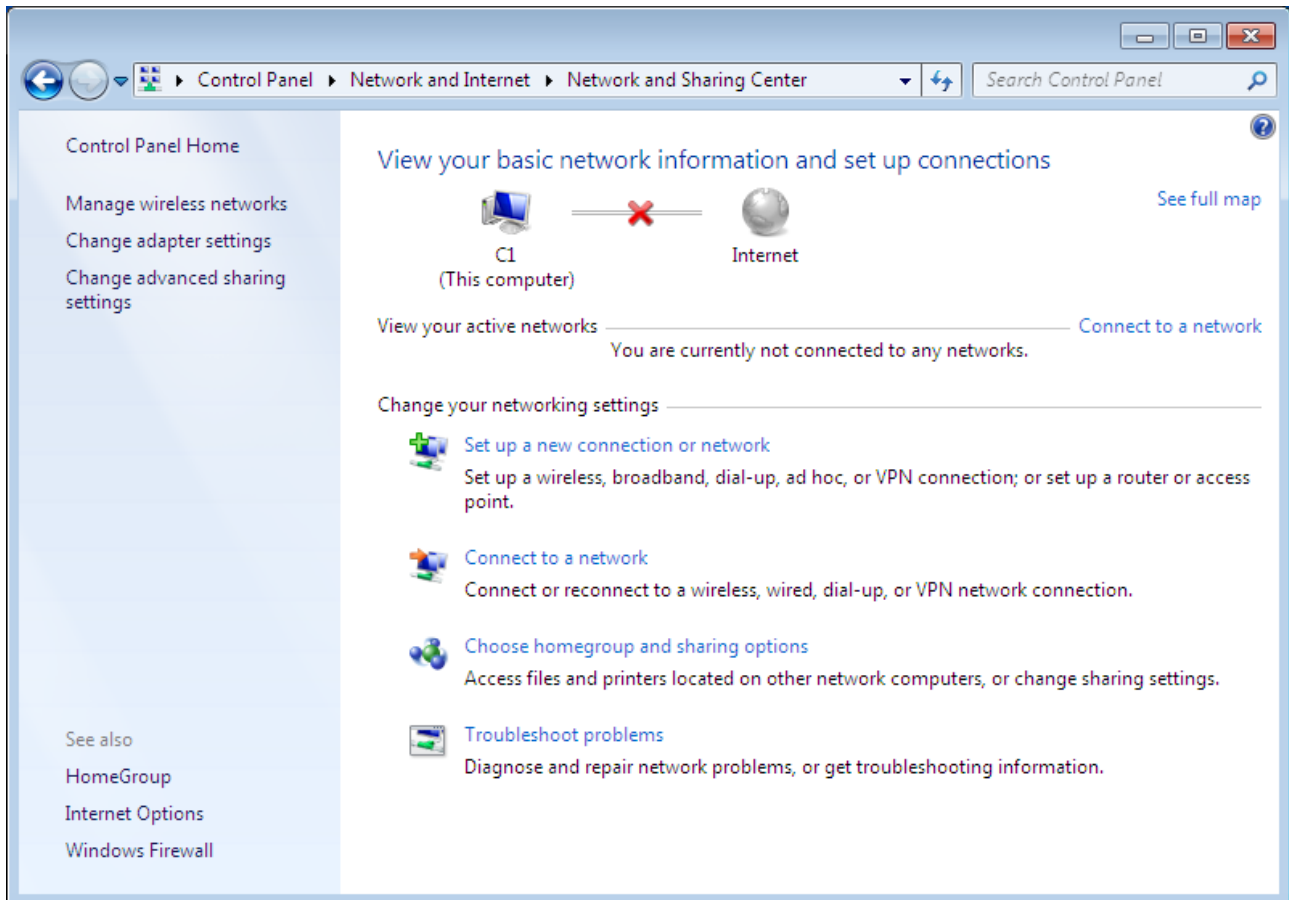


Figure 7. The **Network and Sharing Center** window.

4. In the opened window, right-click the relevant **Local Area Connection** icon and select the **Properties** line in the menu displayed.

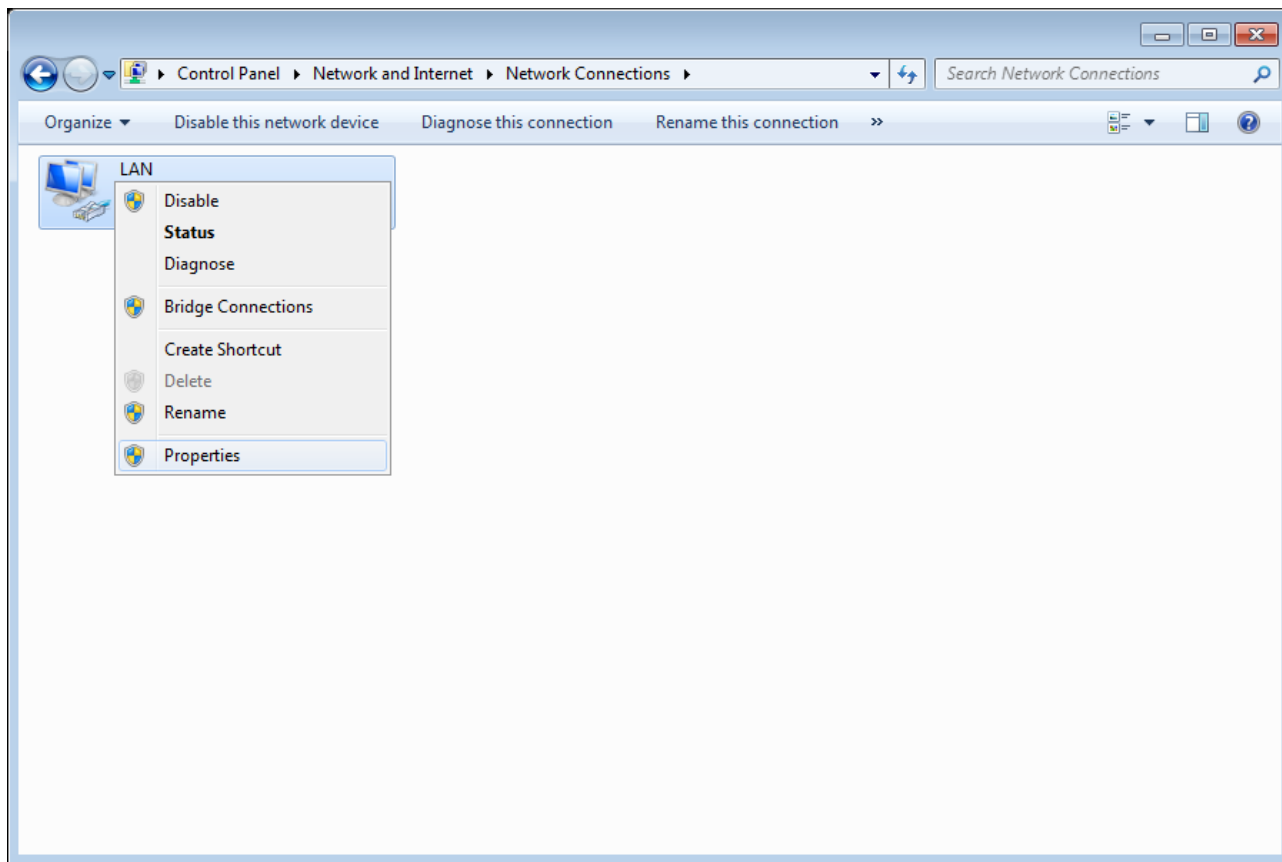


Figure 8. The **Network Connections** window.

5. In the **Local Area Connection Properties** window, on the **Networking** tab, select the **Internet Protocol Version 4 (TCP/IPv4)** line. Click the **Properties** button.

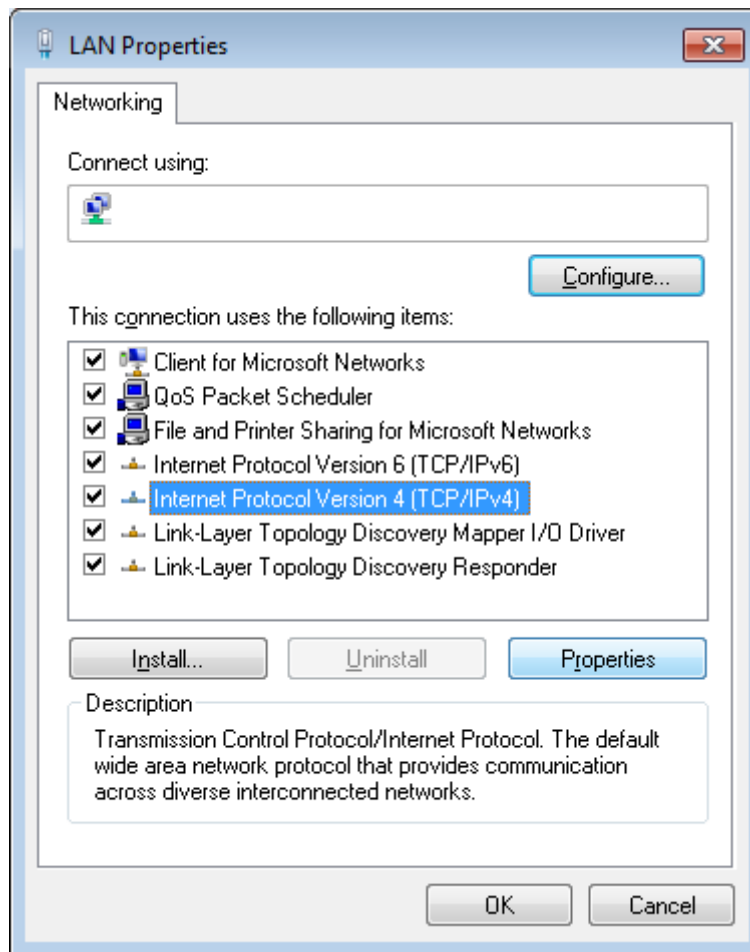


Figure 9. The **Local Area Connection Properties** window.

6. Select the **Obtain an IP address automatically** and **Obtain DNS server address automatically** radio buttons. Click the **OK** button.

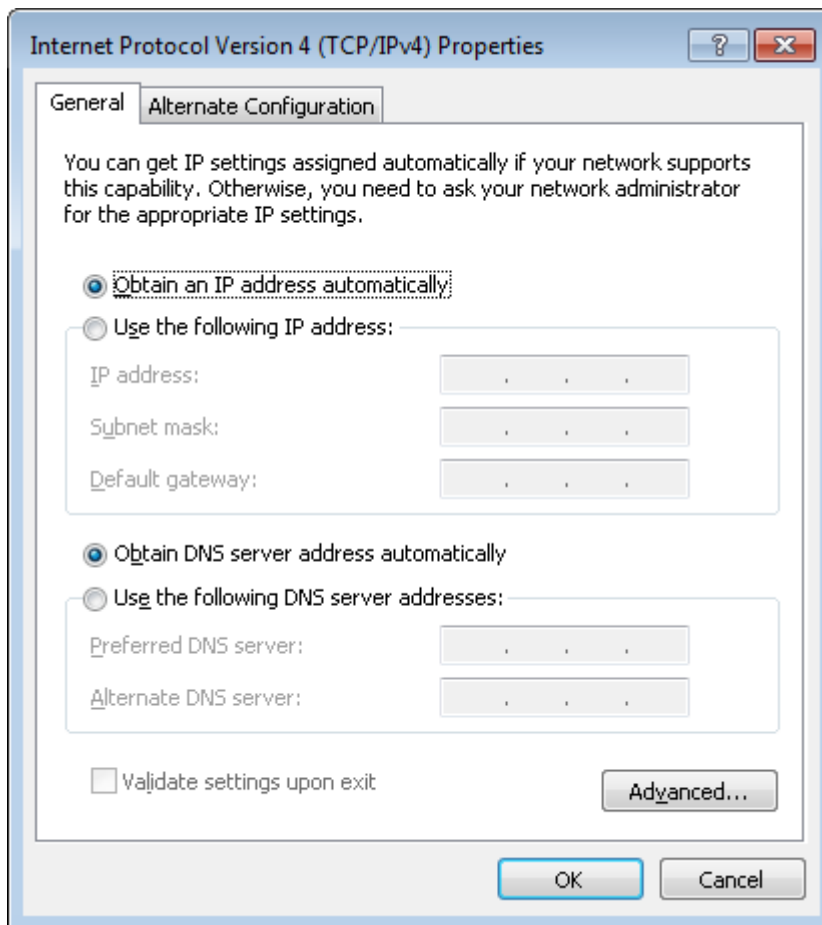


Figure 10. The **Internet Protocol Version 4 (TCP/IPv4) Properties** window.

7. Click the **OK** button in the connection properties window.

Now your computer is configured to obtain an IP address automatically.

PC with Wi-Fi Adapter

1. Connect the power cord to the power connector port on the back panel of the router, then plug the power adapter into an electrical outlet or power strip.
2. Turn on your PC and wait until your operating system is completely loaded.
3. Turn on your Wi-Fi adapter. As a rule, modern notebooks with built-in wireless NICs are equipped with a button or switch that turns on/off the wireless adapter (refer to your PC documents). If your PC is equipped with a pluggable wireless NIC, install the software provided with your Wi-Fi adapter.

Configuring Wi-Fi Adapter in OS Windows XP

1. Click the **Start** button and proceed to the **Control Panel > Network and Internet Connections > Network Connections** window.
2. Select the icon of the wireless network connection and make sure that your Wi-Fi adapter is on.

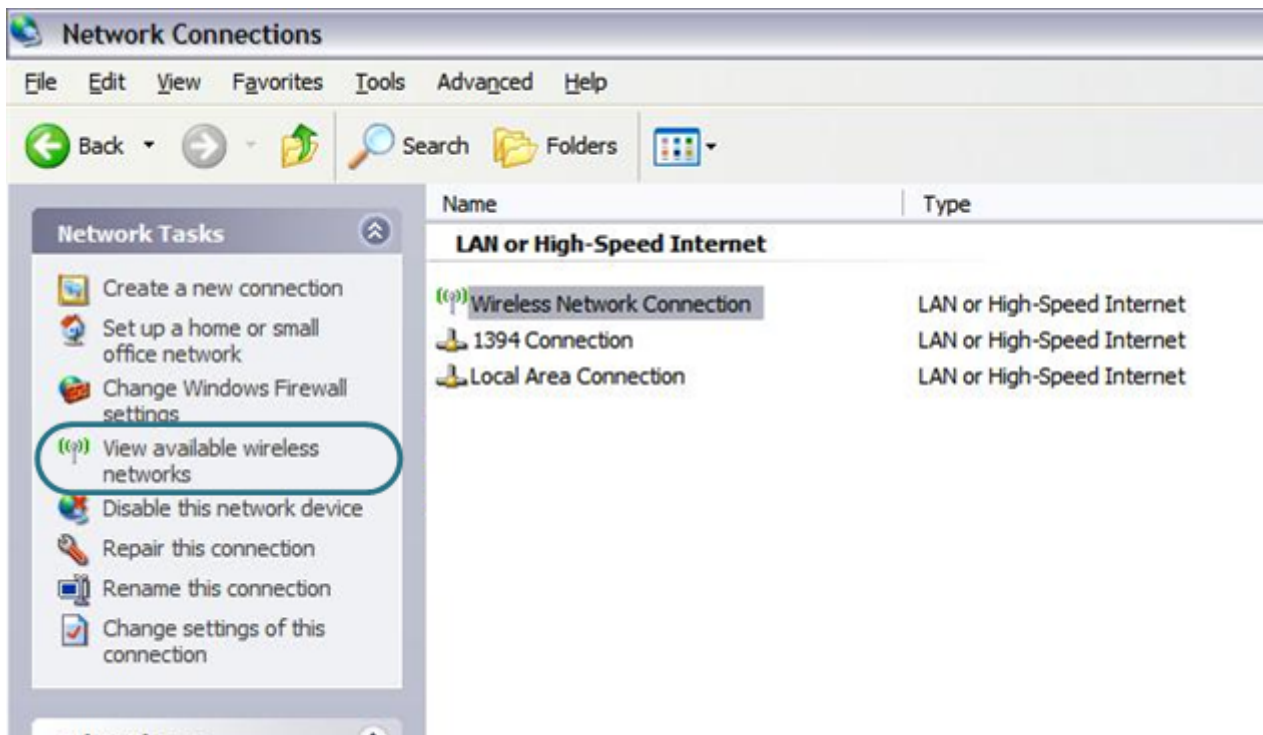


Figure 11. The **Network Connections** window.

3. Search for available wireless networks.
4. In the opened **Wireless Network Connection** window, select the wireless network **DIR-615** and click the **Connect** button.

After that the **Wireless Network Connection Status** window appears.

! If you perform initial configuration of the router via Wi-Fi connection, note that immediately after changing the wireless default settings of the router you will need to reconfigure the wireless connection using the newly specified settings.

Configuring Wi-Fi Adapter in OS Windows 7

1. Click the **Start** button and proceed to the **Control Panel** window.
2. Select the **Network and Sharing Center** section. (If the Control Panel has the category view (the **Category** value is selected from the **View by** drop-down list in the top right corner of the window), choose the **View network status and tasks** line under the **Network and Internet** section.)

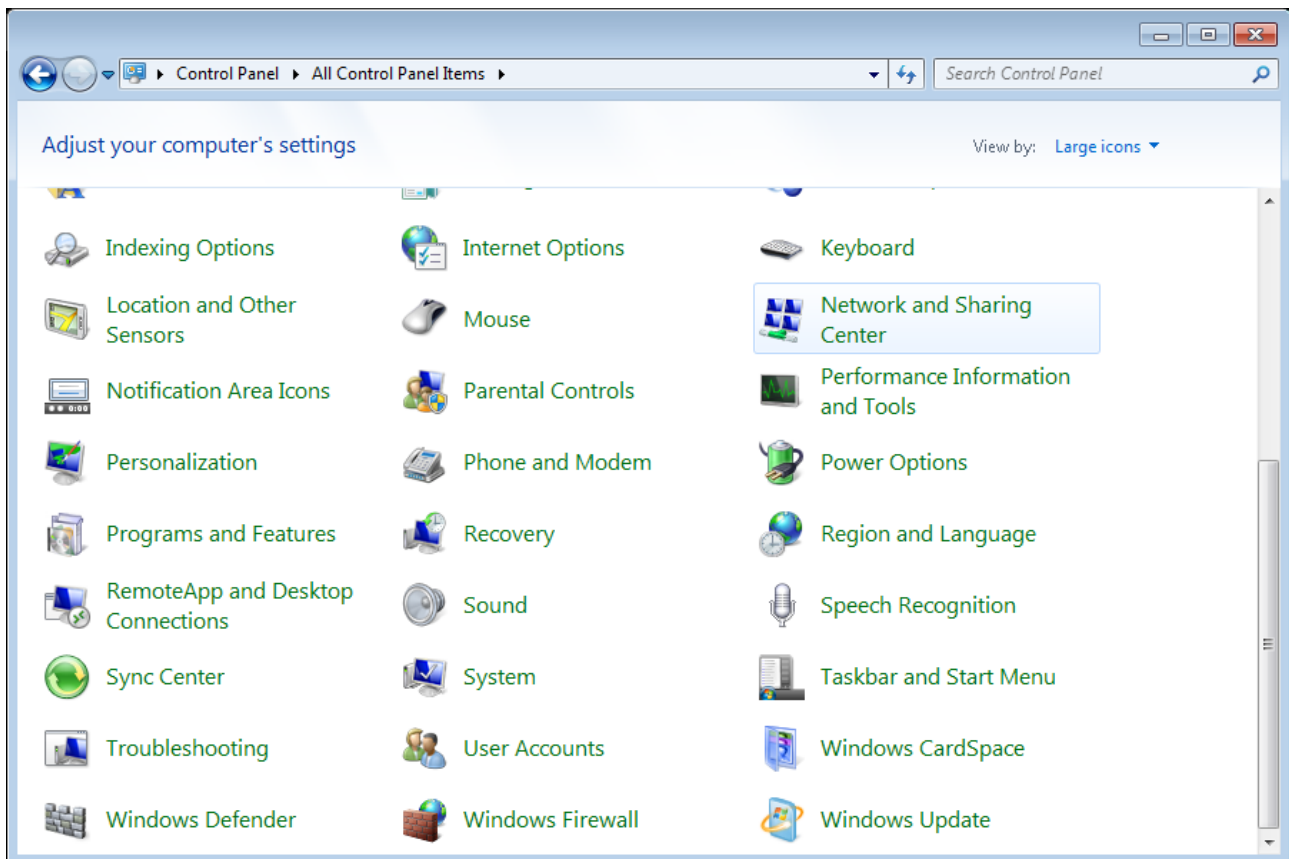


Figure 12. The **Control Panel** window.

3. In the menu located on the left part of the window, select the **Change adapter settings** line.
4. In the opened window, select the icon of the wireless network connection and make sure that your Wi-Fi adapter is on.
5. To open the list of available wireless networks, select the icon of the wireless network connection and click the **Connect To** button or left-click the network icon in the notification area located on the right side of the taskbar.

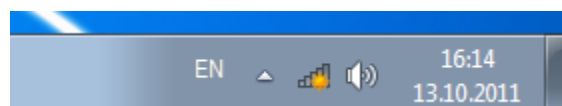


Figure 13. The notification area of the taskbar.

6. In the opened window, in the list of available wireless networks, select the wireless network **DIR-615** and click the **Connect** button.

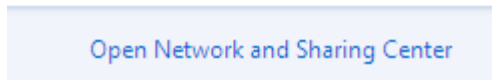
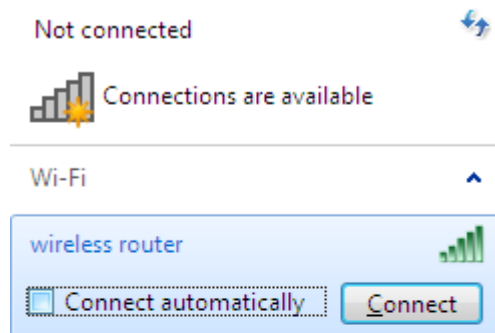


Figure 14. The list of available networks.

7. Wait for about 20-30 seconds. After the connection is established, the network icon will be displayed as the signal level scale.

! If you perform initial configuration of the router via Wi-Fi connection, note that immediately after changing the wireless default settings of the router you will need to reconfigure the wireless connection using the newly specified settings.

Connecting to Web-based Interface

When you have configured your computer, you can access the web-based interface and configure needed parameters (create a WAN connection, change the parameters of the wireless network, specify the settings of the firewall, etc.).

1. Start a web browser (see the *Before You Begin* section, page 12).
2. In the address bar of the web browser, enter the IP address of the router (by default, the following IP address is specified: **192.168.0.1**). Press the **Enter** key.



Figure 15. Connecting to the web-based interface of the DIR-615 device.

3. On the opened page, enter the username (login) and password for the administrator account (by default, the following username and password are specified: **admin**, **admin**). Then click the **Enter** link.



Figure 16. The login page.

! If the error “The page cannot be displayed” (or “Unable to display the page”/“Could not connect to remote server”) occurs upon connecting to the web-based interface of the router, make sure that you have properly connected the router to your computer.

Right after the first access to the web-based interface you are forwarded to the page for changing the administrator password specified by default.

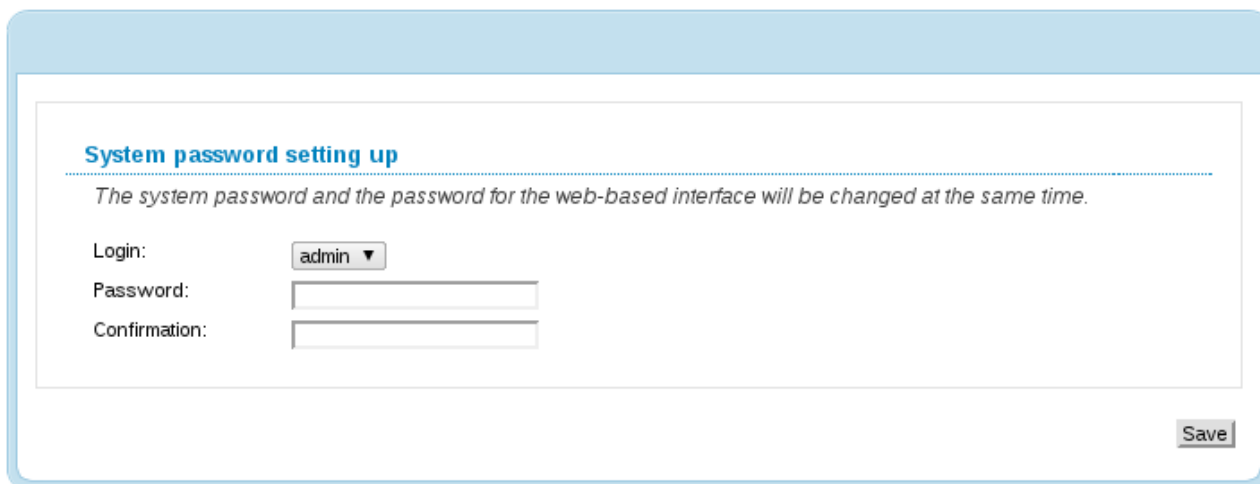


Figure 17. The page for changing the default administrator password.

