



Nevod NAT-PPP/SLIP Server Beta-1.10

Unsupported Product

Turn any PC into an Inexpensive Terminal Server and Simplify Dial-In User Setup

- Turn any DOS box into a terminal server
- Clients are all identical - ship everyone the same configuration
- One IP address serves up to 8 PPP or SLIP dialups.
- Automatically senses mode (PPP or SLIP)
- Also supports fixed IP address dialups based on login name(proxy ARP)
- Use your obsolete equipment
- Supports 16550 chips and AST-4 port dumb cards
- Supports identd queries
- Finger and telnet supported for remote management
- Works with Compuserve/WinCim
- Coexists with NetWare and other networks

```

      NEVOD PROXY-PPP/SLIP SERVER
      LAN 1 2 3 4 5 6 7 8
          0 0 0 0 0 0 0 0
1 COM2 ir102828 PPP 28800/ARQ/U34/LAPM/U42BIS
2 COM10 AUTO_SENSE
3 COM11 lamb PPP 115200
4 COM12 edg SLIP 21600/U42BIS
5 COM13 AUTO_SENSE
6 COM14 START_LPROTO
7 COM15 newb SLIP 19200/ARQ/U34/LAPM/U42BIS
8 COM16 kathie SLIP 26400/ECC
      Uptime 0 Days 0 Hours 0 Minutes 10 Seconds
      NEVOD PROXY-PPP/SLIP SERVER
NEVOD PROXY-PPP/SLIP SERVER Ver 1.8 (960417).
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proxy>

      Message Screen. ALT-ESC to toggle screen. F10 to Exit.
  
```

Screen capture of SRVR NAT-PPP/SLIP screen.

Need to provide a few users with remote TCP/IP dial-in capability, but dont want to confront the cost and client configuration issues of a traditional terminal server solution ?

Solution: Dig up an old PC, a few modems and run a copy of SRVR. Now, all the remote users need are a telephone number, login name and password.

PPP/SLIP: Since SRVR supports both PPP and SLIP, the remote machines may be running Windows, DOS, Unix, Win95 or NT. All of which may be configured the same way.

Security: Each dial-in user must have a Username/Password pair. After a few failed attempts, SRVR will hangup the connection. SRVR also acts as a firewall for the dial-in user by acting as a proxy for TCP/IP connections. This protects attacks on dialed-in user's machine from the Internet.

([Download](ftp://ftp.nevod.com/pub/srvr110.exe) via Web or FTP <ftp://ftp.nevod.com/pub/srvr110.exe> - self extracting ZIP)

Requirements: DOS, 640K RAM, 1M disk space (yes, a PC with only a floppy drive will do but expect performance to suffer a bit), Ethernet card (any ODI driver equipped card), Serial ports (AST-4 multiport card also supported).

Introduction

Well, if you're like me, ever since this Web thing hit, your friends and even friends of friends have come out of the woodwork to see if you could help them get an internet connection so that thier "kids" could run Netscape. Id love to accomodate them all since I think this stuff is cool, but going out to buy a terminal server and a bunch of external modems just didnt seem cost effective. I have a bunch of other equipment taking up space and generating heat but nothing seems to have a lot of ports on it. After seeing an add for some \$28 4-port AST cards and some \$59 14.4K internal modems, it occured to me that I could put together a "box of ports" for pretty cheap using an XT or AT. Didnt have any software though that I could confingure to support all this and at the same time not take too much of my time to keep it running. So I took bits and pieces of some of the other code we sell (a multi-tasker, memory manager,serial drivers,ethernet drivers,IP router,SLIP,PPP) and compiled it into a single .exe to be loaded by DOS. Now I had a multi-line PPP/SLIP server. Didnt want to spend all my evenings setting up browsers on everyone's PC so I added a mapping mechanism that would modify IP addresses and port numbers based on login name and account type so that for your generic Netscape user, the specific address settings for his TCP/IP stack (e.g. Trumpet) were irrelevant. Finnaly added DNS interception to force the right choice of Name Server. Out of all this I created SRVR.EXE. I hope you guys find it usefull.

