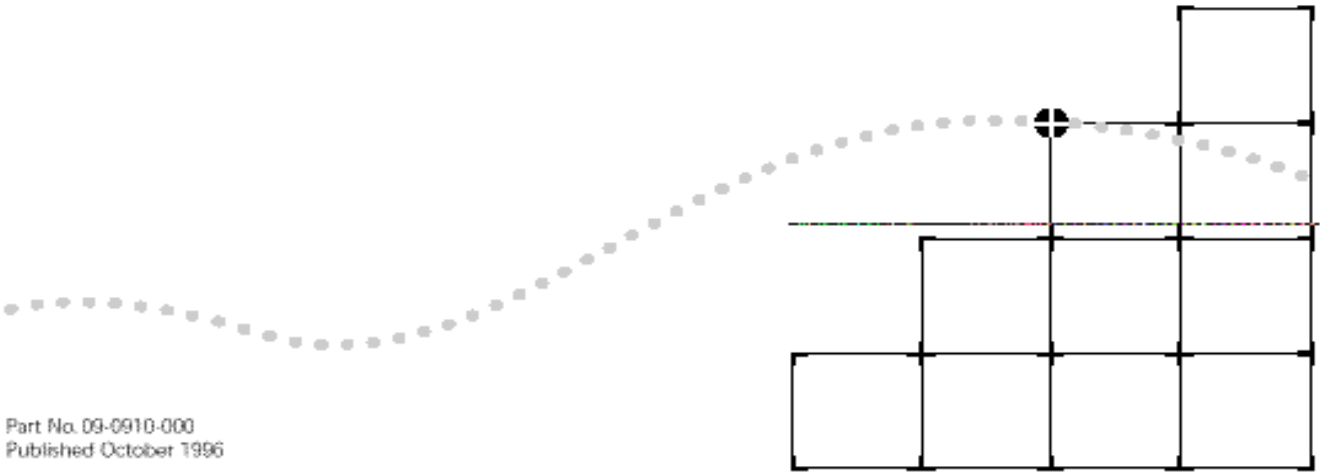
RAS1500 Dialout Application Note (Using NCSI Software Provided with the RAS1500)

Draft



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NCSI Dialout for RAS1500

Introduction

This document provides product overviews and step-by-step instructions to install and configure Network Communications Services Interface (NCSI) dialout clients on a Microsoft® Windows™95 platform as well to configure the NCSI dialout feature on the RAS1500.

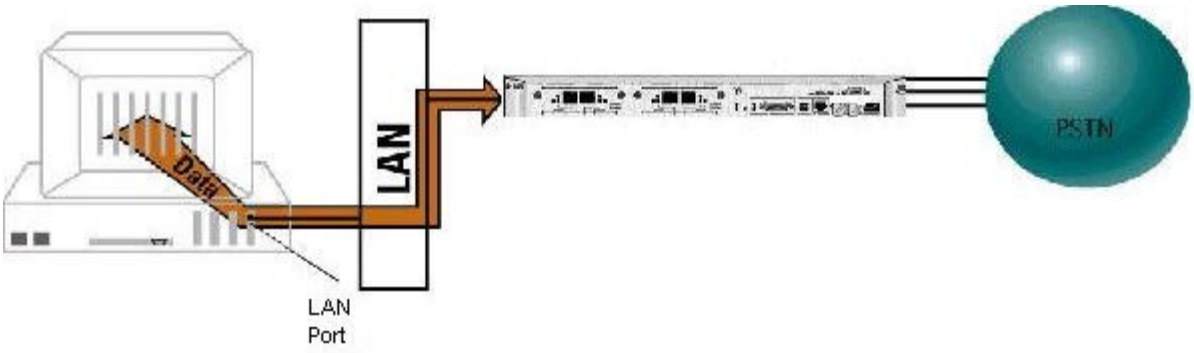
Overview

NCSI client software used in combination with RAS1500's modem sharing capabilities provides a LAN attached PC with DialOut service over IPX/IP or TELNET. The client/server configuration can utilize the LAN/WAN to support all attached users. Dial out service requires only configuration of the RAS1500 and the PC (wishing to dial out) where the NCSI software is installed.

There are two components of the configuration process, the configuration of the RAS1500, and the configuration of the PC.

RAS1500's dialout functionality is extended by its modem pool service, allowing up to 24 simultaneous PC calls (9 per PC - NCSI client limit). Communications applications running on the PC access on-line services, terminal emulation services, and file transfer services using the dialout client. These applications are either NCSI- compatible or non-NCSI compatible.

Technically speaking, a PC with the dialout client software installed accesses the specific port on RAS1500 - just as if that modem were directly attached to the user's PC. See below.



Modem Use of NCSI-Compliant Applications: Data Is Sent over the Network Directly to a RAS1500 Modem

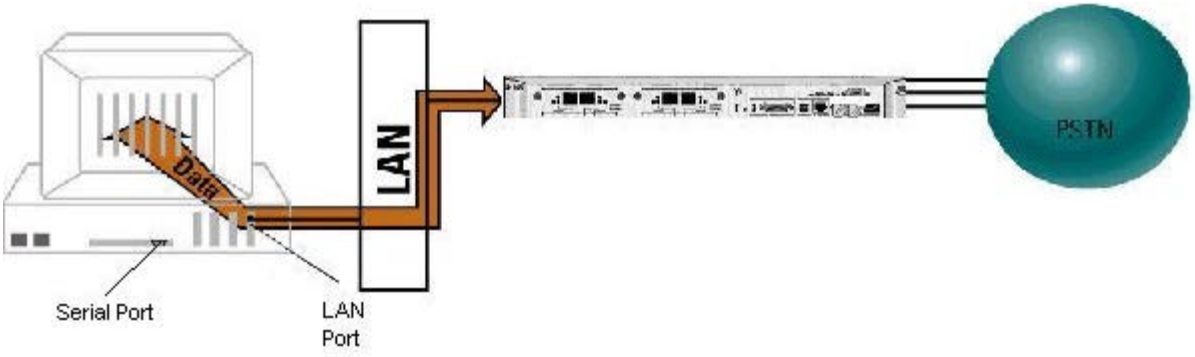
On the **RAS1500**, a *network service* is configured to enable dial-out functionality. Also, a *modem pool* is assigned a name to identify modem(s) belonging to the pool. Each port in that pool can be assigned to specified users throughout the network. In turn, each modem pool port has a modem

attached which can access any other modem attached to a host, PC, or some other system across the LAN/WAN.

