

DIALUP ISP Connection in NetWare 4.x, 5.x and BorderManager.

Beta version 1.0, Friday, March 09, 2001 – Craig Johnson

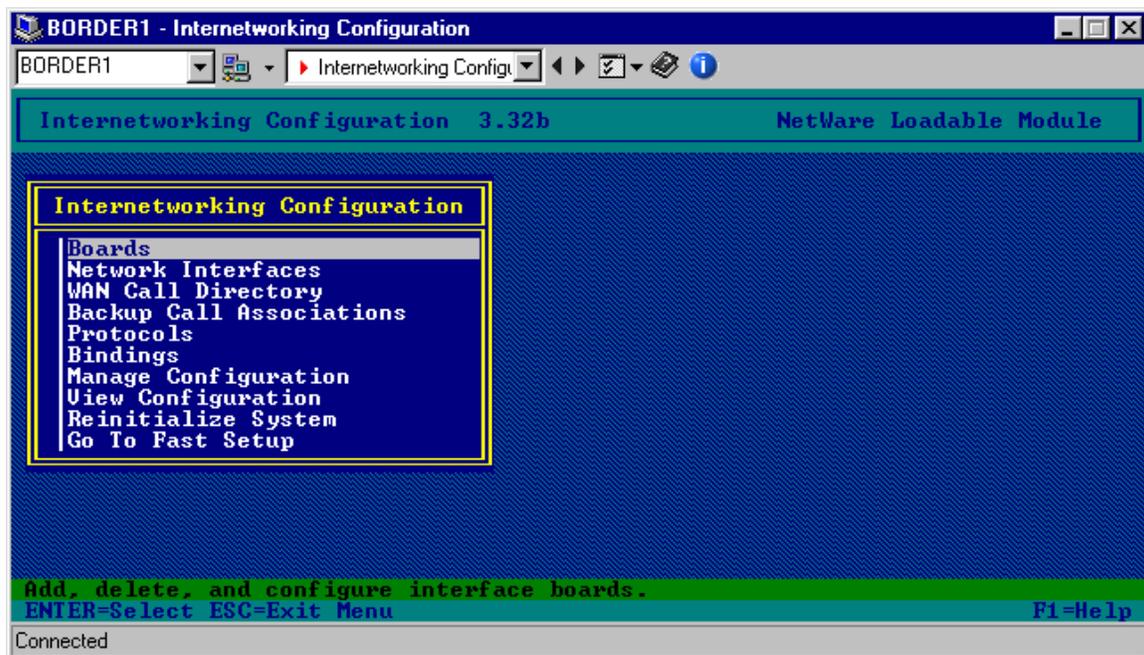
As long as you have the MPR (multi-protocol router) modules installed for NetWare (comes with NetWare 5.x in NIAS and with BorderManager), you can configure a NetWare server to dial into an ISP and act as a router for your internal network.

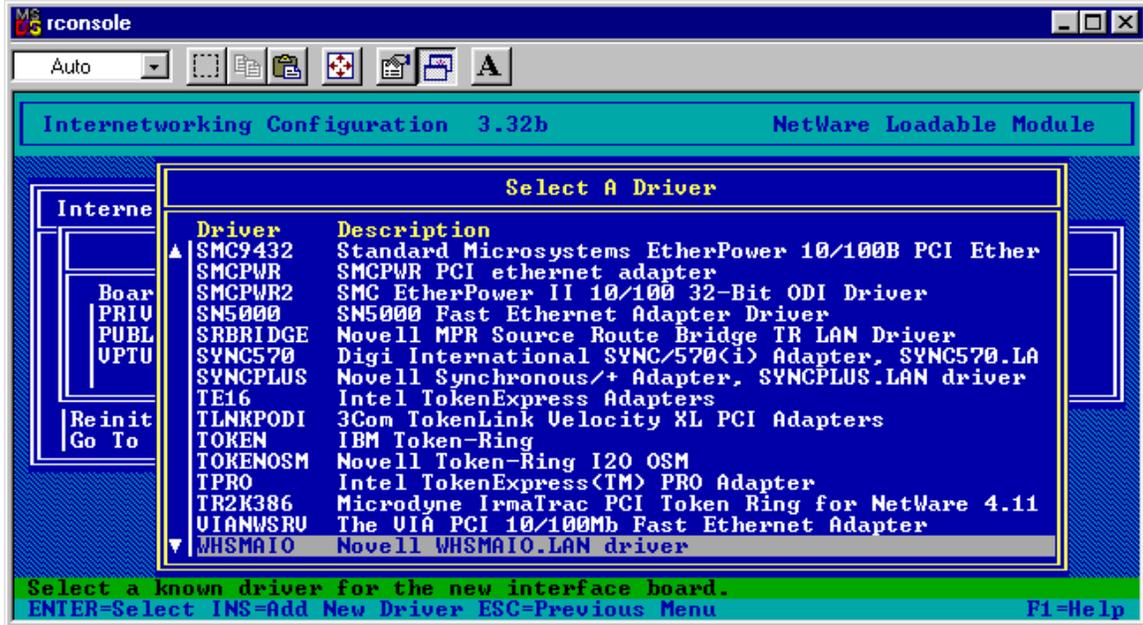
Most of the configuration is done using INETCFG.NLM. You can manually force the connections up and down with the CALLMGR.NLM. You can troubleshoot using the PPPTRACE.NLM.

INETCFG screens

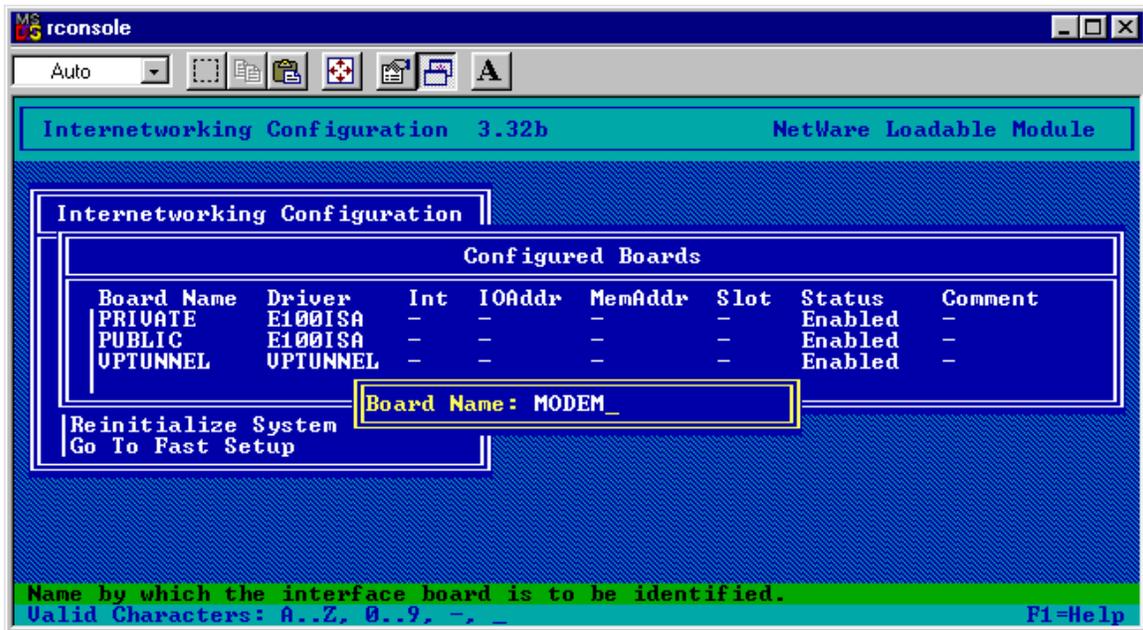
Launch INETCFG at the server console prompt.

