NetPager

Version 1.18

LANSOFT **U.S.A**

internet/cserve: support@lansoft.com

(614) 786-1713

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Innovative Network Solutions

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Introduction

Thank you for considering ***NetPager*** as your total electronic link to your pocket pagers. ***NetPager*** has been developed after a considerable amount of research and testing and is being distributed under the ***ShareWare*** policy. See the section entitled ***Registration*** for more information.

Application

NetPager links pocket beepers or pagers with electronic mail (email) making it simple to link people together more effectively and provide a better support service for those who need it. ***NetPager***, therefore, requires some electronic mail application for it's use. See the section entitled ***System Requirements*** for more information.

In addition to its email support, ***NetPager*** also incorporates some facilities to monitor network status and transmit warnings if the network fails. ***NetPager*** can also be set to monitor broadcast messages transmitted over your network then send these messages to selected pagers.

Finally, ***NetPager*** also supports manual paging operations that make it simple to transmit a message to various pagers from the ***NetPager*** console.

Who this Manual is Directed To

This requires a intermediate to advanced knowledge of networking and high security for installation and operation. Therefore, this manual will assume appropriate knowledge in these areas. If you are not a network supervisor or do not feel you have sufficient experience in this field, please pass ***NetPager*** on to the appropriate personnel for further evaluation.

System Requirements

- ***Novell Netware*** version 3.1 or higher. ***NetPager*** has only been tested in this environment, but it is at least conceivable that lower version such as 2.x will suffice.
- Electronic mail. Currently supported products are:
  Pegasus Mail by David Harris
  Charon by Brad Clements
  MHS by Novell Inc.
  Any ***MHS*** compatible email application.
- Dedicated PC of any speed. ***NetPager*** should operate as effectively with a 4MHZ PC as with a 66MHZ 486.
- Hayes compatible modem. Modem speed is relevant only to alpha pagers and their supporting equipment. More information can be found in the section ***Installation*** under ***Create/Modify NETPAGER.INI***

History

NetPager development history:

Version **Description**

1.0 First initial release of ***NetPager***

1.01 - Added Documentation:
- Novell Security Requirements
- **IgnoreCD** modem variable

- Corrected bug with return addresses (missing period).

1.02 - Added **PassWord** to [PAGER] section of **NETPAGER.INI**

1.03 - Added **FromName** to [EMAIL] section of **NETPAGER.INI**
- Corrected numeric message parsing for numeric pagers. Invalid characters are now stripped and the remaining characters are transmitted.
- Added Documentation about **TAP** protocol.

1.10 - Major new release
- Fixed various email bugs dealing with return addresses
- Added ***MHS*** support
- Added **broadcast** support
- Cleaned up various displays
- Added standalone support (see **StandAlone** keyword in [SYSTEM[section of .INI file.
- Additional new option keywords:
  [EMAIL]
  SupportCharon
  SupportPmail
  SupportMHS
  MHSUndelivered
  MHSApp
  [PAGER]
  PageAlarm
  PageBroadcast
  SkipBroadcast
- Added wildcard support for selecting page names. See ***PC Email Interface***.
- All pager window displays word-wrap and should be faster.

1.11 - Minor bug fixes

1.12 - Minor bug fixes

1.13 - Never released. Went on to 1.14 due to various new problems

1.14 - **First Commercial Release** the fixes and feature additions to this version are excessively numerous and too complex to list entirely here. Some of the most notable follow:
- Rewrote all ASYNC routines to handle modem operation more efficiently. This should fix prior problems running on XTs with some old modems.
- Added ***Manual Page*** support. See the section with this title for more information.
- Added broadcast support for multiple servers.
- Cleaned up some more screen outputs in the message area. Now only email information pertaining to pages are monitored.
- Finally added support for log files. See table listing for **LogName** and **LogSize** for more information.
- Support added for 43/50 line modes on EGA and VGA monitors. This is detected and done automatically at program startup.
- Removed window sound effects with **PageAlarm** turned on.
- Added screen saver (see **ScreenSav*e*** variable of NETPAGER.INI file)
- Added reboot ability for failed connections (see **RebootDelay** variable of NETPAGER.INI file)
- Added broadcast scanning adjusting (see **ScanTime** variable of NETPAGER.INI file)

- Added adjustable retry time for failed pages (See **RetryDelay** variable of NETPAGER.INI)
- Added support for multiple pager companies (See section: *Create NETPAGER.DAT File)*
- Added remote shutdown ability (See **ShutDown** variable of NETPAGER.INI)
- Added shut down confirmation when <ESC> is pressed.
- Transmissions may now be aborted by pressing <ESC> at any point in the process.
- Corrected bug that made return email 200+ lines long
- Pager ID list defined by **NETPAGER.DAT** file is now only limited by memory. Theoretically 1000+ pagers can be defined.
- Further cleaned display structure. Screen is kept less cluttered.
- Created **SETUP.EXE**, a separate application with context sensitive help, designed to make edits to **NETPAGER.INI** easier.

1.15
- Additional numeric pager support added for *SkyPage* and other 800-number pagers. See *Numeric Support* for more information.
- Added gateway support for *MHS*. See *Running as a Gateway* in the *Installation* section.
- Debug support has been added to help troubleshoot problems.
- Fixed MHS bug with with incomming mail causing an error 201 periodically.
- Fixed bug with numeric pagers not being sent notification of crashed server.
- Removed all support for **StandAlone**.

1.16
- Corrected the parsing of return addresses containing "-".
- Added **PagerLength** variable to define the maximum length of the page.
- Corrected the use of the **MailQueue** variable so it can be changed in Charon support.

1.17
- Added file server name to broadcast messages.
- A "server is down" mesesage will be sent if a connection cannot be made to the network when started.

1.18
- Added **MaxAge** variable to expire pages.
- Added **MHSHost** variable to force MHS host name.
- Added **MHSUser** variable to force MHS user name.
- Added **MHSFileMask** to specify what files to scan for mail.
- Added **MHSPath** to specify MHS location.
- Corrected dialer bug. Sometimes hung when a bad connection was made.
- Cleaned up main screen a little.

Using NetPager

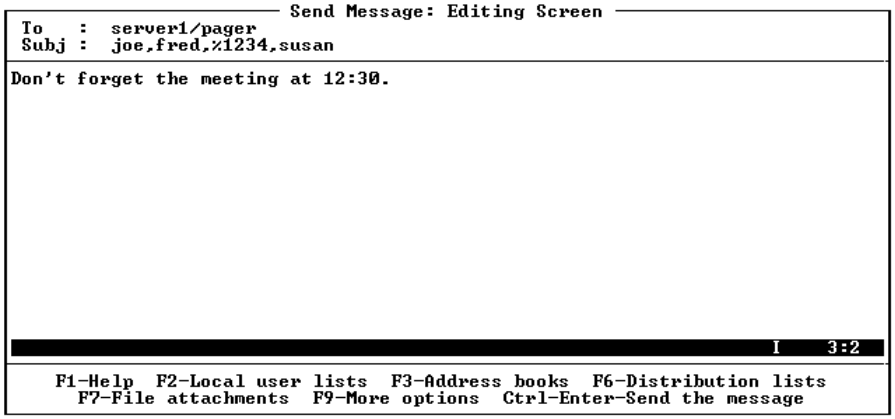
This section describes the use of ***NetPager*** after installation. If installed in an environment using ***Charon***, see the section ***SMTP Mailers*** in *addition* to ***PC Email Interface***.

PC Email Interface

NetPager is capable of associating user names with pager phone numbers or PIN numbers of alpha pagers. This should be done prior to using ***NetPager*** but it is not required.