Enter the new password in the **Password** and **Confirmation** fields. Then click the **Save** button.

! Remember or write down the new password for the administrator account. In case of losing the new password, you can access the settings of the router only after restoring the factory default settings via the hardware Reset button. This procedure wipes out all settings that you have configured for your router.

After successful registration the router's quick settings page opens.

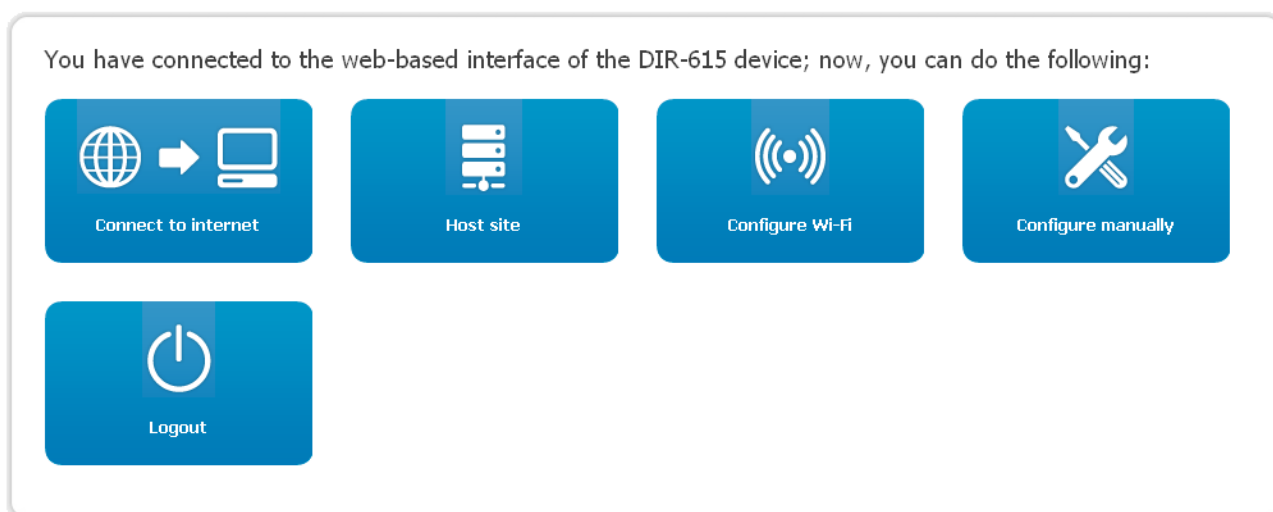


Figure 18. The quick settings page.

To configure connection to the Internet, click the **Connect to internet** button. After clicking the button, the Internet Setup Wizard opens (see the *Internet Setup Wizard* section, page 29).

To configure access from the Internet to a web server located in your LAN, click the **Host site** button. After clicking the button, the Site Setup Wizard opens (see the *Site Setup Wizard* section, page 49).

To configure the router's wireless network, click the **Configure Wi-Fi** button. After clicking the button, the Wi-Fi Setup Wizard opens (see the *Wi-Fi Setup Wizard* section, page 50).

To configure all parameters of the router independently without the Wizards, click the **Configure manually** button.

After clicking the button the system statistics page opens. The page displays general information on the router and its software (the version and the date of the firmware, the IP address of the device, the name of the WLAN, etc.).

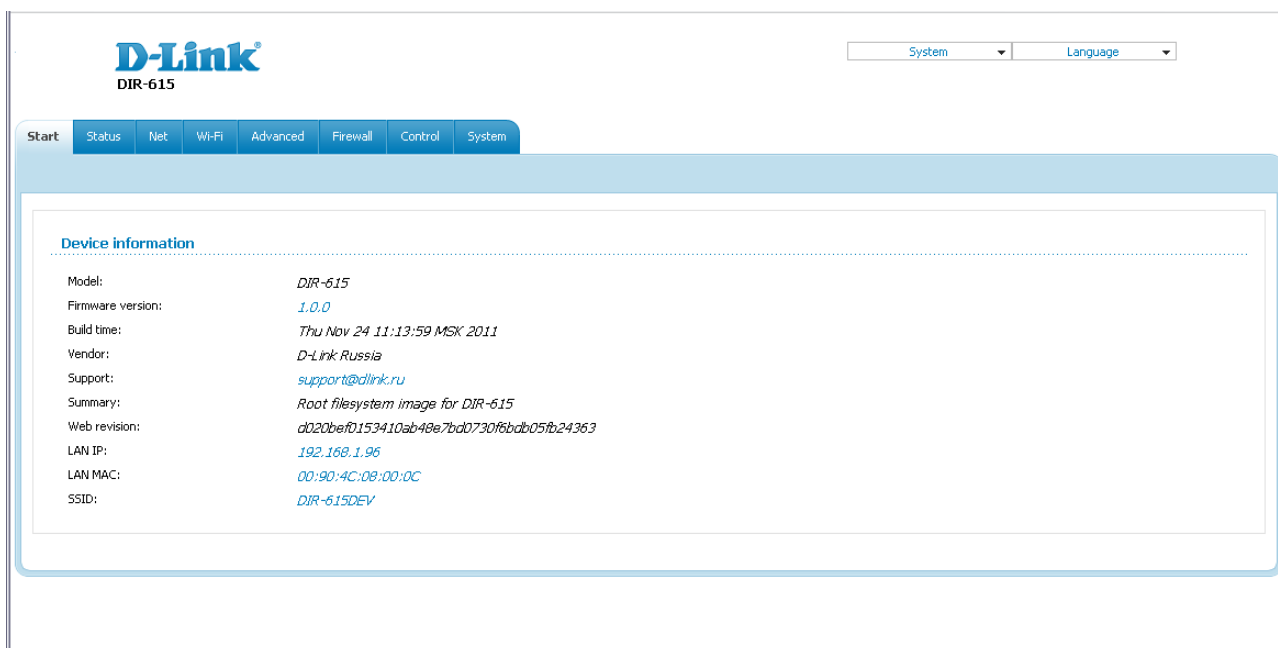


Figure 19. The system statistics page.

From the system statistics page you can proceed to the page for upgrading the router's firmware, contact the technical support group, and proceed to the settings of the local interface or the device's WLAN.

To upgrade the firmware of the router, left-click the current firmware version (the right column of the **Firmware version** line). After clicking the line, the **System / Firmware upgrade** page opens (see the *Firmware Upgrade* section, page 108).

To contact the technical support group (to send an e-mail), left-click the support e-mail address (the right column of the **Support** line). After clicking the line, the e-mail client window for sending a new letter to the specified address opens.

To edit the router's local interface parameters, left-click the IP or MAC address of the local interface (the right column of the **LAN IP** line or **LAN MAC** line correspondingly). After clicking the line, the page for editing the LAN interface opens (see the *LAN* section, page 74).

To configure the router's WLAN parameters, left-click the SSID of the WLAN (the right column of the **SSID** line). After clicking the line, the **Wi-Fi / Basic settings** page opens (see the *Basic Settings* section, page 77).

The web-based interface of the router is multilingual. Select a needed language from the menu displayed when the mouse pointer is over the **Language** caption. You can change the language of the web-based interface in any menu item.

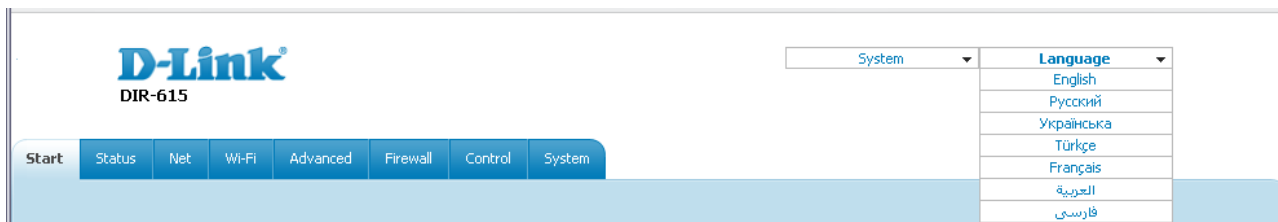


Figure 20. Changing the language of the web-based interface.

After selecting the language, the notification on unsaved changes will be displayed. Click the **Save** button to save the current language of the web-based interface as the default language.

Saving and Restoring Settings

! Note that you should regularly save the changes of the router's settings to the non-volatile memory.

The router's web-based interface displays the notification on unsaved changes at the top of the page.

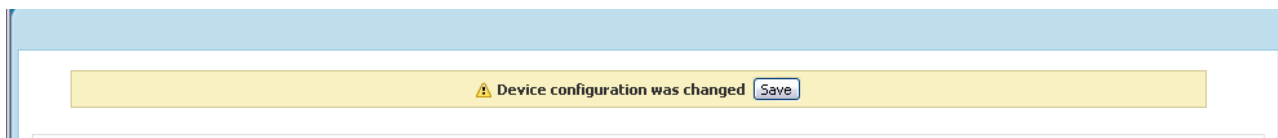


Figure 21. The notification on unsaved changes.

You can save the router's settings via the top-page menu displayed when the mouse pointer is over the **System** caption.

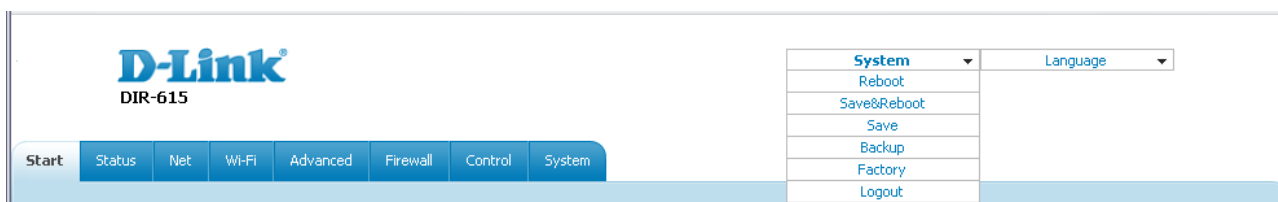


Figure 22. The top-page menu.

Click the **Reboot** line if you have already saved the router's settings.

Click the **Save&Reboot** line to save new settings and immediately reboot the router.

Click the **Save** line to save new settings to the non-volatile memory and continue configuring the device. Also you can save the device's parameters via the **Save** button on the **System / Configuration** page.

Click the **Backup** line and follow the dialog box appeared to save the configuration (all settings of the router) to your PC. Also you can save the router's configuration to your PC via the **Backup** button on the **System / Configuration** page.

Click the **Factory** line to restore the factory default settings. Also you can restore the factory defaults via the **Factory** button on the **System / Configuration** page.

Also you can restore the factory default settings via the hardware Reset button. The hole of the button is located on the back panel of the router next to the power connector. Use a small paperclip to activate the button; insert it into the hole (with the router turned on), push, and hold for 10 seconds. Then remove the paperclip. Wait for about 30 seconds. Now you can access the web-based interface of the router using the default IP address, username and password.

When you have configured all needed settings, click the **Logout** line.

CHAPTER 4. CONFIGURING VIA WEB-BASED INTERFACE

Setup Wizards

Internet Setup Wizard

To configure connection to the Internet, click the **Connect to internet** button.

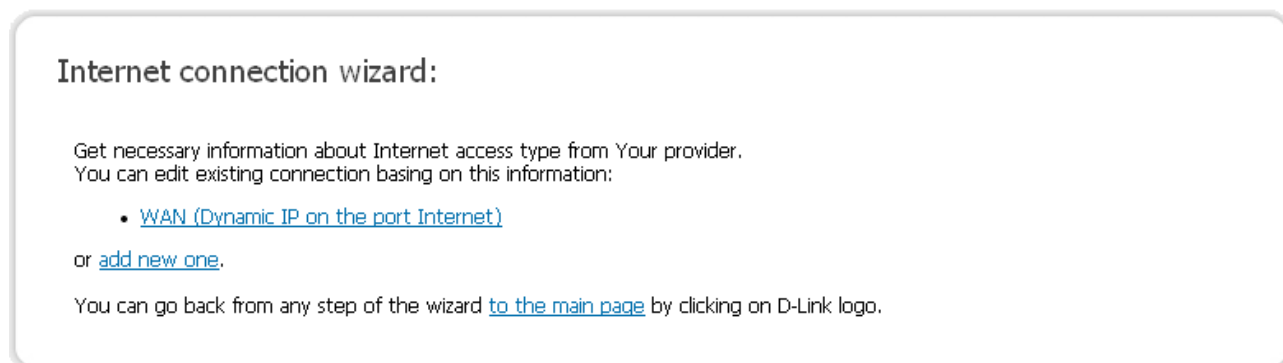


Figure 23. Configuring connection to the Internet.

By default, the **WAN** connection is configured in the system. To edit this connection, click the **WAN** link and change the relevant parameters (see the *Dynamic IP Connection* section, page 37).

To create a new WAN connection, click the **add new one** link.

Internet connection wizard:

Select connection type:

- PPPoE**
A connection of this type requires a username and password. This type is used for connection via Ethernet or via DSL.
- Static IP**
A connection of this type allows using a fixed IP address, provided by your ISP.
- Dynamic IP**
A connection of this type allows obtaining an IP address automatically from your ISP.
- PPTP + Static IP**
A connection of this type is protected by a special tunnel in the standard non-protected network. This type is used by some ISPs. It requires a username and password. When this type is selected, you can specify a fixed IP address for the non-protected network before configuring the tunnel.
- PPTP + Dynamic IP**
A connection of this type is protected by a special tunnel in the standard non-protected network. This type is used by some ISPs. It requires a username and password. When this type is selected, you automatically obtain an IP address for the non-protected network from the ISP.
- L2TP + Static IP**
A connection of this type is protected by a special tunnel in the standard non-protected network. This type is used by some ISPs. It requires a username and password. When this type is selected, you can specify a fixed IP address for the non-protected network before configuring the tunnel.
- L2TP + Dynamic IP**
A connection of this type is protected by a special tunnel in the standard non-protected network. This type is used by some ISPs. It requires a username and password. When this type is selected, you automatically obtain an IP address for the non-protected network from the ISP.

Next >

Figure 24. The page for selecting the connection type.

On the opened page, select the needed choice of the radio button and click the **Next** button.

PPPoE Connection

Internet connection wizard:

Connection name

The connection name has been generated automatically according to the specified parameters. You can specify another name or skip to the next step.

Name:

Figure 25. Configuring PPPoE WAN connection.

In the **Name** field, specify a name for the connection for easier identification and click the **Next** button.

Internet connection wizard:

Ethernet

MTU:

MAC:

PPP

Username:

Without authorization:

Password:

Password confirmation:

Advanced PPP settings

Figure 26. Configuring PPPoE WAN connection.

If needed, in the **MTU** field, change the maximum size of units transmitted by the interface.

If your ISP uses MAC address binding, in the **MAC** field, enter the MAC address registered by your ISP upon concluding the agreement.

You can click the **Clone MAC** button to set the MAC address of the network interface card (of the computer that is being used to configure the router at the moment).

Also you can set the address of a device connected to the router's LAN at the moment. To do this, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).

In the **Username** field, enter your login, and in the **Password** and **Password confirmation** fields – the password provided by your ISP.

If authorization is not required, select the **Without authorization** checkbox.

If needed, specify additional settings for your PPPoE WAN connection.

Internet connection wizard:

▶ **Ethernet**

PPP

Username:

Without authorization:

Password:

Password confirmation:

▼ **Advanced PPP settings**

Service name:

Authentication algorithm: ▼

MTU:

Keep Alive:

LCP interval (sec):

LCP fails:

Dial on demand:

PPP IP extension:

Use Static IP Address:

PPP debug:

PPPoE pass through:

Figure 27. Configuring PPPoE WAN connection.

Parameter	Description
Service name	The name of the PPPoE authentication server.
Authentication algorithm	Select a required authentication method from the drop-down list or leave the AUTO value.
MTU	The maximum size of units transmitted by the interface.
Keep Alive	Select the checkbox if you want the router to keep you connected to your ISP even when the connection has been inactive for a specified period of time. When the checkbox is selected, the LCP interval and LCP fails fields are available. Specify the required values.
Dial on demand	Select the checkbox if you want the router to establish connection to the Internet on demand. In the Maximum idle time field, specify a period of inactivity (in seconds) after which the connection should be terminated.

Parameter	Description
PPP IP extension	This option is used by some ISPs. Contact your ISP to clarify if this checkbox needs to be enabled.
Use Static IP Address	Select the checkbox if you want to use a static IP address to access the Internet. In the IP Address field displayed when the checkbox is selected, specify a static IP address.
PPP debug	Select the checkbox if you want to log all data on PPP connection debugging.
PPPoE pass through	Select the checkbox if you want to allow PPPoE clients of computers from your LAN to connect to the Internet through this PPPoE connection of the router.

Click the **Next** button to continue.

If needed, change the connection settings available in the **Miscellaneous** section.

Internet connection wizard:

Miscellaneous

Enable RIP:

Enable IGMP Multicast:

NAT:

firewall:

Figure 28. Configuring PPPoE WAN connection.

Parameter	Description
Enable RIP	Select the checkbox to allow using RIP for this connection.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

Click the **Next** button to continue.

After that the page displaying all specified settings opens. Click the **Save** button to create the connection or the **Back** button to specify other settings.

After clicking the **Save** button, the quick settings page opens.

Static IP Connection

Internet connection wizard:

Connection name

The connection name has been generated automatically according to the specified parameters. You can specify another name or skip to the next step.

Name:

< Back Next >

Figure 29. Configuring Static IP WAN connection.

In the **Name** field, specify a name for the connection for easier identification and click the **Next** button.

Internet connection wizard:

Ethernet

MTU:

MAC: <Select address> ▼

IP

IP Address:

Netmask:

Gateway IP address:

Primary DNS server:

Secondary DNS server:

Advanced IP settings

< Back Next >

Figure 30. Configuring Static IP WAN connection.

If needed, in the **MTU** field, change the maximum size of units transmitted by the interface.

If your ISP uses MAC address binding, in the **MAC** field, enter the MAC address registered by your ISP upon concluding the agreement.

You can click the **Clone MAC** button to set the MAC address of the network interface card (of the computer that is being used to configure the router at the moment).

Also you can set the address of a device connected to the router's LAN at the moment. To do this, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).

Fill in the **IP address** and **Netmask** fields.

In the **Gateway IP address** field, enter the IP address of the gateway used by this WAN connection.

In the **Primary DNS server** and **Secondary DNS server** fields, enter the addresses of the primary and secondary DNS servers.

Click the **Next** button to continue.

If needed, enter the IP addresses of the ISP's local resources.

Internet connection wizard:

Routing configuration

*Here you can add IP addresses of your ISP's local resources.
Click "Add" button to add resource. Click mouse right button on the table header to add, delete, or edit addresses.*

Destination network	Destination netmask
---------------------	---------------------

Buttons: Add, Edit, Delete (context menu), Add, < Back, Next >

Figure 31. Configuring Static IP WAN connection.

To add a route, click the **Add** button or right-click the routing table heading and select the **Add** line from the shortcut menu displayed.

Click the **Next** button to continue.

If needed, change the connection settings available in the **Miscellaneous** section.

Internet connection wizard:

Miscellaneous

Enable RIP:

Enable IGMP Multicast:

NAT:

firewall:

Buttons: < Back, Next >

Figure 32. Configuring Static IP WAN connection.

Parameter	Description
Enable RIP	Select the checkbox to allow using RIP for this connection.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

Click the **Next** button to continue.

After that the page displaying all specified settings opens. Click the **Save** button to create the connection or the **Back** button to specify other settings.

After clicking the **Save** button, the quick settings page opens.

Dynamic IP Connection

Internet connection wizard:

Connection name

The connection name has been generated automatically according to the specified parameters. You can specify another name or skip to the next step.

Name:

Figure 33. Configuring Dynamic IP WAN connection.

In the **Name** field, specify a name for the connection for easier identification and click the **Next** button.

Internet connection wizard:

Ethernet

MTU:

MAC:

IP

Obtain DNS server addresses automatically:

Advanced IP settings

Vendor ID:

Figure 34. Configuring Dynamic IP WAN connection.

If needed, in the **MTU** field, change the maximum size of units transmitted by the interface.

If your ISP uses MAC address binding, in the **MAC** field, enter the MAC address registered by your ISP upon concluding the agreement.

You can click the **Clone MAC** button to set the MAC address of the network interface card (of the computer that is being used to configure the router at the moment).

Also you can set the address of a device connected to the router's LAN at the moment. To do this, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).

If your ISP has provided the addresses of the DNS servers, deselect the **Obtain DNS server addresses automatically** checkbox and fill in the **Primary DNS server** and **Secondary DNS server** fields.

If your ISP has provided its identifier, fill in the **Vendor ID** field.

Click the **Next** button to continue.

If needed, change the connection settings available in the **Miscellaneous** section.

Internet connection wizard:

Miscellaneous

Enable RIP:

Enable IGMP Multicast:

NAT:

firewall:

< Back Next >

Figure 35. Configuring Dynamic IP WAN connection.

Parameter	Description
Enable RIP	Select the checkbox to allow using RIP for this connection.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

Click the **Next** button to continue.

After that the page displaying all specified settings opens. Click the **Save** button to create the connection or the **Back** button to specify other settings.

After clicking the **Save** button, the quick settings page opens.

PPTP + Static IP or L2TP + Static IP Connection

Internet connection wizard:

Connection name

The connection name has been generated automatically according to the specified parameters. You can specify another name or skip to the next step.

Name:

Figure 36. Configuring PPTP + Static IP WAN connection.

In the **Name** field, specify a name for the connection for easier identification and click the **Next** button.

Internet connection wizard:

Ethernet

MTU:

MAC:

IP

IP Address:

Netmask:

Gateway IP address:

Primary DNS server:

Secondary DNS server:

Advanced IP settings

Figure 37. Configuring PPTP + Static IP WAN connection.

If needed, in the **MTU** field, change the maximum size of units transmitted by the interface.

If your ISP uses MAC address binding, in the **MAC** field, enter the MAC address registered by your ISP upon concluding the agreement.

You can click the **Clone MAC** button to set the MAC address of the network interface card (of the computer that is being used to configure the router at the moment).

Also you can set the address of a device connected to the router's LAN at the moment. To do this, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).

Fill in the **IP address** and **Netmask** fields.

In the **Gateway IP address** field, enter the IP address of the gateway used by this WAN connection.

In the **Primary DNS server** and **Secondary DNS server** fields, enter the addresses of the primary and secondary DNS servers.

Click the **Next** button to continue.

If needed, enter the IP addresses of the ISP's local resources.

Internet connection wizard:

Routing configuration

*Here you can add IP addresses of your ISP's local resources.
Click "Add" button to add resource. Click mouse right button on the table header to add, delete, or edit addresses.*

Destination network	Destination netmask
---------------------	---------------------

Buttons: Add, Edit, Delete (context menu); Add, < Back, Next >

Figure 38. Configuring PPTP + Static IP WAN connection.

To add a route, click the **Add** button or right-click the routing table heading and select the **Add** line from the shortcut menu displayed.

Click the **Next** button to continue.

If needed, change the connection settings available in the **Miscellaneous** section.

Internet connection wizard:

Miscellaneous

Enable RIP:

Enable IGMP Multicast:

NAT:

firewall:

Buttons: < Back, Next >

Figure 39. Configuring PPTP + Static IP WAN connection.

Parameter	Description
Enable RIP	Select the checkbox to allow using RIP for this connection.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

Click the **Next** button to continue.

Internet connection wizard:

VPN

Connect automatically:

Username:

Without authorization:

Password:

Password confirmation:

VPN server address:

Advanced PPP settings

Encryption:

Authentication algorithm:

MTU:

Keep Alive:

Extra options:

Dial on demand:

PPP debug:

IP received:

Figure 40. Configuring PPTP + Static IP WAN connection.

Leave the **Connect automatically** checkbox selected to allow automatic start of the connection upon the load of the router.

In the **Username** field, enter your login, and in the **Password** and **Password confirmation** fields – the password provided by your ISP.

If authorization is not required, select the **Without authorization** checkbox.

In the **VPN server address** field, enter the IP or URL address of the PPTP or L2TP authentication server.

If needed, specify additional settings for your PPTP + Static IP or L2TP + Static IP WAN connection.

