chronological, reverse chronological, alphabetical, and three "files first" versions of the first three values. When using a "files first" setting, files are always listed at the beginning of the list of items, followed by the posts.

**Def. item overrides:** each file item has associated with it four values: file payback (#), byte payback (%), file cost to DLer (#), and byte cost to DLer (%). Each of these is described individually below. Each item also has associated with it a flag called "these items override." If that flag is set to "yes," then CNet will use the ITEM'S four variables when determining paybacks and costs. If that flag is set to "no," then CNet will use the SUBBOARD'S four variables for determining paybacks and costs. As new files are uploaded, CNet copies the subboard's four variables into the item's attributes. The subboard flag "def. item overrides" determines how each item's "these items override" flag is initially set on new uploads. In determining how you will set this flag, you must decide whether (when you change these four subboard values) you want your changes to affect ALL items, or only NEWLY UPLOADED items.

**File payback (#):** how many file credits to award to the UPLOADER of this file each time that it is DOWNLOADED.

**Byte payback (%):** how many byte credits to award to the UPLOADER of this file each time that it is DOWNLOADED. The actual number of byte credits awarded is calculated as a percentage of the size of the file.

**File cost to DLer(#):** how many file credits to charge the user who attempts to download this file.

**Byte cost to DLer(%):** how many byte credits to charge the user who attempts to download this file. The actual number of byte credits charges is calculated as a percentage of the size of this file.

**Sub-op account # (1-6):** Each subboard can have associated with it up to 6 users who are the supervisors. They are sometimes called "fair-witnesses" or "trustees" of the subboard. CNet refers to these individuals as "subboard

operators" (or "sub-op" for short). Subboard operators have all the privileges of system operators, but limited to their subboard only. They may kill or edit any item. They may view private, anonymous, and aliased message authors. They can download without being charged file or byte credits. For each subboard operator, enter their account number into one of the 6 entry boxes. Users can use the special command "VIew" to list the subboard operators of any subboard.

## Editing more than one subboard at a time

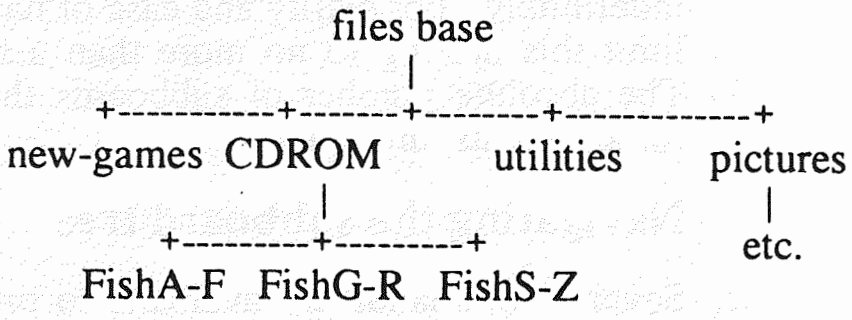
The edit subboard "EL" command may also take an argument--a RANGE of subboard numbers from the current list of subboards. When you use this feature, CNet will bring you into the visual data editor with ALL of the fields ghosted (all black on blue). When you attempt to CHANGE any of the fields, that field will become active (white on blue). If you save your changes, the values in the fields you activated will be applied to all subboards in the range of subboards that you specified.

## Subdirectories: Creating a subboard tree structure

As your BBS grows, you may find yourself continuously in need of adding subboards. With large numbers of subboards, it is helpful and more user-friendly to "group" similar subboards together, and not to present possibly hundreds of subboards to the user all on a single list. CNet offers this capability by providing a special type of subboard called a "subdirectory." Users will see subdirectories on lists with other subboards, but with the special marking of "(dir)" to the left of the subdirectory's name. Moving into a subdirectory is as easy as moving into a subboard--just enter its number at the command prompt. Instead of moving into an actual subboard, however, the user will be presented with a new list of subboards (and possibly other subdirectories).

It is in this way that you can formulate a "tree" structure to your BBS's message and file areas. All global read-new and search commands automatically traverse subdirectories. In addition, there are several commands designed specifically for ease of movement through the subboard tree

structure (described in the next section). Following is an example graphic representation of a subboard tree structure (each subdirectory shown may contain a number of subboards):




To create a subdirectory, use the AL command from the files or message area prompt, or from the prompt you receive immediately after entering any subdirectory. The process proceeds similarly to that of adding a subboard. When you are prompted "Is this a subdirectory?" however, answer Yes. You will still be prompted for a unique subboard name, and a path to data files. These are necessary, as the subdirectory may itself have entry, exit, and other data files which must be kept somewhere. If the process succeeds, you will be taken to the visual data editor as you were when entering normal subboards. You will notice, however, that many of the subboard variables do not apply to subdirectories. Those that do not apply will be "ghosted"--shown in black on blue, and un-editable.

One very important note must be made. Subdirectories DO have their own access group, flag, and other access restriction variables. When users manually browse through the subboard tree, these flags will be honored just as they are for normal subboards. However, many "global" commands like Yank, and (Z) search move through the "physical" subboard structure, and do not follow the subboard tree structure. It is necessary and REQUIRED that you set access restriction variables on each individual subboard, regardless of its position within a subdirectory which may have its own access restriction settings. That is, although a subboard may not be visible to users because it is within a subdirectory that they do not have access to, they may still be able to access that subboard by using global commands, like "scan for new files as logon" or "yank global new."

One note about limits. Any list of subboards may contain up to 238 subboards and subdirectories, in any combination. Subboards may be nested virtually indefinitely. For clarity and ease of navigation, it is wise to limit this nesting to no more than a few levels, however. The absolute number of subboards that CNet supports is, for all intents, unlimited.

## Navigating the subboard tree

Several commands are available to provide for movement through the subboard tree.

At any subboard or subdirectory prompt, the "List" command will provide the current list of subboards and subdirectories. Entering a number from this list at a subboard or subdirectory prompt will move you into that subboard (or in the case of a subdirectory, into a new list of subboards).

The "› " and "‹ " commands are available to move to the "next" and "previous" subboards, respectively. These commands are "smart" in the sense that if the "next" subboard is actually a subdirectory, CNet will enter the first subboard in that subdirectory, recursively if necessary. Moving to the "previous" subboard works using similar logic.

The "/" command will move the user to the previous list of subboards. This is equivalent to moving "up one branch" in the subboard tree.

The ":" command will move the user to the "root" list of subboards, as if he had just entered the files or messages area from the main prompt. This command and the previous "/" command are similar in function to the DOS commands "CD :" and "CD /" respectively.

Users may decide that they are not interested in certain subboards. These subboards may be removed from "› " and "‹ " traversal by being "dropped." The "DRop" command at the subboard prompt provides users with this ability. The "Join" command provides the opposite effect. "Dropped" subboards are also skipped in ALL global commands just as

"scan for new at logon" and global searching.

Each subboard may have an "entry" file and an "exit" file--files that are displayed to users as they enter and exit a subboard, respectively. To write or edit these files, a sysop or subboard operator may use the "ENtry" and "Xit" commands. To completely remove one of these files, save a blank file. These files are SKIPPED for users who have selected "super user" as their help level using the EP command. These files are by default SKIPPED for global commands like RA or SG. To show the entry and exit files during global commands, add the "banner" modifier.

## Rearranging and removing subboards

You can move a subboard to any other position on the list of subboards. Use the "ML" command followed first by the number of the subboard you wish to move, and then by the new position you wish it to have. For example, to move subboard #10 to the beginning of the list, use "ML 10 1." The "ML" command is only able to move a subboard to another position in the current directory of subboards.

To remove a subboard, use the "KL" command, followed by the subboard's number from the list of subboards. You must be at the "Message base," "Upload base," or a subdirectory prompt--you must not be "in" a subboard. You will be asked if you would like to "delete files also." This provides you with a way of removing the subboard from the list, but not actually deleting anything. If you do not delete the files, and then re-add a subboard with the same "unique dirname" and paths, the subboard will "reappear." This allows you to move subboards to other subdirectories if you need to.

## Direct disk access subboards

Direct disk access subboards provide users with the ability to perform "low-level" DOS directory commands (like "dir" and "cd") on a specific DOS subdirectory (like DH0:files/) or entire DOS partition (like RAM: or DF0:). Direct disk access subboards are convenient for maintenance operations, "quick swap floppy" subboards, and in some cases, CD ROM applications.

Adding a direct disk access subboard begins just like adding any other subboard--with the "AL" command. Direct disk access subboards require unique subboard names and data paths to store subboard-specific data files, just like other subboards and subdirectories. The VERY important path for a direct disk access subboard is the "partition0/CDROM/Netpath." This path should indicate the subdirectory or partition to which users of the subboard should have access. This path defaults to the data path.

Note that users will ALSO have access to all DOS subdirectories visible within the path you choose. This means that if you select your path to be DH0:, users can also download from DH0:C/.

Once you have entered the path information, you will be taken directly to the visual data editor to edit the new subboard's structure. Most of the fields here will be ghosted. This is the major disadvantage of using direct access subboards--most of the powerful subboard features are not available. Short file descriptions (DOS "filenotes") are limited to 79 characters in length. Simple statistics like the name of the uploader, number of downloads, and best CPS rate are unavailable in direct access subboards. Commands specific to these subboards are as follows:

The "CD" command will display the current path. The CD command also takes arguments, just like DOS. Specify path names, use the "/" character to step back one directory tree level, or use the ":" character to return to the home directory. Users will NOT be able to move outside of the directory or partition as specified by the subboard's partition 0 path.

The "Scan" command displays the current directory's actual contents, in a format similar to the DOS "list" command. DOS wildcards are available here, as with most commands in the direct disk access subboard.

The "Note" command will allow any user of the subboard to make changes to a file's filenote (short description). Because no distinction is made between users in this subboard, ANY user may make changes to the filenote.

The "Kill" command may only be used by sysops and

subboard operators. DOS wildcard characters may be used.

The "Download" and "*" (select) commands work a bit differently here. Files matching the specified (optional) pattern are displayed one by one. The user has the option of responding "yes" to download the file, "quit" to stop listing files, or any other key to display the next file.

The "Upload" command works as it does in any other subboard, except the user may not enter "long descriptions" for files. File "validation" is not an option here. Unfinished files are not marked as such, but may be resumed simply by using the "Upload" command again, and sending the file again (using a resumable protocol, such as Zmodem).

In a subboard configured with the "QWK reply" flag set to "yes," only ".REP" files will be processed. Once QWK importing is finished, ALL files are then deleted.

## CD-ROM subboards

Choose a unique dirname (and a default "path to data dir") just as with any other subboard. However, set the "path to part0/net/cd" field to point to the directory on your CDRom which will contain the files available in this subboard (like "CD:fish/800-820/820/"). Do not forget the last "/". To add the files into the subboard, use the "AO" command. A description of this command is given in the "uploading and downloading" section.

You should set the "use CDROM temp dir" field to Yes if you are using a multi-disk CDROM unit, or a very slow single-disk unit. Setting this field to Yes will prevent two users from using the CDROM at the same time. Files are copied from the CDROM to the temporary directory you chose from the CONFIG "paths..." screen before they are used.

## UUCP subboards

Choose any "unique dirname" for this subboard that you wish. The "path to part0/cd/net" field should be set to the path where the UseNet message files are stored for this subboard (like "UUNEWS:rec/arts/startrek/"). Do not

forget the last "/". The origin/distribution line should contain the information added to the outgoing "distribution:" lines (like "world" or "na"). Set the network affiliation field to read "UUCP". See the networking chapter for more information.

## FidoNet subboards

The "unique dirname" for a FidoNet subboard should be the network tagname of the echomail area. You should set the "network affiliation" to reflect the network with which the subboard is associated. If you do not wish to use the default CONFIG origin line, you may enter a custom origin line for the subboard into the "origin/distribution" field. If you are using CNet's tosser, you may leave the "path to data dir" and "path to part0/cd/net" fields set to their defaults. If you are NOT using CNet's tosser, you need to set the "path to part0/cd/net" field to point to the subdirectory where the ".msg" files are kept for this subboard. See the networking chapter for more information.

## Items and the post and response format

Two things that CNet message bases are NOT: An "unthreaded" message base simply lists all messages in chronological order, each with its own title, without links between messages at all. A fully threaded message base allows responses to messages, and responses to responses, producing links between messages going in all directions. Fully threaded message bases also often list messages in strict chronological order.

CNet uses a "post and response" format in each subboard. Only posts have titles and appear on a list to the user. All responses to a post are added to the end of that post. This method is very different from the unthreaded or fully threaded message base formats. It is possible to consider CNet to have a "partially threaded" message base. The "Read" command is used to read an item and its responses together. Because all responses to a post are grouped together chronologically, responses to responses are not encouraged.

CNet's "post and response" format offers a great deal of

organization and ease of use--users do not have to deal with each message individually, but rather as groups of messages or "items" of conversation. Users do not have to deal with BBS messages like "this is message 52332 in response to message 49223." Nevertheless, you will find that users sometimes respond "off topic." When this happens, you should encourage them to use the "Post" command to bring up a new subject, instead of using the "Respond" command at the "respond or pass" prompt.

At the very end of reading an item, or at the end of each response, depending on the setting of the EP option "message pausing", the prompt "respond or pass" appears. From this prompt, the following options are available:

. : read the entire item again, beginning with the original post.

+ {n}: move forward a specified number of responses. If you just read response 2, "+3" will read response 5.

- {n}: move backward a specified number of responses.

**Again**: read the most recently read message again. Repeats what you just read.

**Last**: read the LAST response to the item.

**New**: begin reading the item from the first new response.

**Over**: read the item over, beginning where you did when you first began reading the item. That is, if you were reading new items, "over" will begin at the first new message. Otherwise, "over" will begin at the first message.

**Post**: same as the post command from the subboard prompt. This allows you to enter a new post (even quoting from the item you are currently reading) when a response to the existing item would be inappropriate.

**Quit**: stop reading this item. If you are reading multiple items, no further items will be read. When reading multiple items, and you want to stop reading this item, moving on to the NEXT item, use the "pass" command instead.

**Respond:** add a response message to this item. The message you enter should be relevant to the item's discussion. If you are about to enter a message off-topic, use the "Post" command instead.

**Scan:** list the response numbers, dates, authors, and addressees of all responses. The original "post" message is considered response "0".

**Vote:** sysops and subboard operators may add subboard-specific vote topics to a subboard by using the subboard "VOTE" command. Users may vote on these topics by using the VOTE command. Individual subboard vote topics may be "linked" to specific items by using the AT command to set the "vote link serial#" field to the vote topic's serial number (displayed when you vote on the topic). In this way, the VOTE command can then be used from the "respond or pass" prompt, immediately voting on a specific topic.

**Yank:** Bundle all messages in the current item for downloading. Invokes the yank-task to bundle this particular item. See the description of the yank-task in the "downloading messages" section.

**Z :** invoke the interactive text search on this particular item. See the description of the Z command in the "finding what you are looking for" section.

**‹ {n}:** When reading multiple items, as with the "RN" or "R ALL" commands, the "‹ " command can be used to go BACK a specific number of items in the range of items. This can be useful, for example, if you are reading items, and forgot to respond to one. Instead of quitting, or remembering where you were and going back later, use the "‹ " command.

**› {n}:** When reading multiple items, as with the "R all" or "R favorite" commands, the "› " command can be used to go FORWARD or SKIP a specific number of items in the range of items.

The commands Download, Examine, Grab, Validate, * (select), Write, ATtribute, Kill, TEst, TRansform, and EDit (all described elsewhere) are also available from this prompt.

## Ways to find what you are looking for

When a subboard contains items, how do you see what's there? How do you find the items you are looking for?

The "Scan" command is probably the subboard command you will use the most. Scan shows items numbers, post or upload dates, number of responses, filenames or titles, file sizes, and descriptions. A '*' is printed to the left of the number of responses if the item itself is "old" but contains new responses. Other characters may appear to the left of the date, like '!' if the item is "missing" (off-line) or if the item failed the integrity check, '+' if the item is marked as a "favorite" item, 'v' if the item is un-validated, '-' if the item is unfinished or undescribed, or 'p' if the item is private. Only sysops, authors, and addresses will see the 'p'--other users will see "‹ private item› " in place of the title. The 'v' will only be shown if the subboard flag "show unvalidated" is set to Yes. Otherwise, users will see "‹ unvalidated› " in place of the title.

Use SG to scan all items on all subboards, or SA to scan new items on all subboards. Any of the range keywords may be used with the Scan command (see the section "selecting ranges of items"). The 'text' operator is especially useful with the Scan command. It searches for a pattern of letters or characters within titles or short descriptions. "SG 'text'" will find items with "text" in their title or short descriptions on all subboards.

Browse works very similarly to Scan. Browse, however, offers a command prompt after each screen full of Scan output. Many of the most important item commands are available from this prompt. * (select), Read, Download, Grab, Examine, Kill, EDit, TEst, TRansform, Write, Validate, and others. So many people find Browse a more efficient alternative to the Scan command that the Browse command is available from the NSAL command (New Scan at Logon), and the prompt that appears when you first enter a subboard with new messages. Use BG to browse all subboards, BA to browse new items on all subboards. All range keywords are available to the B and BG commands (see the section "selecting ranges of items").

The FIND command is available from any command prompt. FIND will search for FILES whose filenames match a pattern you specify. The only limitation with FIND is that it is only able to search the first NINE characters of filenames. FIND is not a good way to search for files with specific "extensions" (suffixes). If you do not specify any wildcards, CNet will add "*" to the beginning and end of your input, matching files with your string anywhere in the first nine characters of their filenames. All DOS wildcard patterns are available for use with the FIND command. For example, FIND ([a-b]*|cn*) will match files beginning with A, B, or CN. When FIND locates a subboard with at least one file matching the pattern you've specified, a "Browse" command is performed on that subboard, as if you had used "Browse" with the FIND pattern as its argument.

The FIND command is usually very quick. On BBSs with large numbers of subboards, you may need to set the "keep headers" fields of those subboards to "headers only" in order to maintain the efficiency of FIND (and the global duplicate checking routines). See the description of the "keep headers" field, or the "memory" section of this chapter for more information.

CNet provides a way to search the TEXT of messages. This is the SLOWEST of the available search methods, and should NOT be used to just look for TITLES. Use the "Z" command when you really want to search the messages (items and responses) of items for a specific text string.

You are given the option to search using a background process (in fact, the yank-task). If you choose to use yank-task, CNet will allow you to continue to use the BBS while it performs the search. You will receive an OLM when it has finished. The "RM" command is used to read the marked messages. When you search using the background process, you are able to set keywords AND filters, as you are able to do with the "NSAL" and "NM" commands (see a description of these in the "Scanning for new messages and files at logon" section.

If you choose NOT to use a background process, CNet will search interactively. You are only able to select "keywords," not "filters." When a matching item is found,

you are shown the item "scan" display, and individual lines of text which contain the keyword(s). The keyword(s) will be highlighted. If one number is shown before the line of text, it is the text line number in the original post. If two numbers are shown, the first is the response number, and the second is the text line number.

Press control-C at any time to abort the search. Use "ZG" to search ALL subboards. All range keywords are available to the Z and ZG commands (see the section "selecting ranges of items").

## Uploading and downloading files

To download a file or a range of files, use the "D" command. To "select" files for downloading, use the "*" command. When you are ready to download all of your selected files, use the "DS" command. Files that you un-select at the "DS" prompt will be "temporarily" removed from the select list. Once you have completed the download, the un-selected files will reappear.

To empty your select list, use the "*C" command. To view your selected files, use the "SS" command. files that you un-select from the "SS" prompt will be removed permanently from your select list.

CNet will allow you to select more files than you have time to download with the current call. A message to this effect will be displayed when the select list is displayed. During a download, CNet will automatically arrange files so that as many files can be completely sent as possible within the time allowed. CNet will also allow a user to begin downloading a file for which he does not have the time to complete. This allows users with limited call times to download very large files, provided they are using a resumeable protocol like Zmodem. They can resume interrupted downloads on the next call.

When downloading files from a subboard with the "Use CD ROM temp dir" flag enabled, CNet will first copy all of these files to the CD ROM temporary directory (as configured from the CONFIG "paths..." screen). This option is provided to prevent multiple users from accessing the CD ROM simultaneously, creating bottlenecks.

You may "download" files from local mode. CNet will prompt you for a path. If you enter a path, CNet will actually copy the selected file(s) to this "target" path.

To upload files, use the "U" command. CNet will first prompt for a file transfer protocol. With this knowledge ahead of everything else, CNet will know whether or not to allow the user to "skip" the filename prompts. When using a "batch" protocol (like Zmodem or Ymodem), the filenames are included in the data transferred over the modem during the transfer. When using a non-batch protocol (like Xmodem), the user must enter the filename because it is not transferred with the actual file.

CNet will check the subboard "upload minimum free" field to make sure there is enough free space on the disk. In the case of subboards with multiple partitions, CNet will choose to upload to the partition with the most available free space. All files in a given batch upload will always be placed on the same partition.

Just as is possible with posts (and if allowed by the subboard) you may choose an addressee, choose an alias, select to be anonymous, select to be private, etc. See the description of the "post" command for more information.

A user may be disconnected while uploading a file. Depending on the protocol he is using, CNet may or may not delete the unfinished file. If the protocol is "resumeable" (see the protocols... section of the CONFIG chapter) like Zmodem, the file will be added to the subboard, but as "unfinished." The file will be marked with "!" next to the item number on a scan list. CNet will report the message "(unfinished file)" when the item is read. Unfinished files cannot be downloaded.