BOARDS

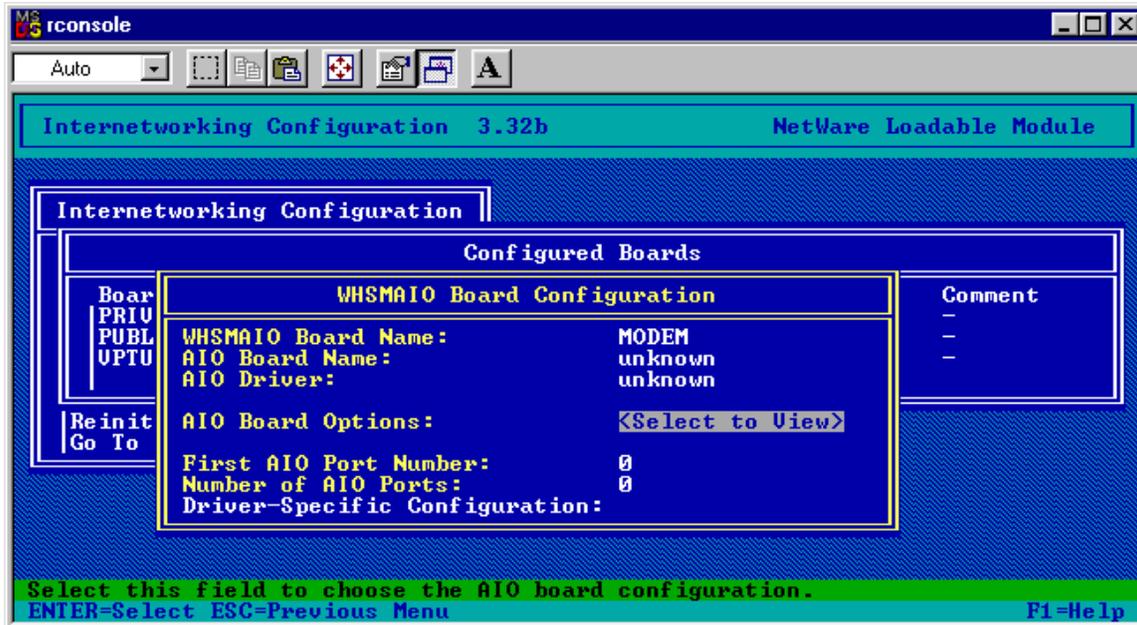




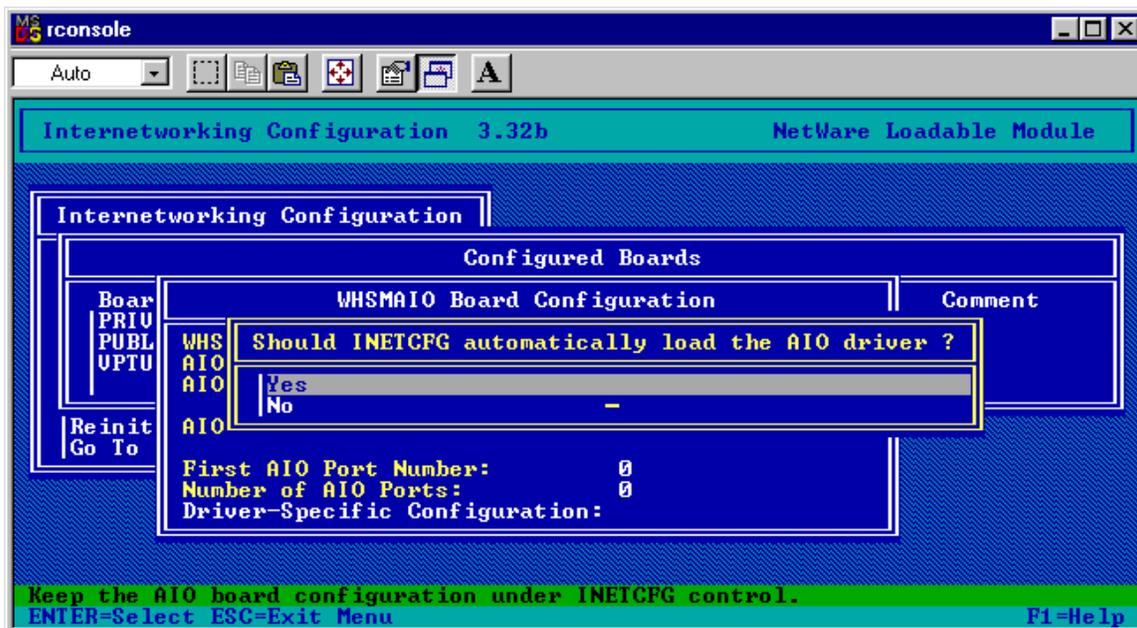
Install a serial port interface by selecting the WHSMAIO driver.



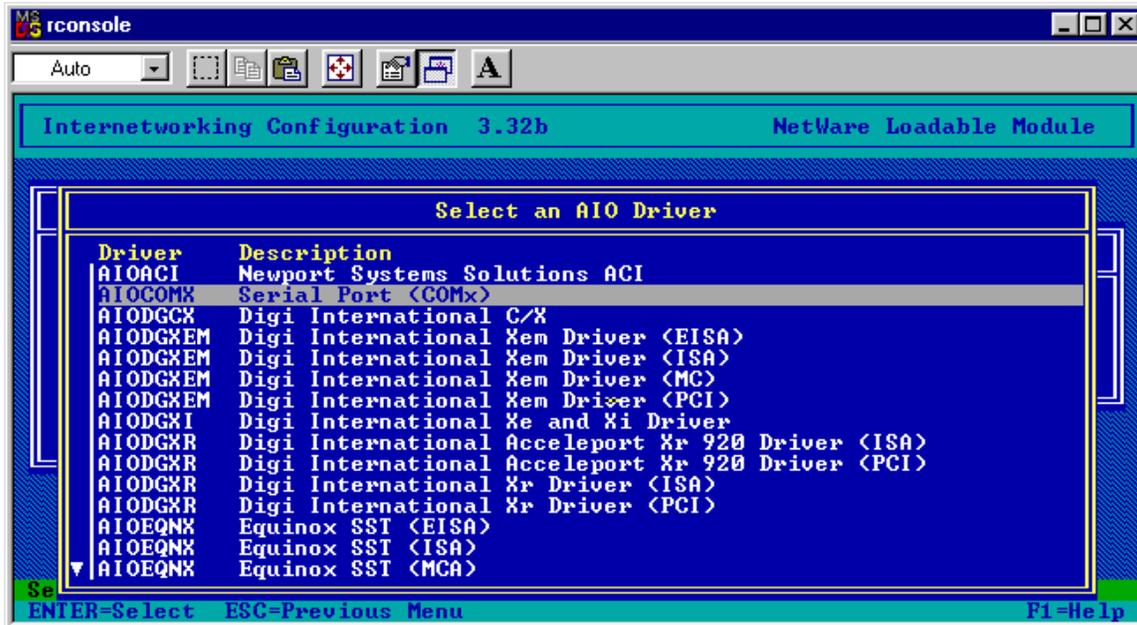
Give it a board name such as COM1 or COM2 or MODEM



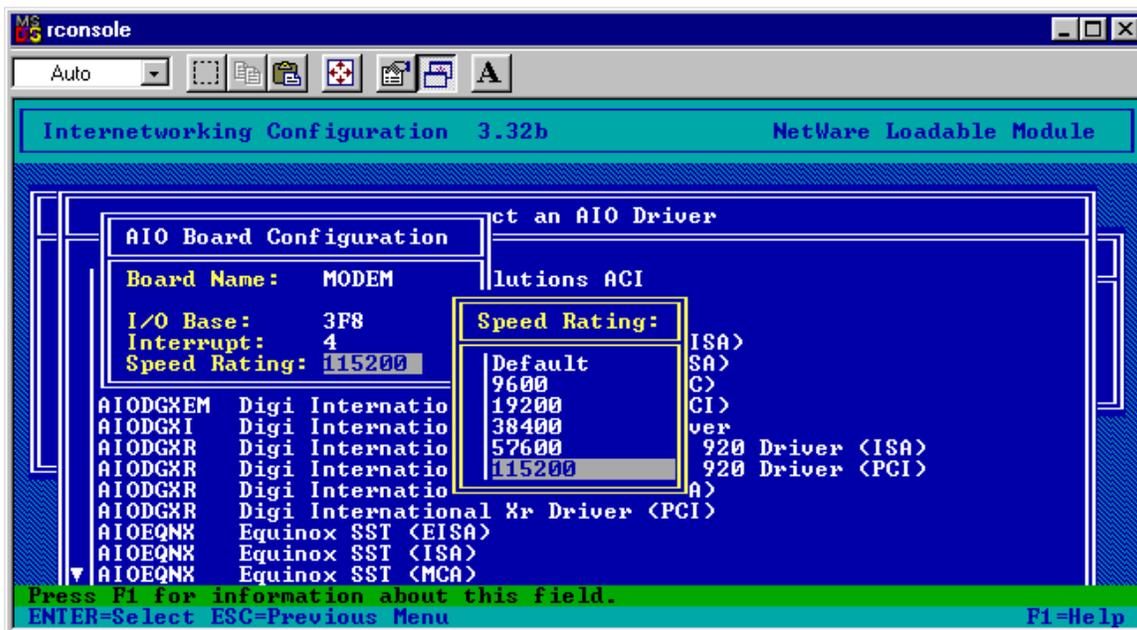
You will need to configure the serial port settings next, so press Enter at AIO Board Options.



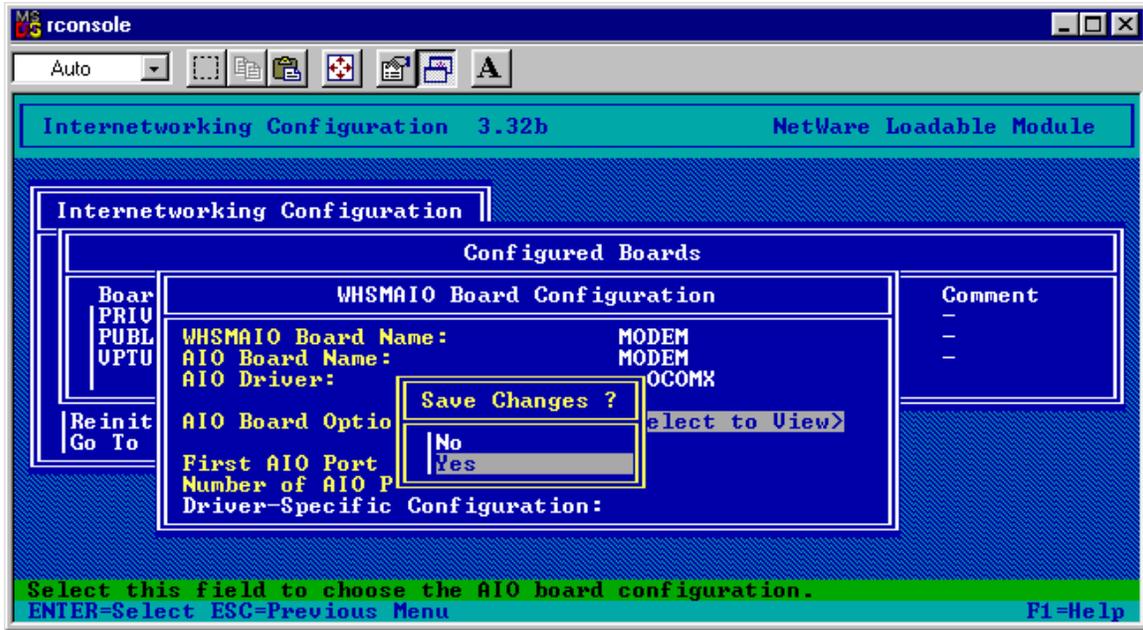
Allow INETCFG to automatically load the AIO driver. (Select Yes).



Select the AIOCOMX Serial Port driver.

