

NetXpress

Internet Server

Administrator's Manual

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Preface

WELCOME TO THE WORLD OF THE INTERNET

The future is upon us. That mythical information superhighway is now in clear reach.

Many estimates are floating around about the Internet's population and its increase in size. It is considered safe to say that it currently has around 50 million people and that it is doubling every couple of years. In fact lately, the population acceleration has frightened and overwhelmed many Internet old timers. All figures denote that the Internet has obtained 'critical mass' to be present for a very long time to come.

With the release of NetXpress Server, we have put into motion what we expect to be a mass influx of small businesses onto the network of networks, the Internet.

No longer the realm of universities and big business, the Internet has begun to bring cyberspace to the masses. No longer will only Unix machines be able to surf the Internet. NetXpress Server requires only MS-DOS to provide what many Unix 'weenies' would consider unthinkable.

The Internet with its thousands of protocols, can be managed from well conceived software that takes care of all of the unruly elements of Internet connectivity. There will always be a learning curve due to terminology, but we hope that our software will provide one of the easiest in-roads on to the Internet.

CONVENTIONS

In this book, the following conventions are used:

- ◆ Optional variables are placed within square brackets; for example, [<variable>]

- ◆ Mandatory variables are placed within angled brackets; for example, <variable>
- ◆ Whenever you may use more than one variation, a | character is used to denote the different possible values; for example, put | send | output
- ◆ Input typed in by you is printed in *italic*; for example, *cd \netpres*

SUPPORT

There are a number of places to receive support.

Mailing List: Send a message to 'netserver-request@merlinsys.com', and in the body of the message include your serial number.

Phone: 1-613-749-0888

Fax: 1-613-741-7583

BBS: 1-613-741-7583

E-mail: support@merlinsys.com

Web: <http://www.merlinsys.com>

FidoNet: Support 1:163/509

Installation

INSTALLATION

If you received a diskette, insert the diskette in one of your disk drives. Then enter INSTALL and press the <Enter> key.

Example: If you placed the disk in drive A:, you would type:

```
a:  
INSTALL
```

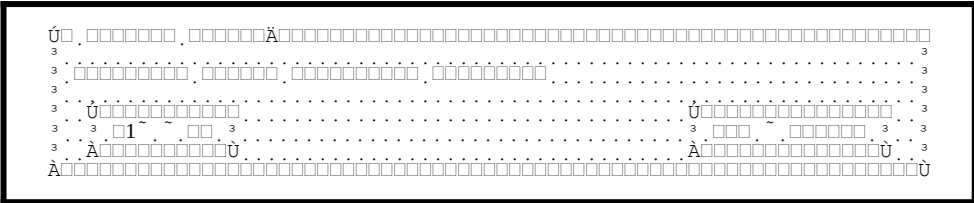


Figure 1-1 Install

The NetXpress Server Directory is where you would like to install the software.
Press the 0 key to continue.

If you received a compressed file containing the software, simply uncompress the file(s) into an empty directory.

Example:

```
md \netsrv  
cd \netsrv  
pkunzip NETSRV
```

After the INSTALL program finishes, you must go into the SETUP program and alter the default settings, especially your network addresses.

Configuration

SYNTAX

The syntax for the Setup program is as follows:

```
SETUP [configfile]
```

Where [configfile] is the location and name of the configuration file.

If you omit the [configfile] parameter, SETUP will try to open the configuration file NETSRV.CFG in the current directory.

USING TEXT WINDOWS AND YOUR MOUSE

The SETUP program uses a text window approach to displaying information for you. The top window is always the current one and only those fields within it are active.

SETUP also allows you to use a mouse or a pointing device to perform functions. All mouse-assessable functions can also be accessed through a keyboard command. To access a certain field or command by using the mouse, simply move the mouse cursor to the area occupied by the field or command and click on the left mouse button. Clicking on the right mouse button will usually get on-line help.

KEYBOARD COMMANDS

The following keystrokes will work with any window:

l	Context-Sensitive Help
t	Move the pointer to the field above the current one
b	Move the pointer to the field below the current one
r	Move the cursor one character to the right
l	Move the cursor one character to the left
Y	Move the cursor one character to the left
F	Move the pointer to the next field
S-F	Move the pointer to the previous field
R	Move the pointer to the next string field

NETXPRESS SERVER CONFIGURATION

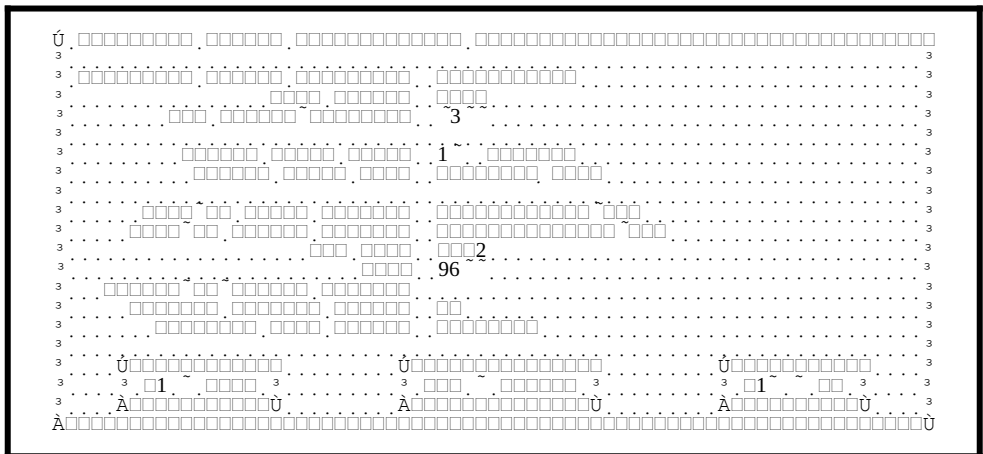


Figure 2-1 NetXpress Server Configuration

NetXpress Server Directory:

⇒ The directory that includes the executable programs, all of the LOG files and the User database files.

0

Text Editor:

⇒ This value is used by the SETUP program to edit certain text files.

GMT Offset / Timezone:

⇒ The offset in minutes from Universal Time/Greenwich Median Time.

1

2 -300 Eastern Standard Time - North America

3 -480 Pacific Standard Time - North America

4 +60 Central European Time - Europe

Screen Saver Timer:

⇒ The screen saver will start up after the specified number of minutes have occurred without any keyboard activity. To restore the screen and cancel the screen saver, just press any key. Please note, that the key you press will be processed if it has a function.

5

Screen Saver Type:

⇒ There are currently three types of screen savers:

6

- ◆ Blank Screen
- ◆ Bouncing Ball
- ◆ Fade Out

7

8Selecting None will disable the screen saver.

9

Login Command:

⇒ The path and filename of a file that contains the login commands to connect to your service provider for dial-up access.

10

11When non-empty, this login command file will be executed whenever NetXpress Server is started up.

12

13For more information on the format of the login file, please see the appropriate Appendix section.

14

Logoff Command:

⇒ The path and filename of a file that contains the logoff commands to disconnect your dial-up connection.

15

16When non-empty, this command file will be executed whenever NetXpress Server is exited.

17

18For more information on the format of the logoff file, please see the appropriate Appendix section.

19

COM Port:

- ⇒ The communications port to use for the dial-up login and logoff commands and for the carrier detect option.

20

Baud:

- ⇒ The baud rate to use for the dial-up login and logoff commands.

21

Dialup-On-Demand Timeout:

- ⇒ If non-zero, NetServer will use this value as an inactivity timeout. When this number of seconds goes by without any packet traffic, NetServer will logoff (with the logoff command) and wait for packet traffic. Once packet traffic resumes, it will then logon back on with the login command.

22

Monitor Carrier Detect:

- ⇒ If enabled, NetServer will monitor the Carrier Detect signal from the specified communications port. When the CD is dropped, then NetServer will exit with an errorlevel of 99.

23

24This is only useful with dial-up connections.

25

Internal SLIP Driver:

- ⇒ When enabled, NetServer will use its own internal SLIP driver. This SLIP driver takes the place of packet drivers like SLIPPER, UMSLIP or ETHERSLP.

TCP/IP

This window allows you to configure your TCP/IP connection parameters. These values are used with the Packet Driver software to connect the NetServer to the Internet.

Most, if not all, of these values will come from your service provider

This section does not provide any way to configure your Packet Driver. You must have it loaded and configured before running the NetXpress Server software. The Packet Driver software may handle either Ethernet or SLIP classes. Please see the Appendix section on Packet Drivers for more information.

For dial-up access, you will need to either have your modem connect and login in to your service provider before you load in your SLIP/PPP packet driver or have NetXpress Server use its internal dialer to connect.