NetPager is designed to work with virtually any email interface with a supporting transport (i.e. ***Charon***). To send a page from within your email application, simply address the email to the pager user (the machine logged in and running ***NetPager***) and supply a list of pagers in the **Subject** field to send the message to.

Diagram 1. Example Email Transmission



This ***Pegasus Mail*** screen shows the basic format for sending a page to a number of people. The user logged in and running ***NetPager*** is the account known as PAGER on the server called SERVER1. The people who will receive this page are JOE,FRED,SUSAN and the pager with the PIN number of 1234.

Some points of interest:

- If PAGER had been set up in the ***Pegasus Mail*** routing tables, then mail may be sent to PAGER without the server name preceding it.

- Note the format of specifying separate PIN numbers rather than names. It is possible that a new pager may have been assigned yet not in ***NetPager***'s internal tables. Using the percent sign (**%**), you may specify the actual pager PIN number if you wish. More information on special pager codes can be found in the section entitled ***Paging Syntax*** and ***Alpha and Numeric Pagers***.

- Finally, in this example, the message is being sent to an alphanumeric pager, that is, a pager that can handle the text found in the message. Numeric pagers cannot accept characters such as the word "MEETING". There is no facility to enter this information for numeric pagers, nor is there support to display them in most cases. More on this can be found in ***Alpha and Numeric Pagers***.

Wildcard Support

In addition to specifying the various pager IDs in the **Subject:** of the email message, you may also specify numerous pager with the use of the wildcard "*". Some examples:

Subject: J*	Sends a page to all pager IDs beginning with "J" (Joe, John, Jim)
Subject: *	Sends a page to all pagers listed in the ID table
Subject: M-*	Might send a page to those people in MIS who are listed in the table beginning with "M-" (M-John, M-Joe...)

Note that in the third example, a little constructive administration was used to set up "paging groups" within the **NETPAGER.DAT** file to make paging groups of people more convenient.

SMTP Mailers

NetPager can work directly with ***Charon*** thus providing users of SMTP mailers such as many Unix and VMS based computers with SMTP capabilities. To send a page from an SMTP host, simply follow the same procedures and rules provided in ***PC Email Interface*** making certain to provide a valid subject containing the list of page recipients (including wildcards if desired). In this case, the address would be PAGER@SERVER1 or whatever SMTP mailing address is configured within ***Charon*** to route the mail to the Novell user.

Diagram 2. Alpha and Numeric Pagers

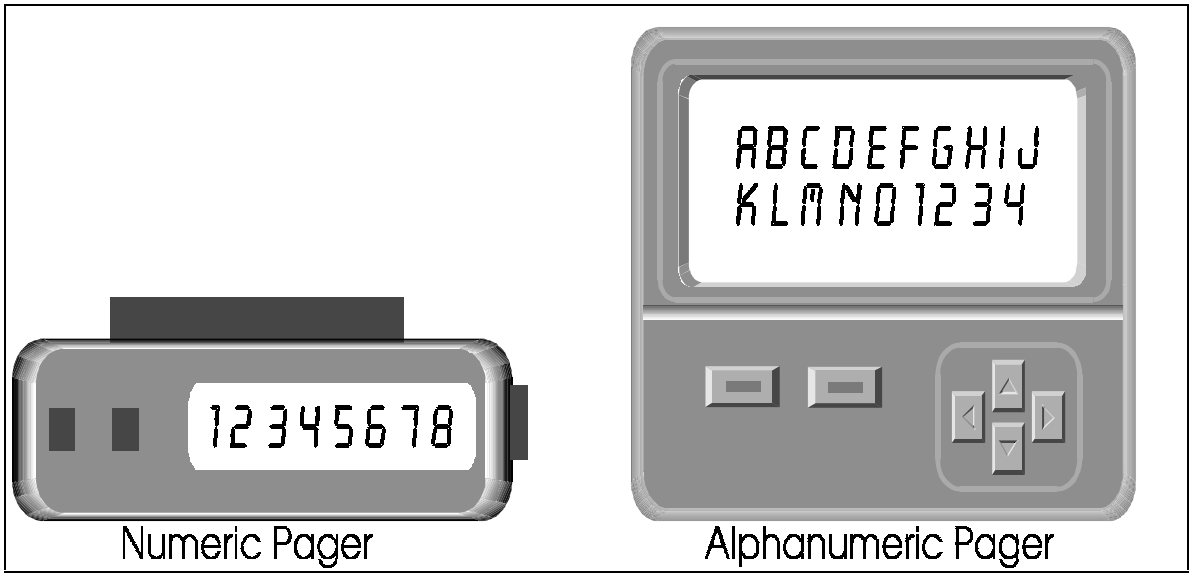


Diagram 2 above depicts a common type of numeric pager and alphanumeric pager. This by no means depicts all types of available paging equipment. The basic difference between alphanumeric and numeric pagers is their ability or inability to display letters or characters other than numeric digits or rudimentary symbols such as dashes (-). From an implementation point of view, the alphanumeric pager can do all that a numeric pager does including accepting input using virtually the same procedures.

Numeric pagers will usually only allow input by phone. This allows the person sending the page to dial a local phone number assigned to that physical pager, then enter a number of additional digits to be displayed to the pager holder. Many alphanumeric pagers offer the same feature. In either case, due to the physical design limitations of touch-tone telephones, only numbers are available for transmission.

Alphanumeric pagers are usually assigned PIN numbers for additional identification. This is usually associated with some software either used by pager dispatchers or provided by the pager company for in-house use. This software allows you to enter text messages to be transmitted to the pagers assigned to the referenced PIN numbers. For local or in-house installations, the software will usually use a modem to connect with the paging company's computer, transmit the message, and allow the paging company's transmission equipment handle actually sending the message to the pagers. This is the area where ***NetPager*** really shines. Now any machine on the network can send a page to these pagers without having an attached modem, and pages can be queued in high-traffic areas. ***Diagram 3*** depicts a standard paging system in general with the addition of ***NetPager.***