Any user, using a "resumeable" file transfer protocol, may complete the unfinished upload. The way to do this is by using the "U" command, followed by the unfinished item's number. It is OK to upload other "new" files at this time as well. The user completing the file will receive the file and byte credits, and will be considered "the uploader" of the file.

The file transfer log (read using the "LU" command) normally shows the one letter "unique identifier" for the protocol used to upload, followed by the baud rate (like "Z144"). If the file was left unfinished, a "U" will instead be used (like "U144"). If the file was resumed and finished, a "R" will instead be used (like "R144").

Two files by the same name may never be uploaded into the same subboard. If the subboard option "global dupe check" is enabled, a file with a name matching the name of any other file in any other subboard may not be uploaded. This feature uses a method similar to the "FIND" command to locate duplicate filenames. On larger systems, this may take considerable time during a file transfer, and may even cause the file transfer protocol to "time out." To prevent these delays, and providing you have enough memory, insure that the subboard "keep buffers" fields of all of your upload area subboards are set to "headers only."

After an upload, you will be asked to enter descriptions for your files. A "short" description is always required. In fact, a file must have a short description, be finished, and be validated before you will receive file or byte credits for the file. The maximum number of lines used for short descriptions is determined by a field on the CONFIG "limits..." screen. Long description are optional. If you leave files undescribed, you may later use the "W" command to write descriptions for them (and to receive credits).

If you immediately disconnect after an upload, CNet will send you mail telling you of unfinished or undescribed files.

There is a way to "upload" your short descriptions along with the files themselves. You may upload a file entitled "files.bbs." This file should be formatted as:

```
filename        description line 1
        {description line 2}
        {etc}
filename2       description line 1
        {etc}
        {etc}
```

All filenames should be entered at the beginning of a line. The rest of the line, and all consecutive lines which begin with a space or a TAB, will make up the short description for that file. You may describe as many files as you wish. CNet will automatically delete the "files.bbs" file after the upload--it will never be added to the subboard as an item itself.

You are limited as to the number of files which you may upload at once by a field on the CONFIG "limits..." screen.

## Adopting Orphan Files

The way to add files which are already on the disk to a subboard is by using the "AO" (Adopt Orphans) command. You will be prompted for a partition number and a file pattern. Access to this command is controlled by a user privilege flag. This command operates very similarly to the Upload command. Perhaps where this command is most useful is with CD ROM subboards. After you have configured a CD ROM subboard (described in a section above), use the AO command to add items to the subboard. Many CD ROMs contain "files.bbs" or other description files. Give CNet the appropriate description filename as found on your CD ROM, and CNet will automatically adopt the short descriptions. To automate the entire process (to skip the prompts for short and long descriptions), use the "AO!" command. NOTE that there is a maximum to the number of files that you can adopt at one time as determined by an option on the CONFIG "limits..." screen.

The "AO" command may be used from a QWK direct exchange subboard to adopt QWK reply packet(s) without uploading them. You must have placed the QWK reply packet(s) into the subboard's directory.

## Other ways to view files

CNet offers two ways to "view" a file without actually downloading it--"Examine" and "Grab."

The "Examine" command is used to view the contents of an "archive" file (like Zip, Zoo, Arc, Lha, etc.). It is often very helpful to know the names of the files stored in an archive before you spend time downloading it.

In order for CNet to recognize an archive as being a viewable archive, its archive type must be listed in the "archivers..." screen of the CONFIG program, with a valid "view format" field. See the CONFIG chapter for more information.

The "Grab" command is used to display the ASCII or HEXADECIMAL contents of a file. Grab will ask "Hex or ASCII?" Selecting Hex will produce a display similar to the "type opt h" DOS command. Selecting ASCII will cause CNet to attempt to "read" the file. NOTE that attempting to ASCII-grab a non-ASCII file may produce unintelligible gibberish on the screen.

## Selecting ranges of items

There are MANY ways to select items to scan, read, download, etc. You can select items by number or name. Any valid RANGE of numbers may be used, like "R1", "R1-5", "R1,10" etc. Names may contain any valid DOS wildcards, like "S file", "S *.txt", "S br*", "S games.???", etc.

Following are the keywords which may be added to any subboard command allowing the selection of a range of items:

**all:** all items. For example, "Read all."

**banner:** for global commands, like RA and SA, show the subboard entry files. For example, "RA banner."

**brandnew:** only new items. Old items with new responses will not be matched. For example, "S brandnew."

**by {user}:** items posted or uploaded by a particular user. If used with the "mess" keyword, messages written by a particular user. {user} may be either an account number or a handle. If the handle contains spaces, do not forget to use quotation marks.

**byme:** items posted or uploaded by you. If used with the "mess" keyword, messages written by you.

**favorite:** items marked as sysop favorites. Sysop favorite items have "+" next to their item numbers on the Scan display. Sysop favorite status is toggled on and off using the AT command.

**first (or ^):** the first item in the subboard.

**free:** items marked as free downloads. Free download status is toggled using the AT command.

**last (or $):** the last item in the subboard.

**mess:** consider individual messages--items and responses together. Without this modifier, all commands operate on ranges of ITEMS, not messages. See the next section for more information.

**new:** only new posts, new files, AND old items which have new responses. For example, "Scan New" or its BBSMENU alias, "SN." To disregard old items with new responses, use "brandnew."

**newresp:** only old items with new responses. New posts and newfiles without responses will be disregarded.

**next:** if you finished reading or using a particular item, this will match the NEXT item on the list of items (current item plus 1).

**pass:** skip the "respond or pass" prompts when reading items. This can also be accomplished by using the "!" like "R2!."

**preview:** read one "old" response when reading old items with new responses. For example, if an item has 10 responses, 2 of them new, "Read New" will read only the last two responses. "Read New Preview" will read the last THREE responses. The BBSMENU abbreviation "RN" is by default set to "Read New Preview."

**previous:** if there was an item most currently read or manipulated, this will match the PREVIOUS item on the list of items (current item number minus 1).

**private:** only those items written with the PRIVATE flag set. This keyword does not work with the "mess" keyword.

**reverse:** process the range of items in REVERSE order. For example, "R1-10 Reverse" will begin reading with item 10, then 9, etc., down to 1.

**since {date}:** matches items posted or uploaded AFTER a given date. {date} has the format DATE-MONTH-YEAR. You may leave off the YEAR or BOTH the MONTH AND YEAR. CNet will default to the current YEAR and MONTH. This keyword works with the "mess" keyword. {date} can be a single NEGATIVE integer, representing an offset from the CURRENT date. "Read since -2" will read all messages posted within the last two days.

**this (or current or .):** match the most recently used item. For example, after "R2" "R this" will re-read item number 2.

**to {user}:** items posted or uploaded TO a particular user (the addressee). If used with the "mess" keyword, messages written to a particular user. {user} may be either an account number or a handle. If the handle contains spaces, do not forget to use quotation marks.

**tome:** items posted or uploaded TO you. If used with the "mess" keyword, messages written to you.

**until {date}:** matches items posted or uploaded BEFORE a given date. {date} has the format DATE-MONTH-YEAR. You may leave off the YEAR or BOTH the MONTH AND YEAR. CNet will default to the current YEAR and MONTH. This keyword works with the "mess" keyword. {date} can be a single NEGATIVE integer, representing an offset from the CURRENT date. "Read until -2" will read all messages not posted within the last two days.

**unval:** matches items which are unvalidated, undescribed, or unfinished. In other words, files for which users have not yet received credits.

**'text'**: By placing text within single quotation marks (apostrophes), you can match only items which contain that text within their titles OR short descriptions. For example, "S 'txt'" will find all files with TXT in their titles or short descriptions. "SG 'txt'" can be a useful way to search the short descriptions of all files on all subboards.

## Scanning and reading messages in "chronological" order

CNet uses a very rigid "item and response" format. Very rarely are individual messages (like responses) referred to. A special argument "mess" may be used with the Scan and Read commands to display in chronological order as they were entered into the subboard. Posts and responses are completely "unthreaded" and treated as equal entities. The Scan mess command will give the date, the author, the addressee, and the subject of each message. Each message (post or response) has its OWN "message number" which is a different animal from the arbitrary item numbering you see when you do a Scan (without mess). When you select to "Read 10", the tenth post (and its responses) from the scan list will be displayed. However, "Read mess 10" displays the 10th message (post or response) that was entered into the subboard. For example, "Scan mess until 1-6-93" will display the header information of all messages entered before June 1, 1993. "Read Mess 255" will read the 255th message.

The "mess" operator is especially useful in conjunction with the "to," "by," "tome," and "byme" operators. The "read tome" command will only read ITEMS which are addressed to you. If you want to read all MESSAGES (items AND responses) addressed to you, you can use "read mess tome." Of course the "mess" operator works well with other popular versions of the scan and read commands, like "RN mess tome" or "SG mess tome."

When reading messages, a limited capability "respond or pass" is given. It is possible to respond to the item, or post a new message at this prompt. If the message belongs to an item which has a file attached, the popular download, examine, grab, and * (select) commands will also be available.

## Ratios, paybacks, and the file and byte credit systems

Each user's file has two fields, "file credits" and "byte credits." These are usually set to increase when the user uploads and decrease when the user downloads. These fields may ALSO be set to increase when another user downloads files that the user uploaded (this is called a "payback").

When an item will cost a certain number of file credits and byte credits to download, the user may not download that file unless he has at least those numbers of credits. All new users are given the an initial amount of file and byte credits as set on the CONFIG "defaults..." screen.

An item will require NO file or byte credits to download if the "free download" flag is set in the item's attributes (set using the AT command).

Each subboard has the fields "file cost to DLer(#)" and "byte cost to DLer(%)" (set from the EL command). Each item has the fields "file cost to DLer(#)" and "byte cost to DLer(#)." When an item is uploaded, the subboard's "file cost to DLer(#)" field is copied into the item's "file cost to DLer(#)" field. Also, a PERCENTAGE of the item's total size is copied into the item's "byte cost to DLer(#)" field. This percentage is given by the subboard's "byte cost to DLer(%)" field. When downloading, CNet will use the item's copies of these fields if the item's "these vals. override" flag is set to Yes. Otherwise, the subboard's values are used. NOTE that you can set the default value of the "these vals. override" flag for new uploads by setting the subboard's "def. item overrides" flag to Yes or No. NOTE that you may use the AT command at any time to change the "these vals. override" flag and then to manually change the number of file and byte credits required to download this file.

Each subboard has two fields, "upload file ratio#" and "upload byte ratio#." Each field may have a value between 0 and 3. When set to 0, uploaders will receive NO CREDITS. The values 1 to 3 correspond to the three "file credit ratios" and "byte credit ratios" that each user has in

his account. These credit ratios in the user's account actually control the number of credits the user receives for uploading--the subboard fields merely specify which of the user's ratios to use.

A file credit ratio of 0 means the user receives no file credits when he uploads. A file credit ratio of 1 means the user will receive 1 file credit for each file he uploads. A ratio of 2, 2 file credits per file uploaded, and so on. A byte credit ratio of 0 means the user receives no byte credits when he uploads. A byte credit ratio of 1 means the user will receive 1 byte credit for each byte be uploads. A ratio of 2, 2 byte credits per byte uploaded, and so on.

"Paybacks" provide a way of rewarding the uploader based on the number of times his uploads are actually downloaded by other users. They are actual credits added to the uploader's file and byte credit fields. You may actually choose to use this method of rewards IN PLACE of the ratio system, or in conjunction with it.

Each subboard has the fields "file payback (#)" and "byte payback (%)" (from the EL command). Each item has the fields "file payback to ULer(#)" and "byte payback to ULer(#)." When the item is uploaded, the subboard's "file payback (#)" field is copied into the item's "file payback to ULer(#)" field. Also, a PERCENTAGE of the item's total size is copied into the item's "byte payback to ULer(#)" field. This percentage is given by the subboard's "byte payback (%)" field. When downloading, CNet will use the item's copies of these fields if the item's "these vals. override" flag is set to Yes. Otherwise, the subboard's values are used. NOTE that you can set the default value of the "these vals. override" flag for new uploads by setting the subboard's "def. item overrides" flag to Yes or No. NOTE that you may use the AT command at any time to change the "these vals. override" flag and then to manually change the number of file and byte credits that the uploader will receive when this file is downloaded.

The total number of credits that the user received for the upload (through either ratios or paybacks) are stored in the item's "file credits to ULer" and "byte credits to ULer" fields (from the AT command). If the file is unvalidated by a sysop, or killed by the uploader, these credit values are subtracted from the user's file and byte credits.

Users will not receive rewards for downloading files that they uploaded.

## Ways to kill, edit, or move existing items

Subboard operators and any user with the "kill/edit any file" privilege flag may use the "Kill" command to remove items from a subboard, or the "EDit" command to change the contents of a message. Users with the "kill/edit own files" privilege flag but without the "kill/edit any file" privilege flag may only use the "Kill" command to remove items posted or uploaded by them, and may only use the "EDit" command to change the contents of messages written by them.

When killing posts, one prompt is given to verify the kill. When killing files, one prompt is given to verify the kill, the file is deleted from the hard drive, and any upload credits received for the upload are removed. Options exist, however, if the user has the "kill/edit any file" privilege flag or is a subboard operator.

In the later case, the prompt "credit removal factor [0]" is given before kill verification. This variable will instruct CNet how to remove credits from the uploader. A value of 0 (or just pressing return) will not remove any upload credits received by the uploader for uploading the file. A value of 1 will remove the same number of credits that the user received when uploading the file. A value of 2 will remove twice the number of credits, and so on.

For subboard operators and users with the "kill/edit any file" privilege flag, the prompt "delete this file" also appears just after the "delete this post" prompt. Answering Yes to delete the post, but No to delete the file will result in the file being left on the hard drive as an "orphan." Answering No to delete the post, but Yes to delete the file will "transform" the file into a "post." This is a very useful feature when you wish to save the discussion about a file, but wish to delete the file itself.

The EDit command first prompts for a response number. The response number "0" means the "root" or "post" message. Sysops and subboard operators may change the

message's date. According to the same access restrictions that are used when posting or responding, users may change the anonymous or private status of a message, change the addressee, or change the alias.

The Kill and EDit commands may also be used from the item "respond or pass" prompts. At these prompts, the Kill and EDit commands default to the current item. A response number may be specified as an argument to Kill or EDit a specific response. The Kill command also accepts a RANGE of response numbers to kill.

NOTE that killed items are not actually PURGED from the subboard structures until auto-maintenance runs. Simply killing items will not make room for new items in a "full" subboard until auto-maintenance time.

Sysops and subboard operators can MOVE an item (or range of items) to another subboard by using the "MOve" command. When asked to choose a destination, you may choose a number from the current list of subboards, or use the "/" or ":" keys to move to the previous or top directory level, respectively. The "top" directory level consists of two subdirectories, the "message base" and the "upload base." This means that you are able to easily move posts and files between the message base and the upload base. You can "move" files to the SAME subboard for the purpose of changing the PARTITION that they are stored on. There are three other prompts given by the Move command.

**"Move to which partition"**: a list of the available partitions is given, together with their available disk space. The default will be to use the first partition listed. If you are moving only posts (no files), just press ENTER at this prompt. Otherwise, select from the list.

**"Re-new item post dates"**: Whether or not you want the item's post date to be updated to today's date. The affect that this will have is changing the item's position on the Scan list (when sorted chronologically), and causing the item to appear as "new" again to all users. The individual messages, when read, will retain their original dates.

**"Kill source items"**: Whether to remove the originals. If

you are moving items between subboards, this allows you the opportunity to just "copy" them.

## File validation

File validation provides the sysop or subboard operator with a way of "checking" uploads before they are made public. Depending on the circumstances under which you run your BBS, it may be wise to check for copyrighted or explicit material before allowing users to download new uploads. "Unvalidated" files must first be "validated" by a sysop or subboard operator before they may be downloaded. New uploads are marked as "unvalidated" if the subboard flag "file validation" is set to Yes, and the user's "skip file validation" privilege flag is set to No. "Unvalidated" files may only be "validated" by using the "Validate" command.

The Validate command may also be used to "unvalidate" files which have already been validated.

If the subboard flag "show unv. files" is set to No, the filename of unvalidated files is replaced with "‹ unvalidated› " when using the Scan or Browse command. If this flag is set to Yes, or a sysop or subboard operator uses the Scan or Browse command, filenames of unvalidated files are shown, however a letter "v" will appear next to the item number.

Upload credits are only awarded for validated files. The file must also be finished and described to receive upload credits. When the validate command is used to unvalidate a finished and described file, upload credits are removed from the uploader.

To remind users that upload credits are only awarded for validated files, the file "systext:validation" is displayed at the completion of an upload in a subboard where the "file validation" flag is set to Yes. You may edit this file to display any message you wish.

## Downloading messages--the "yank-task"

Spending time on-line reading messages can be costly. Not only considering phone charges for the caller, it also ties up

the port so no other users can get on the system. CNet incorporates a very powerful "background task" called "yank-task." The "yank-task" can read messages and pack them into a downloadable file for offline reading, all while you are still on the BBS doing other things. This process is called "yanking" messages. Once a yank has been started, you will be returned to the BBS. When finished, Yank-task will inform you using an OLM (On-Line Message). If successful, the downloadable file will be placed into your select buffer (viewed using "SS" and downloaded using "DS"). You may log off and return to the BBS later to retrieve the yank file.

While you are in a subboard, the "Yank" command can be used in all ways that the "Read" command can be used. You can "Yank" any range of messages, or use the command "YN" to yank just the new messages. The "YA" command operates a little differently than the "RA" command, however. See the next section for a discussion of that.

There are actually TWO ways to yank messages. Your answer to the question "use QWK off-line reader format?" will determine which method of yanking is performed. If you select NOT to use the QWK format, yank-task will create an ASCII text file.

The text file that yank-task creates will have a filename consisting of the two letter "yank identifier" that you choose from the CONFIG program's "defaults..." screen, followed by the current month and date, and then a two digit number that increments each time you use yank-task on the same day. Yank-task will pack the text file using an archiver program if the user has chosen to use one from the "EP" command's "message bundling" field. Usually TXT (no packing), LHA, ARC, LZH, and ZOO are options to the user here. CNet determines which choices to give the users here based on which archivers have "pack formats" entered for them from the CONFIG program's "archivers..." screen.

The text file that yank-task creates can be read by using the "type" command from the Shell or by using an editor.

The QWK off-line reader format is a popular way of downloading messages. When yank-task uses the QWK

format, many files are produced, requiring that users MUST choose an archiver from the "EP" command's "message bundling" field. If this field is set to "TXT" (no archiver, just ASCII text), yank-task will be unable to produce a QWK packet. In order to make use of a file that is produced in the QWK off-line reader format, one must have a QWK off-line reader program. There are SEVERAL of these available for the Amiga. Although there are newer and more powerful programs, "Q-Blue" is one that was used in initial CNet QWK tests.

Aside from the fact that QWK provides better organization and better message reading features, the advantage of using QWK is that QWK readers allow the ability to REPLY to messages. New posts and even private mail can also be written off-line using these QWK reader programs. QWK readers use an archiver program to pack the replies into packets ending with "REP."

When the user again connects to the BBS, he may use the "QWK" command to upload his "REP" packets. CNet will unpack the file(s) and distribute the messages to their proper subboards automatically. In order for the QWK command to be available, you must designate a "QWK reply subboard" as described in the "edit/view subboard configuration" section.

The yank-task must assemble and pack messages into "temporary" files before making the packet available to the user. The path used to store these files is set using the CONFIG program's "yank/qwk packing" field within the "paths..." screen. If you have the memory, RAM: is recommended to make yank-task quicker and to reduce wear on your drives. The maximum amount of RAM required can be determined from the settings described below.

There are several ways to restrict user access to the yank-task. Each of these is found on the CONFIG program's "limits..." screen:

**Maximum yanks:** The maximum number of yank-tasks which CNet will allow to run simultaneously. This is primarily a function of your memory resources. Each

yank-task occupies memory for stack and variable space. In addition, if your yank-task is configured to use RAM: to store its temporary files, make sure there is enough space for each yank-task.

**Maximum yank size (KB):** This determines how MUCH a user can yank at one time. If you use RAM: to store your yank temporary files, you can multiply this value by the "maximum yanks" to determine how much memory could possibly be used. The next two fields determine how many of these files can exist on disk at one time, and how long they can exist before being automatically removed.

**Days to hold user Yank files:** Auto-maintenance is charged with the duty of removing yank-files that have not been "picked-up" before this designated maximum number of days. This feature protects your system from accumulating too many of these potentially very LARGE files.

**Maximum yank files per user:** Usually, one yank file per user is enough. The user may download one, and then yank again. This field exists so that you can make it possible for users to store more than one yank file in their select buffers at a time. Remember that each can potentially be "maximum yank size."

## Determination of New items and responses

When you enter a subboard, CNet reports the number of "new posts," "new files," "new-response items" (items with new responses), and "new" messages addressed to you. How does CNet determine what is "new"? Intuitively, a "new" message or file would be one that you hadn't yet seen.

If CNet kept one bit of information for each message, for each user, the overhead associated with searching, sorting, and storing this information could quickly become overwhelming. Instead, CNet remembers two dates for each subboard, for each user. One date is used as a "cut-off" date. All messages written after this date are considered "new" to a user. The other date remembers when the user first entered the subboard during a given call. If, during a given call to the BBS, a user enters a particular

subboard, that subboard's "cut-off" date is replaced by that subboard's "first-entered" date when the user logs off. This means that when the user calls back and re-enters that subboard, everything that was written since he first entered the subboard on his previous call will be "new." This includes messages that he himself wrote into that subboard.