Configuration

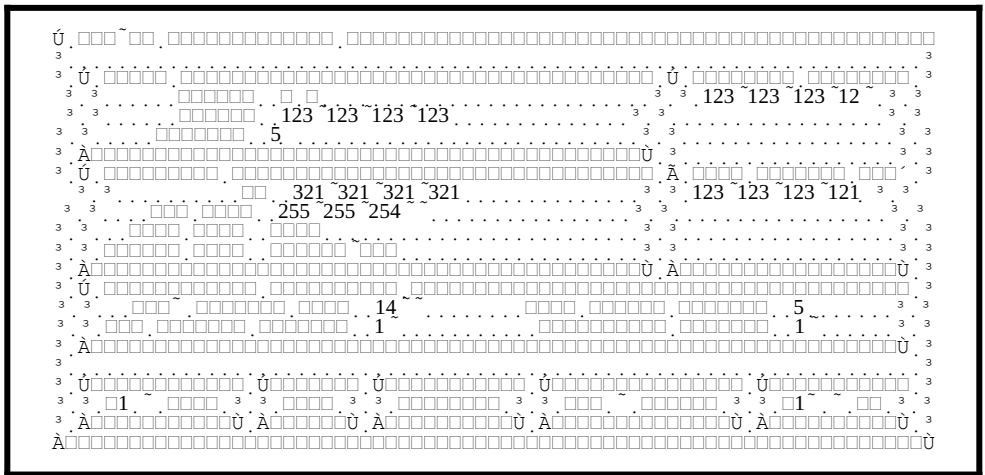


Figure 2-2 TCP/IP Configuration

BOOTP Enable:

- ⇒ If enabled, NetXpress will use the BOOTP protocol and connect up to the specified server to query the information in the two other windows. This means that your IP address is a temporary address, and that you may not give it out since it will always change.

26

27 If disabled, then you must fill out the rest of the information in the next two windows, but you do not need to fill out any of the information in the BOOTP window.

28

BOOTP Server:

- ⇒ The IP address of a BOOTP server to contact upon startup to query your address information. You must not place a domain address in this field.

29

BOOTP Timeout:

- ⇒ The timeout in seconds for a connection to the BOOTP server to fail.

30

IP Address:

- ⇒ Your IP address.

31

Net Mask:

- ⇒ If you have more than one IP address for your network, then you must set the network mask for your local network.

32

33 If not (which is usually the case), then just leave this entry blank or enter the default value of '255.255.254.0'.

34

35 This value may never be '255.255.255.255'.

36

Host Name:

- ⇒ Some applications will wish to know your PC's name, a short textual name. This will be the machine's name and not your domain name. This name may contain only numeric digits and letters, and should be less than 9 characters.

37

Domain Name:

- ⇒ Your system's domain address.

38

Gateway Address:

- ⇒ The address of a local gateway. This value is always supplied by your network service provider and is usually the IP address of the machine that NetXpress will connect up to.

39

Name Servers:

- ⇒ The IP addresses of name servers (in order of importance). These name servers will resolve domain addresses into IP addresses.

40

Maximum Segment Size:

- ⇒ This is the maximum segment size that NetServer can receive over the packet driver. The default value is 1400 for Ethernet.

41

42The maximum value should not exceed 4096.

43

TCP Connect Timeout:

- ⇒ This allows you to specify a specific amount of seconds that NetServer will attempt to connect to a remote computer, wait for data from a remote computer, and wait to accomplish other miscellaneous networking tasks.

44

45The default is 30 seconds, but may be set longer if you have an especially slow connection.

46

Name Lookup Timeout:

- ⇒ The time needed to resolve a domain name into an IP address. Some name servers are very slow (very busy) and thus this value needs to be increased.

47

Inactivity Timeout:

- ⇒ The number of seconds of inactivity with a session before it times out. You should use caution in setting this value. You might wish to leave it blank since all of the modules contain time outs also. Setting this value too low will abruptly close the session without warning after a shortly period of time.

SMTP

SMTP stands for Simple Mail Transfer Protocol and is defined in RFC821 and has been updated in other various RFCs. It is the standard way of transferring private mail between hosts directly connected to the Internet.

The NetXpress Server SMTP module contains both a server and a client. Whenever there is new mail to be delivered, the client will connect up to the destination and deliver the messages. If it cannot connect to the destination, it will try to connect to a default SMTP server and send the message. If this also fails and the message is three days old, then an error message will be sent back to the user. If the destination user does not exist on the destination site, then an error message will be sent back to the user.

The SMTP server will wait until another SMTP client contacts it to deliver messages.

A new feature to version 1.1, is the POP3 gateway. The SMTP server will now place incoming messages destined for POP3 users in their mailboxes. It now also handles the Extended SMTP protocol.

Configuration

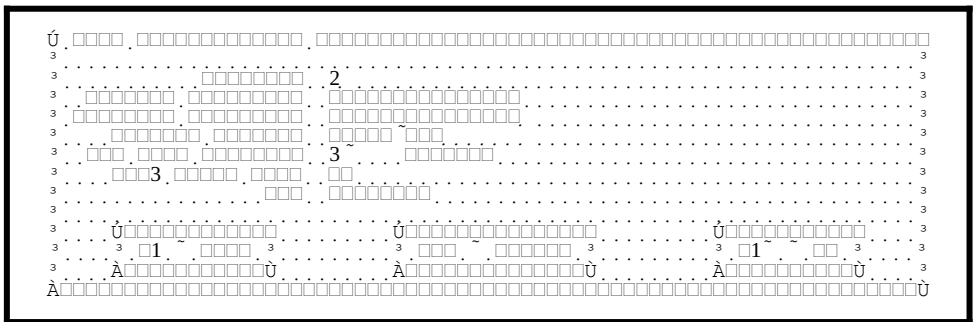


Figure 2-3 SMTP Configuration

48

Sessions:

⇒ The maximum number of sessions for SMTP. Each session can only handle one incoming or outgoing SMTP connection.

49

50A value of zero (0) will disable the SMTP module.

51

Inbound Directory:

⇒ A directory where incoming message files are stored.

52

53Messages are composed of two files: .WRK and .TXT.

54

55The .TXT file contains the actual message with all headers and the message body.

56The .WRK file contains the recipient of the message plus some other information.

57

Outbound Directory:

⇒ A directory where outbound messages are stored. Outbound messages are composed exactly like inbound messages.

58

Default Gateway:

⇒ If the destination address cannot be resolved or contacted, then the message will be sent to this address. This address will most probably be your service provider's smtp server.

59

Check Mail Interval:

⇒ The interval, in seconds, to check the outgoing mail directory for new messages.

60

POP3 Users Only

⇒ When set, the inbound message recipient will be verified as a POP3 user. If the user does not exist, then the message will be refused. When not set, all messages will be allowed and only those that are destined for a POP3 user will be placed in their respective mailbox.

61

Log:

⇒ If enabled, each SMTP session logs all input and output to a log file. The log file is appended to each time NetXpress is started up. The format of the log file is: SMTP-x.LOG, where x represents the session number.

62

63The log file will be opened at startup and will only be closed when NetXpress exits.

64

NNTP

Network News Transfer Protocol is the standard method of distributing USENET news among systems directly connected to the Internet. It is defined in RFC 977.

The NetXpress Server NNTP module contains only a client. Thus no NNTP client can connect to your server to exchange news. This should not be a problem, since only major distribution hubs have NNTP servers. It does however contain a client that has the ability to transfer both outgoing and incoming news from your system. The transfer of outgoing locally created news is done with the POST or IHAVE NNTP command.

Configuration

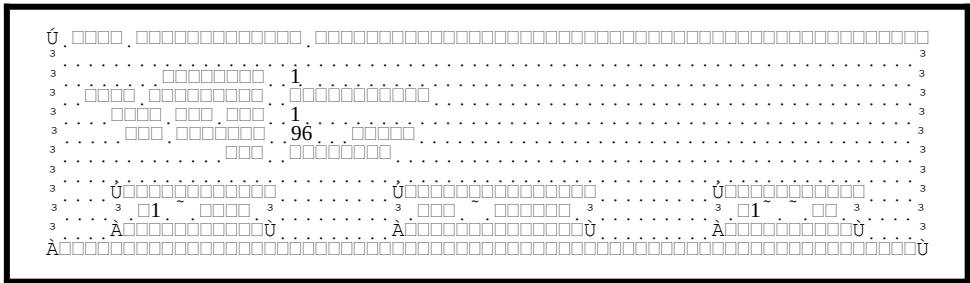


Figure 2-4 NNTP Configuration

Sessions:

⇒ The maximum number of sessions for NNTP. Each session can only handle one outgoing connection.

65

66A value of zero (0) will disable the NNTP module.

67

News Directory:

⇒ A directory that incoming and outgoing news is stored in. The NEWS.NDX file will be maintained in this directory along with both outgoing and incoming news.

68

69Incoming news messages are stored in .BAG files. These files are in a 'batched rmail' format and are compatible with the PageSat .BAG format.

70

Address:

- ⇒ The address of a NNTP server. The address can be either an IP address or a domain address.

79

Newsgroup File:

- ⇒ This file stores information on which newsgroups to request from this NNTP host.

80

Get Active:

- ⇒ If enabled, NetXpress Server will request a newsgroup list every 24 hours period from this NNTP server. This list is saved to a file in the NNTP News Directory with a filename of the NNTP server followed by a .GRP file extension. This is overwritten each time a list is requested.

81

82Example: \spool\news\foobar.grp

83

Get New Groups:

- ⇒ If enabled, NetXpress Server will request a list of new newsgroups every time the NNTP server connects to this host. This list is saved to a file in the NNTP News Directory called 'NEW-GRPS.LOG'.