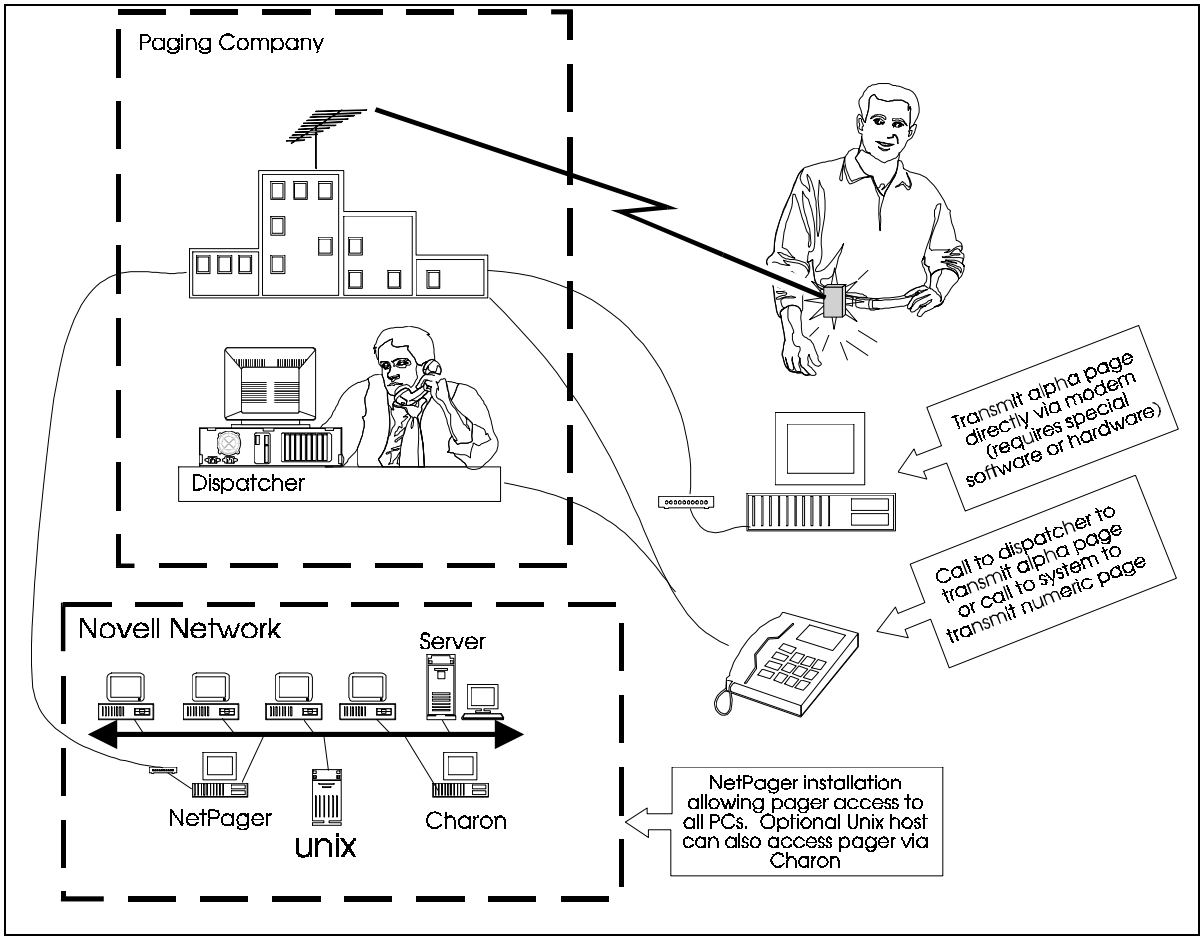
To recap, briefly, let us put together a table of company pagers:

Holder Name	***Type***	***Telephone Number***	***PIN Number***
Joe Smith	Alpha	555-2345	31245
Sam Spade	Numeric	555-8922	n/a
Judy Carter	Alpha	555-2346	31244
Mike Jones	Alpha	555-2231	32122

Table 1. Company Pagers

In this case, Joe, Judy and Mike all have alpha numeric pagers and Sam has a numeric page. All four of these users can receive numeric pages following the same procedures, that is, by dialing their associated telephone numbers and entering the numeric message via the telephone. However, Sam cannot receive characters on his pager while the others can. The only elements missing to send character information to the alpha pagers are the phone number to the paging system (modem number or dispatcher) and software for transmitting the information if a dispatcher is not used. Both can be provided by the paging company.

Diagram 3. Paging Service in General



You can see that sending a message to each of these people can take quite some time by dialing the phone for each one. ***NetPager*** has the ability to mix pager types for a single message, assuming, of course, the message is strictly numeric. To do this, the configuration table would contain a list similar to the above, defining each user name and the type of pager he/she carries. Then you can simply list the pagers by name in the subject of your email message and ***NetPager*** will use the appropriate procedures to transmit the message.

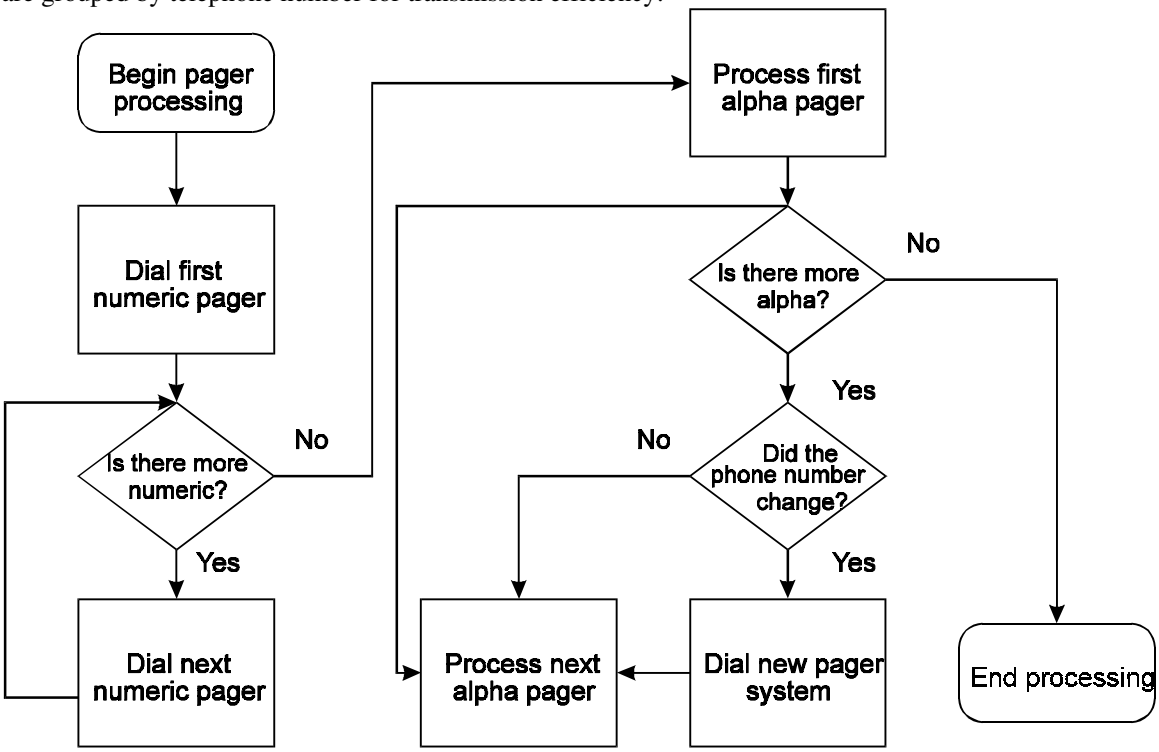
Special characters can be used to force ***NetPager*** to send a message to a pager that may or may not be in the configuration table.

% Using this symbol prior to any PIN number will tell ***NetPager*** to use this PIN number to dial an alphanumeric pager. For example, if %31244 was found in the subject of a message, ***NetPager*** would transmit the message to Judy Carter's pager regardless of what the table says.

A number sign indicates that the following is an additional phone number to dial for a numeric pager. If #5552346 were found in a message subject, the message would be transmitted using numeric pager procedures by dialing the phone number 555-2346, pausing, then entering the message. The message, in this case, would have to be a valid numeric message such as another phone number or coded message.

Information regarding ***NetPager*** configuration table can be found in the ***Installation*** section.

The chart below describes a typical pager process. Numeric pages are grouped together and alpha pages are grouped by telephone number for transmission efficiency.



Alpha Support

The message format for alpha pagers requires that the entire message not be longer than 250 characters. This includes any automatic padding that may be required to format the message to fit a particular pager. Alpha messages for ***NetPager*** are basically the body of the email message. The message begins on the first non-blank line and ends on the next blank line found or the end of the message itself. In this way we can term the format as being blank-line delimited. A blank line is detected by the absence of any characters on a line other than space, carriage return, or line feed.

