SIEMENS

Gigaset 504 AGU

Gigaset

Contents

The product series Gigaset 501/504

The devices of the product series Gigaset 501/504 are powerful but easy-to-use communication devices for connecting your PC or local area network (LAN) to the Internet. They contain an integrated ADSL modem (ADSL /ADSL2+), allowing you easy access to the Internet.

With the router Gigaset 504 you can also connect a set-top box to watch IPTV, if this is supported by your Internet service provider.

You can connect your PC via cable or wirelessly and create a wired local network (LAN) or wireless local area network (WLAN). For network security, wireless transmission can be encrypted using the WPA/WPA2 standard or 64/128-bit WEP.

Your device allows several users to access the Internet simultaneously. A single user account can be shared if your Internet service provider permits this. If you want to surf the Internet, watch IPTV and make calls using the Internet at the lowest possible cost, the Gigaset devices are a convenient and simple solution.

The devices have an extensive range of functions but remain simple to use. They can be configured and operational within a few minutes.

Do your part for the environment (ECO)

Thanks to a switch-mode power supply unit, all of our broadband products offer significantly reduced power consumption - for more energy-efficient use, which helps make a cleaner environment for everyone. You can turn the WLAN off completely when you're not using it. It's our goal to ensure a sustainable economic process by using an environmentally friendly production and management system - which makes it easy for us to meet the strict ISO 14001 standards for international environmental management.

Features and applications

The router Gigaset 504 AGU's wide range of features makes it ideal for a large number of applications.

Depending on your device, some of the features may differ from the description in this instruction manual.

- **Internet access**

  The router supports shared Internet access for up to 252 users via the integrated ADSL /ADSL2+ modem. This means several users in your network can surf the Internet at the same time, all using the same Internet account.

- **Setting up a local area network**

  The router offers the following possibilities:

  – Depending on the device up to four devices connected via Ethernet ports with a transmission speed of 10 or 100 Mbps (with automatic recognition).
  – Up to 252 mobile terminals connected via a radio interface with a transmission speed of up to 54 Mbps. It complies with IEEE 802.11g standard and can work with all products that satisfy Standard IEEE 802.11b or 802.11g.
  – Using the router Gigaset 504 AGU makes it easy to set up a network at home or in small offices. For example, users can exchange data or share resources in the network, such as a file server or printer.
  – The router Gigaset 504 AGU supports DHCP for dynamic IP configuration of the local area network, and DNS for domain name mapping.

  An introduction into the various options of establishing a local network can be found in the appendix in section "Local area networks with Gigaset products" on page 66.

- **Security functions**

  The router Gigaset 504 AGU offers comprehensive security features:

  – Firewall protection against unauthorised access from the Internet

    All PCs in the local area network use the Public IP address of the router to establish Internet connections, making them 'invisible' to other Internet users. The router only allows access from the Internet if it has been requested from the local area network.

    Thanks to the firewall, the router also offers comprehensive protection against attacks from computer hackers.

- Service filtering and URL blocking

  The router can filter Internet access, allowing you to determine which PCs may access which Internet services.

  You can also deactivate access to certain Internet domains and sites (URL blocking).
- Access control and encryption for the local area network

  You can use various encryption methods and authentication methods (WEP, WPA/WPA2-PSK, WPA/WPA2, MAC access control) to prevent unauthorised access to your wireless LAN or to make data illegible to unauthorised parties. The security settings available to you depend on the components used in your local network.

  With MAC access control you can allow wireless access to selected PCs.

◆ **Offering your own services on the Internet**

- If you want to offer your own services on the Internet, you can set up the router as a virtual server without permitting further access to the local area network.
- DMZ (Exposed Host)

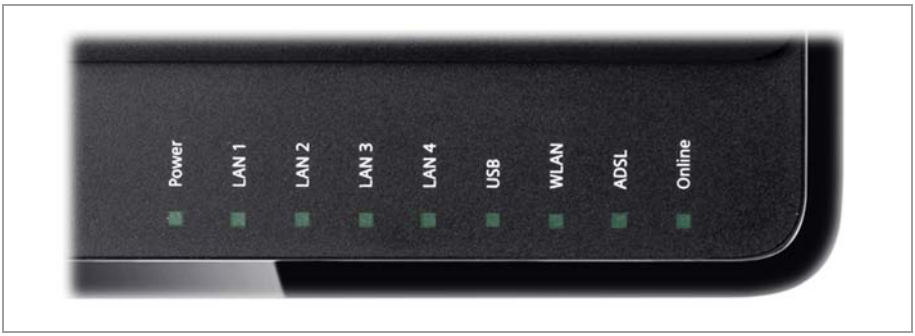
  This allows you to release a PC in your local area network for unlimited access from the Internet. Note that in this case your local area network will no longer be adequately protected against Internet attacks.

The device

Operating elements

⏻	Button to switch the device on and off.

LED panel



The LEDs (from left to right) have the following functions:

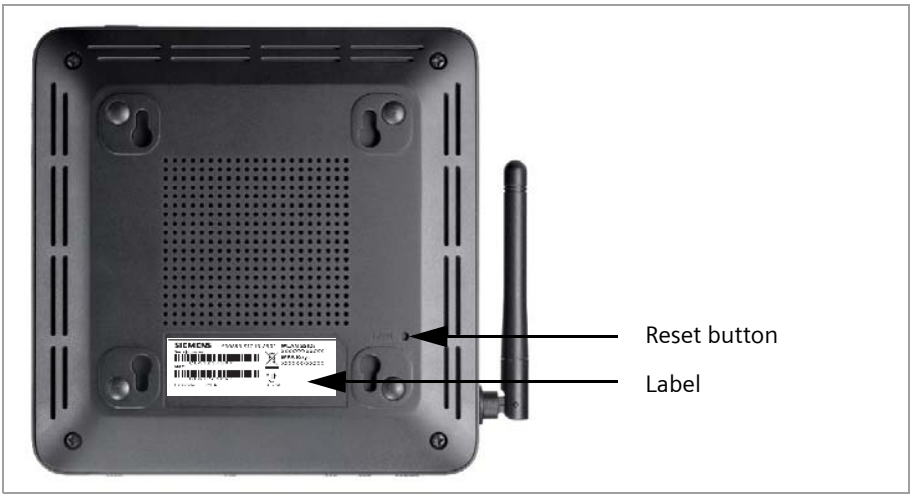
LED	State	Status
Power	On (green)	The router is connected to the mains.
	Flashing	Firmware update is running.
	Frequently flashing	Self-test failure. Device is not bootable or device malfunction.
	Off	The router is disconnected from the mains.
LAN / LAN1 – LAN4	On	A device is connected to the relevant LAN port.
	Flashing	The relevant LAN port is sending or receiving data (traffic).
	Off	There is no device connected.
USB	On (green)	A device is connected to the router via the USB port.
	Flashing	The USB port is sending or receiving data.
	Off	There is no device connected.
WLAN	On	The radio interface is activated, no data transmission at present.
	Flashing	The router is sending or receiving data on the radio interface.
	Off	The radio interface is deactivated.
ADSL	On	A DSL connection is established.
	Flashing	The DSL line is being synchronised.
	Off	DSL is deactivated.
Online	On	Connection to the Internet has been established.
	Flashing	Data is being sent to or received from the Internet.
	Off	There is no Internet connection.

Ports on the rear panel

The rear panel of the router houses the ports.

Element	Description
POWER	Socket for the mains adapter supplied **Warning**: Using the wrong power supply unit may damage the router.
USB	USB port for connecting a PC via USB cable.
LAN1 – LAN4 (yellow)	Four 10/100 Mbps switch ports with automatic recognition (RJ-45). You can connect up to four devices with Ethernet ports (such as PCs, a Hub or Switch). You can connect an external modem (e.g. a VDSL or cable modem) to the LAN1 port. The integrated ADSL modem is then deactivated. You will find additional information on the configuration settings on page 23.
ADSL (grey)	DSL socket for connecting the integrated modem to the DSL port of the splitter

Bottom



Reset button

The underside of the router houses the reset button providing the following functions:

Reboot function: Press and hold the button behind the opening for more than 1 second but less than 5 seconds to reboot the device. This does not affect the configuration settings.

Reset function: Press and hold the button behind the opening for at least 5 seconds to return all settings to factory settings. **Warning**: This will clear all the configuration settings you have made since the initial startup. Updated firmware will not be affected.

Label

On the label you will find the serial number of your device.

System requirements

You require the following components to operate your router Gigaset 504 AGU:

- A PC with
  - an 802.11g or 802.11b compatible wireless Network adapter.

  Note:
  An 802.11b-compatible network adapter has a maximum transmission speed of 11 Mbps. An 802.11g-compatible network adapter has a maximum transmission speed of 54 Mbps.

  or

  - an Ethernet port (10Base-T or 100Base-TX)
- A Web browser such as Microsoft Internet Explorer V 6.0 or higher or Mozilla Firefox V 1.0 or higher for configuring your router.

  Note:
  We recommend you use a PC with the Windows Vista or Windows XP operating system because only then are all system requirements for using the device fulfilled.
- To access the Internet you require
  - a DSL port (splitter),
  - the access data for your Internet service provider.

For experienced users

The default settings for the router Gigaset 504 AGU are:

- IP address: 192.168.254.254
- Subnet mask: 255.255.255.0
- WLAN: Off
- SSID: AlShamil
- Radio channel: 1 or automatic
- System password: admin

Installing the device

Overview of the installation steps

1. First install an Ethernet network card in the PCs you want to connect to the router Gigaset 504 AGU. The installation is described in the user guides for these products.
2. Then make the necessary connections (PCs, splitter) on the router Gigaset 504 AGU and activate the device (page 15).
3. Then configure the router Gigaset 504 AGU to activate the device's Internet access (refer to the section entitled "Internet" on page 23). To do this you will need the access data for your Internet service provider.
4. If you wish to use other functions of the router Gigaset 504 AGU, for example the comprehensive security features, use the ***Advanced Settings*** (page 22).

Note:
Before the PCs can communicate with the router and with each other in a local network, you may have to change your network settings (see page 17). Configure these network settings on **one** PC first so that it can establish a connection to the router. You can then use this PC to configure the device. To find out how to do this, refer to the document entitled "Configuring the local area network" on the CD-ROM.

Setting up the router Gigaset 504 AGU

The router can be set up in any suitable location in the home or office. You do not need any special wiring. However, you should comply with the following guidelines:

- Operate the router only indoors within a temperature range of 0 to +40 °C. Do not position the router near sources of heat. Do not cover the ventilation slots. High temperatures can damage the device.
- A mains socket for 220/230 V~ and a connection socket for the splitter or LAN must be available in the place where you set up the router.
- Do not position the device in the immediate vicinity of stereo equipment, TV sets, microwave ovens or the like. This may cause interference.
- Position the router so that it is as near to the centre of your wireless network as possible. The general rule is: The higher you place the antenna, the better the performance. Make sure that the place where you position the router offers optimum reception throughout the house, apartment or office.
- Make sure the router cannot fall down, as this could damage the antenna. Position the router on a non-slip surface.
- Do not place the router on any furniture surface that could be affected by the heat from the device.
- Lay the cables so that nobody can trip over them. You should not cover the cables with anything.

Please remember:
Network connections (LAN) via cables and telephone lines may only be set up with the router within enclosed rooms.

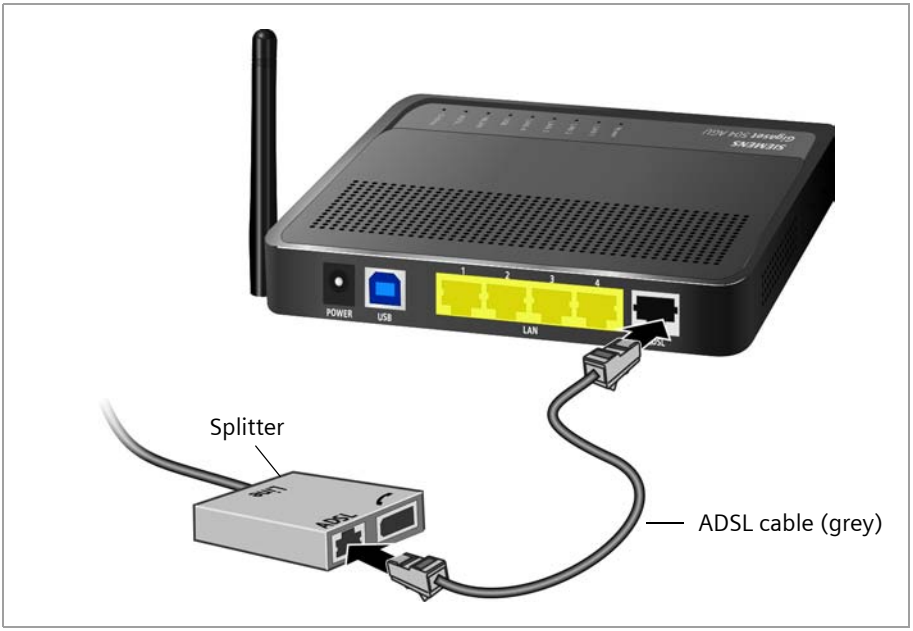
Connecting to the splitter data port

You can operate the router in two different operating modes in order to set up an Internet connection:

- with an integrated ADSL modem
- with an external modem, such as a VDSL or cable modem

Using the integrated ADSL modem

➔ Connect the **ADSL** port (**grey**) on the router to the ADSL socket on the splitter. To do this, use the DSL cable supplied (**grey**).

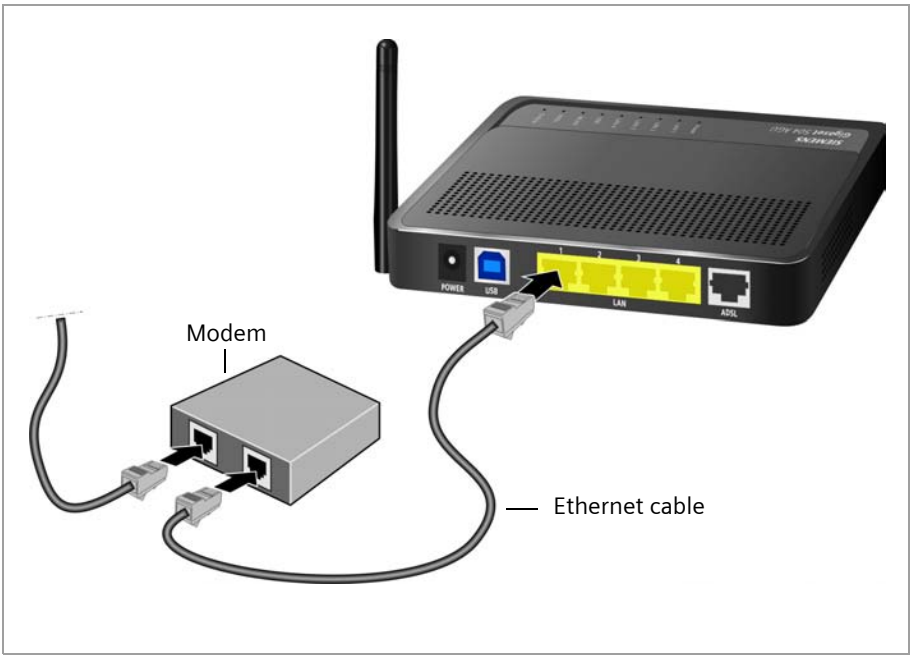


Using an external modem

In this case the LAN1 port is used as WAN port. The integrated ADSL modem is then deactivated.

➞ Connect the **LAN1** port on the router with an external modem. To do this, use the cable supplied with your modem or any Ethernet straight cable having an RJ45 connector on both sides.

➞ Then connect this modem to the relevant communications port (e.g. splitter).



To put the LAN port into operation for a WAN connection you have to change the ***Connection type*** of the Internet connection to ***Ethernet*** (see page 23).

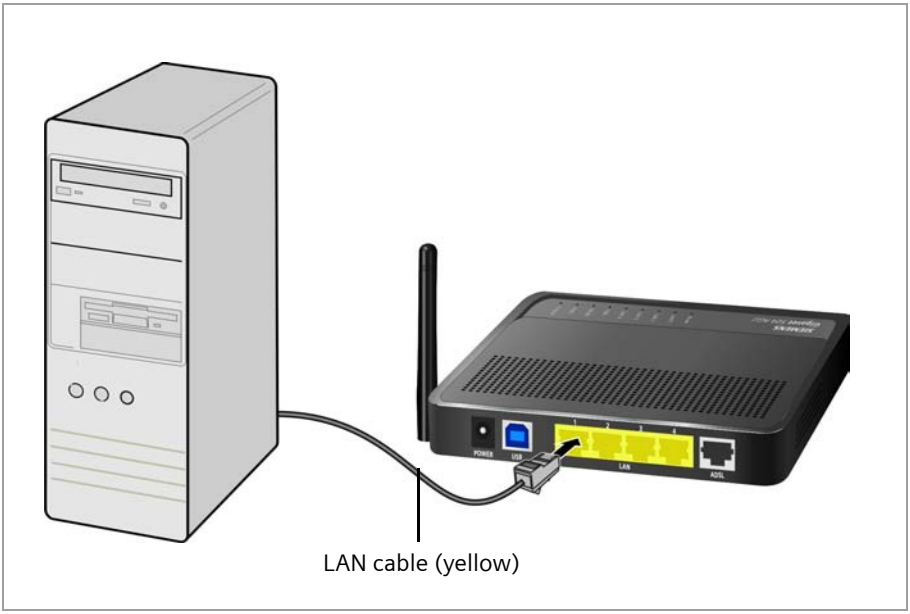
Wired connection to the PC

You can connect wired or wireless PCs to your router to create a local area network (LAN).