Description

The SPNK'R NAT Slip Server converts an ordinary PC XT or better into a multi-line TCP/IP PPP/SLIP server and router complete with login/password security. Additionally, the NAT feature overcomes the client side configuration difficulties associated with setting up TCP/IP. Using this feature the client need only enter his login/password pair.

Applications:

- Become a minature Internet Service Provider.

- Use Netscape at work ? Well, execute SRVR.EXE on your desktop before you leave and dial into it from home. Then run Netscape at home.
- Remote access from multiple sites provided by a single inexpensive PC.

Features:

- No client configuration and no new IP addresses.
- Cheap. Uses obsolete equipment. Works on any PC.
- Proxy DNS service for NAT-PPP/SLIP accounts ensures name resolution.
- All user needs is telephone number/login/password.
- Also supports standard PPP/SLIP with specific addresses.
- Proxy ARP for standard PPP/SLIP accounts.
- Supports AST and clone multiport cards.
- Supports 16550 chips.
- Supports identd queries.
- Finger and telnet support for remote management.
- Works with CompuServer/WinCim (via Trumpet WinSock).

What a NAT-SLIP account wont do (PPP/SLIP users with IP addresses in SRVR.PWD will do these):

- PING
- Open a listening socket.

SRVR is comprised of SRVR.EXE,SRVR.SCR,SRVR.PWD. SRVR.SCR is a list of commands that get executed at startup. SRVR.PWD is a text file containng login/password pairs and account type information. SRVR.EXE is the main program loaded by DOS. SRVR.SCR and SRVR.PWD must be in the same directory. Ensuring that you have frame type ETHERNET_II defined in NET.CFG then typing SRVR.EXE at the DOS prompt should load the program, execute the commands in SRVR.SCR, then give you a prompt. At this point you may execute other commands such as "serial" to get a status on all the serial ports, "finger" to get finger style user lists. The command "exit" or F10 will close all the ports and return you to DOS. Refer to the Configuration section for more information on the commands.

Requirements

- PC with 512K and a floppy drive.
- Ethernet card with ODI driver.
- Serial ports (16550 preferable) or internal modems. A 4-Port AST or clone card works nicely.

Configuration

CONFIGURATION FILES: SRVR.SCR, SRVR.PWD, NET.CFG

Installation requires only 2 files to be edited (using DOS edit or your favorite ASCII editor).

Un-installation is a snap since only 3 files are needed to run the program, SRVR.EXE, SRVR.SCR, SRVR.PWD. Just delete them.

SRVR.SCR: (Refer to Figure 2)

This file sets up the ethernet interface, IP router, and serial ports.

Lines prefixed by a pound "#" sign are treated as comments and are therefore not executed.

The first step is to configure the ethernet interface for IP traffic. This is done using the command "eth add -". The "-" may be replaced with the actual ODI Driver name found in the workstation's NET.CFG file, e.g. "eth add ne2000". Otherwise the "-" indicates that the first ODI Driver with frame type ETHERNET_II free, will be allocated by SRVR for IP and ARP traffic. An example of where this automatic behavior would not be desirable is if the workstation had multiple ethernet cards installed. If no ODI Drivers can be found with a free ETHERNET_II Frame type, e.g., NET.CFG does not have Frame ETHERNET_II defined for ANY of its LINK DRIVER sections or some other TCP/IP stack has been installed under DOS, a popup window will indicate that no ODI Driver could be bound to. Typing "eth" on a line by itself followed by a carriage return will display ethernet statistics and configuration.