Diagram 4. Alpha Message Construction

Address
Message Body
Signature

```
To: Pager
From: Sam Spade
Subject: JOE,SALLY,FRED

WE HAVE A MEETING AT 10:30.  PLEASE CALL ME IF YOU CANNOT
MAKE IT

-----------
Sam Spade
Manager of Operations
```

Diagram 5. Sample Paged Message

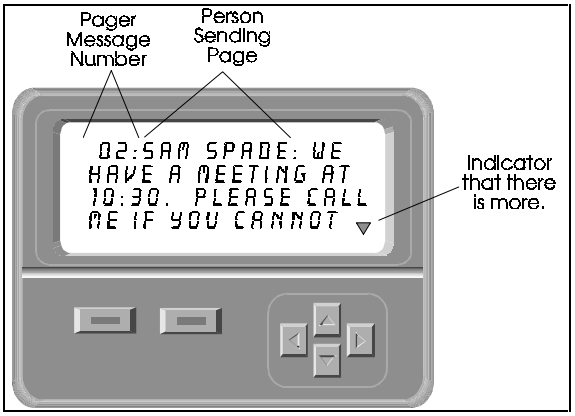


Diagram 4 depicts a sample mail message suitable for alpha pagers. Note that there are blank lines between the address and message body and between the message body and signature. The blank line preceding the message body may be added by your mailer automatically (as ***Pegasus Mail*** does), but additional blank lines are not destructive and are effectively ignored. The actual message transmitted to the pager is "We have a meeting ... if you can't make it.". The signature will **not** be transmitted since there is a blank line preceding it, thus signaling the end of the message. Most email applications do not provide a blank line before a signature, therefore it is up to the user to ensure that one is provided.

Multi-line alphanumeric pagers, in general, handle their own word wrapping. In other words, if a word (delimited by a space) is going to span two lines, the pager will force the entire word to the next line for readability purposes. Lets look at the above example from the pager view. If we were to look at a pager with four visible lines of information that can support twenty characters per line (4x20 mantissa) the pager may appear much the same as that depicted in ***Diagram 5.***

NetPager automatically adds the message originator to the beginning of the message. This is determined directly from the email format. The message number is generated internally by some pagers for reference and management reasons.

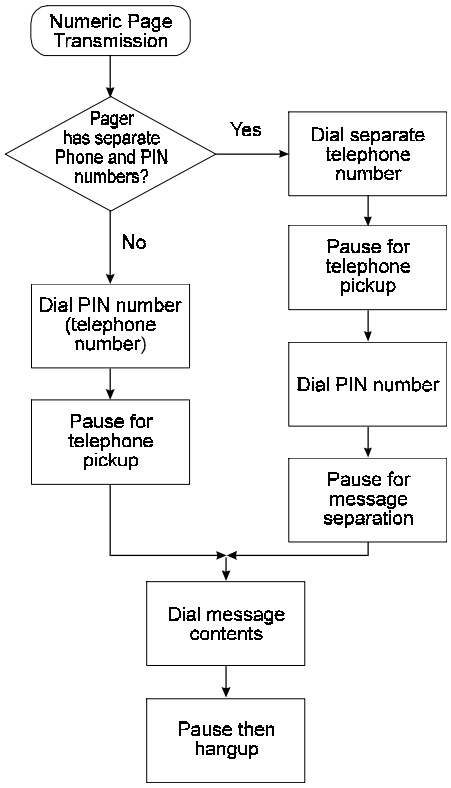
The TAP Protocol

Alphanumeric pagers are turning more and more to a standard of data input known as **TAP** or ***Telocator Alphanumeric Protocol*** formally known as **IXO**. This is basically a system designed to make the delivery of data to the central paging computer located at the paging company as efficient and error-free as possible.

TAP is more-or-less a U.S. standard and may or may not be available in other countries. Currently ***NetPager*** only support **TAP** as its method for transmitting alphanumeric data. You may still use ***NetPager*** to transmit numeric pages that follow the procedures outlined in ***Numeric Support***.

Numeric Support

NetPager's support for numeric pagers is originated essentially the same way as alpha pagers. That is, an email message much like the one in ***Diagram 4*** is generated except that the message is filtered and any non-numeric characters are stripped. In this example, the message 1030 would be transmitted to the numeric pager since these are the only characters that are numeric in the text.



The basic procedure for transmitting a numeric page is as follows:

- Dial the numeric pagers number. This is either the PIN number (see below) or the supplied telephone number.
- Pause for telephone to be picked up.
- If a separate telephone number is assigned to this pager (instead of the PIN) dial the PIN digits
- If the PIN digits are entered separately, pause for message separation.
- Dial the message then pause for 30 seconds.

A typical dial sequence might be:
`ATDT18005551234,,,15432,,,,65432`
The PIN number of this pager is 15432 while it's phone number is 1-800-555-1234, and the message is 65432.

Diagram 6. Sample Numeric Message Construction.

Address	**To: Pager** **From: Sam Spade** **Subject: JOE,SALLY,FRED**
Message Body	**1234567890**
Signature	**----------** **Sam Spade** **Manager of Operations**

The message in ***Diagram 6*** is a valid message that can be sent to both numeric and alphanumeric pagers. The message body contains only numeric digits which any touch-tone telephone can emulate.

Return Receipt

NetPager has the ability to return email to the person who sent the page containing information regarding the success or failure of transmission. This version of ***NetPager*** will only do this if configured at the time of installation. Future versions will read the receipt flag from the sender's email.

The return receipt can contain a transcript of each page transmitted. More information on this can be found in ***Installation***.

Broadcast Paging

NetPager can be utilized to send ***Netware*** broadcast messages to selected pagers (*Broadcast Paging)*. This includes various system warnings and messages such as "Volume SYS: is out of disk space" or "Backup Completed" or any other messages sent using ***Netware***'s broadcast facilities. The **SEND** command can, therefore, be used to send a broadcast message to ***NetPager*** which will, in turn, send the message to various pagers. To support multiple servers in this manner, you **MUST** already be attached to the various servers prior to running ***NetPager.*** See the [PAGER] section of **NETPAGER.INI** for more information on how to set this up.

Network Monitoring

NetPager has built in facilities to monitor your network connection. If the connection is lost due to physical network problems or the server crashes, ***NetPager*** can be configured to transmit a page to a list of users to notify them of this occurrence. See ***Installation*** for more information

Manual Pages (from the console)

While ***NetPager*** is running, you may press <F2> at any time to enter a page manually. Two fields are presented **both of which must be filled out for a page to be transmitted.** The pager field should contain a list of pagers as you would enter them in any "subject" field as described above. Wildcards and special syntax are all valid here. The message field should contain the message you wish to transmit. Both of these fields are much longer than displayed and will scroll as you type. Messages are limited to 250 characters.

Usage Ideas

NetPager can be used to monitor various activities on your system. Given that your email package can send a message from the command line, you could quite easily write DOS batch programs that send pages to people if certain conditions are met. For example, if your network is on a UPS system and you wish to detect power outages, you might try writing a .BAT file that can detect the existence of a device on the network that is not on the UPS. Better yet, detect if multiple devices exist. If they suddenly disappear than there is a good chance there is a power outage and your .BAT file can send a mail message to ***NetPager*** to transmit the appropriate message.

Paging Syntax (overview)

As an overview, the syntax for sending a page via ***Email*** is as follows:

- Address your mail to the user and/or server that is running ***NetPager***

- Provide a comma (or space) separated list of pagers in the **Subject** of the message that you wish to send the page to. These are names setup in the **NETPAGER.DAT** file or use the special codes "***%***" or "**#**". Wildcards (*) can be used to specify all or a select number of users in **NETPAGER.DAT**.
- Enter the message you wish to send. Make certain that there is at least one blank line following the message or that it is the end of the file (no signature) and make sure that it is a valid numeric

Installation

message for numeric pagers.