First connect just **one** PC to the router via cable. You can then carry out the general configuration.

Wireless connection is possible after completing the installation of the router and switching on the WLAN function via the configuration program. You will find information about this topic in the chapter "Configuring wireless connections" on page 39.

➞ Connect one of the LAN ports (**LAN1** – **LAN4**, **yellow**) on the router to the Ethernet network card in your PC. To do this, use the LAN cable supplied (CAT5, **yellow**).



i	Alternatively you can also connect a PC via the USB port (**blue**).

Connecting to the mains power supply

Please remember:
Only use the mains adapter supplied with the device (9 V DC, 1 A).

➔ Connect the mains adapter cable to the **POWER** socket on the router.

➔ Plug the mains adapter into a mains socket.

➔ Switch on the device.

The router is now switched on and ready for operation.

Checking the operating state

Your router Gigaset 504 AGU is now ready for use. The LED displays on the front panel of the router provide information about the operating state (see page 8).

When the device is ready for use, the LEDs light up as follows:

- The **Power** LED on the front lights up.
- The **ADSL** LED flashes to indicate that the DSL connection is being synchronised. Once this process is complete, the ADSL LED lights up permanently.
- The **LAN** LEDs light up if a device is connected to the corresponding LAN port.
- The **USB** LED lights up if a device is connected to the USB port.

If this is not the case, refer to the section entitled Troubleshooting on (page 62).

Making the basic settings

You can now make the basic settings for Internet access using the user interface of the router (page 18).

Network configuration of the PCs

In order to communicate via the router Gigaset 504 AGU, the **network configuration** may have to be set up on the connected PCs.

This usually takes place automatically provided you have not made any changes to the standard settings for the network configuration and you use one of the following operating systems:

- **Windows Vista**
- **Windows XP**
- **Windows 2000**

With **Windows 98/SE**, you have to carry out the network configuration.

The description of the network configuration can be found on the CD-ROM.

The user interface

You have connected a PC to the router Gigaset 504 AGU and possibly made the settings in the local area network. You can now configure the router using this PC from the user interface of the router. As Internet browser we recommend Microsoft Internet Explorer V 6.0 or higher, or Mozilla Firefox V 1.0 or higher.

Note:

To start the configuration environment, you may need to deactivate the HTTP proxy for your browser.

If you use Window Vista or Windows XP Service Pack 2, you will need to configure the popup blocker.

You will find additional information on these two points on "Deactivating HTTP proxy and configuring a pop-up blocker" on page 72.

If you use a firewall, it must allow connection to the router. For details, refer to the user guide for your firewall. If necessary, deactivate the firewall before you configure your router. You can re-activate the firewall afterwards.

Starting the user interface

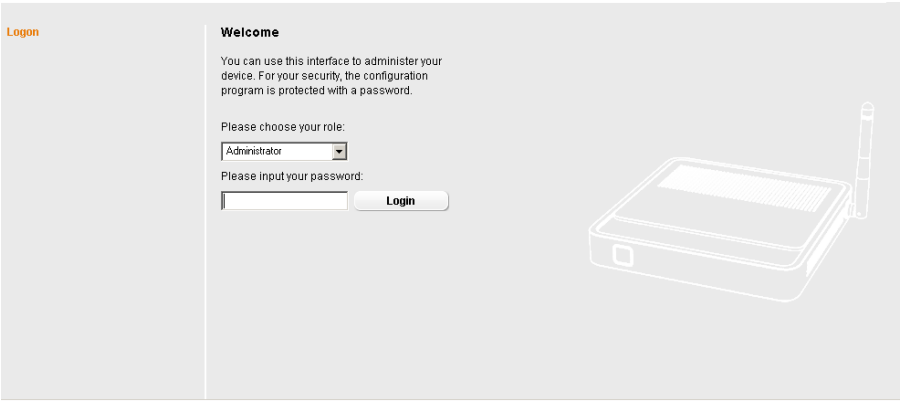
To access the user interface of the router Gigaset 504 AGU:

➔ Start your Internet browser.

➔ Enter the IP address of the router in the browser's address field:

`http://192.168.254.254`

The login screen appears:



For your security, the configuration program is protected with a password. The default password generally required is ***admin***. This may differ depending on the provider settings. If necessary, check the details on the device label.

➞ Enter the password.

➞ Click ***Login***.

Note:
For security reasons you should change this password at a later stage (page 50).

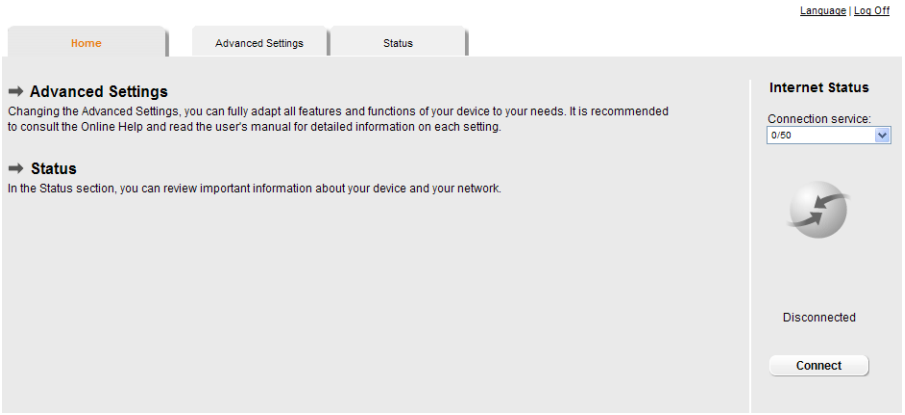
A page with security information will appear. If you carry out all the general and security settings using the user interface, your device and network will be fully protected. If not, the next time you log on you will be informed of security gaps in the configuration program.

➞ Click ***OK***.

The start screen is displayed.

The start screen

The start screen is the starting point for all configuration and administration procedures.



Start screen functions

You can start the following actions on the start screen:

- Select the language for the user interface (page 20).
- When you have configured an Internet connection for the first time, you can view the selected connection service and the status of the Internet connection, choose a different connection service and set up or close an Internet connection (page 20). The start screen shows the status and also the ***Connect*** or ***Disconnect*** button.
- Open the ***Status*** menu to obtain status information about the router (page 56).
- Open the ***Advanced Settings*** menu for additional configuration options (page 22).

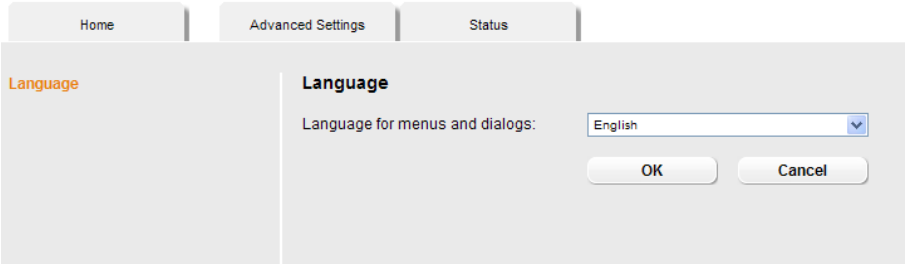
You can call up the ***Advanced Settings*** menu and ***Status*** information at any time and on any user interface screen using the tabs at the upper margin of the user interface.

Selecting a language

The user interface exists in various languages. The language modules available are located on the CD supplied. If you wish to change the preset language, proceed as follows:

➞ Insert the CD into the CD drive of your PC.

➞ Click ***Language*** at the top right of the start screen.



➞ Select the new language you require from the list.

➞ Click ***OK*** to load the desired language.

!	Do not switch off the device during loading, as this could render your device inoperative.

Once the procedure has been concluded, the start screen will be displayed again.

Connecting to the Internet manually

Once you have configured your Internet access (see page 25), you can establish a manual connection to the Internet on the start screen if you have selected ***Connect on demand*** or ***Connect manually*** as the Connection mode.

To establish or end an Internet connection manually:

➞ Open the start screen of the router as described on page 18.

If you have already started the user interface, click the start screen tab at the top left of the window.

If you have not yet started the user interface, do so now and log on.

➞ Click ***Connect*** to establish a connection to the Internet.

➞ Click ***Disconnect*** if you no longer require the connection.

Elements in the user interface

The user interface screens contain the following elements:

Help

Click this tab top right on the screen to display explanations about the current user interface screen.

***Log Off* button**

The ***Log Off*** button is always displayed on the right of the user interface. If you click ***Log Off***, the session is ended and the login screen appears again.

Buttons in the Advanced Settings menu

OK	Transfers the settings you have made to the router configuration.
Cancel	Deletes all the entries on a screen since the last time you clicked ***OK***.

Other buttons may be displayed depending on the function in question. These are explained in the relevant sections.

Configuring Advanced Settings

In the ***Advanced Settings*** menu, you can configure all the options for the router Gigaset 504 AGU. The following table contains the options available in this menu.

Menu	Description
Internet	This menu comprises all the setting options relating to the Internet. In particular, you can do the following: ◆ Check and change the configuration for Internet access (page 25), ◆ Configure the firewall, i.e. a number of security and special functions, for example access control from local PCs to the Internet or the blocking of certain Web sites (page 28), ◆ Make the NAT settings required to provide your own services on the Internet (page 30), ◆ Set up dynamic DNS for a fixed Internet address on the device (page 35), ◆ Configure the Quality of Service (QoS) (page 36).
Local Network	You can change the Private IP address of the router here and make settings on the DHCP server (page 37).
Wireless Network	You can configure the options for wireless communication (SSID and encryption) here and restrict access to the router (page 39).
Administration	You can make or change various system settings here, for example change the password (page 50), set the time (page 49) or activate remote management (page 51). In addition, you can also back up the data on the router or update the firmware (page 52).

Internet

If you have configured the router Gigaset 504 AGU using the Gigaset Installer, you have also configured the WAN connection (Internet access). You can check or change these settings in the ***Internet*** menu.

This menu also offers you a wide range of possibilities for setting up security settings and limiting access to the Internet as well as for providing your own services on the Internet.

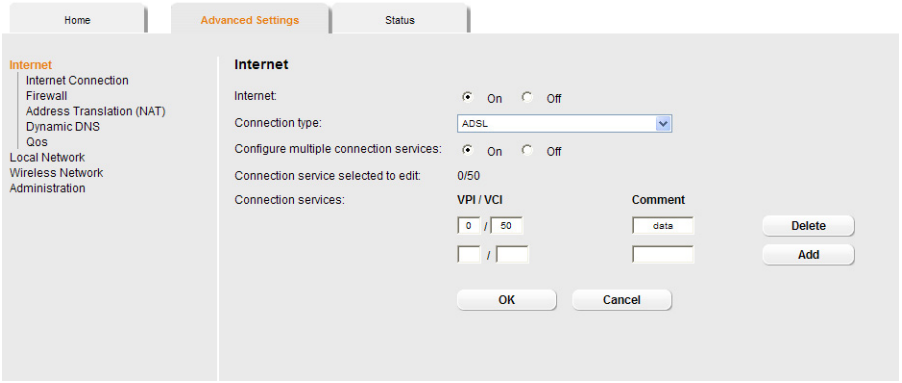
You can carry out the following via the ***Internet*** menu:

Internet	Activate/deactivate the Internet connection, set up additional connection services and edit the virtual connection parameters (see page 23),
Internet Connection	Check and edit the configuration of the Internet connection (see page 25),
Firewall	Protect the network against unauthorised external access (see page 28),
Address Translation (NAT)	Provide your own services on the Internet (NAT, see page 30),
Dynamic DNS	Set up dynamic DNS (page 35),
Qos	Quality of service: You can define the settings and quality for data transfer (see page 36)

Internet selection

You can activate or deactivate the Internet connection for the router on this screen. You can choose the connection type and set up and edit a number of connection services.

➡ In the ***Advanced Settings*** menu, select: ***Internet***.



➡ Select the appropriate option to activate or deactivate the Internet function of the router.

➡ Choose the desired ***Connection type*** for your Internet connection:

- Choose the ***ADSL*** if you are using the integrated ADSL modem of the router.
- Choose ***Ethernet*** if you are setting up the connection to the Internet via an Ethernet network connection (e.g. if you are using an external modem with an Ethernet connection).

If you change the connection type, you must also modify your Internet access settings accordingly (page 25).

➡ If you have selected ***Ethernet***, click ***OK*** to save and apply the changes.

➡ If you have selected ***ADSL***, you can now set up multiple connection services.

Configure multiple connection services

Your Internet service provider can permit you to set up a number of ***Connection services***. You can set up these services here.

➡ Select the appropriate option to activate or deactivate ***Configure multiple connection services***.

If you have already configured an Internet connection, this is shown as ***Connection service selected to edit***. This is then also displayed on other pages of the ***Internet*** menu.

➡ Make the following settings:

- Enter the ***VPI / VCI*** values for each connection service that you have received from your Internet service provider.
- Enter a description to identify the respective connection service.
- Click ***Add*** to create a new entry.
- Click ***Delete*** to delete an entry.

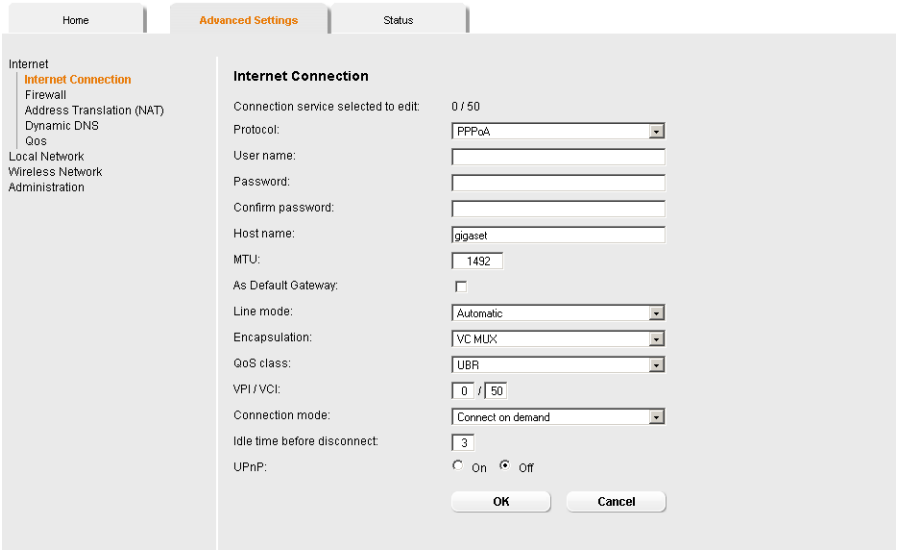
➡ Click ***OK*** to save and apply the changes.

Internet Connection

You can set up or change the configuration of your Internet connection on this screen. All the settings you make here must coincide with the features your Internet service provider makes available to you. False information can lead to problems with your Internet connection.

➡ If you want to configure or modify settings for the Internet connection, select from the ***Advanced Settings*** menu: ***Internet*** – ***Internet Connection***.

Connection type ADSL



All settings apply for the displayed connection service that you selected for editing on the ***Advanced Settings*** – ***Internet*** (page 23) screen. If you only set up one connection service, no selection is displayed.

➡ Enter the account data you have been given by your service provider: ***Protocol***, ***User name***, ***Password***.

➡ Enter a ***Host name*** for your router

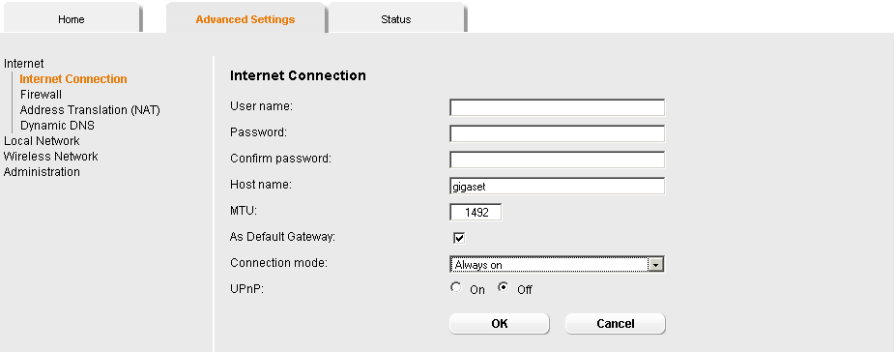
➡ Choose if your router should be used ***As Default Gateway*** for this Internet connection.

➡ Apply the default settings for the parameters ***MTU***, ***Line mode***, ***Encapsulation***, ***QoS class*** and ***VPI / VCI*** unless your service provider has provided you with other data.

Note:

Please ensure that you enter all the details from your provider correctly, otherwise the configuration may fail and you will not be able to connect to the Internet.

Connection type Ethernet



➡ Enter the account data you have been given by your service provider: ***User name***, ***Password***.

➡ Enter a ***Host name*** for your router

➡ Apply the default setting for the parameter ***MTU***, unless your service provider has provided you with other data.

Note:

Please ensure that you enter all the details from your provider correctly, otherwise the configuration may fail and you will not be able to connect to the Internet.

Setting the Connection mode

➡ Specify how Internet sessions are to be established via ***Connection mode***:

– Select ***Always on*** if the connection is to exist at all times when the router is turned on.