84

Time to Poll - Time:

- ⇒ The start and end time to connect to this NNTP server. Both times are in 24-hour format.

85

Time to Poll - Interval:

- ⇒ The interval, in seconds, to connect up to this NNTP server.

86

Polling Days:

- ⇒ The days to connect up to this NNTP server.

POP3

The Post-Office-Protocol is mainly used by users who do not have access to the Internet continuously. It allows them to connect to a POP server and retrieve their messages. NetXpress Server contains a POP3 server and the ability to gateway messages from SMTP to POP3 users and vice versa.

Eudora is an example of POP3-compatible mail software.

Configuration

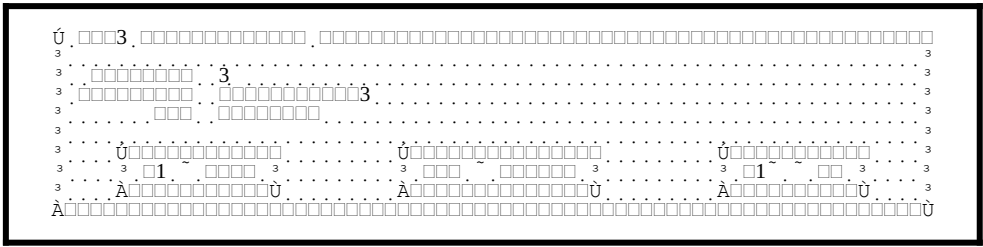


Figure 2-7 POP3 Configuration

95

Sessions:

⇒ The maximum number of sessions for the POP3 server. Each session can only handle one incoming connection.

96

97A value of zero (0) will disable the POP3 module.

98

Directory

⇒ The directory to store POP3 user mailboxes. Each mailbox is a directory off of this directory.

99

Log

⇒ If enabled, each POP3 session logs all input and output to a log file. The log file is appended to each time NetXpress is started up. The format of the log file is: POP3-x.LOG, where x represents the session number.

100

101The log file will be opened at startup and will only be closed when NetXpress exits.

WORLD-WIDE-WEB

The World-Wide-Web protocols allow for the exchange of information in a extremely flexible and unstructured manner. The WWW server is just a file request server, the WWW client has most of the intelligence and makes decisions about how to obtain certain information.

This is by far the fastest growing Internet service on the planet. This service alone is said to have increased the Internet population to record highs recently.

The important difference between the older Gopher protocol and the Web protocols are that the Web display formats are unstructured and can look like anything, while Gopher has a rigid menu structure. Also, Web browsers possess knowledge of many more methods of accessing data than gopher clients do. The number of access methods available to Web browsers is bound to increase in the future.

The NetServer WWW server allows users to not only requests files, but also performs tasks. By editing the NETSRV.WWW file in the system directory you may add aliases, image mapping, security and CGI executables. CGI (Common Gateway Interface) requires NXCgi to be running so that it can take requests. The CGI accepts both GET and POST methods.

Whenever a user requests a directory instead of a filename, a directory listing will be automatically created and sent back to them. If that directory contains a INDEX.HTM file, then that file will be sent back instead.

Also, all requests for '*.html' will be processed as '*.htm'.

You may also wish to add the <!!ACCESS> keyword to your HTML documents. This keyword is translated by the Web server into the number of accesses for this document.

Example:

Before: [Visitor # <!!ACCESS>]
After: [Visitor # 143]

Configuration

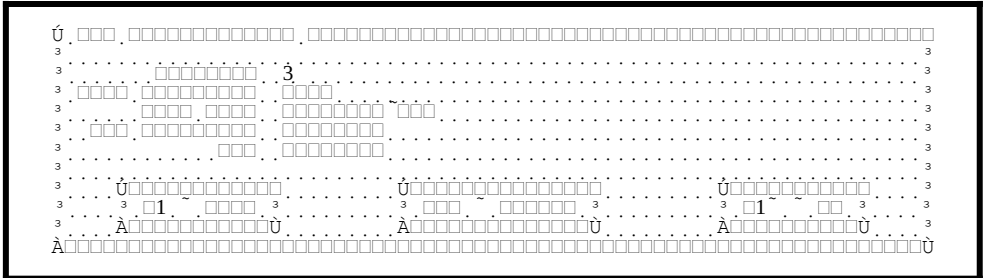


Figure 2-8 WWW Configuration

102

Sessions:

⇒ The maximum number of sessions for the World Wide Web server. Each session can only handle one incoming connection.

103

104A value of zero (0) will disable the WWW module.

105

Home Directory:

106A directory that will be the base directory for all WWW requests. This prevents a user from requesting a file from anywhere on your system.

107

Home Page:

⇒ The filename of your default home page. This filename is relative to your Home Directory.

108

CGI Directory:

⇒ A directory that is used by both NetServer and the NetServer CGI to exchange requests. This should point to an empty directory which may be a RAM drive.

109

Log:

⇒ If enabled, each WWW session logs all input and output to a log file. The log file is appended to each time NetXpress is started up. The format of the log file is: WWW-x.LOG, where x represents the session number.

110

111The log file will be opened at startup and will only be closed when NetXpress exits.

NETSRV.WWW Configuration File

This is a simple text file that contains instructions to process requests. Instructions are taken in the order that they appear.

All references to <url> are able to handle a wildcard character '*'. It must be the last character.

Aliases

⇒ alias <url> <filename>

112

113Aliases the request <url> to the filename <filename>. <filename> is not relative to the Home directory.

114

Image mappings

⇒ map <url>

⇒ [default <filename>]

⇒ [poly <filename> <x1,y1> <x2,y2> ... <x100,y100>]

⇒ [rect <filename> <x1,y1> <x2,y2>]

⇒ [circle <filename> <center_x,center_y> <endpoint_x,endpoint_y>]

⇒ endmap

115

116Whenever <url> receives an image mapping request, the previous instructions will be followed in order to determine which file will be returned. All of the <filename> parameters are relative to the Home directory.

117

118You may have multiple entries of the poly, rect, and circle instruction, but only one entry of the default instruction.

119

120If the map request coordinates do not fall in any of the specified regions, then the <filename> from the default instruction is used. If no default instruction is found, then an error is returned.

121

122The poly instruction allows for a irregular polygon that can be as large as 100 points. The begining and ending points always connect up.

123

124The rect instruction allows for a rectangle whose coordinates are <x1,y1>,<x2,y2>.

125

126The circle instruction allows for a circle.

Security

⇒ protect_ip <url> <ip_address>

⇒ protect_mask <url> <ip_mask>

127

128 Grant access to certain documents or directories to certain IP addresses.

129

⇒ protect_user <url> <user_name>

⇒ protect_group <url> <group(s)>

130

131 The protect_user and protect_group keywords will use the Basic authorization scheme to request a user name and password from the user.

132

133 You may have more than one protect keyword per document. Their operation will be ORed together.

134

CGI Executables

⇒ exec <url> <program>

135

136 Contacts the CGI Server to run <program>. The Web server will wait for the CGI Server to return output to be sent back to the requesting user.

137

Example

138

139 protect_user private* joe_blow

140

141 alias fish.htm \general\fish.html

142

143 exec \system\info.htm \netsrv\cgi\info.exe

144 exec \system\dir.htm dir \netsrv*.exe

145 exec Idunno.htm dunno.bat

146

147 map fishmap.htm

148 default \general\fishnone.htm

149 poly \general\fishpoly/htm 10,34 20,34 21,43

150 rect \general\fishrect.htm 10,34 20,50

151 rect \general\fishrect.htm 44,134 100,254

152 circle \general\fishcirc.htm 50,50 50,60

153 # don't forget the 'endmap' keyword!!

154 endmap

NXCGI

The NetXpress CGI (Common Gateway Interface) Server waits for requests from the NetServer and then sends back the output of the requested program.

It's only command line parameter is the common CGI directory to exchange information with NetServer. It will check this directory for files that have REQ as a file extension (*.REQ). These request files contain information on query parameters and which program to run. Certain environment variables will be set and the specified software will be executed. All output from this program will be sent back to the NetServer so that it can return it back to the requesting user. Programs executed may be either .EXE, .COM, or .BAT and must be DOS programs.

If the HTTP method was POST, then the query will be fed into the CGI software through stdin instead of being fed as the environmental variable QUERY_STRING.

The program that is executed by NXCGI should check to see if QUERY_STRING is set, if not then read data from stdin. The length of data will be specified by the CONTENT_LENGTH variable.