The purpose of the modem pool is to provide shared modem resources for LAN/WAN access to a large number of dialout clients attached to RAS1500 without requiring a one-to-one ratio between clients and modems. This is a more effective use of MIS resources to setup and maintain modems.

On the **client PC**, NCSI also provides a network naming service to choose each RAS1500 on the network, as well as choose ports on that server (for example, *rm0/mod:4*). The user can then select a specific service, modem group, or modem port from a list.

All traffic between the dialout client and the RAS1500 is sent over the PC's LAN port. But, for non-NCSI compatible applications, even though the traffic is actually sent over the LAN port, a COM port must be logically mapped to a specific port to support communications. See illustration on the next page.



Modem Use of NCSIPort: Data Intended for Serial Port Is Redirected over the Network to a RAS1500 Modem

Applications

NCSI-compatible applications access the NCSI directly through the NCSI API to take advantage of NCSI features. A non-NCSI compatible application must use a NCSI *redirector* which provides an interface between the non-NCSI compatible application and NCSI. The NCSI redirector is the virtual device driver *ncsidrv.vxd* provided in the NCSI package.

A second virtual device driver - *ncsi.drv* - supports communications for NCSI-compatible applications. In practice, the redirector works through ncsi.vxd.

In addition to the NCSIPort application, the dialout client software includes two other applications, *btty* and *clist*. Btty provides a simplistic command interface that allows the client user to establish a connection to the modem pool, monitor the connection, and disconnect from the modem pool. Clist, lets users view a list of all the servers currently known to the client to determine which server they wish to establish a connection.

Important: Determine whether your communications package is NCSI or non-NCSI compatible before you begin NCSI installation and configuration because erroneously choosing the redirector for a NCSI-compliant program may render your application inoperable. NCSI-compatible programs such as PROCOMM PLUS use the NCSI virtual device driver *ncsi.vxd* while non-NCSI compatible programs such as Windows' *HyperTerminal* use the NCSIPort virtual device driver *ncsidrv.vxd*. Consult the NPC Website at *http://www.networkproducts.com* for a list of NCSI-compatible programs or contact your software manufacturer for more information.

Installation Assumptions

This application note makes the following assumptions about the client PC:

- You have already successfully installed Windows 95 on the client PC.
- You have already installed a network interface card (NIC) for local (physical) network connections.
- You have already installed the IP or IPX network protocol.
- Your PC is on the same IP or IPX network as RAS1500
- RAS1500 is operational.
- The driver installed on the client for the communications applications that provide NCSI is the ncsi.vxd virtual driver for Windows 95.
- The redirector is for Win95 communications applications that are non-NCSI compatible.
- If you are upgrading NCSI, all previously installed NCSI components will be removed.

Limitations

You should be aware of the following operating limitations:

- Dialout over IPX and IPX dial up networking cannot both be used simultaneously on the same PC.
- The NCSI redirector does not support a PC with *physical* COM3 or COM4 selected. To make it work, be sure the *virtual* port COM4 is configured.
- The standard NCSI virtual device driver (ncsi.vxd) supports up to **9** simultaneous sessions of NCSI-compliant applications on a PC but if the NCSI redirector is used only **8** sessions can run.
- The NCSI redirector supports only **1** session of a NCSI-non compliant application. Using this driver also reduces the allowable number of NCSI-compliant sessions to **8**.
- If any NCSI tool (Windows BTTY, Monitor, Port Set, Clist) is running, each invocation reduces the number of NCSI-compatible applications that can be run by **one**.
- Dialout is not supported over PPTP ports. It can be used for asynchronous ports only.
- Non-NCSI DOS applications cannot use the NCSI redirector.
- A NCSI Windows 3.x client workstation fails to use the specified NCSI redirect COM port and modem setting. The error message received is "port does not exist or are used by another program." We recommend you specify a physical COM port to direct NCSI traffic.

Known Issues

The following conditions apply when NCSI is running:

- The dialout uninstall utility for the Win95 dialout client does not remove the redirector system icon. You must manually remove this item before upgrading to a newer version or it will create a duplicate entry in the system icon.
- Occasionally the IPX dialout client cannot get Login: prompt when using btty.exe.
- Occasionally the IPX dialout client cannot receive data from RAS1500 when using btty.exe.
- NCSIPort 95 modem settings can't be changed while any NCSI application is running.
- BTTY does not work on a NCSI DOS client workstation. The error code received if you attempt to use BTTY is "received error code = 8".

Documentation Errors

- The online documentation on the CD that accompanies the RAS1500 has some errors in it. This application note supercedes the online documentation for NCSI and Dialout configuration.

Configuring Dialout Service on RAS1500

Overview

RAS1500 provides the following network dial-out services:

- IP / IPX dial-out (modem sharing)
- ClearTCP
- TELNET dial-out

IP/IPX Dial-Out

IP / IPX dial-out is commonly known as modem sharing, meaning that any number of RAS1500s can be configured for modem pools allowing network users connections on a first-come, first-serve basis.

