Pegasus Mail

An electronic mail system

for

Novell NetWare®.

Version 1.2, ©1990, David Harris.

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Introduction

Pegasus Mail is a free Electronic Mail system designed to run exclusively on Novell NetWare®
networks. Among the features it offers are:

●   Standard text messages: messages can be composed with the built-in editor and sent to
any other NetWare user on the current file server, or on other file servers if allowed by the
Supervisor. When a message is sent, the recipient is automatically notified (via a NetWare-style
message on his screen) if he is logged-in.

●   Messages can be sent to individual users, NetWare user groups, or to arbitrary collections
of users defined in distribution list files.

●   File transfer: files can be sent as easily and flexibly as messages. The recipient can
extract the transferred file with a single command.

●   Menu-driven operation with considerable online help: Pegasus Mail appears deceptively
simple at an initial glance, because its interface has been designed first and foremost with ease-
of-use in mind. Extensive context-sensitive help is available at a press of the <F1> key, and
`helper functions', such as filename expansion, and user lists are also available when needed.

●   Easily installed and maintained: because Pegasus Mail uses the default NetWare file
system and consists of only two files, system supervisors need only copy it to a public directory
on the file server to have a fully-functional mail system.

●   Flexible management options: a number of options are available to Supervisors to control
access to mass-mail features. Supervisors are also at liberty to decide whether Pegasus Mail can
deliver mail to remote file servers or not, and if they choose to allow it, users on one server need
not have usercodes on the other.

●   Full range of mail options: Features available to users include customisable profiles, self-
copy, reply, message-forwarding, user- definable mail folders, printing, personal names,
automatic trailers and more.

●   Support for external mail gateways: Pegasus Mail 1.2 has support for SMTP Mail via the
Clarkson University gateway. In the near future, it will support other gateways including Novell
MHS (Message Handling System).

Running and using Pegasus Mail

To run Pegasus Mail, users type the command `pmail` at the command prompt. If logged to a local drive, Pegasus Mail will create a temporary mapping on the default file server (this can be an important consideration if you are attached to several servers), but if the current directory is on a network drive, Pegasus Mail will use the server on which the directory resides, as well as the user's identity on that server.

Pegasus Mail does not depend on being called `pmail.exe` for anything, so system supervisors wishing to rename it (perhaps to `mail.exe`, for instance) can feel free to do so.

The Pegasus Mail Main Menu

The main menu contains the following commands:

```
S: Send a mail message
F: send a File via mail
M: select a Mail folder
B: Browse mail messages
P: edit user Profile
E: Edit a file
Q: Quit using mail
```

The top line of the screen contains a continuously-updated clock and the program title bar. Running from right to left along the bottom line of the screen is a message indicating that pressing the <F1> key provides help, the current file server and username in the middle, and the name of the current mail folder at the left.

When you have new or unread mail messages, an extra entry appears at the top of the menu, saying: `N: check for New mail.` This entry will disappear when you have read all your new mail.

To select an entry from the main menu, either type the letter displayed to the left of the entry you want (which is also bold in the entry), or use the cursor keys to move the reverse-video selection bar to the choice you want to make and press the <Enter> key. The <PgUp> and <PgDn> keys will move you to the first and last entries on the menu, respectively.

S: Send a mail message

Select this option from the main menu and a full-screen window will open. On this screen there are three fields[1] and an editing window.

The address field: Type here the name (or names) of the person to receive the message. The address can be in a variety of formats depending on your system: the possibilities are:

● A NetWare address: this is the login name of any user on the current file server. If your Supervisor allows it, you can also send mail to a user on another file server by typing that file server's name followed by a '/' followed by the user's name.

> Example: to send a message to user JOE_BLOGGS on the current server, simply enter JOE_BLOGGS in this field.

> Example: to send a message to user ARAGORN on file server WESTERNESSE type WESTERNESSE/ARAGORN in this field.

● An Internet Address: (note—this option is only available if you are also running appropriate gateway software) Internet addresses are quite complex addresses in the general form:

> <username>@<host>.<domain>

> If you are uncertain about whether or not you can use Internet addresses at your installation, contact your Supervisor.