This program should return a series of optional headers, an empty line and then the document. The allowed headers include:

```
Status: <num>  
Content-Type: <type>/<sub-type>  
Location: <url>
```

CGI Environment Variables

SERVER_SOFTWARE

- ⇒ The name and version of the information server software answering the request.
Format: name/version (NetXpress Server/1.0)
155

SERVER_NAME

- ⇒ The server's DNS alias, or IP address as it would appear in self-referencing URLs.
This is the same value as your domain name.
156

SERVER_PROTOCOL

- ⇒ The name and revision of the information protocol this request came in with.
Format: protocol/revision (HTTP/1.0)
157

SERVER_PORT

- ⇒ The port number to which the request was sent. (80)
158

REQUEST_METHOD

- ⇒ The method with which the request was made. (GET/POST)
159

SCRIPT_NAME

- ⇒ The location and name of the script being executed.
160

QUERY_STRING

- ⇒ The information which follows the '?' in the URL which referenced this script. This is the query information.
161
162Example: info/?name="netsrv"
163
164When a POST method is used, this variable is empty and the query is sent instead through the stdin.
165

REMOTE_ADDR

- ⇒ The IP address of the remote host making the request.
166

HTTP_ACCEPT

⇒ This contains a comma separated list of all the MIME types acceptable to the user.
167

HTTP_USER_AGENT

⇒ This variable contains the name of the software that the user is using.
168

CONTENT_LENGTH

⇒ If the HTTP method was POST instead of GET, then this variable contains the length of data that was fed into the stdin.
169

REMOTE_USER

⇒ If authorization was needed to access this URL, then this environment contains the user's name.
170

FTP

File Transfer Protocol allows users to peruse the files of another system on the Internet. One important fact concerning FTP, is that it tries to look like a file system and thus contains no file descriptions, although there are methods of displaying descriptive text to the user.

The NetXpress Server FTP module works on top of DOS and doesn't not rely on any other file database, thus making it generic and compatible with anything. To make it more flexible, a Directory has two important values assigned to it: Name and Location. Unlike plain DOS, where the name is also the location, both values may be different. This creates a series of directories that may have a common sub-directories in their name, but may reside on different storage devices. This makes it possible to emulate or copy another files database from other software.

A directory also has a third value associated with it; Security Rights. Since DOS was never intended to be used by more than one person at a time, it does not have any notion of security. We have had to introduce a user's database to offset this deficiency in DOS. The user's database offers a user with a password and security rights. The user's database also allows you to monitor the amount of traffic specific users cause and perhaps bill them for it. To access the user's database structure, please see that section in the Appendix.

There are two special files that can be used to display information to a user. The first is named WELCOME.MSG and resides only in the root directory. It is displayed to the user upon logon. It should contain information about your FTP site.

The other file is named 00README and can be contained in any directory. It is displayed to the user when the user changes the directory. This file can be used to describe the contents of a directory.

Both of these files must be ASCII text and both are optional.

Configuration

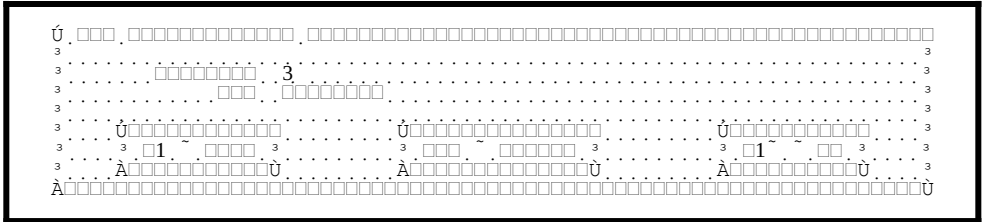


Figure 2-9 FTP Configuration

171

172

Sessions:

- ⇒ The maximum number of sessions for the FTP server. Each session can only handle one incoming connection.

173

174A value of zero (0) will disable the FTP module.

175

Log:

- ⇒ If enabled, each FTP session logs all input and output to a log file. The log file is appended to each time NetXpress is started up. The format of the log file is: FTP-x.LOG, where x represents the session number.

176

177The log file will be opened at startup and will only be closed when NetXpress exits.

178

Directory Configuration

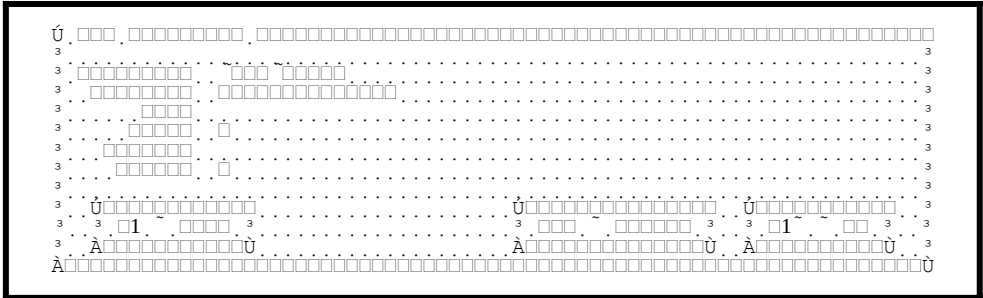


Figure 2-10 FTP Directory Configuration

179

Directory:

- ⇒ The logical name of this directory. This can be anything you like, except that you cannot use any spaces. You must also use the forward slash (/) instead of the normal DOS back slash (\). This was done to provide compatibility with the original Unix FTP servers. You must provide the user with a root directory with the name of '/'.

180

181 All directory entries must start with the slash (/) character and not end with it.

182

183 You must ensure that your directory tree makes sense and does not have any holes in it.

184

185 For example:

186 /

187 /pub

188 /pub/msdos/windows

189

190 In the above example, the directory '/pub/msdos' is missing, and thus the '/pub/msdos/windows' directory will never be displayed.

191

Location:

- ⇒ The physical location of the above address. This will point to a directory on your system.

192

Rights:

- ⇒ The Directory Rights that a user will need before any of the actions are performed.
If the field is empty, then there are no special requirements for that action.

193 It is strongly advised that both Write and Delete have Rights assigned to them.

194

Read	Get/Download a file
Write	Put/Upload a file
Display	Display this directory
Delete	Delete & Rename files

GOPHER

The Internet Gopher protocol offers users the ability to browse through the Internet in a structured menued environment looking at user-friendly menu descriptions instead of service names, hosts and ports. The beauty of Gopher is that a menu entry may point anywhere on the Internet, and thus hopping from one Gopher to another is virtually seamless to the user.

It also allows users to retrieve documents without the need to do it themselves interactively.

The Gopher server provided in NetXpress Server may also be used to perform an Index Search on its on text files. This allows the user to quickly obtain a specialized menu containing documents which contain his/her search words.

Configuration

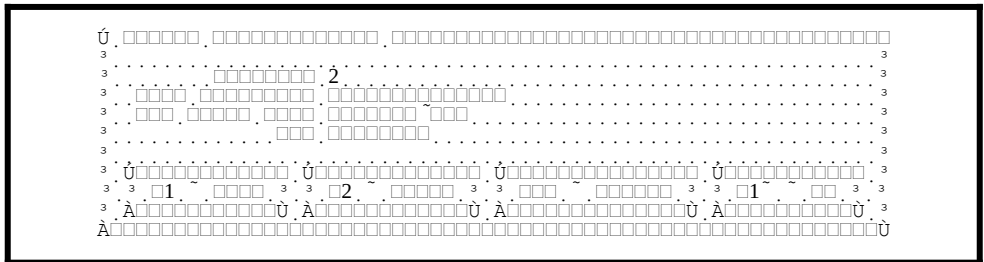


Figure 2-11 Gopher Configuration

195

Sessions:

⇒ The maximum number of sessions for Gopher. Each session can only handle one incoming connection.

196

197A value of zero (0) will disable the Gopher module.

198

Base Directory:

⇒ The base directory from which all other Gopher file access will be relative to. This insures that no one can request sensitive files from private parts of your hard drive.

199

Top Level Menu:

- ⇒ The name, and perhaps path, of the top level menu that is displayed to a user at first. If a path is also specified, then it is relative from the base directory.

200

201As a default, your menus should have a .GPH file extension. You may however have any file extension you wish.

202

Log:

- ⇒ If enabled, each Gopher session logs all input and output to a log file. The log file is appended to each time NetXpress is started up. The format of the log file is: GOPHER-x.LOG, where x represents the session number.

203

204The log file will be opened at startup and will only be closed when NetXpress exits.

205

Menu Configuration

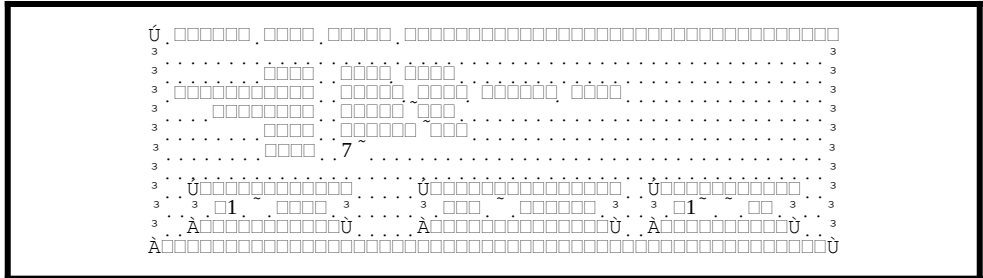


Figure 2-12 Gopher Menu Entry

Type:

⇒ The type of entry:
206

Text File	A straight ASCII file. This does not include most word processor documents. You must make sure that only characters between codes 32 (space) and 126 (~) are present in the document.
Menu	Another menu
BinHexed File	A Macintosh file that has been binhexed.
Archived File	A file that has been archived. ie. ZIP, ARJ
Uuencoded File	A file that has been uuencoded.
Index-Search	A pointer to an index search gopher server.
Telnet Session	A pointer to a Telnet remote login session.
Binary File	If no other entry specifies a file, then you should use this entry.
tn3270 Session	A pointer to a tn3270 remote login session.
GIF File	A GIF image file.
Image File	An image file other than in the GIF format.
Sound File	A sound file. i.e. .WAV
HTML File	A World Wide Web HTML display file.
MIME File	A mail message.

