

**EUT : Internet Access Server**

**FCC ID : NYTAGS-CA3XX**

**ARGUS TECHNOLOGIES CO., LTD.**

**USER'S MANUAL**



# Table of Contents

1 - Introduction .....	1
Features and Benefits .....	3
Some IAS FAQs .....	4
2 - Setup Wizard .....	5
3 - Net-Device Manager .....	15
4 - Net-Device Monitor .....	43
5- Setting up Your IAS Clients .....	49
6 - Troubleshooting .....	58
Glossary .....	65

General Settings .....	16
Modem Settings .....	19
Writing a Login script .....	22
Dial-up/Hang-up Settings .....	26
DHCP Server .....	29
Routing Table .....	31
Virtual Server Mapping .....	34
Client Filter Settings .....	37
Server Name and Password .....	38
Save Settings to File .....	39
Load Settings .....	40
Upgrade Firmware .....	41
General Diagnostic .....	42

### IAS Features and Benefits

- Built-in **DHCP** server can automatically assign your network clients their IP information and gateway.
- **Dial-on-Demand** eliminates the need for dial-up utilities and also dials-out only when needed saving on phone and ISP charges
- **Idle-Time out** automatically disconnects the connection if there has been no traffic for a set period of time
- **Flash ROM** allows firmware to be easily upgraded
- **Internal Firewall** prevents unauthorized access to your network
- **Client Filter** lets you decide which clients on your network are allowed access to which services (Internet, E-mail, etc.).
- **Virtual server** allows you to setup your own web or FTP server. Also provides support for Internet Telephony, Chat and Video Conferencing.
- **460Kbps baud rate** easily supports 128Kbps ISDN TAs or 56Kbps analog modems.
- If you have a multi-port model of the IAS that connects to more than one modem:
  - 1) The **MPPP** function can let you bundle multiple channels together so that you can, for example, use two modems to download one web page getting an unprecedented speed of Internet Access.
  - 2) To save on costs, the optional **Bandwidth-on-Demand** feature will dial-up the multiple modems or ISDN TAs only when needed.

### Some IAS FAQs

It's an IA... who?



- Q:** Can the IAS support both dynamic and fixed IP Addresses?  
**A:** Yes, The IAS supports both dynamic and fixed IP addresses.
- Q:** How many simultaneous sessions can the IAS handle?  
**A:** Each IAS serial port can simultaneously handle 16 FTP plus 32 others (Telnet, mail etc.)
- Q:** How many simultaneous clients can the IAS handle?  
**A:** Each serial port on the IAS can handle 32 simultaneous clients
- Q:** How many workstations on a LAN can the IAS handle?  
**A:** The IAS can handle up to 253 workstations on your LAN
- Q:** Can the IAS be used with Novell or other Networks?  
**A:** Yes. For the IAS to work, TCP/IP protocol just needs to be installed on client computers. The computers don't have to interact with Novell or any other servers to access the IAS.

**Please Set the device's IP Address and name**

The next thing you must do is give your IAS an IP address on your network. This is **NOT** the IP address from your ISP but the local, internal LAN IP address.

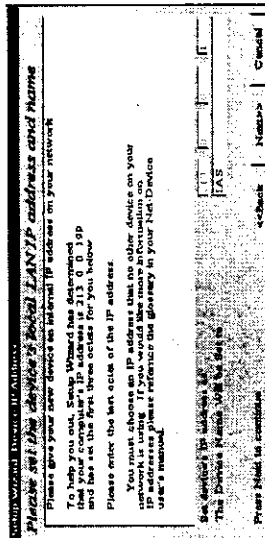
The first three octets of every device or computer's IP address on your network should be the same. Setup Wizard will help you by automatically detecting the IP address of your computer and set the first three octets for you. You need only decide the last octet.

If you wish, here you can also change the name of your IAS to something else. This name is for your personal use only and can be anything you wish.



**What is an IP address and how does it work?**

Please see the IP Addresses entry in the Glossary at the back



**NOTE!** Please pick an IP address that won't conflict with any other PCs or devices, etc. on your network.



.....Press Next to Continue

**Please input your ISP Information for Internet Access**

The next thing you must do is input your ISP (Internet Service Provider) information which will be used to dial-up and login to your ISP when your clients use their Internet applications.

**Telephone Number**

Enter your ISP's telephone number in the Telephone Number field.



**Note!**

If in your office or company you must dial a number to get an outside line (For example this is often the number "9" or "0"), you should enter the number plus a "w" which will instruct the IAS to wait until a dial-tone is received before dialing. For example the phone number 555-2323 which uses 9 to get an outside line would be entered as 9w555-2323. The IAS also support commas which function as delay variables. So our example number could also be entered as 9,,5552323. Each comma will provide around a 3-4 second delay.



### 3 - Net-Device Manager

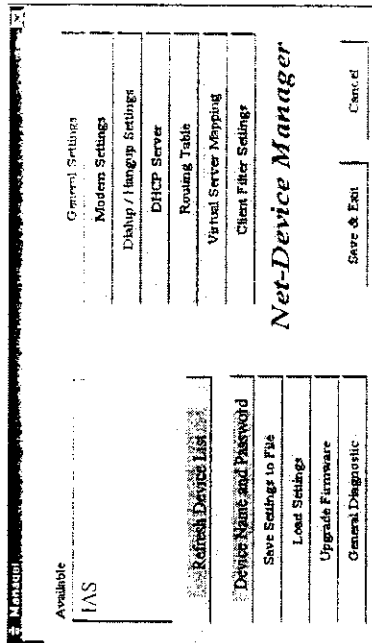
Net-Device Manager is the main program used to configure all the settings of your IAS.

**Note!**

If you like using on-line help more than following along with the manual, most of the screens in Net-Device Manager have a **Help** button that will give you a detailed explanation of what needs to be entered in each field.

### To Run Net-Device Manager from your desktop

On the Windows 95/NT Start menu point to **Programs**, then to **Net-Device** and select **Manager**.



After you have entered **Net-Device Manager**, it will automatically check your network for an available IAS which will be displayed in the **"Device List"**. You can click the **"Refresh Device List"** button to update this list.

### General Settings

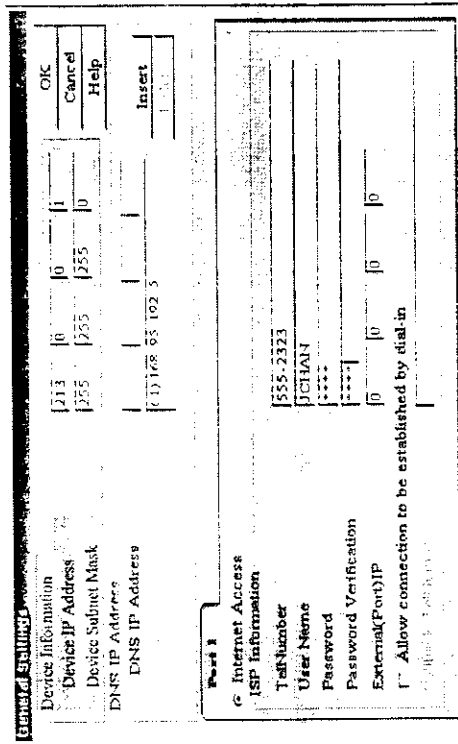
General Settings contains all the major settings of your IAS. This includes IP information, DNS IP Addresses and ISP information for dial-up Internet Access. Most of the information displayed here was entered in Setup Wizard and does not need to be entered again.

**How?**

*How can I input a 2<sup>nd</sup> backup ISP?*

You need to use a login script

Please see Section 3 - Net-Device Manager : Modem Settings



### Device IP Address

The IP address of your IAS is the unit's LAN Address. In our example network the IP address of **213.0.0.1** that we gave the IAS in *Setup Wizard* is displayed here.

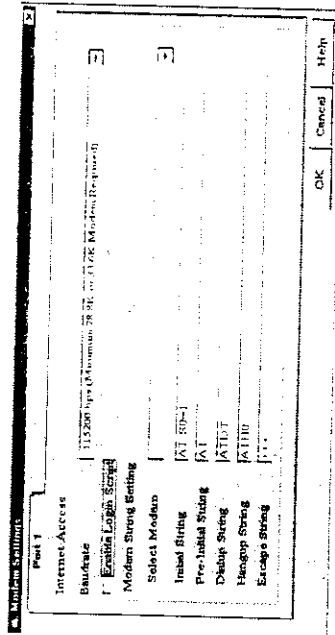
**What?**

*What is an IP address and how does it work?*

Please see the **IP Addresses** entry in the Glossary at the back

### Modem Settings

The Modem Settings lets the serial port(s) on your IAS know how to communicate with the attached modem(s) or ISDN TA(s).



### Baudrate

The baudrate that you entered in Setup Wizard will be displayed here.

#### Note!

The absolute maximum you should set the baudrate for a given port on your IAS is 4 times the speed of your modem. If you set the baudrate too high the IAS may not be able to dial-up a connection. For example if you have a 14.4Kbps modem, the highest you should set the baudrate is 57.6Kbps. You should also be aware of the fact that since some ISP connections and phone lines are not of the greatest quality, this theoretical maximum speed is not attainable and you should set the baudrate at a lower speed.

### Select Modem and Modem String Setting

The most important modem string is the initial string because the IAS uses it to establish communication with your modem or ISDN TA. The modem initial string displayed here was configured automatically when you selected your modem or ISDN TA in Setup Wizard. If your modem is not listed in the Modem Selection List, the **Standard Modem** selection will work with most modems.



### ISDN TA Setup

!!! Extremely Important !!!

Unfortunately, unlike most modems, ISDN initial strings vary between different ISDN TAs and there is no "Standard ISDN TA" initial string. If your ISDN TA is not listed in the modem selection list you must find out what your ISDN TA initial string is. Your ISDN TA's initial string should be listed in your ISDN TA user's manual. There are probably many initial strings listed for your ISDN TA. The one you are looking for is **Asyn-to-Syn PPP** (Asynchronous to Synchronous PPP). You can enter this initial string if you would like to use only one channel of your ISDN TA. If you would like to bundle both channels of your ISDN TA together, you need to use a different initial string called **Multilink-PPP**. For example, the initial strings for a Zyxel Omnimet ISDN TA are:

- 1) **ATB40**: Asyn-to-Syn PPP initial string
- 2) **AT&J3**: Multilink-PPP initial string

You should also verify that your ISDN TA supports the Dial-up string **ATDT**. Most ISDN TAs will support **ATDT** and usually the rest will support **ATD** or **ATDI**.