Looking up NetWare Users' Login Names: If you are unsure of a Netware User's login name, you can look it up by pressing the <F2> key while you are in an address field. A small window will open asking for a search pattern. If you simply press <Enter> here, a list will appear of all users on the current server. You can narrow the search using the special wildcard characters `*' and `?'. The `*' wildcard will match any number of characters in a full name or login name, while the `?' wildcard will match any single character.

> Example: entering JO*ON will match JOHNSON, JOHNSTON, JONASSON, but not, for instance, JAMESON.

You can use any number of wildcard characters in your search string. The list of users resulting from a search is a form of menu—you can move the reverse-video selection bar until the user you want is highlighted, then press <Enter> and the user's login name will be added to the address field. You can also search for users on other servers (if your Supervisor allows this), using the same syntax as for an address—ie, <server>/string. You cannot use wildcards in the

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[1]A *field* is a computer term for an area of the screen into which you can enter information. In Pegasus Mail, you can always tell when you are in a field, because a square bracket ([or]) will appear at the start and end of the field. Some fields will only accept certain types of input, while others will automatically convert text to uppercase. You can move between fields using the <Up> and <Down> arrow keys.

server name.

Sending mail to groups: Pegasus Mail allows you to send messages to NetWare user groups (such as EVERYONE) by placing a pound or hash sign in front of the name of the group: so, to send a message to every member of a group called `APP_USERS', you would enter the address `#APP_USERS'. You can also mail to groups on other servers using the server/groupname notation described above. Note that your Supervisor can restrict use of this feature to selected users.

Sending mail to users listed in a file: You can create a plain text file (using the "Edit a file" option from the main menu, for instance) which contains a list of addressees, one address per line. To tell Pegasus Mail that it should read this file for addressing, place an @ symbol in front of the name of the file: so, to send a message to every user listed in the file C:\MAIL\DIS.LIS, you would enter the address "@C:\MAIL\DIS.LIS" in the address field.

The `Subject' field: Enter in this field a brief précis of the contents of your message: this is the text which will show in the recipient's browse screen when he scans his messages. You can put anything you wish in this field, but it's probably best to make it relevant and meaningful.

*The `Copy Self' field:* You can place either a `Y' or a `N' in this field. If you enter `Y', then Pegasus Mail will keep a copy of the message in the folder you have specified in your user profile. If you have not specified a folder there, the copy will be kept in your main mailbox. Pegasus Mail remembers the last value you used here from session to session.

Editing your message: After you have placed values in the address, subject and copy-self fields, the cursor will move into the Editing Window. At this point, you can compose your message— when you are satisfied with what you have done, press <Ctrl-Enter> to accept it. If you wish to cancel the message at any time, press the <Esc> key.

Your message can contain up to 32000 characters and a maximum of 1,000 lines. While you edit the message, a reverse-video line will appear at the bottom of the editing window—the message line for the editor: when it needs information from you, it will ask here, and messages (such as number of occurrences found in a search) will appear here as well. At the end of the line are numbers indicating line and column in the message.

Editing commands: A wide range of commands and text-editing features are available while you edit your message: these are summarised below.

<Left>, <Right>, <Up>, <Down>	Move a character at a time
<Ctrl-D>, <Ctrl-S>, <Ctrl-E>, <Ctrl-X>	Move a character at a time
<Ctrl-Left>, <Ctrl-Right>	Move a word at a time
<Ctrl-A>, <Ctrl-F>	Move a word at a time
<Home>, <End>	Start/End of line
<Ctrl-Q,S>, <Ctrl-Q,D>	Start/End of line
<PgUp>, <PgDn>	Move a screen at a time
<Ctrl-R>, <Ctrl-C>	Move a screen at a time
<Ctrl-PgUp>, <Ctrl-PgDn>	Top/End of message
<Ctrl-Q,R>, <Ctrl-Q,C>	Top/End of message
<Ctrl-Z>, <Ctrl-W>	Scroll Up/Down one line.
<Ctrl-End>	Delete to end of line
<Ctrl-T>, <Ctrl-Y>	Delete word right of cursor, Delete line
<Ctrl-N>	Insert blank line at cursor
<Ctrl-Q,F>, <Ctrl-Q,A>	Find string, Find and Replace string
<Ctrl-L>	Repeat last search or search/replace
<Ctrl-K,B>, <Ctrl-K,H>	Mark block, finish marking block
<Ctrl-K,C>, <Ctrl-K,M>	Copy block to buffer, Cut block
<Ctrl-K,I>, <Ctrl-K,M>	Insert buffer, Comment block out
<Ctrl-K,R>, <Ctrl-K,W>	Read/Write block to/from file
<Ctrl-Q,M>	Set right margin for wordwrap
<Ctrl-Q,G>	Goto specific line in message
<Tab>, <Shift-Tab>	Indent/Outdent marked block
<Ctrl-V>, <Alt-D>, <F12>	Form digraph (see below)
<Ctrl-P>	Insert next character typed literally