207

Description

⇒ The description that the user will see on their menu.
208

Location:

- ⇒ The location of this entry depends on what type of entry this is.
209

Menus + All Files	This will be path and a filename if the file is on your Gopher server. If it is on another system, then it will be the selector for that entry.
Index-Search	If the Index search is to be performed by your Gopher server, then the location is the name of the menu to search. If it is on another system, then it will be the selector for that entry.
Telnet + tn3270 Sessions	This will be the login name that the user should use upon connection.

210

Host:

- ⇒ The domain address that this entry is located on.
211

Port:

- ⇒ The port to connect to at the host.

213 Gopher 70
214 Telnet 23
215 Finger 79
216

223The log file will be opened at startup and will only be closed when NetXpress exits.

UUCP

The UUCP (Unix-to-Unix-CoPy) protocol is not a TCP/IP Internet protocol at all. It in fact relies on the transfer of messages by either a modem or a null-modem cable. Although this is an ancient protocol, it is still used quite a lot through out the world where Internet connectivity is either very expensive or non-existent.

This protocol replaces both SMTP and NNTP for transferring messages. The news transfer can also be compressed to save on time due to the use of low-speed modems.

The NetXpress Server UUCP module can both call up another UUCP machine or answer an incoming call from another UUCP machine.

Please note that UUCP is not a replacement for SMTP or NNTP. It is merely part of this package for historical reasons. You should use SMTP and NNTP over a TCP/IP link whenever possible.

You may also place NetXpress Server into a UUCP-calling mode by issuing the following on the command line:

```
netsrv -s <host>
```

Where <host> is the UUCP system that you wish to call.

In this special mode, NetXpress Server will not load up any other module but UUCP, and will only assign it one session irregardless of what setting you have in the configuration (including 0).

After the UUCP module has completed, NetXpress Server will exit.

Password:

- ⇒ The password needed when either your system connects to this system or whenever this system connects to your system.

240

Phone:

- ⇒ The phone number of this host.

241

Time to Poll:

- ⇒ The valid times to call this host. The time is in HHMMSS format. This is a 24-hour format.

242

Interval:

- ⇒ The interval, in seconds, to call this host. The host will be called even without any mail for it.

243

Polling Days:

- ⇒ The valid days to call this host.

244

Modem Configuration

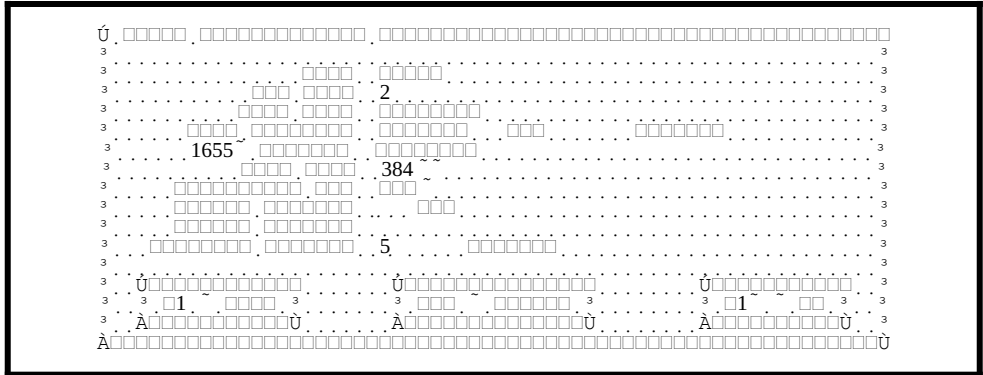


Figure 2-16 UUCP Modem Configuration

245

Name:

⇒ The name of this modem. This is only used for logging purposes.

246

COM Port:

⇒ The communications port for this modem.

247

Port Type

⇒ The type of communications port for this modem.

248

249 Your options are:

250

251 Standard

252 FOSSIL

253 DigiBOARD (Smart I/O)

254

Port Settings:

⇒ If you select advanced, then you must fill in the IRQ and Address of the communications port. Otherwise, defaults will be used.

255

256 ONLY USED FOR STANDARD PORTS!

16550 Trigger

- ⇒ The number of characters in the 16550's input buffer before an interrupt is given. The higher the setting, the faster your machine needs to be to read in all of the data before an overrun occurs. A higher level will increase your CPS.

257

258 ONLY USED FOR STANDARD PORTS!

259

Baud Rate:

- ⇒ The baud rate to open the port at.

260

Initialize Command:

- ⇒ The modem command needed to initialize the modem.

261

Hangup Command:

- ⇒ The modem command needed to hangup the modem.

262

Answer Command:

- ⇒ The modem command needed to answer an incoming call. If you leave this entry blank, then no incoming calls will be answered.

263

Response Timeout:

- ⇒ The number of seconds without a response from the other UUCP machine before we timeout. Three timeouts are allowed before the UUCP module will give up and hangup on the other system.

TELNET

The Telnet module allows people on the Internet to remotely login to your system. To handle this job, the Telnet module relies on NetBIOS or NetWare to reroute the incoming connection to other machines. On these other machines, there will be software running that waits for a connection from the FOSSIL driver provided (NXTSR). The FOSSIL driver, NXTSR, will gateway between either NetBIOS or NetWare networks to an asynchronous communication port, thus fooling the local software into thinking that a call has come in from the modem.

Telnet makes no assumption about the terminal emulation that the user uses, nor does it usually offer any method of transferring data. Thus you must display to the incoming user before they login that they must set their system to ANSI of whatever your software requires.

NXTSR FOSSIL TSR

To have the telnet module connect to an asynchronous host, like a BBS, you must run NXTSR at the host's machine. This is a FOSSIL driver that tricks the host into thinking that a connection is coming from the modem.

The NXTSR can only accommodate one FOSSIL connection, thus if you are using a multitasker (i.e. DESQview) you must load up multiple copies of the TSR in each session's window.

There are two versions of NXTSR: one for NetBIOS (nxtsr-b.exe) and another for NetWare IPX (nxtsr-w.exe).

The syntax of NXTSR is as follows:

```
nxtsr-b [ <node> [/P<port>] [/Numeric] [/Fast | /Ring] ] | [Remove]
nxtsr-w [ <node> [/P<port>] [/Numeric] [/Fast | /Ring] ] | [/Remove]
```

You may also include the following macros on the command line:

```
[@RA] [@PCB] [@SL] [@SYNC]
```

They expand out to the following:

@RA (RemoteAccess) = none (or /Fast or /Ring)

@PCB (PCBoard) = /Ring

@SL (Searchlight) = none (or /Fast or /Ring)

@SYNC (Synchronet) = /Ring /Numeric

To install nxtsr for node #5, simply enter:

```
nxtsr-b 5
```

To remove it:

```
nxtsr-b /r
```

The following table lists and describes all of NXTSR's options:

/Numeric	<p>Send numeric results instead of verbose result codes.</p> <table border="1" data-bbox="610 808 1233 1167"> <tr> <td>0</td> <td>OK</td> </tr> <tr> <td>1</td> <td>CONNECT</td> </tr> <tr> <td>1</td> <td>CONNECT 600</td> </tr> <tr> <td>2</td> <td>RING</td> </tr> <tr> <td>5</td> <td>CONNECT 1200</td> </tr> <tr> <td>10</td> <td>CONNECT 2400</td> </tr> <tr> <td>11</td> <td>CONNECT 4800</td> </tr> <tr> <td>12</td> <td>CONNECT 9600</td> </tr> <tr> <td>14</td> <td>CONNECT 19200</td> </tr> <tr> <td>19</td> <td>CONNECT 38400</td> </tr> </table>	0	OK	1	CONNECT	1	CONNECT 600	2	RING	5	CONNECT 1200	10	CONNECT 2400	11	CONNECT 4800	12	CONNECT 9600	14	CONNECT 19200	19	CONNECT 38400
0	OK																				
1	CONNECT																				
1	CONNECT 600																				
2	RING																				
5	CONNECT 1200																				
10	CONNECT 2400																				
11	CONNECT 4800																				
12	CONNECT 9600																				
14	CONNECT 19200																				
19	CONNECT 38400																				
/Fast	Only set Carrier Detect for a connection.																				
/Ring	Sends a RING result code for a connection.																				
/P<port>	Selects a different port than the default 28. Port 28 is the telnet port and ports above 1024 can be used for non-standard applications.																				
/Remove	Uninstall TSR from memory.																				

Normally NXTSR will send out a CONNECT message once a telnet connection has been established. By using the /Ring option, you can have it send out a RING and then wait for an ATA, before sending out the CONNECT message. Using the /Fast option bypasses everything and just sets the carrier detect.

NXTSR will respond with an OK result code whenever it gets any AT command other than ATA.

It will close the connection whenever DTR is lowered.