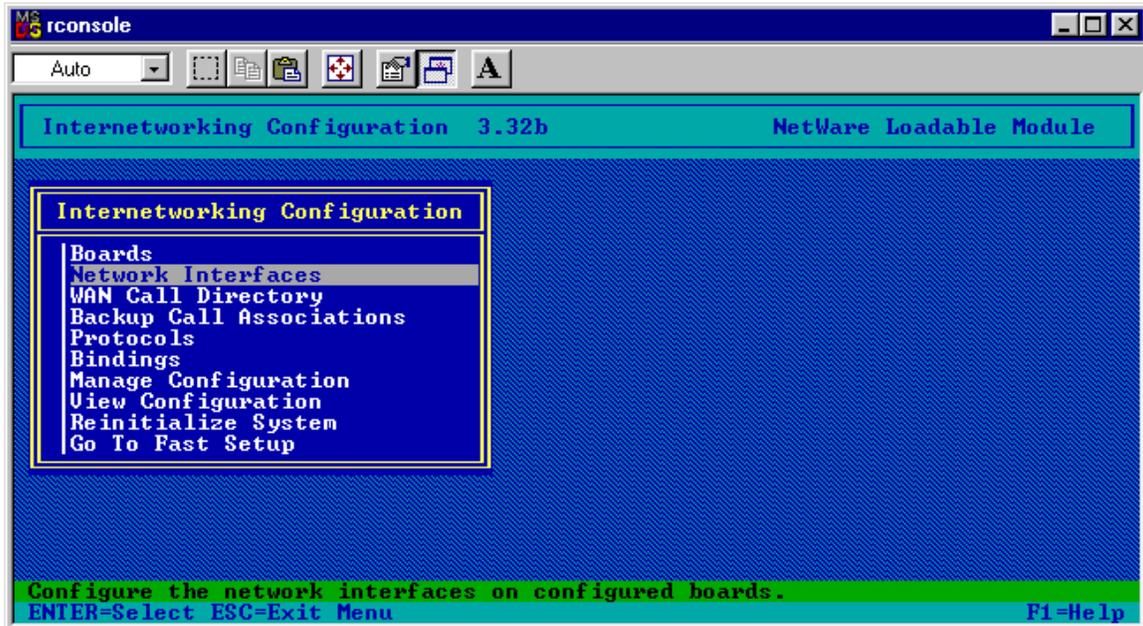


Select the I/O base (3F8 for COM1 or 2F8 for COM2) and interrupt (4 for COM1 or 3 for COM2), then select a serial port speed. Without installing the COMX218.EXE patch, you should not go above about 38,400.

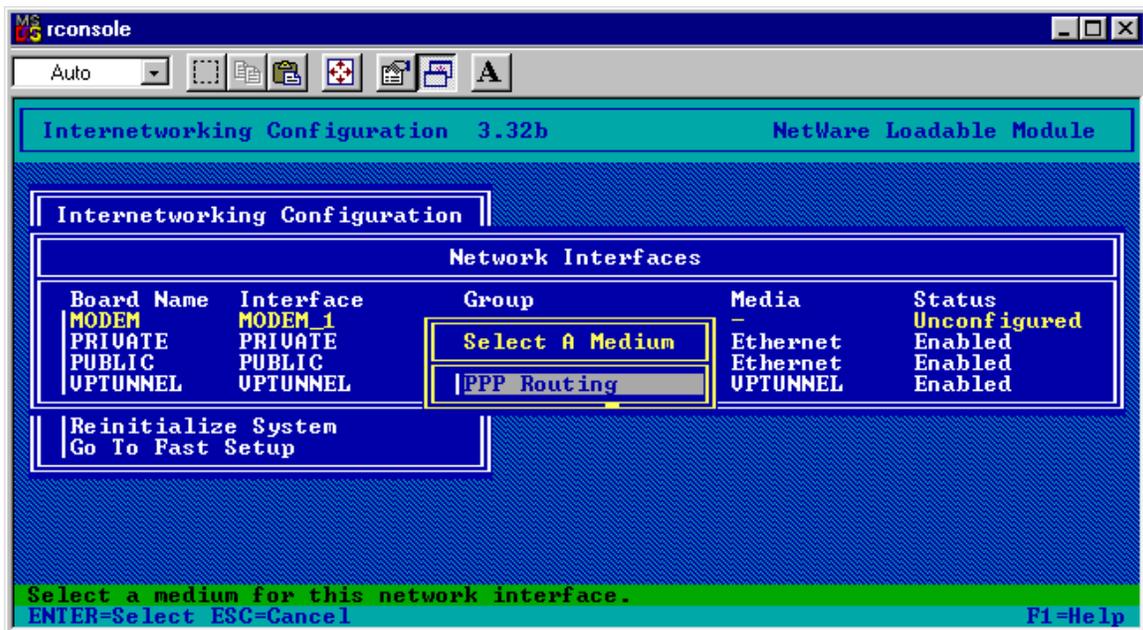


Press Esc and save the changes.
Press Esc again to return to the INETCFG main menu.

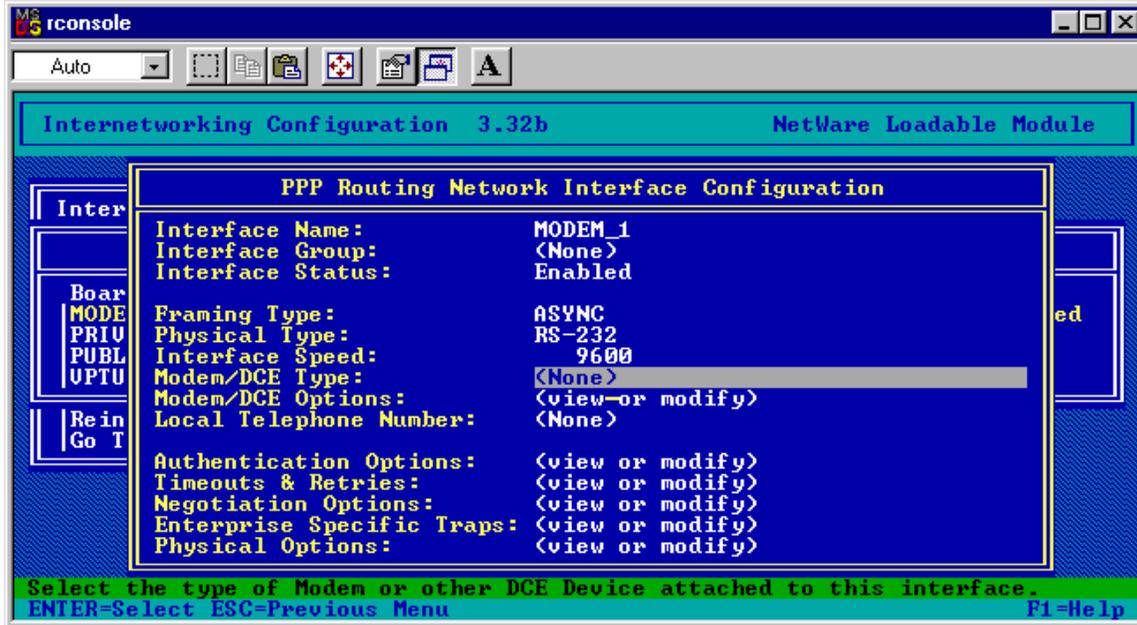
Network Interfaces



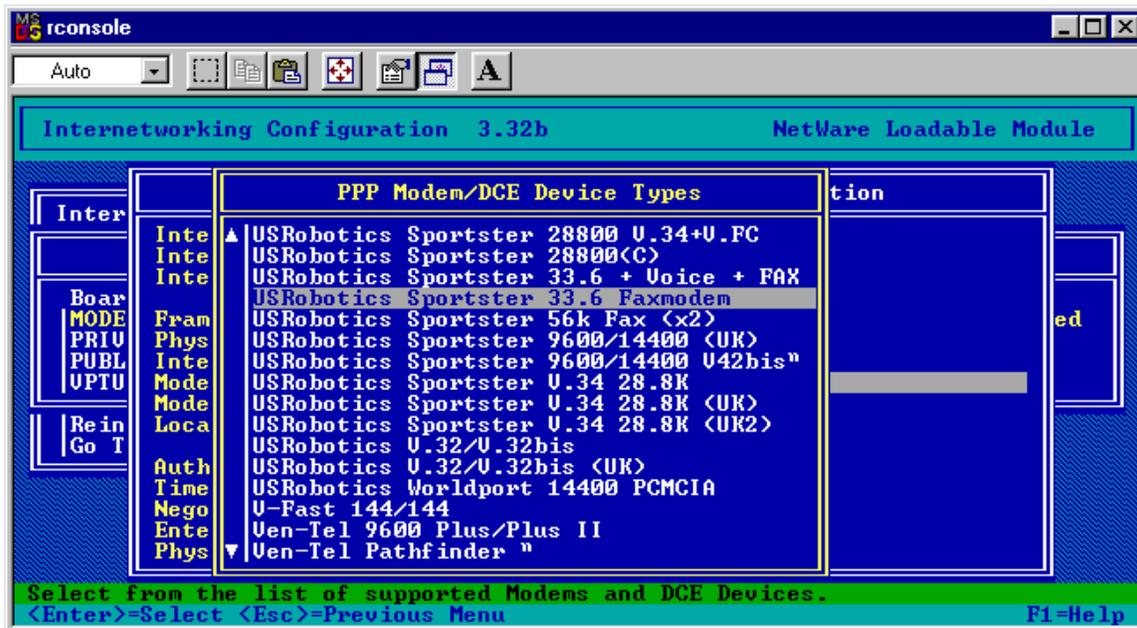
Select Network Interfaces



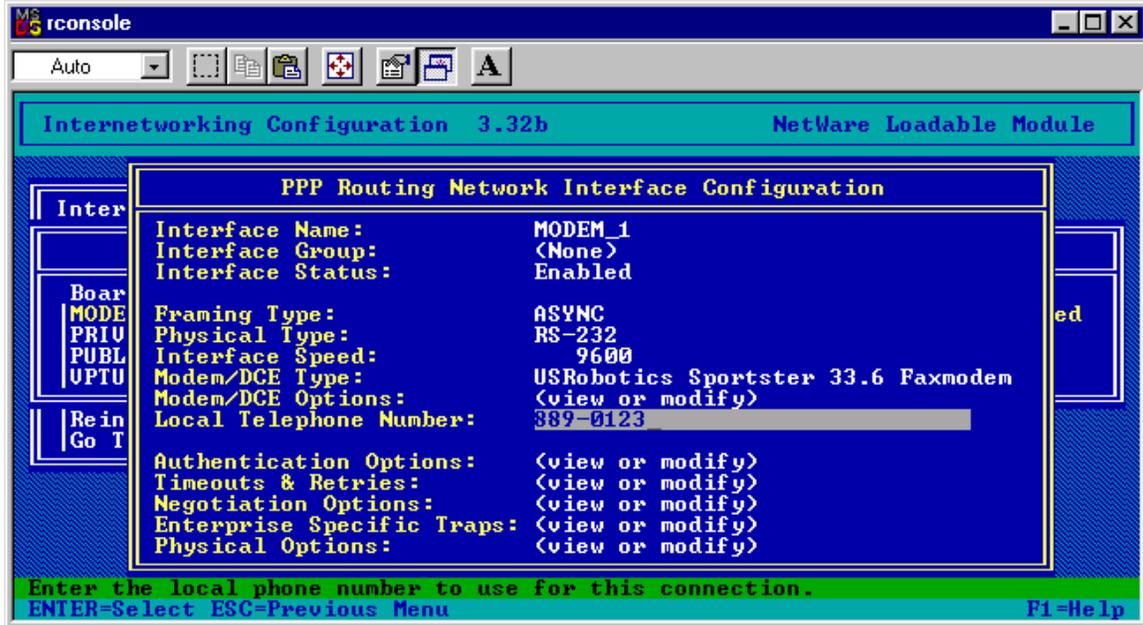
Select the serial port board and you should have (only) a choice for PPP Routing, so select it.