Please also note that to bundle the two channels of your ISDN TA together, you must enter the two phone numbers in the **Telephone Number** field of the Modem settings menu. See **Section 3 - Net Device Manager : Modem Settings**.

**Step B) Get Login Script Information**

Because every ISP has a different interface screen when logging in, you must check to see when and how your ISP requests information from you. The IAS uses PPP user service so when logging into your ISP please find out the selection for PPP Service.

**Note!**

You can get your ISP interface log-in screen by doing a simple dial-up connection using the Dial-up Networking utility in Windows 95. Your Windows 95 Dial-up Networking folder is located in the My Computer icon.

For example, the screen below shows the opening display screen for an ISP called "HINET". The important parts of the screen where the ISP requests information are highlighted.

Annex Command Line Interpreter \* Copyright  
(C) 1988, 1995 Xylogics, Inc.

Checking authorization, Please wait...  
Enter username: JChan  
Enter password: \*\*\*\*\*

Last login: Sat Nov 15 12:20:53 1997 on  
168.95.95.195/42 (022:03/001:43)  
permission granted

(Welcome to Hinet)

\*\*\*\*\*

- 1. PPP users service
- 2. SLIP users service
- 3. Telnnet service
- 4. Exit

( Please key-in your choice ) ==> 1

....Switching to PPP.

**Step C) Make your login Script**

Below are two examples of the login scripts for our example ISP. On the left is the actual inputted login script. On the preceding page we highlighted the important parts that you needed to note which are again highlighted below where they are used.

**Example 1: Script for Normal Reliable ISP**

Login Script	Meaning of Each Login Script Command
Send "ATZ"	Resets modem
Send "AT S0 = 1"	Sends initial string "AT S0 = 1" to modem
Send "ATDT 5552121"	Dials phone number 555-2121
Wait "CONNECT"	Waits for ISP to send reply "CONNECT"
Wait "username:"	Waits for ISP to send reply "username"
SH "Jchan"	Sends the user- name "Jchan" to ISP
Wait "password:"	Waits for ISP to send reply "password"
Send "1234"	Sends password "1234" to ISP
Wait "====>"	Waits for ISP to send reply "====>"
Send "1"	Selects option 1 (PPP) for this ISP
Go	Starts PPP mode

**Example 2: Script for Unreliable ISP (Redial until connected)**

#	Login Script	Meaning of Each Login Script Command
1	Send "ATZ"	Resets modem
2	Send "AT S0 = 1"	Sends initial string "AT S0 = 1" to modem
3	Send "ATDT 5552121"	Dials phone number 555-2121
4	Wait "CONNECT" * 2	Waits for ISP to send reply "CONNECT". If not will go back to line 2 to re-dial
5	Wait "username:" * 12	Waits for ISP to send reply "username". If no response will go to line 12
6	Send "Jchan"	Sends the username "Jchan" to ISP
7	Wait "password:"	Waits for ISP to send reply "password"
8	SH "*****"	Sends password "*****" to ISP
9	Wait "====>"	Waits for ISP to send reply "====>"
10	Send "1"	Selects option 1 (PPP) for this ISP
11	Go	Starts PPP mode
12	Hangup	Hangs up Modem
13	Jump 2	Goes back to line 2 to re-dial



### Multiple-port Dial-up options

If you have a single port IAS you can skip this section. If your IAS can connect to more than one modem or ISDN TA you have multiple options that you can use to regulate how and when your network clients access the multiple ports. You must first choose between two options; whether to use ML-PPP or not use ML-PPP.



#### What is ML-PPP?

Please see the MLPPP entry in the Glossary at the back

#### Note!

The ML-PPP function mentioned in this chapter has nothing to do with bundling the two channels of your single ISDN TA together. It is for bundling the serial ports of your IAS into one channel. To bundle the two channels of a single ISDN TA together please refer to Section 3 - Net Device Manager : Modem Settings.

#### Option A

### Use ML-PPP

Your ISP must support ML-PPP in order to use the ML-PPP function of the IAS. If your ISP supports ML-PPP and you wish to use it, you need to choose what kind of ML-PPP you want to use.

#### 1) Bandwidth-on-Demand

This selection will start ML-PPP for all serial ports after the bandwidth on the first port is saturated.

#### 2) Dial-up a new port after number of clients equals \_\_\_\_\_

This selection will start ML-PPP for all serial ports after the number of clients using the first port for Internet Access equals a number of your choice.

### 3) Always Use ML-PPP

This selection will give your clients the fastest connection every time. ML-PPP will always be used starting when the first client accesses the IAS.

#### Option B

### Don't Use ML-PPP

If you would rather not use ML-PPP or your ISP does not support it you can choose between three options:

#### 1) Bandwidth-on-Demand

If Internet and phone line costs are expensive you can select this option to keep costs down. This option will dial-up a new connection through an unused port when an existing connection's bandwidth is already saturated.

#### 2) Dial-up a new port after number of clients equals \_\_\_\_\_

With this option the IAS will dial-up a new connection through an unused port for the next client when the number of clients using an existing connection reaches a certain number.

#### 3) Always direct clients to an unused port first.

If using the Internet for your company comes at a flat rate or if costs do not matter this is the option for you. It will ensure that everybody using the IAS gets the fastest non-ML-PPP connection possible.

### Routing Table

The routing table lets the IAS know about other networks that are part of your LAN. If there are no routers on your network you can skip this section.

#### What is a router?

Please see the **Router** entry in the Glossary at the back

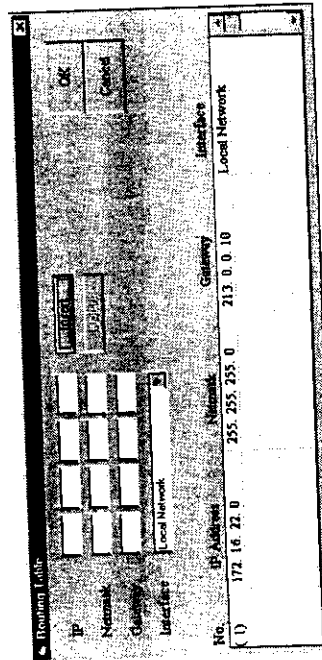
For each router on your network:

- 1) Enter the IP address and Subnet Mask of the Network you wish to route to. In our example below, our second network has IP addresses of "172 . 16 . 22 . x ". We have thus entered the IP address "172 . 16 . 22 . 0" and a netmask of 255 . 255 . 0 . 0. The last digit " 0 " on the subnet mask defines the subnet of your network.
- 2) Enter the **Gateway** (IP address) of your network's router. Usually a router has two IP addresses; one for each side of the two networks that it routes between. You should enter the router's IP address that is on the same side as your IAS. In our example the IP address of our router is "213 . 0 . 0 . 10"

- 3) Set the Interface to **Local Network**

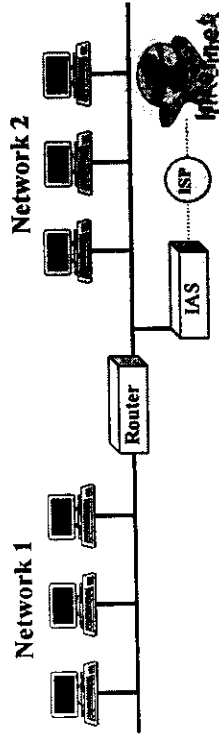
- 4) Press the **Insert** button.

- 5) Press **OK**



#### What? What is the purpose of the routing table?

The routing table is only important if you have routers on your LAN. The Internet is basically one giant network that uses IP addresses to locate it's different sites and works the same way as IP addressing on your LAN. Say your LAN has two networks and someone on Network 1 wants to send an E-mail locally to Network 2. How does that E-mail know to stay in the LAN and not go out through your gateway (i.e your IAS)? The reason is because your router sees the E-mail that has an IP address corresponding to your other network and says "Hey, that E-mail is for the other network, don't go out through the IAS. Come with me and I'll send you to the other network!"

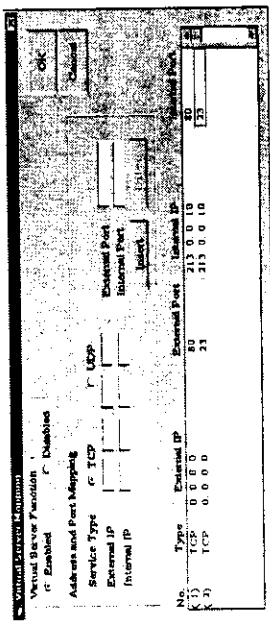


In the above example the IAS is setup on Network 2. The computers on Network 2 are on the same network subnet as the IAS and will be able to access the IAS. But what about the computers on Network 1? They aren't on the same subnet. To let the computers on Network 1 access the IAS, first you have to set their gateway as the IAS IP address. Then in the router itself you can set the router's gateway in the routing table. Lastly you have to setup the routing table in the IAS like the example given on the previous page. Once these two things are done, the computers on Network 1 and the computers on Network 2 can both access the IAS.

- C) Enter the IP address of the computer or Device that will act as the "server" site on your network in the **Internal address** field. Enter the port number for the service that you will be using for this mapping.
- D) Press the **Insert** button to insert the mapping

**Note!** A limitation of the virtual server is that you can only use one computer per port. For example, if you set one computer to be mapped to support chat, only that computer can use that program. All request packets from the Internet with a port number corresponding to Chat will then be sent to the internal IP in the mapping.

Virtual Server Mapping Example (Web or other Server)



In this example we have set up a mapping with a Web page and Telnet server:

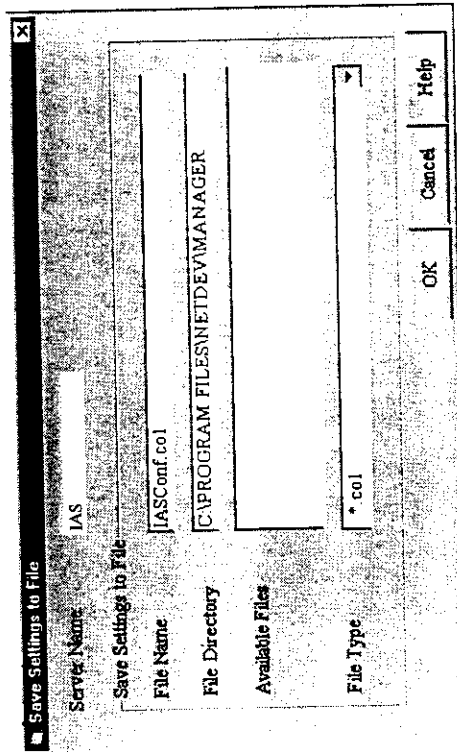
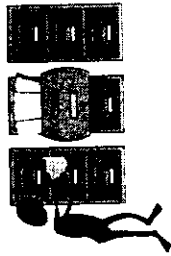
- Both services use TCP. WWW service has a port number of 80 and Telnet has a port number of 23
- The **External** IP address that we are using is dynamic so we have entered **0.0.0.0**.
- Our Internet site server on our network has an IP address of **213.0.0.10**

Now anyone who tries to access our dynamic IP address will automatically be forwarded to our Internal network server at our internal IP address of **213.0.0.10**.