Example:

Machine 1 - NetXpress Server

```
rem load netbios driver
rem load packet driver
netsrv
```

Machine 2 - BBS node

```
rem load netbios driver
nxtsr-b 1
rem run your bbs software
```

Configuration

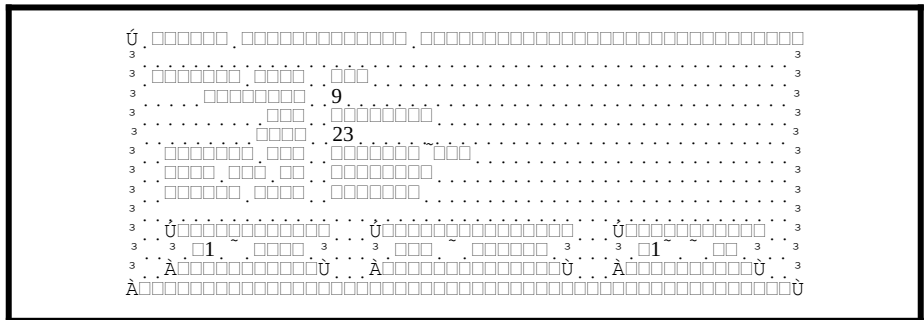


Figure 2-17 Telnet Configuration

264

Service Name:

⇒ The name of this Telnet Service. This is only used by Setup to distinguish between services.

265

Sessions:

⇒ The maximum number of sessions for Telnet. Each session can only handle one incoming connection.

266

267A value of zero (0) will disable the Telnet module.

268

Log:

- ⇒ If enabled, each Telnet session logs all input and output to a log file. The log file is appended to each time NetXpress is started up. The format of the log file is: TELNET-x.LOG, where x represents the session number.

269

270The log file will be opened at startup and will only be closed when NetXpress exits.

271

Port:

- ⇒ The port for NetServer to listen to for this Telnet Service. You may not use the same port as other NetServer modules. Ports above 1024 are available for use by any non-standard application.

272

273The standard Telnet port is 23.

274

275For a list of well-known port numbers, please RFC1700.

276

Welcome Message:

- ⇒ This text file will be shown to users upon connection of this Telnet Service.

277

Wait for CR

- ⇒ If enabled, the user will need to press the <Enter> key after the welcome file is displayed and before a free node is searched for.

278

Telnet Options

- ⇒ If enabled, NetXpress Server will process and issue Telnet control options. These options are only valid for telnet sessions and should be disabled for services that need a straight character stream.

USER CONFIGURATION

General

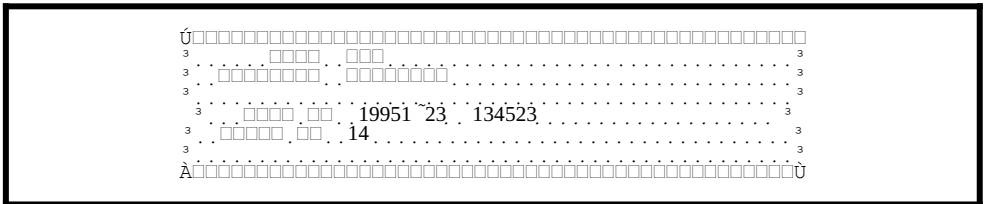


Figure 2-18 User-General Configuration

Name:

- ⇒ The login name of this particular user. This can consist of any character with the exception of spaces and control characters.

279

280 You should have a 'anonymous' account to be used by anyone who does not have a special account.

281

Password:

- ⇒ The password used by this user when logging in.

282

283 If this value contains a single asterisks (*), then the password will not be checked. It will still have to be sent by the user, but the FTP module will ask for the user's email address instead of a password.

284

Address

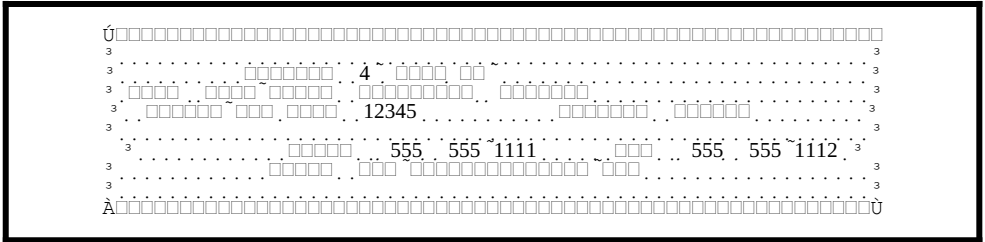


Figure 2-19 User-Address Configuration

285

Address:

⇒ This section is mainly for billing purposes and is optional.

286

FTP

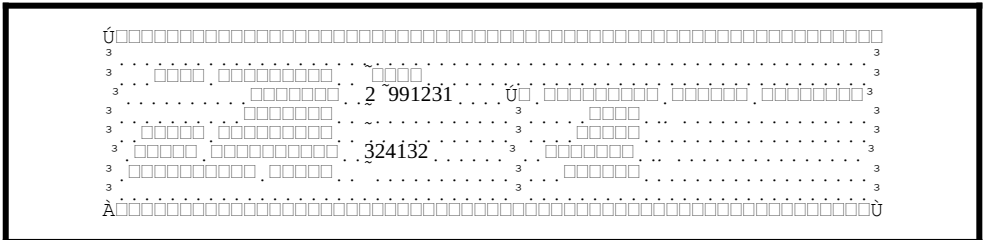


Figure 2-20 User-FTP Configuration

287

Home Directory:

⇒ The user will be placed into this directory when they log into the FTP server.

288

Expires:

⇒ The date on which this user's access to your FTP server will expire. The date is in YYYYMMDD format.

289

Credits:

- ⇒ The amount of kilobytes that the user is allowed to retrieve from your FTP server.
This values will decrease whenever the user retrieves documents.

290

291Whenever this value is smaller than the requested file's size, the user will not be able to retrieve that file.

292

Daily Allowable:

- ⇒ The daily maximum number of kilobytes that the user can retrieve.

293

Total Downloaded

- ⇒ The number of bytes that the user has downloaded.

294

Downloaded Today

- ⇒ The number of bytes that the user has download today.

295

Directory Rights:

- ⇒ The Rights that this user has. An asterisks denotes all rights.

296

297A user will need to have one of the corresponding rights in order to perform certain functions.

298

299You may have 36 groups of Rights. The letters a through Z and the digits 0 through 9 denote Right Groups.

300

301If a directory has a Read Rights of 'RZ', then the user will need to have a Read Right that contains either R or Z or an asterisks.

302

303If the directory has an empty value for a Right, then the user need not have any rights to perform that action.

304

305For more information on directory Rights, please see FTP Directory Configuration.

RemoteCfg

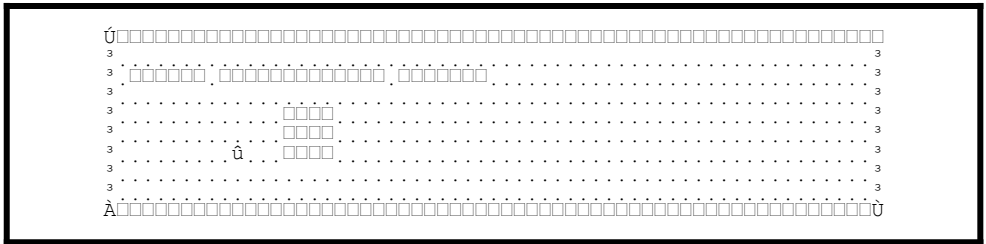


Figure 2-21 User-RemoteCfg Configuration

306

307

RemoteConfig:

⇒ Whether the user has access to the remote configuration server.

308

POP3

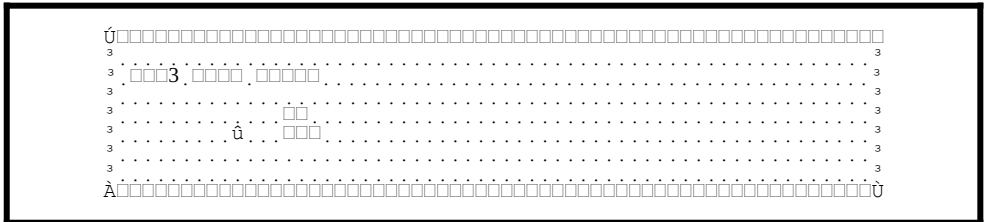


Figure 2-22 User-POP3 Configuration

PO3 Mail User:

⇒ Whether the user has a POP3 mailbox.

309

Web

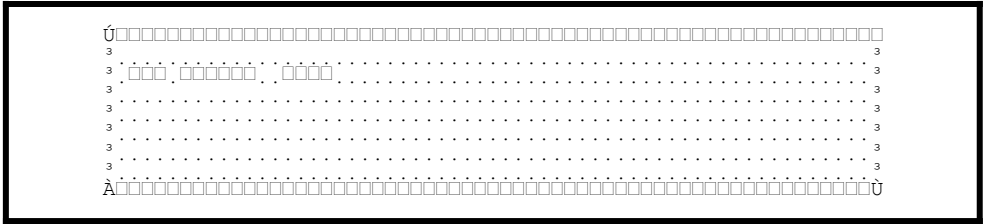


Figure 2-23 User-Web Configuration

Web Groups:

- ⇒ The web groups the this user has access to.
- 310

SESSION SUMMARY

This window will display the usage of each module. It is intended to be used to fine tune system performance by providing a quick glance at the configuration.