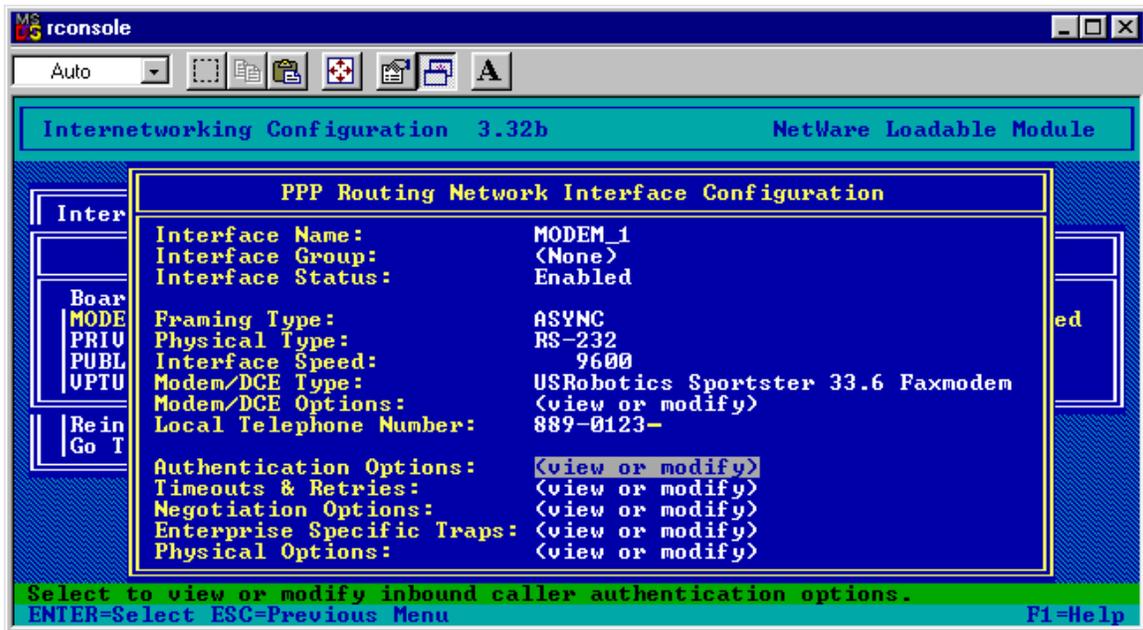
You must now select the Modem type. Hopefully your modem will be listed, but you can generally use a selection that is close to yours. Winmodems will not work!



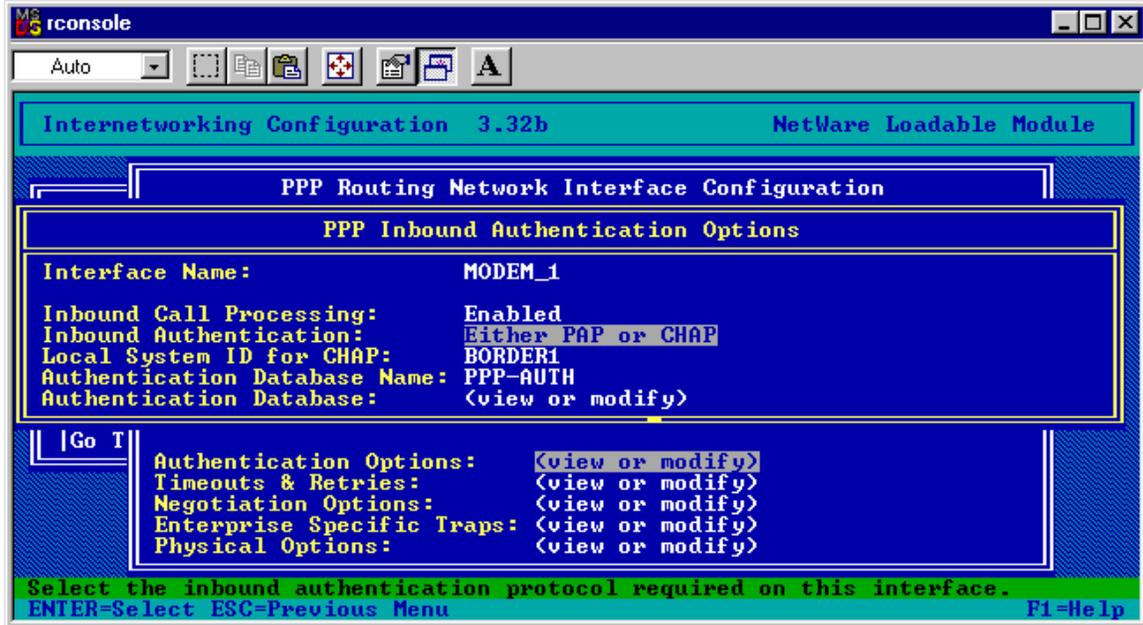
Select a suitable modem. Many selections will probably work.



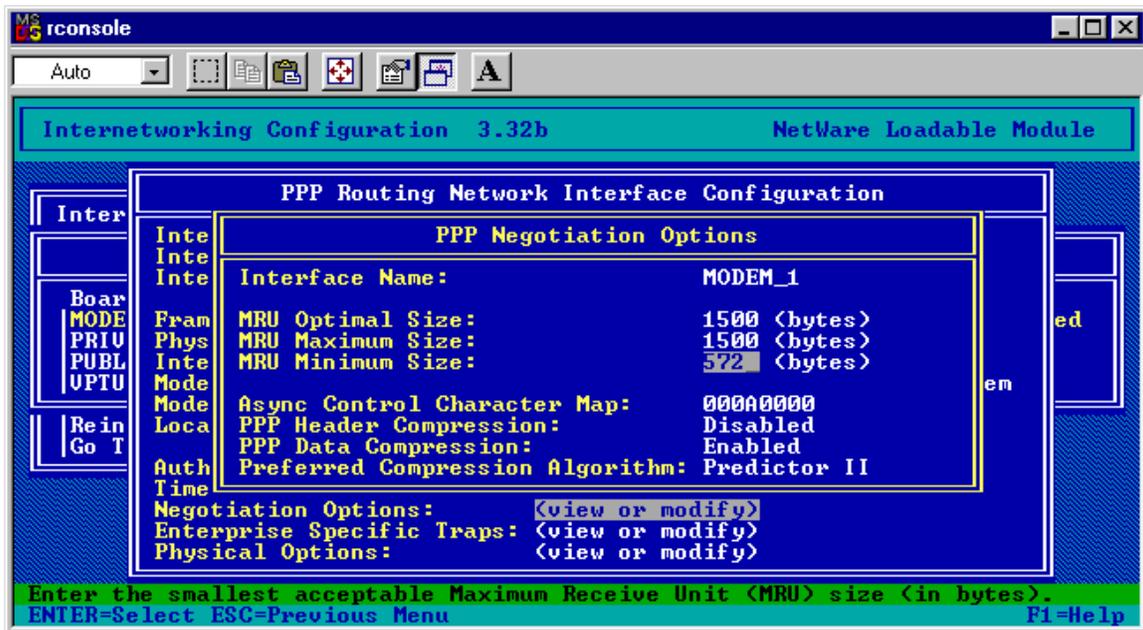
Select Local Telephone number and type in the number for your ISP.



Select Authentication Options and press Enter.

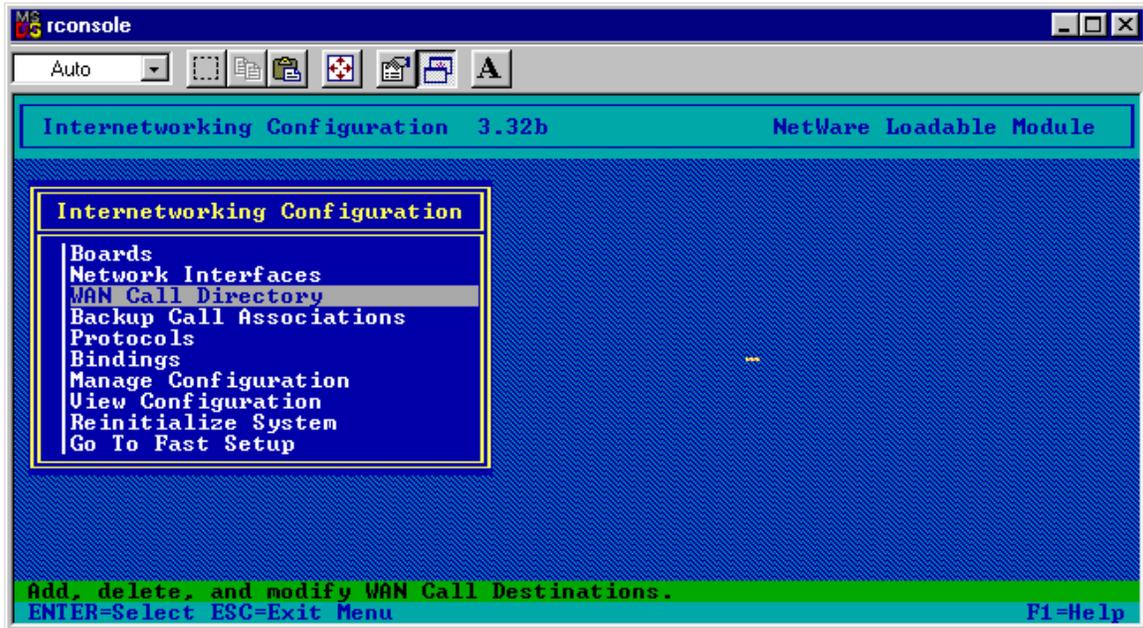


You may be able to use the defaults. If your modem dials the ISP, connects, then disconnects after a few seconds, it may be that the password is not being recognized. You may then want to try a selection of just CHAP, or PAP.