**Note!** If you would like to keep the connection permanently open after you have dialed-up your ISP, you should disable the idle-time out function. Please see Section 3 - Net-Device Manager : Dial-up/Hang-up Settings.

### Save Settings to File

The **Save Settings to File** option lets you save the inputted settings to a file to be retrieved at a later time. This will be useful if your settings are deleted accidentally or you want to have more than one batch of settings.

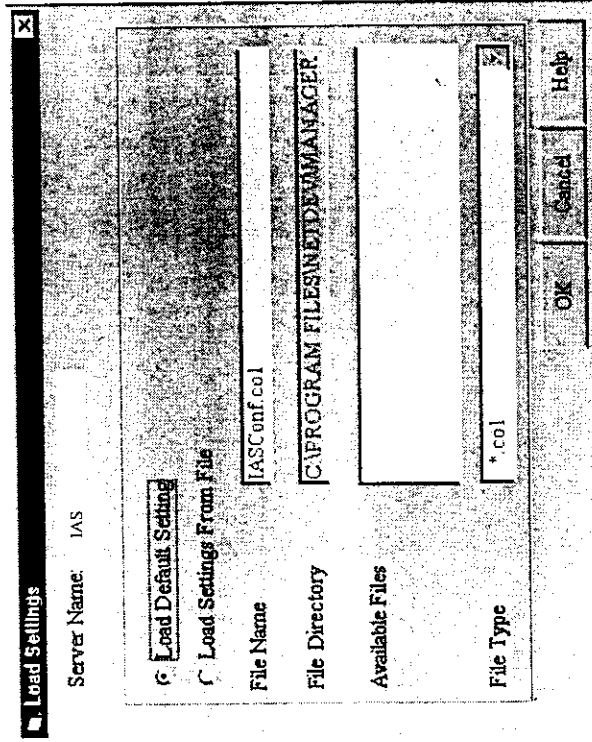


To save the inputted settings to a file, enter the file name in the **File Name** field. You can use the default **File Type** ".col" or select your own file type. You can also use the default directory listed in the **File Directory** field or choose your own.

Press the **OK** button to save the settings to a file.

### Load Settings

The **Load Saved Settings** option lets you load the original default settings of the IAS or previously saved settings.



First choose whether you want to load the default settings or load settings from a previously saved file. If you are loading previously saved settings from a file you can choose the directory by entering it in the **File Directory** field.

Press the **OK** button to load and apply the previous settings to the IAS.

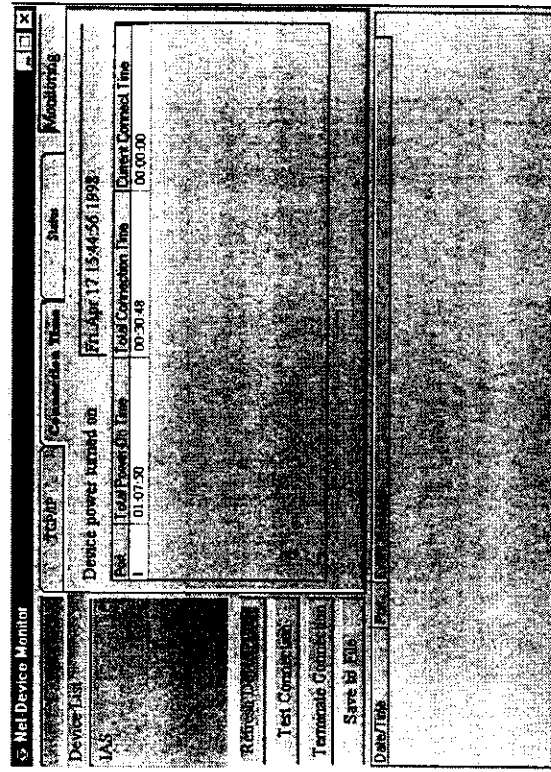
### 4 - Net-Device Monitor



*Net-Device Monitor* is a utility that was designed for letting you know what your IAS is doing and helping you with any problems.

#### To Run Net-Device Monitor from your Desktop

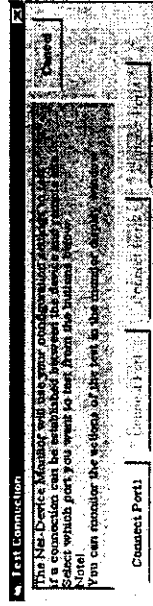
On the Windows 95/NT Start menu point to Programs, then to Net-Device and select Monitor.



### Test Connection

The **Test Connection** function lets you test the connection between your IAS, modem and ISP. This will test if you have inputted some of the major settings of the IAS correctly and whether a problem you may have is due to the modem, IAS or some setting that you may have inputted incorrectly.

To test a connection select the IAS you want to test and press the **Test Connection** button. Select which port you want to test from the option buttons.



**Test Connection** will then use the selected port and the modem attached to it to dial-up your ISP and establish a connection.

### Event Messages

The event message display located in the lower part of IAS Monitor, displays the communication occurring between your IAS, modem or ISDN TA and ISP.

Date/Time	Port	Event Message
4/16/98 3:00:26 PM	Device (1)	Device Connected
4/16/98 3:00:26 PM	Terminal 1 (1)	Terminal 1 Connected
4/16/98 3:00:26 PM	Modem (1)	Modem Connected
4/16/98 3:00:26 PM	ISDN TA (1)	ISDN TA Connected
4/16/98 3:00:44 PM	Device (1)	Device Disconnected
4/16/98 3:00:29 PM	Terminal 1 (1)	Terminal 1 Disconnected

**Note!** You can use your mouse to point and click on any of the event messages to bring up a help screen. If any errors have occurred you can use this as a guide to help you fix the problem.



## Connection Time Tab

- **Device power turned on** will display the time when your IAS was last turned on.
- **Total Power-On-Time** will display the total time since your IAS was last turned on.
- **Total Connection Time** will display the total connection time to your ISP that has been logged since the device was last turned on.
- **Current Connect Time** will display the time that has elapsed since the current connection was established.

TCP/IP		Connection Time	Status
Device power turned on: Fri Apr 17 15:43:22 1998			
Part 1	Modem Power On	00:47:20	
	Total Connection Time	00:19:26	
	Current Connect Time	00:03:34	

## Status Tab

The Status tab will display four things:

- 1) **Modem Power:** If the IAS detects that your modem is turned on, this indicator light will be lit.
- 2) **Modem Ready:** The IAS will send pre-initial and initial commands to your modem or ISDN TA. If the communication is successful, this indicator light will be lit and your modem is ready to dial a connection.
- 3) **Modem Connected:** If the IAS has detected that your modem or ISDN TA has successfully dialed up a connection to a remote site, this indicator light will be lit.
- 4) **PPP Connected:** After the connection is established, if the IAS has detected that PPP has successfully started, this indicator light will be lit.

TCP/IP		Connection Time	Status
Part 1 Internet Access			
	Modem Power		<input type="checkbox"/> Modem Power
	Modem Ready		<input type="checkbox"/> Modem Ready
	Modem Connected		<input type="checkbox"/> Modem Connected
	PPP Connected		<input type="checkbox"/> PPP Connected

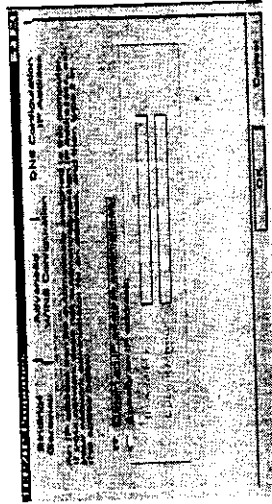
**2** Each IAS client PC needs an IP address

The default setting of Windows 95 lets the IAS automatically extract IP information from the built-in DHCP server in your IAS. To check or change this setting:

In the same Network window as step 1 page, select TCP/IP in the "The Following Network Components are Installed" window and click Properties.

**Option A**

If you would like to have the IAS assign this computer an IP address automatically, on the IP Address tab select "Obtain IP address automatically" and press OK.



**Note!** If you select "Obtain IP address automatically", this computer will also automatically retrieve it's other TCP/IP information from the IAS, including Gateway and DNS Configuration.

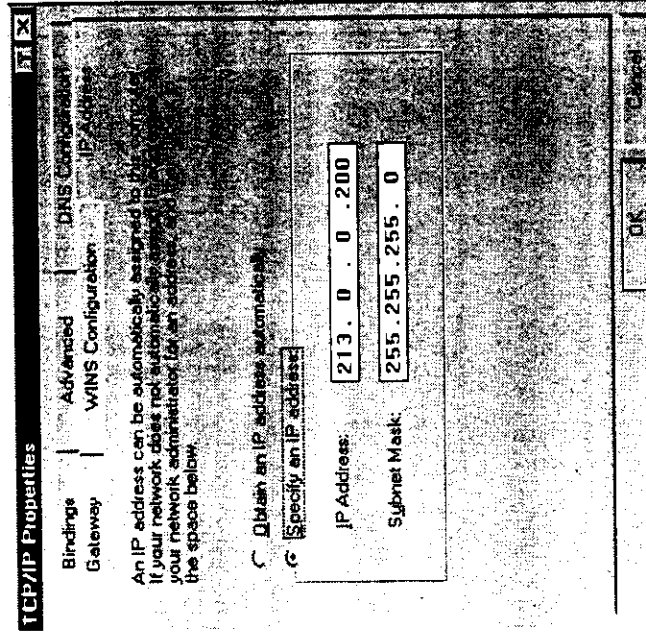
**Warning!** As a general rule you should only have one DHCP server working on your network. If you decide to use a different DHCP Server instead of the DHCP server in your IAS, you should disable the IAS DHCP Server. You should also set the IAS as your gateway in the other DHCP server.