The practice of not updating the subboard's "cut-off" date until the user logs off keeps messages in that subboard "new" until the user logs off. However, CNet will only prompt the user to "read new messages now?" when entering a subboard for the FIRST time during a given call.

Exceptions to this method of tracking "new" messages are found in the "NM" command (described in the next section), and the "YA" command (yank new on all subboards). Once you have visited a subboard, or have used a global command like NM or YA to view messages in a subboard, the NM and YA commands will IMMEDIATELY "forget" about the new messages in that subboard. This feature was put in place primarily to allow users to "continue" a NM or YA if the previous one was cut short because of BBS limitations (like maximum size of Yank file).

When Scanning or Browsing items, "old" items that have new responses (these are called "new-response items") are shown with a asterisk (*) next to the date.

## Scanning for new messages and files at logon

Each new user's "logon macro" is copied from the file CNET:BBSTEXT, line 10. By default, this line contains the command "NS." This will result in the "NS" (New Scan) command to be executed after the user has logged on. This command is actually usable from any command prompt, but was initially designed to be used at logon. The NS command is composed of two component commands, "NF" (new files) and "NM" (new messages). Each of these component commands is also usable individually from any command prompt.

The NF command searches for subboards containing new files. New files here are identified as those uploaded since the last use of the NF (or NS) command. CNet performs a

"Browse" of the new files in each subboard. For the duration of the call, the NF command will "remember" which files are currently "new." By default, these new files are "forgotten" for the NEXT call. At completion of the NF command, however, the user is given the option of "remembering" the new files for the next call.

The NM command searches for subboards containing new messages. New messages here are identified as those written since your last visit to the subboard. Once you have visited a subboard, or the NM command itself is used to view the new messages in a subboard, the new messages in that subboard will be "forgotton" by the NM command. This prevents NM from reading (or yanking) the same new messages twice. (Note that this works differently from the RN and RA commands, where messages are "remembered" until the next CALL.) However, if during your call, a user on another port writes a message into a subboard in which you have already read the new messages, the NM command will immediately again recognize this subboard as having a new message.

If one or more subboards is found to have new messages, a prompt is given with the following options:

**List:** List subboards with a summary of the number of new posts, the number of posts with new responses, and the number of new messages (posts and responses) addressed specifically to you.

**Browse:** Browse new items and items with new responses. Only new posts will be shown, not new files (unless the file has new responses). A RANGE of subboard numbers may be given as an argument.

**Read:** Read new items and items with new responses. Only new posts will be shown, not new files (unless the file has new responses). A RANGE of subboard numbers may be given as an argument.

**Cancel:** Immediately remove the "new" status of the subboard without first reading or browsing the messages. A RANGE of subboard numbers may be given as an argument.

**Yank:** Pack new messages for downloading. See the section concerning Yank for more information. One additional prompt is available when Yanking from the NM command. This prompt asks if you would like to "set

filters/keywords/subboards." The default answer to this question is No, and all new messages will be Yanked. If you select Yes, this allows you to yank only specific messages from specific subboards. A list of the subboards with new messages will be displayed, and a prompt containing the following commands will be given:

**Abort**: abort the yank, return to the NM prompt.

**List**: re-list the subboards.

**Sub**: toggle the yanking of subboards. Use a range of subboards following this command. Subboards "unselected" for yank will have the "+" that appears next to their names during a List become "-" instead.

**Filter**: select words or phrases which, if they appear in a message or its header, cause a particular message NOT to be yanked. If you choose NOT to have the filter apply to ALL subboards, you must again use the Filter command but with a range of subboards as an argument. Subboards which have the filter applied to them appear with an "f" next to their titles during a List.

**Keyword**: select words or phrases which MUST appear somewhere in a message or its header in order for that message to be yanked. If you choose NOT to have the filter apply to ALL subboards, you must again use the Keyword command but with a range of subboards as an argument. Subboards which have the keywords applied to them appear with a "k" next to their titles during a List.

**Yank**: begin the yank using the chosen filters, keywords, and subboards.

## File integrity testing

Even when using 32-bit CRCs and error correcting modems, "corrupt" files sometimes end up in a subboard. Perhaps the file was corrupt before it was even transmitted, or perhaps it was upload-resumed, and contained some erroneous data at the end of the file before it was resumed.

Each file in a subboard has associated with it a field called "integrity check" (editable by using the AT command). The four possible states of this flag are "passed," "not tested," "not testable," and "test failed."

CNet uses the DOS archiver programs themselves to determine an archive's integrity. CNet issues a DOS

command to run the archiver program, and monitors the program's output. Depending on what is printed, CNet makes the determination as to whether the file is OK or not.

In order for a file type to be testable, that type (the file "extension", like .ARC or .SHAM) must be listed in the CONFIG program's "archivers" screen. In addition, that archiver's entry in the config screen must have values entered for the "test format," "test keyword," "keyword column," and "keyword line" fields. All of the popular file formats have already been entered for you into the default CNet configuration. To be able to actually test these file types, however, you must insure that the programs PKAX, UNARJ, HSCHK, LHA, WARPCK, UNZIP, ZOOM and ZOO are available from the Shell path. In case you change one of these archiver programs, update to a newer version of one of them, or wish to add your own file types to be tested, it is important that you understand how the four CONFIG fields must be set.

The "test format" will be used to construct the actual DOS command to test a file. For the ZOO file format, the test format is

zoo › %s xNd "%s"

"zoo" is the DOS name which invokes the archiver program. "› %s" is used internally by CNet to re-direct the output from the archiver program to a location where it is readable by CNet. NOTE that all test format lines contain this "› %s" immediately following the name of the archiver program--any added test formats MUST contain this argument. Next, you enter the arguments necessary to get the archiver program to test a file. The filename itself will be substituted where the second "%s" appears. To test the file "my.zoo" from the command shell you would use:

zoo xNd "my.zoo"

Therefore the CNet test format would be:

zoo › %s xNd "%s"

The quotations around the second %s (where the filename will be substituted) are there in case the filename or path contains a space.

You must actually look at the archiver's output for a GOOD archive to determine the values of the next three fields. If these fields are not PRECISELY set, CNet will report "failed" when in fact the archive may be OK. The ZOO program gives output like this:

```
zoo: my.file          --- OK
zoo: archive seems OK.
```

The "test keyword" field tells CNet what word or phrase it should be looking for in the archiver program's output to signal a GOOD archive. For ZOO, the test keyword is best set to "OK".

The "keyword line" field tells CNet on which line of output to look for the "test keyword." The output "lines" are numbered in REVERSE here. The LAST line of output is known to CNet as line 0. The next to last line is 1. It is valid to specify a number as high as 3 here. For ZOO, the keyword line should be set to 0, because "OK" appears on the last line of output.

The "keyword column" tells CNet at which column on the keyword line to expect the test keyword. Start counting at 0. For the ZOO program, the "OK" appears at column 20. Notice that there are TWO spaces between "zoo:" and "archive."

File testing either occurs immediately after the file is uploaded, during auto-maintenance, or not at all, depending on the subboard's setting of its "file testing" field. A file may be "manually" tested by a sysop or subboard operator by using the "TEst" command. Files which FAIL the integrity check are marked as "(failed integrity check)" when they are read. They are marked with a "!" beside the item number when they are displayed in an item scan. They also appear in the auto-maintenance log (the sysop "LA" command). Testable files which have not yet been tested are marked as "(not yet tested)" when they are read.

## File transformation

When you request that your users always upload ".LHA" files into your Amiga subboards, ".ZIP" files into your IBM subboards, and ".IFF" files into your clip-art subboards,

should you always expect your users to follow your directions? It's not going to happen. Luckily, CNet comes equipped with a mechanism for overseeing the TRANSFORMATION of files from one "type" to another (.ZIP to .LHA for example, or the reverse).

CNet "transforms" files by using specially constructed DOS script files (files containing a "batch" of DOS commands), called "xscripts". These script files must use one archiver program (pkunzip, for example) to disassemble an archived file, and then use another archiver program (lha for example) to re-assemble the archive from its component files. Properly written transformation script files should also deal with error checking, temporary file cleanup, and proper operation within a multi-user environment.

Note: Transformation may be used for many things other than simply changing one archive type into another. For example, there are many utility programs available for changing one graphic format into another. Using this, you could create an Xscript to change GIF graphic files into IFF, as just one example.

By default, CNet will attempt to find transformation script files for all file types. You may prevent a subboard from attempting to transform specific file types by setting the subboard's "arcs transformable" field. The numbers in this field refer to the numbering of the archivers in CONFIG's "archivers..." screen. If a user uploads a file which is on CONFIG's list of archivers, but whose number does NOT appear in the subboard's "arcs transformable" field, CNet will NOT attempt to transform the file. On the other hand, if a user uploads a file which is NOT on CONFIG's list of archivers, CNet will always attempt to transform that file. (Unless file transformation is disabled in that subboard)

How does CNet decide which script file to use when attempting to transform a file? To begin with, each subboard has a field called "transform to." You should set this field to the 2, 3, or 4 letter file extension to which you would first like CNet to attempt to transform all files. Do not include the "." in this field.

CNet first searches for the most specific transformation file (one which would transform the file from the existing file

type to the "transform to" type), and if not found, looks for progressively more general transformation files. If the file does not have a 2 to 5 letter extension (the letters following a period), CNet assigns it the default extension of "any."

Here's the order in which CNet searches for a transformation file. The word "old" is replaced with the file's current extension (or "any" if the file does not have an extension). The word "new" is replaced with the subboard's "transform to" field. The "data" directory refers to the subboard's own "data" subdirectory, found within it's "path to data dir" path. Once a file is found, the search ends, and CNet attempts to execute the transformation file:

| directory | script name |
|---|---|
| data | old2new |
| data | old2old |
| S: | old2new |
| S: | old2old |
| data | old2#? |

The last script search attempts to find ANY script file which will operate on the existing file type.

File transformation either occurs immediately after the file is uploaded, during auto-maintenance, or not at all, depending on the subboard's setting of its "file transformation" field. A file may be "manually" transformed by a sysop or subboard operator by using the "TRansform" command. Files successfully transformed appear in the auto-maintenance log (the sysop "LA" command), showing both the "new" and the "old" file sizes.

Each item has a field "transform attempted" which is set to "yes" after CNet attempts to run a transformation script for the file. You can edit this flag by using the "AT" command. Once this flag is set to "yes," auto-maintenance will not attempt to transform the file again. By setting this flag to "no," you can force auto-maintenance to attempt to transform the file again. The transformation script will not be ran if the file with the "new" extension already exists in the subboard.

There is a directory on the master CNet disk entitled "xscripts." Within this directory are examples of transformation scripts. Note that CNet does NOT look in the "xscripts" directory to find them. If you choose to use one of these files, you must COPY it to the appropriate directory (either S: or the subboard's "data" directory). Although tested and working, many of these script files contain minimal error checking and recovery--they are included to provide examples. If you plan to improve upon CNet's default transformation scripts, or plan to write your own transformation scripts, it is helpful to know what CNet passes to the script file as "arguments." There are three arguments:

1. The "new" filename, with new extension attached, including the full path.
2. The "old" filename, exactly as it was uploaded, including the full path.
3. The "core" filename, without an extension or path.

There are DOS script commands for extracting and making use of these arguments.

Note that byte payback and byte credit values for the item are automatically re-adjusted for the item's new size if the item's size changes during transformation. Other variables already that are already binding may NOT be altered, however (such as the byte credits that the user has already received if the file was immediately validated).

## Subboard file structure and fragmentation considerations

The subboard's data path should contain a directory "data" (this should have been automatically created for you when you originally created the subboard). Once messages are posted or files uploaded, you will see one or more of the following files:

_text: Contains all posts and responses. This file will "grow" in 65536 (64K) increments as necessary to house new messages. Killed message areas are tracked so that new messages first attempt to fill space once occupied by those killed messages. The "fit" of new messages is not always perfect, resulting inevitably in fragmentation of the

file structure. There are ways, are described below, to periodically "clean" this file and remove and fragmentation.

**_free:** Contains structures to track the "killed" portions of _text. This file exists at all times, except after the subboard reorganization program is used, until there is another message created.

**_headers3:** Contains BRIEF information about each item in the subboard. Just enough information to determine if there are new responses to the item and to sort the items by date or title. This file's purpose is to allow fast item indexing and retrieval. If you have set "keep headers" to "headers," this file will be kept in memory after the subboard is first accessed. If you have some extra memory, it is recommended that you do keep these small files in memory.

**_items3:** Contains DETAILED information about each item in the subboard--full title, creation information, flags, etc. Portions of this file are loading on an as-needed basis by the BBS. If you set "keep headers" to "headers and items," this file will also be kept in memory after the subboard is first accessed.

**_message3:** Contains a short data structure for each MESSAGE in the subboard (items and responses individually). This provides quick indexing by message author and addressee (as used in the "Scan MESS" command).

**_short2:** This file contains the short descriptions for uploaded file items, if any exist.

Continuous posting, responding, uploading, and killing will eventually result in fragmentation of the _text file. The _text and _free files will become much larger than necessary, simply because of "short blocks" of free space which are left unused. To fix this problem, CNet has a utility known as "repair_sub" located in pfiles:maintenance. To invoke this program from the current subboard, use the RR command. If you have enough memory to hold the new _text file in memory, you should answer "yes" when asked if you would like to use RAM during the repair process.

Repair_sub is also handy in the event that your subboard has suffered some sort of damage (from whatever cause). If you notice responses "looping" or titles or headers filled with "garbage," it might be a good time to use the RR command. Repair_sub will attempt to salvage all non-corrupt messages, purging the others.

Repair_sub can be run as a system event as well. It is a "CNet C" pfile, and takes one argument, the RANGE of subboards to operate on (the PHYSICAL subboard numbers, as displayed from the subboard's EL command). It is OK to include physical subboard numbers which correspond to direct disk access subboards or subdirectories, repair_sub will skip them. So, for example, if you want repair_sub to repair all of your subboards on the first of every month at 3 am, add a system event with the date set to "1," the time set to "300," the command set to "Run CNet C" and the arguments set to "pfiles:maintenance/repair_sub 0-255" (replace the number 255 with your highest physical subboard number, as taken from CONFIG's "max UD/BASE subboards" setting). If you want repair_sub to operate on only specific subboards, use a range of those subboard numbers separated by commas.

## Other subboard maintenance options and considerations

As messages are posted, they are assigned a serial number unique to that subboard. This serial number is essential to the proper look-up and indexing used by various commands. Normally, this serial number is automatically incremented as necessary. If, however, you do any direct manipulation of subboard data files, such as moving all data files from one subboard to another, you should consider this serial number. It is shown as "last message serial number" on the EL screen. It is OK to set this number HIGHER than it should be. It is NOT a good idea to have this number LOWER than it should be, as serial numbers will then be repeating, causing confusion.

Another thing to be aware of is that when items are killed, they are not purged from the subboard data structures until auto-maintenance (amaint) runs. Thus, if a subboard is full (maximum number of items reached), simply killing an

item will NOT alone make room for a new one--amaint must first operate. Furthermore, in order for amaint to operate, it needs exclusive access to the subboard. If there are users in a subboard when amaint attempts to lock it, amaint will skip that subboard. If users attempt to enter a subboard while it is locked by amaint, they will be told that the subboard is temporarily locked.

Amaint is also responsible for the execution of many other subboard options. The "amaint inactive days" setting is used by amaint to purge old items automatically after a given number of days of inactivity. To be considered "active" a file must have been downloaded, and a post must have been responded to within the specified number of days. In the case of network subboards, amaint uses for comparison the date the message was "imported" to your system, not the date that the actual message was written.

The "auto-free after days" setting is used by amaint to give items "free" status automatically after a given number of days since uploading.

File testing and transformation occur during amaint, unless you have the flags set differently for the subboard.

The "purge old responses" flag causes amaint to delete old responses from items, even though the items themselves might be considered "active." This feature uses the same "amaint inactive days" in determining which responses are killed.

By setting the "amaint adopt orphans" flag, you can have amaint automatically search the subboard's partitions for orphan files, and add them to the subboard. This could be a handy feature in the case of fidonet file networking.

By setting the "default purge status" flag to "@Amaint", you can have all new posts and responses immediately marked for deletion at the next run of amaint. This might be useful for "temporary" file transfer areas. Another use of this flag is in private file transfer bases where it would be appropriate to purge the item at download (a setting of "@DL"). The item is not immediately killed, but its status is changed to "@Amaint" and actual deletion happens then.

## Notes:

# CHAPTER 10 - The Text Editors

In many ways, life on a BBS REVOLVES around its text editors. An editor is the tool you use to "input" messages, descriptions, and configuration files while on the BBS. CNet has two built-in message editors and one built-in "ANSI" editor. Using the CONFIG program's "editors..." screen, you can add "external" (stand-alone) editors. Consult the CONFIG chapter for more information on this procedure. This chapter will describe CNet's built-in editors, and CNet's powerul Message Command Interpreter (MCI).

A user may choose his default editor using the EP command. The default maximum number of lines of text that a user may enter in the editor depends on the user's "editor lines" field. However, many BBS features have their own (lower) limitations on editor lines.

## The Line Editor

The oldest and most basic of editors is the "line editor." This is the DEFAULT editor for new users. To use this editor, users may use "dumb" terminals--terminals or terminal emulation programs which do not understand cursor positioning, text manipulation, or other "ANSI" commands. There is never a need to even TOUCH the "control" key.

Whether posting, responding, leaving mail or feedback, describing a file, or editing the user dictionary or network alias list, a user is in the line editor when he sees:

```
(Net/3 LineEditor:
Enter up to 250 lines--enter .H at column 1 for Help, or .S to Save.
Only press ENTER when beginning a new paragraph.
```

At this point, you may type freely, using the TAB, ENTER and BACKSPACE keys to do simple formatting and error correction. Word wrapping within paragraphs is done automatically. When you are done, make sure you are at the beginning of a new line, and then press the PERIOD key (.) then the letter S, and then press ENTER. That's the easy way to enter text. However, there are dozens of other "dot" commands available to perform convenient functions. They are called "dot" commands because they all begin by pressing a PERIOD at the beginning of a new line.

To actually place a period into the text at the beginning of a line, type a second period. The prompt will be replaced by a period.

For most commands, especially those that will irreverisbly alter text, the Editor will wait for you to press ENTER before it actually does anything. This give you the opportunity to cancel the command by pressing the backspace key.

Here are descriptions of the available dot commands. The "defaults" given are what happens when you use the command with no additional argument:

**.A** Abort. All new text and changes will be lost!

**.B** Border. Put any character around the text--above, below, and on both sides. This command is really only useful on pre-centered, non-word-wrapped text. Using it in any other way may cause characters to be chopped from the ends of lines.

**.C** Copy. The range of lines that you specify will be copied to the end of the text. If you are in insert mode (.I), the lines will be copied to the insert point. This command defaults to ALL lines.

**.D** Delete. The range of lines that you specify will be removed from the text. This command defaults to the LAST line.

**.E** Edit. You will be given the chance to re-enter each line that you specify. Hitting ENTER on a blank line will keep the line as-is. You can use the .X command to get out of edit mode. This command defaults to the LAST line.

**.F** Find. After you enter a range of lines, you will be prompted for a phrase to locate. The phrase may not be broken between two lines. The line editor will report the line number(s) where the phrase appears and the number of occurrences on each line. The search is not case sensitive. This command defaults to ALL lines.

**.G** Get. Sysops may use this command to specify a

path and filename to read into the editor. Text will be inserted at the end of the text, or at the insert point if insert mode is active (.I).

.H Help. Display a brief summary of commands.

.I Insert. Enter the line number where you wish to begin inserting text. If you do not specify a line number, inserting will occur at the BEGINNING of text.

.J Justify. Several types of justification are supported:
**"Pack"** removes extra spaces.
**"Expand"** will add spaces between words to make lines 'flush' with the left and right margins.
**"Indent"** adds a space to beginning of lines.
**"Un-indent"** removes a space.
**"Center"** moves lines to the middle of the screen.
**"Left"** removes all spaces from the beginning of lines.
**"Right"** adds spaces to the beginning of lines until text is flush against the right margin.

.K Replace. This command operates exactly like Edit, except that pressing ENTER on a blank line will ERASE that line.

.L List. Display lines of text with line numbers. MCI commands are not interpretted here. This command defaults to ALL lines.

.M MCI read. Display the text exactly as it will appear to people reading the message. All MCI is interpretted, and a header is displayed. This command defaults to ALL lines.

.N New. All text and changes will be lost! The editor will be re-started.

.O Line numbers. Toggle the display of line number prompts on and off.

.P Put. A sysop may specify a path and filename to which to save the text. If the specified path begins with a "+" CNet will APPEND the text if a file already exists with the given name.

**.Q** Quote. If you are replying to a message, the Quote command will allow you to insert lines from the original message into your reply. The initials of the original message's author will be placed at the beginning of each quoted line.

**.R** Read. Display text using word wrapping. Line numbers are not displayed. MCI commands are NOT interpretted. This command defaults to ALL lines.

**.S** Save. Use this command to save the text (send the message) when you are ready to accept what you have entered.

**.T** Toggle. Add or remove the "carriage returns" from the ends of lines. CNet remembers where you pressed the ENTER key. When you use the List command, the "\" character will show at the ends of lines where you pressed ENTER. See the discussion of paragraph formatting to follow.

**.V** Visual. Move to the visual editor. Remote callers must be using an ANSI terminal with 80 columns width. See the section about the visual editor to follow.

**.W** Word-wrap. Turn off or turn back on the automatic word wrapping feature. Without word-wrapping, you must press ENTER to reach the next line. All lines will then be marked as having carriage returns.