ClearTCP Dialout

RAS1500 supports ClearTCP as a network service. ClearTCP is used by some Internet providers to tunnel user data through a socket in rough form without network protocols being applied.

Telnet Dial-Out

RAS1500 also supports modem sharing for TELNET users who want to dial-out. A network user can TELNET to RAS1500 and allocate one or more modems for dial-out.

Once a modem is allocated to a user, it is connected to a TELNET session. All characters received from the user are sent to the modem (for example, AT command strings) and all characters received from the modem are sent to the user.

Network Dialout Configuration Overview

To configure RAS1500 and your PC to support network dialout services, you must follow these general steps:

1. Add an IP Network on your system
2. Add an IPX Network on your system
3. Add a *modem group* to your RAS1500
4. Add a dial-out *network service* to your RAS1500
5. Add a *dialout user* to your RAS1500
6. Set *global dialout service* parameters to your RAS1500
7. Load and configure *NCSI client software* on your PC
8. *Optional* - set TELNET dial-out parameters to your RAS1500
9. *Optional* - edit network services on your RAS1500

Note: This section assumes you have completed basic system configuration, including adding and enabling the IP network.

Network Dialout Configuration

Configure IP on System

Configure the IP system as follows:

Set system name <system name>

Add ip network ip address <ip address>/<subnet mask>

Set ip network ip routing ripv2

Configure IPX System – To Support Dial out - Dial Up Networking

If you wish to support Microsoft Dial Up Networking, you must configure IPX on the RAS1500 as follows:

Configure the IPX network on the ethernet interface:

Add ipx network ipx address <ipx network address> frame <frame type>

Example:

Add ipx network ipx address 3 frame dsap

Set the IPX system name:

Set ipx system name <system name>

Use the same system name as you have previously set with the "set system name" command.

Example:

Set ipx system name fred

Next, we need to get the physical address of the ethernet interface. Type:

Show interface rm0/eth:1

To which the RAS1500 responds something like:

```
ras1500> show interface rm0/eth:1

INTERFACE rm0/eth:1 SETTINGS
Description:                SONIC-T Ethernet Driver
Type:                       ETHERNET-CSMACD
Speed:                      0
High Speed:                 0
Administrative Status:      Up
Operational Status:         Up
Link Up/Down Traps:         ENABLED
Promiscuous Mode:           FALSE
Connector Present:          TRUE
Filter Access:              OFF
Last Change:                0d 00:00:02
Input Filter:
Output Filter:
Physical Address:           00:c0:49:0f:48:a6
ras1500>
```

We'll need to note the physical address of the RAS1500 ethernet port. Above, the address is 00:c0:49:0f:48:a6. We'll need to insert the last eight octets of this address in the next step.

Next up, we'll need to enter the IPX system number, which we gathered above:

Set ipx system number <last 4 octets of physical address without colons>

Or for using the example above:

Set ipx system number 490f48a6

Configure Modem Groups

By default all modem ports on your RAS1500 belong to a default modem group called *all*. However, you can define several modem groups (for all network services *except* DialOut) that contain a range of interfaces. Modem interfaces can belong to more than one modem group.

When a network user requests a modem group, he or she will be assigned the first available modem from that group. If all modems in the group are in use, the user will get a message indicating a modem is not available and the user can either re-submit the modem request or select another group.

Configure modem groups by specifying the interfaces that you want to belong to the group:

add modem_group <group_name>
interface [rm0/mod:1, rm0/mod:2, etc.]

For example, to configure a modem group called abc, type:

add modem_group abc interface rm0/mod:1,rm0/mod:8

Note: The modem group you specify above for DialOut network service must match **exactly** (case-sensitive) the modem group you specify for the DialOut user to insure a proper dial-out connection. For instance, if you create a DialOut network service for the default modem group **all**, then the DialOut user you create must also specify the modem group **all**.

Configure Dialout Service

Adding a dial-out service configures RAS1500 to listen for client requests (TELNET users, skip to the *Configure Dial-out Users* section*).* Use the following command:

add network service <name up to 8 characters>
server_type dialout
data <modem group information>
socket <number>
close_active_connections <true | false>

name	Name (sent via SAP) you specify for the service. Limit: **8 ASCII** characters.
server_type	Designates the type of service. The parameter in this case is *dialout.*
data	Used to assign one or more modem groups to the dialout service. *Note*: You **must** assign a modem group but **not** more than one to the DialOut service or it will not be enabled.
socket	Dialout service uses TCP port 32773 which **cannot** be changed for this service type
*close_active_*	Indicates whether or not to close any active connections when a service is disabled by the **disable network_service** command. Default is *False*.

To specify one modem group, after *data* type:

data modem_group="<group_name>"

Note: See the *RAS1500 User Manual* for more on **data** values.

For example, to add the network service "modems", server type "dialout", that specifies the default modem group *all*, type:

add network service modems server_type dialout data modem_group="all"

Important: If any **data** value includes a *space*, enclose it in *double quotations* and *forward slashes*. For example: data modem_group=\"Hi everyone\"

Configure Dial-Out Users

Create a dial-out user using the following commands to add a *user name*, type and *modem group*. Remember to specify a modem group **exactly** matching the modem group you specified earlier.

add user <name> password <password> **type dial_out**
set user <name> **modem_group** <name>

For example:

add user gil password fish type dial_out
set user gil modem_group all

Set Global Dialout Parameters

Dialout service has three global configuration parameters that you can set using the following command. *Note*: This command does *not* apply to TELNET DialOut Service.

set dial_out
idle_timeout <minutes>
recovery_timeout <minutes>
security [yes | no]

idle_timeout	Determines the interval that RAS1500 will wait before closing an inactive dialout connection. Default: **5 minutes**. Limit: **65535 minutes**.
recovery_timeout	When the client terminates a connection, this setting determines the interval that RAS1500 will wait before closing the session. For example, if a user accidentally disconnects his LAN connection, he can plug it back in without losing his session with the hub. Default: **5 minutes**. Limit: **65535 minutes**.
security	Determines whether to require a user name and password to dial out. This value must be set to **no**.