Note:

If you are on a time-based tariff, this option can result in high connection charges.

– Select ***Connect on demand*** if applications such as an Internet browser or an e-mail program are to connect to the Internet automatically.

– In the ***Idle time before disconnect*** field, enter a period after which the Internet connection is to end automatically if no data is transmitted (the default setting is 3 minutes).

This time setting only applies to the ***Connect on demand*** and ***Connect manually*** options.

– Select ***Connect manually*** if you always want to establish and end the Internet connection manually. If you are on a time-based tariff this will save you high connection charges.

➡ Click ***OK*** to apply the settings.

Using UPnP (Universal Plug and Play)

PCs with UPnP (Universal Plug & Play) can offer their own network services and automatically use services offered in the network.

Note:

The operating system Windows ME, Windows XP or Windows Vista must run on the PC. Check, if the UPnP function has been installed on the PCs operating system. Maybe you have to install the UPnP components retroactively. Please consult the documentation of your operating system.

As soon as you have installed UPnP on a PC operating system and activated it on the router, applications on this PC (e.g. Microsoft Messenger) can communicate via the Internet without you needing to expressly authorise it. In this case, the router automatically implements Port forwarding, thereby facilitating communication via the Internet.

The task bar on the PC on which UPnP is installed contains an icon for the router. Click this icon to open the user interface. On Windows XP system, this icon is also shown under network connections.

➡ In the ***Advanced Settings*** menu, select: ***Internet*** – ***Internet Connection***.

➡ Click ***UPnP***.

Note:

When the UPnP function is active, system applications can assign and use Ports on a PC. This poses a security risk.

➡ Click ***OK*** to apply the settings.

Firewall

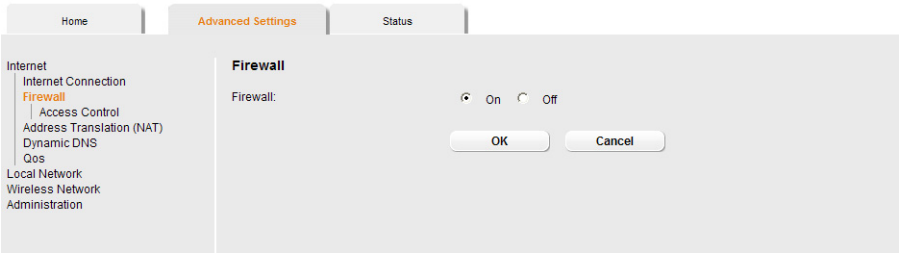
The firewall functions of the router Gigaset 504 AGU include various security functions for the local network.

You can do the following:

- Enable or disable the router firewall.
- Block access by individual PCs to selected services or Web sites.

The firewall functions for the router are activated and configured in the factory. If you want to deactivate the firewall, carry out the following steps:

➞ In the ***Advanced Settings*** menu, select: ***Internet*** – ***Firewall***.



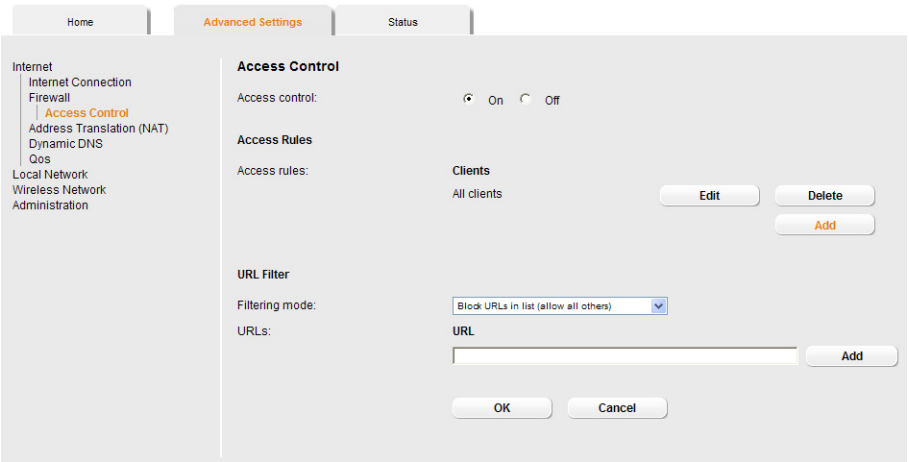
➞ Click the required option.

➞ Click ***OK*** to apply the settings.

Setting up access control to the Internet

The ***Access Control*** function allows you to control access to various services for one or more PCs. You can permit or block access to URLs and services at certain times.

➞ In the ***Advanced Settings*** menu, select: ***Internet*** – ***Firewall*** – ***Access Control***.



➞ Activate the ***Access Control*** function by selecting ***On***.

You have the following setting options for ***Access Control***:

URL Filter

With the URL Filter you can block or allow access to certain Web sites or Internet domains. When you have entered the relevant URLs, you can create access rules which use the URL Filter for selected clients in your network.

➞ Select the ***Filtering mode***:

- ***Allow URLs in list (block all others)*** or
- ***Block URLs in list (allow all others)***

➞ Enter the relevant URL in the field.

➞ Click ***Add*** to create a new entry.

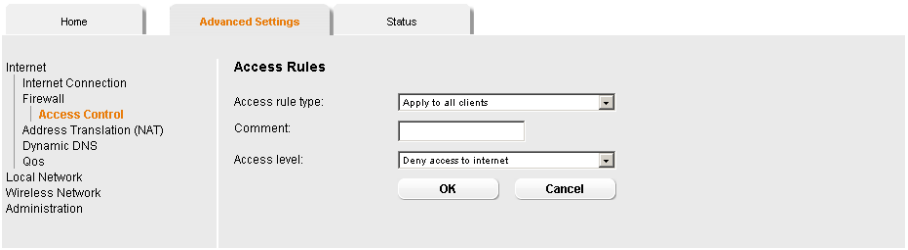
➞ Click ***Delete*** to delete an entry.

➞ Click ***OK*** to apply the settings.

Access Rules

You can limit access to the Internet for all clients, or only for certain clients in the network, thereby allowing or blocking access to services.

➞ Click ***Add*** to create an access rule.



➞ Select the ***Access rule type*** from the list:

- ***Apply to all clients***: The rule applies to all PCs in the network.
- ***Specify IP address range***: You select the PCs to which the rule is to apply by entering an IP address range.
- ***Specify IP address*** or ***Specify MAC address***: The rule applies to a PC you have selected via the IP address or MAC address.

➞ Enter a name for the access rule in the ***Comment*** field.

➞ Define the ***Access level***. Choose one of the following options:

- ***Deny access to internet***
- ***Allow web browsing***
- ***Allow web browsing with URL filter***

  If you have set up URL filters on the ***Access Control*** screen (page 29), you can activate them here.

– ***Custom***
  You can specify your own service filter here.

Specifying an own service filter

The services in the list are blocked for Internet access. The specified service filter applies to all clients. To create a service filter, proceed as follows:

➔ Select the services that are to be blocked.

– Select predefined services from the ***Predefined applications*** list. The most popular Internet services are offered.

Or

– Specify your own services manually.

  Select the ***Protocol*** and enter the appropriate port number or port range in the ***Port start*** and ***Port end*** fields. To define one single port enter the same number in both fields.

  Entering a ***Comment*** that is displayed will help you to identify different services.

  Enable the ***Filter*** checkbox to use the respective service for the service filter.

➔ Click ***Add*** to create a new entry with the entered data or for the selected, predefined application.

➔ Click ***Delete*** to delete an entry.

➔ When you have completed all the settings in this screen, click ***OK*** to apply them.

Setting up the NAT function

The router Gigaset 504 AGU comes equipped with the NAT (Network Address Translation) function. With address mapping, several users in the local network can access the Internet via one or more public IP addresses. All the local IP addresses are assigned to the router's public IP address by default.

One of the characteristics of NAT is that data from the Internet is not allowed into the local network unless it has been explicitly requested by one of the PCs in the network. Most Internet applications can run behind the NAT firewall without any problems. For example, if you request Internet pages or send and receive e-mails, the request for data from the Internet comes from a PC in the local network, and so the router allows the data through. The router opens precisely **one** port for the application. A port in this context is an internal PC address, via which the data is exchanged between the Internet and a client on a PC in the local network. Communicating via a port is subject to the rules of a particular protocol (TCP or UDP).

If an external application tries to send a call to a PC in the local network, the router will block it. There is no open port via which the data could enter the local network.

Some applications, such as games on the Internet, require several links, i.e. several ports so that the players can communicate with each other. In addition, these applications must also be permitted to send requests from other users on the Internet to users in the local network. These applications cannot be run if Network Address Translation (NAT) has been activated.

Using port forwarding (the forwarding of requests to particular ports) the router is forced to send requests from the Internet for a certain service, for example a game, to the appropriate port(s) on the PC on which the game is running.

When the router is supplied, the NAT function (Network Address Translation) is activated, i.e. all IP addresses of PCs in the local network are converted to the router's public IP address when accessing the Internet.

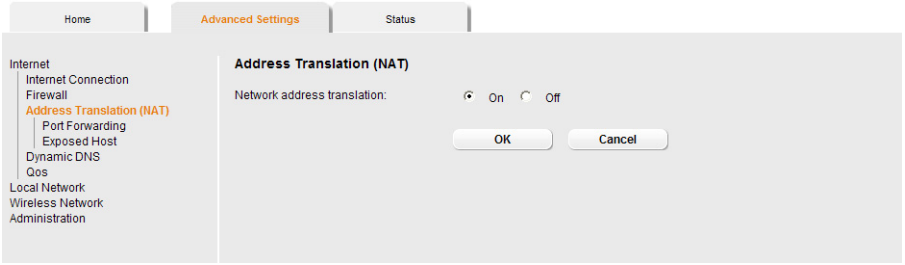
You can use the NAT settings to configure the router to carry out the following tasks:

- Set up the router as a virtual server by configuring Port Forwarding (page 32),
- Open the firewall for a selected PC (page 34).

Note:
For the functions described below, the IP addresses of the PCs must remain unchanged. If the IP addresses of the PCs are assigned via the DHCP server of the router, you must select ***Never expires*** (page 38) as the setting in the ***Local Network*** menu entry for the ***Lease time*** or assign static IP addresses for the PCs.

By default the NAT function is activated. You should only deactivate the NAT function if you want to configure you own firewall in you local network.

➞ In the ***Advanced Settings*** menu, select: ***Internet*** – ***Address Translation (NAT)***



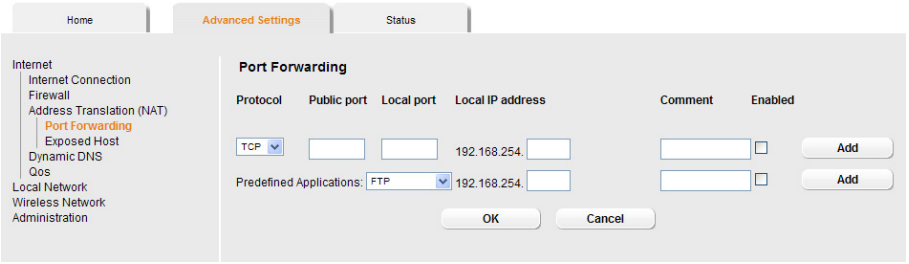
➞ Select the required option.

Port Forwarding

If you configure Port Forwarding, the router Gigaset 504 AGU outwardly assumes the role of the server. It receives requests from remote users under its public IP address and automatically redirects them to local PCs. The private IP addresses of the servers on the local network remain protected.

Internet services are addressed via defined port numbers. The router needs a mapping table of the port numbers to redirect the service requests to the servers that actually provide the service.
Port Forwarding has been configured for this purpose.

➞ In the ***Advanced Settings*** menu, select: ***Internet*** – ***Address Translation (NAT)*** – ***Port Forwarding***



➞ Select the required application from the ***Predefined Applications*** list.

➞ Select the checkbox in the ***Enabled*** column to activate the entry.

➞ Click the ***Add*** button. The data for the required service is entered on the screen.

➞ Click the ***Delete*** button to delete an entry.

If the application you require is not in the list, you must manually enter the relevant data on the screen:

➞ Select the protocol for the service you are providing from the ***Protocol*** list.

➞ Under ***Public port***, enter the port number(s) of the service you are providing.

You can use

- a single port number,
- several port numbers separated by commas,
- port blocks consisting of two port numbers separated by a dash, or
- any combination of these (for example **`80,90-140,180`**).

➞ In the ***Local port*** field, enter the internal port number to which service requests are to be forwarded.

You can only specify one port number here.

➞ Enter the IP address of the PC that provides the service in the ***Local IP address*** field.

Example: The Web server has been configured to react to requests on port 8080. However, the requests from Web sites enter the Web server via port 80 (standard value). If you add the PC to the forwarding table and define port 80 as the public port and port 8080 as an internal port, all requests from the Internet are diverted to the service with the port number 80 on the Web server of the PC you have defined with port 8080.

➞ ***Comment***: Enter a description that makes it easy to identify different entries.

➞ Select the checkbox in the ***Enabled*** column to activate the entry.

➞ Click the ***Add*** button to add a new entry.

➞ Click the ***Delete*** button to delete an entry.

➞ Click ***OK*** to apply the settings.

Opening the firewall for a selected PC (Exposed Host)

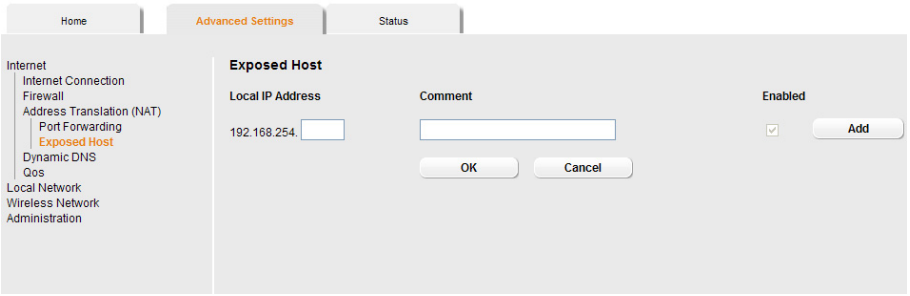
You can set up a client in your local network to be a so-called "exposed host" (DMZ). Your device will then forward all incoming data traffic from the Internet to this client. You can then, for example, operate your own Web server on one of the clients in your local network and make it accessible to Internet users.

As the exposed host, the local client is directly visible to the Internet and therefore particularly vulnerable to attacks (e.g. hacker attacks). Only activate this function if it is absolutely necessary (e.g. to operate a Web server) and other functions (e.g. port forwarding) are not adequate. In this case you should take appropriate measures for the clients concerned.

Note:

Only one PC per public IP address can be set up as an Exposed Host (see also Port Forwarding on page 32).

➡ In the ***Advanced Settings*** menu, select: ***Internet*** – ***Address Translation (NAT)*** – ***Exposed Host***



➡ Enter the ***Local IP Address*** of the PC that is to be enabled as an Exposed Host.

➡ Enter a name for the PC in the ***Comment*** field.

➡ Activate ***Enabled*** by ticking the check box.

➡ Click the ***Add*** button to add the entry to the list.

You can add more than one PC to the list, but you can only activate one of them.

➡ Click the ***Delete*** button to delete the entry from the list.

➡ Apply the settings by clicking ***OK***.

Dynamic DNS

Any service you provide on the Internet can be accessed via a Domain name. Your router's Public IP address is assigned to this domain name. If your Internet service provider assigns the IP address for your local network's WAN connection dynamically, the IP address of the router can change. The assignment to the domain name will no longer be valid and your service will no longer be available.

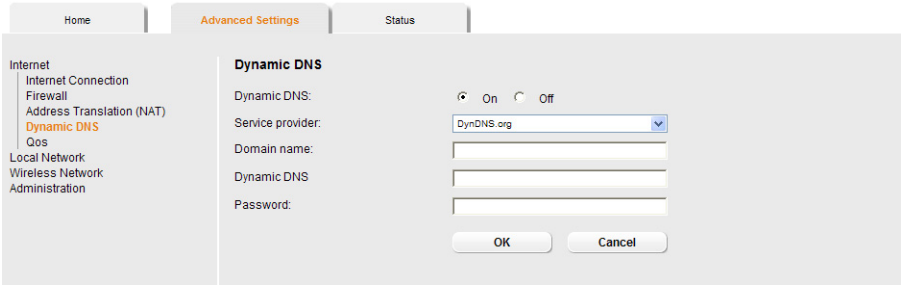
In this case you must ensure that the assignment of the IP address to the domain name is updated regularly. This task is performed by the dynamic DNS service (DynDNS). You can use the DynDNS service to assign the router Gigaset 504 AGU an individual fixed domain name on the Internet even if it does not have a static IP address.

Various Internet service providers offer a free DynDNS service.
If you use the service of a DynDNS provider, your service can be reached on the Internet as a subdomain of one of the DynDNS service domains.

One possible service is **DynDNS.org** (http://www.DynDNS.org). If you have activated the device's DynDNS function, it will monitor its public IP address. When this changes, the device will open a connection to DynDNS.org and update its IP address there.

Note:
You must have an account with the service you have chosen (e.g. DynDNS.org) before you can use the DynDNS function. Follow the instructions on the provider's Web site. Then enter the user data when configuring the router.

➞ In the ***Advanced Settings*** menu, select: ***Internet*** – ***Dynamic DNS***



➞ Activate the ***Dynamic DNS*** function.

➞ Select a provider from the ***Service provider*** list.