NetPager is exceedingly simple to install. The main program **NETPAGER.EXE** is entirely self-contained. Its supporting files **NETPAGER.DAT** and **NETPAGER.INI** are used only at initialization time and are the only additional files needed to operate.

Copy Installation Files

Place the ***NetPager*** distribution files in any sub directory you desire. This includes the following files:

`NETPAGER.EXE`	Main Program
`NETPAGER.DAT`	Pager/User Table
`NETPAGER.INI`	Configuration file
`NETPAGER.PS`	Documentation (PostScript)
`SETUP.EXE`	Setup program for editing NETPAGER.INI
`README.1ST`	Last minute documentation

Create a Novell Pager User

Using SYSCON, create a user called PAGER or whatever user name you desire. This will be the user referenced in all email containing messages you wish to have transmitted. From a cosmetic point of view, it is much easier to send mail to PAGER than to USER1. The remainder of this manual will assume that the user name PAGER is used.

- PAGER should be created with at least enough rights to maintain its own mail directory.
- If a return receipt is desired, PAGER must also have CREATE, ERASE, FILESCAN and MODIFY rights in the other user mail directories if *Pegasus Mail* support is desired.
- If MHS support is desired (and provided by ***NetPager***) then the above two issues are also true for the MHS sub directory structures. Also ensure that the MV environment variable is set for PAGER.
- PAGER should have at least **USER** rights for the ***Charon*** mailqueue..

Create/Modify NETPAGER.DAT

NETPAGER.DAT is a data file that contains information much like ***TABLE 1***. This is where the relationships between name, pager type, pager PIN, and phone number are established.

You can edit **NETPAGER.DAT** using any text editor that creates a standard text file. Example editors might be ***Microsoft's DOS EDIT.COM*** or ***EDLIN.***

The format for this file is:

NAME,PIN,TYPE,[phone,speed,parity,databits,stopbits]

Where:

Name = English name to reference for a particular pager. This is most easily accomplished by using the login names of each user, but it is not necessarily related to any network names, nor to these names have to exist as valid logins on the network.

PIN = For alphanumeric pagers, only PIN numbers are allowed in this area. Numeric pagers require their phone numbers here or their PIN numbers for 800-number type numeric pages (such as *SkyPage* and others).

Type = Type of pager. The only valid information here is either "A" or "N" for alpha or numeric respectively.

Phone (optional) = Alternative telephone number for paging system. This is useful if you are connecting to multiple companies. By default the phone number specified in NETPAGER.INI under *AlphaPhone* is used. For numeric pagers with 800-number phone support, enter this number here (see text below).

Speed (optional) = Alternative modem speed to use in case an alternative phone number is given. By default, the speed specified under *Baud* in the NETPAGER.INI file is used.

Partiy (optional) = Alternative parity to use in case an alternative phone number is given. By default, the parity specified under *Parity* in the NETPAGER.INI file is used. Use the fully qualified parity name (EVEN, ODD, NONE etc...)

Databits (optional) = Alternative data bits to use in case an alternative phone number is specified. By default, the data bits specified under *DataBits* in the NETPAGER.INI file is used.

Stopbits (optional) = Alternative stop bits to use in case an alternative phone number is specified. By default, the stop bits specified under *StopBits* in the NETPAGER.INI file is used.

An example NETPAGER.DAT file is shown below:

```
samspa,12321,a
joesmi,33822,a
henry,555-1234,n
;judjon,555-1222,n
mark,23332,a
george,22311,a,555-2311,2400,none,8,1
genrod,15443,n,555-2231
```

Note that available memory may limit the number of entries in* NETPAGER.DAT. *Each entry is about 80 bytes in length.

In this example, a network whose supervisor decided that user name conventions will contain three characters from the first name and three from the last has been established.

- Sam Spade, Joe Smith, Mark, and George all have alphanumeric pagers while Henry, Gene Rod and Judy Jones have numeric pagers.

- Henry, Mark, and George are not users on this network (they do not conform to the naming conventions described above), yet they carry pagers and need to be accessed via ***NetPager*** by users periodically.

- George is a support representative that actually works for another company. He was kind enough to provide his pager data number and the communication parameters to send him alphanumeric pages.

- Judy Jones's pager has been temporarily removed from this table by the placement of a semicolon in the first column (;). This is an easy method for remove people without losing track of the pager information.
- Gene's pager is numeric but it has a special 800 number which all this company's numeric pagers use. The 800 number is dialed, followed by a pause, then the PIN number and another pause.

- Note that dashes in phone numbers are not required for proper operation but can be left if for readability.

Create/Modify NETPAGER.INI

The main configuration file, NETPAGER.INI, contains a large assortment of variables that can be defined to effect the way ***NetPager*** operates. The file format itself follows the standard .INI format found in many configuration files that support numerous programs such as ***Microsoft Windows.*** This format was used for ease of understanding and readability.

Basically, the file is broken up in to sections or profiles that contain related variable definition. Each section is delimited by a section heading or the end of the file. A section heading is described by text delimited by brackets and the variables following the header is are said to be a part of that section.

Variable definitions always follow the VARIABLE=VALUE format.

A short example follows:

```
[section 1]
var1=value
var2=value
var3=value

[section 2]
var4=value

var5=value
var6=value
var7=value
;var8=value
```

In this example, two sections have been defined, "section 1" and "section 2" and numerous variables have been defined for each section.

Some basic rules:

- Section headings can contain spaces

- Blank lines can be used for readability purposes but are ignored at processing time

- A semicolon in the first column (;) temporarily removes a variable from processing. This is known as "commenting out" information.

- Variables and/or text that is not referenced by the processor is ignored. In other words, if additional variables or information is found in the file, it does not affect the processing of the file unless it happens to contain keywords that may be mistaken as variable references.

- All variables and values have the format of VARIABLE=VALUE.

- Values do not necessarily have to be defined. There does not have to be a value for each variable. Certain situations may require values to be removed. The variables, on the other hand, may be left in tact within this file for future reference (i.e. VARIABLE=). This can also be done using the semicolon described above.

SETUP.EXE (the easy way)

A separate application SETUP.EXE is provided to help make modifications to NETPAGER.INI quick and painless. SETUP will create a new NETPAGER.INI file if one does not already exist with preset defaults that are, at best guess, generally logical settings. However, the NETPAGER.INI file created by SETUP **IS NOT COMPLETE AND MUST BE EDITED** in order for ***NetPager*** to function.

While running SETUP, pressing <F1> at any time will provide context sensitive help about the variable the cursor is currently on. Very extensive help can be found including descriptions of *Charon, Pegasus Mail and MHS.*

To save your settings, press <CTRL-ENTER> and answer yes to the question. <ESC> will abort the edit procedure.

NETPAGER.INI File Contents

The following tables represent the different sections that make up the **NETPAGER.INI** file. Read each description carefully before making any modifications.