Parameter	Description
Encryption	<p>Select a method of MPPE encryption.</p> <ul style="list-style-type: none"> • No encrypt: MPPE encryption is not applied. • MPPE 40/128 bit: MPPE encryption with a 40-bit or 128-bit key is applied. • MPPE 40 bit: MPPE encryption with a 40-bit key is applied. • MPPE 128 bit: MPPE encryption with a 128-bit key is applied. <p>MPPE encryption can be applied only if the MSCHAP, MACHAPv2, or AUTO value is selected from the Authentication algorithm drop-down list.</p>
Authentication algorithm	Select a required authentication method from the drop-down list or leave the AUTO value.
MTU	The maximum size of units transmitted by the interface.
Keep Alive	Select the checkbox if you want the router to keep you connected to your ISP even when the connection has been inactive for a specified period of time. When the checkbox is selected, the LCP interval and LCP fails fields are available. Specify the required values.
Extra options	Advanced options of the pppd daemon which need to be specified for this connection. <i>Optional.</i>
Dial on demand	Select the checkbox if you want the router to establish connection to the Internet on demand. In the Maximum idle time field, specify a period of inactivity (in seconds) after which the connection should be terminated.
PPP debug	Select the checkbox if you want to log all data on PPP connection debugging.
IP received	The IP address assigned by the ISP.

Click the **Next** button to continue.

If needed, change the settings of the VPN tunnel available in the **Miscellaneous** section.

The screenshot shows a web-based configuration interface for a VPN tunnel. The title is "Internet connection wizard:". Below it, the section is labeled "Miscellaneous" in blue text. Underneath, it says "Additional settings of VPN tunnel". There are three settings listed: "Enable RIP:" with an unchecked checkbox, "NAT:" with a checked checkbox, and "firewall:" with a checked checkbox. At the bottom right, there are two buttons: "< Back" and "Next >".

Figure 41. Configuring PPTP + Static IP WAN connection.

Parameter	Description
Enable RIP	Select the checkbox to allow using RIP for this connection.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

Click the **Next** button to continue.

After that the page displaying all specified settings opens. Click the **Save** button to create the connection or the **Back** button to specify other settings.

After clicking the **Save** button, the quick settings page opens.

PPTP + Dynamic IP or L2TP + Dynamic IP Connection

Internet connection wizard:

Connection name

The connection name has been generated automatically according to the specified parameters. You can specify another name or skip to the next step.

Name:

Figure 42. Configuring PPTP + Dynamic IP WAN connection.

In the **Name** field, specify a name for the connection for easier identification and click the **Next** button.

Internet connection wizard:

Ethernet

MTU:

MAC:

IP

Obtain DNS server addresses automatically:

Advanced IP settings

Vendor ID:

Figure 43. Configuring PPTP + Dynamic IP WAN connection.

If needed, in the **MTU** field, change the maximum size of units transmitted by the interface.

If your ISP uses MAC address binding, in the **MAC** field, enter the MAC address registered by your ISP upon concluding the agreement.

You can click the **Clone MAC** button to set the MAC address of the network interface card (of the computer that is being used to configure the router at the moment).

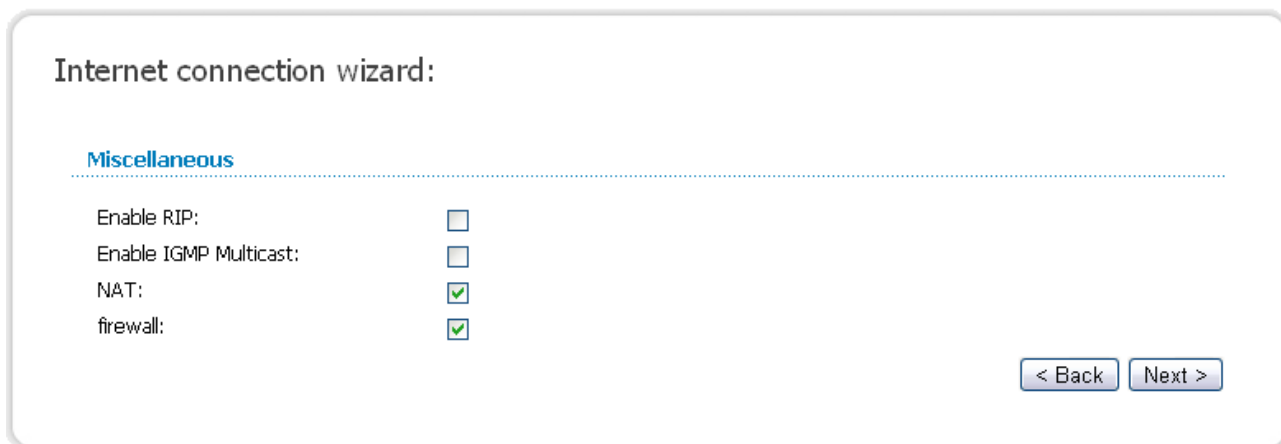
Also you can set the address of a device connected to the router's LAN at the moment. To do this, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).

If your ISP has provided the addresses of the DNS servers, deselect the **Obtain DNS server addresses automatically** checkbox and fill in the **Primary DNS server** and **Secondary DNS server** fields.

If your ISP has provided its identifier, fill in the **Vendor ID** field.

Click the **Next** button to continue.

If needed, change the connection settings available in the **Miscellaneous** section.



The screenshot shows a web-based configuration interface for an internet connection wizard. The title is "Internet connection wizard:". Below the title, there is a section header "Miscellaneous" with a dotted line underneath. There are four settings listed, each with a checkbox: "Enable RIP:" (unchecked), "Enable IGMP Multicast:" (unchecked), "NAT:" (checked), and "firewall:" (checked). At the bottom right of the form, there are two buttons: "< Back" and "Next >".

Figure 44. Configuring PPTP + Dynamic IP WAN connection.

Parameter	Description
Enable RIP	Select the checkbox to allow using RIP for this connection.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

Click the **Next** button to continue.

Internet connection wizard:

VPN

Connect automatically:

Username:

Without authorization:

Password:

Password confirmation:

VPN server address:

Advanced PPP settings

Encryption:

Authentication algorithm:

MTU:

Keep Alive:

Extra options:

Dial on demand:

PPP debug:

IP received:

Figure 45. Configuring PPTP + Dynamic IP WAN connection.

Leave the **Connect automatically** checkbox selected to allow automatic start of the connection upon the load of the router.

In the **Username** field, enter your login, and in the **Password** and **Password confirmation** fields – the password provided by your ISP.

If authorization is not required, select the **Without authorization** checkbox.

In the **VPN server address** field, enter the IP or URL address of the PPTP or L2TP authentication server.

If needed, specify additional settings for your PPTP + Dynamic IP or L2TP + Dynamic IP WAN connection.

Parameter	Description
Encryption	<p>Select a method of MPPE encryption.</p> <ul style="list-style-type: none"> • No encrypt: MPPE encryption is not applied. • MPPE 40/128 bit: MPPE encryption with a 40-bit or 128-bit key is applied. • MPPE 40 bit: MPPE encryption with a 40-bit key is applied. • MPPE 128 bit: MPPE encryption with a 128-bit key is applied. <p>MPPE encryption can be applied only if the MSCHAP, MACHAPv2, or AUTO value is selected from the Authentication algorithm drop-down list.</p>
Authentication algorithm	Select a required authentication method from the drop-down list or leave the AUTO value.
MTU	The maximum size of units transmitted by the interface.
Keep Alive	Select the checkbox if you want the router to keep you connected to your ISP even when the connection has been inactive for a specified period of time. When the checkbox is selected, the LCP interval and LCP fails fields are available. Specify the required values.
Extra options	Advanced options of the pppd daemon which need to be specified for this connection. <i>Optional.</i>
Dial on demand	Select the checkbox if you want the router to establish connection to the Internet on demand. In the Maximum idle time field, specify a period of inactivity (in seconds) after which the connection should be terminated.
PPP debug	Select the checkbox if you want to log all data on PPP connection debugging.
IP received	The IP address assigned by the ISP.

Click the **Next** button to continue.

If needed, change the settings of the VPN tunnel available in the **Miscellaneous** section.

Internet connection wizard:

Miscellaneous

Additional settings of VPN tunnel

Enable RIP:

NAT:

firewall:

< Back Next >

Figure 46. Configuring PPTP + Dynamic IP WAN connection.

Parameter	Description
Enable RIP	Select the checkbox to allow using RIP for this connection.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

Click the **Next** button to continue.

After that the page displaying all specified settings opens. Click the **Save** button to create the connection or the **Back** button to specify other settings.

After clicking the **Save** button, the quick settings page opens.

Site Setup Wizard

To create a virtual server for redirecting incoming Internet traffic to a specified IP address in the LAN, click the **Host site** button.

Figure 47. The page for adding a virtual server.

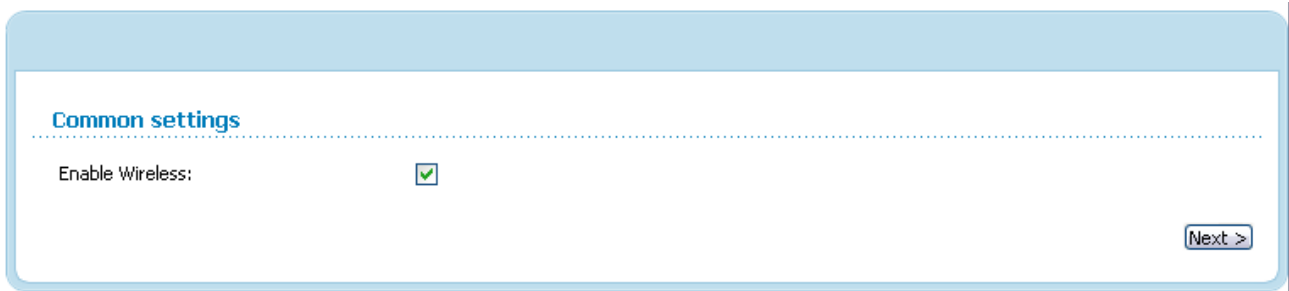
On the opened page, you can specify the following parameters:

Parameter	Description
Name	Enter a name for the virtual server for easier identification. You can specify any name.
Interface	Select a WAN connection to which this virtual server will be assigned.
Private IP	Enter the IP address of the server from the local area network. To choose a device connected to the router's LAN at the moment, select the relevant value from the drop-down list located to the right of the Private IP field (the field will be filled in automatically).
Remote IP	Enter the IP address of the server from the external network.

When needed settings are configured, click the **Save** button. After that you get to the quick settings page.

Wi-Fi Setup Wizard

To specify all needed settings for your wireless network, click the **Configure Wi-Fi** button.



Common settings

Enable Wireless:

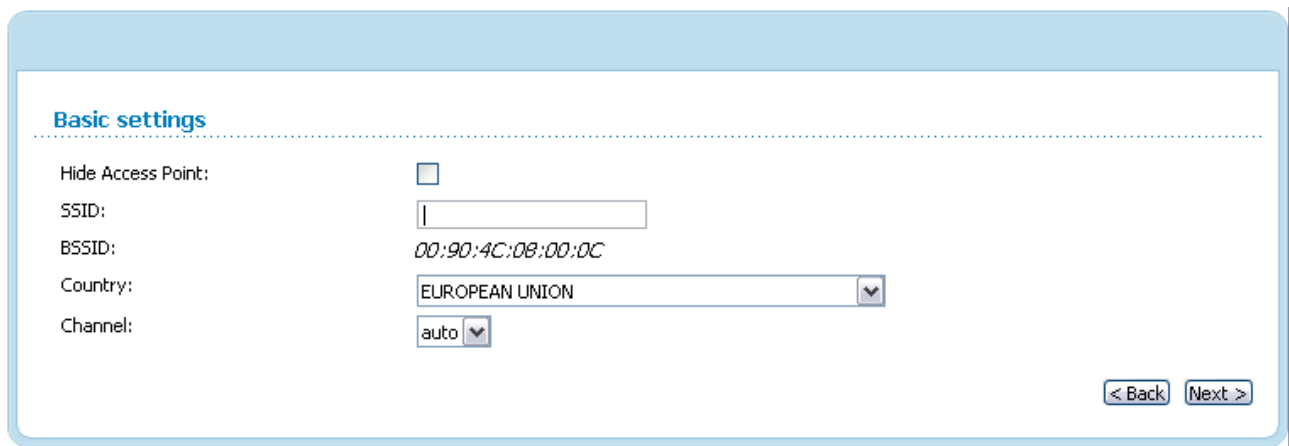
[Next >](#)

Figure 48. Common settings of the wireless LAN.

On the opened page, in the **Common settings** section, select the **Enable Wireless** checkbox (if it was deselected before) to enable Wi-Fi connections.

Click the **Next** button to continue.

In the **Basic settings** section, you can change the basic parameters of your router's WLAN: “hide” your wireless network (**Hide Access Point**), specify a name for the network (**SSID**), select your location (**Country**) and the wireless channel number (**Channel**).



Basic settings

Hide Access Point:

SSID:

BSSID: 00:90:4C:08:00:0C

Country: EUROPEAN UNION

Channel: auto

[< Back](#) [Next >](#)

Figure 49. Basic settings of the wireless LAN.

Click the **Next** button to continue.

On the next page, you can modify security settings of the WLAN. By default, the **Open** network authentication type with no encryption is specified for the WLAN.

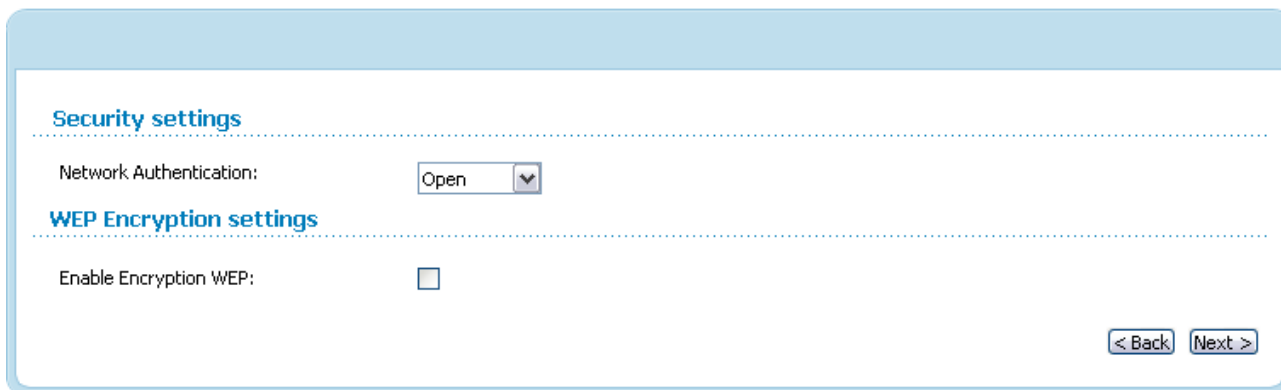


Figure 50. The default security settings.

! The default security settings do not provide sufficient protection for the WLAN. Please, specify your own security settings.

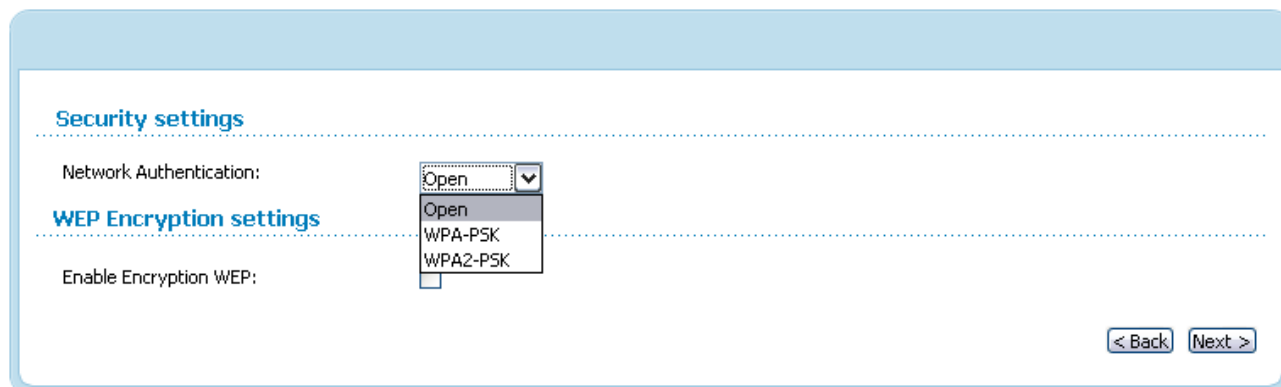


Figure 51. Network authentication types supported by the router.

The router supports the following authentication types:

Authentication type	Description
Open	Open authentication (with or without WEP encryption).
WPA-PSK	WPA-based authentication using a PSK.
WPA2-PSK	WPA2-based authentication using a PSK.

When the **Open** value is selected, the **WEP Encryption settings** section is displayed:

The screenshot shows a configuration page with two main sections. The first section, 'Security settings', contains a 'Network Authentication' dropdown menu with 'Open' selected. The second section, 'WEP Encryption settings', contains three items: 'Enable Encryption WEP' with a checked checkbox, 'Encryption Key WEP as HEX' with an unchecked checkbox, and 'Encryption Key WEP (1)' with an empty text input field. At the bottom right, there are two buttons: '< Back' and 'Next >'.

Figure 52. The **Open** value is selected from the **Network Authentication** drop-down list.

Parameter	Description
Enable Encryption WEP	The checkbox activating WEP encryption. When the checkbox is selected, the Encryption Key WEP as HEX checkbox and the Encryption Key WEP (1) field are displayed on the page.
Encryption Key WEP as HEX	Select the checkbox to set a hexadecimal number as a key for encryption.
Encryption Key WEP (1)	A key for WEP encryption. You can specify keys containing 5 or 13 symbols (use digits and/or Latin characters). If the Encryption Key WEP as HEX checkbox is selected, you can specify only keys containing 10 symbols (the digits 0-9 and the characters A-F).

When the **WPA-PSK** or **WPA2-PSK** value is selected, the **WPA Encryption settings** section is displayed:

The screenshot shows a configuration page for wireless security. It is divided into two sections: 'Security settings' and 'WPA Encryption settings'. In the 'Security settings' section, 'Network Authentication' is a dropdown menu with 'WPA2-PSK' selected. Below it, 'Encryption Key PSK' is a text input field with '76543210' entered. 'WPA2 Pre-authentication' is a checkbox that is currently unchecked. The 'WPA Encryption settings' section follows, with 'WPA Encryption' as a dropdown menu set to 'TKIP' and 'WPA renewal' as a text input field with '3600' entered. At the bottom right of the form, there are two buttons: '< Back' and 'Next >'.

Figure 53. The **WPA2-PSK** value is selected from the **Network Authentication** drop-down list.

Parameter	Description
Encryption Key PSK	A key for WPA encryption. The key can contain digits and/or Latin characters.
WPA2 Pre-authentication	The checkbox activating preliminary authentication (displayed only for the WPA2-PSK authentication type).
WPA Encryption	An encryption method: TKIP , AES , or TKIP+AES .
WPA renewal	The time period (in seconds), at the end of which a new key for WPA encryption is generated. When the value 0 is specified for this field, the key is not renewed.

Click the **Next** button to continue.

When all the steps of configuring the WLAN are completed, the specified settings are displayed on the page. Check their correctness and then click the **Save** button. After that you get to the quick settings page.

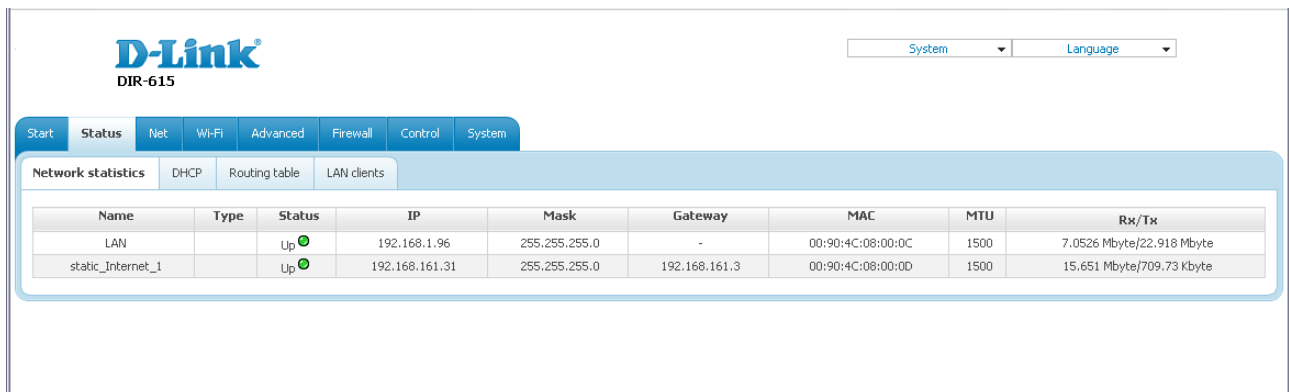
Status

The pages of this section display data on the current state of the router:

- network statistics
- IP addresses leased by the DHCP server
- the routing table
- data on devices connected to the router's network and its web-based interface.

Network Statistics

On the **Status / Network statistics** page, you can view statistics for all interfaces (connections) existing in the system. For each connection the following data are displayed: state, IP address, subnet mask and gateway (if the connection is established), MAC address, MTU value, and volume of data received and transmitted (with increase of the volume the units of measurement are changed automatically: byte, Kbyte, Mbyte, Gbyte).



The screenshot shows the D-Link DIR-615 web interface. At the top left is the D-Link logo and 'DIR-615'. On the top right are dropdown menus for 'System' and 'Language'. Below the logo is a navigation bar with tabs: Start, Status (selected), Net, Wi-Fi, Advanced, Firewall, Control, and System. Under the 'Status' tab, there are sub-tabs: Network statistics (selected), DHCP, Routing table, and LAN clients. The main content area displays a table with the following data:



Name	Type	Status	IP	Mask	Gateway	MAC	MTU	Rx/Tx
LAN		Up 	192.168.1.96	255.255.255.0	-	00:90:4C:08:00:0C	1500	7.0526 Mbyte/22.918 Mbyte
static_Internet_1		Up 	192.168.161.31	255.255.255.0	192.168.161.3	00:90:4C:08:00:0D	1500	15.651 Mbyte/709.73 Kbyte

Figure 54. The **Status / Network statistics** page.

DHCP

The **Status / DHCP** page displays the information on computers that have been identified by hostnames and MAC addresses and have got IP addresses from the DHCP server of the device, as well as the IP address expiration periods (the lease time).

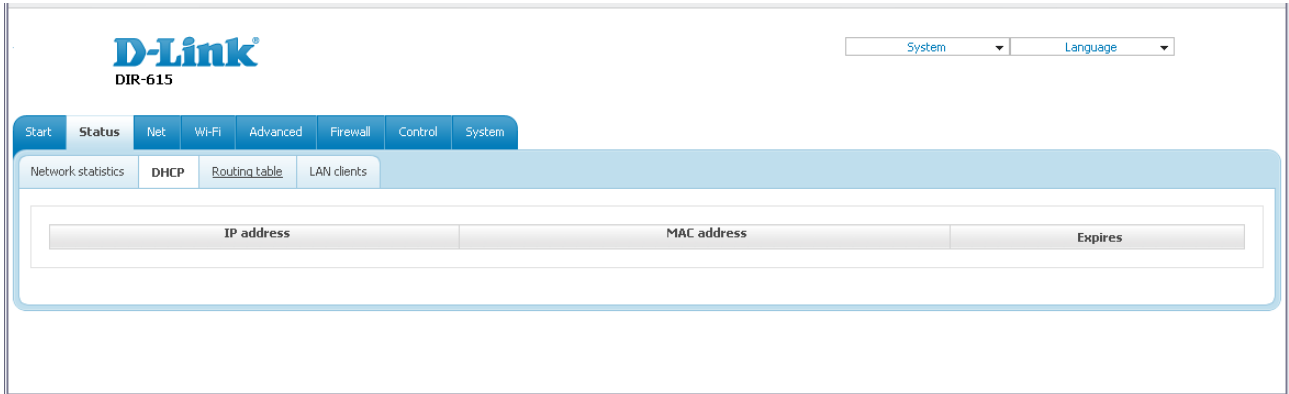
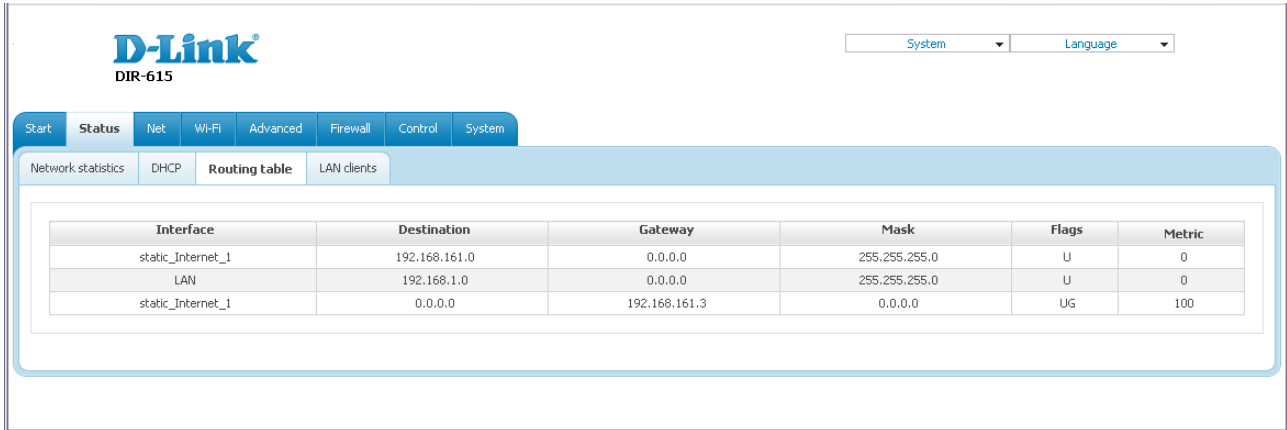


Figure 55. The **Status / DHCP** page.