For example:

set dial_out idle_timeout 2 recovery_timeout 2 security no

Optional - Configure Telnet Dialout Service

Follow these steps to configure TELNET dialout service:

1 If you've already added a modem group and dialout user, set network service as follows:

- *server_type* as *telnetd*
- *socket* number higher than 1024 (to avoid conflicts with existing socket numbers)
- *DATA* parameters:
  - service_type=dialout
  - modem_group="<name>" You can use the default modem group *all* or create your own. The modem group name must be in double quotes.

Optionally, if you want to provide a *login banner* or *login prompt*, they are expressed as:

- login_banner=string
- login_prompt=string

Note: Adding control characters \r\n\ to banners or prompts puts a carriage return after the string.

Note: If you *don't* want dialout callers seeking authentication, add *auth=off* to the DATA value of the network service (auth=on is the default). In this case, *do not* add a user when setting auth=off.

For example (abbr.):

ad ne se modems ser telnetd so 6666 da service_type=dialout,login_banner=\"Hi y'all\r\n\",modem_group="all"

IMPORTANT: You cannot assign *more than one* modem group to a TELNET network service.

The previous example makes available *all* modem ports assigned to the default modem group *all*. If you want to make only *one* port available for TELNET service, type the following, for example:

add modem_group tn_users interface rm0/mod:5

ad ne se di ser telnetd so 6666 da service_type=dialout,login_banner=\"Hi y'all\r\n\",modem_group="tn_users"

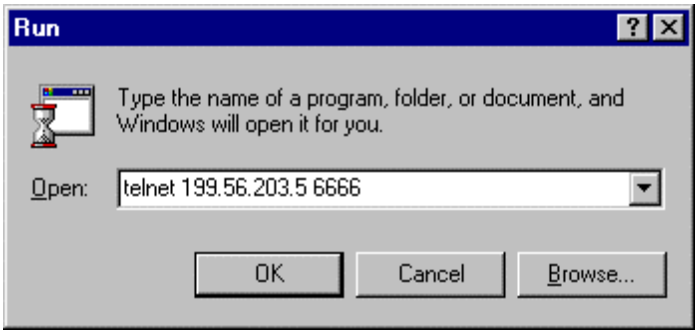
Reminder: If any **data** value includes a *space*, enclose it in *double quotations* and *forward slashes*.

2 Type **list network services** to review network service settings. Be sure that Administrative Status is *enabled*. If *disabled*, you'll need to try again: be sure to observe command conventions. It lists:

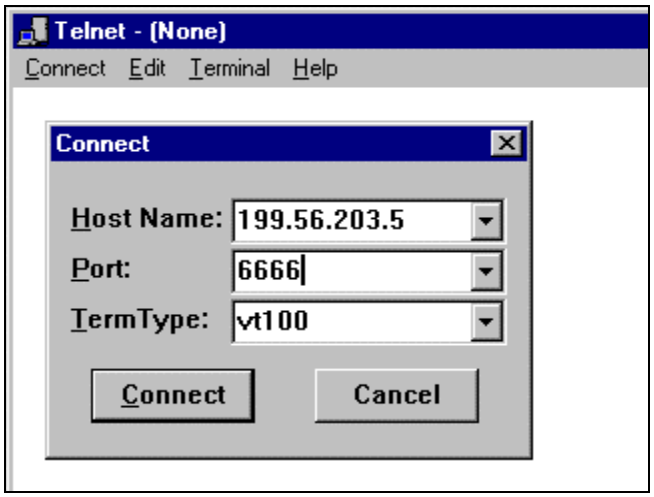
```
CONFIGURED NETWORK SERVICES
                        Server                          Admin
Name                    Type        Socket    Close     Status
modems                  TELNETD     6666      FALSE     ENABLED
  DATA: modem_group="all",service_type=dialout,login_banner="Hi y'all"

tftpd                   TFTPD       69        FALSE     ENABLED
  DATA:

telnetd                 TELNETD     23        FALSE     ENABLED
  DATA:
```

3 TELNET to RAS1500's IP address with a TCP Port number matching the socket number set earlier.

WIN 95 users: from the **Start** icon, click on **Run** and, in the dialog box, type *telnet 199.56.203.5 6666* in the **Open** field as shown below.



or, after opening the **Run** box, type *telnet* and click on **Connect**, **Remote System** to bring up the **Connect** box below. Replace TELNET with the socket number in the **Port:** field.



4 Configured users are prompted to login and upon authentication can issue AT commands to the modem. Be aware that callers with the DATA value *auth=off* are not prompted to login.