Table 2. [System] Configuration Section

Variable Name	Required	Default	Description
Debug	No	0	For development and debugging purposes, certain debug levels may be established to help provide some clues to problems. For a complete list of debug values see the *Troubleshooting* section.
ExtendedVideo	No	Yes	***NetPager*** can be configured to run in extended 50 or 43 line mode for monitors/video cards that support this. Additional information can be displayed at one time in the higher screen size modes.
GateWay	No	No	***NetPager*** can run as an ***MHS*** gateway. By simply setting this to YES, ***NetPager*** will cycle once, when run, then exit. All waiting mail is processed durring this cycle period.
LogFile	No	-none-	A run-time log of activities may be maintained if a valid file name is provided here.
LogSize	No	1 Meg	If a log file is maintained then this would indicate the maximum allowable file size before logging is suspended.
RebootDelay	No	0	If the network connection is lost, ***NetPager*** can reboot its PC after a certain number of seconds following the transmitting of any pages. To do this, enter a number of seconds to wait before rebooting. A value of zero disables this feature.
Registration	No	-none-	Once ***NetPager*** is registered by following the registration instructions found later in this document, a passcode will be provided to enter here. This will enable any protected features of ***NetPager***. Passcodes are keyed to the file server name(s) that ***NetPager*** is to support. If more then one file server is to be registered, enter each passcode separated by a comma.
ScanTime	No	1	***NetPager*** "listens" for network broadcast messages by polling the network periodically. This can create a small amount of network traffic. By default, this period is every one second but it can be extended up to 255 seconds by entering the time here.
ScreenSave	No	0	Enter the number of seconds of inactivity after which ***NetPager*** will begin screen-save mode to help eliminate the possibility of damage to the monitor. A value of zero disables this feature.
ShutDown	No	-none-	You can shutdown ***NetPager*** remotely by sending it a sequence of characters via broadcast message. When this occurs, ***NetPager*** will shut down with an errorlevel of 1. This is useful for remotely updating software or using the ***NetPager*** PC for other purposes during off-hours.

Table 3. [EMail] Configuration Section

Variable Name	Required	Default	Description
AutoScan	No	0	Number of minutes to wait before automatically scanning mail directory for new mail (in the off chance that ***NetPager*** was not informed of the presence of new mail).
FromDelimits	No	@/ unknown	This advanced variable tells ***NetPager*** how to read incoming email. If first character "@" is found than the user name is taken from this character back to the last space. If it the second character is found "/" than the user name is taken from here to the next space. If neither is found than the user name will become "unknown"
FromField	No	From:	This defines which text to look for the sender of ***NetPager***'s email. If this text is found (in this case "From:") than the **FromDelimits** are used to locate the specific text. Please note that this is case sensitive.
FromName	No	Novell Username	If specified, the value of **FromName** will be used for the name of the sender of any returned mail. If not specified, the name of the logged in user running ***NetPager*** will be used on return mail. Recommendations are that a name be specified that is **not** a valid Novell user to eliminate the ability to reply to these messages.
IDField	No	Subject:	This indicates where in the Email to look for the pager id list. It is assumed to be the "Subject:" field in this manual. Please note that this is case sensitive.
MailDir	No	sys:mail	This is the root volume and directory for the network mail structure. If your volume is not SYS or you are not using ***Pegasus Mail*** than this may need to be changed.
MailFiles	No	*.CNM	The files to search for in a person's mail directory that actually contain the new mail text.
MailQueue	No	mailqueue	By default, ***Charon*** is configured to use the queue named MAILQUEUE for processing mail. If you have chosen to use a different name, enter that here as well. This is only required if ***ReturnReceipt*** is turned on.
MaxAge	No	0	If ***NetPager*** is shut down or for whatever reason is not running, page requests can accumulate in the mailbox directory. Set this variable to the number of minutes that a request can be old before being considered an expired page. Keeps old and obsolete pages from being processed.
MHSApp	No	MHS	If ***MHS*** support is selected, enter the name of the application you wish to have ***NetPager*** register for email. By default this is MHS but it may be changed to PMAIL or whatever application you have the ***NetPager*** user registered as using (under its ***MHS*** settings)
MHSFileMask	No	*.	Normally, ***MHS*** mail is in the form of non-extensioned files in the appropriate mialbox directories. In the off-chance that you need to have ***NetPager*** scan for a different kind of file, you may specify the file mask here. For example, *.0* will scan for files of the form TEST.001, TEST.002, ...
MHSHost	No	None	By default, ***NetPager*** will try to determing the current ***MHS*** host name by scanning the appropriate files. If you wish, you may force the name of the host or workgroup to be whatever you enter for this variable.

Table 3. [EMail] Configuration Section cont...

MHSPath	No	None	***NetPager*** will use the environment variable ***MV*** to find the location of the ***MHS*** directory tree. You my override this by specifying the location here. If the ***MHS*** tree is located on F:\MHS\... then this entry should be **F:**. If ***MHS*** is in H:\MAIL\MHS\... then the entry should be **H:\MAIL**
MHSUnDelivered	No	No	***NetPager*** can scan the undelivered mail sent to ***MHS*** in the /mhs/mail/snd directory for new mail. This is useful if you do not wish to wait for each ***MHS*** cycle for ***NetPager*** to transmit its messages.
MHSUser	No	None	By default, ***NetPager*** will examine the **USR** environment variable to determine its ***MHS*** address and mailbox. You can override this by entering a username here. Be sure that it is an existing username as found in your ***MHS*** setup.
ReturnReceipt	No	No	This keyword tells ***NetPager*** to attempt to return an email message to the sender of the page to notify them of their page status (success information). Future versions will pull this information from the mail itself.
SupportCharon	No	No	If you desire support for the ***Charon*** gateway, then enter YES here. This is provided for standardization purposes only.
SupportMHS	No	No	This variable MUST be set to YES if support for ***MHS*** is desired. Otherwise, ***NetPager*** will not scan the ***MHS*** directory structures for mail.
SupportPmail	No	No	***Pegasus Email*** support is turned on or off depending on the value of this option.

Table 4. [Modem] Configuration Section

Variable Name	Required	Default	Description
BaudRate	Yes	n/a	Enter the speed that you wish to have your modem connect to the pager company's system at. Many company's use 300 as a standard baud rate but higher rates may be available. Valid values are 150, 300, 600, 1200, 2400, 4800, 9600, 19200, and 38400. This has only been tested up to 9600. Higher values may require special UART chipsets in your comport hardware. *NOTE* that this is only the default when not supplied in NETPAGER.DAT.
Busy	No	BUSY	Enter the result code text here for ***NetPager*** to detect that a busy signal was detected by your modem and that redial procedures should be activated. Please note that this is case sensitive.
ComPort	Yes	n/a	This required parameter specifies which COM port to use for transmitting data. This can only be "1" or "2". Simply enter the port number that your modem is connected to.
Connect	No	CONNECT	Enter the result code text here for ***NetPager*** to "listen" for from your modem to indicate a proper modem connection has been established. Please note that this is case sensitive.
DataBits	Yes	n/a	Enter the databits required to correctly communicate with the paging system's modem. Usually this is set to "7". Anything other than "7" or "8" will generate an error. *NOTE* that this is only the default when not supplied in NETPAGER.DAT.
DialPrefix	No	ATD	Enter the dialing prefix to send to your modem prior to any dialing activity. If you must dial "9" before reaching an outside line, this is where you would place it. For touch tone dialing (required for numeric pagers) that need the "9" to dial out, you would use ATDT9,. Any text here is transmitted **verbatim** to the modem.
Escape	No	+++	This is the escape sequence required to signal your modem to go back to command mode. Hayes compatible modems initially use "+++" but it can be changed by the user.
Hangup	No	ATH0	Enter the modem commands here to transmit to your modem to terminate any connections. Any text here is transmitted **verbatim** to the modem.
IgnoreCD	No	No	Normally, carrier detect is useful for determining the status of a connection. However, if the modem is not correctly wired, than this information may not be available or not valid. Set **IgnoreCD** to YES if your experience problems with ***NetPager*** incorrectly detecting connection status.
ModemInit	No	ATZ	Commands here are transmitted to the modem at the initial start of ***NetPager***. One point to be aware of is that most page software will not work correctly with any data compression or error correction, therefore you would enter commands here to turn these features off on your modem. In some manuals, this is known as **Normal Mode**. Any text here is transmitted **verbatim** to the modem.
NoDialtone	No	DIALTONE	If ***NetPager*** sees this text from your modem, it will initiate redial procedures to try again. This would indicate that the phone line was busy, unavailable, or that the phone number is incorrect. Please note that this is case sensitive.