➞ Enter ***Domain name***, ***User name*** and ***Password***. You will have received all the necessary information when you registered with your ***Service provider***.

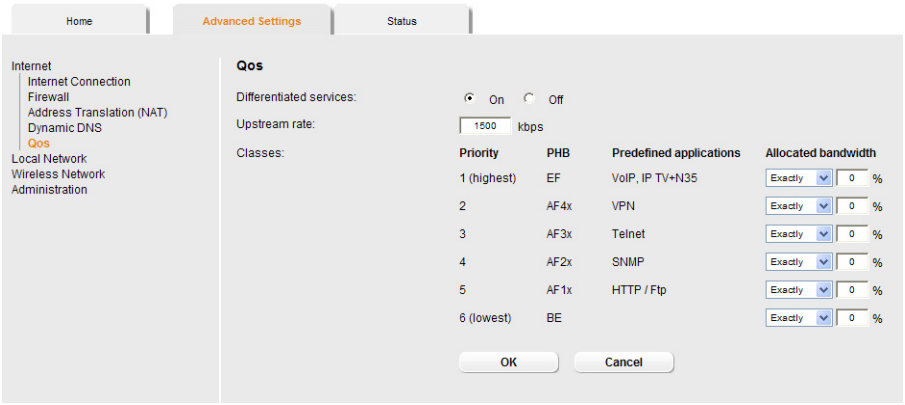
➞ Click ***OK*** to apply the settings.

Qos (Quality of Service)

Many communication and multimedia applications require high speed and large bandwidths to transfer data between the local network and the Internet. However, for many applications there is often only one Internet connection available with limited capacity. Qos (Quality of Service) divides this capacity between the different applications and provides undelayed, continuous data transfer where data packets with higher priority are given transmission preference.

The QoS configuration dialogue enables you to optimise the transmission behaviour for certain applications. For example IPTV is your favourite application and so you want to ensure that no other application will disturb the transmission of IPTV data.

➥ In the ***Advanced Settings*** menu, select: ***Internet*** – ***Qos***.



All settings apply for the displayed connection service which you selected for processing in the ***Advanced Settings*** – ***Internet*** screen (page 23).

➥ Select the option ***Differentiated services***, i.e. the prioritisation of certain services for the data transfer between your network and the Internet.

For each ***Priority*** is specified which data packets are to be given priority of transfer. In addition, ***PHBs*** (Per Hop Behaviours) are used to decide whether data packets are to be forwarded immediately and ahead of all others (***EF***, Expedited Forwarding), guaranteed and without data loss (***AF***, Assured Forwarding), or normally (***BE***, Best Effort). If your application already supports QoS, it determines the priority automatically. Your device recognises this when forwarding. It recognises certain ***Predefined applications*** and assigns each packet the relevant priority. You can also define what proportion of the bandwidth for your Internet connection is to be made available to a particular class as ***Allocated bandwidth***.

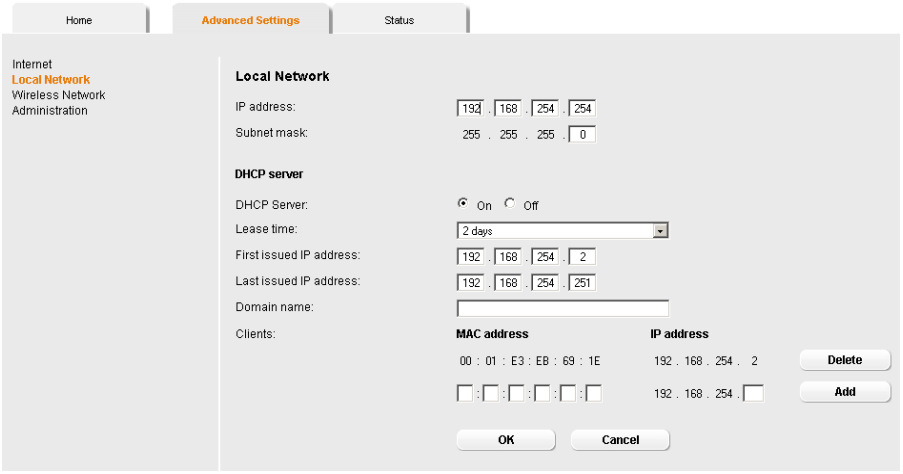
➥ Select the ***Allocated bandwidth*** for ***Predefined applications***.

➥ Click ***OK*** to save and apply your changes.

LAN configuration

You can use the LAN configuration to define an IP address for the router Gigaset 504 AGU and configure the DHCP server.

➞ In the ***Advanced Settings*** menu, select: ***Local Network***.



Defining the private IP address for the router Gigaset 504 AGU

On this screen you can change the device's IP address. The preset IP address is 192.168.254.254. This is the Private IP address of the router. This is the address under which the device can be reached in the local network. It can be freely assigned from the block of available addresses. The IP address under which the router can be reached from outside is assigned by the Internet service provider. The default Subnet mask for the local network administered by the router is 255.255.255.0.

➞ If you want to assign a different IP address to the router, enter your chosen IP address in the boxes next to ***IP address***.

Please make sure to note which subnet mask is set when assigning the IP address. The preset subnet mask defines that the first three parts of the IP address must be identical for all network components (including routers).

We recommend that you use an address from a block that is reserved for private use. This address block is 192.168.1.1 to 192.168.255.254.

➞ Adjust the ***Subnet mask*** if necessary.

The Subnet mask specifies how many address parts of the IP address must be identical for all network components (including routers).

Notes:

New settings can only be made after the router has been rebooted. If necessary, reconfigure the IP address on your PC (including one that is statically assigned) so that it matches the new configuration.

Configuring the DHCP server

The router has a DHCP server for which the factory setting is active. Consequently, the IP addresses of the PCs are automatically assigned by the router.

Note:

- If the DHCP server for the router is activated, you can configure the network setting on the PC so that the option ***Obtain an IP address automatically*** is set up. For further information, refer to the section entitled "Configuring the local area network" on the CD-ROM.
- If you deactivate the DHCP server, you will have to assign a static IP address for the PCs that use the network settings.

➡ To activate the DHCP server, select ***On***.

➡ If the DHCP server is active, you can define a ***Lease time***. The least time indicates how long the client may use the allocated IP configuration.

Note:

If you select ***Never expires***, the IP addresses are never changed. Activate this option if you want to make NAT or firewall settings using the IP addresses of the PCs; otherwise you have to assign static IP addresses to these PCs.

➡ Define the range of IP addresses the router should use to automatically assign IP addresses to the PCs. Define the ***First issued IP address*** and the ***Last issued IP address***.

➡ You can define the name of a domain (Windows workgroup) in the ***Domain name*** field.

➡ Apply the settings by clicking ***OK***.

Assigning static IP addresses to individual PCs

Even if you have activated the DHCP server, you can still assign a static IP address to individual PCs (e.g. when setting up these PCs for NAT functions).

➡ Enter the ***MAC address*** of the PC to which you want to assign a static IP address.

➡ Enter the ***IP address*** you wish to assign to the PC.

➡ Click ***Add*** to add the entry to the list.

➡ Click ***Delete*** to delete the entry from the list.

➡ Apply the settings by clicking ***OK***.

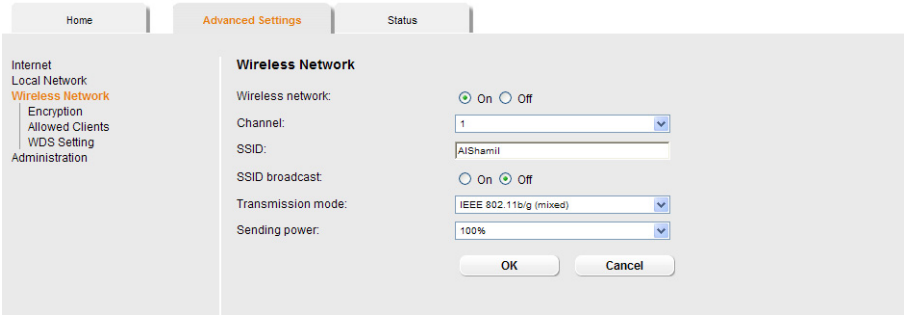
Configuring wireless connections

The WLAN function of your router Gigaset 504 AGU is deactivated on delivery. You can activate it on this page.

If you have implemented wireless PC communication via the router, you should improve the security settings of your wireless network via the ***Advanced Settings*** – ***Wireless Network*** menu. You can carry out the following functions:

Wireless Network	Activate the wireless module of the router and specify basic settings for your wireless network, for example ***SSID, Transmission mode*** or ***Sending power***.
Encryption	Set up Encryption for wireless transmissions (page 41).
Allowed Clients	Restrict access to the LAN of the router (page 45).
WDS Setting	Activate the repeater function (Wireless Distribution System, WDS) and define repeaters to increase the range of your WLAN (see page 46).

➡ In the ***Advanced Settings*** menu, select: ***Wireless Network.***



➡ Select ***On*** for the ***Wireless Network***.

Devices can only log in wirelessly if the WLAN module of the router is activated.

You can now make the settings for the wireless network.

Channel

All clients in the network use the set radio channel for wireless data transfer. You can choose between various channels, depending on your current location.

➡ Select ***Automatic*** so that the best channel for transmitting the data is used automatically.

SSID

For the wireless network components to be able to communicate with one another, you must use the same SSID (Service Set Identifier).

The default SSID for the router is **AIShamil**. For security reasons you should change this SSID.

➞ Enter a character string of your choice. The SSID is case-sensitive. It can contain up to 32 characters. Use a combination of letters, digits and special characters.

Note:

The connection to the wireless network adapters will be interrupted until you have entered the new SSID in them as well.

SSID broadcast

If this option is enabled, the router will send the SSID in all data transfers and the SSID of the router will be displayed on PCs that have a wireless network adapter. In this case, hackers could use the SSID to detect your network.

If ***SSID broadcast*** is deactivated, the SSID of the router will not be displayed. This increases protection against unauthorised access to your wireless network. Make a note of the SSID. You will need it to log on to the PC.

➞ Select ***Off*** to deactivate ***SSID broadcast***.

To protect your wireless network, you should also enable encryption of data transmissions (page 41).

Transmission mode

The IEEE 802.11g standard permits data transfer up to 54 Mbit/s, and the IEEE 802.11b standard up to 11 Mbit/s. Choose ***IEEE 802.11g only*** to ensure the best possible data transfer rates in your network. To operate clients with older wireless network adapters in your network, select ***IEEE 802.11b/g (mixed)***.

➞ Select the required transmission mode for your wireless network.

Sending power

➞ Select the required sending power for your device.
It is recommended that you select a sending power with a range to suit the spatial environment of your local network. A much greater range makes it easier to eavesdrop on your wireless data transfer.

➞ Click ***OK*** to apply the settings.

Setting encryption

If you are sending data over radio channels, we recommend that you activate encryption (WEP or WPA) on the components in the wireless network. WPA offers greater security than WEP. You should therefore select WPA encryption if it is supported by all components in your wireless network.

WPA-PSK is a more efficient method for protecting wireless networks. Dynamic keys, based on TKIP (Temporal Key Integration Protocol) offer increased security. The new WPA2-PSK standard is based on AES.

➞ In the ***Advanced Settings*** menu select: ***Wireless Network*** – ***Encryption***

The following security mechanisms are currently available:

- WPA2-PSK and WPA2-PSK/WPA-PSK (page 41)
- WEP encryption (Wired Equivalent Privacy, page 42)

Note:
If you want to use the repeater function of your router (page 46) you can only use WEP encryption.

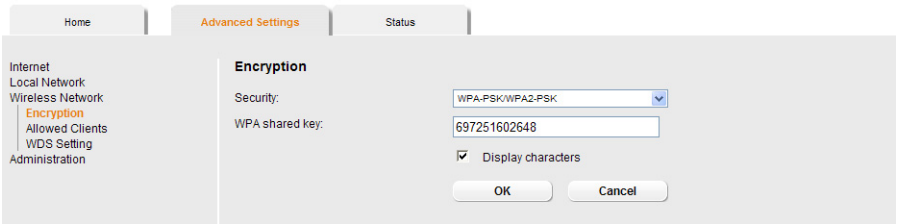
WPA2-PSK and WPA-PSK/WPA2-PSK

WPA with pre-shared key (WPA-PSK)

WPA-PSK is a special WPA mode for private users and users in small companies without their own authentication server. After a certain period of time (Rekey interval), encryption keys are automatically generated with the pre-shared key, automatically changed ("rekeying") and authenticated between the devices.

The standard of encryption available to you depends on the components in the wireless network. Every PC (network adapter) that requires access to a WPA-protected wireless network must also support WPA. To find out whether and how you can use WPA on your PC, read your network adapter's user guide. If all components support WPA2, select ***WPA2-PSK***. If you are using network adapters that only support WPA, select ***WPA-PSK/ WPA2-PSK***. Your device then automatically defines the best possible way to protect your data for each client. The entries described below are identical for both options.

➞ Select the required option in the ***Security*** field.



➞ Enter a key in the ***WPA shared key*** field (up to 32 characters) and confirm it by entering it again. Use a combination of letters, digits and special characters.

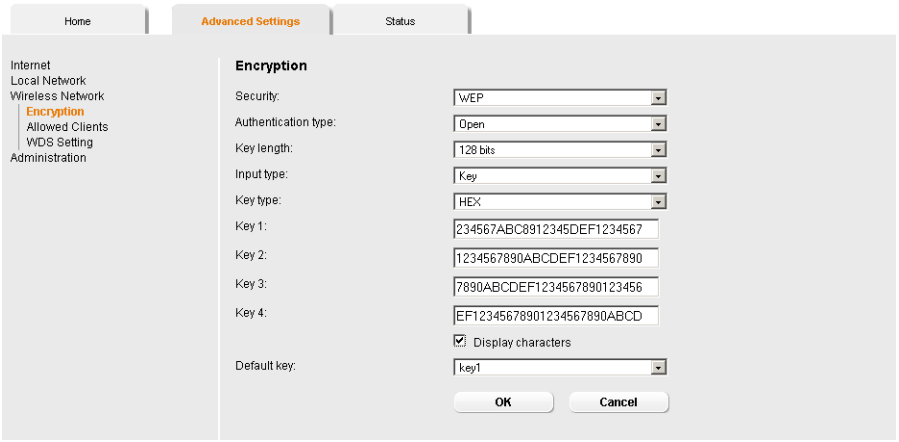
➞ If you select the ***Display characters*** option, the ***WPA shared key*** will be displayed in readable characters.

➞ Click ***OK*** to apply the settings.

WEP encryption

If WPA is not supported by all components in your wireless network, we recommend that you activate WEP Encryption on the components.

➞ Choose the ***WEP*** option in the ***Security*** field.



➞ Select the ***Authentication type***:

- Select ***Shared*** to require that each client log in to the network with a specified key.
- Select ***Open*** to permit data transfer within the wireless network without the need to enter a key.

You can choose either the standard 64-bit key or the more robust 128-bit key. The keys are generated in hexadecimal or in ASCII format. You must use the same keys for encryption and decryption for the router and all your wireless network adapters.

➞ Select the ***Key length***: 64 bits or 128 bits.

➞ Select the ***Input type***, i.e. whether the key is to be entered manually or generated automatically by means of a ***Passphrase***.

Manual key entry

➞ Select the ***Key type***, ***Hex*** or ***ASCII***.

If you select ***Hex*** as the key type, you can use the characters **0** to **9** and **A** to **F**.

– With a 64-bit encryption depth, the key is 10 characters long.
An example of a valid key: 1234567ABC

– With a 128-bit encryption depth, the key is 26 characters long.
An example of a valid key: 234567ABC8912345DEF1234567

If you select ***ASCII*** as the key type, you can use the characters **0** to **9**, **A** to **Z**, **a** to **z** plus the special characters in the ASCII character set.

– With a 64-bit encryption depth, the key is 5 characters long.
An example of a valid key: GIGA1

– With a 128-bit encryption depth, the key is 13 characters long.
An example of a valid key: GIGASET_504AG

➞ Enter up to four keys in fields ***Key 1*** to ***Key 4***.

➞ If you select the ***Display characters*** option, the keys will be displayed in readable characters.

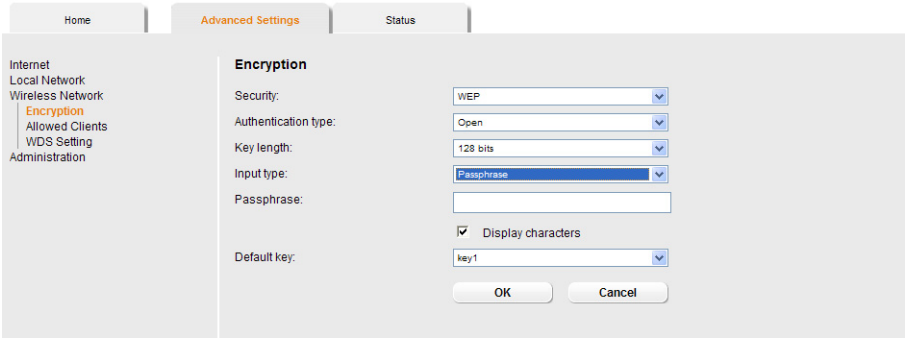
➞ Select one of the four keys as the ***Default key***.

Note:

- It is very **important** that you make a note of the key(s) that have been entered. You will need this information to configure the wireless network adapters properly.
- When you have concluded the configuration, you must change the WEP encryption in the wireless network adapters for the connected PCs in the same way as they will not otherwise be given access to the wireless network of the router.