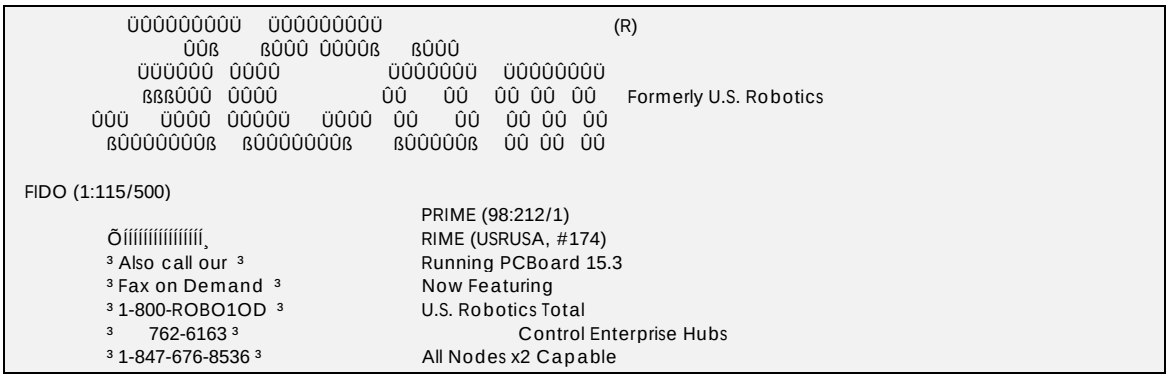
IMPORTANT: Characters you type after providing a login & password do *not* display on screen.

For example, issue the *ATI4* command:

```
login: gil
Password:

USRobotics Analog/Digital Quad  Settings...
Copyright, 1988-97, U.S. Robotics. All rights reserved.

  B0  C1  E0  F1  Q0  V0  X0
  BAUD=38400  PARITY=N  WORDLEN=8  DTE=GATEWAY NAC
  DIAL=TONE   ON HOOK   TIMER     LINE=STANDARD ANALOG

  &A0  &B0  &C1  &D2  &G0  &H0  &I0  &K1  &L0  &M4  &N0  &P0  &R1  &S0
  &T4  &U0  &X0  &Y1  %N6  *U1=0  *U2=0  *U3=1  *V2=0  *X0=2048  *X1=2

  S00=000  S01=000  S02=255  S03=013  S04=010  S05=008  S06=002  S07=060
  S08=002  S09=006  S10=007  S11=070  S12=050  S13=000  S14=000  S15=000
  S16=000  S17=000  S18=000  S19=000  S20=000  S21=010  S22=017  S23=019
  S24=150  S25=005  S26=001  S27=000  S28=008  S29=020  S30=000  S31=000
  S32=009  S33=000  S34=000  S35=000  S36=000  S37=000  S38=000  S39=011
  S40=000  S41=000  S42=126  S43=200  S44=015  S45=000  S46=255  S47=032
  S48=000  S49=016  S50=100  S51=000  S52=005  S53=000  S54=064  S55=000
  S56=000  S57=000  S58=000  S59=000  S60=000  S61=000  S62=000  S63=000
  S64=000  S65=000  S66=000  S67=001  S68=000  S69=000  S70=000  S71=001
  S72=000  S73=001  S74=000  S75=000  S76=004  S77=000  S78=000

  LAST DIALED #:  T918479825092
  LAST DNIS #:                  LAST ANI #:
```

or, call the 3Com BBS site at 847 982 5092:

```
login: gill
Password:

CONNECT 28800/ARQ/V34/LAPM/V42BIS
CONNECT 115200 / 10-14-97 (13:23:44)
(Error Correcting Modem Detected)

USR Support BBS - Node 12 - Total Control Rack
PCBoard (R) v15.3/250 - Node 12

Testing your system capability...

Do you want graphics (Enter)=yes? (     )
```



Note: Modem LEDs light only when modem *calls* are unhooked (*amber*) and connected (*green),* not before. A TELNET connection (SHRMOD) will *not* light the modem unless a call is placed.

Optional - Editing Network Services

You can change network service values using **set network service**. But two caveats apply:

1. All DATA parameters are lost when you issue the **set network service** command. So you must re-enter all options in the DATA field.
2. Before using the **set network service** command, you must first disable the network service. Enable the network service again once the change is made. The network service is enabled by default when you add it. To disable the service, type:

   disable network service <service_name>

   To enable network service, type:

   enable network service <service_name>

Note: You cannot change the service name using the **set network service** command. To do so, delete the network service using **delete network service** and add it again with the new service name.

Installing and Configuring Dialout on a Windows 95 Platform

Overview

Before you install and configure the dialout client, be sure that the RAS1500 has been configured to accommodate your dialout client as described in *Configuring Dialout Service on RAS1500*.

> *Note*: NCSI Client installation for Windows 3.*x* and DOS platforms is described in the *RAS1500 User Manual*.

To install and configure the dialout client on a Windows 95 platform, do the following:

1. Determine if you will be using a NCSI-compatible or a non-NCSI compatible application.
2. Install NCSI Client.
3. Add new hardware.
4. Install your modem.
5. Launch Windows 95.
6. Setup security.
7. Using Port Setup, configure COM port to dialout for non-NCSI compatible applications.
8. Open a NCSI- or non-NCSI compatible application.
9. Connect to the RAS1500 you previously configured for dialout.

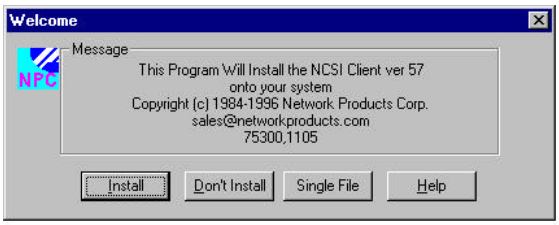
Determining Need for NCSIPort 95

Determine if you will be using a NCSI- on non-NCSI compatible application. If you're using a non-NCSI compatible program such as *HyperTerminal*, you will need to load the NCSI redirector NCSIPort 95 (ncsidrv.vxd). to enable dialout service.

