ARESCOM

Broadband Internet & Remote Access Solutions

AresGate 1000 Wireless Router

User's Installation Guide

Published August 2001

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1. BEFORE YOU BEGIN

1.1 Introduction

The state of the art ARESCOM AresGate™ 1000 Series Wireless Access Point router is specifically designed for the application in a variety of SOHO network environments:

If you already have a high speed ADSL or Cable modem installed in your network, with AresGate's powerful routing features, a shared Internet access is easily provided to your entire network.

If you like to build a wireless networking environment at home or in the office, with AresGate's wireless AP capability and external antenna, you can move your laptop PC from office to office or from the kitchen to the living room and still stay connected to the Internet.

If you are using an analog modem for Internet dial-up service, with AresGate's built-in 56K modem*, you can retain the most economic way of Internet access and sharing it to all the PCs on your LAN network.

This guide is to help you understand the various applications this product is capable of and further ease you through the installation process by providing simple step-by-step instructions in setting up your AresGate router.

1.2 Product Models

- AresGate 1000
- AresGate 1000 Pro - includes a built-in 56K modem

1.3 Features

- Up to 11Mbps high-speed data transfer rate for wireless transmission.
- Interoperability to equipment complied with IEEE 802.11b (DSSS) 2.4 GHz.
- User-friendly Web interface (GUI) for quick router configuration.
- Provides shared Internet access to your network through DSL modem, Cable modem, or built-in 56K analog modem* connection.
- Flexible external antenna for maximum wireless communication.

* For AresGate 1000 Pro model only

- Up to 128-bit WEP (Wired Equivalent Privacy) encryption.
- DHCP server simplifies your network administration.
- Supports NAT/PAT firewall capability.
- IP filtering feature protects your network from unauthorized data traffic that enters or leaves the router.

1.4 Package Includes

- Arescom AresGate 1000 wireless router (x 1)
- Power adapter and cord set (x 1)
- RJ-45 to RJ-45 straight-through Ethernet cable (x 1)
- RJ-11 to RJ-11 telephone cable (x 1)*
- External wireless LAN antenna (x 1)
- User's Installation Guide
- Quick Installation Guide

1.5 Diagram of the AresGate 1000

Front Panel LEDs

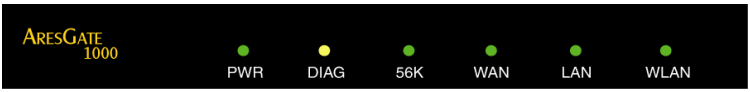


Figure 1. Front Panel Interface

PWR (Power)

A PWR LED is ON when power is supplied to the AresGate router.

DIAG (Diagnostic)

The yellow DIAG LED indicates that the AresGate router is in a self-diagnostic mode during boot-up. Once the router is successfully booted up, the DIAG LED remains off. If there is a software malfunction or a problem with the router, the DIAG LED will remain on.

56K*

The 56K LED displays the status of the built-in 56K analog modem. The green LED is on and remains solid if the modem line successfully connects between a remote carrier (such as your ISP) and the AresGate router. The LED flashes when there is data activity on the modem interface.

* For AresGate 1000 Pro model only

WAN

The WAN LED displays the 10BaseT WAN Ethernet connection between the AresGate router and a broadband device (e.g. Cable modem or ADSL modem). The green WAN LED is on and remains solid when connection is valid. The LED flashes when there is data activity on this port.

LAN

The LAN LED displays the 10BaseT Ethernet connection between the AresGate router and an Ethernet network. The green LAN LED is on and remains solid if there is a valid link. The LED flashes when there is data activity on this port.

WLAN

The WLAN LED displays the connection between the AresGate router and a wireless LAN network. The green WLAN LED is on and remains solid if a Wireless LAN client successfully connects. The LED flashes when there is data activity on this port.

Back Panel Interface

Figure 2. Back Panel Interface

POWER

The power interface connects to the power adapter.

On/Off

Select the On/Off switch to turn the AresGate router on or off.

56K LINE/PHONE*

The 56K modem ports connects the built-in 56K analog modem to a telephone outlet using the included RJ-11 to RJ-11 telephone cable.

10BT WAN

The 10BaseT WAN interface connects the AresGate router to a broadband equipment, such as Cable modem, xDSL modem or router via 10BaseT cabling.

10BT LAN

The 10BaseT LAN interface connects the AresGate router to the local LAN network.

External Wireless Antenna Connector

The included antenna needs to be securely attached to this external wireless antenna connector in order to provide wireless connection.

* For AresGate 1000 Pro model only

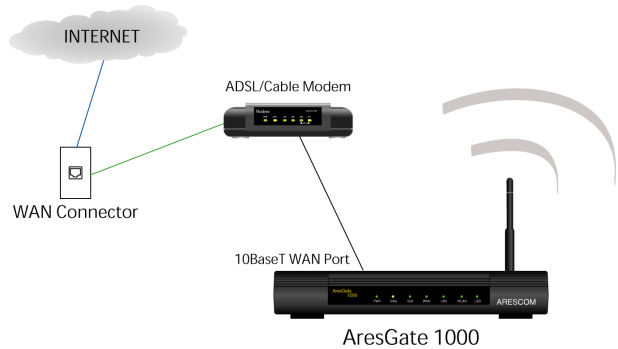
1.6 Application Scenarios

The AresGate router can easily fit into your personal networking environment. The following application examples provides a basic idea of how AresGate routers can improve your current network.

WAN Application

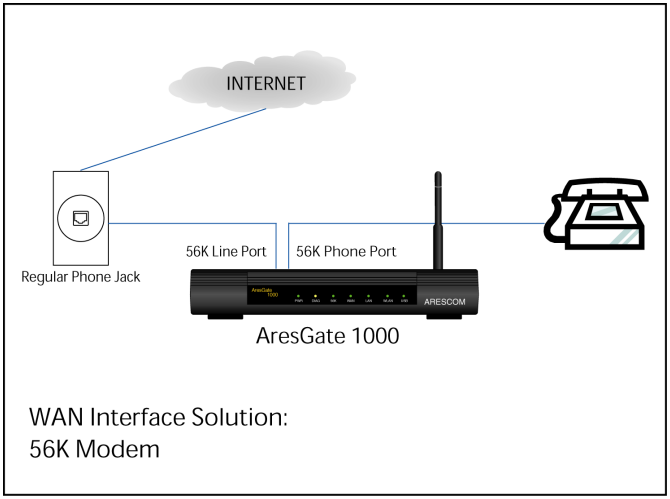
The AresGate router can incorporate with your existing Internet access equipment, such as xDSL modem, Cable modem, or 56K modem, and provide a gateway to the Internet for your entire network.

A. Shared Internet access through a ADSL/Cable modem (ADSL/ Cable modem should be provided).



WAN Interface Solution:
ADSL/CABLE Modem

B. Shared Internet access through a 56K fax modem*.



To support modem dial-up users, the AresGate router already has a built-in 56K modem* that will replace all other 56K modems installed in the PCs on the network.