➞ Click ***OK*** to apply the settings.

Generating a key by means of a Passphrase



➞ Enter a ***Passphrase*** (up to 32 characters) and confirm it by entering it again. The key is generated automatically.

➞ If you select the ***Display characters*** option, the ***Passphrase*** will be displayed in readable characters.

➞ Click ***OK*** to apply the settings.

Connecting PCs wirelessly

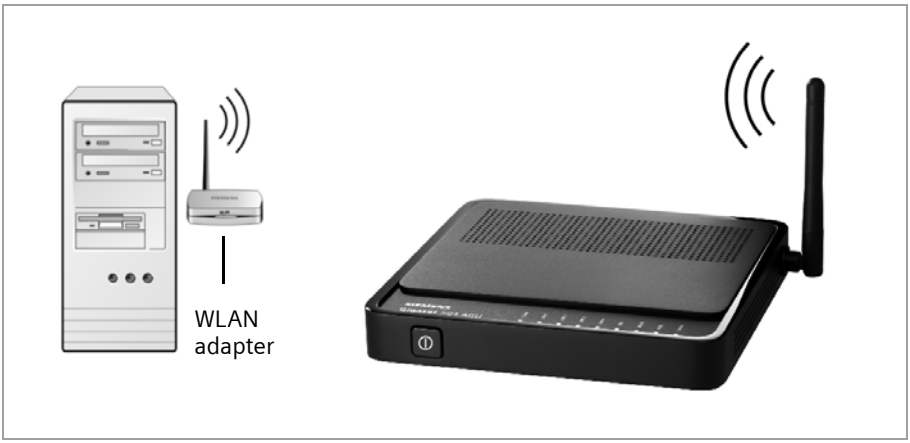
A wireless connection is made using a wireless network adapter that must be installed in your PC. This can be an 802.11g or 802.11b-compatible wireless network adapter.

A wireless network is defined by assigning an identical SSID to all the devices.

➞ You should therefore enter the SSID for the router in your network adapter configuration: The default SSID is AlShamil.

➞ Choose the used encryption method in the configuration settings of your network adapter and enter the correct key.

If the correct SSID and encryption key has been entered in your PC's wireless network adapter, the wireless link will be established automatically.



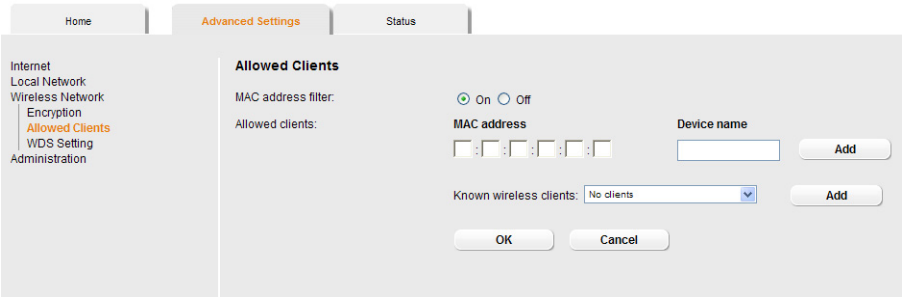
Permitted clients

On this screen you can specify the PCs that are to have wireless access to the router Gigaset 504 AGU and hence to your LAN and WLAN.

The default setting for access control is deactivated. This means that all PCs that use the correct SSID can be logged in.

Access control is based on the MAC addresss of the PC network adapters.

➞ In the In the ***Advanced Settings*** menu select: ***Wireless Network*** – ***Allowed Clients***.



➞ Activate access control by selecting ***On*** in the ***MAC address filter*** field.

Entering PCs manually:

➞ Enter the ***MAC Address*** and ***Device name*** of the required PCs in the appropriate fields.

➞ Click ***Add*** to add the entry to the list.

➞ Click ***Delete*** to delete the entry from the list.

Note: Only following deletion is the entry transferred to the list of known MAC addresses.

➞ Apply the settings by clicking ***OK***.

Selecting from the list of logged-in PCs

➞ Select the required PC from the ***Known wireless clients*** list. All PCs that were already entered manually on the router with the MAC address are displayed.

➞ Click ***Add*** to add the selected PC to the list.

➞ Click ***OK*** to apply the settings.

Note:

If you activate MAC access control, you must at least add the PC on which you are configuring the router to the list. Otherwise, you will have no access to the user interface and will receive an appropriate error message.

If you have inadvertently denied all PCs access to the router, you have two options:

- You can completely reset the router (page 10).
- You can connect a PC to the router using one of the LAN connections. As MAC access control only affects PCs that are connected wirelessly, you can use this PC to change the configuration.

Repeater function (WDS)

WDS (Wireless Distribution System) allows you to extend the range of your wireless network using a repeater. A repeater located at the outer range of a wireless network ensures that data is forwarded between WLAN clients in this wireless network and clients within its own wireless range. Repeaters and access points thereby form a common wireless network within which all clients can be moved about freely. Clients automatically set up a connection to the next access point / repeater (roaming). For security purposes you must determine which access points / repeaters are to form a common wireless network.

If you want to use a repeater in your wireless network you must activate the Wireless Distribution System (WDS) function.

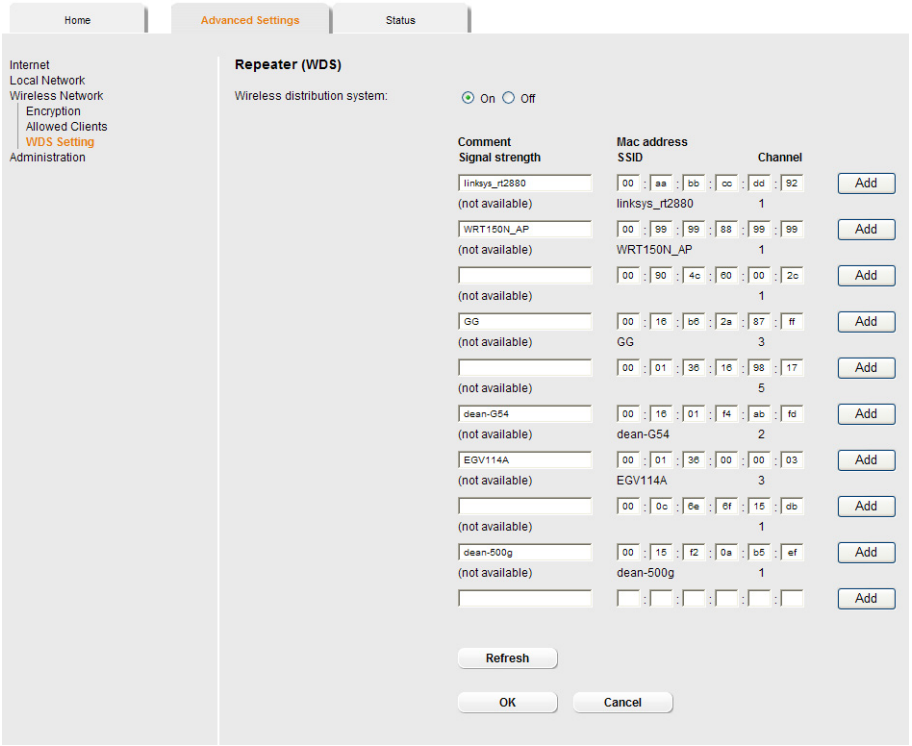
Note:

WDS can only be used with WEP encryption or without encryption. If you use WPA-PSK encryption (default) you have to change the encryption of your wireless network. For information refer to the section "Setting encryption" on page 41.

➥ In the In the ***Advanced Settings*** menu select: ***Wireless Network*** – ***WDS Setting***

➥ To activate WDS select the ***On*** option next to ***Wireless distribution system***.

The environment is scanned for wireless networks in rage. If the search has been completed successfully the networks are displayed.



All repeaters/access points in range are displayed with the following information:

- ***SSID***
- ***Mac address***
- ***Channel***

The ***Signal strength*** of the connection to the repeater, if one exists, is shown as a percentage. You can use this data to determine the best possible location for your repeater.

You can register a maximum of three repeaters to extend your WLAN.

You can enter additional repeaters manually.

➞ Click the ***Add*** button to register a repeater in your wireless network.

➞ Click the ***Delete*** button to remove a repeater from your wireless network.

Note:
The registered but currently unavailable repeaters are shown only by their MAC addresses.

➞ Click ***Refresh*** to update the display.

➞ Click ***OK*** to apply the settings.

Note:

- WDS can only be used with WEP encryption or without encryption. You may have to change the encryption of your wireless network, if applicable.
- The encryption settings on the repeater have to correspond to the settings on your router.
- The router and the repeaters must use the same channel.

Further information can be found in the user manual for the repeater.

Administration

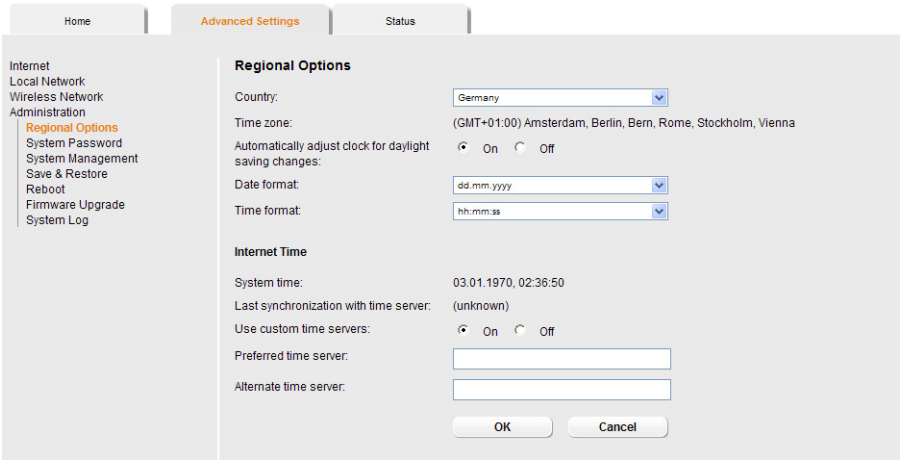
The user interface of the router Gigaset 504 AGU includes several helpful functions for administration.

Regional Options	Enables regional settings (page 49).
System Password	Changes the system password (page 50).
System Management	Configures system management (page 51).
Save & Restore	Backs up and, if necessary, restores configuration data (page 52) or reset the router to the factory settings (page 53).
Reboot	Reboots the device (page 53).
Firmware Upgrade	Updates firmware (page 54).
System Log	Configures settings for the system log (page 55).

Regional Options

For operating your router Gigaset 504 AGU, you can select the location, time zone and format for entering the time and date, and you can also configure a time server for the Internet time (system time).

➡ In the ***Advanced Settings*** menu, select: ***Administration*** – ***Regional Options***.



➡ Select the country you are currently in from the list.

You can set the time so that it automatically switches to summer time or the ***Time zone***, as required.

➡ Select the required option or choose the ***Time zone*** for your location.

➡ Select the required format for entering the date and time from the ***Date format*** and ***Time format*** lists.

Internet Time

The ***System time*** of the device is automatically synchronised with the time server on the Internet. The time of the ***Last synchronization with time server*** is displayed for your information.

➞ If you would like to use your own time server, activate the ***On*** option next to the ***Use custom time servers*** field.

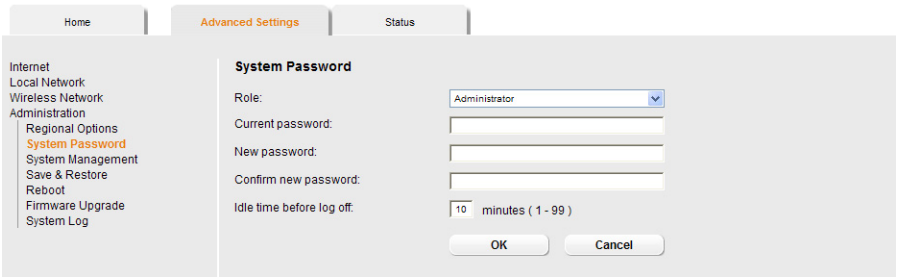
➞ Enter the Internet address of the time server in the ***Preferred time server*** or ***Alternate time server*** fields.

➞ Click ***OK*** to apply the settings.

System Password

You can assign a System Password to the user interface of the router Gigaset 504 AGU and specify the period after which a session is to be automatically ended if no further entry is made.

➞ In the ***Advanced Settings*** menu, select: ***Administration*** – ***System Password***.



After installation, the user interface of the router is protected by the System Password **admin**. To prevent unauthorised changes being made to the configuration, you should set a new System Password from time to time.

➞ Enter the old ***System Password*** in the ***Current password*** field.

➞ Enter a new ***System Password*** in the ***New password*** field and repeat it in the ***Confirm new password*** field.

The System Password may contain up to 20 characters. The System Password is case sensitive. Avoid proper names and all too obvious words. Use a combination of letters, digits and special characters.

Note

If you forget your System Password, you have to reset the router Gigaset 504 AGU (page 10). This returns **all** your settings to the factory configuration. This means the system password is changed back to **admin**.

Idle time before log off:

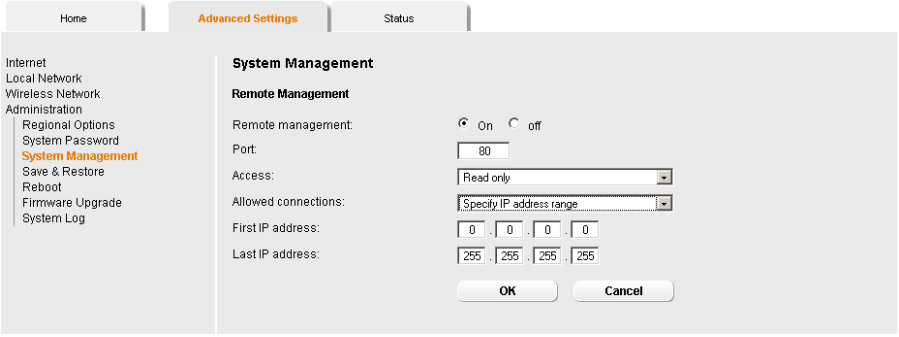
➞ Enter the number of minutes after which the configuration program is to be ended if no further entry is made. The default is 10 minutes. If you enter 0, the program will never be ended automatically.

➞ Click ***OK*** to apply the settings.

System management

Your router Gigaset 504 AGU offers you the option of using remote management in addition to the configuration program that you access via a PC in your local network.

➞ In the ***Advanced Settings*** menu, select: ***Administration*** – ***System Management***.



Remote Management enables a PC that is not in your local network to be used to configure the router via a standard Web browser. You can activate Remote Management for one particular or for any PC.

For security reasons, this function is only available if you have previously changed the system password for your device (see page 50).

You can start remote management by entering the public IP address in your Internet browser. As Internet providers often change this each time you dial in, it is also worth using dynamic DNS (see page 35).

➞ Click the option ***On***, to activate ***Remote Management***.

➞ You can change the ***Port*** via which you can access the configuration program from the Internet, for example in order to mask and protect the configuration program against unauthorised access.

➞ ***Access***: You can select ***Read only*** if you only wish to activate remote management for reading or you can select ***Full control*** if you wish to activate it for reading and writing.

➞ ***Allowed connections:*** You can activate this function for

- One particular PC (***Specify IP address***),
- An range of IP addresses (***Specify IP address range***) or
- Any PC (***Allow all clients***).

Please remember:

If you permit several PCs then anyone who finds out your password can access this user interface and therefore also your network! If it is needed, then you should only activate this option for a short time.

– Select the required option from the list.
– For the option ***Specify IP address***, enter the IP address of the client; for ***Specify IP address range***, enter the first and last IP address in the range you want to permit.

Please remember:

- The Internet provider may assign the IP address to the PC dynamically. This may change the IP address. Make sure that the PC that is to access the router from the Internet always has the same IP address.
- For access to the configuration environment via Remote Management, you must enter the address of the router Gigaset 504 AGU to be managed in the browser using the following format: **`http://X.X.X.X:8080`** (x.x.x.x represents the public IP address of the router).

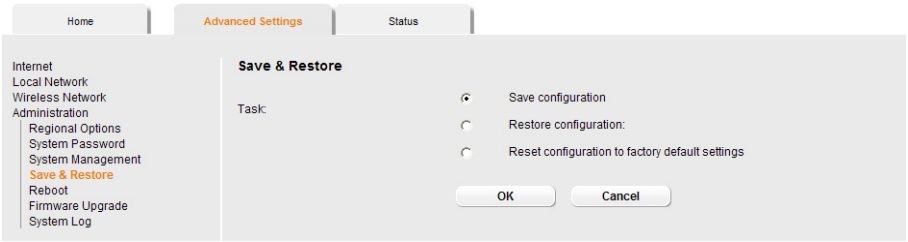
➡ Click ***OK*** to accept the settings.

Backing up and restoring a configuration

When the router Gigaset 504 AGU has been configured, it is recommended that you back up the settings. This means you can restore the settings at any time if they are accidentally deleted or overwritten.

You can also reset the configuration to the factory settings. You should always do this before handing the device to an external person.

➡ In the ***Advanced Settings*** menu, select: ***Administration*** – ***Save & Restore***.



Backing up configuration data

➞ For ***Task***, activate the ***Save configuration*** option.

➞ Click ***OK***.

You can then set the location in which the backup file is to be saved in a file selection window.