Digraph formation

Pegasus Mail allows foreign-language users to enter accented characters from the IBM ASCII set by a technique called digraph formation. This consists of typing two characters—a base character, and another character indicating the form of accent to be added to it—then pressing a special key (any of <Ctrl-V>, <Alt-D> or <F12>). Pegasus mail then replaces the two characters with the proper single character from the extended ASCII set.

The following combinations of base character and modifier are valid:

```
AaeiOoUu +       "       = ÄäëïÖöÜü
aeiou            +    ^      = âêîôû
aeiou            +    `      = àèìòù
aEeiou     +     '      = áÉéíóú
c          +     ,      = ç
Nn         +     ~      = Ññ
Aa         +     o      = Åå
<< or >>                = « or »
!! or ??                = ¡ or ¿
o          +     /      = ф
a          +     e      = æ
```

Examples:
to produce ä   type   a"   then press the digraph key.
to produce «   type   <<   then press the digraph key.

An important point: if you are sending your message to an Internet address, then extended characters will probably become garbled in transmission: this is because the format specified for Internet mail cannot carry quite enough information about special characters to represent them properly. As a result, an î character, for instance, will be received as a `female' sign—an o with a cross beneath it. You should take care when sending messages containing special characters to Internet addresses.

Sending your message

When you have finished editing your message, press <Ctrl-Enter>: a small dialog window will open asking you if you want to accept what you've entered. If you answer `Y' you message will be sent, and you will return to the main menu. If you answer `N', the cursor will move to back to the address field, and you will be able to edit what you have typed.

F: Send a File via mail

When you select `F: Send a File via mail' from the main menu, a small window will open asking you for an address or list of addresses, a subject and a filename.

While you are in the address field, you can press <F2> to obtain a list of usercodes, just as you can when sending a message. You can send a file to a user group, or to a list of recipients from a file, using the same syntax as for sending a message.

In the `Filename:' field, you can use a Pegasus Mail feature called *filename expansion,* which offers you both a fast way of entering filenames, and assistance in finding files. If you press the <Tab> key while in a filename field, Pegasus Mail will take what you have typed so far and use it as a template for searching for files: if it can find only one file which uniquely matches what you have typed, it will automatically complete the file or directory name for you. If there is more than one possible match, Pegasus Mail will open a small window with a scrolling list of matching files. While this window is open, you can either scroll using the arrow keys, or press the first letter of the file you are looking for to move the selection bar to the file you want. Press <Enter> when your file is selected, and Pegasus Mail will add it to what you have typed so far.

Filename expansion can be used to expand both directory and filenames. You do not need to include DOS wildcard characters (`*' and `?')—Pegasus Mail will automatically add them if necessary—but you can do so if you wish to narrow a search.

When you have entered the filename, Pegasus Mail will ask you to accept your data: if you choose `Y', the file will be sent and if you choose `N' you will be able to continue editing what you have typed. To cancel sending a file, press the <Esc> key at any time.

If you send a file through an SMTP gateway (ie, to an Internet address), Pegasus Mail will automatically apply a process called UUENCODING to the file: in technical terms, this allows the 8-bit data in the file to be sent via the gateway, which only supports 7-bit data. If the addressee is also using Pegasus Mail, he will be able to extract the file from the Browse screen, just like any other. If he does not use Pegasus Mail, he will have to use a program called a UUDECODER to extract the file: these are generally readily available in sites with Internet mail support.

M: Select a Mail folder.

Pegasus Mail allows you to create mail folders, into which you can move messages after you've read them. When you choose `Select a Mail Folder' from the main menu, Pegasus Mail will open a window listing all the mail folders you have created.