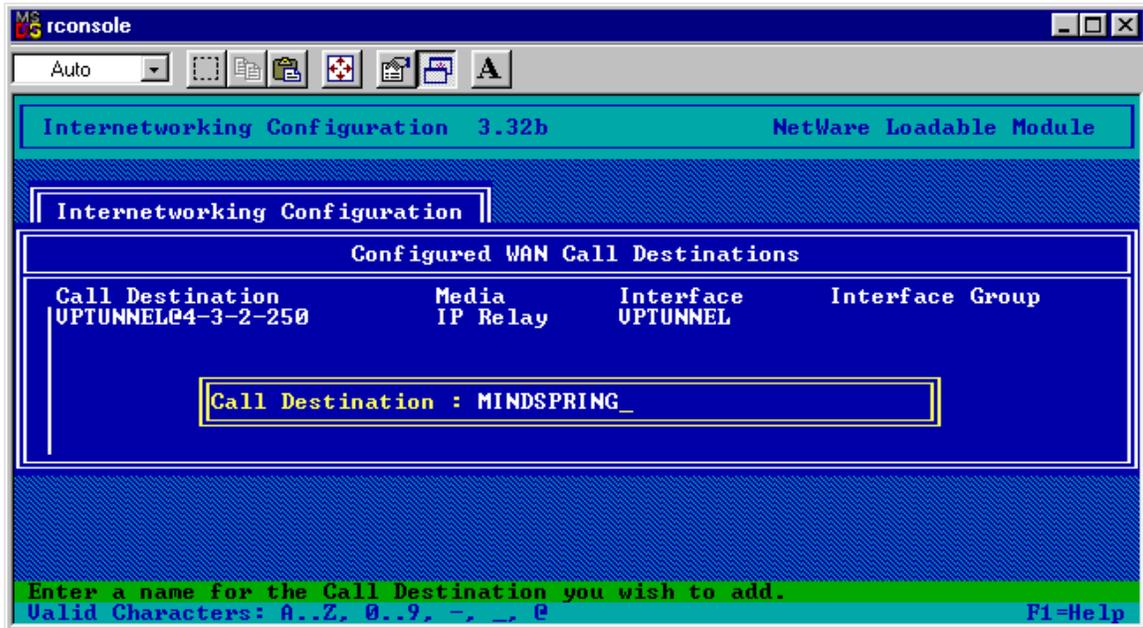
Under negotiation options, it might help to reduce the MRU Minimum Size to 572 bytes. Press Esc, save changes and press Esc as needed to return to the INETCFG main menu.

WAN Call Directory



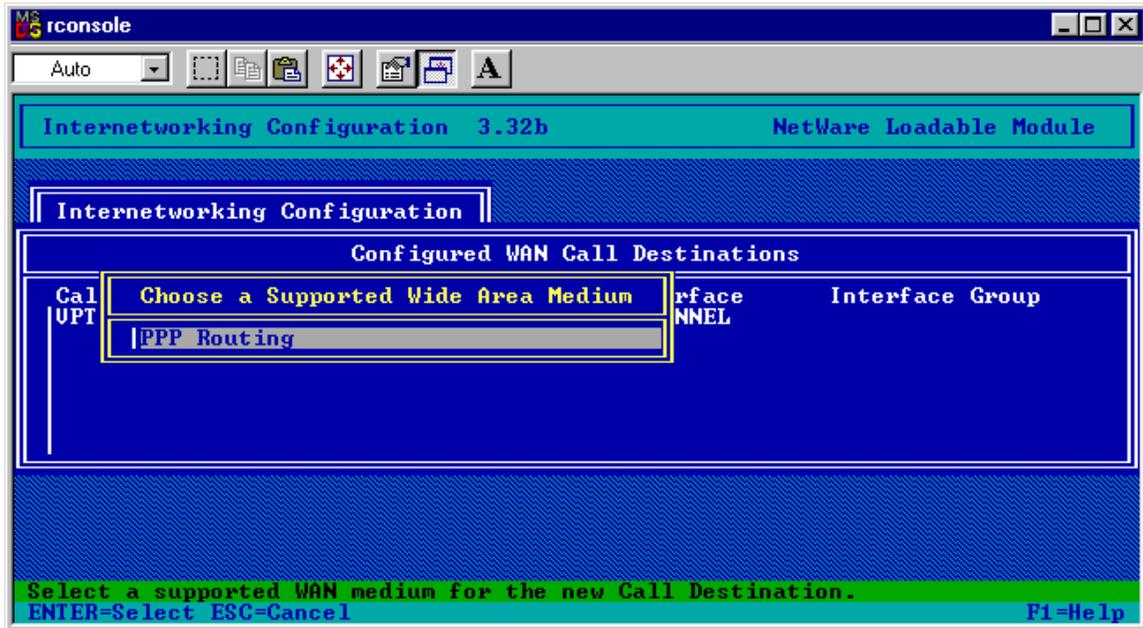
Select WAN Call Directory

Press Insert

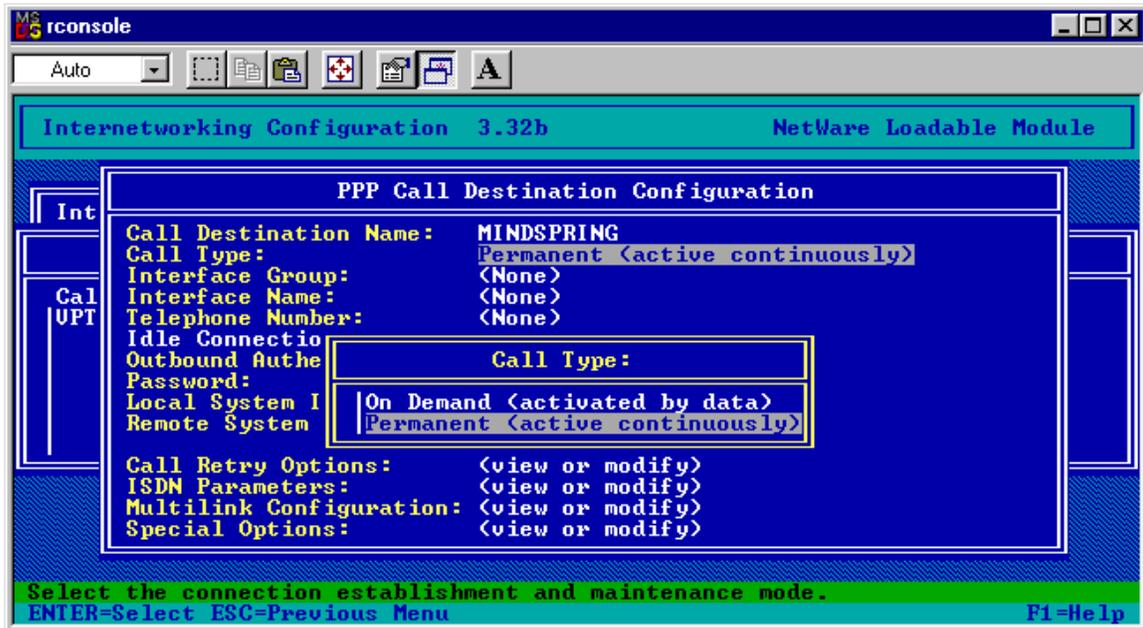


Type in a name for the ISP connection you are configuring.

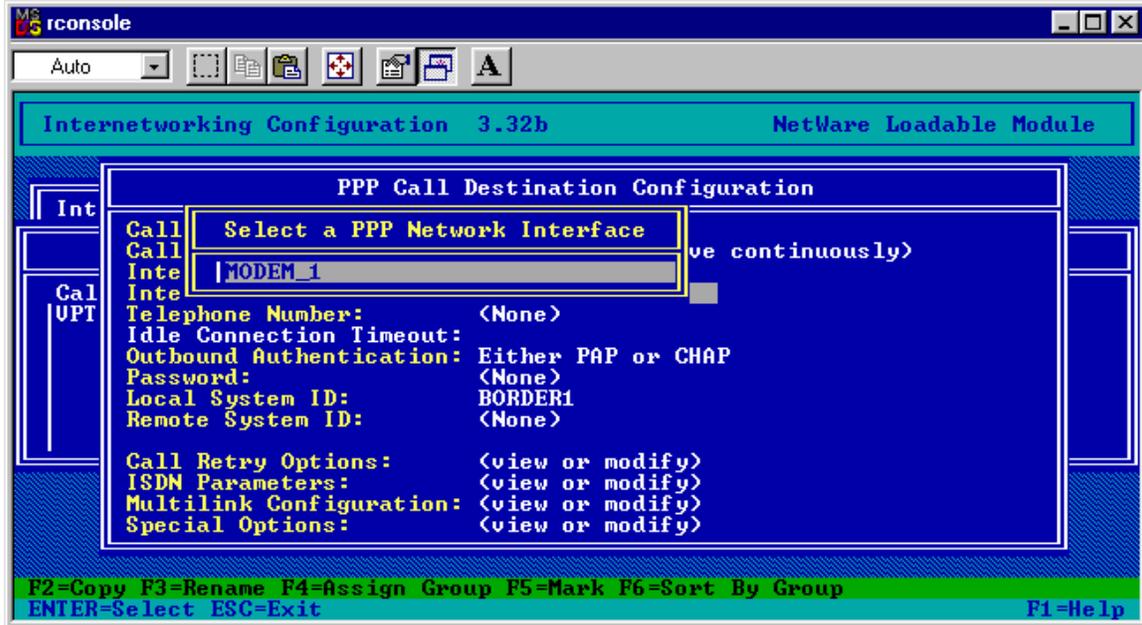
If you have multiple ISP's to call, you will need to set up more than one here, with one used as a primary, and others used as backups.