Table 4. [Modem] Configuration Section cont...

NumericPause	No	,,,,,	For numeric pagers, a pause is necessary between dialing the pager number and transmitting the message. This is represented by a number of commas. Enter subsequent numbers of commas to enable ***NetPager*** to do it's job correctly. Each comma represents approximately one second, but this may be changed by the user. Experimentation here may be in order.
OK	No	OK	This is the standard modem response that ***NetPager*** "listens" for each time a command is entered. The text "OK" is usually correct for most modems. Please note that this is case sensitive.
Parity	Yes	n/a	Enter the parity needed to communicate with your pager company's system. Usually this is "EVEN" but it might be different in your situation. *NOTE* that this is only the default when not supplied in NETPAGER.DAT. Valid values are EVEN, ODD, SPACE, NONE, NULL, MARK, SPACEOFF, or MARKOFF.
StopBits	Yes	n/a	Enter "1" or "2" stop bits as a value here to correctly communicate with your pager company's system. Usually "1" is used. *NOTE* that this is only the default when not supplied in NETPAGER.DAT.

Table 5. [Pager] Configuration Section

Variable Name	Required	Default	Description
AlphaPhone	No	-none-	Enter the phone number to your pager company's computer system. This is required for alphanumeric pages. Contact your pager company for this information. *NOTE* that this is only the default when not supplied in NETPAGER.DAT.
LostConnList	No	-none-	If a list of pager names or IDs are given here (separated by commas), than these pagers will be sent the message found in **LostConnText** if the network connection for ***NetPager*** is suddenly lost. This can be indicative of a server crash or power outage.
LostConnText	No	-none-	This is the text transmitted to the pagers listed in **LostConnList** in the case of a sudden network connection lose.
PageAlarm	No	No	Each time a new page message is processed, a brief noise will be made signifying the processing. Turning this on may also activate other sound effects in the system.
PageBroadcast	No	-none-	To activate ***NetPager's*** support for transmitting ***Netware*** broadcast messages, enter the names of pagers found in **NETPAGER.DAT** you wish to transmit to. This follows all of the same addressing rules found in ***Email Support*** including special characters and wildcards.
PagerLength	No	250	Specifies the maximum length of a page. Utilized for some companies that have a short cut-off for alphanumeric pages.
PageTitle	No	20	In ***Diagram 5***, you will note that the pager has a generated message number. This tends to throw off the formatting of a message (the length of the first line). In this example, a space and the characters "02:" are generated. This pager has a 20 character line length. 20-4=16 therefore the first line of the message should not exceed 16 characters.
PageWidth	No	20	This is the maximum length of a single line of text on a pager. In ***Diagram 5*** this would be 20. If a carriage return is found before a full 20 characters are processed, the line is "padded" with spaces to retain the proper visual formatting.
Password	No	-none-	Some implementations of the **TAP** protocol require that a password be transmitted to validate the transmission. Contact your pager company to determine if a password is necessary and, if so, enter it here.
Retrys	No	3	Number of times to retry connections in case of BUSY or NO DIALTONE, or failed transmissions.
RetryDelay	No	10	When a transmission attempt fails, ***NetPager*** will attempt to transmit again for as many times *Retrys* is set to. The time between retry attempts is, by default, 10 seconds but can be changed by entering an alternative number of seconds to wait here.
Title Text	No	-none-	Enter text here to proceed page messages. Normal use for this would be the characters "FROM" to help accent the user the message is coming from. This does not affect the **PageTitle** setting since it can automatically be detected by ***NetPager***.

Table 5. [Pager] Configuration Section cont...

SkipBroadcast	No	MAIL	Enter a comma delimited set of words to scan broadcast messages for. If any of these words are found, the broadcast message will **NOT** be transmitted. This is very pertinent when it comes to broadcast messages such as "You have new mail". The word "MAIL" will ensure that this broadcast message is not constantly transmitted. If **SkipBroadcast** is modified, make sure the word **MAIL** is included in the list, otherwise numerous useless pages may be transmitted. This is not case sensitive, all comparisons are converted to upper case.

Create NP.BAT file (optional)

Since ***NetPager*** has the ability to shut down remotely (see ***ShutDown*** variable of NETPAGER.INI file), it may be desirable to have ***NetPager*** reload itself once it shuts down. Alternatively, you may wish to have some other process execute if ***NetPager*** is shut down remotely. To do this, you must execute ***NetPager*** from a .BAT file that will detect if ERRORLEVEL has been set to 1 (as in the case of a remote shut down).

A typical .BAT file would look like this:

```
REM Begin NP.BAT file
:TOP
G:
CD \PAGER
NETPAGER
IF ERRORLEVEL 1 GOTO TOP
ECHO NetPager terminated properly.
```

Pegasus Mail Support

NetPager has inherent support for the popular ***Pegasus Mail*** by David Harris. Very little really needs to be done to configure ***NetPager*** to read email sent by ***Pegasus Mail***. It will scan the user's mail directory for .CNM files and act accordingly. ***NetPager*** will utilize the same methods ***Pegasus*** uses in delivering mail, creating its own .CNM files (new mail). No other gateways or transports need to be used for operation of ***NetPager***. Make certain that the ***SupportPmail*** variable is set correctly in the **NETPAGER.INI** file.

NetPager must have READ, WRITE, FILESCAN, CREATE, MODIFY and ERASE rights to the SYS:MAIL directory structure for full email support. The easiest way of doing this is to enter as Supervisor:

```
GRANT ALL BUT A TO {username} FOR SYS:MAIL
```

Where {username} is the name of the ***NetPager*** user.

MHS Support

More and more ***Netware*** compatible email applications support ***Novell's MHS*** transport (Mail Handling Service). ***NetPager*** utilizes this standard to support any email program that can work with ***MHS***. ***NetPager*** will scan it's own ***MHS*** mail directory and/or the public undelivered mail directory for new mail to be transmitted.

To configure ***NetPager*** to work with ***MHS*** you must first add the ***NetPager*** user to the ***MHS*** user list. The easiest way of doing this is to use the ***MHSUSER*** utility provided with ***MHS***:

As SUPERVISOR enter

```
MHSUSER -X01 -U{username} -S{password} -A{appname} -Y0 -V
```

Where {username} is the name of the ***NetPager*** user, {password} is the ***MHS*** administrative password and {appname} is the name of the application ***MHS*** uses to identify your email application. The application name chosen here should be entered in ***MHSAppName*** in the **NETPAGER.INI** file. Consult the ***MHS*** administrators guide for more information.

To have ***NetPager*** scan the undelivered ***MHS*** mail directory (/mhs/mail/snd) for new mail to be transmitted, you must set the **MHSUndelivered** variable to YES in the **NETPAGER.INI** file. This

would be desirable to eliminate the delay provided by the ***MHS*** cycle time. This is the time ***MHS*** delivers new mail to the appropriate mail directories and can be detrimental to the operation of ***NetPager*** since a quick transmission time is usually desirable.

The ***SupportMHS*** variable must be set for ***NetPager*** to operate using the above ***MHS*** abilities.

Make certain that the **MV** environment variable is set correctly and points to the drive and directory of ***MHS*** directory structure (F:\ for example).

By default, ***NetPager*** derives its own email user name from its ***Netware*** username, however, if the **USR** or **USER** environment variables are set, this name is used instead. In addition, if **FromName** is set in the **NETPAGER.INI** file, this name supersedes all other settings and will be used for delivering all mail.