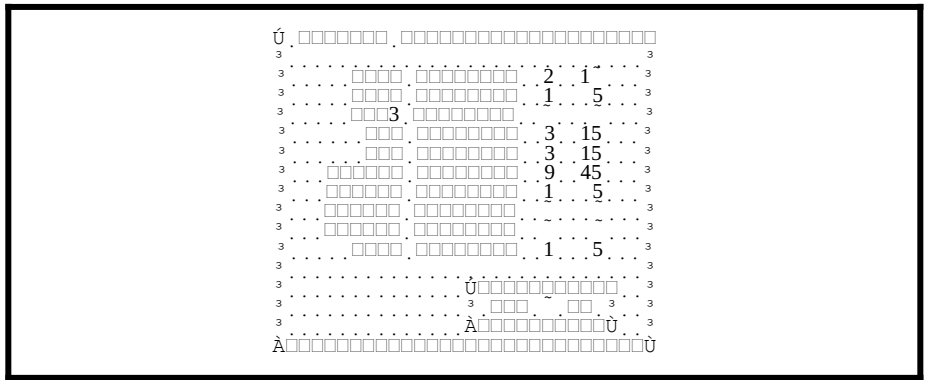


Figure 2-24 Session Summary

Questions & Answers

How do I get the fastest performance?	<ul style="list-style-type: none">• Turn off all logs.• Do not run under a multitasker like Desqview or Windows.• Try to use IP addresses instead of domain addresses.• Do not run on a machine that acts as a LAN server.• Do not use buffers in your packet driver or your packet multiplexer. (This one will greatly increase your speed over a network)
What is the difference between a UUCP address and a Domain (DNS) address?	An UUCP address is at most eight characters long and contains no periods. A Domain (DNS) address always contains periods and can be any length. The UUCP address is used by systems who communicate with the UUCP protocol over modems. The newer DNS address is used by systems who use the Internet for mail.
What is a port?	A port is like a channel. Each application has its own port that it listens for incoming connections on. Port values under 1024 are well-known ports for (well-known) applications.
What are some good books to read about the Internet and USENET?	<i>The Whole Internet: User's Guide & Catalog</i> O'Reilly & Associates, Inc., Ed Krol

Connecting To The Internet
O'Reilly & Associates, Inc.,
Susan Estrada

Managing UUCP and USENET
O'Reilly & Associates, Inc.,
Tim O'Reilly and grace Todino

Using UUCP and USENET
O'Reilly & Associates, Inc.,
Grace Todino and Dale Dougherty

*The Matrix: Computer Networks & Conferencing Systems
Worldwide*
Digital Press,
John S. Quarterman

!%@:: A Directory of Electronic Mail Addressing & Networks
O'Reilly & Associates, Inc.,
Donnalyn Frey & Rick Adams

Unix Communications
The Waite Group,
Bart Anderson, Barry Costales, and Harry Henderson

Zen and the Art of the Internet
Brendan Kehoe,
zen-internet.src or zen.txt

Hitchhikers Guide to the Internet
Ed Krol,
RFC1118

Glossary

10Base2

An implementation of the Ethernet IEEE standard on thin coaxial cable at 10 megabits per second. The maximum segment length is under just under 200 meters.

10Base5

The original Ethernet medium, an implementation of the Ethernet IEEE standard on twinaxial cable at 20 megabits per second. The maximum segment length is 500 meters.

10BaseT

An implementation of the Ethernet IEEE standard on 24 gauge unshielded, twisted-pair wiring at 10 megabits per second.

Archie

A system for locating files that are publicly available by anonymous FTP.

ARPAnet

An experimental network established in the 1970's where the theories and software on which the Internet is based were tested.

Article

What a message is called if it is part of a newsgroup.

Asynchronous Communication

A method for transmitting data that sends one character at a time. Asynchronous also refers to commands, as in a windowing environment, that may be sent without waiting for a response from the previous command.

Attenuation

The loss of signal strength that occurs as a signal is transmitted through a cable.

AUP

Acceptable Use Policy; A term used to refer to restrictions placed on the use of a network.

Backbone

A major high-speed point to which other networks are connected.

Bandwidth

The capacity of a network to carry information. In a network, the higher the bandwidth, the greater the information-carrying capacity of the network, and the faster data can be transmitted from one device to another.

Bridge

An electronic device that connects two networks so that devices on one network can communicate with devices on the other network. Bridges connect only networks that operate under the same communications protocols.

CCITT

Consultative Committee for International Telegraphy and Telephony; An international standards-making body consisting of national telecommunications authorities.

Daemon

A program running in the background on a Unix system. A daemon performs a single task the entire time that it is running.

Dedicated Line

A permanently connected private telephone line between two locations. Leased lines are typically used to connect a moderate-sized local network to an Internet service provider.

Dialup Line

A method of connecting to a computer by calling it up the telephone.

DNS

Domain Name System; A distributed database system for translating computer names into numeric Internet addresses, and vice-versa. (e.g. foobar.com into 194.56.78.2)

Ethernet

A data link protocol jointly developed by Intel, Xerox, and DEC and subsequently adopted by the IEEE as a standard.

FAQ

Frequently Asked Question; Many USENET newsgroups maintain FAQs so that participants won't spend lots of time answering the same set of questions.

Flame

A virulent and often largely personal attack against the author of a USENET posting. Flames are unfortunately common

Flamers

People who frequently write flames. See above.

Freenet

An organization to provide free Internet access to people in a certain area.

FTP

File-Transfer-Protocol; An application that allows you to transfer files from one computer to another. This requires direct access to the Internet.

Gopher

A menu-driven system for exploring Internet resources.

IAB

Internet Architecture Board; The ruling council that makes decisions about standards and other important issues that concern the Internet.

IETF

Internet Engineering Task Force; A volunteer group that investigates and solves technical problems, and makes recommendations to the IAB.

IEEE

Institute of Electronic and Electrical Engineers; A standards-setting group in the United States that is part of ISO.

Internet

A worldwide 'network of networks' which are connected to each other.

IRC

Internet Relay Chat; An Internet-based application that allows users to interact in real-time.

ISDN

Integrated Services Digital Network; A new kind of dialup connection offering higher speed access over voice lines.

ISO

International Standards Organization; An international standards-making body responsible for the OSI network standards.

LISTSERV

This is a special automated agent that adds and deletes subscribers to mailing lists.

Mailing List

A discussion of individuals on a specific topic. Mailing lists are implemented by using a special mail address. Subscribers to the mailing list, send their comments in to that address. Their message will then get distributed out to all other subscribers.

Moderator

A person who receives all mail for a mailing list or moderated newsgroup and approves it for general viewing. This sometimes is automated for mailing lists.

Moderated

When a newsgroup is moderated, all messages are sent to the moderators address. The moderator will be authorize the distribution of those message to the rest of that newsgroups subscribers. Newsgroup

Newsgroup

A conference or topic area that is part of USENET.

NIC

Network Information Center; A organization that's responsible for supplying information about any network. The InterNIC plays this role for the Internet.

NNTP

Network News Transfer Protocol; A method of exchanging USENET news among host on the Internet.

NSFNET

National Science Foundation Network; One of the larger networks that makes up the Internet.

OSI

Open Systems Interconnect; A series of protocols for networking.

POP

Point of Presence; The closest location for a network.

PPP

Point to Point Protocol; This protocol is a new standard and should replace SLIP. It is used for the same thing as SLIP, mainly to hook up a computer to the Internet with just a high-speed modem.

Repeater

A hardware device that repeats the signal on a network. As signals pass over a line, they lose some of their power and pick up static. A repeater amplifies and conditions the signals on a network.

RFC

Request For Comments; RFCs are electronic documents that help define the Internet. They contain protocol standards, format standards, frequently asked questions, etc. RFC filenames all start with RFC and then have their number (eg. RFC1137).

RFC822

The RFC that contains the standard for mail interchange within the Internet. RFC976 builds on RFC822 and describes UUCP routing among many other things.

RFC1036

The RFC that contains the standard for mail interchange with USENET.

Router

A device that connects two networks together and maintains addressing information for each network.

Service Provider

An organization or company that provides connections to the Internet.

SLIP

Serial Line Internet Protocol; This protocol is used when using IP over an asynchronous line. Usually this is used with modems.

SMTP

The electronic mail transfer protocol defined in RFC821.

TELNET

An application that allows you to log onto another computer. In the Internet this requires having direct access to the Internet

TCP/IP

Transmission Control Protocol / Internet Protocol; The networking protocol that most of the Internet is based on.

Transport Agent

A transport agent is merely a program that transports files/messages from one location to another. An example of UUCP's transport agent is UUCICO.

UNIX

An operating system used by many of the systems on the Internet.

USENET

USENET is a network of systems that exchange news articles. There are over 18000 systems worldwide that participate. USENET comprises of thousands of newsgroups or conferences.

UUCICO

A program that transfers files/messages from one system to another.

UUCP

Unix-to-Unix CoPy; This is a collection of programs that allow computers to communicate with each other. UUCP uses standard modems, serial cables, and the telephone system. It is used to transfer USENET articles from one system to another. It can also be used to transfer private e-mail.