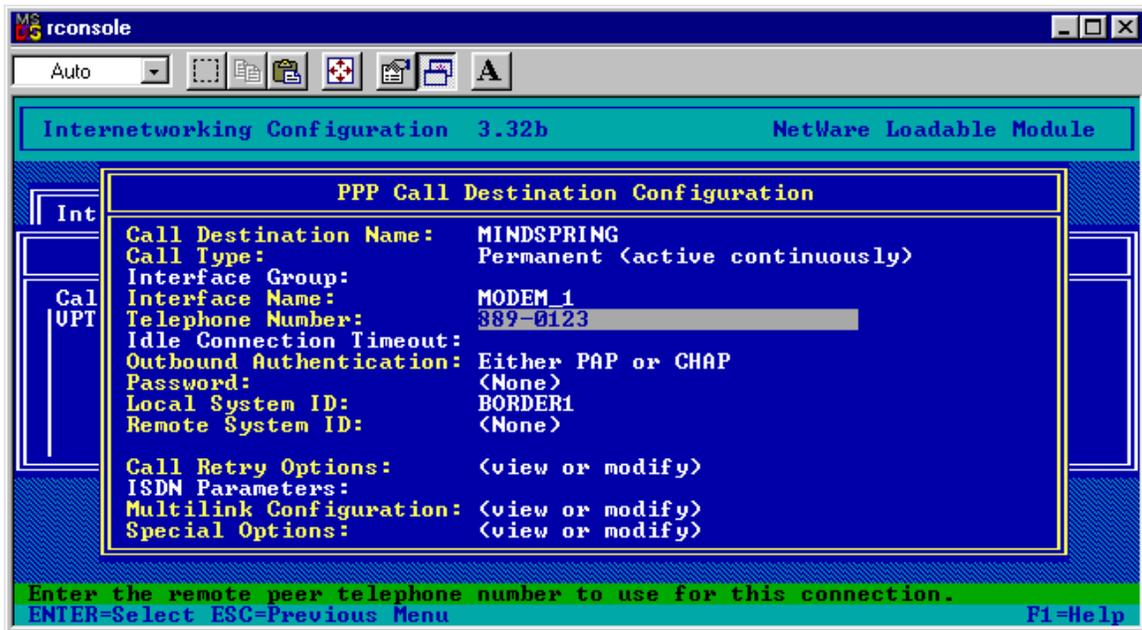
You should have an option for PPP Routing for the serial interface. Select it.



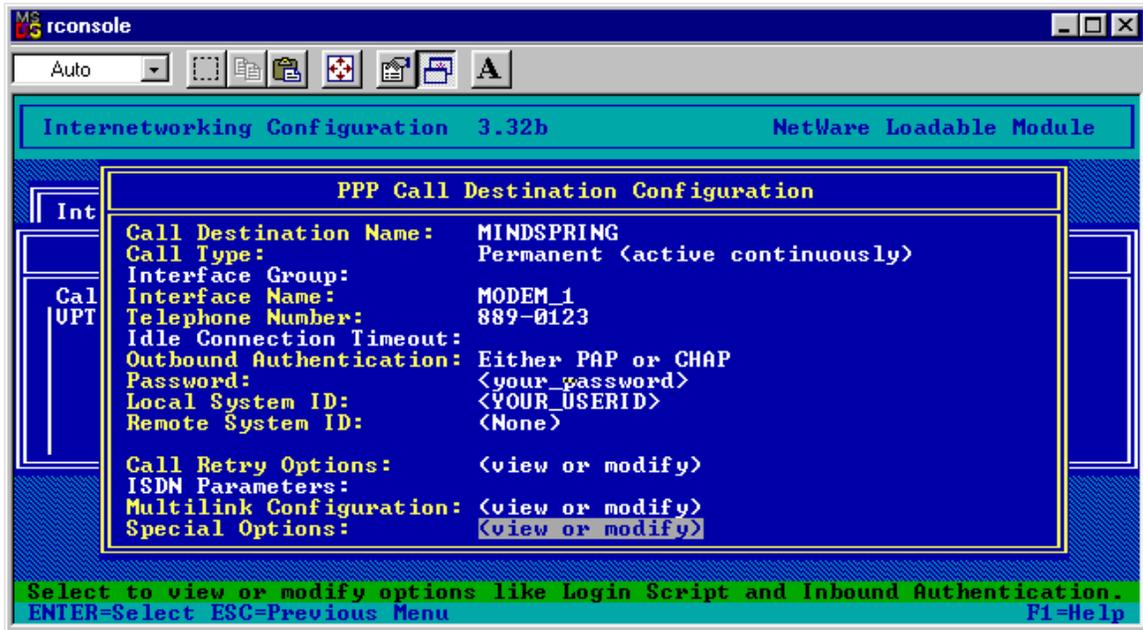
Set the Call Type. If you want the server to maintain a continuous connection, select Permanent. Otherwise select On Demand.



Move to Interface Name and press Enter. Select your serial port.



Enter the Telephone number, and select PAP or CHAP, CHAP only or PAP. (Try PAP or CHAP, and choose another option only if you cannot get authenticated to the ISP).



Enter your dial-up password for Password, and your dial-up user ID for Local System ID.

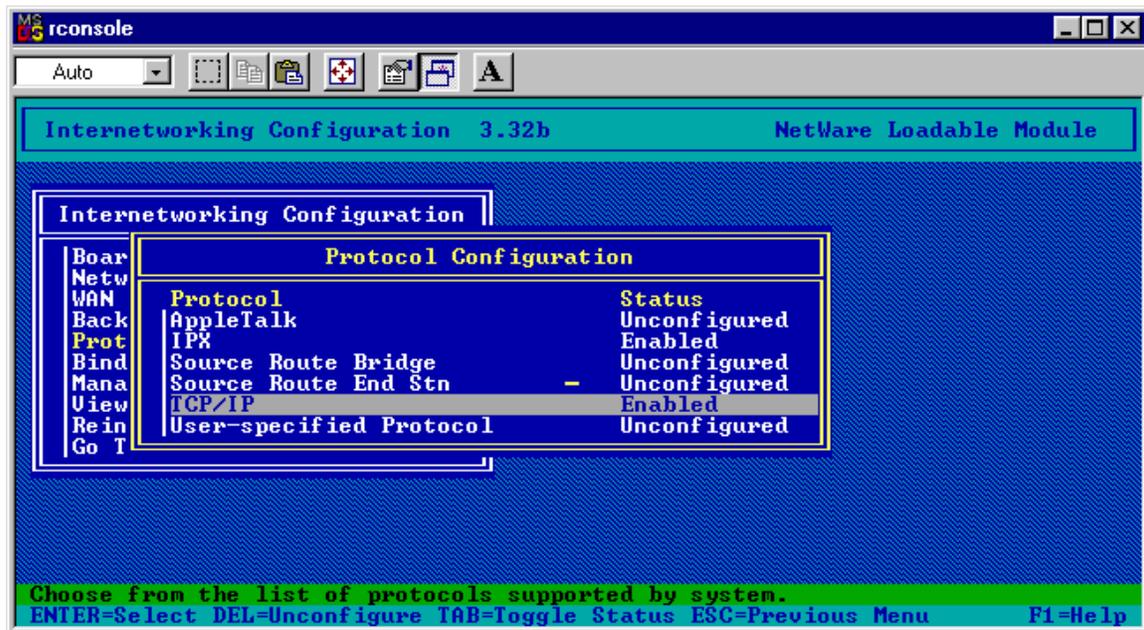
Press Esc and save your changes. Press Esc again to return to the INETCFG main menu.

PROTOCOLS

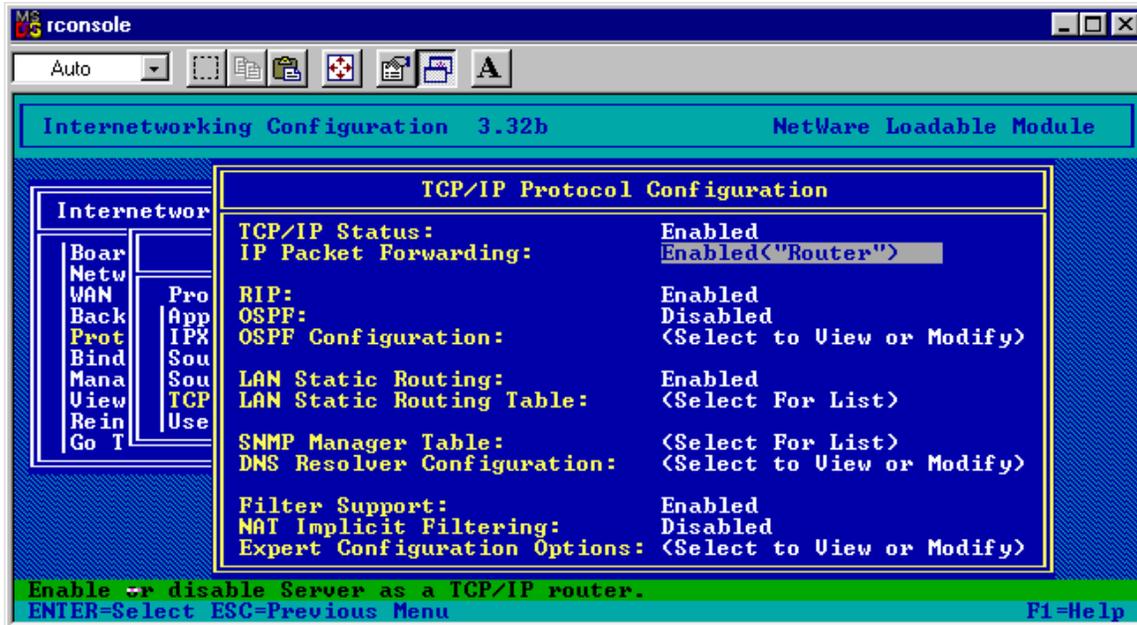
In the Protocols section, you set up the DNS resolver configuration so that your server can resolve URL's. This feature is necessary if using BorderManager proxies on the server, but is not really necessary if using the server only as a router to the Internet.

You also enable or disable filtering support in this menu section.