NOTE: *If you have ADSL or Cable modem for high speed Internet access, the 56K* dial-up connection provides a good backup when your ADSL or Cable service is down.*

In the WAN Application scenario mentioned above, please be aware of the following when you intend to use both applications*:

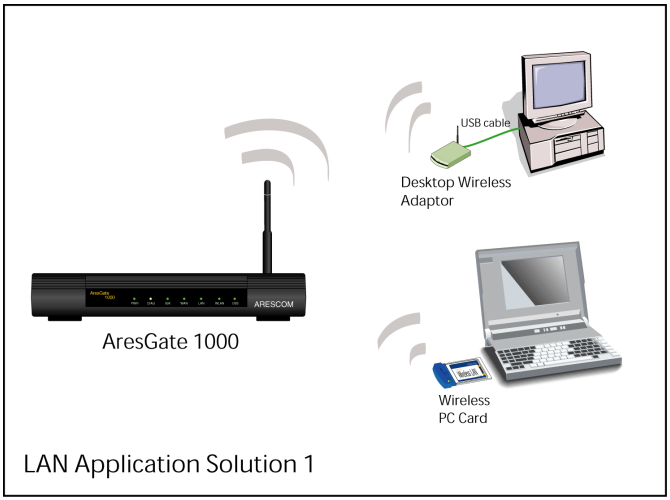
1. The 10 BaseT WAN port and 56K Line port are shared, which means that you CANNOT use both **10 BaseT WAN port** and **56K Line port** at the same time.
2. The 56K line has a higher priority over the 10BaseT WAN line. In other words, if you are connected to the Ethernet WAN at the moment and decide to use the 56K modem instead, then the AresGate router will disconnect the Ethernet WAN interface and initiate the 56K modem dial-up connection.

* For AresGate 1000 Pro model only

LAN Application

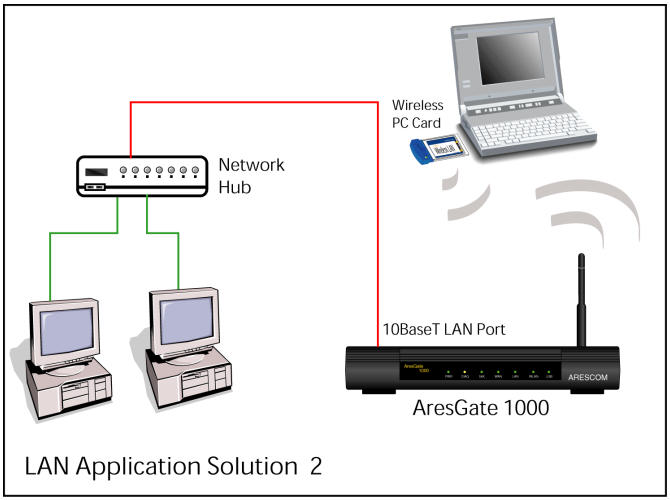
You can easily create a wireless network environment with your AresGate router and wireless devices installed in each one of your PCs and laptops. *AresGate router is compatible with any wireless device that complies with IEEE802.11b standard*.

A. Construct a wireless LAN network.



LAN Application Solution 1

B. Construct a mixed wired and wireless network (Infrastructure Network).



LAN Application Solution 2

Based on the figure above, the AresGate router can connect to the wired LAN through the connection from the 10BaseT LAN port on the AresGate to a network hub, so each wireless client has access to the resources on the network as well as to other clients.

ARESCOM WIRELESS PERIPHERAL PRODUCTS

ARESCOM provides a complete wireless solution to satisfy your needs. You can purchase the following wireless products from ARESCOM website or authorized distributors:

For laptop PCs:

- WL-110: ARESCOM Wireless PCMCIA Card
- WL-210: ARESCOM USB Wireless Adapter

For desktop PCs:

- WL-100: ARESCOM PCI/USB Card
- WL-210: ARESCOM USB Wireless Adapter

2. HARDWARE INSTALLATION

CAUTION!!! Turn off all electronic devices, including your personal computer, before you begin to connect and disconnect cables.

2.1 Setup Instructions

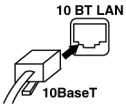
- Choose a location for the AresGate router close to a power outlet and nearby telephone outlet. Preferably, select a convenient location that does not experience too much foot traffic and is away from sunlight.
- It is important to place the AresGate router in the center of all your wireless devices.
- After locating the optimum spot for the router, place the AresGate Router on a level surface – such as a desktop, shelf, or table.
- Place the AresGate router on the predetermined surface, so you can see the back panel for convenient cable connection.

2.2 Antenna Attachment

Step 1. Tightly attach the included external antenna to the antenna connector on the rear panel.

2.3 Connect to the Ethernet

10BaseT LAN Interface Connection



Step 1. Locate your Ethernet cable (included).

Step 2. Attach the Ethernet cable to the **10BT LAN** connector of your AresGate router.

Step 3. Plug the other end of the Ethernet cable to your Ethernet network.

You have 3 options to connect to the Ethernet depending on your network environment:

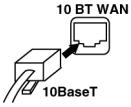
Option 1. **To a single PC:** Attach the included Ethernet cable to the Ethernet port on a PC.

Option 2. **To a hub with uplink port available:** Attach the Ethernet cable to the uplink port on a hub.

Option 3. **To a hub with non-uplink port available:** Attach a **crossover** Ethernet cable (Not included) to the non-uplink ports on a hub.

Step 4. Once the router is powered on, the **LAN** LED on the front panel should lit green to indicate a valid Ethernet connection. If the LAN LED is not lit, repeat steps 1 through 3.

10BaseT WAN Interface Connection



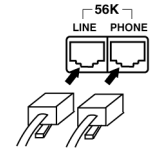
Step 1. Locate your Ethernet cable.

Step 2. Attach the Ethernet cable to the **10BT WAN** connector of your AresGate router.

Step 3. Attach the other end of the Ethernet cable to the Ethernet port of your Cable modem or DSL modem.

Step 4. Once the router is powered on, the **WAN** LED on the front panel should lit green to indicate a valid WAN connection. If the WAN LED is not lit, repeat steps 1 through 3.

2.4 Connect the 56K Analog Modem*



Telephone Cables

Step 1. Plug the included RJ-11 to RJ-11 telephone cable into the **56K Line** port of the AresGate router.

Step 2. Plug the other end of the telephone cable into the telephone outlet on the wall or within your home.

Step 3. Once you successfully establish connection using the 56K modem, the **56K** LED on the front panel should lit green to indicate a valid modem connection (Refer to the 56K MODEM section on how to connect the 56K modem).

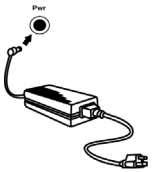
* For AresGate 1000 Pro model only

2.5 Connect the Analog Phone*

Step 1. Plug another telephone cable (not included) into the **56K Phone** port of the AresGate router.

Step 2. Connect the other end of the phone cable to your analog phone or fax machine.

2.6 Connect to the Power Adapter



Step 1. Plug the power adapter into the **POWER** port of the AresGate router.