**.Z** Zip. Send a text file to the BBS using an error checking "ZIP" file transfer protocol. Although it is possible to simply "dump" a terminal program's buffer directly into the editor, problems with word-wrapping arise and may cause "garbage" to appear. The Zip command allows you to use Xmodem or ASCII protocol to bring a file safely into the editor.

**.›** Margin. This command can be used to temporarily alter the right margin used for text entry, justification, and borders.

**.$** Search and replace. This command operates similarly to Find, except there is one additional prompt for

the "replace with" text. CNet will only be able to replace text on lines with enough room (if the replace text is longer than the search text).

.* Command. Allows the user to enter any of the "available anywhere" BBS commands like WHO, STATUS, TIME, OLM, etc. without closing the document or leaving the editor.

## Automatic Paragraph Formatting System

One very important concept to be aware of while in the editor is how CNet handles paragraphs. CNet has been designed to automatically format messages for the current user's column width to avoid broken words at the end of lines, regardless of how the message was written. In order for CNet to effectively accomplish this, it must know where your paragraph breaks are. If you are at the end of a line and have not finished a paragraph, continue to type, and C-Net will automatically "wrap" your word to the next line. Only press the ENTER key when you are about to begin a new paragraph. You can manually alter paragraph boundaries by using the .T command. You can view the position of existing paragraph boundaries by using the .L command.

Experiment by entering a couple of short lines, maybe one or two words each. Use the .T command to remove their paragraph markers. Read the message. Notice how CNet will "pack" text to fill the screen.

This system was originally designed to account for the differences between the old 40 and 80 column screens. Now that 80 column terminals have become prevalent, there are still many benefits of the automatic paragraph formatting system. For example, automatically indented text will always appear correct. The paragraph boundary markers are also essential to the operation of the visual editor.

## Control Keys

Although it is possible to get around in the line editor without ever touching the control key, advanced users will appreciate knowing that several control key commands DO

exist here. (^ just reminds you to hold the control key before pressing the command letter).

| | |
|---|---|
| ^B | Move to the beginning of the line |
| ^N | Move to the end of the line |
| ^D | Delete character under cursor |
| ^K | Delete to the end of line |
| ^T | Move left 1 character |
| ^U | Move right 1 character |
| ^W | Move left 1 word |
| ^R | Move right 1 word |
| ^V | Verify (reprint) text so far |
| ^X | Cancel line (start over) |

## The Visual Editor

CNet's visual editor was designed to provide "word-processor-like" power to on-line editing. The visual editor requires ANSI terminal support of cursor movement, cursor positioning, and simple text insertion and deletion commands. The visual editor should be used only with an 80 column display, but can used with any number of screen rows (make sure your setting in the ET command matches your actual terminal size). The visual editor supports full paragraph formatting and wrapping automatically. The visual editor shows you the subject and the addressee (if there is one) at the top of the page. On the local console screen, the visual editor shows you the cursor row and column position.

To get to the visual editor from the line editor, use the line editor's .V command. To set the visual editor as your default editor, use the EP command.

All visual editor commands are CONTROL commands, and are accessed by holding down the control key and then pressing the appropriate command letter. Control keys are shown as having "^" before the command letter. Many of the visual editor's commands have their own menus, and require you to press an additional key. In all cases, this secondary key is NOT a control key. The commands are as follows:

^A: Page up.

^B: Beginning of line.

^C: Command. Enter a BBS command. The command must be a "global" command like WHO, OLM, TIME, etc.

^K: Kill from the cursor to the end of the line.

^N: End of line.

^O: Bottom of document.

^P: Preview. Read your message with MCI interpretation and message header, exactly as it will appear when read by other users.

^R M: Range/Mark. Set the beginning point for Copy, Kill, and Paste.

^R C: Range/Copy. Copy the text between the last marked point and the current cursor position into the Paste buffer.

^R K: Range/Kill. Delete the text between the last marked point and the current cursor position. The text will also be copied into the Paste buffer.

^R P: Range/Paste. Insert the paste buffer at the current cursor position. The paste buffer contains what was last Copied or Killed.

^S: Search. Case is not important here. The visual editor will remember what was last searched for and use that as a default search string.

^U. Top of document. If the cursor is not already at the top of the screen, the first use of control-U will move the cursor to the top of the screen.

^V: Verify screen. Re-send current screen.

^X A: Abort. A verification prompt is given. All text and changes will be lost.

^X C: Check spelling. In order for the spelling checker to function, the files "dict" and "dict.index" must be found in the dictionary-path as specified from the CONFIG program's "paths..." screen. If you have the RAM to spare, it is highly recommended that you place the dictionary files and dictionary path in RAM. Two maintenance programs "dict_expand" and "dict_pack" have been provided. Used from the Shell, these programs can be used to unpack and pack the "dict" file, allowing permanent customization. CNet's spelling checker offers a "guess" function utilizing the SoundEx routines. The spelling checker also has the ability to "learn" into user custom dictionaries. Users may edit their custom dictionaries by using the EP command. You may control the number of words each user may "learn" by changing the user field "dictionary entries."

^X D: Draw editor. A simple ANSI sequence editor. Described in the next section.

^X G: Get. System operators may use this command to read a file into the editor from any path and filename.

^X H: Help. A one-page summary of the visual editor's commands.

^X L: Line editor. Return to the line editor.

^X N: New. Option to re-start the visual editor. All text and changes will be lost.

^X P: Put. System operators may use this command to save the editor's text into any file in any path.

^X Q: Quote. If you are replying to a message, this command can be used to insert the original text into the editor at the current cursor position. If you are responding to a post, you are prompted for the response number you are quoting (the default is the one you've most recently read). Each "quoted" line will begin with the initials of the original message's

author. Because CNet normally displays messages in subject order, it is usually NOT a good idea to quote the entire message. Once the message has been inserted, use the control-K command to selectively kill lines.

^X S: Save. Accept what you have written and enter it into the BBS.

^X Z: Zip. Use Xmodem or ASCII protocol to insert text into the editor.

^Z: Page down.

CNet's visual editor was designed to take advantage of all of the ANSI specification's efficient text manipulation commands for insertion and deletion. If your terminal program can also take advantage of the full power of ANSI, use the ET command to make sure "ANSI support" is set to "full." If, on the other hand, your terminal program does not "know" the more efficient ANSI text commands (you will know this if the visual editor appears to operate incorrectly), then use the ET command to set "ANSI support" to "simple."

## The Draw Editor

The draw editor provides CNet with a simple yet powerful built-in "ANSI sequence" editor. The draw editor may be used to design menus, screens displays, and other drawings. The two basic features of the draw editor are WYSIWYG and sequencing. WYSIWYG or "what you see is what you get" means that you can change colors and text attributes and position the cursor in any way you like, knowing that how you see the screen is exactly the way users will see the screen when reading the draw editor file. MCI commands and "preview" modes are not necessary to re-create actual viewing circumstances. Sequencing means that the draw editor remembers the ORDER in which you create the screen, and re-draws the screen in exactly that order when the file is displayed. This means that "animation" is possible and easy to create with the draw editor. To animate something, draw it, draw it again in its new position, then use the space bar to "erase" the first drawing.

When using a local port, the total number of sequence steps is shown at the top of the screen. Also, because it is possible to move through the sequence steps individually, the "current" sequence step number is also shown.

There are a number of control key commands available in the draw editor. Control keys are shown as having "^" before the command letter. Many of the draw editor's commands have their own menus, and require you to press an additional key. In all cases, this secondary key is NOT a control key. The commands are as follows:

^A: Move BACK one step. When "undoing" a step, CNet has a "memory" of what was replaced at that screen position. Note that when you are not at the final sequence step, all new steps are "inserted" into the sequence.

^K: Kill. Delete all steps after the current step. That is, make the current step the LAST step in the sequence.

^N: "Shift" in and out. When the draw editor is "shifted-in," the high bit of every typed key is set. This "re-maps" the keyboard to allow you to enter graphic and symbol characters.

^P: Play. The sequence is re-drawn from the beginning. You are prompted for a DELAY between steps. This allows you to "slow things down" to get a better view of what is happening. You are also prompted for a final step number. This allows you to "set" the "current" step number.

^T: Text. Change the attributes of new steps. A menu appears with the options Bold, Intense, Reverse, Underline, Color, Field, and Normal. Bold, intense, reverse, and underline toggle between Yes and No. Color and field allow you to set the foreground and background colors, respectively, to a value ranging from 0 to 7. Normal allows you to instantly set bold, intense, reverse, and underline all to No.

^V: Verify. Re-display the current display as quickly as possible.

^X A: Abort. Exit without saving changes.

^X H: Help. Provide a one page quick summary of all commands.

^X S: Save. Save changes and exit the draw editor. An option is given to use "absolute" cursor positioning. Absolute cursor position means that the exact X and Y coordinates of steps will be saved to the file. If absolute positioning is not used, positioning will be performed "relative" to the each current cursor position. That is, the "distance to move" between steps in the X and Y directions will be saved to the file. If you are designing an entire-screen display, you will want to use absolute cursor positioning. Selecting absolute cursor positioning will also automatically clear the screen at the beginning of the sequence. If you want text and animation that will "flow" with what is currently on a screen, you want to use relative cursor positioning. Selecting relative cursor positioning does NOT clear the screen before displaying the sequence.

^Z: Move FORWARD one step in the sequence.

## The Message Command Interpreter (MCI)

The Message Command Interpreter (MCI) is one of C-Net's more powerful features. It allows users to insert "command sequences" directly into messages. These command sequences are interpreted by CNet when the message is later read. These commands include changing colors, moving the cursor, and many other useful utilities.

In CNet/3, MCI commands begin with CONTROL-Q. When you press CONTROL-Q in the editor, CNet will print the character "{" (a left curly brace). Immediately following this, you must place the desired MCI command character, then the appropriate arguments, ending the command with the character "}" (a right curly brace). For example, {c1} will change the text output color to Red.

In order to maintain some visual continuity with older versions of CNet, you may optionally use the CONTROL-Y key to display a special character "\". Following the \ character, you MUST place a command

letter and an argument character. For example, instead of {c1}, \c1 can be used to change the text output color to Red.

NOTE: Remember that the { and \ characters in MCI commands are produced using the special keys CONTROL-Q and CONTROL-Y, NOT the actual \ and { keys on the keyboard!

Access to MCI commands is divided into three categories: SYSOP ONLY, LEVEL 1, and LEVEL 2. Access to sysop-only commands requires the system operator privilege flag. Access to level 1 and level 2 commands requires the "MCI level 1" or "MCI level 2" privilege flag, respectively. Two lines in BBSTEXT are used to determine which commands belong to which "level." BBSTEXT line 4 contains commands which are "sysop only." BBSTEXT line 5 contains commands which are "level 2." All other commands are then by default "level 1." In the descriptions to follow, the commands which are by default level 2 are marked with "(2)" and the commands which are by default sysop-only are marked "(s)".

Within the editor, users are able to enter any MCI command they wish. Once an MCI command is entered, CNet will check the user's access. If the user does not have access to that MCI command, CNet will change the control-Q to an actual text "{" or the control-Y to a "\". In this way, the command will not be interpretted, but will still appear visually the same as the "real thing".

Following are the MCI commands:

{@n} Set MCI environment variables
- n= 0 reset MCI environment settings (except n=8)
- n= 1 disable further MCI interpretation (all codes PRINTED)
- n= 2 disable word wrap-around
- n= 4 disable the More? pause temporarily
- n= 8 disable sysop-only MCI commands (cannot be reset)
- n=32 ENABLE SkyPix pseudo-ANSI commands
- n=64 DISABLE Text Translation (use when sending system-specific text files, like C64/128 screens). Screen output, MCI, and ALL formatting is suppressed.

To set multiple items, add their values ( for 1,2,4, use 7 ). All codes are reset at the end of the current file or message.

{:n} Set the automatic indentation of text
n= 0 disable indentation altogether
n= 1 return to default indentation (sysop defined)
n= 2 set indentation to occur at the current cursor position

{An} Disable message abortion using the SpaceBar or the / key. (s)

{Bn} Print n Bells (beeps)

{Cn} Change the cursor color to #n.
0=black 1=red 2=green 3=yellow 4=blue
5=purple 6=cyan 7=white

Color codes 8,9,a,b,c,d,e, & f are INTENSE versions of the first 8 ... visible on 16 color terminals only.

{F0} Move cursor to home position
{F1} Move cursor to home position and clear screen

{Gn} Wait for a key press. The key will be placed into MCI string variable n (70+n). (2)

{Hn} Print n backspaces.

{In m} Input a line. Result will ALWAYS be placed in variable 70. (2) n= input options (may be summed)

| | | |
|---|---|---|
| n = | 1 | all caps |
| n = | 2 | FILENAME ... don't allow =:;"/* |
| n = | 8 | chop leading spaces |
| n = | 16 | force 1st letter of each word uppercase |
| n = | 32 | force all others letters lower case |
| n = | 64 | numeric input only |
| n = | 128 | print input box (.) |
| n = | 256 | allow MCI control-A/C |
| n = | 512 | HANDLES ... don't allow ^_'{\|}~@ |
| n = | 16384 | Don't allow spaces |
| n = | 32768 | Don't allow cursor movement |

m = length of input (default is 40).

{JA n} Jump to label #n unconditionally.
{JE n} Jump to label #n if last TEST was EQUAL.
{JG n} Jump to label #n if GREATER THAN.
{JL n} Jump to label #n if LESS THAN.
{JN n} Jump to label #n if NOT EQUAL.

By specifying a label which does not EXIST, it is possible to effectively EXIT the message.

{n} An MCI command which consists only of a NUMBER is a LABEL. LABELS are used to "mark a spot" in a message. LABELS are used with the MCI "Jump" commands above.

It is legal to jump "backward" to the 20 most recent labels. The reverse branching will only be effective when the message is READ FROM DISK, and will not occur when reading the message in an editor.

By placing the special character + after the label number (like {JA 2+}), it is possible to force CNet to only branch forward. This is useful in situations where you re-use the same label number.

{Kn} Kolorific mode on/off. When enabled, the text color will be changed automatically as each character is printed.

{Ln m} Load the variable specified by 'n' with contents of 'm'. N and m may be any legal GETUSER specifications. M may also be a "literal" by placing the special character # before text or numbers. (s)

{L60 61} Copy contents of register 1 into 0
{L21 #100} Set user's game points to 100

Use EXTREME caution with this command. Memory can easily be corrupted to the point of system failure if used indiscriminately.

{Mn x..} Perform MATH functions on the variable specified by n. This MCI command can be used to add, subtract, multiply, divide, and mod (find remainder). Arguments may be variables, literals, or one of the special characters +, -, /, *, or %. (s)

Arguments must be entered in RPN, Reverse Polish Notation. That is, specify the operands, and THEN the operators.

{M60 #1 +} Add 1 to MCI register 0
{M60 24 #3 / +} Add 1/3 of the current CPS rate to reg 0

Calculate your gas mileage without leaving the editor!

{Nn} Print n NewLines

{On} Set FLASHing text (Commodore C/G) or BOLD text (ANSI)

{Pn} Set Print Direction.
n=0 normal printing
n=1 print each character, backspace, then the character again
n=2 print upward
n=3 print downward
n=4 print backwards

{Q0} Re-send all current ANSI settings
{Q1} Cancel all active MCI modes (colors/printmodes, etc).
{Q2} Remember current ANSI settings
{Q3} Recall last remembered ANSI settings

{Rn} Set REVERSE video on/off

{Sn} Set the number of 1/50 seconds to pause between characters. (2)

{Tn m} Test a variable or literal against another. Results may be interpreted using the {J} commands. N and m may be any legal GETUSER specification, as detailed under the {V} command. (s)

In addition, you may specify "literal" text or numbers by using the special character #. Here are some examples:

{T60 61} Compare the MCI numeric register 0 with register 1.

{T60 #1} Compare the MCI numeric register 0 to the number '1'
{T70 #Y} Compare the MCI string register 0 with "Y"

When comparing strings, variables are compared case-insensitive. Also, the special character ' may be used IN PLACE of # to determine whether one variable appears within (instr()) another, instead of strict equality.

{Un} Set underline mode on/off.

{Vn s} Display a system variable. N may be any valid GETUSER specification. The special numbers 60-69 correspond to the MCI numeric registers. The special numbers 70-74 correspond to the MCI string registers. (s)

If the optional argument 's' is specified, it must be of the form %n.ms ... a 'C' style format command. Alternately, 's' may be the special character 'c' followed by a field width. The variable will be displayed CENTERED within a field of spaces of the specified width.

{Wn} Wait for n seconds to pass. (2)

{XM n} Replace MCI character register 0 (70) beginning with its nth character. Similar to BASIC MID$(). (s)
{XL n} Replace MCI character register 0 with its leftmost n characters. Similar to BASIC LEFT$(). (s)
{XR n} Replace MCI character register 0 with its rightmost n characters. Similar to BASIC RIGHT$(). (s)
{XP} Replace MCI character registers 0 and 1 with the PARSED version of MCI character register 0. Text is parsed at the first space. (s)
{XS} Store the SIZE (strlen()) of MCI character register 0 into MCI numeric register 0 (60). (s)

{Zn} ANSI users, change Background color to n (same as C colors).

{^n} Move cursor up n lines.

{!n} Move cursor down n lines.

{› n} Move cursor to the right n spaces.

{< n} Move cursor to the left n spaces.

{-n} Insert n characters at cursor position.

{*n f} Display file with path/name given by f. 'n' will be OR'ed with the current MCI environment (see '@'). (s)

{#n f} Run a program file with path/name given by f. (s)
n=0 for an AREXX program,
n=1 for AREXX w/exclusive access.
n=2 for a CNet C program,
n=3 for C w/exclusive access.
n=4 for a DOS program
n=5 for DOS w/exclusive access.
n=6 for a Paragon program
n=7 for Paragon w/exclusive access.

{$ f} Send AmigaDOS command specified by f. (s)

{+ s} Write string specified by 's' to the call log. (s)

{& s} Perform BBS command specified by 's' ... must a 'system' command like Time, Who, Chat, etc. (s)

{% d} Set the user's time remaining to 0 (hang-up) if the current date is less than the date specified by 'd' in the format dd-mm-yy. (s)

{?n} Wait for a Yes or No response (used in BBSTEXT for prompt lines) n=0 for default [No], n=1 for default [Yes]. The response is ALSO placed in MCI string register 0 (variable 70) as "1" or "0". (s)

{=n} May be used to replace {?n} in BBSTEXT. Lines which contain {?0} or {?1} in BBSTEXT are prompts for Yes/No answers, with defaults of No and Yes, respectively. You may FORCE an answer using this command. {=0} will skip the prompt, automatically returning "No" to Cnet. {=1} will skip the prompt, automatically returning "Yes" to CNet. (s)

# The Visual Data Editor (VDE)

CNet's Visual Data Editor (VDE) is not a text editor like the line and visual (ANSI) editors. The VDE was designed to allow quick editing of BBS data sructures. The VDE is used whenever the EA or EG commands are used to edit users and access groups, and whenever the EL or AT commands are used to edit subboards or items.

In order to use the VDE remotely, you must use an ANSI terminal, preferably with color. In addition, because ANSI cursor positioning and drawing requires more data to be moved over the modem, it is recommended that only a high speed (9600 baud or higher) modem be used.

When in the VDE, the arrow keys may be used to move around to the various field titles. To edit a field, press the return key. When finished editing that field, press return again. Many of the line editor's "control keys" are available for power editing here. If there is already text in the field, the text will be highlighted. Typing backspace or the space bar will delete or add to the current text. Pressing any other key will "type-over" the current text. Fields which lead to other screens are marked with "›› ." In normal VDE operation, "un-editable" fields are "ghosted"--shown in black on blue instead of white on blue.

The VDE may be used to edit MULTIPLE groups, users, subboards, or items at one time. This is accomplished by specifying a RANGE of numbers following the EA, EG, EL, or AT command. When in multiple-item editing mode, ALL field will appear ghosted. When you edit a field, it will become un-ghosted. When you exit and select to save changes, only the un-ghosted fields will be applied to ALL items that you are editing.

Control-X may be used to immediately exit a VDE screen. Control-V may be used to verify (re-display) the current VDE screen.

# CHAPTER 11
# The Pfiles, Gfiles, and News File Areas.

The term "Pfile" is used throughout CNet literature to denote a "program" file. A Pfile is any special game or utility program that you would like to make available to your users "online" during their call to your BBS. Pfiles do not necessarily have to be written specifically for CNet. They may be in DOS Shell, CNet specific compiled-C, AREXX, or "paragon" format. You will find that most other BBS packages will refer to Pfiles as "doors" or simply "on-line programs." A special area of the BBS is set up for users to select Pfiles they wish to use from a list. The "P" command from the main prompt is used to get to the Pfiles prompt.

The term "Gfile" is used throughout CNet literature to denote a "general text" file. A Gfile is any file which is "read" to the user. It may be straight out text like a documentation file for a game, an information file, or a story or joke. It may also contain ANSI and MCI codes to create color displays or animation sequences. A special area of the BBS is set aside for for users to select Gfiles they wish to view. The "G" command from the main prompt is used to get to the Gfiles prompt.

Although separated for logical convenience, the Gfiles areas and Pfiles areas may each contain any combination of Gfiles and Pfiles. This allows you to include documentation files among your Pfiles, and to include executable files among your Gfiles.

The News Files area is used to store messages to be displayed as soon as users log on. News files are sometimes (and confusingly) called "bulletins" in other BBS packages. At log on, CNet will only display news files which are "new" since the user's last call to the BBS. The News Files area may hold any combination of Gfiles and Pfiles. The "N" command from the main prompt is used to get to the News prompt.