Installing the NCSI Client on Windows 95

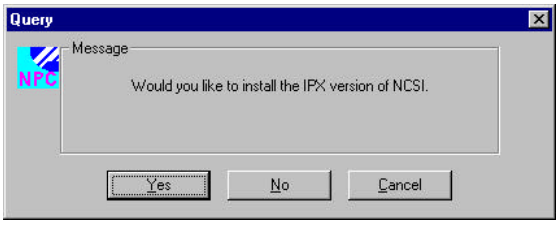
The installation process is almost entirely automated. Follow these steps to successfully install the NCSI software onto your PC. NCSI Client Ver 57 is the version supported by RAS1500. Later NCSI versions are *not* currently supported.

1. Insert RAS1500 Resource CD into your CD Rom Drive.
2. Run D:\Client\Dialout\Win95\ncsi9557.exe (assuming D: is your CD Rom). Select **Run...** from the **Start** menu and type: **D:\Client\Dialout\Win95\ncsi9557.exe** in the Command Line box. Temporary support files are copied. Once the files have been copied, a **Welcome** screen displays:

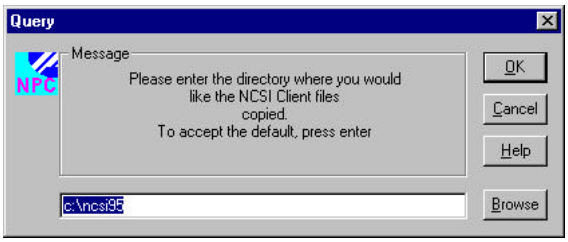

Welcome
Message
This Program Will Install the NCSI Client ver 57
onto your system
Copyright (c) 1984-1996 Network Products Corp.
sales@networkproducts.com
75300,1105
Install
Don't Install
Single File
Help

3 Click on the **Install** button to start the installation process.

As the installation process continues, a screen appears with the following message: "This Client will only work with Server versions higher than 2.14." Click on **OK**. The **Query** screen displays:

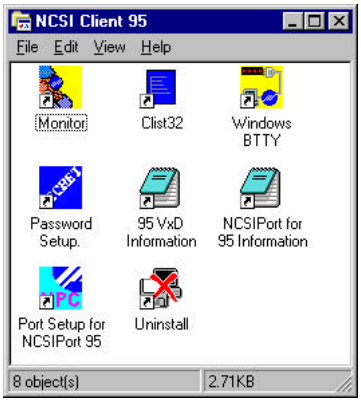


4 If you want to install NCSI's IPX version, click on the **Yes** button. NOTE: If you intend to run Windows Dial up networking, or another IP PPP type application, you MUST use the IPX version of NCSI and have the IPX protocol operating on the PC and the RAS1500. If you don't want to install the IPX version (and you are not running an IP application) click **No** and a **Query** screen appears for the TCP/IP version. You can choose this screen or click **No** again and choose the next screen for NCSI's NetBios version. A **Query** screen similar to the following displays:



5 Enter a directory name or accept the default location (*c:\ncsi95*) where the files will be copied and click **OK**. The files of the NCSI client will be copied to the directory listed in the box.

All files are decompressed. Because this takes a few moments you can click on **Cancel** anytime to stop installation, but you'll need to restart at Step 1. When the installation process is complete, a program group called NCSI Client 95 is created.



After the program group is created, the **Installation Completed** screen displays:

7 Click on **Stay Here**.

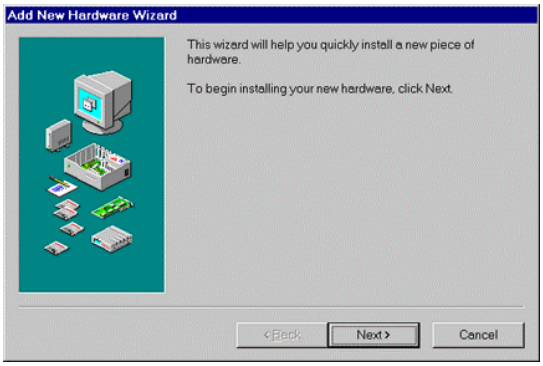
You are returned to the NCSI Client program group. To use the NCSI Client software you must now add hardware and modems to your PC.

Adding New Hardware

If you have non-NCSI compatible applications, you must install the NCSI redirector.

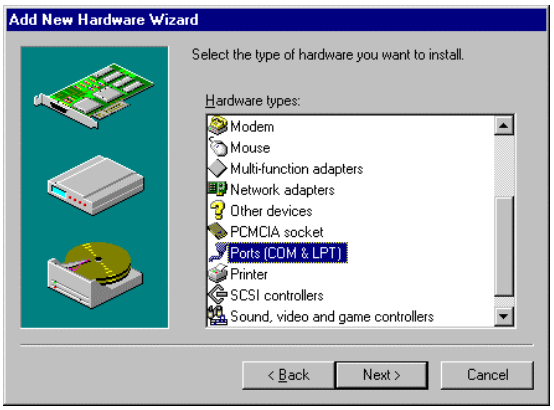
1 At the **Control Panel**, click on the **Add New Hardware** icon.

2 At the **Add New Hardware Wizard** screen, click **Next>**.

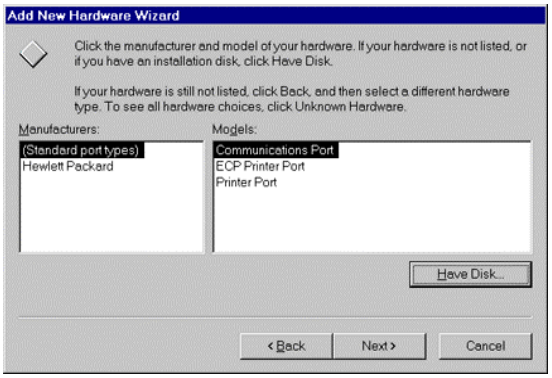


3 At the next screen, click on the **No** button and click **Next>**.

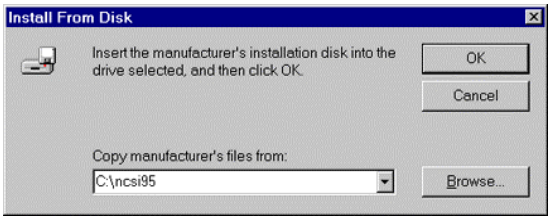
4 At the next screen, highlight **Ports** (COM & LPT) in the Hardware types scroll list and click **Next>**.