Step 2. Connect one end of the power cord to the power adapter, and insert the other end of the power cord to the power outlet on the wall.

Step 3. Switch your AresGate router to **ON**.

Step 4. Once the router is powered on, the **PWR** LED on the front panel should lit green to indicate a valid power connection. If the PWR LED is not lit, turn off your router and repeat steps 1 through 3.

* For AresGate 1000 Pro model only

3. CONFIGURING YOUR ROUTER

The AresGate 1000 offers platform-independent HTML based graphical user interface (GUI) configuration, so now you can simply set up your router using your PC's web browser.

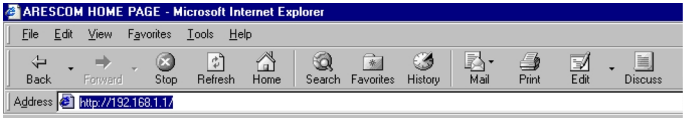
Before you start configuring your router, you **MUST**:

1. Install the TCP/IP network protocol on your PC, then set its IP Address to "**Obtain an IP address automatically**". For more information on installing and configuring TCP/IP, refer to the instructions in the section titled "TCP/IP PROTOCOL CONFIGURATION".
2. Configure your wireless device(s) and set the channel number to "***6***" and SSID to "***arescom***".

The steps below helps you configure your AresGate router on the LAN using the web GUI.

Step 1. Launch a web browser from your computer.

Step 2. Enter the default URL ***http://192.168.1.1*** and press ***Enter***.



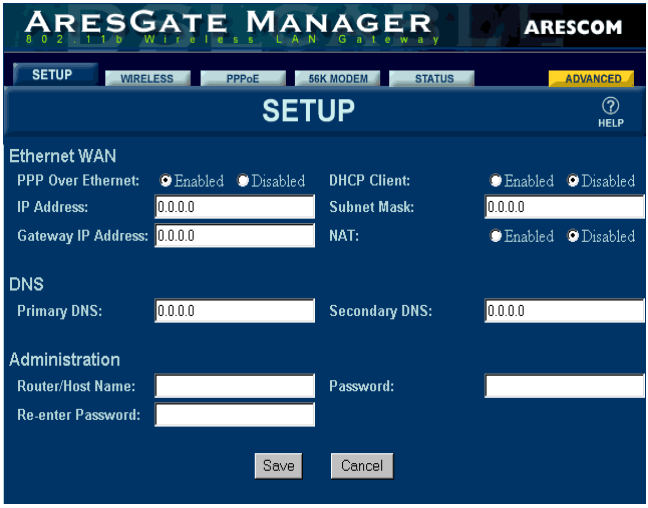
The web browser may take a few seconds to log on to your AresGate router. As you proceed with the configuration, you will notice that the AresGate router's web GUI is divided into 2 sections:

Basic:	Allows you to enter values for a basic router configuration: *SETUP* *WIRELESS* *PPPoE* *56K MODEM** *STATUS*
Advanced:	For users in need of greater control over the AresGate routing capabilities, you can access the optional *Advanced* section: *PORT MAPPNIG* *IP ROURING* *IP FILTERING* *UPGRADE*

* For AresGate 1000 Pro model only

3.1 Basic Configuration

SETUP



A. Click the ***SETUP*** tab on the top.

This page allows you to configure the following parameters:

(1) Ethernet WAN Configuration
(2) DNS IP Addresses
(3) Administration

The **Ethernet WAN** allows you to enter the required values to connect your AresGate router to a remote Ethernet network. These values include PPPoE, DHCP Client information, IP Address, Subnet Mask, Gateway IP Address and NAT information.

PPP Over Ethernet: This feature is provided for those xDSL modem users whose ISPs are using this protocol. To see whether or not you need to select this option, please try connecting the Internet. If you are required to enter a username and password during a dial-up session, then you are already using PPPoE and therefore will need to enable this feature on the AresGate router.
Once you enable the PPPoE feature here, click the ***PPPoE*** tab and enter the ***User Name*** and ***Password*** to complete PPPoE setting.

DHCP Client:	By enabling the DHCP client feature, the router will automatically obtain a dynamic WAN IP Address, Subnet Mask, Gateway IP Address from your ISP. If you have one static IP Address provided by your ISP, then you **MUST** disable the DHCP Client feature first and enter values below.

NOTE: *If you are enabling **PPP Over Ethernet** or **DHCP Client**, then you **DO NOT** need to enter IP Address, Subnet Mask, Gateway IP Address below.*

IP Address:	This is the WAN IP Address of your AresGate router. If you have a static IP Address provided by your ISP, then enter it here.
Subnet Mask:	Enter the WAN Subnet Mask provided by your ISP.
Gateway IP Address:	Enter the router's Gateway IP Address provided by your ISP.
NAT:	Enabling the NAT (Network Address Translation) function allows the router to perform IP-sharing, which means multiple PCs on your LAN with Private IP addresses can share Internet access using one Public IP Address. Disable the NAT function if you are not planning to use the AresGate router for shared Internet access.

In the **DNS** (Domain Name Server) section:

Primary DNS:	Allows you to assign the IP Address of the Primary DNS provided by your ISP.
Secondary DNS:	Allows you to assign the IP Address of the Secondary DNS provided by your ISP.

The **Administration** section allows you to enter a Router Name and Password to ensure maximum administrative security for your router.

Router Name:	**For Cable Modem users:** This is the Computer/Host Name provided by your ISP. Your ISP may request you to enter the name here. **For other users:** Enter a desired router name here.
Password:	This feature provides maximum security for your router by limiting access to users with the correct password only. When you type your password, the name will appear as asterixes (****).

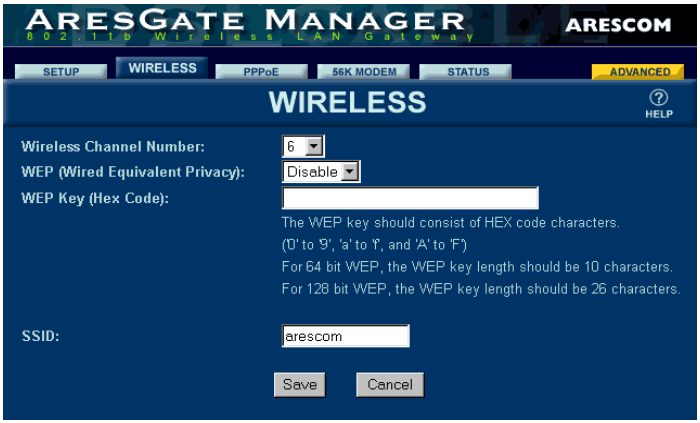
B. Enter a desired ***Router Name*** and ***Password***.

C. Re-enter the password to authenticate its use.

D. Click the ***Save*** button to save the values to AresGate router. If you do not wish to send the configuration to your AresGate router, simply click the ***Cancel*** button.