**Option B**

If you would like to give this computer a static IP address you can enter it here. Please note that when giving your computer a static IP address you must assign it's:

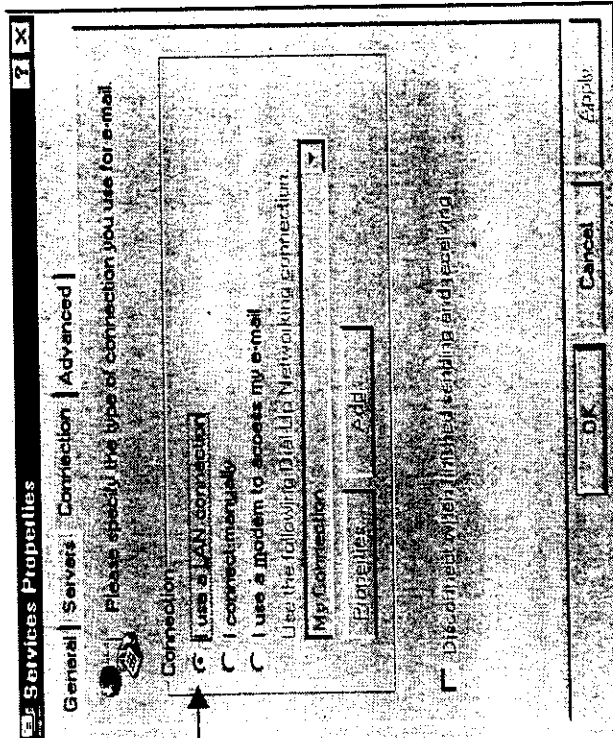
- 1) IP address
- 2) Gateway
- 3) DNS Server IP Address

In the same Network window as step 1, select TCP/IP in the "The Following Network Components are Installed" window and click Properties. On the IP address tab select Specify an IP address and enter the IP address you want to assign to this computer. Also be sure to enter the Subnet Mask of this IP Address which is probably 255 . 255 . 255 . 0



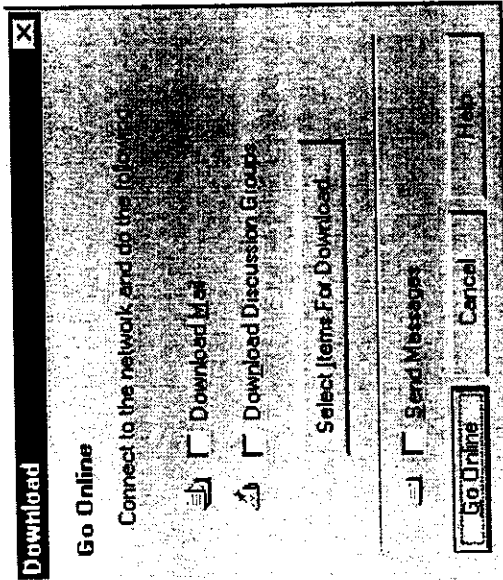
### Setting Microsoft Outlook/ Microsoft Exchange

On the Tools menu select Services. On the Services tab select the E-mail profile that you are using and press the Properties button. On the Connection tab choose "I use a LAN connection". Press Apply to enable the new setting and OK to exit.



### Setting Netscape Communicator

To set Netscape you must set the browser to Go Online through your LAN. You can do this by selecting **Go Online** in the **File Menu**. The following display screen will open on your screen.



Press **Go Online**. Netscape will then be able to access the Web through your LAN.





**Trouble #5**

- The IAS dials-up a connection but can't seem to communicate with the ISP.
- ✓ This is most likely a problem due to the fact that your baudrate setting is too high for your modem or ISDN TA. Many times the maximum baudrate that your modem or ISDN TA claims it can achieve is not really attainable because of phone line quality, errors, etc. You should go into **Net-Device Manager's Modem Settings Menu** to correct this problem. See **Section 3 - Net Device Manager : Modem Settings**.

**Trouble #6**

- Sometimes when I try and use the Internet or get my mail, the application can't access the Internet immediately
- ✓ This is probably not an error or a problem. If you are the first person to use the IAS, there will be a delay while the Dial-on-Demand function automatically dials-up a connection and logs on to your Internet Service Provider. Subsequent users will then be able to use the existing connection that you have just established without a delay.
- ✓ It is also possible that your modem is dialing but having problems connecting to your ISP. For example your ISP may be returning a busy signal. You can use the **Net-Device Monitor** to see all events occurring between your modem and ISP.  
(Please see **Section 4 - Net-Device Monitor**)

**Trouble #7**

- The IAS seems to slow down my modem when I install it
- ✓ The IAS should have no effect on your modem speed. Of course if more than one client is using the same modem through the IAS the speed will be reduced.

**Trouble #3**

- I configured the IAS but I can't get it to communicate with my modem.
- ✓ It's possible that your initial string is configured incorrectly. If you are using an ISDN TA and your ISDN TA was not listed when you were prompted to select your modem in Setup Wizard you must look up your ISDN TA's initial string in your ISDN TA user's manual and input it in **Net-Device Manager's Modem Settings Menu** to correct this problem. See **Section 3 - Net Device Manager : Modem Settings**.
- ✓ If after making sure that the initial string is correct, the IAS will still not dial-up a phone number, please use the **Net-Device Monitor** which has on-line help. Please see **Section 4 - Net-Device Monitor**.

**Trouble #4**

- The IAS dials-up a connection but can't seem to communicate with the ISP
- ✓ This is most likely a problem due to the fact that your baudrate setting is set too high for your modem or ISDN TA. The maximum baudrate that your modem or ISDN TA claims it can achieve is often not really attainable because of poor phone line quality, modem manufacturing quality and a myriad of other possible reasons. You should go into **Net-Device Manager's Modem Settings menu** to correct this problem to set to a lower baudrate and try again. See **Section 3 - Net Device Manager : Modem Settings**.
- ✓ If after changing the baudrate, the IAS still cannot connect to your ISP, please use the **Net-Device Monitor** which has on-line help. Please see **Section 4 - Net-Device Monitor**.

**ML-PPP (Also called MP or MPPP)** stands for Multilink Point to Point Protocol and is an advancement of the PPP protocol that allows for the bridging or bundling of two ISDN or analog channels for faster connections. What does that mean in practical terms? It means that you can use one computer to use two or more modems to download a single web page. For example, if I'm trying to access [www.yahoo.com](http://www.yahoo.com) using two modems, each modem will go get part of Yahoo, then your IAS will bundle the information together and then give it to your computer resulting in double the speed. Pretty cool, eh?

**MAC address.** The hardware address of a Device connected to a shared media. To find out the MAC address of your computer please see **Section 6 : Troubleshooting, Tool C.**

### IP Addresses (Referenced from [www.pcwebopedia.com](http://www.pcwebopedia.com))

A Computer on the Internet is identified by its **IP Address**. A computer's IP address is like a telephone number because it identifies one address or in this case one computer Device. Every computer or device on a network must have a different IP address. An IP address consists of four groups of numbers called **octets** which are separated by periods. For example, 213 . 0 . 0 . 1 is an IP address. An IP address consists of a **network portion** and a **host portion**. The network portion identifies the subnet that the computer belongs to. The host portion identifies the particular computer or node on that network. In our example IP address, **213 . 0 . 0 . 1** refers to the network **213 . 0 . 0** with the computer number **1**. IP addresses can either be **dynamic (temporary)** or **static (permanent, fixed)**. A dynamic IP address is a temporary IP address that is assigned to you by a server (Usually a DHCP server) when you turn on your computer. A static IP address is a permanent IP address that you can set yourself in your computer. When the IAS dials-up your ISP your ISP can give it a fixed or dynamic IP address. Likewise when you turn on your computer the IAS can give your computer a dynamic or fixed IP address.

**ISDN TA.** (Integrated Services Digital Network Terminal Adapter) ISDN is a high speed digital telephone connection involving the digitization of the telephone network using existing wiring. An ISDN Terminal Adapter can be thought of like an "ISDN Modem".

**ISP (Internet Service Provider).** An organization that provides Internet services. An ISP is the company that will provide the connection from your computer or network to the Internet. An ISP can offer a range of services, such as dial-up accounts, E-mail, web hosting or News.

**LAN (Local Area Network).** A data network intended to serve an area of only a few square kilometers or less. This often means a small private network in companies.

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## Glossary

**Server.** A provider of resources (e.g., file servers and name servers). A computer that uses the resources of a server is called a **Client**. For example the IAS provides Internet Access and is thus called an Internet Access **Server**. The computers that use the IAS are clients of the IAS and are thus called IAS Clients.

**Subnet:** A portion of a network that shares a common address component. On TCP/IP networks, subnets are defined as all devices whose IP Addresses have the same prefix. For example, all devices with IP addresses that start with 213 . 0 . 0 . would be part of the same subnet.

**Subnet Mask / IP Address Mask.** Subnet mask is what is used to determine what subnet an IP address belongs to. Subnetting enables the network administrator to further divide the host part of the address into two or more subnets.

**TCP/IP (Transmission Control Protocol/ Internet Protocol )** is the standard protocol used on the Internet. This means that every computer that wants to communicate with another computer on the Internet must use TCP/IP protocol to transmit and route data packets. TCP/IP uses **IP addresses** to locate different computers or devices on a network.

**UDP (User Datagram Protocol).** An Internet Standard transport layer protocol. It is a connectionless protocol which adds a level of reliability and multiplexing to IP.

**Virtual Server.** A very general term. In terms of your IAS the "Virtual Server" function is to reverse translate using NAT protocol from the WAN to your LAN. Please see **Section 3 - Net-Device Manager: Virtual Server** for more information.

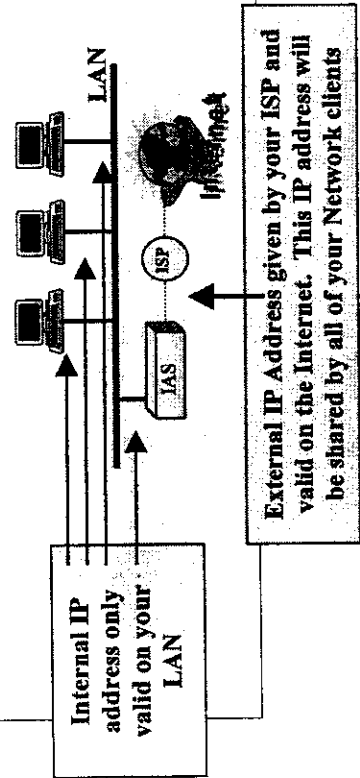
**NAT Technology** (Referenced from [www.pcwebopedia.com](http://www.pcwebopedia.com))

The IAS uses a technology called Network Address Translation (NAT) (Sometimes called IP Address Masquerading) to let everyone on your network use one IP address given to you by your ISP (Internet Service Provider). This technology is also a firewall in itself.

How does it work? Every IP address on the Internet is a Registered or Legal IP address. Therefore no two IP addresses on the Internet are the same. For you to use the IAS to access the Internet you need one of these registered IP address from your ISP (Internet Service Provider). On your private Intranet or LAN, the IP addresses of your computers are probably unregistered or "illegal" IP addresses.