Routing Table

The **Status / Routing table** page displays the information on routes. The table contains destination IP addresses, gateways, subnet masks, and other data.



The screenshot shows the D-Link DIR-615 web interface. At the top left is the D-Link logo and 'DIR-615'. At the top right are dropdown menus for 'System' and 'Language'. Below the logo is a navigation menu with 'Start', 'Status', 'Net', 'Wi-Fi', 'Advanced', 'Firewall', 'Control', and 'System'. Under 'Status', there are sub-tabs for 'Network statistics', 'DHCP', 'Routing table', and 'LAN clients'. The 'Routing table' tab is active, displaying a table with the following data:

Interface	Destination	Gateway	Mask	Flags	Metric
static_Internet_1	192.168.161.0	0.0.0.0	255.255.255.0	U	0
LAN	192.168.1.0	0.0.0.0	255.255.255.0	U	0
static_Internet_1	0.0.0.0	192.168.161.3	0.0.0.0	UG	100

Figure 56. The **Status / Routing table** page.

LAN Clients

On the **Status / LAN clients** page, you can view the list of devices connected to the router and devices accessing its web-based interface.

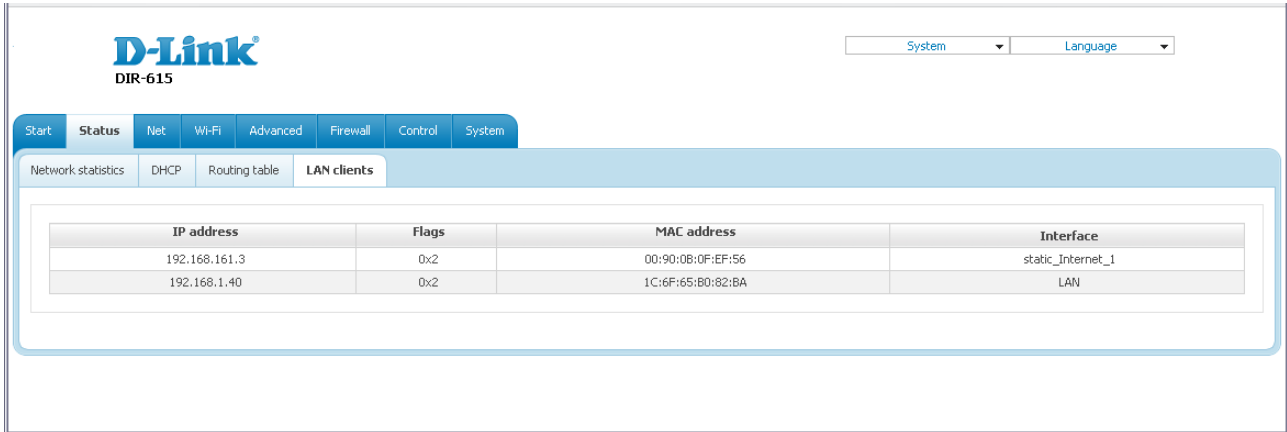


Figure 57. The **Status / LAN clients** page.

For each device the following data are displayed: the IP address, the MAC address, and the interface to which the device is connected.

Net

In this menu you can configure basic parameters of the router's local area network and configure connection to the Internet (a WAN connection).

WAN

On the **Net / WAN** page, you can create and edit connections used by the router.

By default, the **WAN** connection is configured in the system. It is assigned to the INTERNET port of the router. You can edit this connection or delete it.

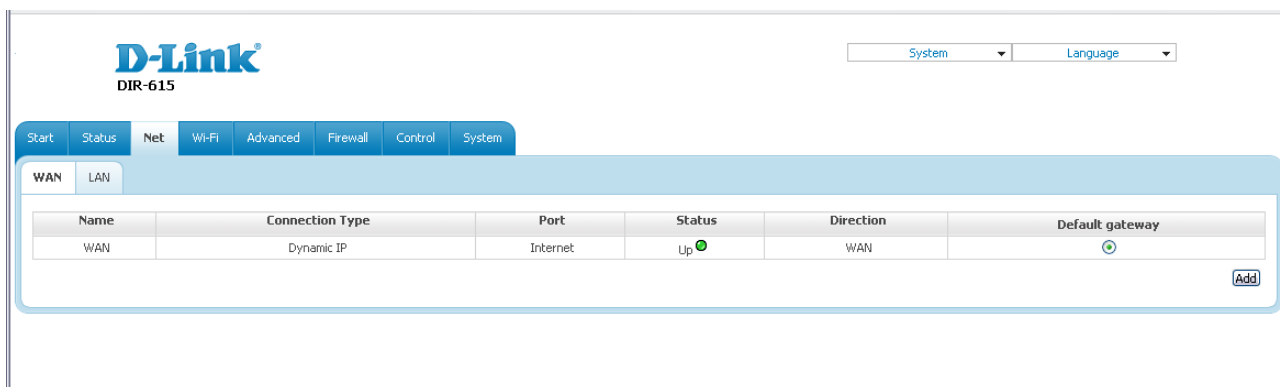


Figure 58. The Net / WAN page.

To create a new connection, click the **Add** button. On the page displayed, specify the relevant values.

To edit an existing connection, left-click the relevant line in the table. On the page displayed, change the parameters and click the **Save** button.

To delete an existing connection, left-click the relevant line in the table. On the page displayed, click the **Delete** button.

To use one of existing WAN connections as a default gateway, select the choice of the **Default gateway** radio button located in the line corresponding to this connection.

Creating PPPoE WAN Connection

To create a connection of the PPPoE type, click the **Add** button on the **Net / WAN** page. On the opened page, select the **PPPoE** value from the **Connection Type** drop-down list and specify the needed values.

General settings

Connection Type:

Port:

Name:

Enable:

Direction: WAN

Ethernet

MTU:

MAC:

Figure 59. The page for creating a new connection. The **General settings** and **Ethernet** sections.

Parameter	Description
General settings	
Port	A physical interface to which the new connection will be assigned.
Name	A name for connection for easier identification.
Enable	Select the checkbox to enable the connection.
Direction	The direction of this connection.
Ethernet	
MTU	The maximum size of units transmitted by the interface.
MAC	<p>A MAC address assigned to the interface. This parameter is mandatory if your ISP uses MAC address binding. In the field, enter the MAC address registered by your ISP upon concluding the agreement.</p> <p>You can click the Clone MAC button to set the MAC address of the network interface card (of the computer that is being used to configure the router at the moment) as the MAC address of the WAN interface.</p> <p>Also you can set the address of a device connected to the router's LAN at the moment. To do this, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).</p>

PPP

Username:

Without authorization:

Password:

Password confirmation:

Service name:

Authentication algorithm:

MTU:

Keep Alive:

LCP interval (sec):

LCP fails:

Dial on demand:

PPP IP extension:

Use Static IP Address:

PPP debug:

PPPoE pass through:

Miscellaneous

Enable RIP:

Enable IGMP Multicast:

NAT:

firewall:

Figure 60. The page for creating a new connection. The **PPP** and **Miscellaneous** sections.

Parameter	Description
PPP	
Username	A username (login) to access the Internet.
Without authorization	Select the checkbox if you don't need to enter a username and password to access the Internet.
Password	A password to access the Internet.
Password confirmation	The confirmation of the entered password (to avoid mistypes).
Service name	The name of the PPPoE authentication server.
Authentication algorithm	Select a required authentication method from the drop-down list or leave the AUTO value.
MTU	The maximum size of units transmitted by the interface.
Keep Alive	Select the checkbox if you want the router to keep you connected to your ISP even when the connection has been inactive for a specified period of time. When the checkbox is selected, the LCP interval and LCP fails fields are available. Specify the required values.

Parameter	Description
Dial on demand	Select the checkbox if you want the router to establish connection to the Internet on demand. In the Maximum idle time field, specify a period of inactivity (in seconds) after which the connection should be terminated.
PPP IP extension	This option is used by some ISPs. Contact your ISP to clarify if this checkbox needs to be enabled.
Use Static IP Address	Select the checkbox if you want to use a static IP address to access the Internet. In the IP Address field displayed when the checkbox is selected, specify a static IP address.
PPP debug	Select the checkbox if you want to log all data on PPP connection debugging.
PPPoE pass through	Select the checkbox if you want to allow PPPoE clients of computers from your LAN to connect to the Internet through this PPPoE connection of the router.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
Miscellaneous	
Enable RIP	Select the checkbox to allow using RIP for this connection.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

When all needed settings are configured, click the **Save** button.

Creating Static IP WAN Connection

To create a connection of the Static IP type, click the **Add** button on the **Net / WAN** page. On the opened page, select the **Static IP** value from the **Connection Type** drop-down list and specify the needed values.

General settings

Connection Type:

 Port:

 Name:

 Enable:

 Direction: *WAN*

Ethernet

MTU:

 MAC:

Figure 61. The page for creating a new connection. The **General settings** and **Ethernet** sections.

Parameter	Description
General settings	
Port	A physical interface to which the new connection will be assigned.
Name	A name for connection for easier identification.
Enable	Select the checkbox to enable the connection.
Direction	The direction of this connection.
Ethernet	
MTU	The maximum size of units transmitted by the interface.
MAC	<p>A MAC address assigned to the interface. This parameter is mandatory if your ISP uses MAC address binding. In the field, enter the MAC address registered by your ISP upon concluding the agreement.</p> <p>You can click the Clone MAC button to set the MAC address of the network interface card (of the computer that is being used to configure the router at the moment) as the MAC address of the WAN interface.</p> <p>Also you can set the address of a device connected to the router's LAN at the moment. To do this, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).</p>

IP

IP Address:

Netmask:

Gateway IP address:

Primary DNS server:

Secondary DNS server:

Miscellaneous

Enable RIP:

Enable IGMP Multicast:

NAT:

firewall:

Figure 62. The page for creating a new connection. The **IP** and **Miscellaneous** sections.

Parameter	Description
IP	
IP Address	Enter an IP address for this WAN connection.
Netmask	Enter a subnet mask for this WAN connection.
Gateway IP Address	Enter an IP address of the gateway used by this WAN connection.
Primary DNS server/ Secondary DNS server	Enter addresses of the primary and secondary DNS servers in the relevant fields.
Miscellaneous	
Enable RIP	Select the checkbox to allow using RIP for this connection.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

When all needed settings are configured, click the **Save** button.

Creating Dynamic IP WAN Connection

To create a connection of the Dynamic IP type, click the **Add** button on the **Net / WAN** page. On the opened page, select the **Dynamic IP** value from the **Connection Type** drop-down list and specify the needed values.

General settings

Connection Type:

 Port:

 Name:

 Enable:

 Direction:

Ethernet

MTU:

 MAC:

Figure 63. The page for creating a new connection. The **General settings** and **Ethernet** sections.

Parameter	Description
General settings	
Port	A physical interface to which the new connection will be assigned.
Name	A name for connection for easier identification.
Enable	Select the checkbox to enable the connection.
Direction	The direction of this connection.
Ethernet	
MTU	The maximum size of units transmitted by the interface.
MAC	<p>A MAC address assigned to the interface. This parameter is mandatory if your ISP uses MAC address binding. In the field, enter the MAC address registered by your ISP upon concluding the agreement.</p> <p>You can click the Clone MAC button to set the MAC address of the network interface card (of the computer that is being used to configure the router at the moment) as the MAC address of the WAN interface.</p> <p>Also you can set the address of a device connected to the router's LAN at the moment. To do this, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).</p>

IP

Obtain DNS server addresses automatically:

Vendor ID:

Miscellaneous

Enable RIP:

Enable IGMP Multicast:

NAT:

firewall:

Figure 64. The page for creating a new connection. The **IP** and **Miscellaneous** sections.

Parameter	Description
IP	
Obtain DNS server addresses automatically	Select the checkbox to configure automatic assignment of DNS server addresses. If the checkbox is selected, the Primary DNS server and Secondary DNS server fields are not displayed.
Primary DNS server/ Secondary DNS server	Enter addresses of the primary and secondary DNS servers in the relevant fields.
Vendor ID	The identifier of your ISP. <i>Optional.</i>
Miscellaneous	
Enable RIP	Select the checkbox to allow using RIP for this connection.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

When all needed settings are configured, click the **Save** button.

Creating PPTP + Static IP or L2TP + Static IP WAN Connection

To create a connection of the PPTP + Static IP or L2TP + Static IP type, click the **Add** button on the **Net / WAN** page. On the opened page, select the relevant value from the **Connection Type** drop-down list and specify the needed values.

General settings

Connection Type:

 Port:

 Name:

 Enable:

 Direction:

Ethernet

MTU:

 MAC:

Figure 65. The page for creating a new connection. The **General settings** and **Ethernet** sections.

Parameter	Description
General settings	
Port	A physical interface to which the new connection will be assigned.
Name	A name for connection for easier identification.
Enable	Select the checkbox to enable the connection.
Direction	The direction of this connection.
Ethernet	
MTU	The maximum size of units transmitted by the interface.
MAC	<p>A MAC address assigned to the interface. This parameter is mandatory if your ISP uses MAC address binding. In the field, enter the MAC address registered by your ISP upon concluding the agreement.</p> <p>You can click the Clone MAC button to set the MAC address of the network interface card (of the computer that is being used to configure the router at the moment) as the MAC address of the WAN interface.</p> <p>Also you can set the address of a device connected to the router's LAN at the moment. To do this, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).</p>

IP

IP Address:

Netmask:

Gateway IP address:

Primary DNS server:

Secondary DNS server:

Miscellaneous

Enable RIP:

Enable IGMP Multicast:

NAT:

firewall:

Figure 66. The page for creating a new connection. The **IP** and **Miscellaneous** sections.

Parameter	Description
IP	
IP Address	Enter an IP address for this WAN connection.
Netmask	Enter a subnet mask for this WAN connection.
Gateway IP Address	Enter an IP address of the gateway used by this WAN connection.
Primary DNS server/ Secondary DNS server	Enter addresses of the primary and secondary DNS servers in the relevant fields.
Miscellaneous	
Enable RIP	Select the checkbox to allow using RIP for this connection.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

VPN

Connect automatically:

Username:

Without authorization:

Password:

Password confirmation:

VPN server address:

Encryption:

Authentication algorithm:

MTU:

Keep Alive:

Extra options:

Dial on demand:

PPP debug:

IP received:

Miscellaneous

Enable RIP:

NAT:

firewall:

Figure 67. The page for creating a new connection. The **VPN** and **Miscellaneous** sections.

Parameter	Description
VPN	
Connect automatically	Select the checkbox to enable auto-start of the connection upon the boot-up of the router.
Username	A username (login) to access the Internet.
Without authorization	Select the checkbox if you don't need to enter a username and password to access the Internet.
Password	A password to access the Internet.
Password confirmation	The confirmation of the entered password (to avoid mistypes).
VPN server address	The IP or URL address of the PPTP or L2TP authentication server.

Parameter	Description
Encryption	<p>Select a method of MPPE encryption.</p> <ul style="list-style-type: none"> • No encrypt: MPPE encryption is not applied. • MPPE 40/128 bit: MPPE encryption with a 40-bit or 128-bit key is applied. • MPPE 40 bit: MPPE encryption with a 40-bit key is applied. • MPPE 128 bit: MPPE encryption with a 128-bit key is applied. <p>MPPE encryption can be applied only if the MSCHAP, MACHAPv2, or AUTO value is selected from the Authentication algorithm drop-down list.</p>
Authentication algorithm	Select a required authentication method from the drop-down list or leave the AUTO value.
MTU	The maximum size of units transmitted by the interface.
Keep Alive	Select the checkbox if you want the router to keep you connected to your ISP even when the connection has been inactive for a specified period of time. When the checkbox is selected, the LCP interval and LCP fails fields are available. Specify the required values.
Extra options	Advanced options of the pppd daemon which need to be specified for this connection. <i>Optional.</i>
Dial on demand	Select the checkbox if you want the router to establish connection to the Internet on demand. In the Maximum idle time field, specify a period of inactivity (in seconds) after which the connection should be terminated.
PPP debug	Select the checkbox if you want to log all data on PPP connection debugging.
IP received	The IP address assigned by the ISP.
Miscellaneous	
Enable RIP	Select the checkbox to allow using RIP for this connection.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

When all needed settings are configured, click the **Save** button.

Creating PPTP + Dynamic IP or L2TP + Dynamic IP WAN Connection

To create a connection of the PPTP + Dynamic IP or L2TP + Dynamic IP type, click the **Add** button on the **Net / WAN** page. On the opened page, select the relevant value from the **Connection Type** drop-down list and specify the needed values.

General settings

Connection Type:

 Port:

 Name:

 Enable:

 Direction:

Ethernet

MTU:

 MAC:

Figure 68. The page for creating a new connection. The **General settings** and **Ethernet** sections.

Parameter	Description
General settings	
Port	A physical interface to which the new connection will be assigned.
Name	A name for connection for easier identification.
Enable	Select the checkbox to enable the connection.
Direction	The direction of this connection.
Ethernet	
MTU	The maximum size of units transmitted by the interface.
MAC	<p>A MAC address assigned to the interface. This parameter is mandatory if your ISP uses MAC address binding. In the field, enter the MAC address registered by your ISP upon concluding the agreement.</p> <p>You can click the Clone MAC button to set the MAC address of the network interface card (of the computer that is being used to configure the router at the moment) as the MAC address of the WAN interface.</p> <p>Also you can set the address of a device connected to the router's LAN at the moment. To do this, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).</p>

IP

Obtain DNS server addresses automatically:

Vendor ID:

Miscellaneous

Enable RIP:

Enable IGMP Multicast:

NAT:

firewall:

Figure 69. The page for creating a new connection. The **IP** and **Miscellaneous** sections.

Parameter	Description
IP	
Obtain DNS server addresses automatically	Select the checkbox to configure automatic assignment of DNS server addresses. If the checkbox is selected, the Primary DNS server and Secondary DNS server fields are not displayed.
Primary DNS server/ Secondary DNS server	Enter addresses of the primary and secondary DNS servers in the relevant fields.
Vendor ID	The identifier of your ISP. <i>Optional.</i>
Miscellaneous	
Enable RIP	Select the checkbox to allow using RIP for this connection.
Enable IGMP Multicast	Select the checkbox to allow multicast traffic from the external network (e.g. video streaming) to be received.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

VPN

Connect automatically:

Username:

Without authorization:

Password:

Password confirmation:

VPN server address:

Encryption:

Authentication algorithm:

MTU:

Keep Alive:

Extra options:

Dial on demand:

PPP debug:

IP received:

Miscellaneous

Enable RIP:

NAT:

firewall:

Figure 70. The page for creating a new connection. The **VPN** and **Miscellaneous** sections.

Parameter	Description
VPN	
Connect automatically	Select the checkbox to enable auto-start of the connection upon the boot-up of the router.
Username	A username (login) to access the Internet.
Without authorization	Select the checkbox if you don't need to enter a username and password to access the Internet.
Password	A password to access the Internet.
Password confirmation	The confirmation of the entered password (to avoid mistypes).
VPN server address	The IP or URL address of the PPTP or L2TP authentication server.

Parameter	Description
Encryption	<p>Select a method of MPPE encryption.</p> <ul style="list-style-type: none"> • No encrypt: MPPE encryption is not applied. • MPPE 40/128 bit: MPPE encryption with a 40-bit or 128-bit key is applied. • MPPE 40 bit: MPPE encryption with a 40-bit key is applied. • MPPE 128 bit: MPPE encryption with a 128-bit key is applied. <p>MPPE encryption can be applied only if the MSCHAP, MACHAPv2, or AUTO value is selected from the Authentication algorithm drop-down list.</p>
Authentication algorithm	Select a required authentication method from the drop-down list or leave the AUTO value.
MTU	The maximum size of units transmitted by the interface.
Keep Alive	Select the checkbox if you want the router to keep you connected to your ISP even when the connection has been inactive for a specified period of time. When the checkbox is selected, the LCP interval and LCP fails fields are available. Specify the required values.
Extra options	Advanced options of the pppd daemon which need to be specified for this connection. <i>Optional.</i>
Dial on demand	Select the checkbox if you want the router to establish connection to the Internet on demand. In the Maximum idle time field, specify a period of inactivity (in seconds) after which the connection should be terminated.
PPP debug	Select the checkbox if you want to log all data on PPP connection debugging.
IP received	The IP address assigned by the ISP.
Miscellaneous	
Enable RIP	Select the checkbox to allow using RIP for this connection.
NAT	Select the checkbox if you want one WAN IP address to be used for all computers of your LAN.
Firewall	Select the checkbox to enable protection against ARP and DDoS attacks.

When all needed settings are configured, click the **Save** button.

LAN

To edit the parameters of the router's local interface, proceed to the **Net / LAN** page.

The screenshot shows the D-Link DIR-615 web interface. At the top, there's a navigation menu with 'Start', 'Status', 'Net', 'Wi-Fi', 'Advanced', 'Firewall', 'Control', and 'System'. The 'Net' tab is selected, and the 'LAN' sub-tab is active. The main configuration area is divided into several sections:

- IP Address:** 192.168.0.1
- Netmask:** 255.255.255.0
- Static DHCP:**
 - IP address: []
 - MAC address: []
 - Host name: []
- DHCP server:**
 - Mode: Enable
 - Start IP: 192.168.0.2
 - End IP: 192.168.0.254
 - Lease time (min): 86400

Buttons for 'Remove' and 'Add' are visible in the Static DHCP section, and a 'Save' button is at the bottom right.

Figure 71. The page for configuring the local interface.

In the **IP** section, you can edit the basic parameters of the local interface.

Parameter	Description
IP Address	The IP address of the router in the local subnet. By default, the following value is specified: 192.168.0.1 .
Netmask	The mask of the local subnet. By default, the following value is specified: 255.255.255.0 .

When needed settings are configured, click the **Save** button.

In the **Static DHCP** section, you can specify MAC address and IP address pairs (set a fixed IP address in the local area network for a device with a certain MAC address). The router assigns IP addresses in accordance with the specified pairs only when the DHCP server is enabled (in the **DHCP server** section, in the **Mode** drop-down list, the **Enable** value is selected).

To create a MAC-IP pair, click the **Add** button and specify the following parameters:

Parameter	Description
IP address	An IP address which will be assigned to the device with the specified MAC address.
MAC address	The MAC address of the device from the LAN.
Host name	A network name of the device for easier identification. <i>Optional</i> .

When all needed MAC-IP pairs are specified, click the **Save** button.

Existing MAC-IP pairs are displayed in the table of the **Static DHCP** section. To remove a pair, select the relevant line in the table and click the **Remove** button. Then click the **Save** button.

In the **DHCP server** section, you can configure the built-in DHCP sever of the router.

Parameter	Description
Mode	<p>An operating mode of the router's DHCP server.</p> <p>Enable: the router assigns IP addresses to clients automatically in accordance with the specified parameters. When this value is selected, the Start IP, End IP, and the Lease time fields are displayed on the page.</p> <p>Disable: the router's DHCP server is disabled, clients' IP addresses are assigned manually.</p> <p>Relay: an external DHCP server is used to assign IP addresses to clients. When this value is selected, the External DHCP server IP field is displayed on the page.</p>
Start IP	The start IP address of the address pool used by the DHCP server to distribute IP addresses to clients.
End IP	The end IP address of the address pool used by the DHCP server to distribute IP addresses to clients.
Lease time	The lifetime of IP addresses leased by the DHCP server. At the end of this period the leased IP address is revoked and can be distributed to another device, unless the previous device has confirmed the need to keep the address.
External DHCP server IP	The IP address of the external DHCP server which assigns IP addresses to the router's clients.