NOTE: *Once you change your router's password, you are prompted to enter the **User Name** onto the **Enter Network Password** pop-up window to authenticate the change. Simply key in the **Router Name** you entered above.*

WIRELESS



A. Click the ***WIRELESS*** tab on the top.

The Wireless page allows you to configure all the necessary values for the Wireless Access Point in your router. All other wireless devices that want to connect to this router **MUST** use the same values (i.e. Wireless Channel Number, WEP, WEP key and SSID) as the router:

Wireless Channel Number: You can select up to 11 channels to establish wireless LAN connection among different PCs on the network. Only PCs set with the same channel number can communicate with the router (default channel is set at 6).
If you experience lost connection or slow data transfer, then you can try out different channel numbers for the best effect.

WEP (Wired Equivalent Privacy): It is highly recommended that you enable WEP to maximize network security. You can setup a **64-bit** or **128-bit** WEP that encrypts data packages while using wireless LAN.
Once WEP is enabled, entering the WEP Key value below is required.

WEP Key (Hex Code): Allows you to input a hex code up to 26 characters in length (0 to 9, a to f, A to F).
For *64-bit* WEP, the key length is 10 characters.
For *128-bit* WEP, the key length is 26 characters.

SSID: Allows you to enter a SSID (Service Set Identification) name for your router. To communicate, all wireless workstations must share the same SSID name (Default code is "**arescom**").

B. Select a desired wireless channel.

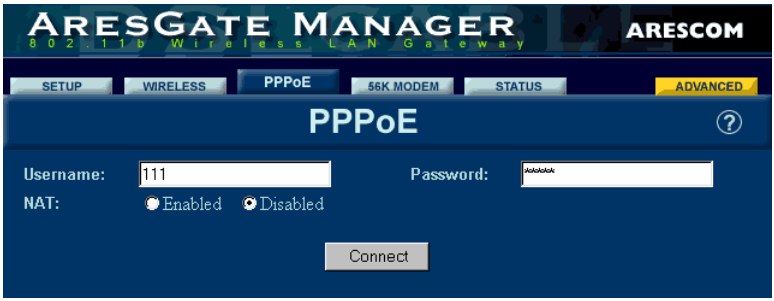
C. Select ***64-bit*** *or* ***128-bit*** for the ***WEP (Wired Equivalent Privacy)*** option to ensure data transfer security.

D. Enter a set of desired ***WEP KEY*** numbers.

E. Enter a desired **SSID** code.

F. Click the ***Save*** button to save the values to AresGate 1000. If you do not wish to send the configuration to your AresGate router, simply click the ***Cancel*** button.

PPPoE



A. Click the ***PPPoE*** tab on the top.

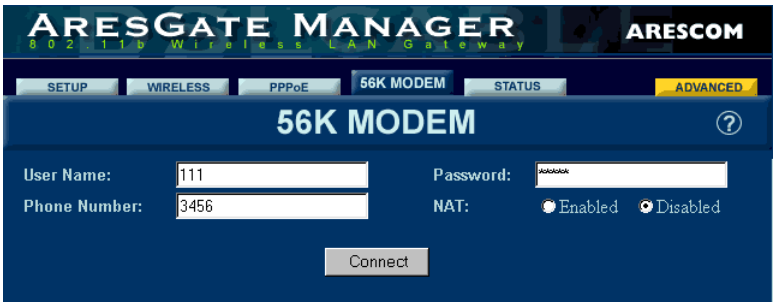
The **PPP Over Ethernet** page needs to be filled out by xDSL modem users whose ISPs are using this protocol. To know whether you need to select this option, please try connecting the Internet. If you are required to enter a username and password during a dial-up session, then you are already using PPPoE and therefore will need to enable this feature on the **SETUP** page.

Username:	The name of the Internet account provided by your ISP.
Password:	The password you use to access your ISP account.
NAT:	Enabling the NAT (Network Address Translation) function allows the router to perform IP-sharing, which means multiple PCs on your LAN with private IP addresses can share Internet access using one public IP Address. Disable the NAT function if you are not planning to use the AresGate router for shared Internet access.

B. To establish a PPPoE broadband connection, enter these values and click the ***Connect*** button. To disconnect an existing PPPoE connection, click the ***Disconnect*** button.

NOTE: *Once you click the **Connect** button, your xDSL service is activated and always **ON**. To surf the Internet, you are not required to run the PPPoE program originally running on your PC.*

56K MODEM*



A. Click the ***56K MODEM*** tab on the top.

You can also use the built-in 56K Modem for shared Internet access:

User Name:	The name you use to access the remote server or ISP.
Password:	The password you use to access the remote server or ISP.
Phone Number:	The primary phone number you dial to access the remote server or ISP. If you need to dial "*9*" to reach an outside line, please insert a comma "*,*" **RIGHT AFTER** the number "*9*". For example, if your ISP phone number is (*734) 765-4321*, then you need to enter "*9,17347654321*".
NAT:	Enabling the NAT (Network Address Translation) function allows the router to perform IP-sharing, which means multiple PCs on your LAN with private IP Addresses can share Internet access using one public IP Address. Disable the NAT function if you are not planning to use the AresGate router for shared Internet access.

B. To establish a 56K connection, enter these values and click the ***Connect*** button. To disconnect an existing 56K connection, click the ***Disconnect*** button.

* For AresGate 1000 Pro model only

STATUS

A. Click the ***STATUS*** tab on the top.

The Status page collects information from various functions and operations of your AresGate router and displays the information within a single page for your convenience. Viewing the overall status of your system makes it easier for you to monitor your router, troubleshoot any operation problems you might encounter, and reset your router's configuration if necessary.

B. To reboot the router, click the ***Reboot AresGate*** button.

NOTE: *Once you click the **Reboot AresGate** button, the router will reset the router configuration to manufacturer default mode.*

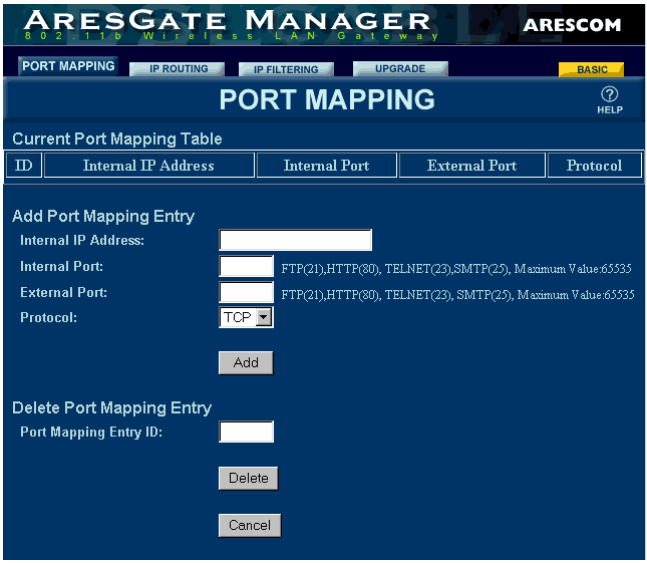
At a single glance, you will find the following router information:

1. **System:** *Router Name*, *Firmware Version*, *Firmware Date*, and *MAC Address*.
2. **Ethernet WAN:** *DHCP Client*, *PPPoE Status*, *IP Address*, *Gateway IP Address*, *DNS IP Address*, *NAT*, and *Ethernet Packets and Bytes Sent* and *Received*.
3. **56K Modem*:** *Connection Status*, *IP Address* data, *Phone Number*, *NAT*, and *IP Packets* and *Bytes Sent* and *Received*.
4. **Wireless LAN:** *Wireless link* and the total number of *Ethernet Packets* and *Bytes Sent* and *Received*.
5. **Ethernet LAN:** *Ethernet Link*, *IP Address*, *Subnet Mask*, *Ethernet Packets* and *Bytes Sent* and *Received*.