When clients on your network start surfing the Internet, the IAS will receive all the requests for information. The IAS will dial-up your ISP and will give your IAS a registered legal IP address. Your IAS then uses that IP address to ask for all that requested information saying, "Send all information back to me at this IP address." So in essence it looks like all your network client's requests are coming from that one IP address (Hence the name IP masquerading). When all that information comes back to the IAS, it will then sort the data using an Address Translation Table and give the data to the computer on your network that requested it.

In regards to the firewall, what happens if someone on the Internet tries to access your network via the IAS? Nothing! There's nothing there but the IAS which will not reverse translate unless you have allowed it by using the Virtual Server function.



**Network Address.** The network portion of an IP address. For a class A network, the network address is the first byte of the IP address. For a class B network, the network address is the first two bytes of the IP address. For a class C network, the network address is the first three bytes of the IP address. In each case, the remainder is the host address. In the Internet, assigned network addresses are globally unique.

**Port Number.** In addition to meaning a connector on your computer, a port also has another meaning. The other meaning of port can be thought of as a "Service number". Every service that travels over phone lines and modems has a standard port number. For example to use the World Wide Web service the standard port number is 80. The standard port number for telnet is 23. Who came up with this system? Port numbers are controlled and assigned by the IANA (Internet Assigned Numbers Authority). How do you know what service has what port number? Most computers have a table in their systems that lists which port numbers have been assigned to which services or you could also find port number lists on the Web.

**Protocol.** A formal description of message formats and the rules two computers must follow to exchange those messages. You can think of protocols like languages. If two computers or devices aren't speaking the same language to each other, they won't be able to understand or communicate. Just like people!

**PPP (Point-to-Point Protocol).** PPP is the method that your IAS connects to the Internet. PPP is the

**Router.** A device which forwards traffic between networks. If you request information from a location on your network or the Internet using **TCP/IP**, your computer will broadcast the **IP Address** request onto your LAN. The router's job is to listen for requests for IP addresses that are not part of your LAN and then route them to the appropriate network which may either be the Internet or another subnetwork on your LAN. For information on how the IAS and router interact please see **Section - 3 Net-Device Manager : Routing Table.**

## Glossary

**Note!**

The best site for finding information is on the Internet. Much of the information for this glossary was referenced from a great site at <http://www.pcwebopedia.com>. If you want more information for any of these terms or some terms that may not be listed please check out that site. It's quite impressive.

**Baudrate.** Baudrate in regards to your IAS refers to the number of bits per second (Bps) that are transmitted between your IAS and modem or ISDN TA.

### DHCP (Dynamic Host Configuration Protocol)

A protocol that was made to lessen the administrative burden of having to manually configure TCP/IP Hosts on a network. DHCP makes it possible for every computer on a network to extract it's IP information from a "DHCP server" instead of it having to be inputted manually by each network client (or network administrator). Using the IAS' built-in DHCP server, every computer on your network can automatically extract it's IP information from the IAS.

#### Why is it called "dynamic"

Each time a network client turns on their computer the IAS DHCP server will automatically give them an IP address from the IP address pool configured in the DHCP Server menu of Net-Device Manager. It is called "dynamic" because the address that they get could be different each time they turn on their computer depending on which addresses have already been assigned.

Wait.....wait....yes.....I see your server giving you a very interesting IP address tomorrow.



**DNS (Domain Name System) Server IP Address.** A DNS Server can be thought of as the computer at your ISP whose job is to take all the DNS addresses that you type into your web browser like [www.yahoo.com](http://www.yahoo.com) and translate those addresses into their corresponding IP addresses. So to send this "translator" all your requests for information, you need to know his address and his address is known as the DNS Server IP address.

**Ethernet.** A LAN (Local Area Network) protocol developed by Xerox and DEC. It is a very commonly used type of LAN

**Firewalls.** A method of protecting files and programs on one network from users on another network. Firewalls are typically installed to give users access to the Internet while protecting their Internal Information. The IAS uses a firewall known as NAT. (See NAT).

**Firmware.** Software that has been permanently or semi-permanently written onto ROM. Your IAS supports flash ROM which means you can upgrade the firmware in the IAS very easily by obtaining a copy of the new firmware and using the upgrade firmware function.

**FTP (File Transfer Protocol).** A protocol which allows a user on one host to access, and transfer files to and from, another host over a network.

**Intranet.** The Intranet is the use of Internet technologies within a company. Intranets exist only within organizations while the Internet is a global network open to all. Intranets run on private networks within companies and between their branch offices.

**IP (Internet Protocol).** The Internet Protocol is the network layer for the TCP/IP Protocol Suite. It is a connectionless, best-effort packet switching protocol.

### Troubleshooting Time

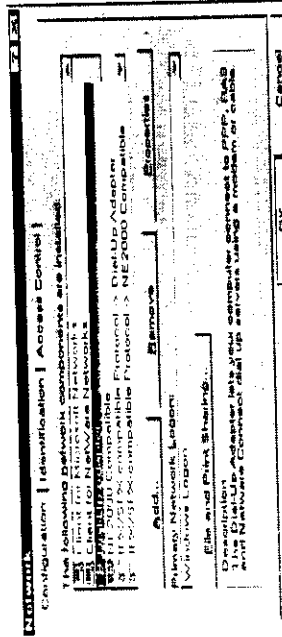


#### Trouble #1

- My computer can't detect the IAS on my network when I try and configure it. (ie. "Device Not Found")
- ✓ Try pressing the "Refresh Device List" button
- ✓ Make sure that the power is correctly connected by checking that the "PWR" indicator light on the IAS unit is lit.
- ✓ Make sure that the IAS is properly connected to your Ethernet hub by pressing "Refresh Device List" in either Net-Device Manager or Setup Wizard. If the IAS is correctly connected, the "Net" indicator light on the IAS will flash. If no flash occurs then the IAS is not properly to your network. Try reconnecting the IAS to your hub and try again. If there is still no flash, it is possible your Ethernet cable or hub has a problem.
- ✓ Make sure your computer is a properly configured TCP/IP computer. Check by trying to "ping" the computer you are using. If you can successfully ping yourself, your computer has TCP/IP correctly installed. Then try pinging another computer on your network. If ping is successful your computer is properly connected to the network.
- ✓ Take TCP/IP Dial-up Adapter off your computer. For instruction on how to do this please see **Trouble #2** on the next page.

#### Trouble #2

- Other computers can connect to the IAS but my computer can't.
  - Whenever I click on Internet Explorer or Netscape I still see the Windows Dial-up utility popping up on my screen asking for my phone number and password to dial-up my ISP.
  - ✓ Take **TCP/IP dial-up adapter** off all computers that will be using the IAS to access the Internet. TCP/IP dial-up adapter is not needed to use the IAS to connect to the Internet.
- To take off TCP/IP Dial-up Adapter, on the Windows **Start** button, point to **Settings** and then to **Control Panel**. Double click on the **Network** icon. Click on the adapter called **Dial-up Adapter** and press the **Remove** button. Restart your computer and try again.



- ✓ Make sure that you have a correct IP address. On the Windows 95 Start button, select Run and type "winipcfg". If the IP address field is listed as "0. 0. 0. 0" that computer has no IP address. Make sure that the automatic DHCP configuration is setup properly on that computer  
(See Section 5 – **Setting up Your IAS Clients**, Step 2)
- ✓ Make sure that the Web browser is set to connect via your LAN  
(See Section 5 – **Setting up Your IAS Clients**, Step 3)

4

### Important Notes

Note!

The **Dial-on-Demand** function means IAS clients can "Click and Play" on their desired Internet application without the hassle of having to use dial-up utilities. If dial-up windows are still popping up on your screen when you try and start your Internet applications, take TCP/IP dial-up adapter off your computer. If this adapter is installed your computer might sometimes get confused as to whether dial-up utilities are needed or not to make a connection. If you are using the IAS you don't need dial-up utilities since the IAS will dial for you.

For more information on how to take TCP/IP dial-up adapter off a computer please see **Section 6 - Troubleshooting, Trouble #2.**

Note!

To use the IAS, the switch on the side of the IAS must be set to "NORMAL". The Terminal setting on the side of the IAS stands for Terminal Setup Mode and is not needed for Windows 95. It is only used for Terminal and Remote Configuration

## 6 - Troubleshooting

### Tools for your IAS

Tool A

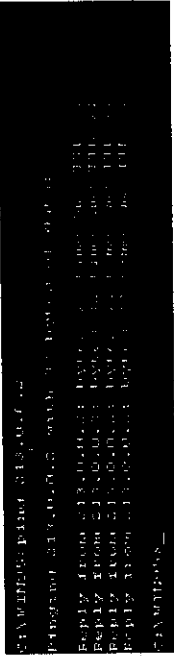
### Net-Device Monitor

So you're having some problems. Many problems can be solved by checking out Net-Device Monitor where there is on-line help. Please see **Section - 4 Net-Device Monitor** which details all of the functions and help applications that it has.

Tool B

### PING

Ping stands for **Packet Internet Groper**. Ping is a utility that conducts a test to determine if there is a communications path between two devices on a network. Basically it lets your computer ask another computer or device, "Is there anything alive at this IP address?". You can use the PING command in your DOS prompt. You can also type either the IP address or the domain name of the Net-Device you wish to PING. For example both "PING 213.0.0.2" and "PING www.yahoo.com" will work. In the example below we have sent a successful PING to an IAS which has an IP address of 213.0.0.2 . So who cares right? Actually it's good. You can ping your IAS from your computer to see if there's a connection between your computer and your IAS. You can also ping an IP address on the Internet to make sure that your computer has a connection via the IAS to the Internet. It's a great way to eliminate some of the potential reasons for troubles. Very useful!





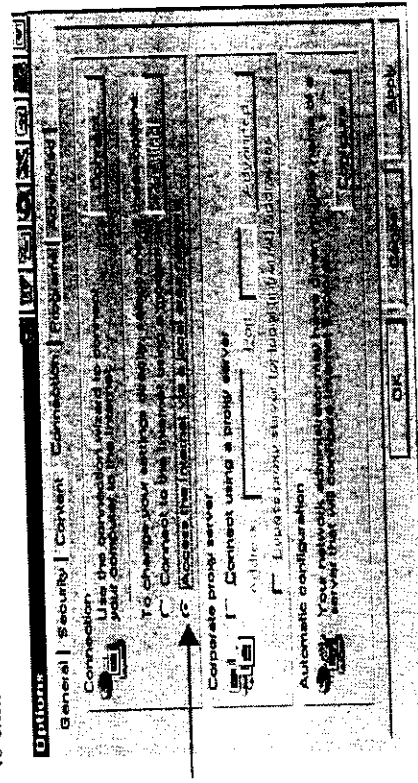
**Internet Explorer, Netscape, Internet E-mail and other Internet Applications must be set to connect through your LAN.**

You and your network client's will be connecting to the IAS through your LAN. This means that when using applications to (Netscape, Internet Explorer, etc.) you must set the applications to connect through their LAN. Some examples follow:

**Note!** Unfortunately we can't list all the Internet applications and versions that you might be using but in all Internet programs there is probably an option field where you can specify how you want to connect the application to the Internet. To use the IAS you must set it to connect through your LAN.