➞ Select a local directory on your PC where you want to save the configuration file and enter a file name.

➞ Click ***Save***.

The current configuration data is now saved in the specified file.

Restoring the saved data

➞ For ***Task***, activate the ***Restore configuration*** option.

➞ Enter the path of the backup file that you want to use to restore the configuration or choose the file in the file system via the ***Browse*** button.

A window will appear prompting you to confirm the procedure.

➞ Click ***OK***. The configuration will now be updated.

Restoring factory settings

You can reset the router Gigaset 504 AGU to the factory settings. You should do this before making the device available to others or exchanging it through the dealer. Otherwise unauthorised persons may use the Internet access data at your expense.

➞ Select ***Reset configuration to factory default settings*** and click ***OK***.

A window will appear prompting you to confirm the procedure.

Note:

If the router is not operating properly, you can reboot it. It should then be ready for use again (page 10).

Please remember that when the device is fully reset, **all** the configuration settings are returned to the factory settings. This means that you will have to completely reconfigure the router.

Reboot

If the router Gigaset 504 AGU is not operating properly, you can reboot it. It should then be ready for use again.

➞ In the ***Advanced Settings*** menu, select: ***Administration*** – ***Reboot***

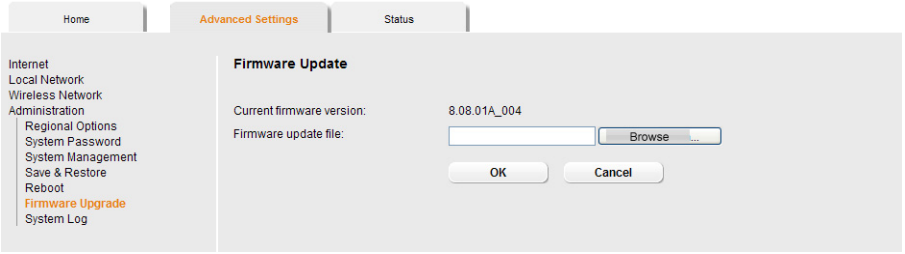
➞ Click ***OK*** to reboot the device.

A window will appear prompting you to confirm the procedure.

Updating firmware

If Gigaset Communications GmbH or your Internet service provider releases a new version of the firmware, you can update the firmware of the router Gigaset 504 AGU. First download the firmware from the Internet onto your PC.

➡ In the ***Advanced Settings*** menu, select: ***Administration*** – ***Firmware Upgrade***.



The firmware version that is currently installed on the device is displayed in the ***Current firmware version*** line.

➡ End all network activities in the local network.

➡ In the ***Firmware update file*** field, enter the file with the new firmware that you have downloaded from the Internet or click ***Browse*** to search for the file in your PC's file system.

➡ Click ***OK***. The firmware will now be updated.

Warning:
Do not turn off the router during the updating procedure and do not interrupt the power supply. Turning off the device can make it unusable. The update can take several minutes.
Gigaset Communications GmbH accepts no liability for damage that occurs through improper use.

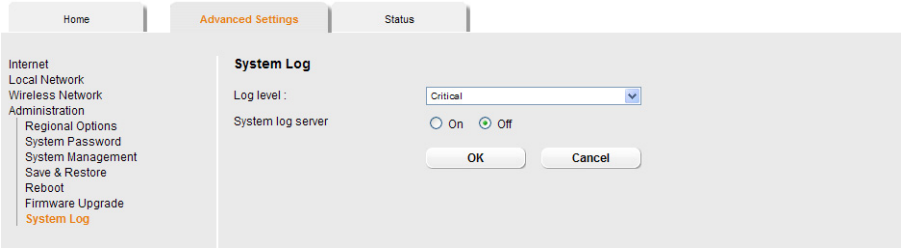
After a successful update, the device is automatically rebooted. All LEDs go out. The login screen is displayed again.

To see whether the upgrade procedure was successfully completed, check the current software version displayed in the overview of the ***Status*** menu (page 56).

System Log

The System Log is displayed in the ***Status*** – ***Device*** menu. It contains important information about how the device functions and possible problems. This information can also be automatically transferred to a system log server.

➥ In the ***Advanced Settings*** menu, select: ***Administration*** – ***System Log***.



➥ ***Log level*** : Specify how much information is to be contained in the system log. You can choose between four levels:

- ***Critical***: Log file of the most important information for possible device functionality problems.
- ***Warning*** and ***Informational*** are intermediate levels.
- ***Debugging***: Complete and detailed information on all device functions

> **Please remember:**
> Setting the log level ***Debugging*** can generate enormous load on the system and thus impair the data throughput of the device.

➥ ***System log server***

- Activate this function if the device system log is to be automatically transferred to a system log server in the local network.
- ***Server address***
  Enter the IP address for the system log server.
- ***Server port***
  Enter the port of the system log server that is to be used to transfer the system log.

➥ Click ***OK*** to save and apply the changes.

Status information

Information about configuration and the status of the router Gigaset 504 AGU is displayed in the ***Status*** menu of the router. On the first screen you will find an overview of the status of the Internet connection, the local and wireless network, the USB interface and the device.

Detailed information is available on the following status screens:

- ***Security***
- ***Internet***
- ***Local network***
- ***Wireless network***
- ***Device***

To display a status screen:

→ Select ***Status*** in the start screen.

→ Select the entry with the information you require.

Overview

On the first screen you will find an overview of the current operating status and the most important device data.

Internet

- ***Connection status***
  The status of the Internet connection and, if connected, the duration of the connection.
- ***IP address***
  Public IP address of the device.

Local network

- ***IP address***
  Local IP address of the device.
- ***DHCP server***
  Status of the DHCP server of the device and, if activated, the number of clients in the network that have been assigned an IP address.

Wireless network

- ***Status***
  Status of the wireless network connection of the device and, if activated, the number of clients in the wireless network connected to the device.
- ***SSID***
  Wireless network ID.

Device

- ***System time***
  System time of the device.
- ***Firmware version***
  Firmware version currently installed on the device.

➥ Click ***Refresh*** to refresh this screen and update the displayed data.

Security

You will find information about possible security risks for the device and the network on the ***Security*** screen in the ***Status*** menu.

In the ***Status*** menu, select ***Security***:

- ***System password not changed***
  The configuration program of the device is not sufficiently protected against unauthorised access because you have not changed the system password since setting up the device. Information on how to avoid this security risk is given in the section "System Password" on page 50.
- ***Identification of your wireless network visible or not changed***
  Unauthorised users can also find the wireless network easily as you have not changed the ID of the wireless network (SSID) since setup and have not deactivated SSID broadcasting. Information on how to avoid this security risk is given in the section "Configuring wireless connections" on page 39.
- ***Encryption for your wireless network not activated***
  None of the data in the wireless network is encrypted during transfer and can therefore easily be intercepted. Unauthorised users will also have easy access to your network, your PCs and your Internet connection. Information on how to avoid this security risk is given in the section "Setting encryption" on page 41.
- ***Access to your wireless network not restricted to allowed clients***
  Users can access the wireless network from any PC. Information on how to avoid this security risk is given in the section "Permitted clients" on page 45.
- ***Firewall for your Internet connection turned off***
  The network is not protected against hackers who gain unauthorised access via the Internet. Information on how to avoid this security risk is given in the section "Firewall" on page 28.
- ***Address translation for your Internet connection turned off***
  The clients in the network are not protected against unauthorised access via the Internet. Information on how to avoid this security risk is given in the section "Setting up the NAT function" on page 30.
- ***One or more of your local clients directly exposed to the Internet***
  At least one client in the network is directly visible on the Internet as an exposed host and is therefore particularly exposed to the risk (e.g. through hacker attacks). Only activate this function if it is absolutely necessary (e.g. to operate a Web server) and

other functions (e.g. Port forwarding) are not suitable. In this case, you should take the appropriate measures on the clients concerned. Information on how to avoid this security risk is given in the section "Opening the firewall for a selected PC (Exposed Host)" on page 34.

- ***Remote management enabled***
  All users, including unauthorised ones, who find out the system password for the device can access the device's configuration program via the Internet. The section "System management" on page 51 explains how you can avoid this security risk.

➔ Click ***Refresh*** to refresh the screen and the displayed data.

Internet

You will find information about the status of the Internet connection of the device on the ***Internet*** screen in the ***Status*** menu.

In the ***Status*** menu, select ***Internet***:

- ***Connection service***
  You can select the ***Connection service***, for which the following information is to be displayed.

  This information is not displayed if you only set up one connection service.
- ***Connection status***
  Status of the Internet connection and, if connected, the duration of the connection. If you have set ***Connect on demand*** or ***Connect manually*** as the connection mode (page 25), you can ***Connect*** or ***Disconnect*** the connection to the Internet manually here.
- ***Connection mode***
  Connection mode set for connecting to the Internet.
- ***IP address***
  Current public IP address of the device.
- ***MAC address***
  Public MAC address of the device.
- ***Default gateway***
  IP address of the assigned default gateway.

ADSL Line

- ***Status***
  Status of the cable connection from your device to your DSL port.
- ***Line mode***
  Line mode used by your DSL port.
- ***Maximum line rate***
  Maximum possible data transfer rate of your DSL port for incoming and outgoing data traffic.

- ***Noise margin***
  Maximum signal-to-noise ratio of your DSL port for incoming and outgoing data traffic.
- ***Line attenuation***
  Line attenuation of your DSL port for incoming and outgoing data traffic.
- ***Output power***
  Output power of your DSL port for incoming and outgoing data traffic.

Address Translation (NAT)

- ***Status***
  Status of the NAT (Network Address Translation) for the Internet connection.
- ***NAT table***
  Current number of entries in the NAT table.

➥ Click ***Empty*** to delete all the current entries in the NAT table.

Dynamic DNS

- ***Status***
  Status of the configuration for dynamic DNS. If dynamic DNS is set up, the name of the provider is shown.
- ***Domain name***
  Shows the domain name range for dynamic DNS.

➥ Click ***Refresh*** to refresh this screen and update the displayed data.

Local Network

You will find information about the local network settings on the ***Local Network*** screen in the ***Status*** menu.

In the ***Status*** menu, select ***Local network***:

- ***IP address***
  Local IP address of the device.
- ***Subnet mask***
  Subnet mask used in the local network.
- ***MAC address***
  Local MAC address of the device for wired data transfer.

DHCP server

- ***Status***
  Status of the DHCP server of the device for automatic assignment of IP addresses to clients in the local network.

- ***DHCP clients***
  Clients in the network that have been assigned an IP address. The ***Host name*** and the ***MAC address*** are listed to identify each client. Information is also provided about the ***IP address*** assigned to each client and about the ***Lease time*** for the IP address, i.e. the length of time before the current IP address becomes invalid and the client is assigned a new address by the DHCP server.

➥ Click ***Refresh*** to refresh this screen and update the displayed data.

Wireless Network

You will find information about the wireless network settings on the ***Wireless network*** screen in the ***Status*** menu.

In the ***Status*** menu, select ***Wireless network***:

- ***Status***
  Status of the connection between the device and the wireless network.
- ***SSID***
  Wireless network ID.
- ***Channel***
  Radio channel that is currently being used for data transfer in the wireless network.
- ***MAC address***
  Local MAC address of the device for wireless data transfer.
- ***Wireless clients***
  Clients in the wireless network that are currently connected to the device. The ***Host name***, ***MAC address*** and ***IP address*** are specified for identifying each client. You will also see information about the ***Uptime*** to date of the current connection for each client in the wireless network.

Repeater (WDS)

- ***Status***
  Status of the WDS (Wireless Distribution System) in the wireless network for increasing the range (***Enabled*** or ***Disabled***).
- ***WDS links***
  Current number of connections to other access points or repeaters in the wireless network.

➥ Click ***Refresh*** to refresh this screen and update the displayed data.

Device

You will find the most important device data on the ***Device*** screen in the ***Status*** menu.

In the ***Status*** menu, select ***Device***:

- ***System uptime***
  Device's operating time since the last time the system was started.
- ***System time***
  System time for your device.
- ***Firmware version***
  Firmware version currently installed on your device.
- ***Bootcode version***
  Version of the bootcode currently installed on your device.
- ***ADSL driver version***
  Version of the ADSL driver currently installed on the device.
- ***Wireless driver version***
  Version of the WLAN driver currently installed on the device.
- ***User interface version***
  Version of the user interface currently installed on the device.
- ***Hardware version***
  Hardware version of the device.
- ***Serial number***
  Serial number of the device.

System Log

The system log contains important information about how the device functions and possible problems. You can adapt the scope of the system log to suit your requirements (see "System Log" on page 55).

➥ Click ***Refresh*** to refresh this screen and update the displayed data.

Appendix

Troubleshooting

This section describes common problems and their solution. Any problems can be identified from the different LED displays. If you cannot solve the connection problem after checking the LED displays, consult of the following table. Further information is available on the Internet at
http://www.gigaset.com/customercare.

Make sure the firmware on your device is up-to-date. The latest version can be found on the Internet on the product page
www.gigaset.com/gigaset504 or www.gigaset.com/gigaset501

Symptom	Possible cause and solutions
Power LED does not light up.	No power supply. ➔ Check whether the mains adapter is connected to the router and a power outlet. ➔ Check whether the power outlet and the mains adapter are working properly. If the mains adapter is not working properly, contact our customer service unit (see Quick Start Guide). ➔ If your router has an On button: Check whether the device is plugged in.
ADSL LED flashes.	➔ Wait until the integrated DSL modem has completed its synchronisation. This procedure can take up to 10 minutes. ➔ The LED will also flash (at regular intervals) if no DSL cable is attached.
The **ADSL** LED does not light up after synchronisation.	➔ Check the DSL cable. Check that the DSL cable is properly connected to the DSL port and the splitter.

Symptom	Possible cause and solutions
The **LAN** LED on a connected device does not light up.	No LAN connection ➔ Make sure the connected device is turned on. ➔ Check whether the Ethernet cable is plugged in. ➔ Check that you are using the right cable type (CAT5) and that the cable is not too long (<100m). ➔ Check that the network card on the connected device and the cables are not defective. If necessary, replace a defective network card or cable. ➔ Use the Windows device manager (***My Computer*** – ***Properties***) to check whether the network card is functioning. If you see a red cross or a question mark, the driver may not have been installed or there is a resource conflict. Follow the Windows instructions to remedy the problem.
You cannot connect to the Internet.	➔ Check whether the ***Connect manually*** option is activated. If it is, connections cannot be opened automatically. ➔ Select ***Connect on demand*** or ***Always on***. If you are on a time-based tariff, this option can result in high connection charges (see page 26). ➔ The connection may have been terminated manually with the ***Connect on demand*** option selected. – Restore the connection again manually using the ***Connect*** button. Or – Restart the router. In both cases, the ***Connect on demand*** setting will be active again. ➔ Check whether the data entered for your Internet connection matches what your Internet service provider has specified.
You cannot open a connection to the router from a wireless device.	◆ The wireless network adapter is not using the correct SSID. ➔ Change the SSID on the network adapter.

Symptom	Possible cause and solutions
You cannot open a connection to the router from a wireless device.	◆ Either encryption has been activated on the router but not on the wireless network adapter, or an incorrect key is in use. ➔ Activate the required encryption on the network adapter with the correct key. If you do not know the key, repeat key entry (page 41) via a PC connected via cable to the router and enter the new key on the network adapter. Alternatively, you can reset the router (page 10) and then reconfigure encryption. **Warning**: Please bear in mind that this will reset the entire configuration to the factory settings. ◆ MAC access control is activated, but the PC is not included in the MAC address list. ➔ Enter the PC in the MAC address list.
The router or other PCs cannot be reached by a PC in the connected LAN using a **`ping`** command.	➔ Make sure that TCP/IP has been installed and configured on all the PCs in the local network. ➔ Check that the IP addresses have been correctly configured. In most cases you can use the DHCP function of the router to assign dynamic addresses to the PCs in the LAN. In this case, you have to configure the TCP/IP settings of all the PCs so that they obtain the IP address automatically. If you configure IP addresses in the LAN manually, remember to use the same subnet mask for all PCs in the LAN. This means that the masked part of the IP address on each PC and on the router has to be identical.
You cannot open a connection to the configuration environment of the router.	➔ Use the **`ping`** command to check whether you can establish a network connection to the router. ➔ Check the network cable between the PC you want to use to administer the device and the router. ➔ If the PC you want to use for administering the device is in the router's local network, make sure that you are using the correct IP address range (see above). ➔ If the PC you want to use for administering the device is not in the router's local area network, this PC must be authorised for remote management.

Symptom	Possible cause and solutions
You have forgotten or lost the password .	➞ Reset the router (page 10). **Warning**: Please bear in mind that this will return **all** the configuration settings to the factory settings.
You cannot access a resource (drive or printer) on a different PC.	➞ Make sure that TCP/IP has been installed and configured on all the PCs in the local network and that the PCs all belong to the same workgroup. ➞ Check whether the resource has been released on the PC in question and whether you have the necessary access rights. ➞ Printing: Check whether the printer has been set up as a network printer.