* For AresGate 1000 Pro model only

3.2 Advanced Configuration

PORT MAPPING



A. Click on the ***PORT MAPPING*** tab on the top.

Port Mapping allows you to provide certain services (web hosting, FTP server, or Telnet) or applications (PCAnywhere or Blizzard's StarCraft) to the Internet on your LAN. Incoming data packets received with a specific port (external port) can be mapped/routed to the specific application or service (internal port) according to the Port Mapping Table.

Current Port Mapping Table

The Current Port Mapping Table displays the ID (index number), Internal IP Address, Internal Port #, External Port #, Protocol type for each entry. When you click the ***Add*** button, a new Port Mapping Entry will be created.

Add Port Mapping Entry

In the Add Port Mapping Entry section, you can enter values for each of the following items:

Internal IP Address: The IP Address for the PC running the special service(s) within the router's private subnet. It is recommended to assign a permanent private IP Address (in the range of 192.168.1.2 - 192.168.1.254) to the PC because the internal DHCP server is always ON.

NOTE: *Each time you assign a permanent IP Address to your network PC, reboot your AresGate router so the DHCP server can reserve it.*

Internal Port: The port number of the PC running the special service(s) within the router's subnet. A port is used to distinguish between requests for different services, such as 21 is for FTP, 80 is for HTTP, 23 is for Telnet and 25 is for SMTP, etc.

External Port: The port number associated with the Dial-Out IP Address. A port is used to distinguish between requests for different services (please refer to *Internal Port* for more details).

Protocol: The protocol type used depending on the type of special service or application you intend to provide. Currently, the router supports **TCP** and **UDP** protocols.

Delete Port Mapping Entry

Port Mapping Entry ID: To delete an entry from the port mapping table above, enter the associated ID number and click the ***Delete*** button.

B. If you do not wish to send the configuration to your AresGate router, simply click the ***Cancel*** button.

An example on how to set up a WEB hosting service:

Internal IP Address:	Enter ***192.168.1.100*** (Make sure the WEB server's IP Address is 192.168.1.100 and Subnet Mask is 255.255.255.0).
Internal Port:	Enter ***80***.
External Port:	Enter ***80***.
Protocol:	Select ***TCP***.

IP ROUTING

A. Click the ***IP ROUTING*** tab on the top.

IP Routing designates the AresGate router which path or route to use when forwarding data packets. You will need to create an IP route when there are other routers on your LAN.

Current IP Routing Table

The Current IP Routing Table displays the index number (ID), Destination IP Address, Subnet Mask, Gateway IP Address, and Interface for each entry. When you click the ***Add*** button, a new IP Route is created.

Add Route

In the Add Route section, you can enter values for each of the following items:

Destination IP Address: The IP Address of where data packets are to be sent.

Subnet Mask: The subnet mask of the Destination IP Address.

Gateway IP Address: The IP Address of the gateway on the LAN where data packets are to be sent.

	The Gateway IP Address can only be set if the route uses the LAN interface.
Interface:	Determines whether data packets are to be sent through the Ethernet_LAN, Ethenet_WAN, or Modem.

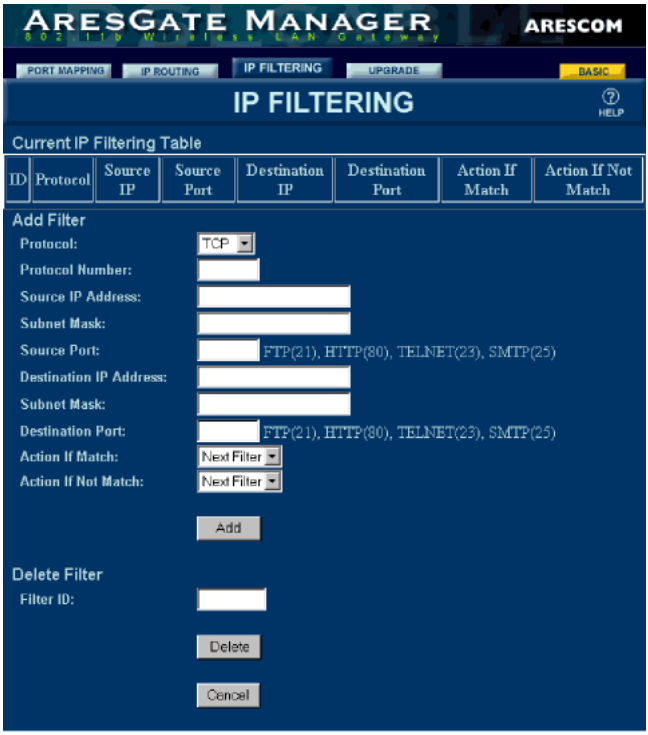
Delete Route

Route ID:	To delete a route from the routing table, enter the associated ID number and click the ***Delete*** button.

B. If you do not wish to send the configuration to your AresGate router, simply click the ***Cancel*** button.

C. If you wish to update a pre-existing route, please delete the original route and add a new route.

IP FILTERING



A. Click the ***IP FILTERING*** tab on the top.

IP Filtering allows you to define up to 16 sequential filters, and each filter can be set to examine, or filter, both source and destination data packets.

Current IP Filtering Table

The Current IP Filtering Table displays the Filter ID, Protocol, Protocol Number, Source/Destination IP, Source/Destination Port# for each filter, as well as the action taken when the filter conditions are matched or not matched. When you click the ***Add*** button, a new IP filter is created.

Add Filter

In the Add Filter section, you can enter values for each of the following items:

Protocol:	Currently, AresGate 1000 supports TCP, UDP, ICMP, or Other. If you select Other, then you need to specify the following Protocol Number field.
Protocol Number:	The associated number for the desired protocol. You need to enter a number if you have selected *Other* in the previous *Protocol* field.
Source IP Address:	The IP Address of the device sending the data packet.
Subnet Mask (Source):	The subnet mask of the device sending the data packet.
Source Port:	The TCP/IP port of the service, such as FTP, the web (HTTP), Telnet, or SMTP, that sends the data packet.
Destination IP Address:	The IP Address of the device receiving the data packet.
Subnet Mask (Destination):	The subnet mask of the device receiving the data packet.
Destination Port:	The TCP/IP port of the service, such as FTP, the web (HTTP), Telnet, or SMTP, that receives the data packet.