To select a folder, highlight the its name and press <Enter>. Subsequent `Browse' requests will use this folder, and its name will be displayed at the extreme right of the bottom line of the main screen.

To create a new folder, highlight the entry marked `[New Folder]' at the end of the list and press <Enter>: Pegasus Mail will open a small window asking you to give the folder a name. Type a name of up to eight characters, consisting of only the letters `A' to `Z' and the digits `0' to `9'. When you press <Enter>, Pegasus Mail will create the folder: you can select and use it immediately.

If you've selected a folder already and want to return to your main mail folder, highlight the `<Main folder>' entry at the top of the list and press <Enter>.

If you want to delete a folder from the list, highlight it and press the <Del> key. Pegasus Mail will ask you to confirm that you want to delete the folder and its contents: WARNING! When you delete a folder, anything that folder contains is also deleted! If you want to keep the contents of the folder, you must first choose `Browse' from the mail menu and move the contents to another folder.

At this stage, Pegasus Mail only supports single-level folders—that is, you cannot create a folder within another folder; all folders are created in your main mailbox.

B: Browse Mail Messages

When you want to look at your mail messages, choose `Browse' from the main menu. A full-screen window will open containing a list of all the messages in the current folder. At the bottom of the screen is a list describing the keys you can press to perform specific actions on the messages.

Marking messages: some of the operations can work on more than one message: to mark the files you want to work with, highlight them one at a time and press either the space bar or the <F5> key. If you want to mark or unmark all messages in the list, press <Shift-F5>. Marked messages have an asterisk displayed next to them.

The following options are available while browsing messages:

<Enter>   Read the currently highlighted message.

<Del> Delete the current message or marked messages.

<F>   Press F to forward the current message to another user. In this release of Pegasus Mail you cannot forward a file sent to you via the Internet if the file is larger than 32Kb—you must extract it and re-send it instead.

<M>   Press <M> to move the current message or marked messages to another mail folder.

<P>   Press <P> to print the current message. A small dialog window will open asking which printer (LPT) port and the number of lines to print per page. If you want to print to a network print queue, the port must already be captured using the NetWare CAPTURE command. Future versions of Pegasus Mail will be able to print directly to NetWare print queues.

<R>   Press <R> to send a reply to the current message: a small window will open asking if you wish to attach the original message to your reply: you can answer `Y' (the message will be attached), `N' (the message will not be attached) or `C' (the message will be attached, but the start of each line will show the character string you have defined in your profile for commenting out messages: the default is `> '). Then Pegasus Mail will open the `Send a Message' window and will provide the reply address of the user automatically; edit your message as you normally would.

<S>   Sort the list of messages: when you press S, a small popup menu will appear listing four options: do not sort, sort by sender's name, sort by date or sort by subject. When sorting by sender's name or subject, the case of the text is ignored. You can freely resort your messages as many times as you wish: Pegasus Mail will remember the sort you last used from session to session.

> *Compatibility note:* if you have previously used Pegasus Mail version 1.0, messages created by that version will not sort correctly by date: they will appear at the end of the list.

<X>   Extract a message or file: if the current message is a true message, Pegasus Mail will allow you to take its contents and place them in a text file of your choice. If the message is an envelope for a file transfer, however, Pegasus Mail will extract the file which was enclosed. While you are typing the name of the file to which you wish to extract, Pegasus Mail's filename expansion feature is available.

When you have finished browsing messages, press the <Esc> key to return to the main menu.

P: Edit your User Profile

You can control many aspects of the way Pegasus Mail works by modifying your user profile. The profile is stored on the file server and retains your settings from session to session. The following profile options are available to you:

Personal Name: this is a string of characters which Pegasus Mail will auto-matically append to your login name on outgoing messages, to allow the recipient to see the `real-world' name of the sender. You can put anything in this field, but the most useful entry is probably your real name, and possibly your position or telephone number.

Signature: this is the name of a file containing text which Pegasus Mail will automatically append to the end of every outgoing message. You would normally place the following in a signature file: your name, position, address and phone/fax numbers, as well as alternative e-mail addresses. The signature must be a plain text file (for instance, one created with the `Edit a file' option from the main menu). While in this field, Pegasus Mail's filename expansion feature is available.