The next steps should be to set up the TCP/IP routing layer. This must be entered in reverse order, such that the default route is entered first, any specific routes entered next, the local subnet route entered next, and finally the IP address of SRVR itself. The command "route add net default 192.101.186.45 2" will make it so that all packets entering SRVR via any port will, by default, get forwarded to TCP/IP node 192.101.186.45. The router port number, "2", at the end signifies that 192.101.186.45 is reached via the ethernet. The default gateway node (192.101.186.45 in this example) must be in the same subnet as SRVR's IP address itself. Typing "route" on a line by itself followed by a carriage return will display the current contents of the routing table. In Figure 2, the next line ("route add net 192.101.186 0 2") explicitly adds a route to the local subnet 192.101.186.X to gateway "0" (no gateway) on the ethernet (port "2"). By leaving off the last digit from the IP address, a subnet mask of 255.255.255.0 is implied. A specific net mask can be entered using slash notation such as "route add net 192.101.186.0/24 0 2" which says use a 24 bit subnet mask of 255.255.255.0 which effects the same command as before.

Finally, the command "ipaddr 192.101.186.105 192.101.186.6", which must be the LAST routing command, effectively executes the command "route add host 192.101.186.105/32 0 0", which adds a route for 192.101.186.105 (SRVR's IP address) to gateway "0" (none) on the local port "0". The IP command also sets the default DNS IP address that will be used for all incoming NAT

connections, regardless of what the host dialing in says it wants as a DNS server. This eliminates the need for the remote dial-in hosts to configure their DNS address, as well as their IP address. Of course if the particular login/password pair indicates that the user should have its own, real, IP address, then all packets from the dial-in are passed through un-modified, just like a normal router/terminal server. The command "ip" by itself followed by a carriage return will display the current IP and DNS addresses for SRVR.

The serial ports and modems are configured using the "serial" command. This command basically sets the port parameters and enters an expect-send string for the modem that should set it up to auto-answer in the right mode (hardware flow control, real CD, hangup on dropped DTR). The line first serial line can be broken up as follows for clarity (spaces are field delimiters):

```
COMMAND serial
OPTION add
COM PORT 2
BAUD 115200
SLIP/PPP/- -
expect ""
send \1\r+++d\ATH\r\R\I600
expect ""
send AT&FX4&A3&B1&D3&H1&I0&K1&M4S7=60M0S0=1
expect OK
```

This command adds COM2 at fixed baud rate 115200. The "-" in the next field indicates to automatically detect PPP or SLIP. The rest of the fields make up the expect-send-expect... strings. In this line expect "" (nothing) then send \1\r+++d\ATH\r\R\I600 which translates to \1 = BREAK, \r = carriage return, +++ = +++, \d = delay one second, ATH = ATH, \r = carriage return, \R = respawn or re-do from the beginning this expect-send sequence if any of it fails, \I600 = set the idle timeout to 600 seconds (time after which we should hangup and , because of \R, re-do the sequence). Other "special" characters include \s for a space (since we cannot have one in a single field), \c at the end of a field indicating that there SHOULD NOT be a carriage return automatically appended to this field, \\ for a single \ and \Dn to change the default timeout (while waiting for a response) of 30 seconds to "n" seconds. This first string is an attempt to hangup the modem in case it has not already. The long AT... send string is the modem INIT string and will be different for each modem. It should set the modem up to auto answer, use hardware flow control (RTS/CTS), pass actual Carrier Detect state to the DTE, hangup (and possibly reset) when DTR is dropped and lock DTE speed. In general this will be the only string that will have to be modified for your installation.

The command "serial" on a line by itself followed by a carriage return will display voluminous serial port information that will be state and protocol dependent.