The AresGate router examines each entering data packet with the above parameters to determine if they match (true) or do not match (false).

For data packets that match or do not match the IP filtering conditions, you can set an **Action If Matched** or **Action If Not Matched** parameter to determine the data packet's destination:

Pass:	Automatically pass through the router.
Restrict:	Pass if only there is an available connection.
Discard:	Packet is blocked and discarded.
Pass to next filter:	Packet goes to the next filter in sequence.

Delete Filter

Filter ID:	To delete an IP filter from the filtering table, enter the associated ID number and click the ***Delete*** button.

B. If you do not wish to send the configuration to your AresGate router, simply click the ***Cancel*** button.

UPGRADE

A. Click the ***UPGRADE*** tab on the top.

The Upgrade feature allows you to upgrade your router to the latest firmware version. The firmware can be downloaded to the router using FTP protocol.

Please visit ARESCOM website at www.arescom.com for the FTP Server IP Address and firmware File Name **BEFORE** you upgrade the firmware.

B. Enter the following information if you want to download a firmware to your router:

FTP Server IP Address: The IP Address of the FTP server that contains the firmware.

File Name: The file name of the router firmware that you want to download.

C. Click the ***Save*** button to save the values to AresGate 1000. If you do not wish to send the configuration to your AresGate router, simply click the ***Cancel*** button.

4. TCP/IP PROTOCOL CONFIGURATION

You must install TCP/IP protocol on each workstation on your LAN so they can communicate with the AresGate router.

Your AresGate DHCP Server is already enabled and will assign IP Address (with IP pool addresses starting from 192.168.1.2 to 192.168.1.254), Subnet Mask, Gateway IP Address, and DNS to your PCs on the LAN. The AresGate router is configured with a **default** LAN IP Address of **192.168.1.1** and Subnet Mask of **255.255.255.0.**

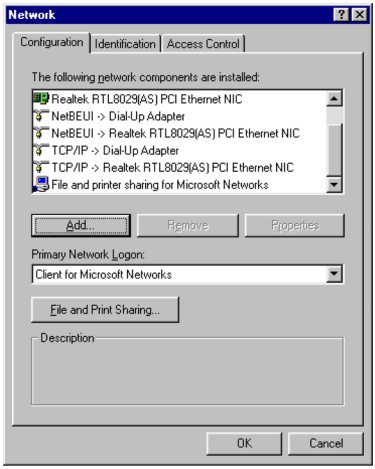
NOTE: *To ensure that your router will assign an IP Address to your PCs, you must set them to obtain IP addresses automatically.*

4.1 Installing TCP/IP in Windows® 95/98/Me

Step 1. Click on ***Start*** -> ***Settings*** -> ***Control Panel***.

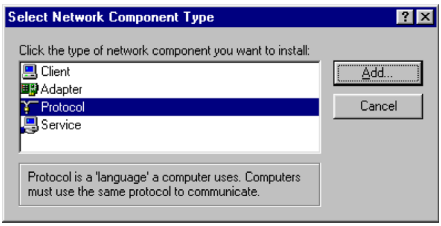
Step 2. Double-click on the ***Network*** computer icon.

Step 3. Click the ***Configuration*** tab. If you see *TCP/IP* listed in the **Network** window, you already have TCP/IP on your Windows 95/98/Me. Skip to Step 8.



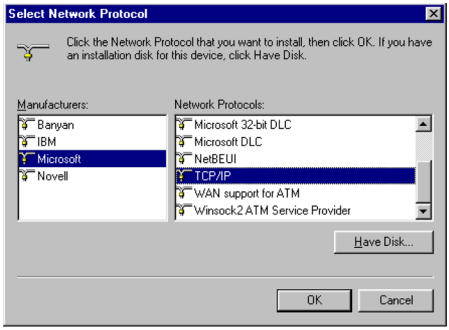
Step 4. From the ***Configuration*** tab, click ***Add***.

Step 5. Select ***Protocol*** and click ***Add***.



Step 6. Choose ***Microsoft*** -> ***TCP/IP*** and click ***OK***.

Step 7. Check to see if *TCP/IP* is listed in the **Network** window. If you do not see TCP/IP listed, then you have not installed the protocol. Repeat steps 4 - 6.

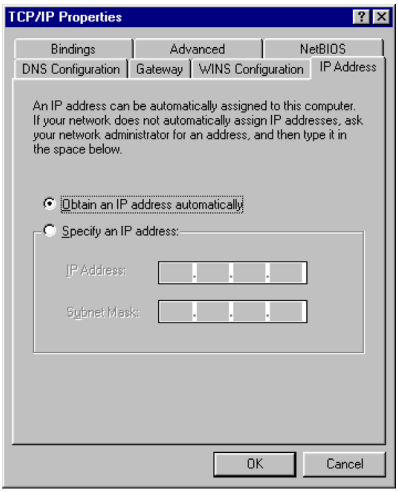


Step 8. From the ***Configuration*** tab, select ***TCP/IP -> XXXX Ethernet Adapters*** ("XXXX" is the maker of your Ethernet card) and click the ***Properties*** button.

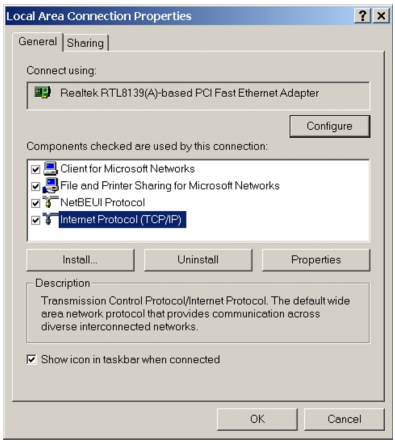
Step 9. Select the ***IP Address*** tab.

Step 10. Click the radio button next to ***Obtain an IP Address automatically***.

Step 11. Click ***OK*** and restart your PC.



4.2 Installing TCP/IP in Windows® 2000



Step 1. Click on ***Start*** -> ***Settings*** -> ***Control Panel***.

Step 2. Double-click ***Network and Dial-up Connections***.

Step 3. Double-click ***Local Area Connection***.

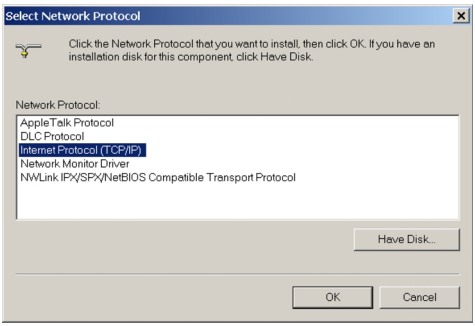
Step 4. In the ***Local Area Connection Status*** window, click on the ***Properties*** button.

Step 5. If you see the *Internet Protocol (TCP/IP)* listed in the ***Local Area Connection Properties*** window, you already have TCP/IP on your Windows 2000. Skip to Step 10.

Step 6. From the ***General*** tab click ***Install***.