WAIS

Wide-Area Information Server; A very powerful system for looking up information in databases across the Internet.

WWW

World-Wide Web; A hypertext-based system for finding and accessing Internet resources.

Appendix

PACKET DRIVER SOFTWARE

Packet Drivers are TSR programs that provide a link between software applications and some type of Internet access hardware. Most of these programs are available free from quite a lot of different sources. These are called the Clarkson packet drivers, and there are different versions of them to suit almost any kind of network card or asynchronous connection.

Our Web site and BBS contain the entire set of freely downloadable packet drivers.

UUCP ERROR MESSAGES

The following table describes some of the possible error messages that UUCP will log.

ROK	The call has been accepted.
RLCK	Host thinks it's already talking to your system
RCB	Host want to call your system
RBADSEQ	The call sequence number is wrong
RLOGIN	Your login ID isn't known to your host's USERFILE or Permissions file
Ryou are unknown to me	Your UUCP Address isn't in your host's L.SYS or SYSTEMS file

If your host sends any of the above, except for ROK, it simply hangs up.

USER'S DATABASE STRUCTURE

This database consists of two files: USERS.DAT and USERS.NDX. The index file consists only of 4-byte long integers that represent the crc32 value of the user's name (lowercase, with a starting value of 0). Each record in the index file corresponds to the same record in the data file. A value of 0 in the index file, stipulates a deleted user.

The data file has in its first two bytes, a short integer that represents how large each record is.

The format of each record in the data file is as follows:

```
typedef struct
{
    char    name[40],           // User's login name -- zero if record is deleted
           password[20],      // User's password
           address[40],       // User's street address
           city[40],          // User's city
           country[20],       // User's country
           code[20],          // User's postal or zip code
           phone[16],         // User's phone number
           fax[16],           // User's fax number
           email[40],         // User's e-mail address
           lastdate[9],       // Last date that the user was on (YYYYMMDD)
           lasttime[7],       // Last time that the user was on (HHMMSS)
           expires[9];        // The expiration date of this account (YYYYMMDD)
    long    accesses,         // Number of logins
           kbcredits,         // How much kb is this user allowed to retrieve -- 0 disables
           kbdownloaded,     // How much kb has this user retrieved ever
           kballoweddaily,   // How much kb can they retrieve in a day -- 0 disables
           kbdownloadedtoday; // How much have they retrieved today
    char    rights[4][27];    // Security Rights (Read, Write, Display, Delete)
    char    remoteConfig;     // What rights they have on the Remote Configuration server
    char    homedir[80];      // Their FTP home directory
    char    pop3user;         // Whether they are POP3 users
    char    web_group[37];    // The Web security group(s) they belong to
} ftpuser;
```

Both files must be opened in a DENYNONE mode.

NNTP NEWS DATABASE STRUCTURE

The NNTP database consists of one index file and many message files: NNTP.NDX and x.OUT. The index file consists of a header record and one record per message. The index is self-packing and will delete records and message files when they have expired.

The NNTP News directory contains the NNTP.NDX file along with all of the x.OUT message files.

The format of the NNTP.NDX header is as follows:

```
typedef struct
{
    long    unused,           // file position of first unused record
           used;            // file position of first used record
} nntpndx;
```

The format of each record in the data file is as follows:

```
typedef struct
{
    long    next,           // file position of next record
           last,           // file position of last record
    char    id[9],          // message filename [<id>.OUT]
           msgid[127],     // message-id of the message
           accesses;       // number of times this message has been sent
    long    timecreated;    // unix-formated date & time
} nntp;
```

The format of unused records is as follows:

```
typedef struct
{
    long    next;           // file position of next unused record
    char    fluff[sizeof (nntp) - sizeof (long)]; // place holder
} nntpfree;
```

LOGIN COMMAND FILE

The Login file is used to send commands to your modem or communications port. It allows for the following commands:

timeout <num>

⇒ Sets the number of seconds allowed to pass before the expected string is found.
311

send | output <string>

⇒ Sends the specified string to the port.
312

expect | wait | input [<num>] [<string> [<str2> [<str3> [<str4> [<str5>]]]]]

⇒ Wait for the specified string to be received. If no <string> is specified, then this commands performs a wait. If the <num> value is omitted, then the value from the last timeout will be used. The string is case-insensitive, thus 'Login' and 'login' are equal.

313If more than one string is given, then the rest are used as a bad tokens. If the text received is equal to any of the bad tokens, the login command will be terminated.

314

message | display <message>

⇒ Will cause the <message> to be displayed on the screen.
315

break [<num>]

⇒ Sends a break signal to your communications port for <num> milliseconds. If <num> is omitted, then the default 5 milliseconds will be used.

316

set <length><parity><stop>

⇒ Sets your communications port to <length> data bits, <parity> and <stop> stop bits.

317

318<length> may only be either 8 or 7,

319<parity> may only be N, O, E,

320<stop> may only be 1 or 2.

321

goto <label_name>

⇒ Moves execution to a label. The search is started at the top of the file. If the <label_name> does not exist, the dialer will exit with an error.

322

label <label_name>

⇒ Declare a label. For use with 'goto'.
323

**if timeout | bad 1 | bad 2 | bad 3 | bad 4 | bad | carrier
else
endif**

⇒ If an EXPECT times out or receives a bad token and the next command is not an IF, then the entire dialing sequence ends with an error.

324

325 However, if you add an IF keyword after an expect, then execution will continue, but according to the following logic:

326

327 timeout the last EXPECT timedout

328 bad 1 the last EXPECT received bad token 1

329 bad 2 the last EXPECT received bad token 2

330 bad the last EXPECT received any bad token

331 carrier Carrier had been detected

332

exit | end

⇒ Exits the dialing script with a positive result
333

cancel

⇒ Exits the dialing script with a negative result
334

dtr 0 | 1

⇒ Drops or raises DTR

The variable <string> may contain any of the following special macros:

\s	A single Space (32)
\r	A line-feed (19)
\n	A carriage-return (16)
\t	A Tab (7)
\\	A backslash
\b	A back-space (8)
\xxx	xxx represents a decimal number. You must include all three numbers.
%p	The phone number of the host (only available in UUCP)
%n	Your login name (only available in UUCP)
%w	Your password for this host (only available in UUCP)
%	This macro is only accepted with the input command. It allows for any character to match. This macro must appear by itself.

There are a couple things that are different from other dialers. You must place a line-feed/carriage-return at the end of any outgoing string that requires one. In the \xxx macro, the xxx represents a decimal number and not an octal number.

A sample login command file for UUCP access follows:

```

.. 00000,0000000,00,00000,0000,0,0000,0000000
00000000,1~
0000,0000,000
000000,8~:0000000,0000 ..0000,00,00,8,0000000,000,0000000,0000000
00000000,0000000000,
000000,3~
0000000,0000000
0000,0000
0000000,000000
0000,0000
0000,00,00,000000000,
0000,00,000,00000000
..1~,0000000,00,0000000
..0000,000,000000,0000000
..000000,8,0000000,000,0000000,0000000
..00,0000~ ..00,0000,00,000000000,0000,0000
00000000,0000000000,
000000,0,000000,0000000,000,3~.0000000000000000
0000000,0000000,0000000,1~,00000000
0000,00,000,000000,0000
..0000000,000000,00,00,0000000000,
..0000,00,000,00000000

```

ERROR MESSAGES

50

⇒ SMTP, NNTP or UUCP received mail/news
335

99

⇒ Lost Carrier!
336

101

⇒ No Packet Driver Installed!
337

102

⇒ Could not allocate enough memory for the SMTP sessions.
338

103

⇒ Could not allocate enough memory for the NNTP sessions.
339

104

⇒ Could not allocate enough memory for the Telnet sessions.
340

105

⇒ Could not allocate enough memory for the WWW sessions.
341

106

⇒ Either NetBIOS and IPX was not found, or NetBIOS could not add the
‘NETXSERVER’ name, or either IPX or NetBIOS could not allocate enough
memory for buffers.
342

107

⇒ Could not allocate enough memory for the FTP sessions.
343

108

⇒ Could not allocate enough memory for the UUCP sessions.
344

109

⇒ Could not allocate enough memory for the Finger sessions.
345

110

- ⇒ Could not find the NETSRV.KEY or the NETXPRES.KEY file!
346
-

111

- ⇒ Corrupt NETSR.KEY or NETXPRES.KEY file!
347
-

112

- ⇒ Could not allocate enough memory for the Gopher sessions.
348
-

113

- ⇒ Did not connect with SLIP/PPP provider through the login command file!
349
-

115

- ⇒ Could not allocate enough memory for the Remote Configuration sessions.
350
-

116

- ⇒ NetServer was downed via the Remote Configuration server.
351
-

117

- ⇒ NetServer was told to restart via the Remote Configuration server.
352
-

118

- ⇒ The Telnet module received an error from NetBios when it tried to add its name.
This error can only be returned when using a NetBios network.
353
-

119

- ⇒ Neither NetBios nor IPX was found. Make sure you have loaded your LAN's
drivers before running NetXpress Server.
354
-

120

- ⇒ Could not allocate enough memory for the POP3 sessions.

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