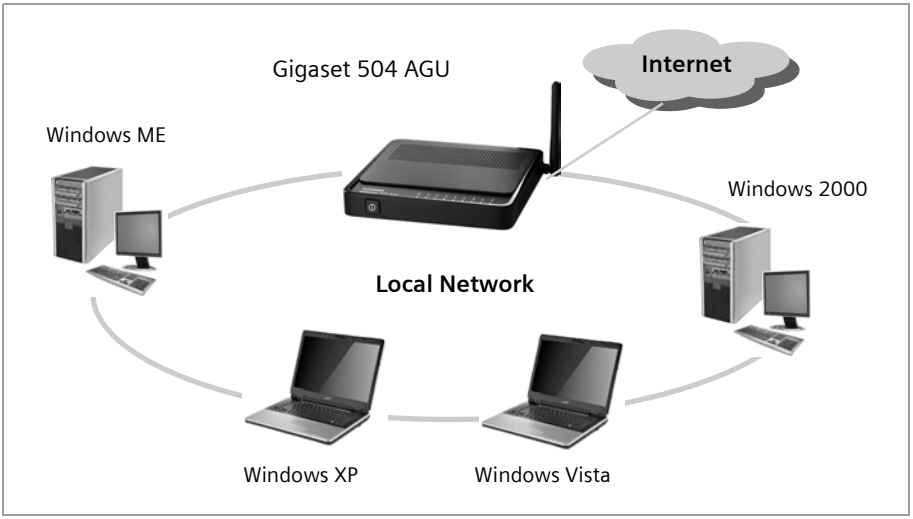
Operating information:

- LAN ports

  The LAN ports may only be used for in-house networks. The ports are destroyed externally if there is a power surge.

Local area networks with Gigaset products

You can use the router Gigaset 504 AGU to set up a local area network, for example a home network. All PCs in this network can communicate with each other and have access to the Internet.



There are various ways in which you can set up the network using a router Gigaset 504 AGU.

- Set up a wired local area network (Ethernet) and allow the connected PCs access to the Internet (page 67).
- Set up a wireless local area network (WLAN) and allow the connected PCs access to the Internet (page 68).
- Set up a local area network comprising wireless and wired network components (page 70).

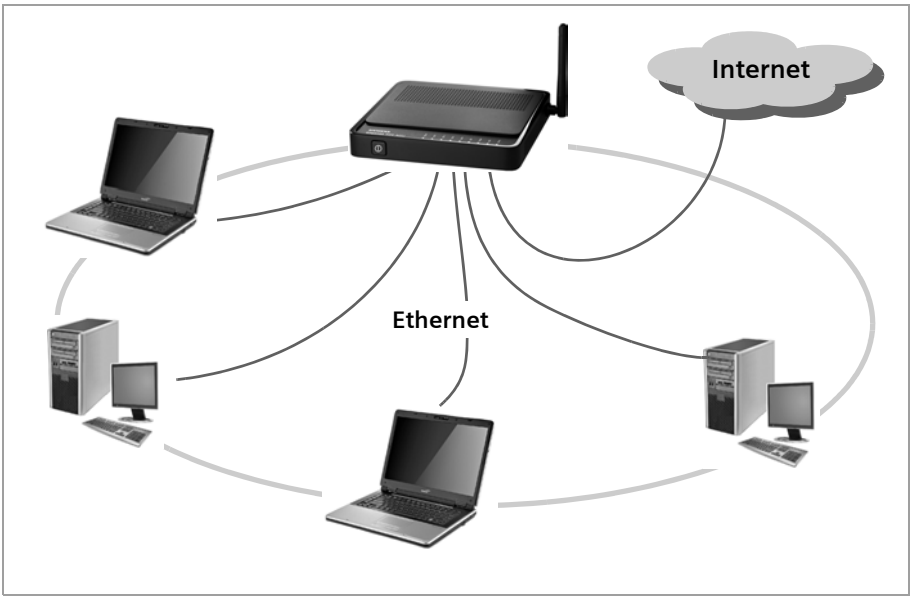
Wired local area network (Ethernet)

In a wired local area network, PCs communicate with one another via an Ethernet cable. When the router Gigaset 504 AGU is used, it establishes the connection between the PCs. For this the 504 series has four Ethernet LAN ports for connecting four PCs. The 501 series has one Ethernet LAN port. The PCs have to be equipped with a network port (Ethernet).

New PCs frequently already have this port. For older PCs you need to install an Ethernet network card.

The PC and the Ethernet LAN port on the router are connected using an Ethernet cable (CAT5). One Ethernet cable is supplied. Additional ones can be obtained from your retailer.

The router Gigaset 504 AGU allows all PCs to access the Internet simultaneously.



Wireless local area network (WLAN)

In a wireless local area network (WLAN), PCs are linked without wires or cables. The PCs have to be equipped with a wireless local area network adapter (WLAN adapter), for example with a Gigaset USB Adapter 54.

There are two types of wireless network:

- Infrastructure mode
- Ad-hoc mode

Infrastructure mode

Infrastructure mode connects wireless and wired networks with one another. In addition to the mobile stations, infrastructure mode needs an access point such as the router Gigaset 504 AGU. In infrastructure mode, the stations in the network always communicate via this access point. The access point sets up the wireless network on a permanent basis. Each station that wants to be part of the wireless network must first register with the access point before it can exchange data.

The access point establishes the connection between the mobile stations of a wireless network and a wired LAN (Ethernet) or the Internet. In this case this is described as the device's router functionality. The router sends data packets that are not addressed to stations within the network "outside" and forwards data packets originating from "outside" to the appropriate station within the network.

You can use the router Gigaset 504 AGU to connect

- wirelessly networked PCs to the Internet and
- wirelessly networked PCs to an Ethernet network.

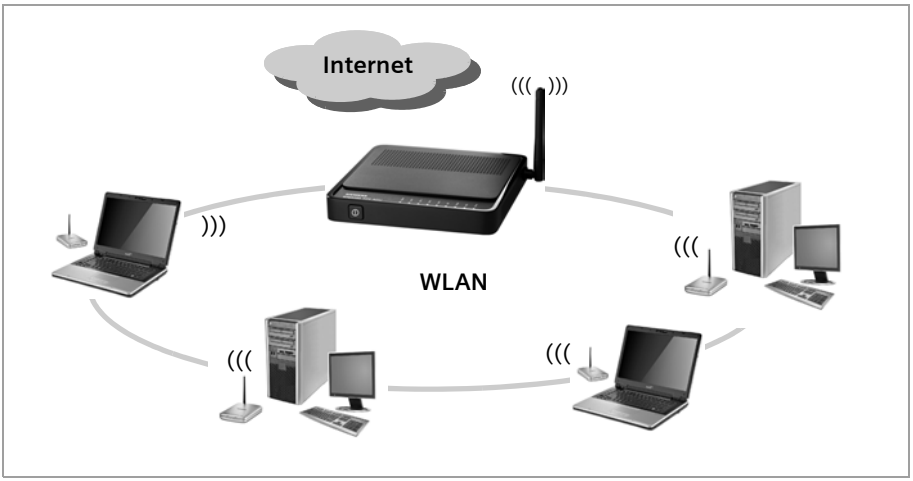
Infrastructure mode is the default configuration for the Gigaset 504 AGU.

Ad-hoc mode

An ad-hoc network is a wireless network that has been configured without an access point or a router. The mobile network components that communicate with each other directly and wirelessly form the network on an "ad-hoc" basis, i.e. as and when required. All the stations in the network have the same rights. Ad-hoc networks are used wherever communications networks have to be set up quickly and there is no existing network infrastructure, and where the participants are on the move.

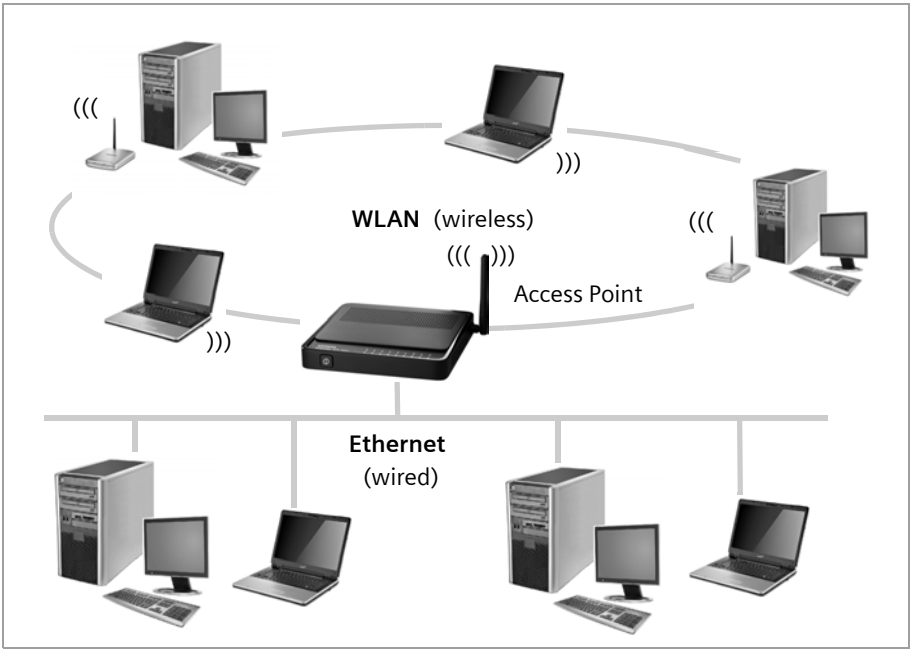
Linking wireless networks with the Internet

The router Gigaset 504 AGU has an ADSL interface that permits all stations within its local area network to access the Internet simultaneously. To be able to use this functionality, you need a DSL connection obtainable from an Internet service provider. Find out whether your service provider supports parallel access by several PCs.



Linking a wireless network to an Ethernet

Wireless local area networks can work easily together with existing Ethernet networks. If you wish to connect mobile stations to an existing wired network, you must group together all mobile stations into a wireless local area network in infrastructure mode.



The devices of the 504 series have four Ethernet interfaces (LAN ports). Up to four PCs can be directly connected to these LAN ports.

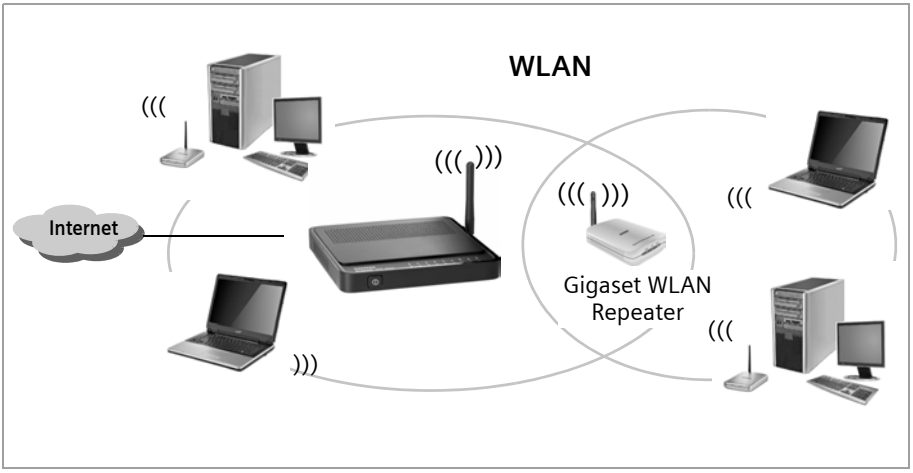
All PCs can access the Internet via the router Gigaset 504 AGU.

Please remember:

You can also connect an Ethernet router or switch to a LAN port to access a larger Ethernet. If you want to link the Gigaset WLAN network to an existing network, a large number of settings have to be applied. Therefore we cannot provide a general example for this use; the configuration depends greatly on the networks in question. We advise having the configuration of such a network carried out by a specialist.

Extending the wireless network coverage with a repeater

Using the Gigaset WLAN Repeater, you can extend your wireless network's coverage. Set it up within the range of your network. The repeater will now transmit data traffic into its own wireless area. This technology allows you to set up wireless networks that cover a much larger area than is possible with a single router Gigaset 504 AGU.



PCs to be connected in a wireless local area network via a repeater must be equipped with an integrated wireless network adapter or you have to connect an external wireless network adapter (e.g. a USB adapter).

Deactivating HTTP proxy and configuring a pop-up blocker

Before you can start the configuration program of the router Gigaset 504 AGU, you might need to adjust the settings described below for your Web browser.

Deactivating the HTTP proxy

Make sure that the HTTP proxy in your web browser is deactivated. This function must be deactivated so that your web browser can access your router's configuration pages.

The following section describes the procedure for Internet Explorer and Mozilla Firefox. Follow the steps for the appropriate browser.

Internet Explorer

➡ Open Internet Explorer and from the ***Tools*** menu, select ***Internet Options***.

➡ In the ***Internet Options*** window, click the ***Connections*** tab.

➡ Click ***LAN Settings***.

➡ Deactivate all options in the ***LAN Settings*** window.

➡ Click ***OK*** and then ***OK*** again to close the ***Internet Options*** window.

Mozilla Firefox

➡ Open Mozilla Firefox. Click ***Tools*** and then ***Settings***.

➡ In the ***Settings*** window, click ***Connection Settings...***

➡ In the ***Connection Settings*** window, select the option ***Direct connection to the Internet***.

➡ Click ***OK*** to finish.

Configuring the pop-up blocker

You must allow pop-ups for the configuration program in order to start it.

Internet Explorer

If working with Windows XP Service Pack 2, pop-ups are blocked by default. If the configuration program is blocked carry out the following steps:

➡ Right-click on the browser information bar.

➡ Select ***Allow popups from this screen***.

➡ Confirm the dialogue window by clicking ***OK***.

The configuration screens for the router are now allowed as pop-ups.

You can make additional settings for pop-ups within Internet Explorer via the ***Tools – Popup Manager*** menu item or via ***Tools – Internet Options*** on the ***Privacy*** tab.

Mozilla Firefox

Pop-ups are blocked by default. Carry out the following steps:

➞ Open Mozilla Firefox. Click ***Tools*** and then ***Settings***.

➞ Click on the ***Content*** icon.

➞ Deactivate the ***Block Popup window*** option.

➞ Click ***OK*** to finish.

Please note:
Should you use a different pop-up blocker, you must configure this accordingly.

Specifications

Interfaces	
1 DSL	RJ11, ITU G.992.5, Annex A
4 LAN	RJ45, 10Base-T/100Base-TX, Auto-sensing
1 USB	USB 1.1, for connection of a PCs
WLAN	802.11g, for wireless connection of up to 252 PCs,
External network adaptor	Input 230 V AC, output 9 V, 1A DC
Wireless properties	
Frequency range	2400 to 2484 GHz ISM band (subject to local regulations)
Spreading	Direct Sequence Spread Spectrum (DSSS)
Modulation	CCK, OFDM
Number of channels	IEEE 802.11b: 13 (Europe, ETSI) IEEE 802.11g: 13 (Europe, ETSI)
Transfer rate	IEEE 802.11b: 1, 2, 5.5, 11 Mbps IEEE 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps
Range	Up to 300 m outdoors, up to 50 m indoors
Operating environment	
Temperature	Operating temperature 0 to 40 °C Storage temperature –25 to 70°C
Humidity	5% to 90% (non-condensing)
LED displays	Power (on/off) ADSL (operation, synchronisation) Online (activity, Internet) WLAN (activity, wireless) LAN1... LAN4 (connection to PC, activity, wired) USB (device connection)
Compliance with security conditions and regulations	
	CE, EN60950

Software	Browser-based configuration environment PPPoE, PPPoA DHCP server and client, DynDNS Firewall, prevention of hacker attacks MAC address filtering URL filtering, domain blocking DoS blocking, SPI NAT Log file WEP encryption WPA-PSK and WPA2-PSK encryption

Authorisation

This device is intended for use worldwide. Use outside the European Economic Area (with the exception of Switzerland) is subject to national approval. Country-specific requirements have been taken into consideration.

Cet appareil est destiné pour une utilisation domestique en France.

More information concerning network interface and Annex A / B is available on the product label.

The functions described in this user manual are not available in all countries.

We,Gigaset Communications GmbH, declare that this device meets the essential requirements and other relevant regulations laid down in Directive 1999/5/EC.

A copy of the 1999/5/EC Declaration of Conformity is available at this Internet address:

http://www.gigaset.com/docs

CE 0682 ⓘ

Glossary

Access point

An access point, such as the router Gigaset 504 AGU, is the centre of a wireless local network (WLAN). It handles the connection of the wireless linked network components and regulates the data traffic in the wireless network. The access point also serves as an interface to other networks, for example an existing Ethernet LAN or via a modem to the Internet. The operating mode of wireless networks with an access point is called Infrastructure mode.

Ad-hoc mode

Ad-hoc mode describes wireless local networks (WLANs), in which the network components set up a spontaneous network without an Access point, for example several Notebooks in a conference. All the network components are peers. They must have a wireless Network adapter.

ADSL /ADSL2+

Asymmetric Digital Subscriber Line (ADSL) and ADSL 2+ are special types of DSL data transfer technology.

AES

Advanced Encryption Standard

AES is an encryption system, which was published as a standard in October 2000 by the National Institute of Standards and Technology (NIST). It is used for WPA encryption. A distinction is made between the three AES variants AES-128, AES-192 and AES-256 on the basis of the key length.

Auto connect

Auto connect means that applications such as Web browser, Messenger and E-mail automatically open an Internet connection when they are launched. This can lead to high charges if you are not using Flat rate. To avoid this, you can select the manual connect option on the router Gigaset 504 AGU.

Bridge

A bridge connects several network segments to form a joint network, for example to make a TCP/IP network. The segments can have different physical characteristics, for example different cabling as with Ethernet and wireless LANs. Linking individual segments via bridges allows local networks of practically unlimited size.