Step 7. In the ***Select Network Component Type*** window, select ***Protocol*** and click ***Add***.

Step 8. Choose ***Internet Protocol (TCP/IP)*** from the Network Protocol list box, then click ***OK***.



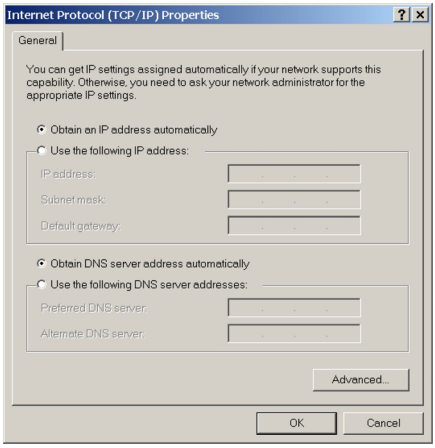
Step 9. Check to see if ***Internet Protocol (TCP/IP)*** is listed in the Local Area Connection Properties window. If you do not see Internet Protocol (TCP/IP) listed, then you have not installed the protocol. Repeat steps 6 - 8.

Step 10. From the ***General*** tab in the Local Area Connection Properties window, select ***Internet Protocol (TCP/IP)*** and click ***Properties***.

Step 11. Click the radio button next to ***Obtain an IP Address automatically***.

Step 12. Click the radio button next to ***Obtain DNS server address automatically***.

Step 13. Click ***OK*** and restart your PC.

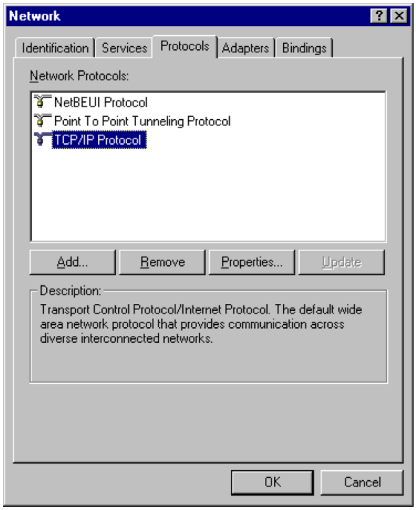


4.3 Installing TCP/IP in Windows® NT

Step 1. Click on ***Start*** -> ***Settings*** -> ***Control Panel***.

Step 2. Double-click the ***Network*** computer icon.

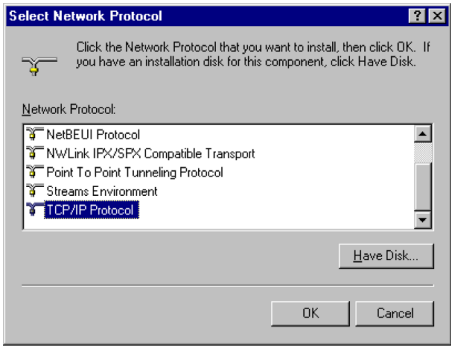
Step 3. Click the ***Protocols*** tab. If you see **TCP/IP Protocol** listed under Network Protocols, you already have TCP/IP on your Windows NT. Skip to Step 7.



Step 4. From the ***Protocols*** tab click ***Add***.

Step 5. Select ***TCP/IP Protocol*** and click ***OK***.

Step 6. Check to verify that *TCP/IP Protocol* is listed under Network Protocols, then click ***OK***. If you do not see TCP/IP listed under Network Protocols, you have not installed TCP/IP. Repeat steps 4 - 5.



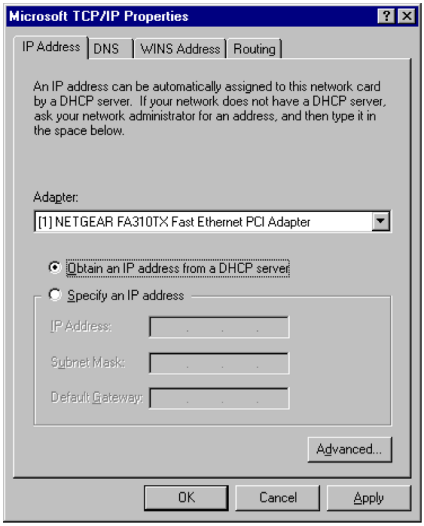
Step 7. From the ***Protocols*** tab, select ***TCP/IP Protocol*** listed under Network Protocol and click ***Properties***.

Step 8. Select the ***IP Address*** tab.

Step 9. Click the radio button next to ***Obtain an IP Address from DHCP Server***.

Step 10. Click ***Apply***.

Step 11. Click ***OK*** and restart your computer.



5. TROUBLESHOOTING

This section is designed to answer some of the questions you might have while operating the AresGate router. Read each heading carefully to find the solution to your problems.

5.1 WAN Link LED Flashing

- Make sure the Ethernet cable from the xDSL/Cable modem is plugged into AresGate router's 10BT WAN port and that both units are powered on.
- Make sure you are using the proper Ethernet cable.
- Reboot your AresGate router.
- You may review any additional documentation.

5.2 Cannot Connect to the AresGate Router

- Verify that the AresGate router is properly installed and is powered on. Once power is on, check your router to see if the LAN LED is solid.
- Make sure you are using the proper Ethernet cable.
- If you are using a wireless device in your PC, its channel number and SSID needs to be ***6*** and ***arescom***, respectively.
- Make sure you set the PC's IP Address to "***Obtain IP address automatically***".
- If you specify a static IP Address in your PC, make sure your PC and AresGate router are on the same subnet. The default LAN IP Address of the AresGate router is **192.168.1.1** with a Subnet Mask of **255.255.255.0**. Your PC should be using an IP Address within the range of **192.168.1.2** to **192.168.1.254**, a Subnet Mask of **255.255.255.0**, and a Gateway pointing to the AresGate LAN IP Address **192.168.1.1.**

5.3 Cannot Connect to the Wireless Lan Interface

- Verify that the AresGate router is properly installed and is powered on.
- Make sure that your included external antenna is securely attached to your AresGate router.
- Make sure that you have set the same wireless channel number, SSID, and WEP for both the router and the wireless device.
- Verify that you have properly installed your wireless LAN card driver into your PC or laptop.
- Test out your wireless LAN connection at close distance first, with no obstacles between your wireless device and the AresGate router.

A. GLOSSARY

When you order Internet service, your ISP will give you a large amount of information. Definitions of common configuration terms are available below. Please note that terminology used by various remote networks may vary.

AP (Access Point) - A hardware device, or software used in conjunction with a computer, that serves as a communications “hub” for wireless clients and provides a connection to a wired LAN. An AP can double the range of wireless clients and provide enhanced security.

Ad-Hoc Mode - A client setting that provides independent peer-to-peer connectivity in a wireless LAN. An alternative set-up is where PCs communicate with each other through an AP (see also **Infrastructure Mode**).