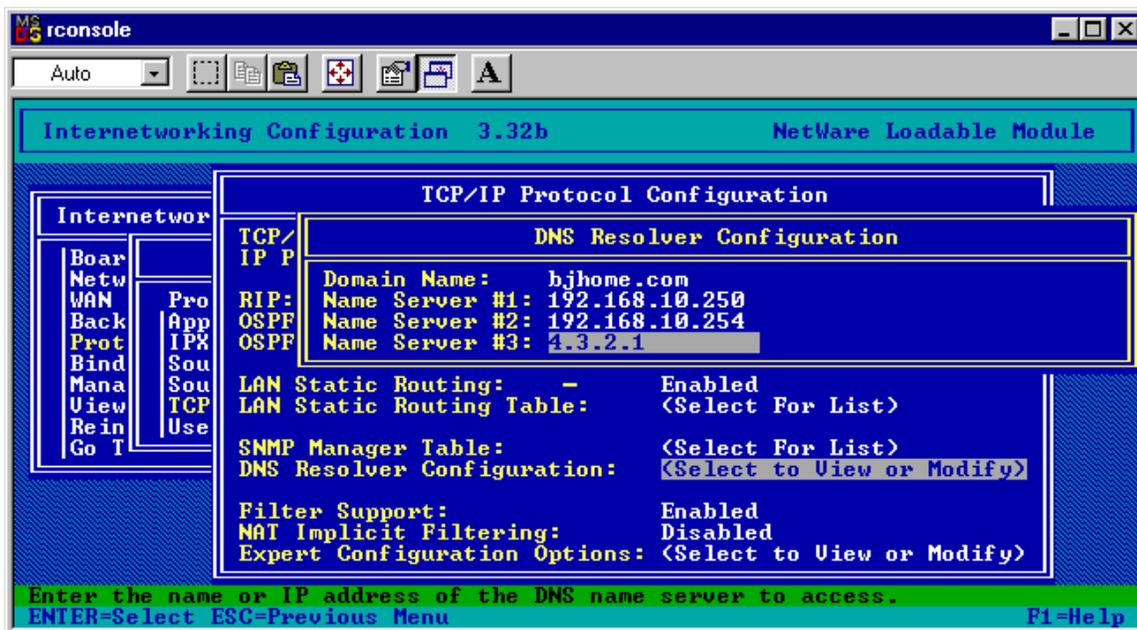
Unlike a routed connection, you do NOT set the default route here if you are using a dial-up interface with a dynamically-assigned IP address. That selection is done under Bindings.



Select Protocols, TCP/IP.



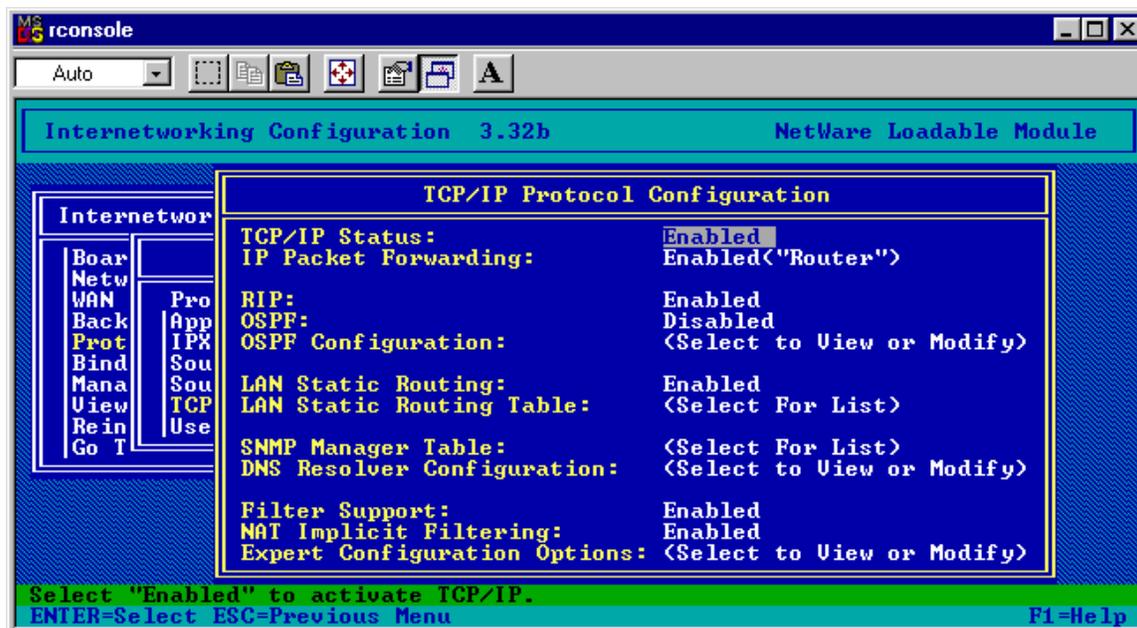
Be sure that IP Packet Forwarding is Enabled.



Select DNS Resolver Configuration.

If you have your own DNS domain, you can enter it here, or you can make one up, or you can leave the setting for Domain Name blank.

Enter the IP addresses for at least two DNS servers on the Internet. Use the ones at your ISP.



If you want to use BorderManager filtering with the dial-up connection, be sure Filter Support is Enabled. You will have to change the default filter exceptions to call out the modem interface instead of an IP address, but filtering will work. Otherwise, consider disabling filtering support.

NAT Implicit Filtering should be enabled (if you have this option). It might not be enabled if you have a fixed IP address and want to make some BorderManager proxy available from the Internet.

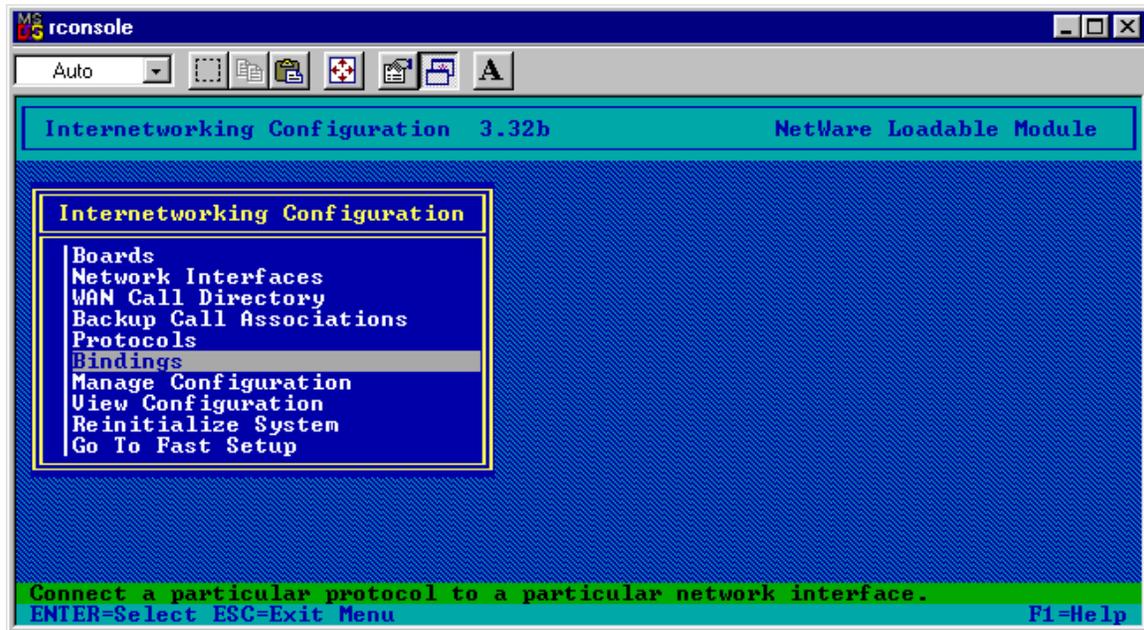
Press ESC and save your changes.

Press ESC again to return to the INETCFG main menu.

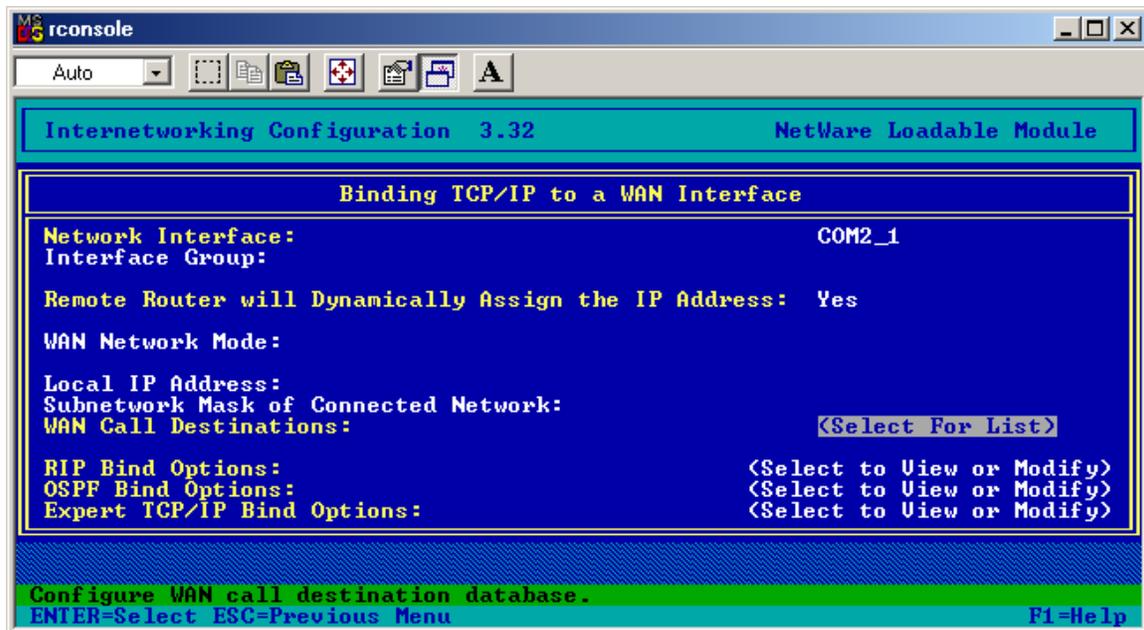
Bindings

In this menu selection, you set up the modem to accept a dynamically-assigned IP address.

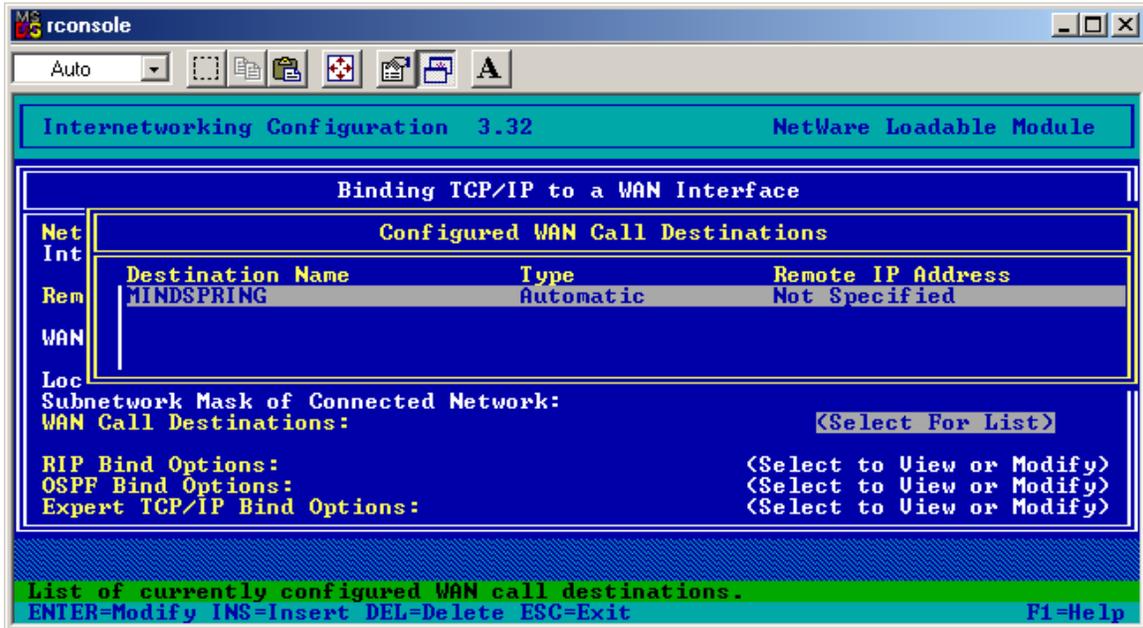
If you use a dynamically-assigned IP address, you also set the default route here.