When all needed settings are configured, click the **Save** button.

Wi-Fi

In this menu you can specify all needed settings for your wireless network.

Common settings

On the **Wi-Fi / Common settings** page, you can enable your wireless local area network (WLAN).

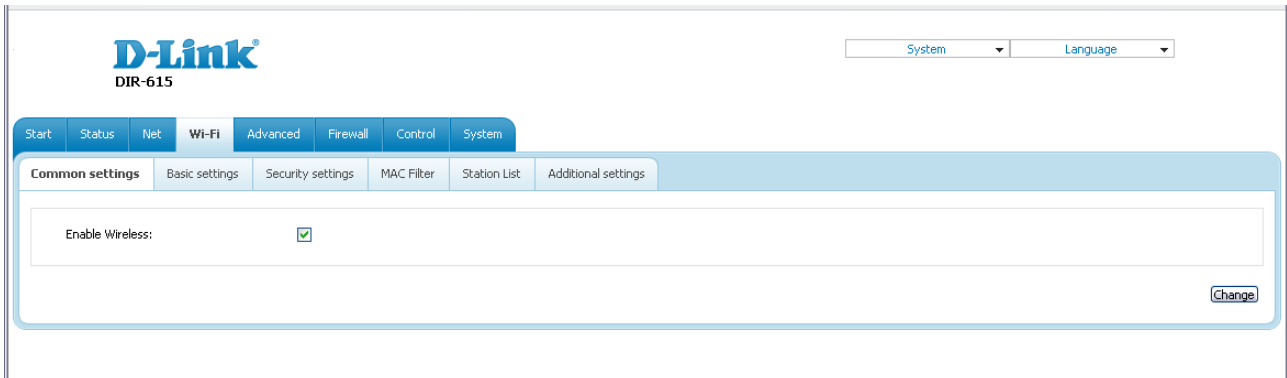


Figure 72. Common settings of the wireless LAN.

The **Enable Wireless** checkbox enables Wi-Fi connections. By default, the checkbox is selected. If you want to disable your WLAN, deselect the **Enable Wireless** checkbox and click the **Change** button.

Basic Settings

On the **Wi-Fi / Basic settings** page, you can configure basic parameters of the router's WLAN.

The screenshot shows the D-Link DIR-615 web interface. At the top, there is a navigation menu with tabs for Start, Status, Net, **Wi-Fi**, Advanced, Firewall, Control, and System. Below this, there are sub-tabs for Common settings, **Basic settings**, Security settings, MAC Filter, Station List, and Additional settings. The main content area contains the following settings:

- Hide Access Point:** A checkbox that is currently unchecked.
- SSID:** A text input field containing the value "DIR-615".
- BSSID:** A text input field containing the value "00:90:4C:08:00:0C".
- Country:** A dropdown menu currently set to "EUROPEAN UNION".
- Channel:** A dropdown menu currently set to "auto".

A "Change" button is located at the bottom right of the settings form.

Figure 73. Basic settings of the wireless LAN.

Parameter	Description
Hide Access Point	If the checkbox is selected, other users cannot see your Wi-Fi network. (It is recommended not to select this checkbox in order to simplify initial configuration of your WLAN.)
SSID	A name for the WLAN. By default, the value DIR-615 is specified. It is recommended to specify another name for the network upon initial configuration (use digits and Latin characters).
BSSID	A unique identifier for your Wi-Fi network. You cannot change the value of this parameter, it is determined in the router's internal settings.
Country	The country you are in. Select a value from the drop-down list.
Channel	The wireless channel number. When the auto value is selected, the router itself chooses the channel with the least interference.

When you have configured the parameters, click the **Change** button.

Security Settings

On the **Wi-Fi / Security settings** page, you can modify security settings of the WLAN.

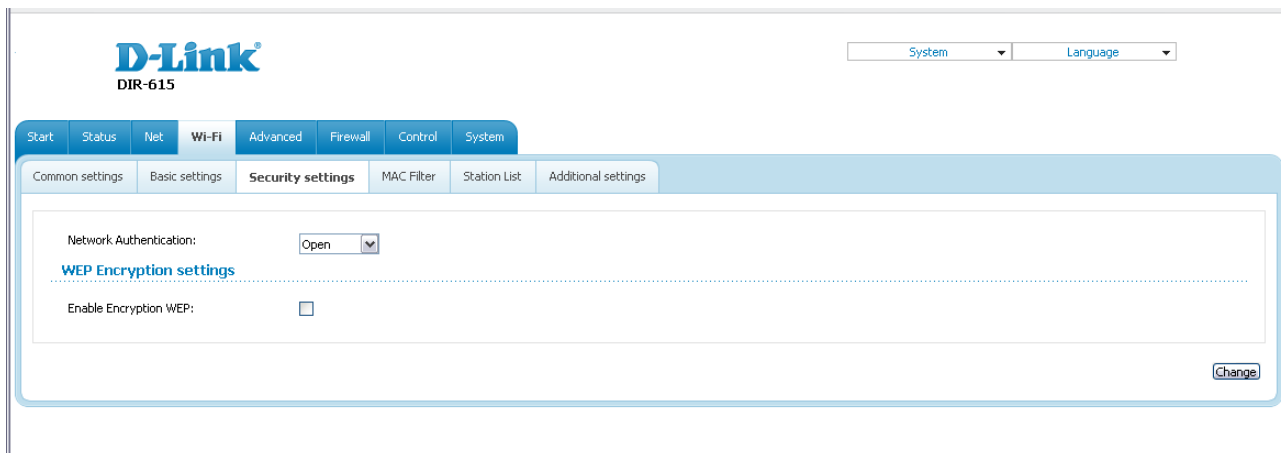


Figure 74. The default security settings.

By default, the **Open** network authentication type with no encryption is specified for the WLAN.

! The default security settings do not provide sufficient protection for the WLAN. Please, specify your own security settings.

The router supports the following authentication types:

Authentication type	Description
Open	Open authentication (with or without WEP encryption).
WPA-PSK	WPA-based authentication using a PSK.
WPA2-PSK	WPA2-based authentication using a PSK.

When the **Open** value is selected, the **WEP Encryption settings** section is displayed:

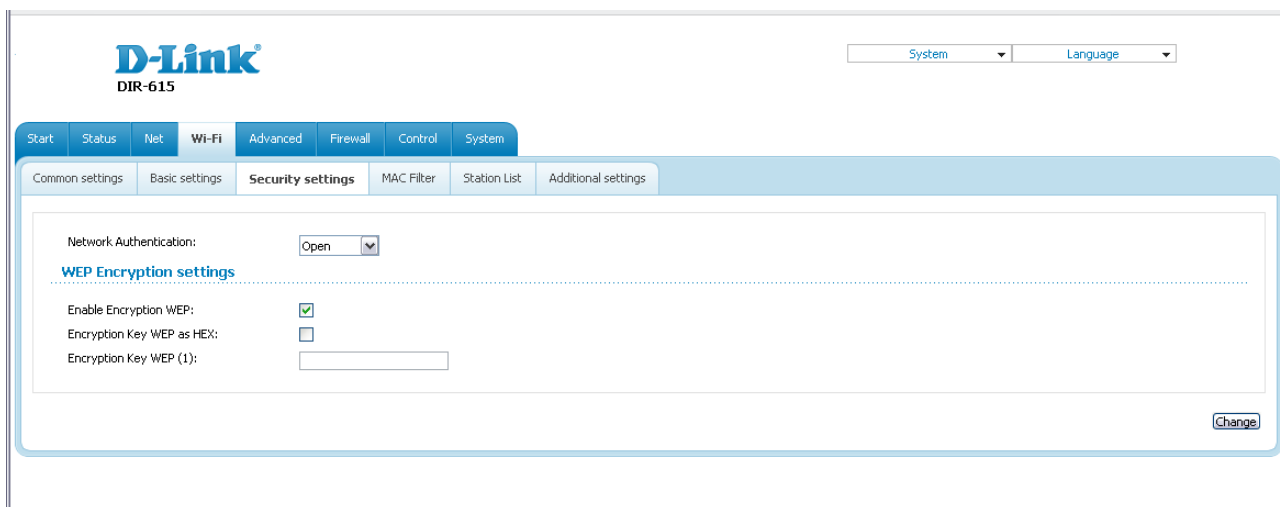


Figure 75. The **Open** value is selected from the **Network Authentication** drop-down list.

Parameter	Description
Enable Encryption WEP	The checkbox activating WEP encryption. When the checkbox is selected, the Encryption Key WEP as HEX checkbox and the Encryption Key WEP (1) field are displayed on the page.
Encryption Key WEP as HEX	Select the checkbox to set a hexadecimal number as a key for encryption.
Encryption Key WEP (1)	The key for WEP encryption. You can specify keys containing 5 or 13 symbols (use digits and/or Latin characters). If the Encryption Key WEP as HEX checkbox is selected, you can specify only keys containing 10 symbols (the digits 0-9 and the characters A-F).

When the **WPA-PSK** or **WPA2-PSK** value is selected, the **WPA Encryption settings** section is displayed:

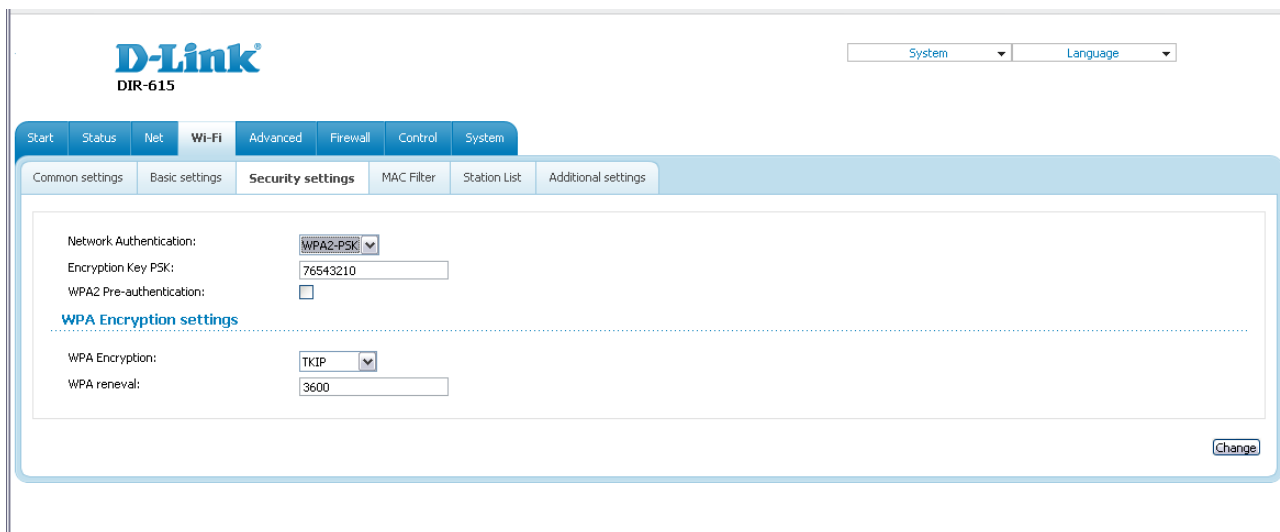


Figure 76. The **WPA2-PSK** value is selected from the **Network Authentication** drop-down list.

Parameter	Description
Encryption Key PSK	A key for WPA encryption. The key can contain digits and/or Latin characters.
WPA2 Pre-authentication	The checkbox activating preliminary authentication (displayed only for the WPA2-PSK authentication type).
WPA Encryption	An encryption method: TKIP , AES , or TKIP+AES .
WPA renewal	The time period (in seconds), at the end of which a new key for WPA encryption is generated. When the value 0 is specified for this field, the key is not renewed.

When you have configured the parameters, click the **Change** button.

MAC Filter

On the **Wi-Fi / MAC Filter** page, you can define a set of MAC addresses of devices which will be allowed to access the WLAN, or define MAC addresses of devices which will not be allowed to access the WLAN.

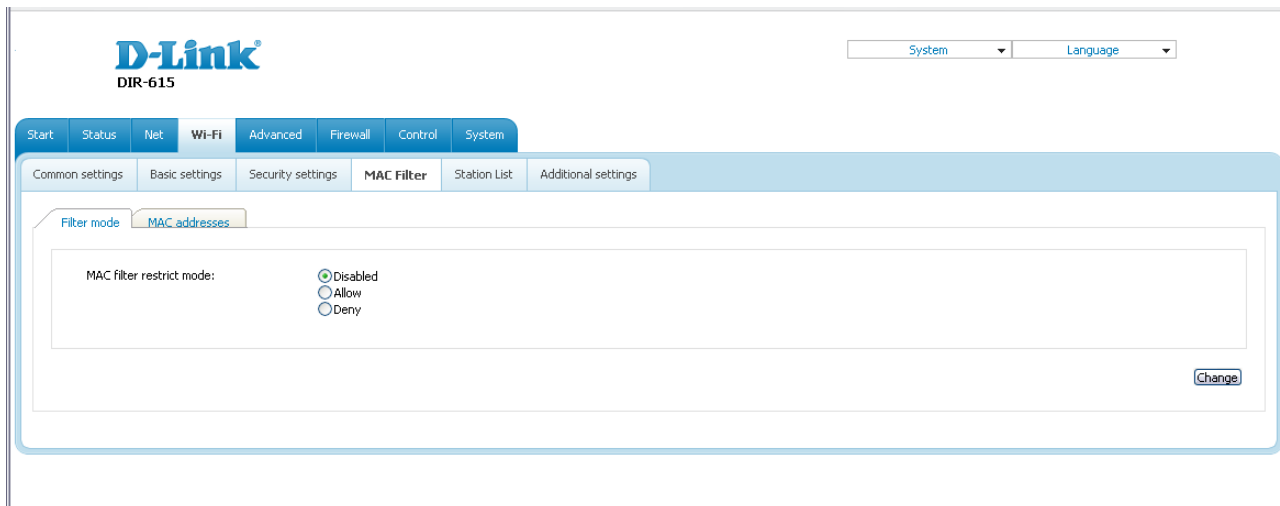


Figure 77. The MAC filter for the wireless network.

By default, MAC filtering is not active (the **Disabled** choice of the **MAC filter restrict mode** radio button is selected).

To open your wireless network for the devices which MAC addresses are specified on the **MAC addresses** tab and to close the wireless network for all other devices, select the **Allow** choice of the **MAC filter restrict mode** radio button and click the **Change** button.

To close your wireless network for the devices which MAC addresses are specified on the **MAC addresses** tab, select the **Deny** choice of the **MAC filter restrict mode** radio button and click the **Change** button.

To add a MAC address to which the selected filtering mode will be applied, proceed to the **MAC addresses** tab.

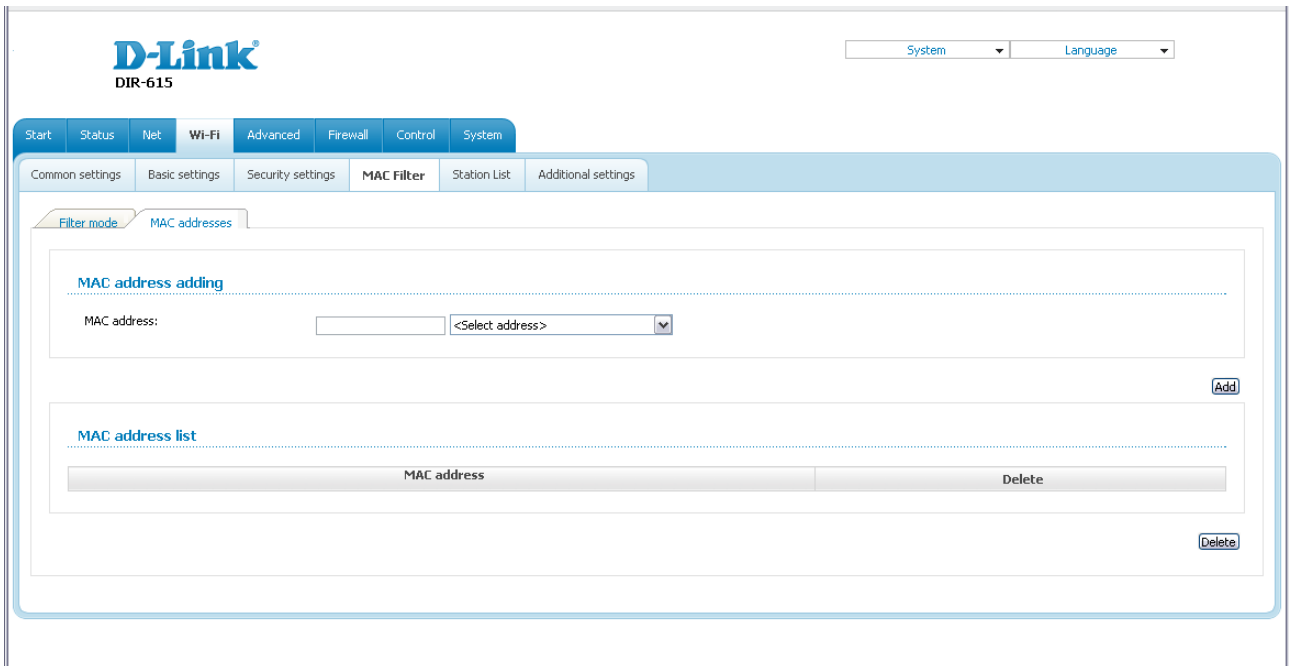


Figure 78. The tab for adding a MAC address.

Enter an address in the **MAC address** field of the **MAC address adding** section, and click the **Add** button.

To add the MAC address of a device connected to the router's LAN at the moment, select the value containing the MAC and IP address of this device from the drop-down list located to the right of the **MAC address** field (the field will be filled in automatically) and click the **Add** button.

To remove a MAC address from the list of MAC addresses, select the checkbox located to the right of the relevant MAC address in the **MAC address list** section and click the **Delete** button.

Station List

On the **Wi-Fi / Station List** page, you can view the list of wireless clients connected to the router.

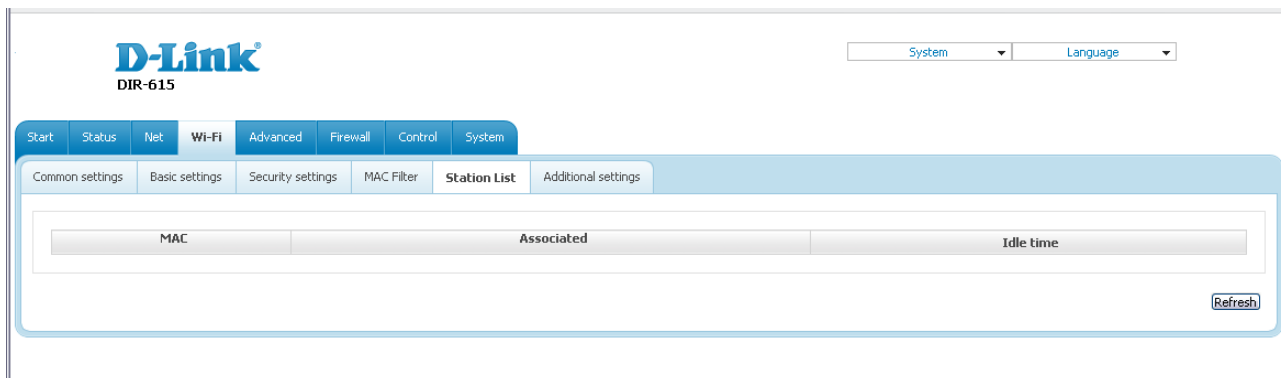


Figure 79. The list of the router's wireless clients.

To view the latest data on the devices connected to the WLAN, click the **Refresh** button.

Additional Settings

On the **Wi-Fi / Additional settings** page, you can define additional parameters for the router's WLAN.

! Changing parameters presented on this page may negatively affect your WLAN!

The screenshot shows the D-Link DIR-615 web interface. At the top, there is a 'D-Link DIR-615' logo and two dropdown menus for 'System' and 'Language'. Below the logo is a navigation bar with tabs: 'Start', 'Status', 'Net', 'Wi-Fi', 'Advanced', 'Firewall', 'Control', and 'System'. Under the 'Wi-Fi' tab, there is a sub-menu with 'Common settings', 'Basic settings', 'Security settings', 'MAC Filter', 'Station List', and 'Additional settings'. The 'Additional settings' page is displayed, showing the following parameters and their values:

- Station Keep Alive: 0
- Beacon Period: 100
- RTS Threshold: 2347
- Frag Threshold: 2346
- DTIM Period: 1
- TX Power: 100
- BG Protection: Auto
- Bandwidth: 40MHz
- TX Preamble: Long Preamble

A 'Change' button is located at the bottom right of the settings area.

Figure 80. Additional settings of the WLAN.

The following fields are available on the page:

Parameter	Description
Station Keep Alive	The time interval (in seconds) between keep alive checks of wireless devices from your WLAN. When the value 0 is specified, the checking is disabled.
Beacon Period	The time interval (in milliseconds) between packets sent to synchronize the wireless network.
RTS Threshold	The minimum size (in bites) of a packet for which an RTS frame is transmitted.
Frag Threshold	The maximum size (in bites) of a non-fragmented packet. Larger packets are fragmented (divided).
DTIM Period	The time period (in seconds) between sending a DTIM (a message notifying on broadcast or multicast transmission) and data transmission.
TX Power	The router's transmit power (in percentage terms).

Parameter	Description
BG Protection	<p>The 802.11b and 802.11g protection function is used to minimize collisions between devices of your wireless network.</p> <p>Select a value from the drop-down list.</p> <p>Auto: The protection function is enabled and disabled automatically depending on the state of the network (this value is recommended if your wireless local area network consists of both 802.11b and 802.11g devices).</p> <p>Always On: The protection function is always enabled (this setting can substantially lower the efficiency of your wireless network).</p> <p>Always Off: The protection function is always disabled.</p>
Bandwidth	<p>The channel bandwidth for 802.11n devices.</p> <p>20MHz: 802.11n devices operate at 20MHz channels.</p> <p>40MHz: 802.11n devices operate at 40MHz channels.</p> <p>20/40MHz -: 802.11n devices operate at 20MHz and 40MHz channels (the channel is combined with the previous adjacent channel).</p> <p>20/40MHz +: 802.11n devices operate at 20MHz and 40MHz channels (the channel is combined with the next adjacent channel).</p>
TX Preamble	<p>This parameter defines the length of the CRC block sent by the router when communicating to wireless devices.</p> <p>Select a value from the drop-down list.</p> <p>Long Preamble.</p> <p>Short Preamble (this value is recommended for networks with high-volume traffic).</p>

When you have configured the parameters, click the **Change** button.

Advanced

In this menu you can configure advanced settings of the router:

- enable the UPnP function
- configure a DDNS service
- add name servers
- define static routes
- create rules for remote access to the web-based interface
- allow the router to use IGMP.

UPnP

On the **Advanced / UPnP** page, you can enable the UPnP function.

UPnP is a set of networking protocols designed for automatic configuration of network devices. The UPnP function performs automatic configuration of the device's parameters for network applications requiring an incoming connection to the router.

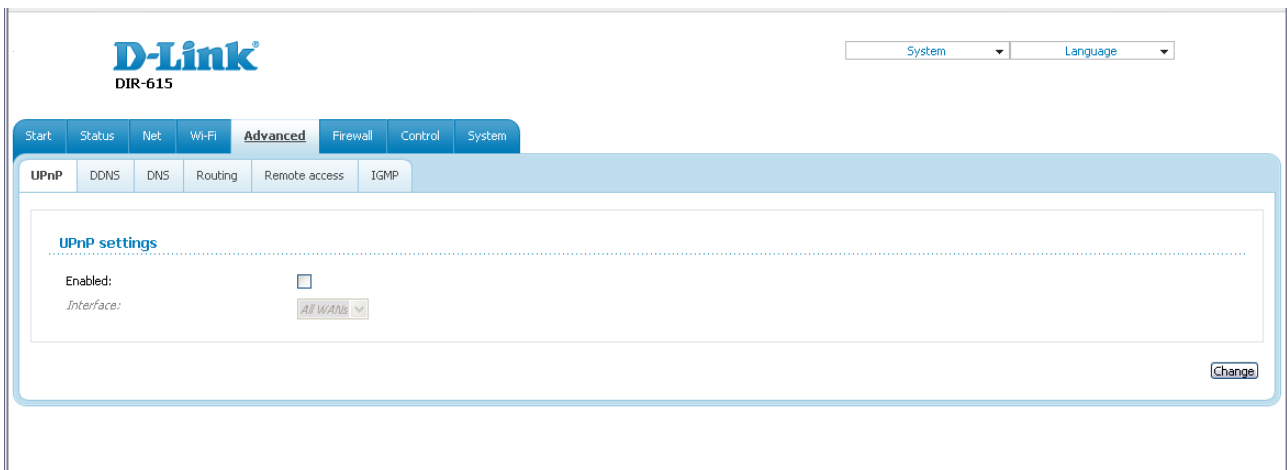


Figure 81. The **Advanced / UPnP** page.