The prompt and command structure of the Pfiles, Gfiles, and News File areas are identical. Everything in this chapter applies to all three areas except where explicitly noted.

## Adding Items

There are three ways to add items to a Pfiles, Gfiles, or News list--Add, Adopt Orphans, and Post.

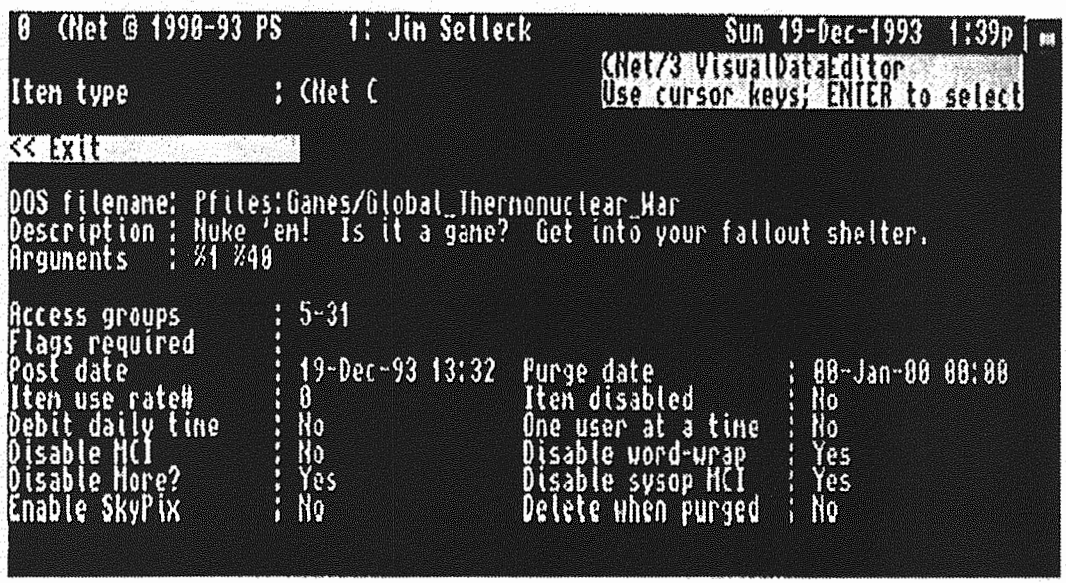
**Add:** Use this command to quickly add a single item that can already be found on your system. You must specify the type of item, either Text, Arexx, DOS, Paragon, or CNet. In the case of a Pfile, if the type of file (Arexx, DOS, Paragon, or CNet) is not apparent from the file's documentation or appearance, you may have to use the information found later in this chapter to make a determination. Once you have selected the type of file, you are then immediately taken to the item edit screen (see the next section). Set the "DOS filename" to the path and filename of the item. Set the "description" to the text that you would like users to see on the list when referring to this item.

**AO:** Adopt Orphans. This command allows you to search and select files from any system directory. You must only specify the path to search. You will not be prompted to re-add files which are already on the current list. For each file you select, you must select a file type, either Text, Arexx, DOS, Paragon, or CNet. Once you have selected the type of file, you are then immediately taken to the item edit screen (see the next section). The DOS filename will have been set automatically. Set the "description" to the text that you would like users to see on the list when referring to this item. The number of items that may be selected at one time is limited by the CONFIG program's "max selected files" setting.

**P:** Post. This command allows you to quickly write a Text file (Gfile) into the current list's directory. You are taken immediately to the item edit screen (see the next section). Set the DOS filename to a unique name (unlike any other on that list). Set the description to the text that you would like users to see on the list when referring to this item. After the DOS filename and description have been set, you are then taken to the editor to write the text file. You will find the Post command most useful when writing News messages.

## Editing Items

A visual data editor (VDE) screen is used to edit "attributes" of an item. You are automatically taken to this screen after using the Post, Add, or Adopt Orphans commands. To return to this screen at any time, use the "AT" command, followed by the item's number. By specifying a RANGE of items, it is possible to edit the attributes of more than one item at a time. When editing a RANGE of items, all of the fields on the VDE screen will appear ghosted (black on blue). When you edit any ghosted field, it will become highlighted (white on blue). If you save your changes, the contents of all highlighted fields will be applied to each item you specified. The fields available on this screen are:




**DOS filename:** the actual path and filename of the item. If a path is not specified, only a filename, CNet will expect to find the file in the list's directory.

**Description:** any text that you would like displayed to users when they use the Scan command to list the available items.

**Arguments:** for pfiles, the extra information that you would like to pass as arguments. Use spaces to separate arguments. If a specified argument begins with a percentage sign (%) followed by a number, CNet will interpret this number as a "GETUSER" value, and will substitute the appropriate data as the argument. See the Arexx interface section for GETUSER numbers. For

example, arguments of "%1 %40" will pass the user's handle and account number.

**Access groups:** the range of access groups which are able to see this item on the list of items.

**Flags required:** each number specified in this field must also appear in the user's "gfile/pfile flags" range of numbers. If any number specified in this field is not present in the user's "gfile/pfile flags" field, this item will not be seen on the list of items.

**Post date:** the date that this item was added to the list.

**Item use rate#:** a number 0 to 3, used in conjunction with the accounting system to charge the user for the use of this item (per execution or read). The number 0 refers to NO CHARGE. The numbers 1 to 3 refer to the accounting system's "per pfile execution" or "per gfile read" fields (there are three of each), depending on whether the item is a text file or a program file. See the CONFIG chapter for more information about the accounting system.

**Debit daily time:** whether or not to subtract the time used to execute this pfile from the user's daily allocated time to execute pfiles. The user field "daily pfile minutes" limits the number of minutes per day that may be spent executing pfiles.

**Disable MCI:** whether or not to TURN OFF ALL MCI commands during the reading or execution of this file.

**Disable More?:** whether or not to TURN OFF the More? page prompt. Set this to Yes for animation files.

**Enable SkyPix:** whether or not to enable SkyPix (pseudo-ANSI graphic drawing commands) during the reading or execution of this file.

**Raw console startup:** in the case of a DOS pfile, whether or not to enter the pfile in "rawcon" mode. A program that is written in "raw console" mode uses "hotkey" input. That is, it does not require the ENTER key. Most programs automatically enable Raw console mode. This flag is included in order to "fix" those that don't automatically enable Raw console mode.

**Purge date:** once this date has been reached, automaintenance will remove this item from the list. See the "delete when purged" flag also.

**Item disabled:** if set to Yes, the reading or execution of this item will be temporarily disabled.

**One user at a time:** in the case of a pfile, set this to Yes if the pfile was not written for use in a multi-user environment. If multiple users simultaneously attempt to use a pfile which was not written for use in a multi-user environment, the pfile's data structures or even the BBS's data structures may become corrupt.

**Disable word-wrap:** whether or not to disable the (default) automatic word wrapping of text. Set this to Yes for animation files and most programs.

**Disable sysop MCI:** this is a security feature. If there is any chance that the pfile contains an MCI "back-door," set this to Yes. The most powerful MCI commands will be disabled.

**Delete when purged:** used by automaintenance in conjunction with the "purge date" field. If set to yes, the file will be deleted from the drive at the same time it is removed from the list by amaint.

To edit the text of a text file (Gfile or News file), use the "ED" command followed by the item number.

## Executing Items

Reading a gfile or executing a pfile is as easy as entering its number at the prompt. Use the "Scan" command to re-display the list of items. The various access restrictions, accounting charges, and daily pfile time will all be checked first. Sysops use the "Scan!" command to receive detailed information about each item.

## Moving and Removing items

Several maintenance commands exist for changing the order of items.

The "X" command can be used to quickly alphabetize the list of items according to their descriptions.

The "ML" command is for reorganizing the current list by MOVING any item to a new spot. The ML command takes TWO arguments, the first being the item number you want to move, and second being the "target" item number to which you would like the item moved. The moving item will then appear AFTER the one currently in the "target" location.

The "K" command is used to remove items from a list. Specify a RANGE of item numbers to remove. The option is given to actually delete the file(s) from disk.

## Swinging the Branches of the Subdirectory Tree

Similar to the message and files areas, it is possible to create a "subdirectory tree" structure within the pfiles, gfiles, and news areas. The difference between subdirectories in the message and files areas, and those in the pfiles, gfiles, and news areas is that the former hold lists of SUBBOARDS, and the latter hold lists of readable/executable ITEMS.

To add a subdirectory to the current list of items, use the "AL" command. You will be taken immediately to the edit-item VDE screen. Set the "DOS filename" to a unique subdirectory name. Set the "description" field to the text you would like users to see when displaying the list of items. Exit the screen and select to "save changes." After this, you are immediately taken to yet ANOTHER VDE screen to edit the access restrictions for your new subdirectory. See the next section for a description of this screen.

All pfiles area subdirectories are created in PFILES:, all gfiles area subdirectories in GFILES: and all news area subdirectories in NEWS:. Therefore, all "DOS filename" subdirectory names used in any one particular area must be unique.

To enter a subdirectory, enter the number that appears next to the subdirectory description when listing items.

To return to the "previous" list of items (that is, move BACK a branch in the subdirectory tree), use the "/" command.

To remove a subdirectory from the list, use the "K" command followed by the item number. Unlike the subboards, there is not a separate "KL" command. NOTE that when you kill a subdirectory, all files within that subdirectory are deleted from disk if you select to "delete files also."

To edit the entry or exit text files for the current subdirectory (list of items), use the "ENtry" or "Xit" command, respectively.

## Restricting Access to a List of Items

The majority of the access restriction fields found in the subboard's "EL" screen are also available here to restrict access to specific lists of items. To edit these fields, use the "EL" command from the pfiles, gfiles, news, or a subdirectory prompt. The "EL" command here always affects the CURRENT list of items, so never takes an argument. Note that the use of the "EL" command here is slightly different than it is in a subboard, where it is possible to use an argument to edit any subboard from the list of subboards.

Because the fields here are identical in operation to those found in the subboard "EL" screen, they will not be described again. Please consult the subboard chapter for reference. The one difference is the reference to "flags required." Just as there are separate fields in the user's account for Message base and File base flags, there is a field for "Gfile/pfile flags."

## The DOS Shell Interface

CNet use's Matt Dillon's "fifo" program to handle the online shell interface. This interface is very stable, and completely supports the "raw" console mode. If your BBS was correctly configured, you should find the "fifo-handler" program in the L: directory, and the "fifo.library" file in the LIBS: directory. Without these

files in place, the DOS shell interface will not operate. When you run a DOS shell program, either from the Pfiles or by using an MCI command, CNet uses the "fifo" program to redirect input and output to and from the BBS.

If you write your own DOS shell program for use with CNet, the most important thing to have your program do is to "die gracefully" when control-C is detected. In the event that the connection with user is broken, or his time limit has expired, CNet will attempt to "break" the DOS shell program by using control-C. If you have the knowledge, it would be wise to close files, and leave the system in a stable state before exiting.

## The CNet C Command Interface

CNet offers a very powerful pfile interface through the C language. Pointers to all of CNet's memory structures are available here for users who really know what they are doing. The directory "programming" on the CNet distribution disks holds the current header (".h") files and example code.

## The AREXX Command Interface

CNet's AREXX interface supports a large number of "callback" routines. They are used just like other AREXX functions. When a function returns a result, it can be found in the AREXX variable "RESULT."

CNet's AREXX interface can either be used from a pfile, or from a completely free-standing external AREXX program. From an external program, you must first "address" one of CNet's AREXX ports by using the following command (replace P with an open port number):

```
address cnetrexxP;
```

This address command is NOT necessary in a pfile run from within CNet. Pfiles automatically address the port they were run from.

Input routines like "prompt" and "getchar" return "###PANIC" when there is a loss of carrier, or the user's time is up. You should check for this condition to avoid crashable programs!

Following are descriptions of CNet's built-in AREXX functions:

ADDKEYS {s}
Add the characters {s} to the input buffer, as if the user had typed them.

ADDPOINTS {n}
Add the value {n} to the user's "DoorPoints" field. To subtract, use a negative number in parentheses!

ADDTIME {n}
Add the value {n} (in TENTHS of minutes) to the user's time remaining for the call and day. To subtract time, use a negative number in parentheses.

BAUD {n}
Set the baud rate to {n}.

BBSCOMMAND {s}
Execute the BBSCOMMAND {s}. {s} must be a command found on the "available everywhere" menu (see the BBSMENU file).

BBSIDENTIFY {arg}
{arg} : returns
ABBEREXX : "1.0"
BBS : "2.35" or current CNet version
EMULATION: "ASCII" or "ANSI"
NAME : Your BBS's name (bbstext line 9)
SYSOP : Sysop's name (bbstext line 10)
TERM : ‹ baud› ‹ columns› ‹ rows› ‹ line›
USER : "‹ username› " "‹ callingfrom" ‹ access›
‹ access› is returned as GUEST for new users, MEMBER for other users, SYSOP for account #1, CO-SYSOP for any other account with maintenance access.

BUFFERFLUSH
Empty the current serial and keyboard input buffers.

CALLEDITOR {n}
This invokes the user's default editor with {n} maximum lines (0 for default). The current contents

of the editor's buffer are loaded, and the results are re-saved. "1" is returned if the temp buffer is not empty ("0" otherwise).

CHANGEWHAT {s}
Set the user's COMMAND field in WHO displays and the control panel. This feature may not yet be implemented. The command is added for upward compatibility.

CHANGEWHERE {s}
Set the user's WHERE field in WHO displays and the control panel. RESULT will be set to the OLD value of the field.

CHECKABORT
Returns 1 if user has pressed Control-C or SPACEBAR, 0 otherwise. You should call this AFTER a line of output has occurred. Each time something is printed, this is reset to 0.

CHECKIO
Returns 0 if the input buffer is empty, or 1 otherwise.

CLEAREDITOR
Clears the contents of the editor temp file. Use this before CALLEDITOR if you do not use LOADEDITOR.

CLOSEDISPLAY
Close the port screen or workbench window.

CLS
Sends the screen-clear code.

DROPCARRIER
Clear the phone line.

FEEDBACK
This performs the standard FEEDBACK command, allowing the user to leave a message to the sysop(s).

FINDACCOUNT {s}
This function accepts either an account number or a

handle. It performs the familiar handle-search if necessary. The account number is returned if there is no problem. 0 is returned otherwise.

GETCHAR
Wait for a single key to be pressed.

GETCARRIER
Returns 1 is there is a carrier (or local mode), 0 otherwise.

GETPORTID {port}
Give account # for user on port {port}. A result of -1 means NO user is on that port.

GETUSER {n}
Get a variable from memory. See the description of this command in the next section.

GETSCRATCH {n}
Operates like GETUSER, but reads user data from the internal "scratch" account structure. With LOADSCRATCH, this is useful for examining user's accounts other than the current user's.

GETWHERE {PORT}
Tell what user on port {port} is doing.

HANGUP
Same as DROPCARRIER.

IREADY
Same as CHECKIO.

LOADEDITOR {s}
This will read the filename given by {s} into the editor temp buffer.

LOADSCRATCH {n}
This command should be performed before GETSCRATCH's. The argument must be a valid account number. RESULT will carry a "1" if everything was loaded OK, "0" otherwise. This command LOCKS the account specified. The

AREXX program ALONE then has access to it. To signal that the program is DONE with the account, each LOADSCRATCH {id} must eventually be followed by a corresponding SAVESCRATCH {id}.

LOGENTRY {s}
Add the text given by {s} to the call log.

MAYGETCHAR
Returns a character from the input buffer, or "nochar" if the buffer is empty.

MODEM {n}
{n} is 0 to totally close the serial port, 1 to open it, 2 to stop all read I/O, but keep the port open.

OPENDISPLAY
Attempt to open the port's screen or workbench window. It may take a few seconds for the display to open.

NEWLINE
Sends the newline code.

PRINT {arg}
Same as TRANSMIT.

PROMPT ‹ length› {arg} '"‹ prompt› "'
‹ length› is the maximum # of characters to input.
{arg} is one of:

| | |
|---|---|
| NORMAL | |
| HIDE | : password input |
| YESNO | : Yes/No, Yes is default |
| NOYES | : Yes/No, No is default |

NOTE: ‹ prompt› must be surrounded by double quotes, and then single quotes, so that AREXX will actually send the quotes to CNet.

PUTSCRATCH {n}
Takes an argument of the same form as GETSCRATCH (note, however, that you should not use the 7 digit format with put/get scratch, only the numbers 1-41.

PUTUSER {n}
The opposite of GETUSER. Use SETOBJECT before using PUTUSER.

QUERY {s}
Input a line, with a prompt of {s}. Up to 80 characters may be entered.

RECEIVE
Input a line, without a prompt. Up to 80 characters may be entered.

RESETMODEM
Send the modem's initialization commands.

SAVEEDITOR {s}
Write the contents of the editor temp buffer to the file specified by {s}. If the file {s} already exists, it will be overwritten. RESULT will carry a "1" if everything was written OK, "0" otherwise.

SAVESCRATCH {n}
{n} is the account number previously used in a LOADSCRATCH command. If {n} is a NEGATIVE ID number, the user data will not actually be SAVED, only the LOCK removed. This is useful for programs which just read account information, and do not wish to add the overhead of saving an account to disk for no reason.

SCREENOUT {s}
Display {s} only to the screen, not the modem.

SELECTFILE {path}
Add the file given by {path} to the user's select-list

SEND {arg}
Sends the given string without translation of any kind. (no MCI, etc).

SENDFILE {s}
Read the file given by the path {s}.

SENDMODEM {s}

Send the string given by {s} to the modem ONLY, not to the screen.

SENDSTRING {s}
Print the text given by {s}. No carriage return is printed afterward.

SETMAILSUBJ {s}
This command should be performed before EACH WRITEMAIL in order to set the SUBJECT of the mail about to be sent.

SETMINFREE {s}
This command tells CNet when to STOP an upload-in-progress due to critical disk space. {s} should be the lowest free-BYTES on the hard drive.

SETNODELOCATION {arg}
Same as CNet's NEW command CHANGEWHERE.

SETOBJECT {s}
Use this command before each PUTUSER or PUTSCRATCH to specify the data you wish to write into the user's account.

SETPROTOCOL {s}
This command should be used before an XUP or XDN. {s} should be a SINGLE character, matching a character in BBSPROTO to designate a specific protocol. If you wish to allow the user to choose his own protocol, send {s} as a NULL string.

SHUTDOWN
Does nothing. Included for compatibility.

SPAWN {s}
Run the AREXX command given by {s}. Usually this is the LAST command in an AREXX pfile, so that control may be transferred to another pfile.

SYSOPLOG {arg}
Samge as LOGENTRY.

TRANSMIT {s}
Print the text given by {s}, and then a carriage return. MCI is translated here.

VERSION
Returns the current CNet version.

WRITEMAIL {s}
Write the contents of the editor temp buffer to the user's mailbox specified by {s}. {s} must be a valid account number. RESULT will carry a "1" if everything was sent OK, "0" otherwise. Use SETMAILSUBJ before WRITEMAIL.

XDN {s}
This command has been CHANGED so that it now performs an XPR file download of the specified file {s}. The command SETPROTOCOL must be used first.

XUP {s}
This command has also changed with XDOWN in the same way. If the transfer is a batch protocol, it is OK to simply pass the PATH here.

## How to form GetUser and PutUser arguments

GETUSER and PUTUSER are extremely powerful commands that allow you to read or set just about ANY of the "variable" data that CNet is using to run the BBS, and the user data information for any users currently online. This power allows experienced programmers the ability to create a limitless number of games and utilities to add-on to CNet. However, the PUTUSER function (to CHANGE data) is not a toy to play with. Using it without fully understanding how it works can lead to corrupted user records, lost data, and major crashes of the BBS or even the entire computer.

There are two ways to use the GETUSER function. The first way allows you to access ANY variable in the MainPort (common to all ports) or PortUser (for the current port) structures. The argument required is seven digits long, in the format XT#####, where X is 1 for the PortData structure, or 2 for the MainPort structure. T is the variable

type, 1 for BYTE, 2 for SHORT, 3 for CHAR *, 4 for LONG, 5 for Struct IsDate *, and 6 for CHAR ** (a pointer to a character pointer). The ##### is a five digit OFFSET into one of the two available structures. For definitions of the structures, see the file "cnet.h" in the programming directory on the CNet distribution disks.