Right margin: place here a value from 20 to 132 which Pegasus Mail will use as the default right margin while you are editing messages. When you reach the right margin while typing a message, Pegasus Mail will wordwrap the current word to the next line.

Home mailbox: Pegasus Mail allows you to specify any location you wish for your home mailbox—the main folder in which your folders will be created and your messages stored. This allows you to store your messages on a local hard disk, or in a personal directory on the file server. You cannot create a home mailbox on a floppy drive. Filename expansion is available while you are editing this field. When you enter a valid directory name, Pegasus Mail will check to see if that directory exists: if it does not, it will offer to create it for you. When you create it, or if it already exists, Pegasus Mail will move your current mailbox to the new location, folders and all.

Note: Pegasus Mail may fail to move some things when shifting to a new home mailbox: these are typically the files associated with file transfer via mail, and it will only fail to move them if they are in the main folder of your mailbox.

Selfcopy box: Enter here the name of the folder in which Pegasus Mail should place copies of messages you have copied to yourself. If you specify nothing here, Pegasus Mail will create them in your home mailbox. Self-copied messages can be browsed and manipulated like any other message, except that the sender is identified as `Self'.

Comment with: You can specify a string which Pegasus Mail will use when commenting blocks —either on a reply to a message, or explicitly using the <Ctrl-K,M> command in the editor. The default entry is `> '. You should try to keep this string short.

E: Edit a file:

Choosing `Edit a file' from the main menu invokes Pegasus Mail's editor to create or edit text files. Any plain ASCII text file up to 32Kb in size can be edited—but you should not try to edit files created with word processing packages such as WordPerfect, since these files (contrary to what you might expect) are normally not plain text.

While you are editing the file, all the commands available while editing a message (see list p.) can be used. To save the file, use the command <Ctrl-K, D>.

You can use Pegasus Mail's filename expansion feature while it is prompting you for the name of the file to edit. Note that you can also use filename expansion when editing, whenever Pegasus Mail prompts you for a filename (for example, a file to read into the current file).

Note that you should use this option to create distribution files, since it is guaranteed to produce files in the correct text format.

Q: Quit using Pegasus Mail

The last option on the main menu allows you to finish using Pegasus Mail, and return to whatever you were doing before—normally either the DOS prompt or a menu.

When you quit, any changes you've made to your user profile are saved, ready for the next time you use the system.

Appendix A: Requirements and installation.

Pegasus Mail requires Novell NetWare ELS-I, ELS-II, 2.15C (Advanced or SFT) or NetWare 386. It needs a minimum of 256Kb on the workstation to run. It is essential that the default NetWare file structure on volume `SYS:` exists, specifically the NetWare-defined user mail directories under `SYS:MAIL`. Since NetWare creates these directories automatically, this requirement is usually self-fulfilling.

Installation

To install Pegasus Mail, copy the files `pmail.exe`, `newmail.exe` and `pegasus.hlp` to a publicly-accessible directory on your network file server. Existing users can then use the program immediately. There are no extra steps required when creating users to allow them to use the system— they have all they need merely by existing.

Modifying NET$LOG.DAT

You should modify `NET$LOG.DAT`, the NetWare system login script, on the host server to contain commands similar to the following:

```
#newmail
if "%ERROR_LEVEL" > "0" then begin
    write ""
    pause
end
```

This invokes the Pegasus Mail `newmail` utility, which reports the number of unread messages the user has when he logs in. The `write` statement prints a blank line, while the `pause` statement gives the user a chance to see the message printed by `newmail`.

Allowing remote server access

Pegasus Mail can deliver mail to users on other file servers if access codes are provided. When a user attempts to send mail to a user on a remote server, Pegasus Mail searches a Supervisor-defined internal table for a usercode and password on the remote server. If one is found, the system uses it to log into the remote server and deliver the message. If none is found, the system attempts to log into the remote server as the NetWare GUEST user. If all attempts fail, an error is reported to the user.

To define the access information Pegasus Mail needs for remote servers, the Supervisor or a Supervisor-equivalent user should run the `puser.exe` program on the distribution disk. Puser presents a menu offering `Interface definition' (this option is covered in Appendix B) and `Server

Access definition'. Select the latter, and a window will open. If you press <Enter> while the `Add a server' entry is highlighted, another window will open prompting you for information about the remote host.