If you want to manually specify all parameters needed for network applications, deselect the **Enabled** checkbox and click the **Change** button.

If you want to enable the UPnP function in the router, select the **Enabled** checkbox, select an interface for which the router's parameters will be automatically configured from the **Interface** drop-down list, and click the **Change** button.

DDNS

On the **Advanced / DDNS** page, you can define parameters of the DDNS service, which allows associating a domain name with dynamic IP addresses.

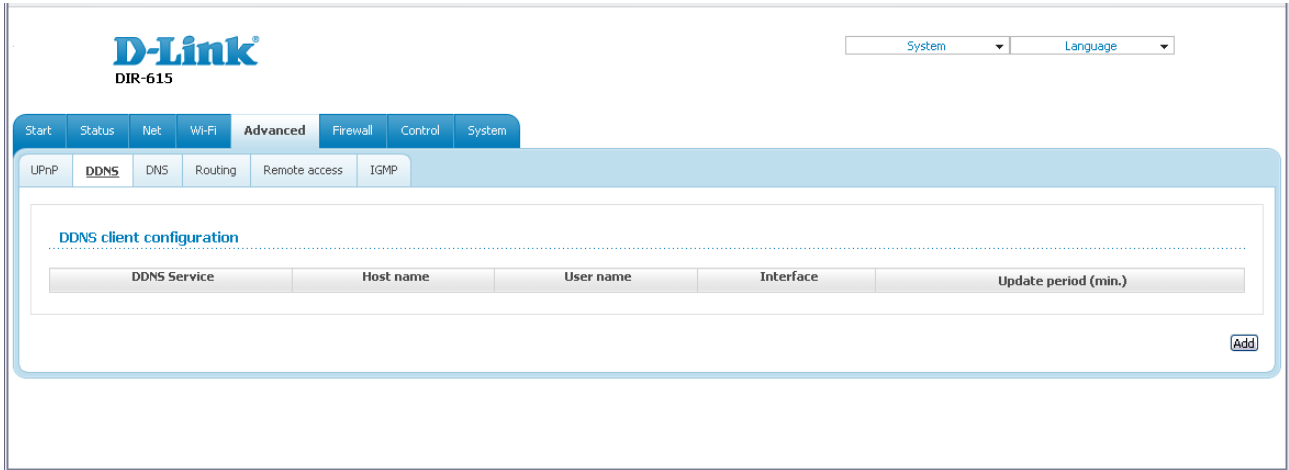


Figure 82. The **Advanced / DDNS** page.

To add a new DDNS service, click the **Add** button.

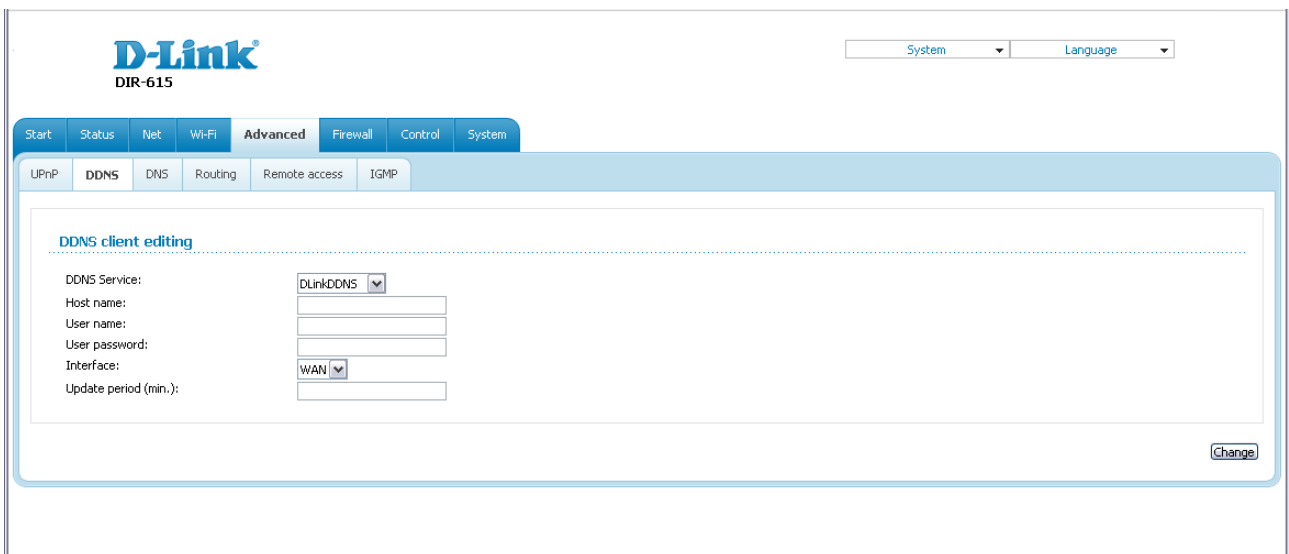


Figure 83. The page for editing the DDNS service.

You can specify the following parameters:

Parameter	Description
DDNS Service	Select a DDNS provider from the drop-down list.
Host name	The domain name registered at your DDNS provider.
User name	The username to authorize for your DDNS provider.
User password	The password to authorize for your DDNS provider.
Interface	Select a WAN connection which IP address will be used to access the DDNS service.
Update period	An interval (in minutes) between sending data with the IP address of the interface specified in the field above to the relevant DDNS service.

Click the **Change** button.

To edit parameters of the existing DDNS service, click the relevant service link. On the opened page, change the needed parameters and click the **Change** button.

To remove an existing DDNS service, click the relevant service link. On the opened page, click the **Delete** button.

DNS

On the **Advanced / DNS** page, you can add DNS servers to the system.

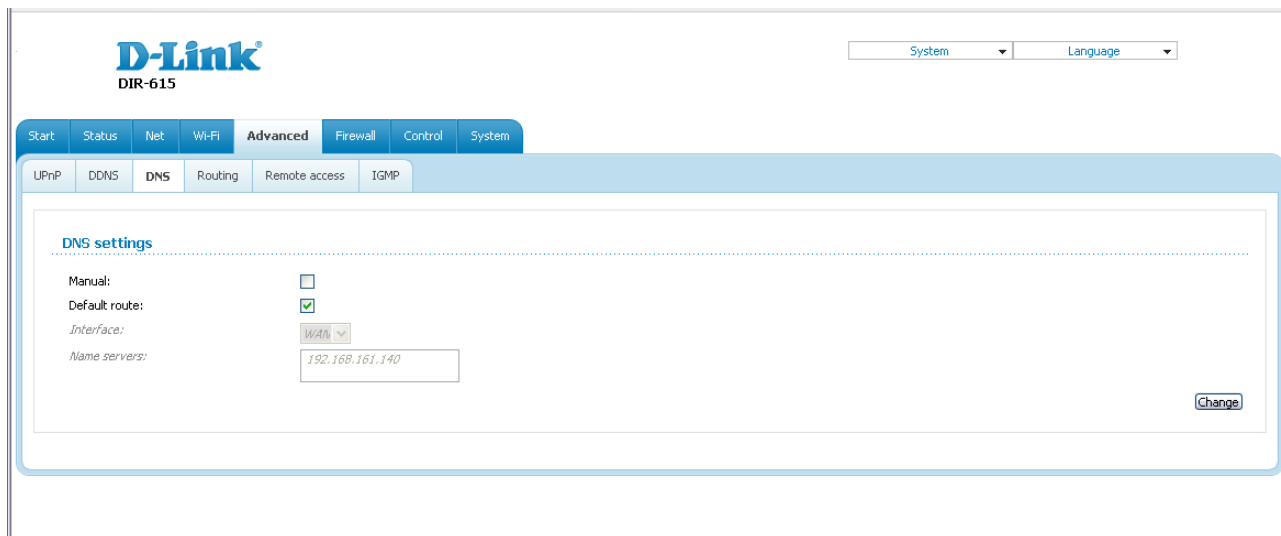


Figure 84. The **Advanced / DNS** page.

DNS servers are used to determine the IP address from the name of a server in Intranets or the Internet (as a rule, they are specified by an ISP or assigned by a network administrator).

The device performs the DNS relay function, i.e., it redirects the DNS requests of users to external DNS servers. You can specify the addresses of DNS servers manually on this page, or configure the router to obtain DNS servers addresses automatically from your ISP upon installing a connection.

! When you use the built-in DHCP server, the network parameters (including DNS servers) are distributed to clients automatically.

If you want to configure automatic obtainment of DNS servers addresses, deselect the **Manual** checkbox, select a WAN connection which will be used to obtain addresses of DNS servers automatically from the **Interface** drop-down list or select the **Default route** checkbox, so that the router could use the connection set as the default gateway (on the **Net / WAN** page) to obtain DNS server addresses, and click the **Change** button.

If you want to specify the DNS server manually, select the **Manual** checkbox and enter a DNS server address in the **Name servers** list. To specify several addresses, press the Enter key and enter a needed address in the next line. Then click the **Change** button.

To remove a DNS server from the system, remove the relevant line from the **Name servers** field and click the **Change** button.

Routing

On the **Advanced / Routing** page, you can add static routes (routes for networks that are not connected directly to the device but are available through the interfaces of the device) into the system.

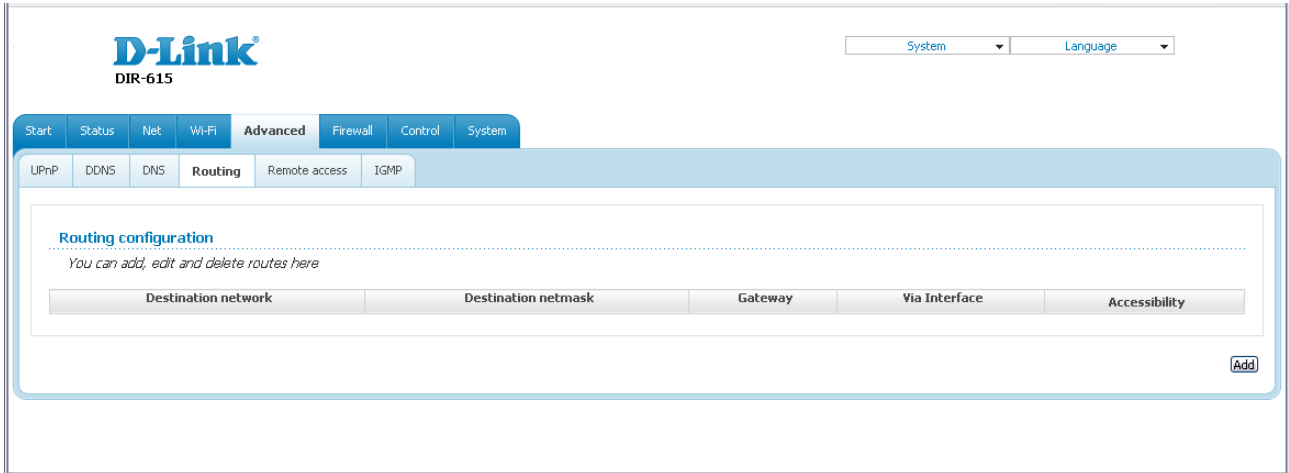


Figure 85. The **Advanced / Routing** page.

To create a new route, click the **Add** button.

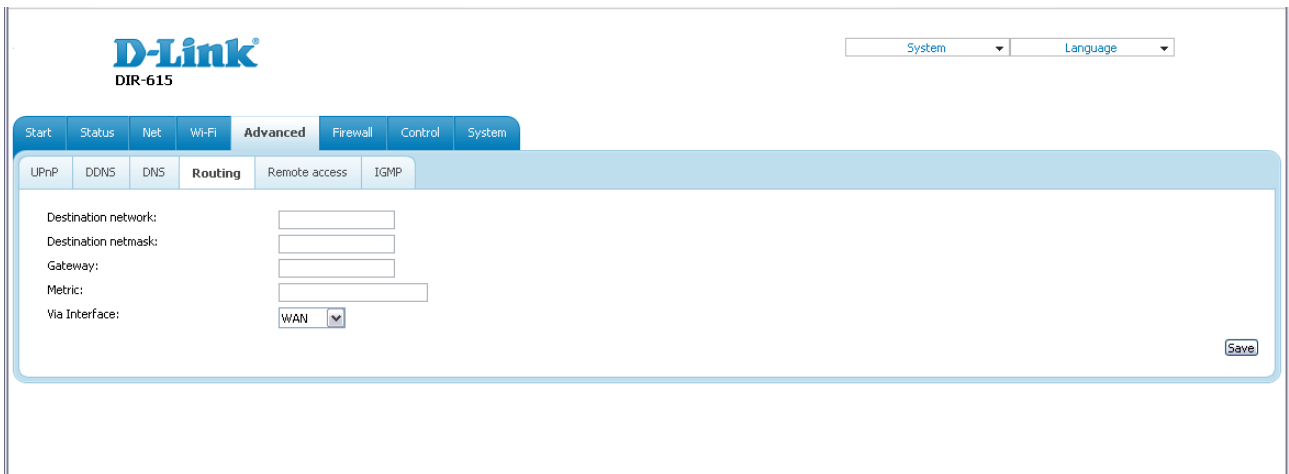


Figure 86. The page for adding a static route.

You can specify the following parameters:

Parameter	Description
Destination network	A destination network to which this route is assigned.
Destination netmask	The destination network mask.
Gateway	An IP address through which the destination network can be accessed.
Metric	A metric for the route. The lower the value, the higher is the route priority. <i>Optional.</i>
Via Interface	Select an interface through which the destination network can be accessed from the drop-down list. If you have selected the <Auto> value of this drop-down list, the router itself sets the interface on the basis of data on connected networks.

Click the **Save** button.

To edit an existing route, click the relevant route link. On the opened page, change the needed parameters and click the **Save** button.

To remove an existing route, click the relevant route link. On the opened page, click the **Delete** button.

Remote Access

On the **Advanced / Remote access** page, you can configure access to the web-based interface of the router. By default, the access from external networks to the router is closed. If you need to allow access to the router from the external network, create relevant rules.

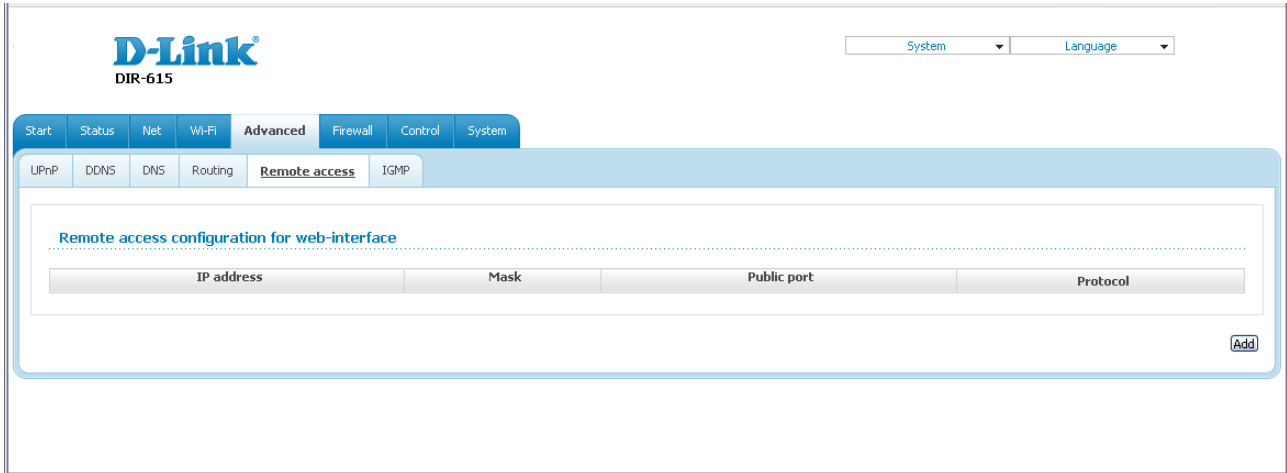


Figure 87. The **Advanced / Remote access** page.

To create a new rule, click the **Add** button.

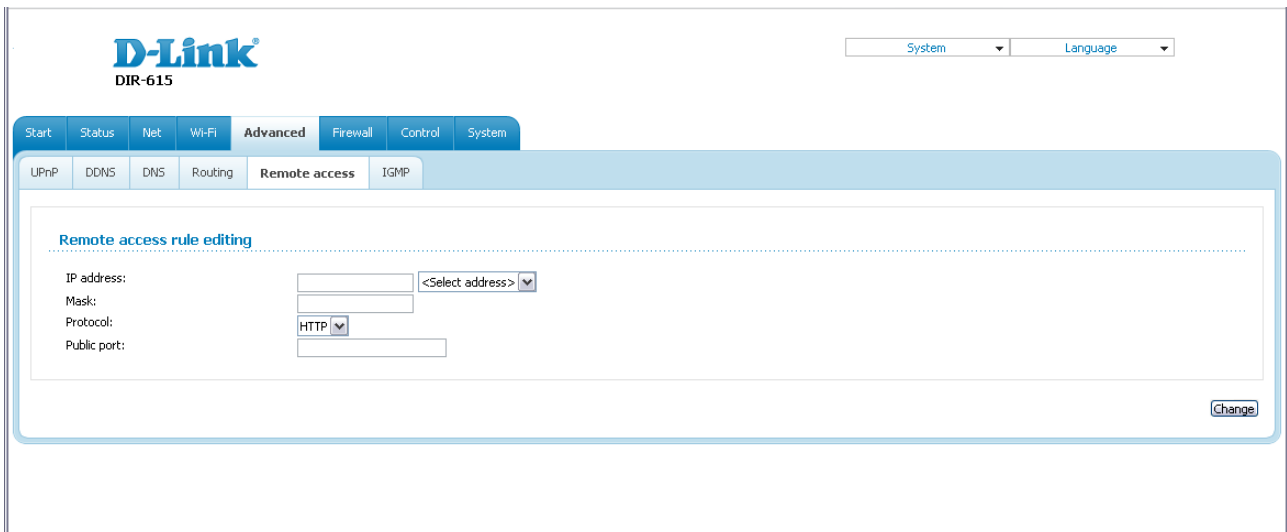


Figure 88. The page for adding a rule for remote management.

You can specify the following parameters:

Parameter	Description
IP address	A host or a subnet to which the rule is applied. To choose a device connected to the router's LAN at the moment, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically).
Mask	The mask of the subnet.
Protocol	The protocol available for remote management of the router.
Public port	An external port of the router. You can specify only one port.

Click the **Change** button.

To edit a rule for remote access, click the relevant link. On the opened page, change the needed parameters and click the **Change** button.

To remove a rule for remote access, click the relevant link. On the opened page, click the **Delete** button.

IGMP

On the **Advanced / IGMP** page, you can enable IGMP for the router.

IGMP is used for managing multicast traffic (transferring data to a group of destinations). This protocol allows using network resources for some applications, e.g., for streaming video, more efficiently.

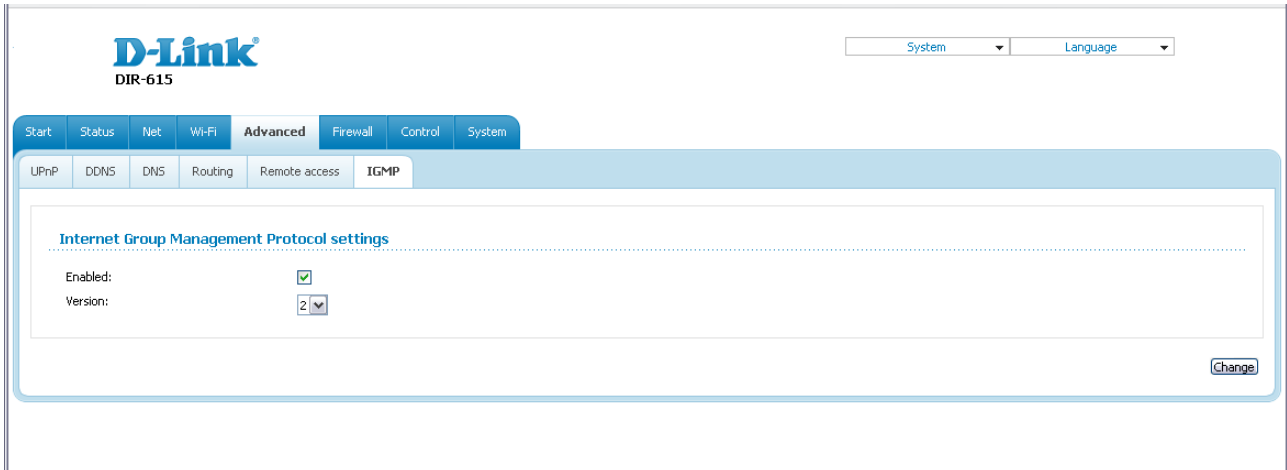


Figure 89. The **Advanced / IGMP** page.

To enable IGMP, select the **Enabled** checkbox. From the **Version** drop-down list, select a version of IGMP. Then click the **Change** button. Such a setting allows using the IGMP Proxy function for all WAN connections for which the **Enable IGMP Multicast** checkbox is selected.

To disable IGMP, deselect the **Enabled** checkbox and click the **Change** button.

Firewall

In this menu you can configure the firewall of the router:

- add rules for IP filtering
- create virtual servers
- define a DMZ
- configure the MAC filter.

IP Filters

On the **Firewall / IP filters** page, you can create new rules for filtering IP packets and edit or remove existing rules.

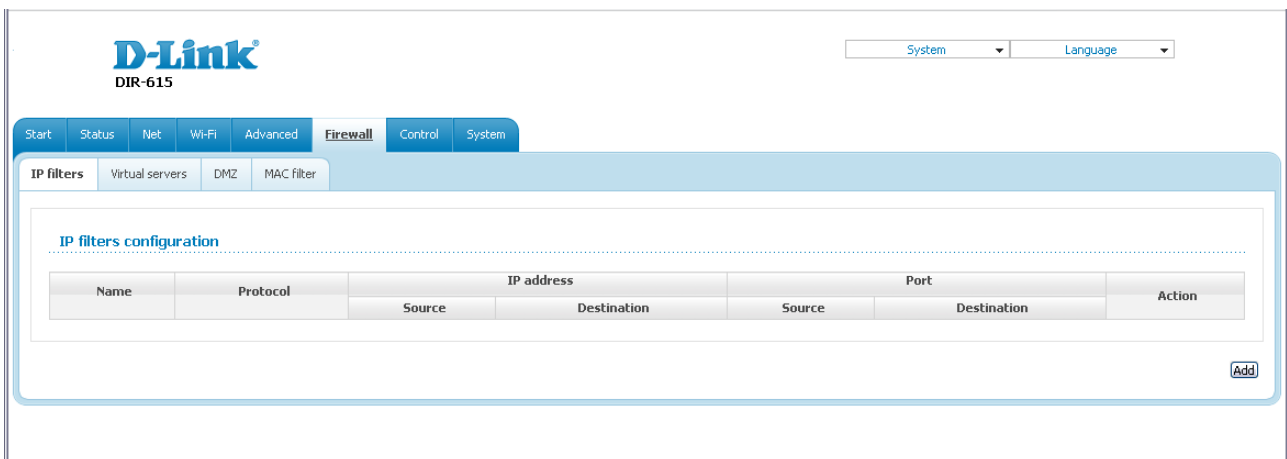


Figure 90. The **Firewall / IP filters** page.

To create a new rule, click the **Add** button.