### Setting Microsoft Internet Explorer 4.0

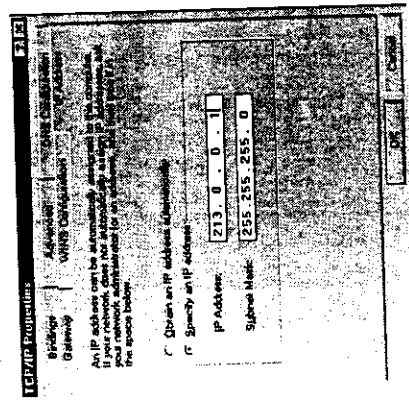
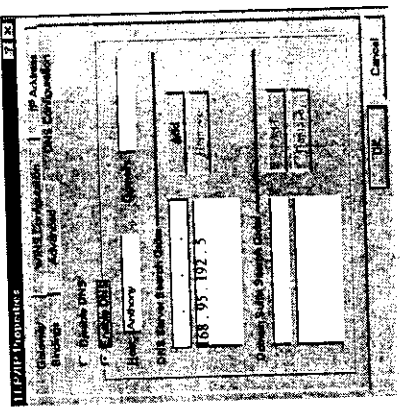
On the Internet Explorer View menu, click Options. Select the Connection tab and select the Access the Internet via a Local Area Connection. Press Apply to enable the new setting and OK to exit.



On the Gateway tab enter the IP address that you gave the IAS in Setup Wizard and press the Add button.

On the DNS Configuration tab enter the DNS Server IP address given to you by your ISP and press Add.

**What?** *What is a DNS Server IP Address?*  
Please see the DNS Server entry in the glossary at the back



In the above example we have set the IP address of our IAS (213.0.0.1) in the Gateway tab and our DNS Server IP address (168.95.192.5) in the DNS Configuration tab.

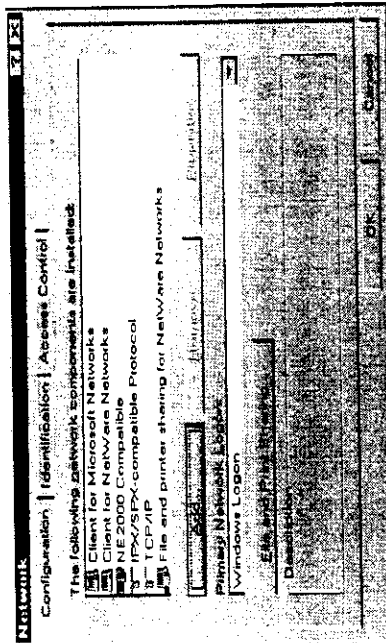
.....Press the OK button to Finish.

### 5- Setting up Your IAS Clients

**1** TCP/IP Protocol needs to be installed on each IAS Client PC

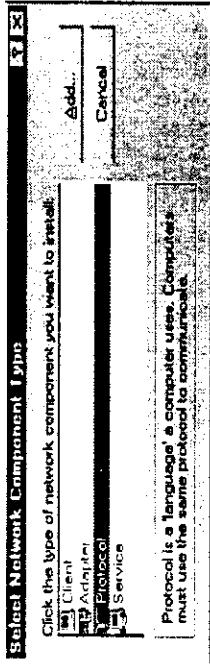
In order for a computer to use the IAS, TCP/IP Protocol must be installed on that computer. To install or check if TCP/IP protocol is installed on a PC:

A. On the Windows 95/NT Start menu, point to **Settings** and click **Control Panel**. Click the **Network** icon to open the **Network** window.

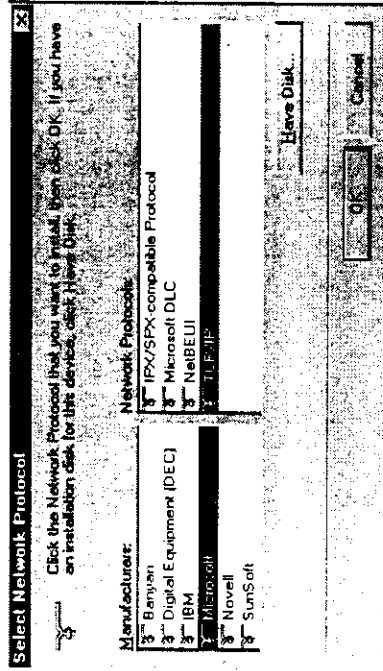


B. If you do not see TCP/IP protocol in "The following network components are installed" window you must install it. The TCP/IP protocol component looks like this **TCP/IP** or a variation like this **TCP/IP - NE2000 Compatible**. If you see that TCP/IP protocol is already installed on this computer, please proceed to Step 2.

C. To install TCP/IP click the **Add** button on the **Configuration** tab. Select **Protocol** and click the **Add** button.



D. Choose **Microsoft** in the **Manufacturers** option box and **TCP/IP** in the **Network protocols** option box.



E. Click the **OK** button to return back to the **Network** window where you will see TCP/IP installed under the "The following network components are installed" Window.

F. Please proceed to Step 2

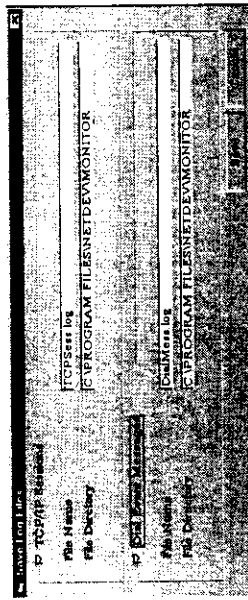
## Terminate Connection

The Terminate Connection function was designed to allow the network administrator the ability to terminate a connection of the IAS instantly at any time.

To terminate a connection select the server in the **Available servers** box, and press **Terminate connection**. Press the **Disconnect button** corresponding to the port you want to disconnect.

## Save to File

If you would like to save the current monitoring session to a file you can click the **Save to File** button. You can use the default **File Name** and **File Directory** or you can specify your own.



## TCP/IP Tab

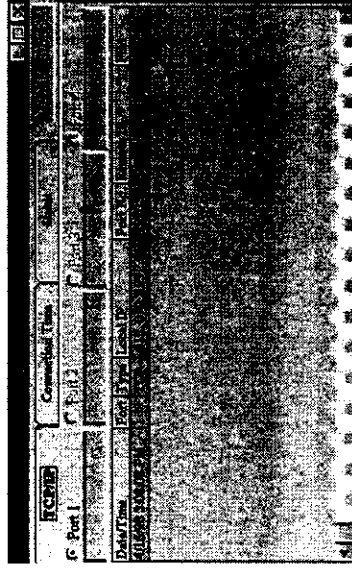
The TCP/IP Tab displays all the TCP/IP requests made by your IAS. If you have an IAS with multiple ports you will be able to select which port you want to view. For each new IP address request:

- **Date/Time** will tell you when the request was made
- **Port** will tell you which port you are viewing
- **Type** will tell you what type of request is being made
- **Local IP** will tell you which IP address the request originated from.
- **Remote IP** will tell you what the IP address that was requested.
- **Port** will tell you what port was requested



### What is a Port?

Please see the **Port** entry in the glossary at the back.



### Upgrade Firmware

The Upgrade Firmware option allows you to upgrade the firmware that is in your IAS.

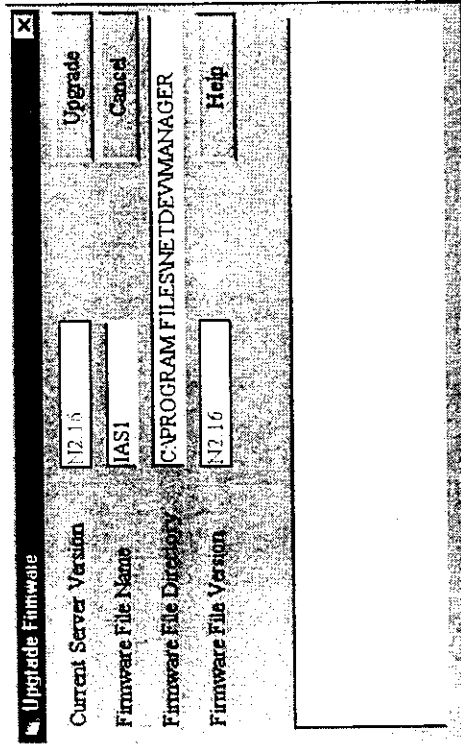


**What is firmware?**

Please see the **Firmware** entry in the glossary at the back



**Note!** This function upgrades the firmware actually in your IAS and not the Net-Device Utilities on your Windows 95/NT.

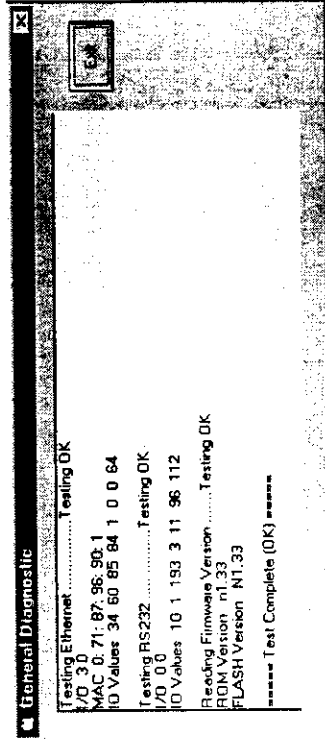


Enter the location of the new firmware file in the **Firmware File Directory**. Net-Device Manager will automatically detect the new firmware name and will be displayed in the **Firmware File Name** field. The **Firmware File Version** will display the version number of your new firmware. Press **Upgrade** to install your new Firmware.

### General Diagnostic

The general diagnostic function will perform a check-up on your IAS to make sure that everything is functioning correctly.

To start the general diagnostic press the **General Diagnostic** button from the main menu.



Press **Exit** to return to the main menu

### Device Name and Password

1) **Device Name**

This field displays the name of the IAS server. If you would like to change this name, enter the new name in this field.