ADSL (Asymmetric Digital Subscriber Line) - Currently the most common DSL technology available that provides asymmetrical bandwidth over a single copper wire pair (over your regular telephone line). The downstream bandwidth from the network to the subscriber is greater than the upstream bandwidth from the subscriber to the network. ADSL speeds typically run from 1.5 Mbps to 8 Mbps downstream and 64 Kbps to 640 Kbps upstream.

Bandwidth - The amount of data that can be transmitted by the network “information highway”, used as an indication for speed of data transmission. An Ethernet link is capable of moving 10 million bits of data per second.

Bit - The term used to refer to a single unit of data in digital data communications. It takes 8 bits to make 1 byte, which is a unit of measurement for computer data.

Bps (Bits per second) - Refers to the unit of measurement used for data transmission speeds over a data communication link, e.g. ADSL runs at 6 Mbps (MegaBits per second).

Bridge - A hardware device that passes packets between multiple network segments using the same networking protocol to connect the different network segments. A DSL modem is a bridge that passes DSL from one network segment to another. Bridge operates at the hardware layer and has no routing capabilities.

Broadband - Any high-bandwidth (see also **Bandwidth**) data communication technology that runs at speeds of 200 Kbps or more and allows combined transmission of voice, data, and video over a single physical connection. Broadband is in contrast to narrowband such as traditional 56K analog modem. DSL, Cable, wireless, and satellite technology are all different types of broadband technology.

Byte - A unit of data equaling to 8 bits (1 Byte = 8 bits).

Cable Modem - A type of modem that connects your PC to the Internet via your local CATV (Cable TV service) provider. Cable modems promise bandwidth rates of 40Mbps downstream and 2.5Mbps upstream. However, since cable service must be shared with all subscribers in the region, actual bandwidth for an individual cable user varies, depending on the number of users online, and is usually around 1Mbps.

DHCP (Dynamic Host Configuration Protocol) - An Internet protocol that allows the DHCP server to dynamically assign IP addresses to any client workstation (any device connected to your LAN, such as a PC) for a set period of time and then sends them back so that they can be reassigned to other workstations. This feature saves the ISP and Network Managers from having to manually configure IP addresses for each PC on the LAN.

DSL (Digital Subscriber Line) - A new kind of digitized data communication technology that delivers high-speed, two-way Internet access over the traditional copper wire telephone line. DSL technology allows the user to share their phone line with their DSL line, providing an “always-on” Internet connection that runs at speeds from 1 Mbps to 52 Mbps depending on the distance between the customer site and the CO. There are many type of DSLs called xDSL, and the most commonly available DSL line is the ADSL (See **ADSL**), which supports up to 6 - 8Mbps downstream. Other types of DSL include SDSL, IDSL, HDSL, VDSL, RADSL, etc.

DSL technology can be accessed by connecting a DSL modem at the customer premise to the telephone line and computer. At the end of the line, DSL-enabling equipment at the CO, such as a DSLAM, aggregates or consolidates all the customer DSL lines and routes the data traffic onto a backbone network for distribution to the ISP or corporate networks.

DNS (Domain Name System) - A mechanism that translates host domain names into its numeric IP Address and vice-versa. A domain name is an easy-to-remember nickname for numerical IP addresses required by a computer, such as janedoe@arescom.com.

Encapsulation - The encapsulating or enclosing data within a particular IP header. Sometimes the entire frame from one network is placed in the header used by the data link layer protocol of another network.

Encryption - A specific algorithm used to encrypt or encode the data so that it becomes unreadable to unauthorized users that do not know the decryption key. A good example of encryption technology is WEP (Wired Equivalent Private).

Ethernet - Most popular LAN (Local Area Network) technology that uses CSMA/CD (Collision Detection) and transfers data between workstations over a variety of cable types at 10Mbps, also called 10BaseT. Most Ethernet LANs use twisted pair 10BaseT cables and support both Ethernet as well as Fast Ethernet at 100Mbps (100BaseT).

Firewall - A security device (either hardware, software, or a combination of both) that selectively blocks out or filters unwanted IP traffic from a public network. Firewall allows the private LAN network to be invisible to the public network outside, preventing intrusion from unauthorized users.

Hub - A hardware device that repeats all data traffic to all CPE (Customer Premises Equipment) ports. A hub functions as the center of a LAN and all other network devices on the LAN, including PCs, printers, DSL modem or routers, are connected to the hub through cabling.

Infrastructure Mode - A client setting providing connectivity to an AP. As compared to Ad-Hoc Mode, where PCs communicate directly with each other, clients set in Infrastructure Mode all pass data through a central AP. The AP not only mediates wireless network traffic in the immediate neighborhood, but it also provides communication with the wired network (see also **Ad-Hoc Mode** and **Access Points**).

Internet - A massive worldwide network of computer networks interconnecting thousands of computers and networks around the world and readily accessible from any computer with a modem or router connection and the corresponding software.

IP (Internet Protocol) - A protocol standard for the Internet. A kind of Internet software that keeps track of all the addresses on the Internet for different nodes, forwards outgoing IP traffic, and recognizes incoming IP traffic.

IP Address - numeric address assigned to each machine on the Internet. Consists of four sets of one, two, or three octal digits separated by periods.

ISP (Internet Service Provider) - The telecommunication company that provides Internet service for the subscriber. The ISP can be a telephone company, a CLEC or ILEC, or any other company that provides Internet access to the end user such as AOL, Earthlink or MSN.

LAN (Local Area Network) - A collection of privately owned, interconnected computers within a confined service area.

PPPoE (Point to Point Protocol over Ethernet) - It is a protocol that allows a computer to access the Internet using a dial-up phone line and a high-speed modem. Relying on two widely accepted standards, Ethernet and point to point protocol (PPP), it makes high speed access easier to use for end consumers, and more seamless to integrate into the existing infrastructure for carriers and ISPs.

WEP (Wired Equivalent Privacy) - WEP data encryption is defined by the 802.11 standard to prevent (i) access to the network by “intruders” using similar wireless LAN equipment and (ii) capture of wireless LAN traffic through eavesdropping. WEP allows the administrator to define a set of respective “Keys” for each wireless network user based on a “Key String” passed through the WEP encryption algorithm. Access is denied by anyone who does not have an assigned key.

B. PRODUCT INFORMATION

B.1 FCC Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Use only shielded cables to connect I/O devices to this equipment.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

B.2 FCC Part 68 Requirements

This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number [REN] for this equipment. If requested, this information must be given to the telephone company.

The REN is used to determine the maximum number of devices connected to your telephone line that will ring in response to an incoming call. In most but not all areas, the total REN of devices connected to a line should not exceed five [5.0]. To find out the total permitted in your area, contact your local telephone company.

If your telephone equipment cause harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you and opportunity to maintain uninterrupted telephone service.

If you experience trouble with this product, please contact ARESCOM, Inc. for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

B.3 Tech Support

For assistance or inquiries on how to install or operate your AresGate router, feel free to contact the ARESCOM Tech Support team using any one of the following means below:

Telephone:	(510) 445-3638
Fax:	(510) 445-3636
E-mail:	support@arescom.com
Web:	www.arescom.com