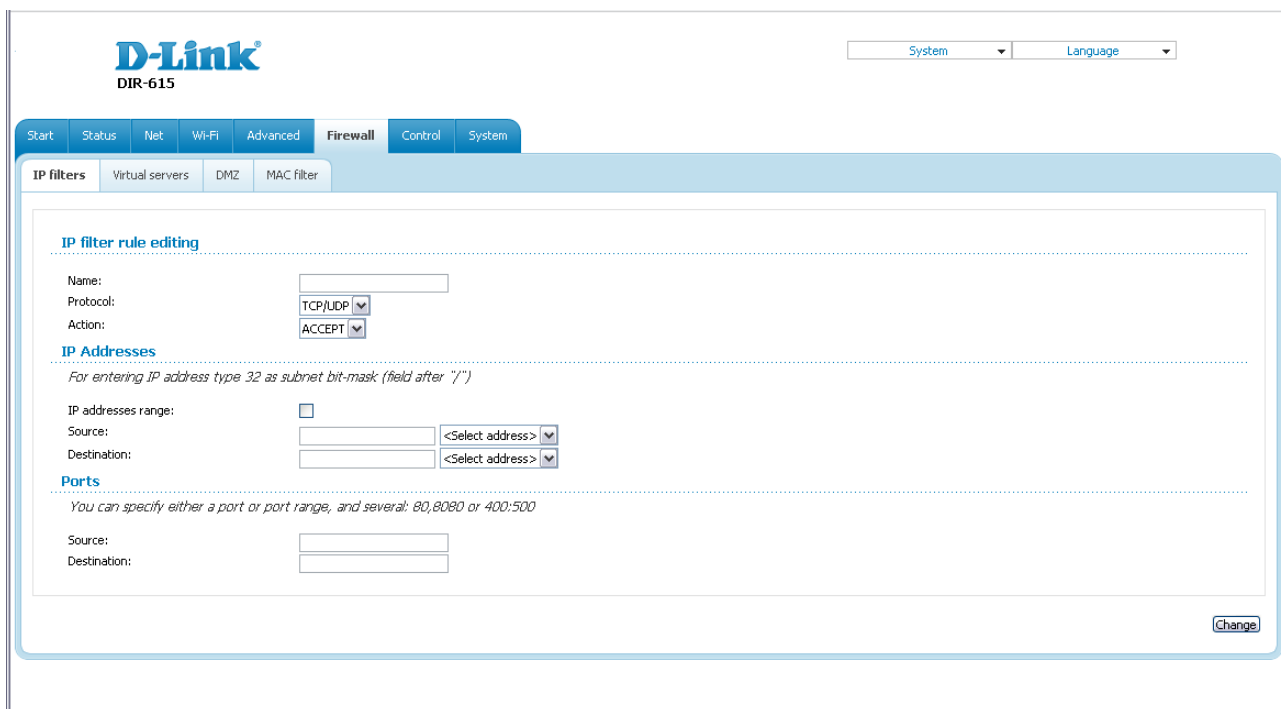


Figure 91. The page for adding a rule for IP filtering.

You can specify the following parameters:

Parameter	Description
IP filter rule editing	
Name	A name for the rule for easier identification.
Protocol	A protocol for network packet transmission. Select a value from the drop-down list.
Action	Select an action for the rule. ACCEPT: Allows packet transmission in accordance with the criteria specified by the rule. DROP: Denies packet transmission in accordance with the criteria specified by the rule.
IP Addresses	
IP address range	Select the checkbox if you want to specify a range of IP addresses as the source or destination IP address.

Parameter	Description
Source	<p>The source host/subnet IP address.</p> <p>If the IP address range checkbox is selected, specify the starting IP address of the range in the Source (first) field and the ending IP address in the Source (last) field.</p> <p>If the IP address range checkbox is not selected, specify the IP address of the host or subnet in the Source field. To specify an IP address add /32.</p> <p>To choose a device connected to the router's LAN at the moment, select the relevant IP address from the drop-down list located to the right of the field (the field will be filled in automatically).</p>
Destination	<p>The destination host/subnet IP address.</p> <p>If the IP address range checkbox is selected, specify the starting IP address of the range in the Destination (first) field and the ending IP address in the Destination (last) field.</p> <p>If the IP address range checkbox is not selected, specify the starting IP address of the host or subnet in the Destination field. To specify an IP address add /32.</p> <p>To choose a device connected to the router's LAN at the moment, select the relevant IP address from the drop-down list located to the right of the field (the field will be filled in automatically).</p>
Ports	
Source	A port of the source IP address. You can specify one port, several ports separated by a comma, or a range of ports separated by a colon.
Destination	A port of the destination IP address. You can specify one port, several ports separated by a comma, or a range of ports separated by a colon.

Click the **Change** button.

To edit a rule for IP filtering, click the link to the relevant rule. On the opened page, change the needed parameters and click the **Change** button.

To remove a rule for IP filtering, click the link to the relevant rule. On the opened page, click the **Delete** button.

Virtual Servers

On the **Firewall / Virtual servers** page, you can create virtual servers for redirecting incoming Internet traffic to a specified IP address in the local area network.

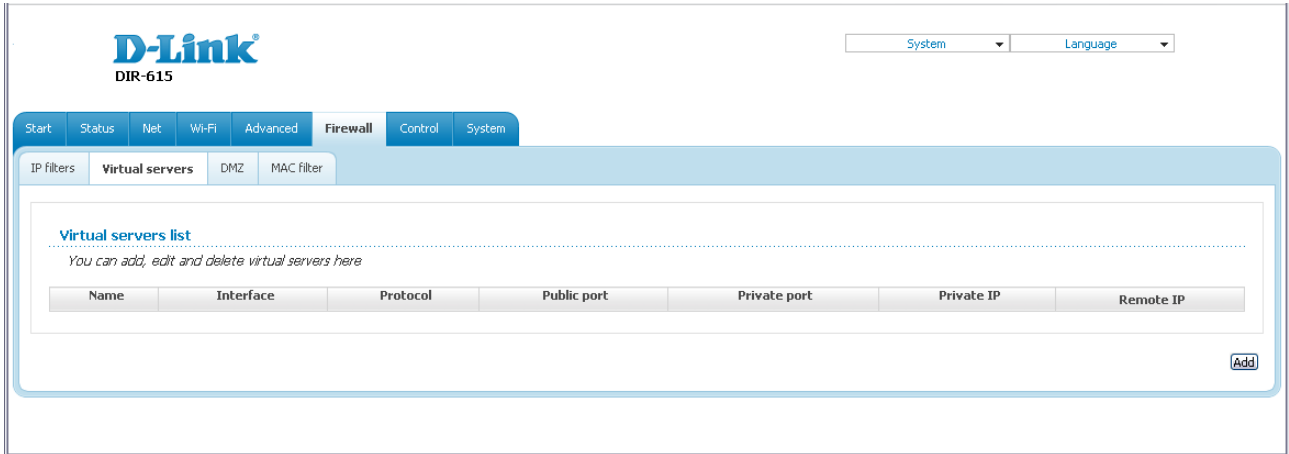


Figure 92. The **Firewall / Virtual servers** page.

To create a new virtual server, click the **Add** button.

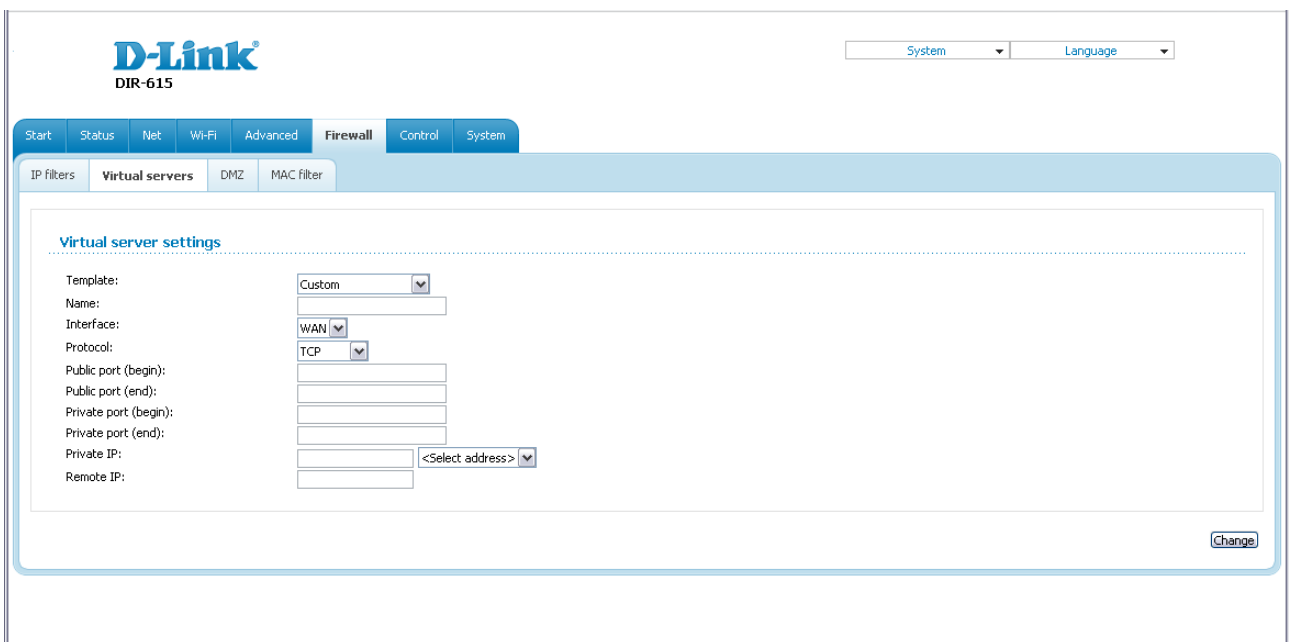


Figure 93. The page for adding a virtual server.

You can specify the following parameters:

Parameter	Description
Template	Select a virtual server template from the drop-down list, or select Custom to specify all parameters of the new virtual server manually.
Name	A name for the virtual server for easier identification. You can specify any name.
Interface	A WAN connection to which this virtual server will be assigned.
Protocol	A protocol that will be used by the new virtual server. Select a value from the drop-down list.
Public port (begin)/ Public port (end)	A port of the router from which traffic is directed to the IP address specified in the Private IP field. Specify the start and the end value for the port range. If you need to specify one port, enter the needed value in the Public port (begin) field and leave the Public port (end) field blank.
Private port (begin)/ Private port (end)	A port of the IP address specified in the Private IP field to which traffic is directed from the Public port . Specify the start and the end value for the port range. If you need to specify one port, enter the needed value in the Private port (begin) field and leave the Private port (end) field blank.
Private IP	The IP address of the server from the local area network. To choose a device connected to the router's LAN at the moment, select the relevant value from the drop-down list located to the right of the Private IP field (the field will be filled in automatically).
Remote IP	The IP address of the server from the external network.

Click the **Change** button.

To edit the parameters of an existing server, follow the link with the name of the server. On the opened page, change the needed parameters and click the **Change** button.

To remove an existing server, follow the link with the name of the server. On the opened page, click the **Delete** button.

DMZ

A DMZ is a host or network segment located “between” internal (local) and external (global) networks. In the router, the DMZ implements the capability to transfer a request coming to a port of the router from the external network to a specified host of the internal network.

On the **Firewall / DMZ** page you can specify the IP address of the DMZ host.

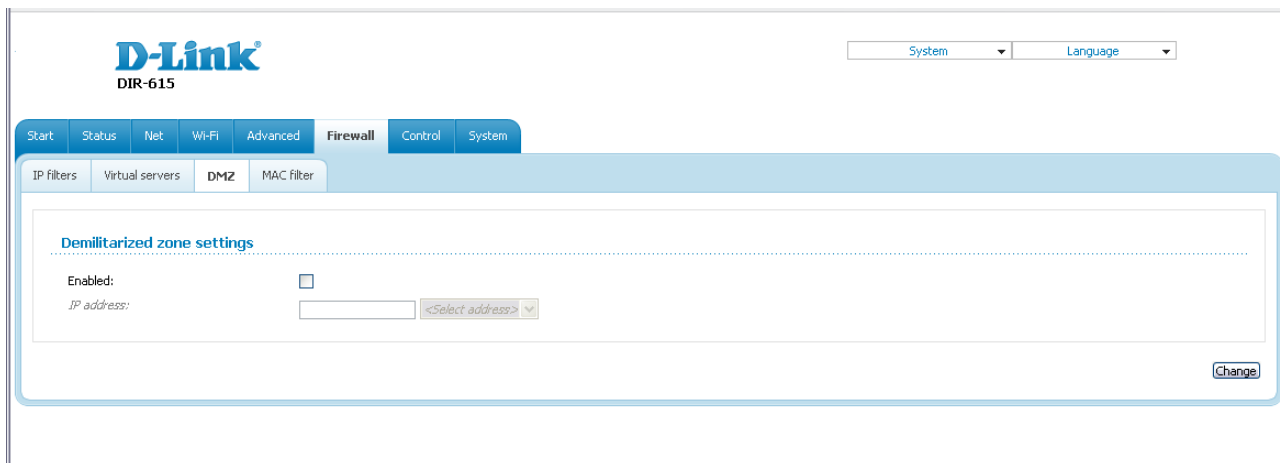


Figure 94. The **Firewall / DMZ** page.

To enable the DMZ, select the **Enabled** checkbox, enter the IP address of a host from your network in the **IP address** field. To choose a device connected to the router's LAN at the moment, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically) and click the **Change** button.

Note that when the DMZ is enabled, all traffic coming to a port of the WAN interface of the router is directed to the same port of the specified IP address. Also note that virtual servers have higher priority than the DMZ host. In other words, if there has been created a virtual server that directs traffic from external port 80 to a port of the device from the router's local network, then entering **http://router_WAN_IP** in the address bar, users of the external network are directed to the specified port and IP address configured for the virtual server, but not to port 80 of the device with the IP address specified on the **Firewall / DMZ** page.

To disable the DMZ, deselect the **Enabled** checkbox and click the **Change** button.

MAC Filter

On the **Firewall / MAC filter** page, you can configure MAC-address-based filtering for computers of the router's LAN.

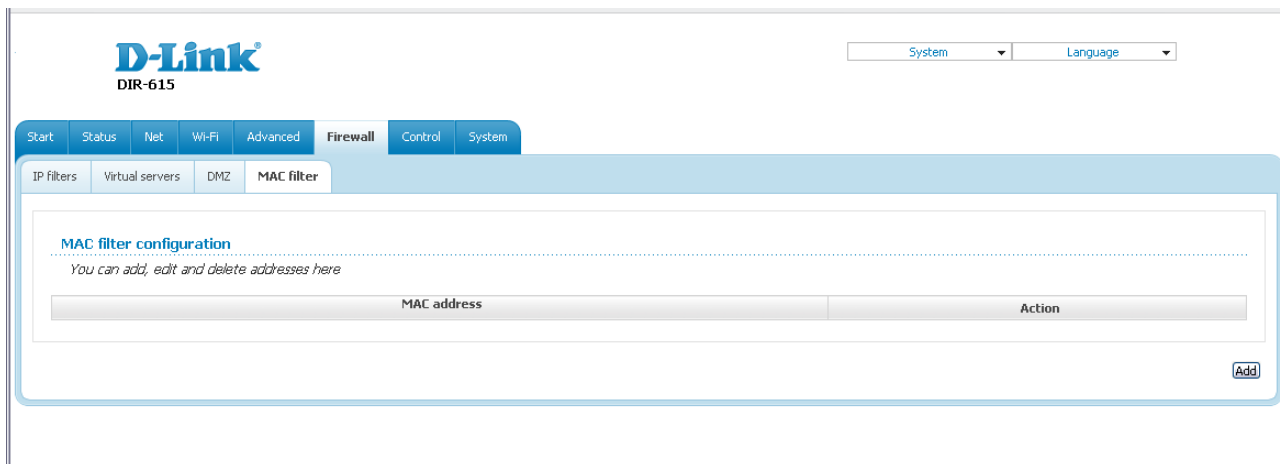


Figure 95. The **Firewall / MAC filter** page.

To specify a new address for the MAC filter, click the **Add** button.

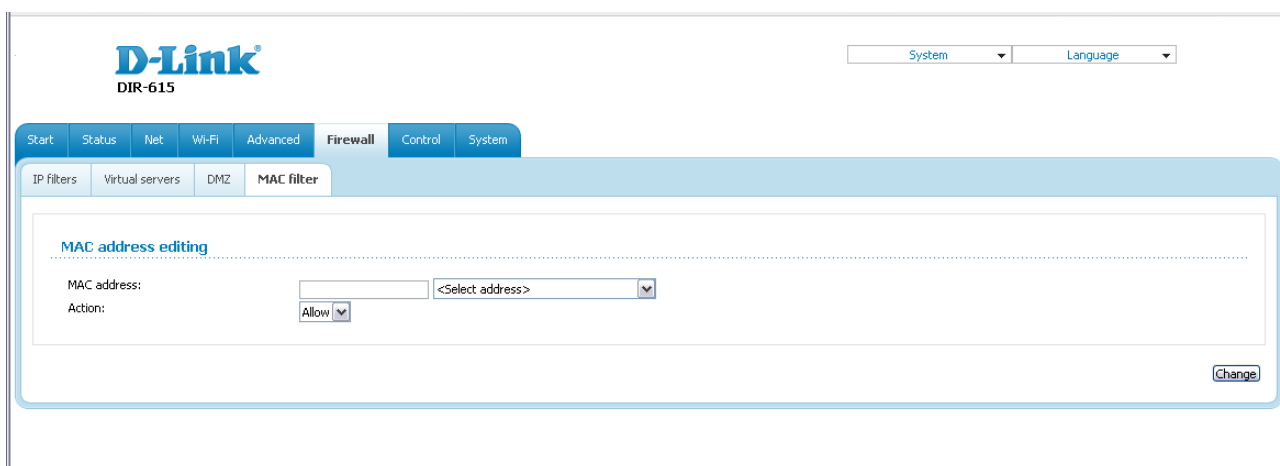


Figure 96. The page for adding an address for the MAC filter.

On the opened page, enter the MAC address of the device from the router's LAN in the **MAC address** field. To choose a device connected to the router's LAN at the moment, select the relevant value from the drop-down list located to the right of the field (the field will be filled in automatically). Then select the **Deny** value from the **Action** drop-down list and click the **Change** button.

To remove an address from the list of MAC addresses for filtering, select the line with the relevant MAC address. On the opened page, click the **Delete** button.

Control

This menu is designed to create restrictions on access to certain web sites.

URL Filter

On the **Control / URL filter** page, you can specify restrictions on access to certain web sites.

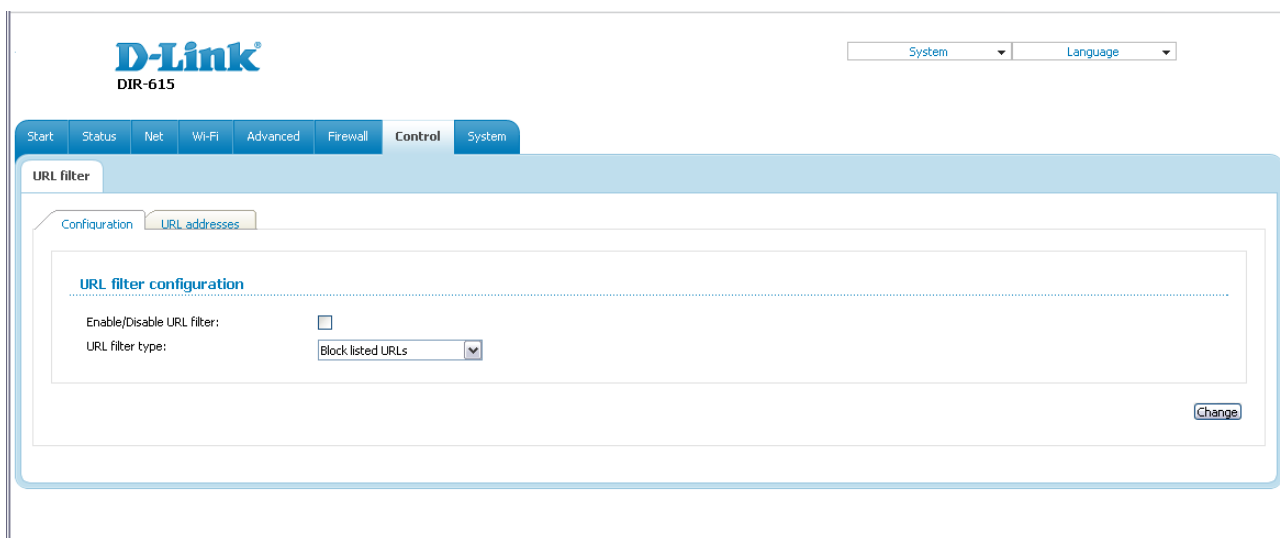


Figure 97. The **Control / URL filter** page. The **Configuration** tab.

To enable the URL filter, select the **Enable/Disable URL filter** checkbox on the **Configuration** tab, then select a needed mode from the **URL filter type** drop-down list:

- **Block listed URLs:** when this value is selected, the router blocks access to all addresses specified on the **URL addresses** tab;
- **Block all URLs except listed:** when this value is selected, the router allows access to addresses specified on the **URL addresses** tab and blocks access to all other web sites.

Click the **Change** button.

To specify URL addresses to which the selected filtering will be applied, go to the **URL addresses** tab and click the **Add** button.

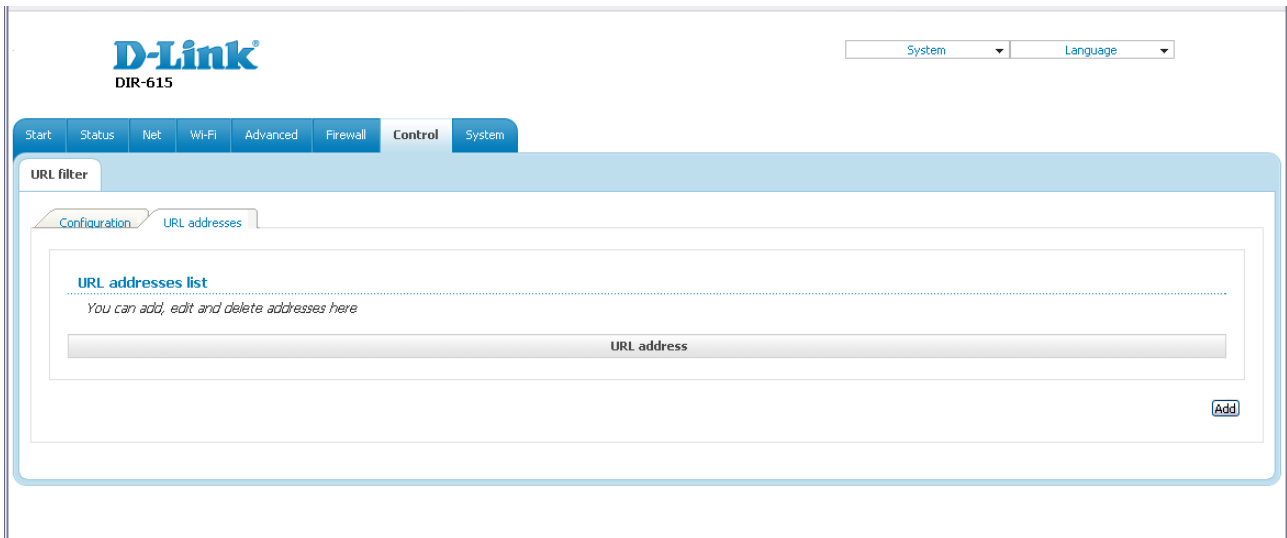


Figure 98. The **Control / URL filter** page. The **URL addresses** tab.

On the opened page, specify the needed parameters.

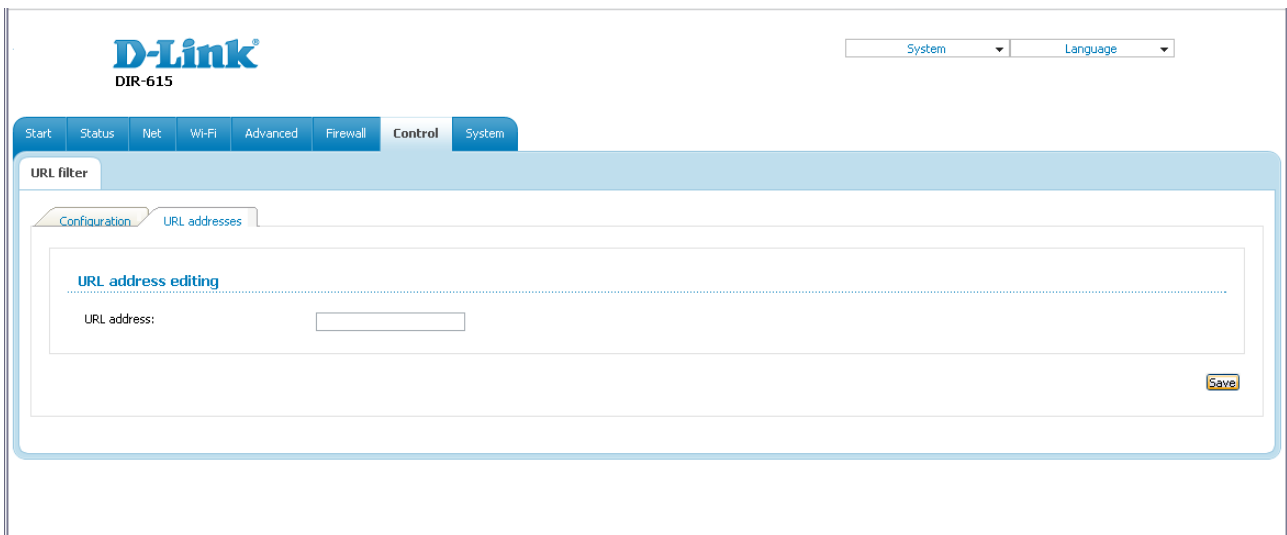


Figure 99. The page for adding an address for the URL filter.