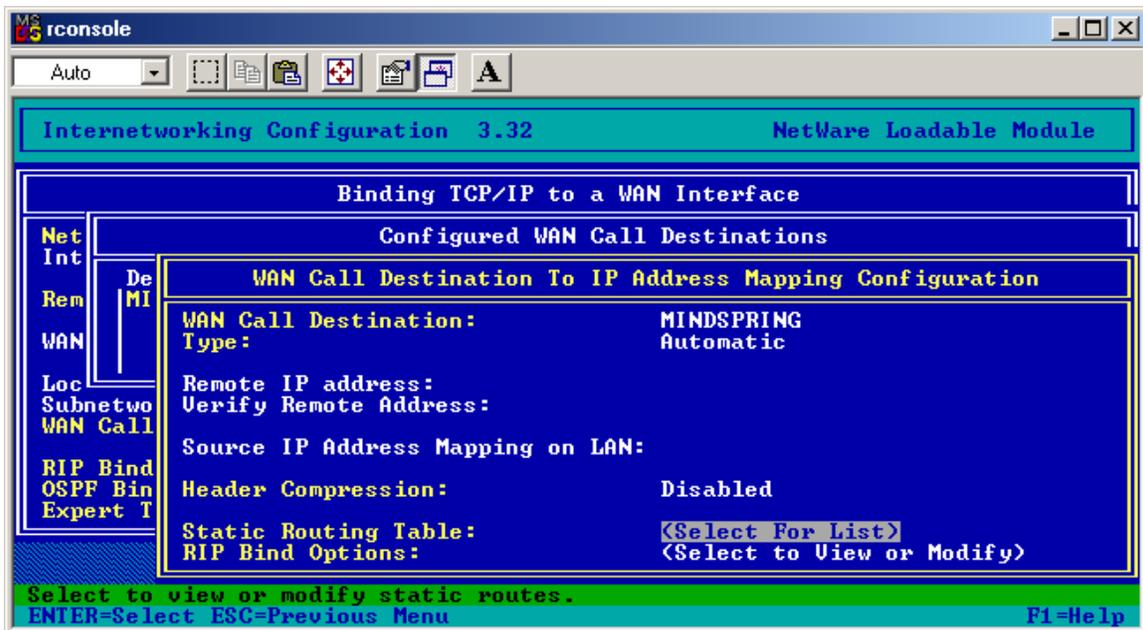
Select Bindings



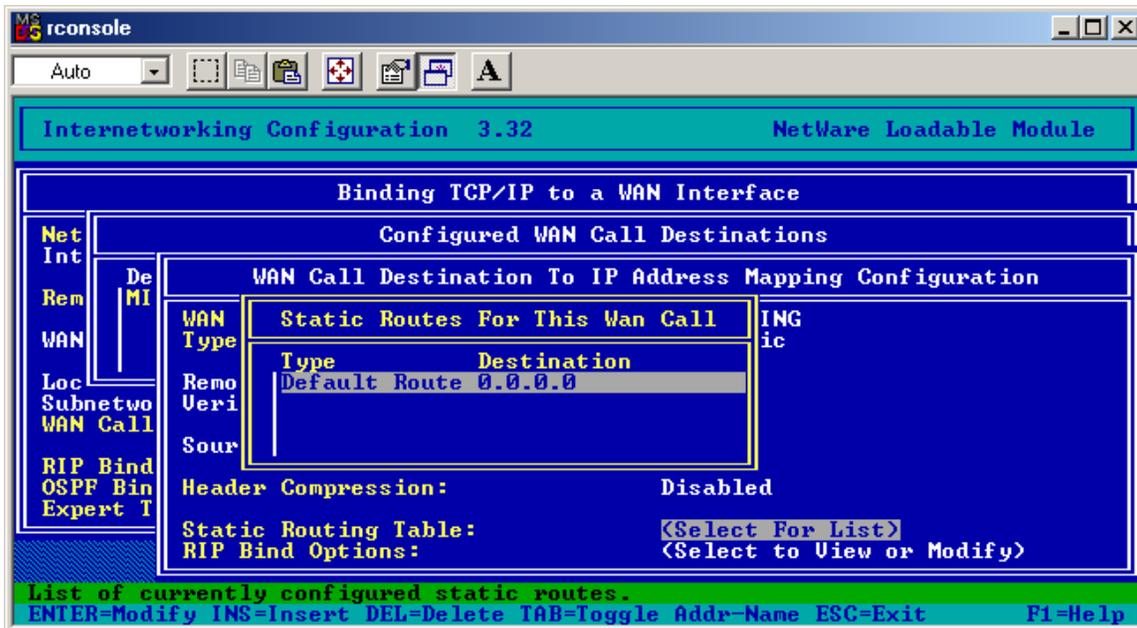
Select your modem board and select Yes for Remote Router will Dynamically Assign the IP Address.



Then select WAN Call Destinations, and select your ISP, as configured earlier.



Select Static Routing Table.



Select Default Route. This setting allows the server to route packets to the Internet using the board interface even if a dynamically-assigned IP address is present. (If you have a fixed IP address, you would set a standard default route under INETCFG, Protocols, TCP/IP, LAN Static Routing.)

Press ESC and save the settings. Return to the INETCFG main menu and select Reinitialize System. The modem should dial out and connect to the ISP.

TROUBLESHOOTING

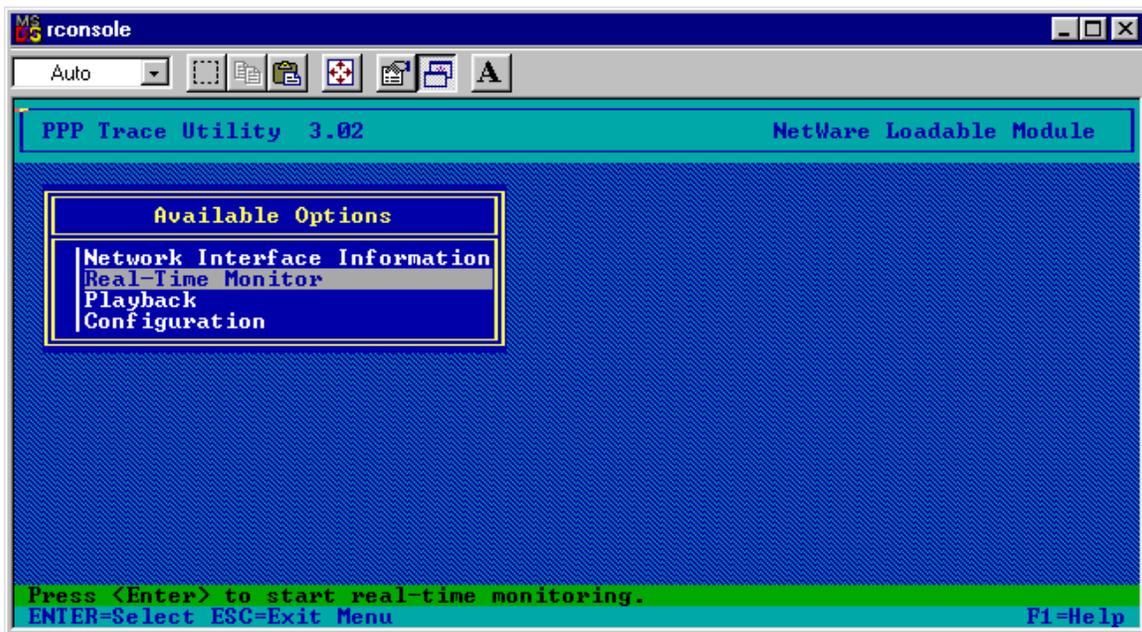
If your modem is not connecting, use the following utilities on the server to try to see what is happening.

CALLMGR

Load CALLMGR at the server and press Insert. You should see the option for your ISP (your WAN Call Destination). CALLMGR can be used to select the WAN Call Destination and force a connection as needed. You can also use CALLMGR to disconnect calls in progress.

PPPTRACE

Load PPPTRACE at the server. This utility allows you to look at, capture and play back PPP sessions so you can try to debug the connection. While it is quite cryptic, it can yield some clues as to what is going on with the modem connection.



Real-Time Monitor is the option you want to use, and sometimes Playback.

The Real-Time Monitor shows you all the communications going to and from the serial port, and it has an option to capture the data to a file. Once captured to a file, the connection can be replayed so you can study the connection process as desired.

The Real-Time Monitor can tell you the following:

1. If you are sending valid commands to the modem
2. If the modem is responding to the commands
3. If the modem is replying with an error message
4. If a connection is established
5. Depending on the setup strings sent to the modem, the connection speed
6. Password problems – If you see 3 instances of a PAP or CHAP packet being sent from the ISP to you, it is an indication that your password was not accepted. That may be an indication that you need to reconfigure the settings to use CHAP, or PAP. A typical indication is that the connection is made, packets are exchanged, and then the ISP sends packets to the modem that get no response. After about 30 seconds, the connection is dropped by the ISP.

TCP IP DEBUG

Use the command SET TCP IP DEBUG=1 at the server to see IP packets. This can help determine routing issues.

CONFIG

Use the command CONFIG at the server (not LOAD CONFIG) to see what the assigned addresses are. This will tell you if the connection was successfully established to the point that the ISP assigned you an IP address at the modem.