2) **Device Password and Password Verification**

The **Net-Device Manager** does not come with a password. If you choose to give the IAS a password, this password will be required the next time and subsequent times that you want to configure the IAS. To enter a password, type your password in the **Device Password** field and type it again in the **Password Verification** field.



**Warning!**

If you choose to enter a password pick something that is easy to remember or write it down in a safe location. If you have completely forgotten your password please contact your place of purchase.

### Client Filter Settings

The *Client Filter* lets you decide what services you allow on your network and who has access to them. You can filter by 5 different services (Mail, WWW, FTP, Telnet, News)

For each service, you can set the Client Filter to allow all computers access, some computers access or no computers access. To give certain computers access you must enter the computer's MAC addresses and click **Insert**.



**Where can I find the MAC address of a computer?**  
Please see Section 6 - Troubleshooting Tool C

No.	MAC Address
(1)	0 40 80 26 E8 3
(2)	0 40 80 26 E5 2

In the above example network we have given:

- 1) All clients access to E-Mail
- 2) 2 computers access to WWW, FTP, Telnet
- 3) No clients access to Newsgroups

Virtual Server Mapping

The Virtual Server function allows a reverse network address translation from WAN to LAN. Normally when you use the IAS to access the Internet you use the NAT function from LAN to WAN.



What is NAT?

Please see the NAT entry in the glossary at the back

Theoretically it is possible to use the virtual server to setup a web page or FTP site because the IAS can let outside users access designated sites on your network that you map in virtual server. However, please be aware of the fact that the speed that they have access will be limited by the speed of your modem or ISDN TA. You can also use the Virtual server to support applications like Chat programs and Internet Telephony. To enable the Virtual Server function click the Enabled circle.

For each service that you want to setup on your Internet site:

- A) Select which protocol (Either TCP or UDP) the service uses. Most services use TCP (WWW, FTP, E-mail etc..).
- B) Enter your IP address supplied by your ISP in the External IP field. If your ISP gives you a dynamic IP address, you can set this as 0 . 0 . 0 . 0 . Virtual server will then use whatever dynamic IP address your ISP gives you as the external IP. Enter the port number for the service that you will be using for this mapping.



What is a Port?

Please see the Port entry in the glossary at the back



How do I find out my IP address if it's dynamic?

You can use Net-Device Monitor  
Please see Section 4 - Net-Device Monitor

Note!

The Internet and your LAN use the same type of addressing system; IP addresses. So if you have two networks on your LAN, it wouldn't be a good idea to use any IP addressing system on your network that used valid Internet IP addresses. Why? Because this could result in packets that are meant for another network on your LAN being sent through the IAS. The solution is that there are certain IP addresses that have been reserved for use on LANs and will never be a valid registered Internet IP address. If you are setting up two networks on your LAN, it would be a good idea to use one of the following IP address subnets:

- 1) 10 . x . x . x
- 2) 172 . 16 . x . x
- 3) 192 . 168 . x . x

- where x is any number between 0 and 255



What about Novell?

The newer Novell Servers support TCP/IP protocol and can be used to route another network's clients to the IAS. If you are using a Novell server that doesn't support TCP/IP protocol to route between two networks, the subnet that does not contain the IAS network will not be able to access the IAS.

### IP Address Mapping Reservation



You can use the IP Address Mapping Reservation option to give particular computers on your network the same static IP address every time they turn on their computer.

To assign a computer on your network a static IP address, enter the MAC address of the computer and the static IP address that you wish to give it and press the **insert** button.

In the example on the previous page we have reserved the IP address "213 . 0 . 0 . 15" for the computer with the MAC address of "1 : 3 : 2 : 34 : 32 : 1".

To delete a static IP address first select it and then press the **Delete** button.

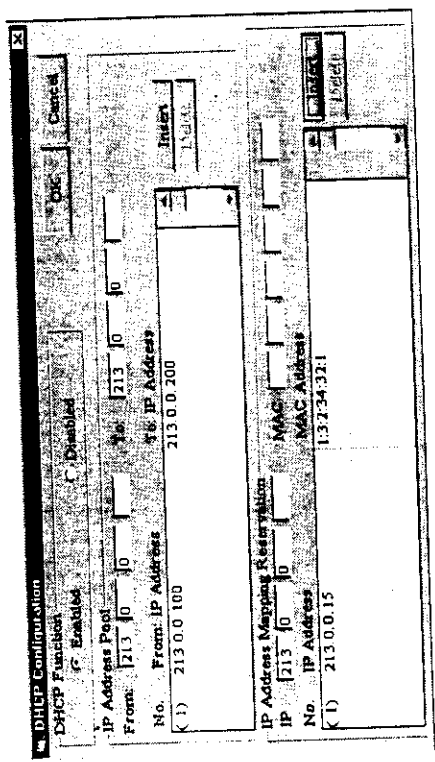
**Where?**  
*Where can I find a computer's MAC address?*  
Please see Section 6 - Troubleshooting Tool C

### DHCP Server



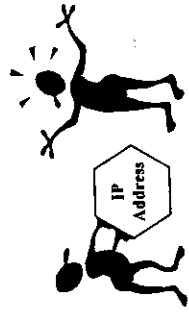
**What is a DHCP Server?**

Please see the DHCP entry in the Glossary at the back



### DHCP Function

The default setting of the IAS comes with the DHCP server already enabled. If you would like to disable the DHCP server click on the **Disabled** circle.



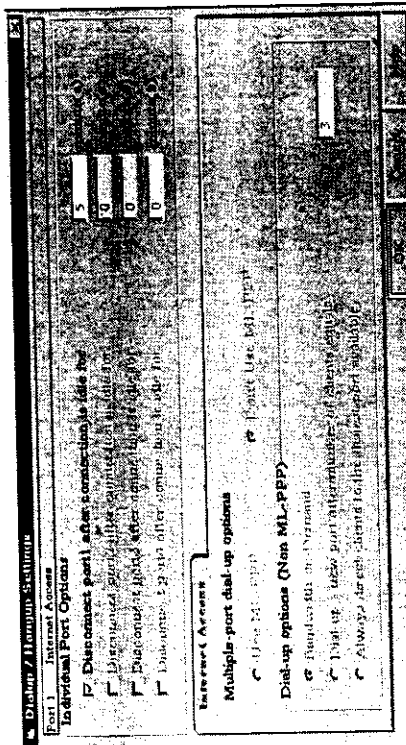
### IP Address Pool

The **IP Address Pool** contains the range of the IP addresses that will automatically be assigned to the clients of your network. The default IP address range of the IP address pool is **100 to 200**. If you would like to change this range first select the range then enter a new range and press the **insert** button. To delete an IP address range first select it and then press the **Delete** button.

**Dial-up/Hang-up Settings**



The Dial-up/Hang-up settings lets you choose when and how the IAS dials-up and disconnects from your ISP (Internet Service Provider.)



**Individual Port Options**



Individual Port Options lets you set the idle-time out function for each serial port of your IAS. Here you can set the number of minutes you wish to let a connection stay idle before disconnecting.

**Note!**

If you turn off the idle-timer, once a client establishes a connection, the connection will be maintained until you turn off your modem, unplug the IAS or use the Terminate Connection function in Net-Device Monitor. See Section 5 - Net-Device Monitor

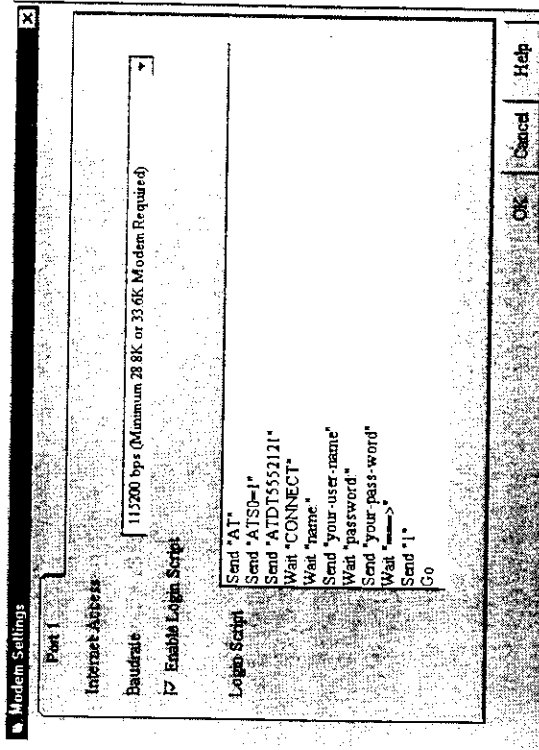
**Example 3: Script for unreliable ISP (2<sup>nd</sup> ISP backup)**

#	Login Script Example 2	Meaning of Each Login Script Command
1	Send "ATZ"	Resets modem
2	Send "AT S0 = 1"	Sends initial string "AT S0 = 1" to modem
3	Send "ATDT 5552121"	Dials phone number 555-2121 (ISP #1)
4	Wait "CONNECT" 12	Waits for ISP to send reply "CONNECT". If not will go to line 12 for ISP #2
5	Wait "username:" 12	Waits for ISP to send reply "username". If no response will go to line 12 for ISP #2
6	Send "Jchan"	Sends the username "Jchan" to ISP
7	Wait "password:"	Waits for ISP to send reply "password"
8	SH "1234"	Sends password "1234" to ISP
9	Wait "====>"	Waits for ISP to send reply "====>"
10	Send "1"	Selects option 1 (PPP) for this ISP
11	Go	Starts PPP mode (Rest of script ignored)
12	Hangup	Hangs up Modem
13	Send "AT S0 = 1"	Sends initial string "AT S0 = 1" to modem
14	Send "ATDT 5553333"	Dials phone number 555-3333 (ISP #2)
15	Wait "CONNECT" 23	Waits for ISP to send reply "CONNECT". If not received will go to line 23.
16	Wait "username:" 23	Waits for ISP to send reply "username". If no response will go to line 23
17	Send "Dblair"	Sends the user- name "Dblair" to ISP
18	Wait "password:"	Waits for ISP to send reply "password"
19	SH "5678"	Sends password "5678" to ISP
20	Wait "====>"	Waits for ISP to send reply "====>"
21	Send "1"	Selects option 1 (PPP) for this ISP
22	Go	Starts PPP mode (Rest of script ignored)
23	Hangup	Hangs up Modem
24	Jump 2	Goes back to line 2 to re-dial ISP #1



### Enable Login Script

With the login script you can manually input the communication between your Modem and ISP. Most ISPs support automatic PPP negotiation but if your ISP does not support automatic PPP negotiation you will have to enter a login script. You can also use the login script to enter a second backup ISP or write a script that makes the IAS re-dial until a successful connection has been established. To write a login script, first click on the **Enable Login Script** option box. The IAS login script commands and some examples are provided on the next few pages.