Enter a URL address in the **URL address** field and click the **Save** button.

To remove an address from the list of URL addresses, select the relevant address in the table on the **URL addresses** tab and click the **Delete** button.

To disable the URL filter, deselect the **Enable/Disable URL filter** checkbox on the **Configuration** tab, then click the **Change** button.

System

In this menu you can do the following:

- change the password used to access the router's settings
- save the current settings to the non-volatile memory
- create a backup of the router's configuration
- restore the router's configuration from a previously saved file
- restore the factory default settings
- view the system log
- update the firmware of the router
- configure automatic synchronization of the system time
- check availability of a host on the Internet through the web-based interface of the router
- allow or forbid access to the router via TELNET.

Administrator Password

On the **System / Administrator password** page, you can change the password for the administrator account used to access the web-based interface of the router and to access the device settings via TELNET.

! For security reasons, it is strongly recommended to change the administrator password upon initial configuration of the router.



The screenshot shows the D-Link DIR-615 web interface. At the top left is the D-Link logo and 'DIR-615'. On the top right are 'System' and 'Language' dropdown menus. Below is a navigation bar with tabs: Start, Status, Net, Wi-Fi, Advanced, Firewall, Control, and System. Under the 'System' tab, there are sub-tabs: Administrator password, Configuration, System log, Firmware upgrade, NTP client, Ping, and Telnet. The 'Administrator password' sub-tab is active. The main content area is titled 'System password setting up' and contains the text: 'The system password and the password for the web-based interface will be changed at the same time.' Below this text are three input fields: 'Login:' with a dropdown menu showing 'admin', 'Password:', and 'Confirmation:'. A 'Save' button is located at the bottom right of the form area.

Figure 100. The page for modifying the administrator password.

Enter the new password in the **Password** and **Confirmation** fields and click the **Save** button.

Configuration

On the **System / Configuration** page, you can save the changed settings to the non-volatile memory, restore the factory defaults, backup the current configuration, or restore the router's configuration from a previously created file.

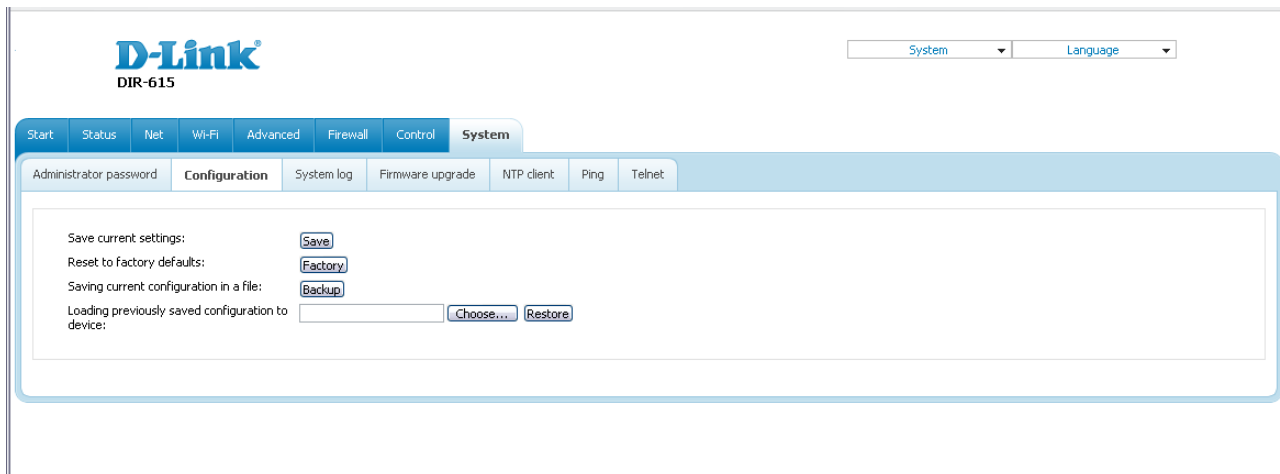


Figure 101. The **System / Configuration** page.

The following buttons are available on the page:

Control	Description
Save	Click the button to save settings to the non-volatile memory. Please, save settings every time you change the router's parameters. Otherwise the changes will be lost upon hardware reboot of the router.
Factory	Click the button to restore the factory default settings. Also you can restore the factory defaults via the hardware Reset button (see the <i>Saving and Restoring Settings</i> section, page 27).
Backup	Click the button and follow the dialog box appeared to save the configuration (all settings of the router) to your PC.
Restore	Click the button to upload a previously saved configuration (all settings of the router) from a file on your PC. Click the Choose/Browse ¹ button to select a previously saved configuration file located on your PC.

Actions of the **Save**, **Factory**, and **Backup** buttons also can be performed via the top-page menu displayed when the mouse pointer is over the **System** caption.

¹ The name of the button depends upon the web browser that you use.

System Log

On the **System / System log** page, you can set the system log options and configure sending the system log to a remote host.

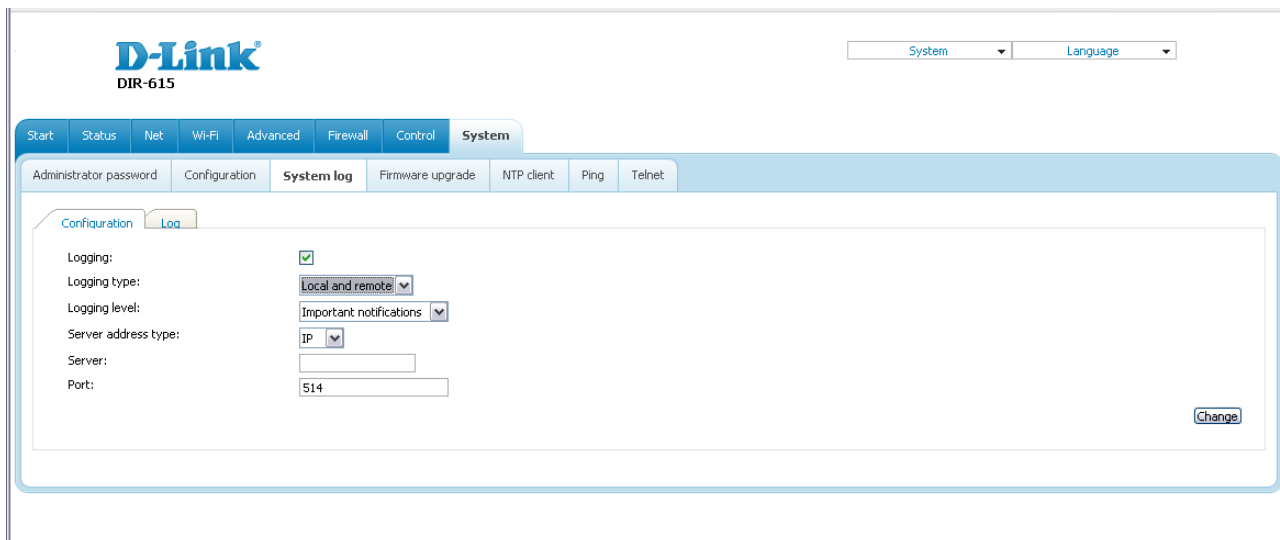


Figure 102. The **System / System log** page. The **Configuration** tab.

To enable logging of the system events, select the **Logging** checkbox on the **Configuration** tab. Then specify the needed parameters.

Control	Description
Logging type	<p>Select a type of logging from the drop-down list.</p> <ul style="list-style-type: none"> • Local: the system log is stored in the router's memory (and displayed on the Log tab). When this value is selected, the Server address type, Server, and Port fields are not displayed. • Remote: the system log is sent to the remote host specified in the Server field. • Local and remote: the system log is stored in the router's memory (and displayed on the Log tab) and sent to the remote host specified in the Server field.
Logging level	Select a type of messages and alerts/notifications to be logged.
Server address type	From the drop-down list, select the IP value to specify an IP address of a host from the local or global network, or the URL value to specify a URL address of a remote server.
Server	The IP or URL address of the host from the local or global network, to which the system log will be sent.
Port	A port of the host specified in the Server field. By default, the value 514 is specified.

After specifying the needed parameters, click the **Change** button.

To disable logging of the system events, deselect the **Logging** checkbox and click the **Change** button.

On the **Log** tab, the events specified in the **Logging level** list are displayed.

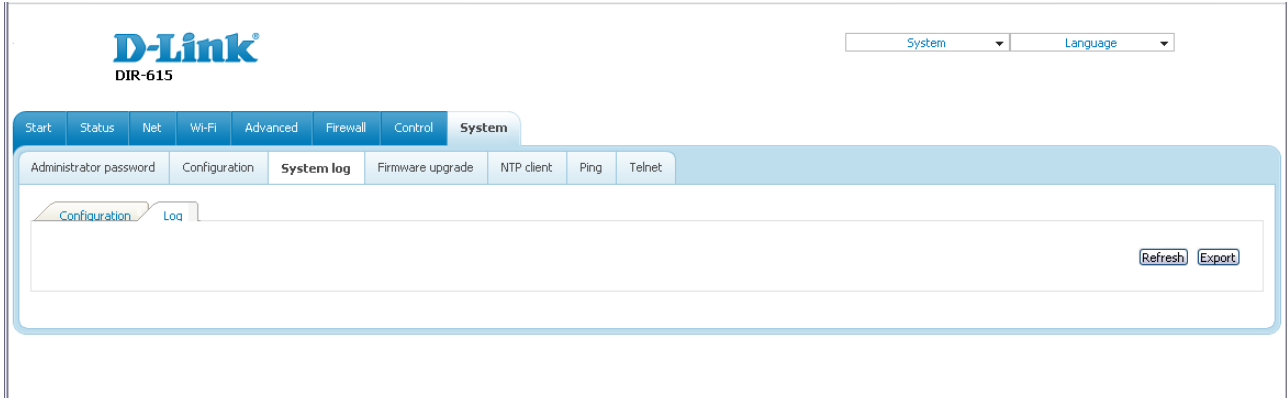


Figure 103. The **System / System log** page. The **Log** tab.

To view the latest system events, click the **Refresh** button.

To save the system log to your PC, click the **Export** button and follow the dialog box appeared.

Firmware Upgrade

On the **System / Firmware upgrade** page, you can upgrade the firmware of the router.

! Upgrade the firmware only when the router is connected to your PC via a wired connection.

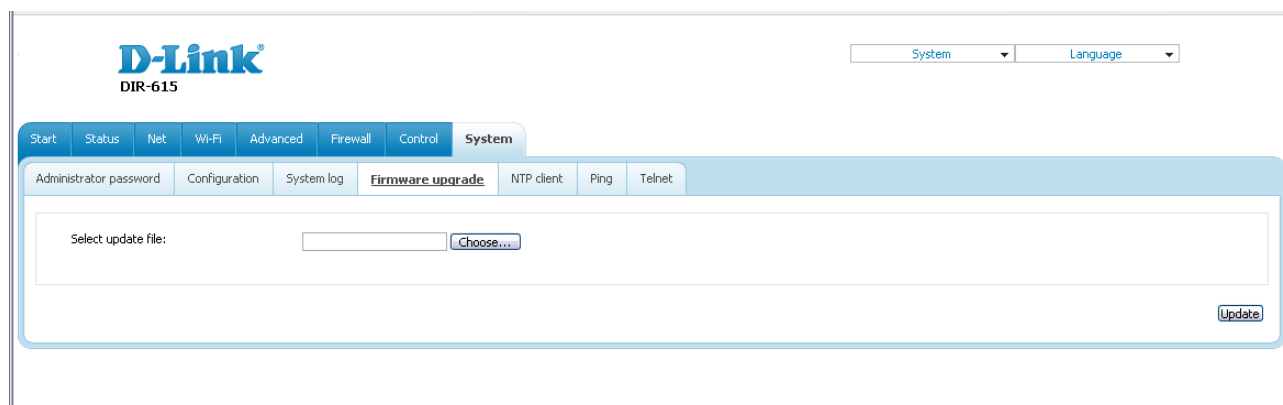


Figure 104. The **System / Firmware upgrade** page.

The current version of the router's firmware is displayed in the **Firmware version** field on the **Start** page. If you need to install a newer version of the firmware, follow the next steps:

! Attention! Do not turn off the router before the firmware upgrade is completed. This may cause the device breakdown.

1. Download a new version of the firmware from www.dlink.ru.
2. Click the **Choose/Browse**² button on the **System / Firmware upgrade** page to locate the new firmware file.
3. Click the **Update** button to upgrade the firmware of the router.
4. Wait until the router is rebooted (about one and a half or two minutes).
5. Log into the web-based interface using the login (**admin**) and the current password.
6. Select the **Factory** line in the top-page menu displayed when the mouse pointer is over the **System** caption.
7. Wait until the router is rebooted. Log into the web-based interface, using the default IP address, login and password (**192.168.0.1**, **admin**, **admin**).

² The name of the button depends upon the web browser that you use.

NTP Client

On the **System / NTP client** page, you can configure automatic synchronization of the system time with a time server on the Internet.

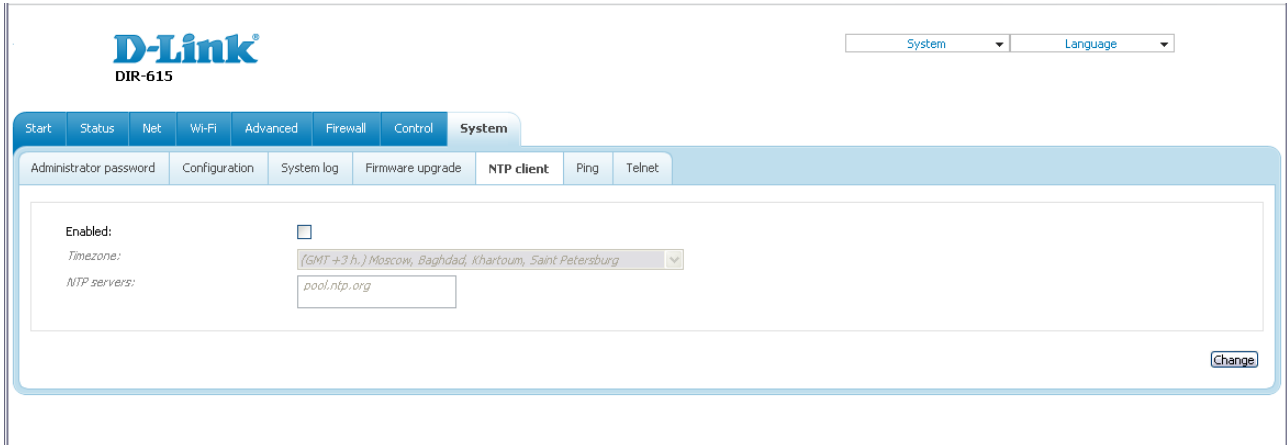


Figure 105. The **System / NTP client** page.

To enable automatic synchronization with a time server:

1. Select the **Enabled** checkbox.
2. Select your time zone.
3. Specify the needed NTP server in the **NTP servers** field or leave the server specified by default.
4. Click the **Change** button.



When the router is powered off or rebooted, the system time is reset to the default value. If you have set automatic synchronization for the system time, the internal clock of the device will be configured after connecting to the Internet.

Ping

On the **System / Ping** page, you can check availability of a host from the local or global network via the Ping utility.

The Ping utility sends echo requests to a specified host and receives echo replies.

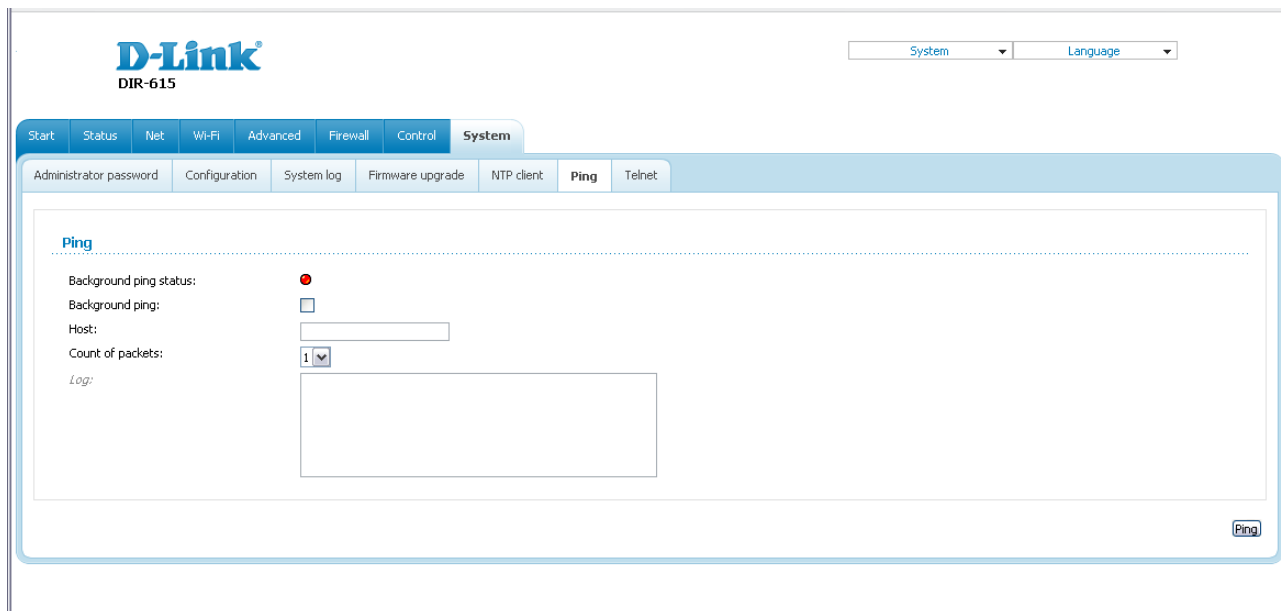


Figure 106. The **System / Ping** page.

To check availability of a host, enter the IP address or name of this host in the **Host** field, and select a number of requests that will be sent in order to check its availability from the **Count of packets** drop-down list. Click the **Ping** button. The check results will be displayed in the **Log** field.

Also you can run the Ping function in the background mode. To do this, select the **Background ping** checkbox. Then enter the IP address or name of a host in the **Host** field and click the **Ping** button. When this mode is selected, the **Count of packets** and **Log** fields are not displayed.

In the background mode, the Ping utility sends requests to the host specified in the **Host** field every 40 seconds. The **Background ping status** light shows the status of the Ping function (green light: the function is running, red light: the function is not running).

To stop running the Ping function in the background mode, deselect the **Background ping** checkbox, enter the IP address or name of a host in the **Host** field, and click the **Ping** button.

Telnet

On the **System / Telnet** page, you can enable or disable access to the device settings via TELNET from your LAN. By default, access is disabled.

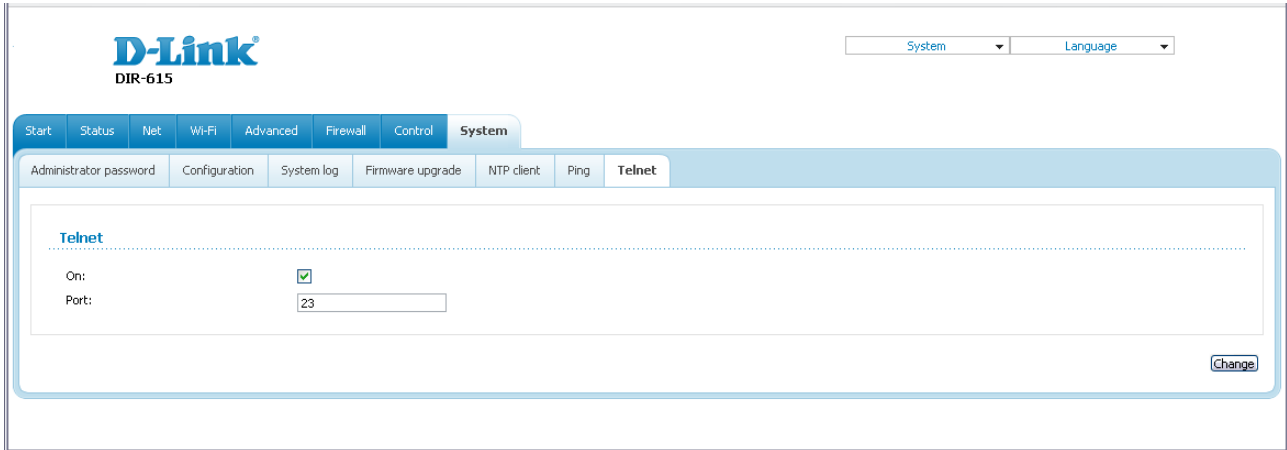


Figure 107. The **System / Telnet** page.

To enable access via TELNET, select the **On** checkbox. In the **Port** field, enter the number of the router's port through which access will be allowed (by default, the port **23** is specified). Then click the **Change** button.

To disable access via TELNET, deselect the **On** checkbox and click the **Change** button.

CHAPTER 5. OPERATION GUIDELINES

Safety Instructions

Place your router on a flat horizontal surface or mount the router on the wall (the mounting holes are located on the bottom panel of the device). Make sure that the router is provided with sufficient ventilation.

To prevent overheating, do not obstruct the ventilation openings of the router.

Plug the router into a surge protector to reduce the risk of damage from power surges and lightning strikes.

Operate the router only from an electrical outlet with the correct power source as indicated on the adapter.

Do not open the cover of the router. Otherwise any warranty will be invalidated.

Unplug the equipment before dusting and cleaning. Use a damp cloth to clean the equipment. Do not use liquid/aerosol cleaners or magnetic/static cleaning devices.

Wireless Installation Considerations

The DIR-615 device lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF noise in your home or office. To maximize your wireless range, follow the guidelines below.

1. Keep the number of walls and ceilings between the DIR-615 device and other network devices to a minimum – each wall or ceiling can reduce your wireless network range by 3-90 feet (1-30 meters).
2. Be aware of the direct line between network devices. Place your devices so that the signal travels straight through a wall or ceiling (instead of at an angle) for better reception.
3. Building materials make a difference. A solid metal door or aluminum studs may have a negative effect on your wireless range. Try to position your router, access points, and computers so that the signal passes through drywalls or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.
4. Keep your router away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.
5. If you are using 2.4 GHz cordless phones or X-10 equipment (wireless devices such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4 GHz phone base is as far away from your wireless devices as possible. Note, that the base transmits a signal even if the phone is not in use.

Connecting to Cable or DSL Modem

If you need to connect the router to a cable or DSL modem, do the following.

1. Place the router in an open location in the supposed center of your wireless network. Do not plug the power adapter into the router.
2. Turn off your PC.
3. Unplug the Ethernet cable (that connects your PC to your modem) from your computer and place it into the INTERNET port of your router.
4. Plug another Ethernet cable into one of the four LAN ports on the router. Plug the other end into the Ethernet port of your PC.
5. Turn on your modem. Wait until the modem is booted (about 30 seconds).
6. Plug the power adapter to the router and connect to an electrical outlet or power strip. Wait until the router is booted (about 30 seconds).
7. Turn on your PC.
8. Verify the LEDs of the router. The following LEDs should be on: **Power**, **LAN** (of the relevant Ethernet port), and **Internet**. If not, make sure that your computer, modem, and router are powered on and the relevant cables are connected correctly.

CHAPTER 6. ABBREVIATIONS AND ACRONYMS

AES	Advanced Encryption Standard
ARP	Address Resolution Protocol
BSSID	Basic Service Set Identifier
CCK	Complementary Code Keying
CRC	Cyclic Redundancy Check
DDNS	Dynamic Domain Name System
DDoS	Distributed Denial of Service
DHCP	Dynamic Host Configuration Protocol
DMZ	DeMilitarized Zone
DNS	Domain Name System
DTIM	Delivery Traffic Indication Message
GMT	Greenwich Mean Time
IGMP	Internet Group Management Protocol
IP	Internet Protocol
ISP	Internet Service Provider
L2TP	Layer 2 Tunneling Protocol
LAN	Local Area Network
LCP	Link Control Protocol
MAC	Media Access Control
MTU	Maximum Transmission Unit
NAT	Network Address Translation
NTP	Network Time Protocol
OFDM	Orthogonal Frequency Division Multiplexing
PPPoE	Point-to-point protocol over Ethernet
PPTP	Point-to-point tunneling protocol
PSK	Pre-shared key
RIP	Routing Information Protocol

RTS	Request To Send
SSID	Service Set Identifier
TKIP	Temporal Key Integrity Protocol
UDP	User Datagram Protocol
UPnP	Universal Plug and Play
URL	Uniform Resource Locator
WAN	Wide Area Network
WEP	Wired Equivalent Privacy
Wi-Fi	Wireless Fidelity
WLAN	Wireless Local Area Network
WPA	Wi-Fi Protected Access