Finally, ***NetPager*** must have READ, WRITE, FILESCAN, CREATE, MODIFY and ERASE rights to the MHS\MAIL directory structure for full email support. The easiest way of doing this is to enter as Supervisor:

```
GRANT ALL BUT A TO {username} FOR {mhspath}\MHS\MAIL
```

Where {username} is the name of the ***NetPager*** user and {mhspath} is the value of the **MV** environment variable discussed previously.

NetPager as an MHS Gateway

To install ***NetPager*** as an ***MHS*** gateway, follow these instructions:

1. Stop ***MHS*** from running by exiting from the menus normally.
2. Create a new ***MHS*** gateway called ***NetPager*** by executing the following command:
   `MHSUSER -X31 -T4 -ENETPAGER -HNETPAGER -S{password} -V`
   be sure to replace {password} with the administrative password for ***MHS***
3. Install the ***NetPager*** distribution files by copying them to {MV}MHS/MAIL/GATES/NETPAGER/PUBLIC where {MV} is the path to the ***MHS*** directory structure.
4. Rename {MV}/MHS/MAIL/GATES/NETPAGER/PUBLIC/NETPAGER.EXE to INPOST.EXE
5. Edit {MV}/MHS/MAIL/GATES/NETPAGER/PUBLIC/NETPAGER.INI and set the **GateWay** variable in the [SYSTEM] section to **YES**.
6. Restart ***MHS.***
7. If the ***MHS*** user is not one added to the routing tables, add it at this time, otherwise ***NetPager*** will not be able to process its ***MHS*** mail since that mailbox will not exist. Also be certain that the **MHSApp** variable is set correctly in the NETPAGER.INI file.

NetPager will now respond to any mail sent to the ***MHS*** user (the one logged in and running ***MHS***). Running ***NetPager*** in this way has a number of drawbacks:

- ***NetPager*** will no longer be able to monitor the network connection since it is reliant upon ***MHS*** to execute it. If the connection is lost (server crashes), ***MHS*** will most-likely lock-up.
- Support for *broadcast paging* will not function in this mode since ***MHS*** is running most of the time and ***NetPager*** will not be active to intercept these messages.
- A significant delay in the time it takes for a message to be transmitted will be incurred due to the cycle time of ***MHS***. This can also be increased if ***MHS*** is busy transmitting its own mail.

With ***NetPager*** setup in this manner, full support for ***Pegasus Mail*** and ***Charon*** are still available. You can still have ***NetPager*** respond to SMTP mail *even though* it is running as an ***MHS*** gateway. Simply make certain that the **SupportPMAIL** and **SupportCharon** variables are set correctly.

Troubleshooting

The following is a table of the most common problems people have when configuring ***NetPager*** to operate with their PC:

Condition	Possible Solution
NetPager does not seem to act properly when dealing with **MailQueue** and SMTP mail.	If you are using the new Novell VLM shell, don't. ***NetPager*** does not support VLMs. Go back to using standard ODI or the ipx/netx combination.
You send an ***MHS*** mail message but ***NetPager*** does not seem to see it.	1. The username is wrong. Check your **USR** environment variable or the **MHSUser** variable in the .INI file. 2. The host name is wron. Check your **MV** environment variable or the **MHSHost** variable in the .INI file. 3. The **MHSFileMask** variable is not set properly. 4. The **MV** variable is set to SERVER/VOLUME: format. Try setting it using ***DOS*** DRIVE:PATH format (ie. F:\). 5. Make sure the **MHSApp** variable is set to a valid application name. You can check this by looking in the \MHS\MAIL\USERS\username directory and seeing if the application has its own directory. 5. Watch the "My Mail Address" and "My Mailbox Directory" information displayed when ***NetPager*** is started and verify that the information is correct.
The modem dials and a connection seems to be made with the paging company computer system, but it hangs up before ***NetPager*** begins transmission.	This is usually caused by error correcting/data compressing modems (V.32 for example). There is too long a time delay for your modem to detect that these two features are not available. The remote modem hangs up before the connection is made. Disable both these features manually by entering the appropriate commands in *ModemInit* in the NETPAGER.INI file.
Error 6 or error 7 is displayed when attempting to return mail as to the status of the page transmission.	This is due to ***NetPager*** having insufficient rights to create, modify, or erase a file in the SYS:MAIL or MHS directory structure. See the sections *Pegasus Mail Support* and *MHS Support* for more information.
Running ***NetPager*** as an ***MHS*** gateway does not seem to work. The modem will not initialize properly.	***MHS*** sets the modem into *echo off* and *quiet mode*. Quiet mode, at least, *must* be set to off for ***NetPager*** to interperet modem responses. Usually this means adding **Q0** to the modem init command (ATQ0E1).

Getting Help

You can obtain help using ***NetPager*** by sending internet email to ***support@lansoft.com***. You may also call (614) 786-1717 for technical support. Help regarding modem settings may be obtained from your pager company.

Credits

The following programs and/or people are mentioned in this manual. Please give credit where credit is due.

Pegasus Email copyright by David Harris
Charon copyright by Brad Clements
MHS is a registered tradmark by Novell Inc.
Netware is a registered trademark by Novell Inc.
Windows is a registered trademark by Microsoft Corp.
Hayes is a registered trademark by Hayes Computer Corp.

Warranty

No warranty is provided with this software. The author cannot be held liable for data loss or equipment damage due to the direct or indirect use of this software.

Registration

NetPager is not free. It is being distributed using the ***Shareware*** concept that allows you to try the program before you purchase it. ***NetPager*** in its unregestered form will only transmit five pages, then pause for keyboard input before allowing another five pages to be transmitted. To eliminate this restriction, follow the registration instructions below.

Additionally, ***NetPager*** will only support servers that have valid passcodes. Servers that do not have passcodes assigned will be ignored.

Registration Instructions

After registration, you will receive the passcode required to eliminate any limitations inherent in this program. Place this passcode in **NETPAGER.INI** in the [System] section under REGISTRATION=. **The passcode is keyed to the attached server name(s)**. You must provide your file server name(s) in the registration form. For multiple purchases, list all server names on the form, multiple passcodes will be provided each of which must be listed (separated by commas) in REGISTRATION=.

Ex:
Registration=339283,223123,5554232

This would effectively register three different servers. Any other servers will be ignored.

To register ***NetPager*** send $149.00 for each server you wish to use ***NetPager*** with. That is, register a copy of ***NetPager*** for each server you wish to have supported.

Send a **Check**, or **P.O.** to:

LANsoft U.S.A.
6665 Busch Blvd
Columbus, Ohio
43229

Passcodes will not be processed until a check is received. Purchase orders can extend registration time length dramatically.

Please complete and send the following form with payment :

Product	Description	Copies	Price/Copy	Total Cost
NetPager	Novell Network Email Paging Software (one copy per supported server must be purchased).		$149.00	
			*Sales Tax:	
			Total	

*Ohio residents add appropriate sales tax.

Where did you here of/find ***NetPager***? _____

Where did you get your copy of ***NetPager***? _____

IMPORTANT!!
For registration purposes, provide the file server name that ***NetPager*** will be attached to. The passcode is keyed to this server name. Therefore if ***NetPager*** is to be run on multiple servers, multiple copies must be purchased.

Server Name: _____

Please send me the registration passcode via (check one) :

[ ] U.S. Mail at the following address
PLEASE PROVIDE REGARDLESS OF DELIVERY REQUEST

_____

_____

_____

[ ] Compuserve, my ID is _____,_____

[ ] Internet, my address is _____

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