## Table of GETUSER values

There are 99 pre-defined GETUSER values. To access one of these, you simply need to use the number from the following table as an argument.

| | |
|---|---|
| 1 | Handle |
| 2 | Password |
| 3 | Real name |
| 4 | City and state |
| 5 | Zip code |
| 6 | Address |
| 7 | Time left |
| 8 | Sysop comment |
| 9 | Voice phone |
| 10 | Data phone |
| 11 | Last call date amd time |
| 12 | Today's date and time |
| 13 | # of mail |
| 14 | # of new mail |
| 15 | Access group |
| 16 | Access group name |
| 17 | Maintenance (0==No) |
| 18 | Number of minutes onlie today |
| 19 | Screen clear code (always 12) |
| 20 | Balance |
| 21 | Door points |
| 22 | User's total calls |
| 23 | Port number |
| 24 | Current CPS |
| 25 | File upload ratio 1 |
| 26 | Byte upload ratio 1 |
| 27 | Term width |
| 28 | Term type |
| 29 | Default protocol |
| 30 | Uploaded Kbytes |
| 31 | Uploaded files |
| 32 | Downloaded Kbytes |

33 Downloaded files
34 File credits
35 Byte credits
36 Public messages
37 Private messages
38 User's WHO banner
39 UUCP id
40 Account number
41 ID (serial) number
42 Day uploaded bytes
43 Day downloaded bytes
44 Day uploaded files
45 Day downloaded files
46 Morning, afternoon, or evening
47 System caller number
48 Subboard number
49 Subboard title
50 Last user's name
51 Post access? (0/1)
52 Respond access?
53 Download access?
54 Upload access?
55 Help level
56 Country
57 Logon time
58 Birth date
59 Organization
60 MCI numeric registers (10 of them)
70 MCI character registers (5 of them)
75 by0, current message primary author name
76 by1, current message secondary author name
77 to0, current message primary addressee name
78 to1, current message secondary addressee name
79 date0, current message date
80 organ, current message organization
81 br, current item number
82 rs, current response number
83 ihead0.Responses, number of responses
84 ihead0.Size, size of file
85 Item0.Downloads, number of downloads
86 Item0.BestCPS, best CPS rate
87 title0, current item title
88 Fancy size, size including "K", "M" etc.
89 plus, part of the Scan output

| | | |
|---|---|---|
| 90 | star, part of the Scan output | |
| 91 | Fancy core, filename without extension | |
| 92 | Fancy suffix, filename extension | |
| 93 | Fancy date, chopped date for Scan output | |
| 94 | Fancy time, chopped time for Scan output | |
| 95 | Total system calls | myp-› Nums[3] |
| 96 | Total uploads | myp-› SAM[3][8] |
| 97 | Total upload K | myp-› SAM[3][9] |
| 98 | Total downloads | myp-› SAM[3][10] |
| 99 | Total download K | myp-› SAM[3][11] |

# CHAPTER 12 - Inter-user communication

This chapter deals with issues relating to communication between users simultaneously on-line to your BBS. It also deals with BBS features which involve inter-port communication. Even if you run only one "dial-in" port, the majority of the features outlined in this chapter will apply to the interaction between dial-in and "local" ports as well.

The most important command to know is "WHO." This command displays a table of information to let you know the status of every port on the system. Each line consists of a port number, the name of the user currently using that port, his logon time, his baud rate, his city, and what he is currently doing on the BBS. If the user has specified a "banner" (by using the EP command), the banner is displayed below the user's other information. New users have a default banner of "Be nice to me, I'm new." You may change the default new user banner by editing the BBSTEXT file (explained in another chapter). If a port is waiting for a call, the user will be shown as "(no one)." By default, these "idle" ports are shown on the WHO display. An option exists from the CONFIG program's "options..." screen to inhibit the display of "idle" ports. The user may specify a range of ports to be displayed by the WHO command.

Using the "hiding" feature (described below), it is possible to be on-line to the BBS, but have the port "appear" idle. Users may not hide from users who have the "conference control" privilege flag (usually only the sysops have this flag).

## On-line messages (OLM's)

On-line messages (or OLM's for short) are a quick way to convey messages to users on other ports. The command for sending an OLM is "OLM." You may specify the port number or user name directly following the OLM command. Specifying a user name of "*" will cause CNet to "broadcast" the OLM to ALL ports. When sending an OLM by handle, it is only necessary to type enough letters for CNet to find an exclusive match with the handle of one user currently online. OLM's may consist of up to 380

characters. Once you have begun to write an OLM, you may BACKSPACE to the beginning of the input buffer to CANCEL the OLM. Pressing RETURN will immediately send the OLM.

You will be notified if your OLM was successfully sent or not. It is possible that the user to whom you are writing an OLM will logoff while you are composing your message. In the case of a "broadcasted" OLM, you will told the exact number of ports which received your message.

The ability to send OLM's is controlled by a user privilege flag. A user may not send an OLM to another user if that other user does not have the ability to reply (that is, he does not have the "send OLM" privilege flag).

Incoming OLM's are primarily only displayed at command prompts. Incoming OLM's are "buffered" until you reach a command prompt. OLM's will not interrupt the visual editor, and will not interrupt you in the middle of typing a command.

After each OLM is displayed, several options are given. You can use the "Again" command to re-read the OLM. The "Reply" command will send an OLM in reply. The "Save" command will write the OLM to your mail box for later reference. In addition, many other system commands are available from this prompt which "default" to the sender of the OLM that you are reading. For example, the "Mail," "FInger," and "CC" commands automatically use the name of the OLM sender as their arguments. For a complete list of commands, enter "?" at the OLM options prompt. Prompts between OLM's do NOT appear when you are in the join teleconference.

When replying to a broadcast message, you are given the option of broadcasting your reply, or sending it only to the sender of the OLM.

## Hiding and muffling

You are "hidden" from other users when they are unable to see that you are on-line when they use the WHO or OLM commands. You "muffle" other users when you only prevent them from sending OLM's to you--they are still

able to see that you are on-line by using the WHO command. Use the "HIde" command to hide from users, or to again become "visible" to users. Use the "MUffle" command to muffle users, or to again make them "audible." Each command may take a port number or user name as an argument. Use "*" to specify ALL ports.

Using the "*" argument activates an internal logic toggle. When initially you are visible to all ports, you may use the HIDE command to hide from specific ports. When users on those ports logoff, you will again become visible to those ports. When initially you are hidden from all ports, or you use the "HIDE *" command to make yourself hidden from all ports, you may use the HIDE command to make yourself visible to specific ports. When users on those ports logoff, you will once again become hidden to those ports. This works in a similar manner for the muffle command.

Users may not hide or muffle users who have the "conference control" privilege flag enabled (usually just the sysops have this privilege). Users with "conference control" may not hide or muffle from each other.

Each user has the option "auto hide & muffle" from the EP command to set the hide and muffle flags automatically each time they logon. This variable may take one of the following values:

**Off:** Logon normally without affecting the hide and muffle flags.

**Your own port:**
If you often use the join teleconference, this setting will prevent your input into the conference from being "echoed" back to you. It can be annoying to see twice everything you type.

**Other ports:**
Hide and muffle ALL ports except your own. This provides for a "stealth" logon--users will not know that you have even logged on. It is equivalent to using "HIDE *" and then HIDE again to become visible to your own port.

**All ports:**
A combination of the previous two values.

Letters appear in the WHO display next to the port numbers to remind you of how your hide and muffle flags are set. Seeing the lower-case "h" shows that you are hidden from the port. Seeing the lower-case "m" shows that you are muffling the port. Seeing the upper-case "H" shows that the user is attempting to hide from you, but is unable to (because you have the "conference control" privilege flag). Seeing the upper-case "M" shows that the user is attempting to muffle you (he may or may not be able to muffle you depending on your access). Seeing a "+" shows that the user has the "conference control" privilege flag, and is incapable of being hidden from or muffled.

## User logon/logoff monitor

By activating the "user monitor" feature, you can have CNet send you an OLM each time that someone logs on or logs off of specific ports (or all ports). Use the "UM" command to activate the user monitor. You may give the UM command a specific port number as an argument, or "*" to specify ALL ports. Using "*" will cause CNet to toggle between the monitoring and un-monitoring of ALL ports, regardless of which ports are currently being monitoring.

The "user monitor" status of a port does not "toggle" in any way when users log and or log off. Only the UM command works to change the user monitor flags.

Users who log on using the "auto hide & muffle" field set to "all ports" or "other ports" will not be seen by other users who are on-line and using the "user monitor" feature. Users with the "conference control" privilege flag, however, may always see other users log on and log off.

## Inter-user chat

Two users may enter a private "chat mode" where they may interactively type to one another in real-time. In order for this chat mode connection to be made, one user must "request" the chat, and other must "accept" it. Both requesting and accepting of inter-user chat are done with the "CC" command. You can specify a port number or user name after the "CC" command, or specify "*" to request a chat with ANY user.

There is a way to FORCE a chat. If a user with the "conference control" privilege flag adds "!" to the end of a "CC" command (like CC2!), CNet will attempt to enter inter-user chat immediately--no "acceptance" of the chat will be required.

To get out of inter-user chat mode, either user can use control-X at any time. Chat mode also exits if either user hangs up or runs out of time.

BBS commands can be executed while in chat mode. Pressing "/" at the beginning of any line will momentarily put the other user on "hold." After the "/," you may enter any of the "global" BBS commands (like WHO, Mail, or OLM). The other user will not be able to see what you are doing. Text that the other user types while you are away will be buffered, and displayed to you all at once when you return to chat mode.

Chat mode uses three colors. One is used by the chat "requester," one is used by the chat "acceptor," and one is used by the sysop if he types into either of the user's port screens. These three colors are defined by the MCI commands found on lines 936, 937, and 938 of the BBSTEXT file(s).

The port screen's pull-down menu "chat mode" option is actually a specialized version of inter-user chat. One difference is that the user may not use control-X to cancel the chat. Only the sysop can exit sysop chat mode, by using the pull-down menu a second time. Another difference is that the user's time remaining is "suspended"--he does not lose any of his time allotted for the call or for the day while in sysop chat mode.

## The "join" teleconference

CNet's "join" teleconference might be called a "CB simulator," "multi-user chat" or "party conference" on other systems. It allows users to enter one of possibly several "rooms" or "channels" where they may all type simultaneously and have their conversation broadcast to all other users in the room. A user's input is not broadcast until he presses the ENTER key. If a user has the

"conference" privilege flag, he may use the "Join" command from the main prompt to enter the teleconference.

When a user enters a room, all users currently in that room are notified of the new arrival. For users other than system operators, the "hide" settings are ignored in the conference room--all users will be able to "see" all other users with the "/L" command. The user entering the room is given a quick summary of who is already in the room. To enter text into the conference, just begin typing.

## The Conference Room Commands

All commands begin with the "/" key. The following commands are available in the conference:

**/?**: a brief summary of all conference room commands.

**/COntrol**: may be used by a system operator to "take control" of a room. Control is revoked from the user currently "in control."

**/Invite**: allow specific users into a room. OLM's are sent to users notifying them of your invitation. If the room's "doors" are closed, a user must have an invitation to enter the room.

**/List**: display a list of users and which rooms they are in. Users in "control" of rooms are shown with a "#".

**/NAme**: toggle the use of your real name. If you enter a real-name room, and you have selected (using the EU command) to keep your real name private, only your handle will be used. This command will ALLOW the use of your real name in the room.

**/PAss N**: pass control of this room to port N, as if the user on port N was the one to create the room.

**/PErma**: toggle the "permanent" status of the room. "Permanent" rooms are not destroyed when empty. Normal rooms are removed from memory and their configurations lost when the last user leaves. If you plan to /SAve a room, you should make it permanent first.

**/Quit**: quit to the Main prompt.

**/Room**: toggle between "the lobby" (conference room 0, if there is one) and your "private" room (a newly created room in which you have control). If you create a private room and then leave it, you will resume contol once you return. If you do not plan to return, you may use the "/PAss" command to give control to another user.

**/Room N**: switch to a specific room by number. Room names and numbers are shown by the "/List" command.

**/SAve**: save this room's configuration so that it will be automatically recreated if ever the BBS is downed and re-booted. The room should be made "permanent" first. Saved configurations are not used if a non-permanent room is vacated and then re-entered.

**/UNinvite**: remove users from the room. This command is only effective if the "doors" to the conference room are closed.

**/Verify**: in a join-link room (where the conference areas of more than one BBS system are "linked" together), request a roster of all link id's and ports. Use this command if you unsure of the integrity of the /List display.

**/X**: edit your conference preferences. Users' conference preferences are only saved if the CONFIG "options..." field "keep conference prefs" is enabled. Otherwise, they are lost upon return to the Main prompt. Conference preferences are described later in this section.

**/XR**: edit the room's preferences. These are described later in this section.

**-**: whisper to a user. You must enter the destination's handle or port number. Text you enter here will be visible only to the specified addressee.

**+**: shout to a user. You must enter the destination's handle or port number. Text you enter here will be visible to ALL users, but will contain a message showing it was addressed to a specific person.

=: make a noise. A noise is like a parenthetical interjection into the conversation. Some noises can be "addressed" to specific users. Some noises act on an "object" that you specify. By pressing ENTER at the noise prompt, you may obtain instructions, a list of noises, or a list of "prototypes" (the actual text that is "filled-in" with your information to make complete sentences). After entering a valid noise name, CNet will prompt you (if necessary) for required or optional arguments.

When a noise is made, there are actually three different versions of the text created. One for the author, one for the addressee, and one for everyone else. Using simple English rules, CNet will use the first, second, or third person of pronouns and verbs as necessary. The systext:noises file contains many "macros" preceeded by the "‘" character. CNet replaces these with the appropriate text as necessary. For example, "‘0" is replaced with "you" for the text shown to you, and is replaced with your name when shown to everyone else.

By making modifications to BBSTEXT and the systext:noises file, it may be possible, but challenging, to convert the noises to another language.

## User Conference Preferences

Each user may set the following conference room preferences for themselves using the /X command:

**alias:** a name other than your real name or handle which will be used in rooms configured to use aliases. If you do not specify an alias, your handle will be used in these rooms.

**default room (lobby or private):** if set to lobby, CNet will first attempt to enter room 0 when you enter the join teleconference. If set to private, CNet will first attempt to create a new room in which you have control.

**private room topic:** the default discussion topic whenever you create your private room.

**display action commands (yes or no):** set this to No if you are annoyed by the constant display of "noises." Default is Yes.

**entry message:** text that will be shown to other users when you enter a room. Be sure to include "‘0" somewhere in the line. If you do not, CNet will automatically print your name at the end of the message.

**exit message:** text that will be shown to other users when you leave a room. Be sure to include "‘0" somewhere in the line. If you do not, CNet will automatically print your name at the end of the message.

**personal noise:** a custom noise that can be used by entering "p" at the noise prompt (the = command). You MUST include "‘0" in your private noise in order for it to be used. The other noise macros ("‘1" etc.) are optional.

## Conference Room Preferences

Users in control of a room (creators and users with the conference control privilege flag) may use the /XR command to set the following room preferences:

**topic:** the room's topic, as seen from the "/L" display.

**user names (handle, names, or aliases):** control which name will be used in the room. If a user's real name is set to be private, his handle will be used, unless he uses the "/NAme" command. If the user has not specified an alias, his handle will be used.

**gender (either, male, female):** allows you to create rooms in which only one gender may enter.

**youngest/oldest age:** allows you to create rooms into which only persons of certain ages may enter.

**access:** a RANGE of access groups which may enter a room. By default, this is ALL groups, 0-31.

**doors (open or closed):** when the doors are closed, only users with invitations (the /IN command) may enter the room. When the doors are open, ALL users may enter.

**capture file (open or closed):** when open, CNet will prompt you for a filename. All text displayed will be saved to this file. MCI command sequences will automatically be stripped.

**show on /List (yes or no):** if set to No, this room will not appear when users use the "/L" command, unless they are already in the room.

**SIG/Public Room (yes or no):** if set to No, the creator's name is displayed as part of the room's title on the "/L" display and when entering the room. If set to Yes, there is no official "owner" of the room.

**chaos (no names) (yes or no):** if set to Yes, names and port numbers will NOT be displayed before text. This makes it impossible to tell who said what.

**max room capacity:** set this if you wish to limit the number of users who may enter the room. "0" will allow an unlimited number of users.

**lurk timeout (min):** set this if you wish to prevent users from entering the conference room and just watching without saying anything (AKA "lurking"). CNet's "idle timer" alone will not catch these users, because there IS activity (text being displayed on the screen).

**noise set #:** select which "noises" file to use for this room. Noise set 0 is the file "systext:noises." Noise set 1 is the optional file "systext:noises1." Noise set 2 is the file "systext:noises2," etc. If you add to or change a noise file, you must use the control panel's menu option "text/menu reload" to re-load the noises files.

**JoinLink channel:** if you are using join-link, set this number to 1 or greater to correspond to the "channel" this room should listen to. See the discussion of join-link in a section later in this chapter.

**entry message:** the text that will be displayed to users as they enter the room.

**exit message:** the text that will be displayed to users as they exit the room.

## Port monitoring

From the console, it is easy to view or monitor a user's session--just open the port screen. With the proper privilege flag ("port monitor"), users can use the "MOnitor" command to have any other port's output simultaneously displayed on their REMOTE terminal screen. This allows users to remotely play "Big Brother." By answering Yes to a prompt, it is also possible to activate the monitoring user's keyboard for input into the port being monitored. This privilege flag should be reserved for system operators and other extremely trusted individuals.

It is currently only possible to use the port monitor between two remote ports. A local logon can not be monitored. A remote user can not be monitored from the console by using the "MOnitor" command.

Although unrestricted, it is wise to be using a baud rate equal to or greater than that of the port you are monitoring. Otherwise, the user being monitored will notice a "lag" in text output.

To exit from port monitor, you must press control-Z twice.

## Remote terminal system

Have you ever encountered the situation where it is local for you in location "B" to call a location "C", and local for a person in location "A" to call you in location "B" but it is not local for "A" to call "C"? For this and other reasons of convenience, CNet has the ability to allow a user on your BBS to enter "terminal mode" with one of your unused ports. Users with the "use termlink" privilege flag set to "full" can use the "TERM" command from the Main prompt with a port number as an argument to enter terminal mode with that specific port. It is also possible to limit the "TERM" command's ability to the dialing of specific numbers by setting the user's "use termlink" privilege flag to "limited."

When the user's termlink privilege flag is set to "limited," CNet will read the file "sysdata:termlink" to determine which numbers may be dialed. The user is then prompted

with a list of these numbers (ones he has access to) and asked to select one. Each line of this file must have the general format of:

dial baud bits ports access rate name

dial: the complete string to be sent to the modem to make the connection. This INCLUDES ATD or ATDT. No spaces.
baud: the baud rate to dial with.
bits: the data word size (7 or 8).
ports: a range of port numbers which may be used to make this call. Select only ports capable of the selected baud rate.
access: a range of access groups. A user must be a member of one of these groups in order to be prompted with this item.
rate: a number 0 to 3. 0 means no charge. The numbers 1 to 3 correspond to the three accounting system values.
name: the name of the system being called. Spaces ARE allowed here.

for example:

ATDT13132552466 19200 8 1-2 0-31 0 Future World

## Join-link

Two or more multi-line CNet BBSs may "link" their join teleconference areas. The "on-line network" that is created allows users on all linked systems to interact through the join teleconference as if all users were connected to one (larger) BBS. Users may address their typed comments to other users on any of the linked systems.

To establish a join-link network, each BBS to be in the network must select a unique "link id #". This number must be 1 or greater, and numbers should be used in sequence. Each sysop must use the CONFIG program's "limits..." screen to set the "highest join-link network id#" field to reflect the highest join-link "link id#" in use in the network. Each sysop must also use the CONFIG program's "defaults..." screen to set the "default joinlink id#" field to reflect the unique "link id#" chosen for his BBS.

A network topology must be chosen. The BBSs should be logically arranged into a linear pattern or a "star" pattern. The network should form no rings or loops. In the case of only two BBSs, the topology is trivial but linear nonetheless.

Although automatic methods will be discussed, the simplest way to establish the network is manually. Each sysop must choose a port (2 ports if a linear network longer than 2, or 3 ports if a branch in a star network) to use for join-link. Enter terminal mode on that port or those ports. One sysop must call the other using ATD commands. Once the connection is established, each sysop must use the terminal program's pull down menu option "JoinLink." The port's screen may then be closed if desired.

Up to 23 conference rooms can be connected through the join-link network. Sysops must use the join "/XR" command to set the "channel" number for rooms to be used with join-link. A channel number of "0" represents a "local" (non-network) room. When rooms are "tuned" to the same channel number across the network, text entered into one will appear in all of the others.

The "/L" command will be expanded to include groupings of users by link-id (and BBS name). Text will appear with the link-id and port number before the name, like "1:0.Big Brother" for Big Brother on link-id #1, port 0. Noises and whispers may be addressed to persons on other link-id's by specifying the link-id and a colon before the port number or handle. If you specify only a handle, CNet will autmatically search all link-id's for a match. Here are some examples:

| | |
|---|---|
| 0 | Port 0 on your BBS |
| 2:0 | Port 0 on the link-id #2 BBS |
| Sammy | A user called Sammy on any BBS |
| 4:Sammy | A user called Sammy on the link-id #4 BBS |

A command "/VERIFY" has been included to force a recount of the network connections. A conference controller should use this command if he suspects that the "/L" display is inaccurate.

Sysops do not have to be present to connect the join-link network. Using BBS events, connections can be made and broken automatically.

The CONFIG "default..." screen contains a "joinlink password" field which must be set to a password mutually agreed upon between the two systems about to be connected. Insure that there are no leading or trailing spaces in the password.

A new BBS event command "JoinLink" takes one of the following arguments:

0: Do not accept incoming JoinLink calls. This can also be used by either of the connected systems to terminate an existing JoinLink connection.

1: DO accept incoming JoinLink calls, as well as normal BBS calls.

2: Accept ONLY JoinLink calls.

ATD{phone#} {password}:
Dial the phone number specified, and supply the password specified in order to attempt a JoinLink connection. The interations and interval event settings will come in REAL handy to perform auto-redial here!

Say two systems want to connect from 9pm until 10pm. Here are the events that will make this happen:

Abbreviations have been used for the event types. An "OFFLINE" event type is "Immediate--force system idle." An "IMMEDIA" event type is "Immediate--system idle or not." A "HOLD" event type is "Only if system is idle."

**For the calling system:**

| Type | Command | Arguments | Time | Val | Itr | Int |
|---|---|---|---|---|---|---|
| OFFLINE | Off-Line | 1 | 2100 | 15 | 1 | 0 |
| HOLD | JoinLink | ATDT{ph#}{pw} | 2100 | 1 | 15 | 1 |
| IMMEDIA | Off-Line | 0 | 2115 | 2345 | 1 | 0 |
| IMMEDIA | JoinLink | 0 | 2200 | 1 | 1 | 0 |

The system will attempt to dial once each minute for 15 minutes or until there is a connection. If there is no connection, the system will return to normal operation at 9:15p. At 10:00p, the join-link connection (if established) will be broken.