### Writing a Login script

Step A) Learn the IAS Login Script Commands Available to you

Example Commands		Result
<b>Send and SH</b>		
Send "ATZ"	Resets Modem	
Send "ATDT 555-3636"	Dials phone number 555-3636	
Send "JohnSmith"	Types "JohnSmith" at ISP interface	
SH "1234"	Types the "1234" at ISP interface but displays **** in Net-Device Monitor display to hide password	
Send ""	Types Enter key at the ISP Interface (Important for ISPs like Compuserve)	
<b>Wait</b>		
Wait 5	Modem will wait for 5 seconds before going to next command	
Wait "CONNECT"	Modem will wait for "CONNECT" to come onto screen before going to next command	
Wait "CONNECT" 6	Modem will wait for "CONNECT" to come onto screen before going to next command. If connect does not come onto screen modem will go back to line 6 of Login Script	
<b>Other</b>		
Go	Begins User Service	
Jump 4	Will go back to command line 4	
Hangup	Hangs Up Modem	

### Device Subnet Mask

The IAS Subnet Mask can usually be left as it's default entry "255 . 255 . 255 . 0".



### External (Port) IP Address

The External (Port) IP address is the IP address that is given to you by your ISP. An IP address is often dynamically assigned by your ISP (ie. it changes every time you log-on). To have this address assigned by the ISP leave this field as it's default entry "0 . 0 . 0 . 0". If you have been given a static IP address by your ISP you can enter it in this field.

### DNS Server IP Address(s)

The DNS Server IP address that you entered in Setup Wizard will be displayed here. The IAS supports multiple DNS Servers which can be entered here.



**What is a DNS Server IP Address?**

Please see the DNS Server IP Address entry in the Glossary

### Allow connection to be established by dial-in

This option is usually employed for the Virtual Server function of the IAS. (Please see Section 3 - Net-Device Manager : Virtual Server). This option does NOT mean remote access as the IAS does not support remote access. However, the IAS does support the function of letting your ISP dial-in to the Internet Access to establish the connection. If you would like to allow the connection to be established by dial-in, enable this option.

### Callback Telephone Number

If you have selected the "Allow connection to be established by dial-in" option, you can use the Callback Telephone number function of the IAS. You can use this function if you do not want to have a permanent connection to your ISP up all the time and your ISP will not support the telephone charge to dial-in to your network when people try and access your static IP address or domain name. After you have entered your ISP's phone number in this field, when anyone calls up the IAS, the IAS will automatically hang-up and dial the ISP's phone number establishing the Internet connection. For information on the purpose of this function please see Section 3 - Net-Device Manager : Virtual Server.

**Please re-check the setting that you have inputted**

The Settings that you have just inputted will be summarized here. Please check to make sure that all the settings you have inputted are correct.

**Setup Wizard: Finish**  
*Please re-check the settings that you have inputted*

Device Settings

Device IP Address is:	213.0.0.1
DNS Server IP Address is:	168.95.192.5
Telephone Number	555-2323
User Name	JCHAN
Modem:	(Standard Modem)
Baudrate	115200

<<Back  Cancel

If you see that you have configured a setting incorrectly, you can click on the Back button to go back to the screen with the mistake and change it.

**Press the Finish button to save your configuration to the IAS and complete Setup Wizard**

**You Have Now Completed Setup Wizard**

- 1) If you need to go into Net-Device manager to configure more advanced settings, you can open the program directly from here by pressing the **Run Manager** button on the bottom of your screen.
- 2) If you don't need to configure anything else in Net-Device Manager please use Net-Device Monitor's **Test Connection** function to see if your IAS can dial-up a connection with the settings that you have configured. You can access Net-Device Monitor by pressing the **Run Monitor** button on the bottom of your screen. Please see **Section 4 - Net-Device Monitor** for instructions.
- 3) Once Test Connection has determined that your connection is okay you should go to **Section 5 - Setting Up Your IAS Clients** and follow all instructions carefully.

**You have now completed Setup Wizard**

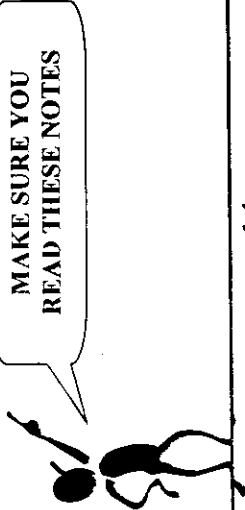
You and your network users can now simultaneously surf the Internet, send E-mail or use other Internet applications.

**IMPORTANT!** Please Note the following:

- 1) Your client's Internet applications like Netscape or Internet Explorer must be set to connect to the Internet through your LAN.
- 2) Network users will have their IP information automatically assigned in blocks.
- 3) The Dial-on-Demand Function eliminates the need for Windows dial-up utilities and lets your network users just click and Play on Netscape, Internet Explorer or Microsoft Windows Dial-up screen pop up, you should remove your pop-up screen from your computer. Instructions can be found in the Troubleshooting section of this User's manual.
- 4) The Run Manager button will allow you to check the status of the connection between you and your device and your ISP is working properly by pressing the Run Manager button below. To continue to configure more advanced settings before using the TEST CONNECTION function please press the Run Manager button.

If you need help with setting up your network clients please refer to the User's Manual.

Run Manager





### ISDN TA Setup

If you would like to bundle your two ISDN B-channels together, you need to enter the two phone numbers in the **Telephone Number** field. Usually ISDN TAs support either the "+" or "&" command so when entering the phone numbers you can enter them as either, for example, "555-2323 + 555-2121" or "555-2323 & 555-2121". If your ISDN TA doesn't support "+" or "&" you should see your ISDN TA user's manual to see how it is possible to enter the two phone numbers.

**!!! Extremely Important !!!**

**Please also make sure you read the ISDN TA Setup note when you get to the "Select Modem and Baudrate" step of Setup Wizard.**

### User Name

Enter your username of your ISP account in the **User Name** field.

### Password

Enter the Password of your ISP account and then re-confirm it be entering it again in the **Password Verification** field.



**How can I input a 2<sup>nd</sup> backup ISP?**

You need to use a login script  
See **Section 3 - Net-Device Manager : Modem Settings**

.....Press Next to Continue

### Please Input your ISP's DNS Server IP Address

Enter the DNS Server IP Address provided to you by your ISP. This information is usually provided to you with the information package given to you by your ISP. If you can't find your ISP's DNS Server IP address your easiest solution is probably just to give someone at your ISP a telephone call and ask them for their DNS Server IP address.



**What is a DNS Server IP address?**

Please see the **DNS Server IP** address entry in the Glossary

### Setup Wizard: DNS IP Address

Please input your **ISP's DNS Server IP address**

Please input your DNS Server IP address provided by your ISP


DNS Server IP Address

[168] [05] [102] [5]

<<Back Next>> Cancel

.....Press Next to Continue

## 2 - Setup Wizard

 Setup Wizard is a program that will let you configure your IAS quickly and easily. Setup Wizard is a step-by-step process that will let you input all the basic settings that are needed to configure your IAS for general usage. All settings that are entered here will also be shown in their respective menus in Net-Device Manager.

### Setup Wizard will automatically start

After you have installed the Net-Device utilities, you will automatically be brought into Setup Wizard.

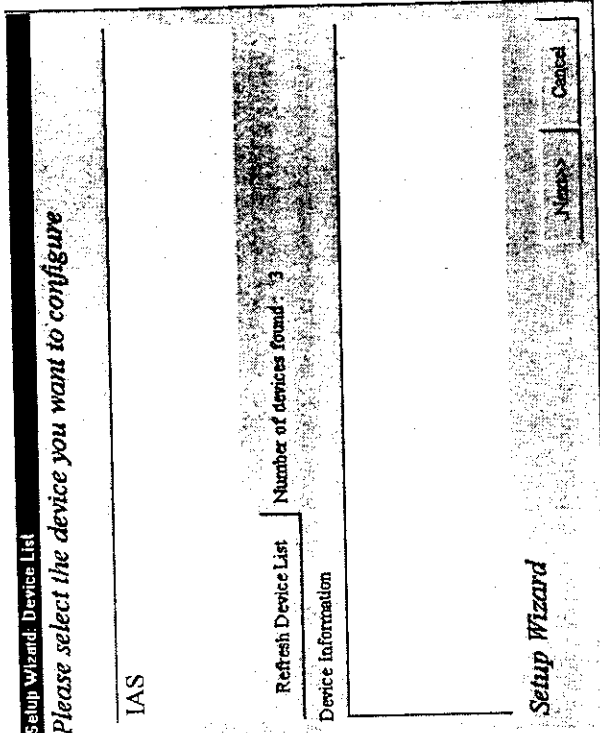
### To Run Setup Wizard from the Windows Start Menu

On the Windows 95/NT Start menu point to Programs, then to Net-Device and select Setup Wizard.

## Please Select the Device you Wish to Configure

Setup Wizard will automatically check your network for available IAS servers which will be displayed in the device list. You can click the "Refresh Device List" button to update this list.

The first thing you must do is select the IAS that you will be configuring from the Device List.



.....Press Next to Continue

## 1 - Introduction

**This manual will explain how to use the included Net-Device Utilities to configure and monitor your IAS.**

*Note!*

**If you haven't already done so please go through your Installation Manual which details how to install the IAS and the Net-Device utilities. Please make sure to follow all instructions.**



Congratulations on purchasing the best in networking technology. The IAS (Internet Access Server) acts as a central dial-out Internet access point for all of your network clients. The IAS accomplishes this by allowing all of your network clients to simultaneously share:

- 1 Modem or ISDN TA
- 1 regular dial-up account from your ISP.
- 1 IP address that can be either dynamic or static

**How?**

***How does it all work?***

Please see the NAT entry in the Glossary at the back

## The Net-Device Utilities

The Net-Device utilities include:

- ◆ **Net-Device Setup Wizard**

A step-by-step process that will let you input all the basic settings that are needed to configure your IAS for general usage. All settings that are entered here will also be shown in their respective menus in Net-Device Manager.

- ◆ **Net-Device Manager**

Net-Device Manager is the main program used to configure all the settings of your IAS.

- ◆ **Net-Device Monitor**

Net-Device Monitor is a multi-purpose utility that was designed for letting you know the status of your IAS connection. It provides a step-by-step event monitor whereby on each event you can point and click to bring up an on-line help screen that will advise you of any troubleshooting procedures that are needed.

## FEDERAL COMMUNICATIONS COMMISSION

### NOTE

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. 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