See also: Switch, Hub, Router, Gateway

Broadcast

A broadcast is a data packet not directed to a particular recipient but to all the network components in the network. The router Gigaset 504 AGU does not pass on broadcast packets; they always remain within the local network (LAN) it administers.

BSSID

Basic Service Set ID

BSSID permits unique differentiation of one wireless network (WLAN) from another. In Infrastructure mode, the BSSID is the MAC address of the Access point. In wireless networks in Ad-hoc mode, the BSSID is the MAC address of any one of the participants.

Client

A client is an application that requests a service from a server. For example, an HTTP client on a PC in a local network requests data, i.e. Web pages from an HTTP server on the Internet. Frequently the network component (e.g. the PC) on which the client application is running is also called a client.

DHCP

Dynamic Host Configuration Protocol

DHCP handles the automatic assignment of IP addresses to network components. It was developed because of the complexity involved in defining IP addresses in large networks – especially the Internet – as participants frequently move, drop out or new ones join. A DHCP server automatically assigns the connected network components (DHCP Clients) Dynamic IP addresses from a defined IP pool range thus saving a great deal of configuration work. In addition, the address blocks can be used more effectively: Since not all participants are on the network at the same time, the same IP address can be assigned to different network components in succession as and when required.

The router Gigaset 504 AGU includes a DHCP server and uses it to assign automatic IP addresses to PCs in the local network. You can specify that the IP addresses for certain PCs are never changed.

DHCP server

See DHCP

DMZ

Demilitarised Zone

DMZ describes a part of a network that is outside the Firewall. A DMZ is set up, as it were, between a network you want to protect (e.g. a LAN) and a non-secure network (e.g. the Internet). A DMZ is useful if you want to offer Server services on the Internet that are not to be run from behind the firewall for security reasons or if Internet applications do not work properly behind a firewall. A DMZ permits unrestricted access from the Internet to only one or a few network components, while the other network components remain secure behind the firewall.

DNS

Domain Name System

DNS permits the assignment of IP addresses to computers or Domain names that are easier to remember. A DNS server must administer this information for each LAN with an Internet connection. As soon as a page on the Internet is called up, the browser obtains the corresponding IP address from the DNS server so that it can establish the connection.

On the Internet, the assignment of domain names to IP addresses follows a hierarchical system. A local PC only knows the address of the local name server. This in turn knows all the addresses of the PCs in the local network and the superordinate name servers, which again know addresses or the next superordinate name servers.

DNS server

See DNS

Domain name

The domain name is the reference to one or more Web servers on the Internet. The domain name is mapped via the DNS service to the corresponding IP address.

DoS attack

Denial of Service

A DoS attack is a particular form of hacker attack directed at computers and networks with a connection to the Internet. The aim is not so much to steal data but to paralyse the computer or network so severely that the network resources are no longer available. A typical hacker attack involves making a remote computer announce that it is acting for the paralysed computer, for example, and receive the data intended for you.

DSL

Digital Subscriber Line

DSL is a data transfer technique in which a connection to the Internet can be run at high speed over normal telephone lines. A DSL connection is provided by an Internet service provider. It requires a DSL modem.

Dynamic IP address

A dynamic IP address is assigned to a network component automatically by DHCP. This means that the IP address of a network component can change with every login or at certain intervals.

See also: Static IP address

DynDNS

Dynamic DNS

The assignment of Domain names and IP addresses is handled by the Domain Name Service (DNS). This service is now enhanced with so-called Dynamic DNS (DynDNS) for Dynamic IP addresses. This enables the use of a network component with a dynamic IP address as a Server on the Internet. DynDNS ensures that a service can always be addressed on the Internet under the same domain name regardless of the current IP address.

Encryption

Encryption protects confidential information against unauthorised access. With an encryption system, data packets can be sent securely over a network. The router Gigaset 504 AGU offers WEP encryption and WPA for secure data transfer over wireless networks.

Ethernet

Ethernet is a network technology for local networks (LANs) defined by the IEEE as standard IEEE 802.3. Ethernet uses a base-band cable with a transfer rate of 10 or 100 Mbps or 1 Gbps.

File Server

See Server

Firewall

Firewalls are used by network operators as protection against unauthorised external access. This involves a whole bundle of hardware and software actions and technologies that monitor and control the data flow between the private network to be protected and an unprotected network such as the Internet.

See also: NAT

Flat rate

Flat rate is a particular billing system for Internet connections. The Internet service provider charges a monthly fee regardless of the duration and number of logins.

FTP (File Transfer Protocol)

FTP is a protocol for exchanging files on the Internet. You can use it, for example, to offer files for downloading or to receive files from other users.

Full duplex

Data transfer mode in which data can be sent and received at the same time.

See also: Half duplex

Gateway

A gateway is a device for connecting networks with completely different architectures (addressing, protocols, application interfaces etc.). Although it is not totally correct, the term is also used as a synonym for Router.

Global IP address

See Public IP address

Half duplex

Operating mode for data transmission. Only one side can send and/or receive data at the same time.

See also: Full duplex

HTTP proxy

An HTTP proxy is a Server that network components use for their Internet traffic. All requests are sent via the proxy.

Hub

A hub connects several network components in a star-topology network by sending all the data it receives from one network component to all the other network components.

See also: Switch, Bridge, Router, Gateway

IEEE

Institute of Electrical and Electronic Engineers

The IEEE is an international body for defining network standards, especially for standardising LAN technologies, transfer protocols, data transfer speeds and wiring.

IEEE 802.11

IEEE 802.11 is a standard for wireless LANs operating in the 2.4 GHz or 5 GHz band. In so-called Infrastructure mode, terminals can be connected to a base station (Access point) or they can connect with each other spontaneously (Ad-hoc mode).

IGMP

Internet Group Management Protocol

IGMP is an Internet Protocol that enables an Internet computer to inform neighbouring routers that it is a member of a multicast group. With multicasting, a computer can send content on the Internet to several other computers that have registered an interest in the first computer's content. Multicasting can, for example, be used for multimedia programs for media streaming to recipients that have set up multicast group membership.

Infrastructure mode

Infrastructure mode is a way of operating wireless local networks (WLANs) in which an Access point handles the data traffic. Network components cannot establish a direct connection with each other as is the case in Ad-hoc mode.

Internet

The Internet is a wide-area network (WAN) linking several million users around the world. A number of Protocols have been created for exchanging data, and these are known collectively as TCP/IP protocol stack. All participants on the Internet can be identified by an IP address. Servers are addressed by Domain names (e.g. gigaset.com). Domain names are assigned to IP addresses by the Domain Name Service (DNS).

These are some of the main Internet services:

- Electronic mail (e-mail)
- The World Wide Web (WWW)
- File transfer (FTP)
- Discussion forums (Usenet / Newsgroups)

Internet service provider

An Internet service provider offers access to the Internet for a fee.

Internet telephony

Transmission of voice via the Internet (Voice over IP).

IP

Internet protocol

The IP Protocol is one of the TCP/IP protocols. It is responsible for addressing parties in a network using IP addresses and routes data from the sender to the recipient. It decides the paths along which the data packets travel from the sender to the recipient in a complex network (routing).

IP address

The IP address is the unique network-wide address of a network component in a network based on the TCP/IP protocols (e.g. in a local area network (LAN) or on the Internet). The IP address has four parts (each with up to three-position digit sequences) separated by full stops (e.g. 192.168.1.1). The IP address comprises the network number and the computer number. Depending on the Subnet mask, one, two or three parts form the network number; the remainder form the computer number. You can find out the IP address of your PC using the **`ipconfig`** command.

IP addresses can be assigned manually (see Static IP address) or automatically (see Dynamic IP address).

On the Internet Domain names are normally used instead of the IP addresses. The DNS is used to assign domain names to IP addresses.

The router Gigaset 504 AGU has a Private IP address and a Public IP address.

IPoA

IP over ATM

IP pool range

The IP address pool of the router Gigaset 504 AGU defines a range of IP addresses that the router's DHCP server can use to assign Dynamic IP addresses.

ISP

(Internet Service Provider)

Internet service provider

LAN

Local network

A local area network (or local network) links network components so that they can exchange data and share resources. The physical range is restricted to a particular area (a site). As a rule the users and operators are identical. A local network can be connected to other local networks or to a wide-area network (WAN) such as the Internet.

With the router Gigaset 504 AGU you can set up a wired local Ethernet network and a wireless IEEE 802.11g standard network (WLAN).

Local IP address

See Private IP address

MAC address

Media Access Control

The MAC address is used for the globally unique identification of a Network adapters. It comprises six parts (hexadecimal numbers), e.g. 00-90-96-34-00-1A. The MAC address is assigned by the network adapter manufacturer and should not be changed.

Mbps

Million bits per second

Specification of the transfer speed in a network.

MER

MAC Encapsulated Routing

MRU

Maximum Receive Unit

The MRU defines the maximum user data volume within a data packet.

MTU

Maximum Transmission Unit

The MTU defines the maximum length of a data packet that can be carried over the network at any one time.

NAT

Network Address Translation

NAT is a method for converting IP addresses (Private IP addresses) within a network into one or several Public IP addresses on the Internet. With NAT, several network components in a LAN can share the router's public IP address to connect to the Internet. The network components of the local network are hidden behind the router's IP address registered on the Internet. Because of this security function, NAT is frequently used as part of the Firewall of a network. If you want to make services on a PC in the local network available on the Internet despite NAT, you can configure the router Gigaset 504 AGU as a Virtual server.

Network

A network is a group of devices connected in wired or wireless mode so that they can share resources such as data and peripherals. A general distinction is made between local networks (LANs) and wide-area networks (WANs).

Network adapter

The network adapter is the hardware device that creates the connection between a network component and a local network. The connection can be wired or wireless. An Ethernet network card is an example of a wired network adapter. The Gigaset PC Card 54 and the Gigaset USB Adapter 54 are examples of wireless network adapters.

A network adapter has a unique address, the MAC address.

Public IP address

The public IP address (also known as the global IP address) is a network component's address on the Internet. It is assigned by the Internet service provider. Devices that create a link from a LAN to the Internet, such as the router Gigaset 504 AGU, have a public and a Private IP address.

Port

Data is exchanged between two applications in a network across a port. The port number addresses an application within a network component. The combination of IP address/port number uniquely identifies the recipient or sender of a data packet within a network. Some applications (e.g. Internet services such as HTTP or FTP) work with fixed port numbers; others are allocated a free port number whenever they need one.

Port forwarding

In port forwarding, the router Gigaset 504 AGU directs data packets from the Internet that are addressed to a particular Port to the corresponding port of the appropriate network component. This enables servers within the local network to offer services on the Internet without them needing a Public IP address.

See also: Virtual server

PPPoA

Point-to-Point Protocol over ATM

PPPoA is a Protocol for connecting network components in a local Ethernet network to the Internet via an ATM network.

PPPoE

Point-to-Point Protocol over Ethernet

PPPoE is a Protocol for connecting network components in a local Ethernet network to the Internet via a modem.

Print server

See Server

Private IP address

The private IP address (also known as the local IP address) is a network component's address within the local network (LAN). The network operator can assign any address he or she wants. Devices that act as a link from a local network, such as the router Gigaset 504 AGU, have a private and a Public IP address.

Protocol

A protocol describes the agreements for communicating in a network. It contains rules for opening, administering and closing a connection, as well as in relation to data formats, time frames and possibly troubleshooting. Communication between two applications requires different protocols at various levels, for example the TCP/IP protocols for the Internet.

PVC

Permanent Virtual Circuit

A permanent virtual circuit is a logical connection in an ATM network.

QoS

Quality of Service

QoS allows network traffic to be sorted according to priorities. When this parameter is activated, Internet telephony is given priority over other data traffic. This is a precondition for problem-free calls.

Radio network

See WLAN

Rekey interval

The rekey interval is the period after which new keys are automatically generated for data encryption with WPA-PSK.

Remote management

Remote management refers to the ability to manage a network from a network component that is actually outside the local network (LAN).

Repeater

A repeater extends the range of a wireless local network by relaying data from the Access point to additional PCs or Network adapters.

Roaming

Roaming extends the range of a wireless LAN by using several Access points that use the same SSID and the same radio channel and are linked via Ethernet. The PCs in the network can switch dynamically between several access points without losing the existing network connection.

Router

A router directs data packets from one local network (LAN) to another via the fastest route. A router makes it possible to connect networks that have different network technologies. For example, it can link a local network with Ethernet or WLAN technology to the Internet.

See also: Bridge, Switch, Hub, Gateway

Server

A server makes a service available to other network components (Clients). The term "server" is often used to refer to a computer or PC. However, it can also mean an application that provides a particular service such as DNS, Web server, file server or print server.

SMTP

Simple Mail Transfer Protocol

The SMTP Protocol is part of the TCP/IP protocol family. It governs the exchange of electronic mail on the Internet. Your Internet service provider provides you with access to an SMTP server.

SNMP

Simple Network Management Protocol

The SNMP Protocol is part of the TCP/IP protocol family. It provides a simple procedure for administering the network based on a system of shared information for management data and network management messages (known as traps) and reports the occurrence of events within the monitored network (e.g. an alarm message or notification of configuration changes).

SPI

Stateful Packet Inspection

Your device uses SPI to monitor and limit access by traffic incoming from the Internet. This allows it to identify and block certain types of attack such as Denial of Service (DoS). A typical DoS attack may involve a remote computer paralysing a system and then claiming to be the paralysed device in order to receive data intended for it.

SSID

Service Set Identifier

The SSID is used to identify the stations in a wireless network (WLAN). All wireless network components with the same SSID form a common network. The SSID can be assigned by the network operator.

Static IP address

A static IP address is assigned to a network component manually during network configuration. Unlike the Dynamic IP address, a static (fixed) IP address never changes.

Subnet

A subnet divides a network into smaller units.

Subnet mask

The subnet mask determines how parts of IP addresses of a network represent the network number and how many the computer number.

If the subnet mask is in a network that is administered by the router Gigaset 504 AGU, for example 255.255.255.0, that means the first three parts of the IP address form the network number and only the final part can be used for assigning host numbers. The first three parts of the IP address of all network components are therefore always the same in this case.

Switch

A switch, like a Hub, is an element used to link different network segments or components. Unlike a hub however, the switch has its own intelligence that enables it to forward packets to only the subnet or network component they are meant for.

See also: Bridge, Hub, Router, Gateway

TCP

Transmission Control Protocol

The TCP Protocol is part of the TCP/IP protocol family. TCP handles data transport between communication partners (applications). TCP is a session-based transfer protocol, i.e. it sets up, monitors and terminates a connection for transferring data.

See also: UDP

TCP/IP

Protocol family on which the Internet is based. IP forms the basis for every computer-to-computer connection. TCP provides applications with a reliable transmission link in the form of a continuous data stream. TCP/IP is the basis on which services such as WWW, Mail and News are built. There are other protocols as well.

UDP

User Datagram Protocol

UDP is a Protocol of the TCP/IP protocol family that handles data transport between two communication partners (applications). Unlike TCP, UDP is a non-session based protocol. It does not establish a fixed connection. The recipient is responsible for making sure the data is received. The sender is not notified about whether it is received or not.

UPnP

Universal Plug and Play

UPnP technology is used for the spontaneous linking of home or small office networks. Devices that support UPnP carry out their network configuration automatically once they are connected to a network. They also provide their own services or use services of other devices in the network automatically.

URL

Universal Resource Locator

Globally unique address of a domain on the Internet.

VCI

Virtual Channel Identifier

Part of an address in an ATM network.

Virtual server

A virtual Server provides a service on the Internet that runs not on itself, but on another network component. The router Gigaset 504 AGU can be configured as a virtual server. It will then direct incoming calls for a service via Port forwarding directly to the appropriate Port of the network component in question.

VLAN

Virtual Local Area Network

A VLAN is a virtual local network within a physical network. A widely disseminated technical implementation of VLANs is defined partially in the Standard IEEE 802.1Q. VLAN allows preferred forwarding of voice data, for example. This functionality is important for VoIP (IP telephony). This also means that phone calls can be made without interruption with a restricted bandwidth.

VoIP

Voice over IP

See Internet telephony

VPI

Virtual Path Identifier

Part of an address in an ATM network.

WAN

Wide Area Network

A WAN is a wide area network that is not restricted physically to a particular area, for example the Internet. A WAN is run by one or more public providers to enable private access. You access the Internet via an Internet service provider.

WDS

Wireless Distribution System

WDS describes the wireless connection between a number of access points.

Web server

See Server

WEP

Wired Equivalent Privacy

WEP is a security protocol defined in the IEEE 802.11 standard. It is used to protect wireless transmissions in a WLAN against unauthorised access through Encryption of the data transmitted.

WLAN

Wireless LAN

Wireless LANs enable network components to communicate with a network using radio waves as the transport medium. A wireless LAN can be connected as an extension to a wired LAN or it can form the basis for a new network. The basic element of a wireless network is the cell. This is the area where the wireless communication takes place. A WLAN can be operated in Ad-hoc mode or Infrastructure mode.

WLAN is currently specified in Standard IEEE 802.11. The router Gigaset 504 AGU complies with Standard 802.11g.

WPA

WPA is a standard-compliant solution for greater security in wireless networks. WPA is meant to replace the existing WEP standard (Wired Equivalent Privacy) and offers more reliable encryption and authentication methods.

WPA-PSK

WPA Pre-shared Key

Variant of WPA data encryption in which new keys are automatically generated at regular intervals by means of a keyword (pre-shared key). The key is updated after defined periods (Rekey interval).

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