You should enter the file server's name, and a usercode and password Pegasus Mail can use on that server. The data is stored in a heavily-encrypted format which should be secure from even an ardent hacker.

You can create any number of entries for remote server access—the list will scroll when you have filled the window. When you have finished defining servers, press <Ctrl-Enter> to accept the definitions and return to the main menu. Choose `Save and Exit' to store the definitions.

The usercode you create for mail access can be extremely limited. I recommend that it not be a member of group EVERYONE, and that it should have only one explicit trustee right granted to it—[C] (or [CW] under NetWare 286) rights in SYS:MAIL. Pegasus Mail does not need access to any other directory on the host server, nor does it need access to any NetWare utilities.

Pegasus Mail logs into the remote server for the shortest possible time to deliver mail or examine usernames, and guarantees that the user will never be left logged-in to the remote host under the mail usercode.

Note: if a mail usercode on a remote server has an expired password, Pegasus Mail will fail when delivering the message, even if grace logins are enabled and plentifully available.

Appendix B: Installing Pmail for an SMTP gateway

Pegasus Mail 1.2 supports one SMTP gateway—the combination LPR and SMTP server available from Clarkson University (due for release November 1 1990).

To install Pegasus Mail to use this gateway, run the Puser program supplied and choose `define Interfaces'. Two options will appear—`no interface', and `Clarkson interface'. Select the Clarkson interface, and a dialog window will appear. You must provide the following information:

Queue name: this is the name of the print queue you have created (using the NetWare PConsole utility) from which the Clarkson gateway expects to retrieve messages. The queue need not exist at the time you define the interface.

Use always: enter `Y' if you want Pegasus Mail to use the gateway for all messages, including mail to other servers. If you select `N', Pegasus Mail will only pass mail with Internet addresses to the gateway, and will use its own mechanism for all other messages.

Our domain: you should type here the string which defines the Internet domain for your site (the domain is essentially the base address for your whole site).

This server's name: The Clarkson Gateway supports aliasing of file servers—that is, it is possible to address mail to a user on a server using a different name from its NetWare name. If you have given this file server an alias when installing the gateway, enter that name here. If you enter nothing, Pegasus Mail will use the file server's NetWare name.

Our time zone: Type here the UNIX-format abbreviation for your time zone: this is required by the RFC822 standard for message format. Examples of time zones are: EDT, PST, GMT, GMT+1200.

When you have filled in all the blanks, accept the data. That's all there is to it!

Appendix C: Supervisor notes

Pegasus Mail makes a variety of control features available to NetWare Supervisors: these are mostly in the form of NetWare user groups, created using the Syscon utility. Pegasus Mail is aware of the following groups:

MAIL_USERS: If this group exists, Pegasus Mail will only run for users who are group members. Use this to control who has access to the mailing facility. If the group does not exist, all users will be permitted access.

GROUPMAIL: If this group exists, Pegasus Mail will only allow mailing to NetWare user groups (using the # prefix in addresses) to members of this group. If the group does not exist, all users will be able to groupmail.

GW_USERS: If this group exists, only its members will be permitted to send mail via the Internet gateway, if one is defined. If the group does not exist, all users will be able to mail via the gateway. Note that the gateway itself can perform access checks, and can refuse to send mail in its own right.

Pegasus Mail and Microsoft Windows v3:

Pegasus Mail has been extensively tested under Microsoft Windows version 3, and has been found to work properly in all modes. When designing the .PIF file for it, you should specify a minimum of 256Kb RAM, and a desired amount of 384Kb. When using Windows v3 (which requires the 3.01 NetWare shells or later to operate correctly) Pegasus Mail's notification messages for new mail will be fielded in a Windows dialog box.

Endword: Technical notes and Acknowledgements

Pegasus Mail was written in C using Turbo-C and C++ by Borland International. Portions of the user interface are written in assembly language. Brief, by Underware/Solution Systems, was the untiring workhorse used to write the program—fabulous editor, try it! NetWare functionality is accessed through the Novell NetWare C Interface Libraries.

The manual was written using WordPerfect 5.1, formatted for an NEC SilentWriter LC-890 PostScript printer.

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