For the system being called:

| Type | Command | Arguments | Time | Valid | Iter | Int |
|---|---|---|---|---|---|---|
| OFFLINE | JoinLink | 2 | 2100 | 15 | 1 | 0 |
| IMMEDIA | JoinLink | 1 | 2115 | 45 | 1 | 0 |
| IMMEDIA | JoinLink | 0 | 2200 | 2300 | 1 | 0 |

This system will reserve itself for ONLY incoming join-link calls during the first 15 minutes. For the remainder of the hour, other calls will also be accepted. At the end of the hour, join-link will be terminated altogether.

If you want this connection to be made on a weekly schedule, set the range of days appropriately. If you want this connection to be made on a specific date, set the month and date.

Notes:

# CHAPTER 13 - Networking: FidoNet and UUCP

FidoNet was born in 1984, the work of Tom Jennings using an IBM PC. By 1985, 150 systems had FidoNet "addresses"--consisting of net and node numbers. Today (1993), almost 20,000 nodes are members of the FidoNet network. Zone numbers were added to separate regions of the world. Point numbers were added to allow "end-user" input into the FidoNet (like using an off-line mailer). FidoNet addresses now consist of four parts, ZONE:NET/NODE.POINT (1:2410/215.0 for example). The "1" designates North America, the "2410" a region in Michigan, and the "215" Future World itself. The "0" after the period tells you that Future World is a "node"--a fully privileged member of the FidoNet. A system with a point number other than 0 is a "point"--completely reliant upon the corresponding "node" (its "boss") for its FidoNet interaction.

FidoNet consists of private mail (netmail) and public conferences (echomail). Echomail may be "local" to a particular region, or distributed around the globe. Programs and other files are also transported via FidoNet.

Sysops of FidoNet connected systems are individuals, who run their BBSs as a hobby. Usually, they pay for their high phone bills out of their own pockets, but sometimes they ask for donations from users. FidoNet coordinators do not receive rewards or payments for their work or expenses.

## Connecting your computer to the FidoNet network

If you are just becoming familiar with FidoNet, you will probably want to test the waters as a "point" first. Your first step, then, will be finding someone in your area running a FidoNet node--preferably someone a local call away. This person must agree to make you a point from his node.

You will need a separate piece of software called a "mailer". The mailer is used to transfer mail bundles and other files to and from other systems. It schedules calls, and knows all of the FidoNet "protocols" necessary to get the job done. If you are a point, you will only be connecting with your boss. The mailer that is

recommended for use with CNet is "TrapDoor." TrapDoor is available as a download from Future World and other BBSs. A small registration fee may be required to use TrapDoor to its fullest extent. The program originates from Austria, although there are North American registration sites.

Configuration of TrapDoor is not "simple" by any means. You must thoroughly read its documentation and understand the terminology that is used (the documentation likely contains a "glossary" of terms). If your boss node uses an Amiga, chances are that he also uses TrapDoor and can offer some advice. And, if you need to, someone on Future World has probably run into the same problem that you have, and wouldn't mind answering a message in the "help me" or "FidoNet discussion" subboards. Example TrapDoor configuration files can be found on the CNet distribution disks.

With TrapDoor configured and making calls to your boss, you will have created an "inbound", "outbound" and "nodelist" directories on your hard drive. The inbound directory will contain everything that TrapDoor receives from your boss or other nodes. The outbound directory holds everything waiting to be sent to your boss or other nodes by TrapDoor. The nodelist directory contains the FidoNet nodelist--a list of all systems connected to the FidoNet network. The nodelist is used to verify and look-up email addresses. Points are never listed in the nodelist.

If you will be using your FidoNet connection with CNet, you are ready to move on the next section, connecting your CNet BBS to the FidoNet network. CNet does all of the work with the inbound and outbound packets for you. If you will be using your FidoNet connection without CNet, you will need a host of other FidoNet tools. You will need an import/exporter (sometimes called a scanner/tosser/packer) like TrapToss, and a message editor like Chameleon. Use of these other third party softwares is beyond the scope of this discussion.

You need to fully understand FidoNet, and have a good working knowledge and experience with it before considering becoming a node. Some users will make this

their first giant leap. Others will find the "point" route the easiest way to get up-to-speed.

## Connecting your CNet BBS to the FidoNet network

There is a great deal of configuration to be done before you are ready to operate CNet with FidoNet. The CONFIG "FidoNet..." screens must be filled in. See the CONFIG chapter for details on this procedure. For the network that you add, you must also edit the "Areas..." "Export-to..." and "Mail routing..." screens. The "areas" are the echomail subboards which you will send and receive from the network. The "export-to's" are the addresses of the other systems with whom you communicate echomail. If you are a point, the only system listed here would be your boss. .If you are a node, you must list your points and the other systems you send to and receive from. The "mail routing" is used to tell CNet where to send email (netmail). If you are a point, you will be sending all mail to your boss. That is, from "*:*/*.*" to your boss address will be your only entry. You should re-boot CNet in order to have it recognize the new network.

Sending netmail through FidoNet requires that you have the traplist.library file in your LIBS: directory, and have compiled the nodelist in your nodelist directory. These procedures are described in the mail chapter. Without a compiled nodelist, you will be completely unable to send netmail. CNet checks and verifies the destination netmail address. A privilege flag is also required. Once mail is posted, it is placed into the outbound directory, waiting to be sent by TrapDoor (or some other mailer). At this point, it can not be edited or killed (through normal BBS commands).

To configure a subboard to receive a FidoNet echo, use the EL command to edit some of the subboard fields. The "unique dirname" must be set to the network "tagname" for the echo. This is the name listed in the "areas..." screen "areas" window. You must set the "network affiliation" to read the name of the FidoNet domain. If you are running only one FidoNet style network, this will just be "FidoNet." You may optionally set the "origin/distribution" field to be an origin line for the subboard. If this field is left blank,

CNet will use the field found on the CONFIG "FidoNet..." screen.

It is not necessary to attach every FidoNet echo that your system tosses. If a FidoNet echo is not attached to a CNet subboard, the FidoNet echo will still be "tossed" to the nodes in your "export-to" list. This allows the "pass through" of echoes.

You need to create a subboard for "bad" messages. This subboard should be given the unique dirname of "BAD_MSGS." You must set the Network Affiliation to one of your FidoNet networks; it does not matter which one. Without a bad messages subboard, all "bad" messages will be discarded.

It is currently your responsibility to make sure that there is enough room in the subboard for newly imported items. New items may be "lost" if the subboard too full to accept new posts. FidoNet messages with the same titles as existing posts are never lost--they are attached to existing posts as responses.

When users post or respond in FidoNet subboards, ".cnet" files are created or appended to in the outbound directory. These files are actually packed when Toss runs (described next). once a FidoNet message has been posted, it is not possible to edit or kill it (using normal BBS commands).

The CNet program which actually does the FidoNet magic is called "Toss". It is located in the CNET: directory, and is a Shell program. You may also run Toss from a BBSEVENT. Toss takes one (optional) argument, the word "verbosity" a space, and then a number from 0 to 3. These levels perform the following logging:

0: Minimal logging (default)
1: Give a summary of toss activity by area.
2: Detail each netmail that is imported or routed.
3: Detail EVERY message that is scanned.

All of Toss's output is kept in a file "mail:toss.log." It is your responsibility to check and periodically delete this file. Toss works in five distinct cycles:

1. Unpack. Find all packed message files in the inbound directory which need to be unpacked, and do so.
2. Locate all .PKT files in the inbound directory.
3. For each .PKT file, read the messages it contains. If the message is going to be exported to an export-to node, add the message to the export-to's buffer. If the message is to be imported locally, remember its position.
4. Import all messages into local subboards. Doing this all at once speeds up the operation of Toss, so that it only must enter any given subboard once.
5. Pack all ".cnet" files in the outbound directory, and add them to the ".flo" files. NOTE that the messages were added to the outbound directory at the time of posted, so do NOT have to be re-scanned for in this step.

Toss has a number of configuration options. You can edit these options from the CONFIG "tosser..." screen. For more information, see the CONFIG chapter. Toss relies on the CONFIG "archivers..." information in order to unpack incoming packets. Insure that the "extract" information is accurate for the most common FidoNet packed message formats, like ZIP, ARC, and LHA.

## The AreaFix utility

CNet's tosser comes complete with a built-in AreaFix utility. AreaFix allows points and nodes (all of the systems listed on the "export-to" screen) to control which of the "areas" they will receive. AreaFix can save you from having to do this maintenance yourself manually.

In order to use AreaFix, the system must know its AreaFix password. Each export-to system can be given a different AreaFix password that you specify on the "export-to" screen. In order to "add" an area, the system must have an "access level" greater than or equal to the access level of the area. The system must also have the access flags that the subboard requires. Access level and access flag fields appear on both the "areas" and "export-to" screens.

To use AreaFix, a message must arrive addressed to "AreaFix." The subject of the message must be the correct

AreaFix password. The body of the message consists of area tagnames, one per line. If the tagname appears alone on the line, or has a "+" before it, CNet will attempt to add the area to the list of areas that the system receives. If the tagname appears with a "-" before it, CNet will remove the area from the list of areas that the system receives.

CNet will always send netmail in "reply" to AreaFix messages, giving a list of which areas are accessible, with "+" beside the ones currently selected by the system.

## Connecting your BBS to FidoNet without using Toss

We can think of no compelling reasons for wanting to run a third-party tosser with CNet instead of CNet's Toss. However, if you are willing to give up Toss's speed and efficiency, there are a couple of programs included to allow you to import and export in FidoNet post-tosser "message" format.

Assuming you are using a tosser like TrapToss or Foozle, you will have subdirectories in your MAIL: directory with the names of the echomail area tagnames. These directories will contain files with names like "2.msg."

If you are not using CNet's Toss, you should NOT have any networks configured from the CONFIG "FidoNet..." screen. In the subboard EL screens, you should have the "path to part0/net/cd" set to the path where the ".msg" files are located. For a network echo with the tagname of "games," this would be "mail:games/." Do not forget the final "/."

Use the Shell program XFIDO to export messages from FidoNet subboards to the Mail: directories. After importing using TrapToss or Foozle, use the Shell program IFIDO to bring the new messages into the FidoNet subboards. Use CLEANFIDO to delete all files from the Mail: directories (to prevent them from being re-imported later).

## The Internet, UseNet and UUCP networks

Although sometimes incorrectly used interchangeably in the BBS world, the three words "Internet, UseNet, and UUCP" refer to very different network concepts. The

Internet is a loose amalgam of networks (a web, or network of networks) reaching millions of people around the globe, with humble beginnings as the U.S. government experimental network "ARPANET". ARPANET has the distinction of being THE first computer network. Internet in 1993 consists of more than 8000 networks spanning the globe--45 countries, all seven continents. The Internet looks seamless to the end user.

The Internet is the largest and fastest growing network around. It has been estimated that between 5 and 10 million people use the Internet itself, and that upwards of 25 million people exchange messages between the Internet and all of the other interconnecting networks. One estimate, cited by Al Gore, says the traffic on the Internet grows 10 percent each month.

What is the Internet useful for? The Internet is used for the exchange of electronic mail, but it is much more than that. It can also be used for file transfer and remote login. The Internet is like one big "virtual library." You can find graphics, software, books, library catalogs, BBSs, sounds, journals, newsletters, newspapers, and magazines on the Internet. Most information is free, but some commercial information providers exist (like Lexis, Nexis, etc.). There are also ways to talk interactively one-on-one to another user also currently using the Internet. There's even something called Internet Relay Chat (IRC), similar to CNet's join teleconference. If you find yourself actually connected to the Internet, there are a vast number of "introductory" books available to show you around.

Who runs the Internet? As Christopher Davis, an Internet regular, put it, "Lots of people and nobody, and the National Science Foundation, kinda, sorta." The Internet can seem personal and institutional, organized and chaotic at the same time. The NSF initiated the NSFNET, the backbone in the United States that connects the mid-level networks (academic and research networks), which in turn connect universities and organizations. For obvious reasons, the NSF has a fair bit to say about the Internet in the United States, but it does NOT have control over the mid-level networks.

What is acceptable use of the Internet? NSFNET's Acceptable Use Policy states that transmission of "commercial" information or traffic is not allowed across the NSFNET backbone, whereas all information in support of academic and research activities is acceptable. Example of "commercial" traffic include purchase orders, invoices, and unsolicited advertisements.

How do you connect to the Internet? It is possible to connect your computer directly to the Internet through a commercial Internet provider such as UUNET Communications Services or Sprint's SprintLink. Many sysops who wish to only use the Internet for electronic mail and UseNet feeds choose to go other routes, however, namely the UUCP network.

Networks NOT part of the Internet are referred to as being "outernets." UUCP and UseNet (and even FidoNet) are outernets. Outernets connect to the Internet through "gateways."

UUCP, which stands for Unix to Unix Copy Program, is a worldwide network. It is a method for computers to talk to each other over phone lines. Versions of UUCP are available for most computer platforms. The UUCP network consists of thousands of computers all over the world that have agreed to communicate via phone lines. It is possible to send mail from one UUCP computer to any other by exactly specifying the computers which the mail must travel through (known as "source routing"). Many UUCP nodes (the ones you will probably encounter), however, "appear" to be part of the Internet itself, because they have registered with the Internet domain name system. These UUCP nodes actually have an agreement with an Internet-connected computer for the exchange of email. UseNet news also runs over the UUCP network, so that may also be available. UUCP does not allow for remote login or interactive file transfer, however. There is no central authority over the UUCP network, but there is a registry of computers (if their operators have remembered to submit the information).

The UUCP to Internet connection route is much less expensive than connecting to the Internet directly. Your expenses may consist only of long distance charges, if that.

However, it may require more initial work on your part. The most difficult part is finding someone to agree to "connect" with you. You may find someone in a local user group, the sysop of another BBS, or at a university. If you require more "hand-holding" however, commercial UUCP email providers such as UUNET and PSI would be more than happy to charge you for UUCP and UseNet access.

UseNet provides a service known as "network news." "News" as used here does not refer to current events from news wires, but to discussions, interest groups, and conferences. Thousands of discussion groups ("newsgroups") exist on topics ranging from cooking to sex, from rock collecting to politics. Collectively, they produce more than 35 megabytes of data EACH DAY. UseNet news can be transferred via and between the Internet and UUCP networks, allowing users of those networks to participate. UseNet is its OWN network, however, with no one organization in control. It is closely related to the Internet, but is NOT the Internet. Having access to one network does not mean access to both. Technically, the UseNet is considered a conferencing system, not an electronic mail network.

As already noted, UseNet is divided into newsgroups. Each newsgroup is made up of "articles." There are more than 2100 newsgroups on UseNet, but not every site or BBS receives all of these groups in its "feed." Why wouldn't a BBS want to receive ALL of the UseNet newsgroups? This would mean a HUGE amount of traffic, using a great deal of valuable disk space. The BBS may be paying for the TIME to download the UseNet feed, making it cost prohibitive. Most commonly, perhaps, is that most of the newsgroups will concern topics which the users of the BBS will not be interested in.

## Connecting your computer to the UUCP network

Once you have a source for your UUCP feed, you will need UUCP software to send and receive packets with your source. The UUCP software will handle the distribution of email to users, and the distribution of newsgroup articles into their individual directories. The software recommended for this duty is Matt Dillon's UUCP version 1.16 or better (a two disk set). This software is available

from the Fred Fish collection, and is available for download from Future World and other BBSs.

There is a great deal to know and to understand about running a UUCP site. Read the UUCP software documentation thoroughly. There are very knowledgeable users on Future World always willing to give another sysop a hand.

With UUCP configured and transferring files to and from your source, you should have two new "assign" commands in your startup files. UUMAIL: should point to a directory where private mail will be stored. Files within UUMAIL: have the names of the their recipients. UUNEWS: should point to a directory where UseNet newsgroups will be stored. Newsgroups have names like "alt.music.classic." The UUCP software uses a "hierarchical" directory structure. Each of the words you see separated by a period is a subdirectory. If you actually received a newsgroup by this name, you should see a subdirectory "alt" within UUNEWS:, a subdirectory "music" within "alt," and a subdirectory "classic" within "music." NOTE that UUMAIL: and UUNEWS: may consume considerable hard drive space.

If you will be using your UUCP connection exclusively with CNet, you are ready to move on to the next section, "Connecting your CNet BBS to the UUCP network." CNet uses the UUMAIL: and UUNEWS: directories as they are created and maintained by the UUCP software. If you will not be using your UUCP connection exclusively with CNet, you may need additional software to read the newsgroups and to enter your responses.

## Connecting your CNet BBS to the UUCP network

Using UUCP email through CNet is a simple procedure. To send or to receive email, a user must have a UUCP ID. He must use the EP command to set one. This will be the user's name on the UUCP network.

When mail arrives for the user, the UUCP software will create a file in the UUMAIL: directory whose filename is the same as the user's UUCP network name. CNet includes

a program which "imports" these mail files. The program "IUUMAIL" is found on the CNet distribution disks. It may be used from the Shell, or as a BBSEVENT (DOS command type). In general, you will want to run this program after completing a UUCP connection. CNet must be running in order for IUUMAIL to be used. After IUUMAIL imports mail, you must delete the files in UUMAIL: to prevent them from being imported again. "DELETE UUMAIL:#? ALL" will accomplish this. You may find it convenient to place the UUCP commands, the IUUMAIL command, and the DELETE command all in one "script" file.

Access for any individual user to send UUCP email is controlled by a privilege flag. See the mail chapter for more information. To actually send the mail, CNet calls the program "SendMail" with the appropriate arguments. SendMail is part of the UUCP software. The directory in which SendMail is located should be added to the DOS search path in your startup files (using a PATH command) so that CNet will be able to find it when necessary. Once email is sent, it cannot be killed or edited from the network (through normal BBS commands). The message is actually sent when you call the UUCP software routines to call your source.

When newsgroup articles arrive through the UUCP software, files with names consisting of numbers (like "1" "2" etc) will appear in the UUNEWS: subdirectories. For example, if you have a newsgroup "rec.arts.startrek" then files will appear in UUNEWS:rec/arts/startrek. To import these files into a CNet subboard, you have to configure a subboard to receive them, and you have to use the program "IUUNEWS" found on the CNet distribution disks.

To configure a UUCP subboard, use the EL command to edit several subboard fields. Set the "network affiliation" to read UUCP. Set the "path to part0/net/cd" field to the path to the newsgroup files. For the "rec.arts.startrek" example, this would be "UUNEWS:rec/arts/startrek/". Do not forget the last "/". Set the "origin/distribution" field to reflect the scope of the messages that will be posted on this subboard. For example, use "world" if you want things distributed throughout the world, or "na" for only North

America. Check with a knowledgeable UUCP node for other distribution codes.

The program "IUUNEWS" actually reads your UUNEWS: directory and imports the HEADERS of the articles into CNet format. Because the actual text of UseNet articles is not imported, you must keep the UUNEWS: directory intact (do not delete files after importing). When messages are deleted through the various CNet pathways (Kill, amaint, etc.), you have the option of deleting the corresponding files from the UUNEWS: directory. This option is available to you from the CONFIG "options..." screen. This method of keeping the UUNEWS: in place was adopted because the majority of people who run UUCP nodes prefer to also have the ability to read the newsgroups using third party software.

The subboard's EL screen contains a "UUCP high-water" field. This keeps track of the last (highest numbered) file that was found in and imported from the UUNEWS directory. Occasionally, this number will be reset, or the newgroup will be "renumbered." When this happens, you will have to reset the "UUCP high-water." You could also simply kill all of the messages on the subboard, and reset the "UUCP high-water" to 0. This will cause all messages to be re-imported when IUUNEWS is again run.

When users post messages or responses, CNet invokes the "PostNews" command with the appropriate arguments. PostNews is not included with CNet, but is a UUCP program which should be located in the same directory as SendMail. Once the message is sent, it may not be killed or edited from the network (through the means of normal BBS commands). The message actually "goes out" when you invoke the UUCP software routines to call your source.

# CHAPTER 14 - System maintenance

## Remote system operators

When you are granted the "system operator" privilege flag, you gain the ability to use all of the maintenance commands (next section). You also gain the ability to enter any subboard with full subboard operator rights. If an unauthorized person were to gain access to these abilities, your BBS could be in serious jeopardy. Fortunately, remote system operator privileges have secondary password protection. If you are connected to a local-mode (console) port, you have access to system maintenance privileges as soon as you logon. If you are connected remotely, however, you must first use the "ID" command before being given access to system maintenance privileges. For security, this applies to ALL users, even the main SysOp, user #1.

The remote system maintenance password and keyword are set using the shell "cnet:setpass" command. If you do not wish to use a remote system maintenance password, just press ENTER at the password and keyword prompts. Remote system operators are still required to use the ID command.

## Maintenance commands

Following are the maintenance commands available at all command prompts. If you do not have system maintenance privileges, CNet will report "unknown command."

AG: Activity Graph. Displays the System Activity Graph (SAG) screen. The SAG is an X-Y plot of system activity (utilization), from 0 to 100%. The X axis is broken in 72 20 minute periods, beginning at 12 midnight, and ending at 11:40pm. The Y axis is broken into a percentage scale. Local ports and local calls do not affect the SAG. The SAG is viewable from the CONTROL panel's "SysInfo" display. You may also "reset" the SAG from the SysInfo display.