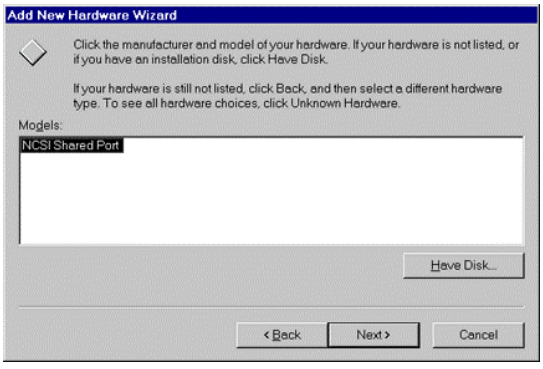
5 Select **Manufacturers** (Standard port types**)** and **Model** (Communications Port). Click on **Have Disk...**



6 At the **Install from Disk** screen, enter the directory where the NCSI client was installed and click **OK**.



7 The **Add New Hardware** screen displays with **NCSI Shared Port** highlighted. Click **Next>**.



8 Click **Finish** to complete new hardware installation.

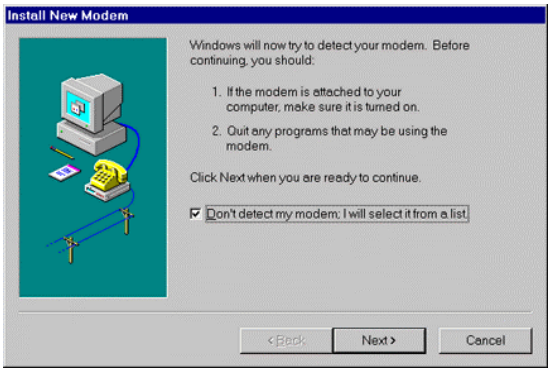
You will be returned to the **Control Panel**. You can now add your modem.

Installing Your Modem

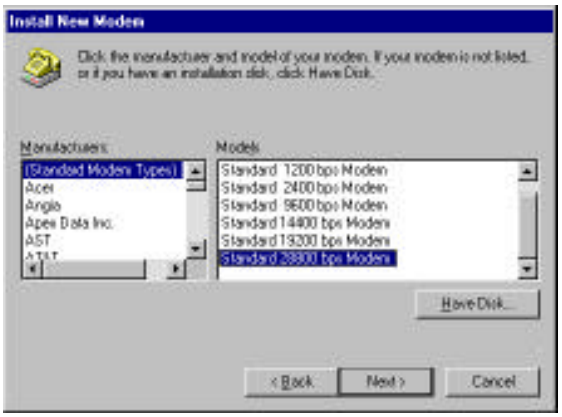
You now need to configure the modem for the dialout client.

1 At the **Control Panel** program group, double click on the **Modems** icon.

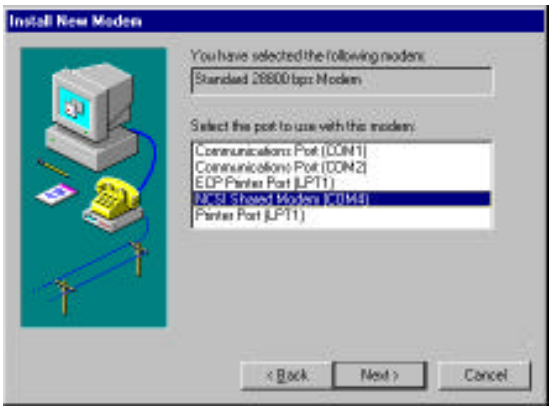
2 At the Modems Properties screen, click on the **Add...** button. At the **Install New Modem** screen, click on **Don't detect my modem**, and click **Next>**.



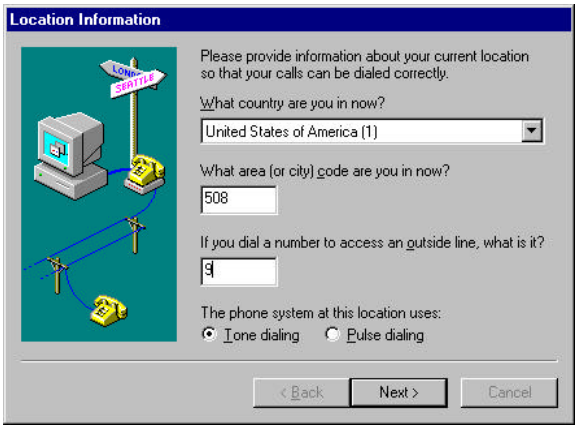
3 At the next screen, select **Manufacturers** (Standard Modem Types) and **Models** and click **Next>**.



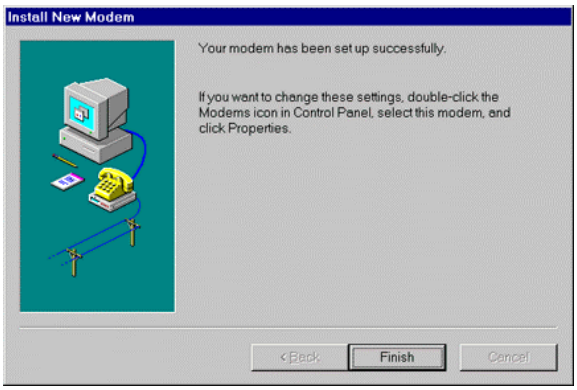
4 At the next screen, highlight **NCSI Shared Modem** (COM4) and click **Next>**.