COM PORT is really only an index, except for the values 1 and 2 which have distinct default values for interrupt number and I/O

port. As can be seen in later serial commands, the interrupt and IO port values can be set/overridden by specifying them in parentheses. This is particularly useful in a fully loaded system or when multiport cards are used. Currently only 16540 and 16550 UART chips are supported. Please contact us if you want a driver for another card. In the second valid serial line, COM PORT is specified as 10(2,1A0). The interrupt vector for this card is 2 and the IO port value is 1A0. Also, since the COM PORT index is greater than or equal to 10, we assume the card is an AST-4 port card or some other shared interrupt card. This allows the next 3 serial commands to configure other serial ports on the same card using the same interrupt vector.

```
eth add -
route add net default 192.101.186.45 2
route add net 192.101.186 0 2
ipaddr 192.101.186.105 192.101.186.6
#serial add 1 115200 - "" \1\r+++dATH\r\R\I600 ""
AT&FX4&A3&B1&D3&H1&I0&K1&M4S7=60M0S0=1 OK
serial add 2 115200 - "" \1\r+++dATH\r\R\I600 ""
AT&FX4&A3&B1&D3&H1&I0&K1&M4S7=60M0S0=1 OK
serial add 10(2,1A0) 115200 - "" \1\r+++dATH\r\R\I600 ""
AT&FX4&A3&B1&D3&H1&I0&K1&M4S7=60M0S0=1 OK
serial add 11(2,1A8) 115200 - "" \1\r+++dATH\r\R\I600 ""
AT&FX4&A3&B1&D3&H1&I0&K1&M4S7=60M0S0=1 OK
serial add 12(2,1B0) 115200 - "" \1\r+++dATH\r\R\I600 ""
AT&FX4&A3&B1&D3&H1&I0&K1&M4S7=60M0S0=1 OK
serial add 13(2,1B8) 115200 - "" \1\r+++dATH\r\R\I600 ""
AT&FX4&A3&B1&D3&H1&I0&K1&M4S7=60M0S0=1 OK
```

~ **FIGURE 2** ~

SRVR.PWD: (Refer to Figure 3)

The SRVR.PWD file has login and password pairs for dial-up users you want to have access to SRVR. The first field is the login name (what SRVR wants to see in the PAP packet if PPP or what SRVR wants to see in response to our "Username:" if SLIP is your protocol). The next field is the password. Dial-in users get 3 tries before the modem is hung up. Duplicate logins are not allowed. The last field is optional. If it is left out, the successful dial-in workstation will be treated like a NAT machine and all actions it takes will look to the rest of the internet as if SRVR was performing these actions. If this field is an IP address, then the dial-in user with this login/password pair will get assigned (via PPP or via "Your Address is xxx.xxx.xxx.xxx" if SLIP) this IP address and its traffic will simply be routed. SRVR will also answer ARP requests for this address. Therefore any address placed in this field **MUST** fall in the same subnet as IP address of SRVR itself.

```
#
# FORMAT:
# login-name password [proxy|n.n.n.n]
# default=proxy
newb newb proxy
```

jim web proxy
lamb newb
bill whatnot 192.101.186.241

~ **FIGURE 3** ~

CONSOLE COMMANDS

eth [add odi-link-driver-name|-]

Attach to an ethernet ODI driver or Display statistics.

route [add|delete host|net default|ip-address/number-of-bits-of-mask
0|gateway router port-number]

Configure or Display IP routing table information

ip [ip-address-of-SRVR] [ip-address-of-DNS]

Set or Display the ip address of SRVR and default DNS address.

serial [hang port-index][add port-index speed protocol expect send
expect.....]

Serial port operations. "serial hang 2" will hangup and reset COM2.

exit

Terminate SRVR and return to DOS. If from telnet session, it just
ends the telnet session.

mem

Display memory usage

finger

Display current dial-in user information

tcp

Display SRVR TCP socket information

Misc

You may remotely monitor/manage SRVR by using the TCP/IP
FINGER command ("finger @IP-address-of-SRVR") to look at the
currently logged in users or the TCP/IP TELNET command ("telnet
IP-address-of-SRVR 23") to get a virtual console of the SRVR
console. Note that when using the telnet command, currently you
must explicitly append the Telnet port number , 23, to the end of the
command to disable Telnet option negotiation. This will be fixed in
future releases of SRVR.

[A little History](#)

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