5 Configure the location, so that calls can be dialed correctly. Click **Next>**.



6 Your modem has been installed successfully. Click on **Finish**.



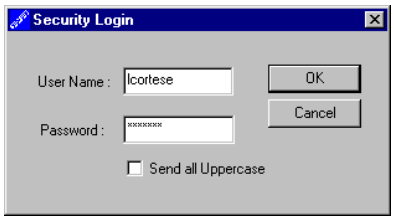
You will be returned to the **Control Panel**. You can now launch Windows 95 (or reboot your PC).

Setting Up Security on the Windows 95 Platform

If you are going to set up security on the Windows 95 platform, you must set it up after each time you reboot your system. You can setup security for non-terminal applications as follows:

1 Double click on the **Security** icon in the NCSI95 program group.

2 Enter a **User Name** and **Password**. This information is used by non-terminal applications when accessing RAS1500.

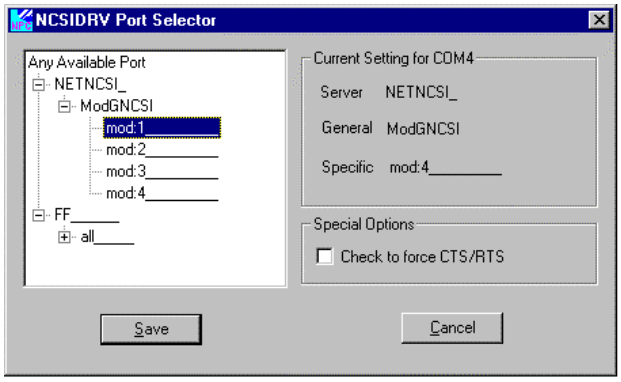


Configuring COM4 port for Dialout (non-NCSI)

If you will be using a non-NCSI compatible application you will need to set a specific port using the Port Set application.

1 Double click on the **Port Setup** program icon in **Programs, NCSI Client 95**.

2 Select a **Specific** NCSI port by clicking on the port name listed on the **NCSIDRV Port Selector** screen you want the COM4 port to map to. Selecting a **General** name is **not** supported. When you select a **specific** name option, the screen displays as follows. Be sure to scroll down to the RAS1500 port you specified in the earlier configuration, otherwise NCSI may fail.



3 Click **Save**.

You are now ready to connect to RAS1500 and use the modem pool.

Opening an Application

You can open an NCSI-compatible application or a non-NCSI compatible communications application to use the dialout client. However, Windows BTTY is provided as part of the dialout client software.

Opening a non-NCSI Compatible Application

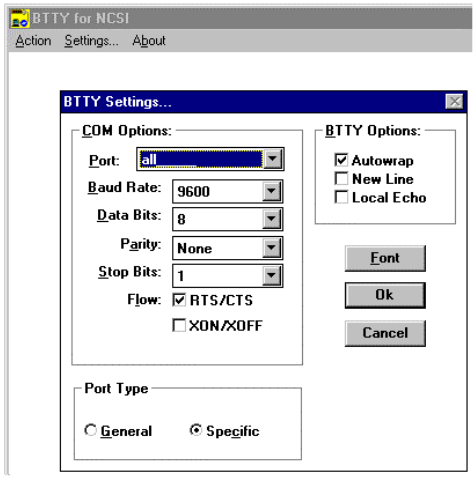
You can open a non-NCSI compatible application to use the dialout client. Follow the instructions provided with the non-NCSI compatible application.

Opening a NCSI-compatible Application

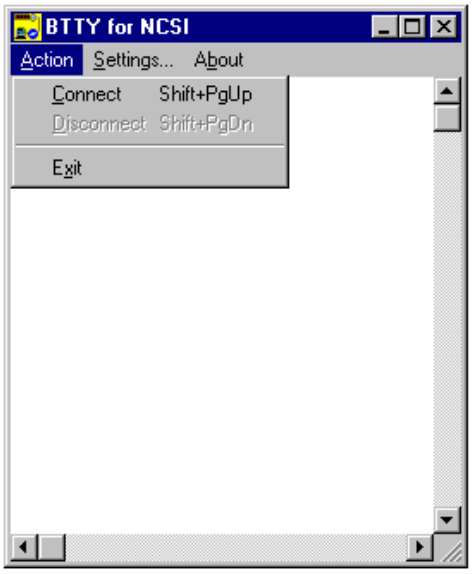
You can open an NCSI-compatible application to use the dialout client. The Windows BTTY application, a NCSI-compatible application, is provided as part of the dialout client software.

1. Double click on the **CLIST** icon to check available RAS1500s on the network. A list of available servers displays.

2 Double click on the **BTTY** icon to attach to the appropriate port on RAS1500. At the **BTTY for NCSI** screen, click on **Settings...** At this screen, select the appropriate **COM Options, BTTY Options** and **Port Type** for your configuration. Click on the **Specific** button and select a *particular* port on RAS1500. Keeping the default **Port** name (with **General Port Type** selected) is *not* supported. Click **Ok**.



3 You will be returned to the BTTY main menu. Click on **Action**, and **Connect** in the pop-up screen. When **OK** displays at the screen, you have successfully connected to RAS1500.



For a complete list of commands available using **BTTY,** select **HELP** from the menu bar.

Support

For Customer support for NCSI Dialout, first see the total service web site at totalservice.usr.com and search on the RAS1500 product. This is where updated NCSI client software will first become available as along with updated applications notes such as this.