AM: Activity Monitor. Displays the System Activity Monitor (SAM) screen. SAM consists of 15

different counters, monitored for 5 different time periods. Counters include the number of feedback, mail sent, mail sent to #1, posts, responses, gfiles read, pfiles launched, new users, upload files, upload K, download files, download K, minutes use, minutes idle, and charges (in cents, for the accounting system). The time periods include "last" (if the system is idle, the last caller), time since setup (re-boot), a definable time "period" (reset from the control panel), total (since file "bbs.sam" was created), and "current." Current is a special column--it shows the number of items online the system RIGHT NOW. You can glance at the current column to quickly see the number of feedbacks waiting to be read, the amount of mail you have, the number of new user applications waiting to be read, etc.

DD: Direct Download. Select files from any path or system directory to download.

DUmp: Change the "time remaining" for another port, or "dump" the user from the system entirely. You may specify a port number as an argument. You may cause the port to close after the user logs off.

EA: Edit (a user's) Account. Completely described in the user account and access group chapter.

EG: Edit (a default access) Group. Completely described in the user account and access group chapter.

LA: Log of Amaint. Everything that occurred during automaintenance--which users were killed, which files were killed, which files failed the integrity check. Option is given to re-start the log.

LC: Log of Calls. All activity for a given call is grouped together, even though several users may logged on at any one time. The first line contains the date, the port, and the modem connect string. This tells you the baud rate and modem protocol in use for the call. If a user successfully logs on, you will see a line with his handle, name, phone number, country,

and "phone verification" field. If the port supports caller ID, you will see a line with the phone number as reported by the modem, together with a list of account numbers whose data phone numbers match the caller ID phone number. A maximum of 8 account numbers is shown. Next you may see a series of log entries as determined by the "logs..." screen of CONFIG and the user's "log verbosity" field. See descriptions of these logs in the CONFIG chapter, and a description of the "log verbosity" field in the user accounts chapter. A line beginning with "SIGNOFF" will detail the way in which the user logged off. After the signoff line appears a "SAM summary"--two letter abbreviations for the variables on the SAM display, summarizing what the user did during that call. "ms" is mail send, "dk" is download kbytes, "df" is download files, "mu" is minutes used, "m1" is mail sent to sysop, "po" is posts, "re" is responses, etc. Option is given to restart the log.

LU: Log of Uploads. TWO logs are actually presented, first the log of uploads, and then the log of downloads. Each line in these files contains the date, the user's handle, the protocol and baud rate, the average CPS (if the file was big enough to measure one), the filename, the size (in K), and the directory (subboard) the file was transferred to or from. Options are given to restart the logs.

RF: Read File. Display a text file. NOTE that MCI is interpretted. You may specify the filename as an argument.

RUN: Execute a CNet "C" pfile. This provides a handy way of running update programs, utilities, etc., from any command prompt. You may specify the filename as an argument.

VF: View Feedback. Read the feedback users posted using the "F" command. See the "mail" chapter for a description of the mailbox commands.

VN: View New users. Read the new user applications,

consisting of responses to questions asked during the new user procedure. See the "mail" chapter for a description of the mailbox commands.

WF: Write File. Load a text file into the editor for editing, or create a new file. You may specify the filename as an argument.

*D: Select Direct. Select any path or directory from which to choose files to add to your download select buffer.

## The on-line shell

The "Shell" command from the Main prompt will take a system operator into an online shell. The online shell has all of the power of an actual DOS shell. Because access to this interface by unauthorized persons could spell instant system death, the on-line shell is protected by yet another password and keyword. This password is also set using the "cnet:setpass" command.

CNet use's Matt Dillon's FIFO routines to manage its on-line shell. You should have the file "fifo.library" in your LIBS: directory, and "fifo-handler" in your L: directory. The file fifo-handler should have also been executed by your startup sequence. If you followed the CNet installation procedure, you should be ready to use the shell.

When the online shell opens, CNet reads startup instructions from the file "shell-startup." In general, this file should contain commands which will make your job as sysop easier. The most important command to include in this startup file is "noreq" which disables DOS requesters. This prevents messages like "insert volume SYSTXT:" from popping up when you misspell "systext:", locking up the system.

Just like a DOS shell, the proper way to exit a CNet on-line shell is with the "endcli" command.

## The maintenance pfiles

CNet comes with several pfiles pre-loaded into a pfiles area directory entitled "maintenance." Because it was unknown

to CNet what your system operator group number would be chosen to be, when you first configured your system, there were no access restrictions placed on this subdirectory. You should use the "AT" command to change the "access groups" field so that only system operators may use this directory.

**Pointers:** this is perhaps the most important maintenance pfile. It re-creates the index files associated with the user data files. These files keep track of the alphabetical and phone-number order of user accounts. These files are crucial to the proper operation of "enter a handle" prompts. If your BBS becomes unable to locate users by handle, of if your BBS mysteriously begins rejecting new users, chances are your "user pointers" files are corrupted. Go to the pfiles and run this program.

**Count:** ocassionally the SAM "current" column will become out-of-sync with the actual number of items on the BBS. Users may post, response, leave mail, and there may be a system crash. SAM, then, would not know about the changes. SAM is only updated when users log off. Use the "count" program to re-figure the SAM "current" column.

**Transpose:** this pfile is described in the user account and access group chapter. It updates the user's privilege flags and limits with the access group defaults.

**Repair_sub:** when ran from this directory (without an argument), the "repair_sub" program attempts to repair any damage to the "subboards3" file. There may be occasion where this file becomes corrupted and requires attention. It is easier to fix the problem than it is to re-enter possibly hundreds of subboards. This pfile may also take an argument of a subboard's "physical subboard#" or RANGE of physical subboard numbers. You can view a subboard's physical subboard number from the subboard EL command. With this argument, repair_sub will perform the equivalent of the subboard RR command on the subboard(s) specified. If you have particularly busy or particularly error-prone subboards, you can "automate" the RR process by placing this command as a bbsevent (see the CONFIG chapter), using the physical subboard number(s) as arguments.

**Missing:** this is a simple pfile which scans all of your subboards for "missing" files--files which are "offline." Items found to be offline are "marked" as offline so that when you scan the items a "!" appears to the left of the filename.

## Automaintenance

CNet's automatic maintenance ("automaintenance") routines are sometimes referred to as "amaint" for short. The pfile "pfiles:bbs/amaint" provides many crucial maintenance functions. It does the following:

Removes users who have not called in the specified number of days. Each user has the field "amaint purge days" to control this.

Delete "yank" files which are over a specified number of days old. This is controlled by a CONFIG "limits..." screen option.

Test and transform files which have not yet been tested or transformed.

Kill files and items which have not been downloaded or responded to in the specified number of days. Each subboard has the field "amaint purge days" to control this.

Pack subboard data files. When items are killed in subboards, the data files are not actually restructued at that time. It is amaint's job to reorganize the subboard data files.

Adopt subboard files which are currently "orphans" in the subboard's directories.

Delete BBSList entires which are older than the specified number of days. This is controlled by a CONFIG "limits..." screen option.

# CHAPTER 15 - Modifications and customization

CNet can be extensively modified to bring a great deal of individuality and personality to your BBS.

## Definitions of Systext: files

CNet's SYSTEXT: directory contains modifiable text files. Some example files are included with CNet, other optional files you can create as needed. Following are the explanations of these files:

**avalid:** Defines which telephone number prefixes CNet will automatically call OUT to for the auto-validate and auto-callback functions. For a description of the auto-validation files, see the "logon procedures" chapter. .

**badnames:** Each line of this file should contain a word or word fragment which CNet should prevent from being used within a handle or real name. Use underscores (_) to represent spaces, or the beginning or the ending of a word. For example, "sysop" will prevent the word "sysop" from appearing anywhere, and will even prevent "asysoperator" from being used. "_sysop" will prevent words beginning with sysop, like "the sysoperator." "sysop_" will prevent words ENDING in sysop, like "the sysop" or "asysop," however, "the sysoperator" will be allowed. "_sysop_" will only prevent the actual word "sysop"--"asysop" and "the sysoperator" will be allowed. If a user enters a "bad name" he will be asked to enter a new one.

**badnumbers:** Each line of this file should contain a phone number or phone number fragment which CNet should prevent from being used within a voice or data phone number. A full phone number has the format "313-5551212." Notice there is only ONE hyphen. If you place "313-555" on a line, all 313-555 phone numbers will be banned. If a user enters a "bad number" he will be IMMEDIATELY DISCONNECTED.

help/: This directory contains files used in conjunction with the "HELP" command. You may add, remove, or modify files in this directory at any time. Since the file "systext:help/menu" is displayed whenever a user types the command "help" with no argument, you should not remove

that file, and you may wish to add information to it to reflect additions or changes you make to the help files.

**menu/:** this directory contains files displayed by the various "?" commands throughout the BBS. You may modify these files at any time. They are not used to determine the actual commands--they are display only.

**new/:** This directory contains the files displayed to new users while explaining the various terminal settings and system preferences. There are a few special files here, explained next.

**new/nq:** Explains the purpose and procedure of the new user questionnaire.

**new/nqX:** New user questionnaire files, each containing one question. X is a positive integer, beginning with 0. You may have as many questions as you like, but must use numbers in order and beginning with 0. These questions and their answers go on to make up the user's "finger" file, which other users can read online.

**new/sq:** Explains the purpose and procedure of the sysop's-eyes-only questions.

**new/sqX:** Sysop questionnaire files. X is a positive integer beginning with 0. You may ask as many questions as you like, but must use numbers in order and beginning with 0. These questions and their answers will become part of the user's "finger" file when sysops ONLY use the "finger" command.

**nmail:** Default new user mail. This optional message is automatically sent to every new user on their first call.

**noises:** Used by the join teleconference to store the action command ("noise") prototypes. For more information, see the inter-user communication chapter.

**qwkend:** This file will become the "goodbye" file in QWK Yank packets.

**qwkstart:** This file will become the "hello" file in QWK Yank packets.

**sys.accessX:** X is the user's access group number. CNet will attempt to display this file at logon. These files allow you to display messages only to members of specific access groups as they logon.

**sys.conf:** The "entry" text which is displayed to users when they enter the join teleconference. You may wish to edit this file to contain general conference usage guidelines.

**sys.countries:** CNet uses a 3 letter abbreviation for the name of the user's country. This file demonstrates the abbreviation convention in use at any prompt where the user is asked to input the name of a country.

**sys.end:** A file displayed to users as they logoff. This file is not displayed when the "!" is used with OFF command.

**sys.info:** A file describing your system. You should explain the hardware and software used to run your BBS. Please mention CNet and how to get it!

**sys.nuser:** Shown to new users. Should contain the rules and acceptable use policy for your system. Users can review this file using the "NU" command.

**sys.private:** Shown to users who enter "NEW" at the logon prompt when the port is not allowing new users (according to the CONTROL panel's pull down menu).

**sys.second:** Shown to users on their SECOND call to the system (the first being the new user call).

**sys.start:** Shown to users as soon as they "press RETURN to enter system."

**sys.welcome:** Shown to users as soon as they successfully logon (by entering their correct handle and password). This file generally contains a greeting, and calls the quote and vote programs. Many sysops add numerous "extra" utilities here, such as "Top Ten Caller" lists. These little game or utility programs may be written in C, or as DOS or AREXX scripts, and can easily be launched right from the text of any CNet text file using "MCI" commands. See the

section on the text editors for more details about using MCI.

**validation:** shown to users after they complete an upload into a subboard which requires that the sysop "validate" files. The file should explain why the user is not immediately receiving credit for his upload.

**vde/:** this directory contains files used by the visual data editor (like the EA, EG, and EL commands). These files are not modifiable. Expert programmers may create additional VDE files. See the programming section on the CNet release disk for more information.

**yankend:** this file is added to the END of a Yank, when the yank is NOT of the QWK variety.

**yankstart:** this file is added to the BEGINNING of a Yank, when the yank is NOT of the QWK variety.

## Making modifications to BBSTEXT

You may make modifications to individual lines of the BBSTEXT file(s). You may not add or remove lines from these files. CNet prints text based on the order of the lines in these files.

Special care should be taken to preserve the order of the %s's, %d's, and %c's found in the BBSTEXT file. These mark locations where CNet will substitute text into the line before the line is printed or otherwise used. When appropriate, it is OK to remove them from a line, but ONLY from right to left. You may NOT remove one from the beginning or middle of a line. For example, a line which reads "You have %d pieces of mail" may be changed to "You have mail." A line which reads "%s has %d items" may NOT be changed to "the area has %d items."

IMPORTANT: do not add color to the beginning of lines 1, 2, 3 or 8. The first characters of these lines are used for input comparison.

In general, it is a BAD idea to increase the length of a line too much. The majority of these lines are used with strcpy() and sprintf() statements into a text buffer. If that

text buffer is not long enough to hold the resultant string, variables and code may become corrupt. The majority of lines print into a 256 character output buffer. If you find you are increasing the size of a line by a considerable margin, you should consider using the MCI {*} command to read a text file.

If "strange" things begin happening with your system (crashes, etc.), the first thing to do is try a "stock" BBSTEXT file, and see if the problem persists. If it goes away, chances are you have increased the length of a BBSTEXT line beyond its capacity. Re-add your modifications a couple of lines at a time to pinpoint the problem line.

If the "stock" BBSTEXT file does NOT cure the problem, all third-party pfiles are then suspect.

## Making modifications to BBSMENU-- Adding or changing BBS commands

The BBSMENU file(s) contain the commands available throughout the BBS. Inside BBSMENU, command prompt menus are organized into separate groups by menu number. The built-in CNet commands you find for each menu in the stock BBSMENU file are in a strict order. You must not change the order of the built-in commands. If you insert or delete any command, CNet will be unable to match commands to their functions. This section shows the proper way to add and remove commands. Note that after making any changes to BBSMENU, you should quit CNet entirely (close the control panel) and reboot to make sure your changes are enabled.

The REQUIRED parts of commands are shown in upper case. Anything that is in lower case is optional typing. Commands may consist of more than one word.

Two separate commands can perform the same function. To "alias" one command to another, use a COMMA (,) to separate the commands on the SAME LINE. For example "Off,LOGOFF" shows that the user can either enter "O" or "LOGOFF" to leave the system. You may add as many aliases to a single command as you need to.

To REMOVE a command, you may not actually REMOVE it from the BBSMENU file. What you should do is to change the command to something which the user would not think of entering. For example, to remove the "List" command, you could change it to "LIST-REMOVED."

To ADD a command, you must add it to the END of a menu list. Follow the command (and the aliases) by the PIPE character (|) and then any text you wish. The text will be displayed when the user enters your command. Most often, the "text" is actually in the form of an MCI command to run a pfile or display a file from disk.

You can create command MACROS--a command which will be "expanded" into another command and arguments. MACROS must be placed at the BEGINNING of a menu set, before the normal commands. The addition (or deletion) of macros does NOT upset the order of the built-in commands which follow. There are many defined command macros included in the stock BBSMENU. All MACROS have a command, followed by a TILDE (~) and then the expanded version of the command. For example, "RG" is a valid subboard command to read items globally. The "RA" command is not an actual subboard command, it is a MACRO set to equal "RG NEW PREVIEW"--read NEW items globally, and show one "old" message from each item with new responses (PREVIEW).

You can set access group restrictions individually for each command. Use the backwards apostrophe character (‘) followed by a RANGE of valid access groups. This can come at the end of a line, or in between the aliases and PIPE printing (see example below). For example, adding "‘31" to a command's definition line will result in only access group 31 being allowed to use the command.

Here is an example of a command which could be added to the end of the "available anywhere" list which would allow users having access levels 10-31 to view a directory of the systems RAM disk by entering either DR or R D:

DRam, Ram Dir ‘10-31 | RAM files:{n2}{#4 c:dir RAM:}

The left braces "{" above are actually Control-Q characters.

NOTE that from a command prompt which allows "available everywhere" commands, CNet first searches menu number 1 (the maintenance menu, if the user is a sysop), then menu number 2 (available everywhere commands), and finally the individual command prompt menu. CNet will use the FIRST valid match it finds, so if a match is found in menu number 1 or 2, CNet will not continue to search the command prompt menu.

## Using multiple graphics sets

A "graphics set" refers to the character set or "terminal type" that the user is calling with. Each terminal type offers different characters and different display capabilities. Each caller's terminal type is set at logon from the "Amiga, IBM, Skypix, Commodore" prompt. The terminal type can be changed while online by using the ET command. CNet recognizes the following different terminal types:

(0) ASCII
(1) Commodore 64/128
(2) IBM
(3) Amiga International
(4) SkyPix

You can create custom "systext:" file sets for any or all of these different terminal types. When attempting to display a text file, CNet will first look for a file with the same name, but beginning with "TTn.", where n is the terminal type number from the above list. If this file is not found, CNet will then attempt to read the default titled text file.

For example, for a caller using terminal type 2 (IBM), if CNet wants to read "sys.nuser," CNet will first look for "systext:tt2.nuser." If that isn't found, CNet looks for "systext:sys.nuser."

If the original filename does not contain "sys." as in the case of "validation," CNet will first look for "systext:tt2.validation." If that isn't found, CNet looks for "systext:validation."

You can create these custom terminal type files for all displayed systext files. When reading "systext:help/editor," for example, CNet will first search for

"systext:help/ttn.editor," where n is the terminal type number.

You can also create custom terminal type files for the "sys.entry" and "sys.exit" files used by subboards. When looking for "base0:subname/data/sys.exit" for example, CNet will first search for "base0:subname/data/ttn.exit." NOTE that the subboard EN and X commands only edit the "sys." files. Creating and editing of the optional TTn files must be handled manually.

## Using multiple languages or text sets

Although CNet currently is being shipped with all text files in English, CNet has the ability to completely support additional languages or "text sets." For each text set, CNet will use different BBSTEXT, BBSMENU, and "systext:" files. Some of these alternate language text sets are available for download from Future World. Others can be obtained from helpful sysops around the world who have done the enormous job of translation on their own.

To enable this feature, use the CONFIG program's "options..." screen. Set "use multiple texts sets" to "user selectable" if you want users to select a text set on their own (during the new user procedure, or by using the EP command). Set it to "port specific" if you want text set 0 to be used for port 0, text set 1 to be used for port 1, etc. This last option allows you to have an "English" port, a "German" port, etc.

Text set 0 uses the files cnet:bbstext and cnet:bbsmenu (this is considered the "default" text set). Text set 1 uses the files cnet:bbstext1 and cnet:bbsmenu1. Text set 2 uses the files cnet:bbstext2 and cnet:bbsmenu2. You must have both a bbstext and a bbsmenu file for each text set you plan to use. You must use text set numbers in order--if you have bbstext2 and bbsmenu2, you must also have bbstext1 and bbsmenu1. You must always have bbstext and bbsmenu.

CNet loads the bbsmenu and bbstext files when the control panel first runs. If you change these files, there is a way to have CNet re-load them. Use the control panel's pull-down menu option "re-load text/menu."

When using multiple text sets, CNet follows a search scheme to find the appropriate systext files. Within the "systext:" directory may exist "xX" directories, where X is the text set number, one for each text set. CNet will first search that directory.

For example, when using text set 1, and attempting to read "sys.info," CNet will first search for "systext:x1/sys.info." If not found, CNet will then search for "systext:sys.info." To complicate things, terminal type files are also supported here. The complete search order is (using text set 1 and terminal type 2):

```
systext:x1/tt2.info
systext:x1/sys.info
systext:tt2.info
systext:sys.info
```

All readable text files will be searched for within the "xX" directories. For example, using text set 0 and terminal type 2, and attempting to read "systext:help/menu," CNet will search in this order:

```
systext:x0/help/tt2.menu
systext:x0/help/menu
systext:help/tt2.menu
systext:help/menu
```

It is possible to have multiple text set files for the subboard exit and entry files. For example, using text set 3 and terminal type 2, CNet will search for "sys.exit" in this order:

```
base0:subname/x3/tt2.exit
base0:subname/x3/sys.exit
base0:subname/tt2.exit
base0:subname/sys.exit
```

NOTE that the subboard EN and X commands will only edit the files:

"base0:subname/sys.exit" and "base0:subname/sys.entry"

You will have to edit the other files (if any) offline or by using the sysop WF command.

## Notes:

# CHAPTER 16 - Electronic Mail

Electronic Mail is also known as "E-Mail" or just "mail." Incoming mail that is addressed to you is stored in your "mailbox" until you read it. Mail may arrive from other users on your BBS, or from users anywhere in the world if you are connected to a Fido-Net or UUCP network. When arriving from a network, mail is often referred to as "netmail." Unlike some other BBSs, mail on CNet is always PRIVATE, and may only be seen and read by the addressee.

## Sending Mail to Other Users

The "Mail" command is used to send a private e-mail message to another user. You may include the addressee's handle or real name after the Mail command. You may only use the user's real name if he has selected his real name to be public (or if you are a sysop). Following are the prompts and options that you will see:

**Handle:** If you did not specify a handle or name when giving the mail send command, you will be prompted to enter it now.

**Subject:** You should give your mail a meaningful but consise subject or topic.

**# of days before expiration:** Users will see this prompt only if they have been granted the proper privilege flag. It allows you to set the message to "expire" after a specific number of days. Expired mail is not actually removed from the recipient's mailbox until he attempts to read it.

**Mark this item as file-mail:** Users will see this prompt only of they have been granted the proper privilege flag. Because files cannot actually be "uploaded" at the mail prompt, this method of sending file-mail is really for sysop-use only. Any file on the system can be "sent" to the user, as long as you know its full and correct DOS path and filename. If you select Yes at this prompt, CNet will expect the "subject" to contain a valid path and filename. CNet will attempt to verify that the file exists. If the file can not be found, you will be returned to the Subject prompt. When a user receives file-mail "attached" in this

way, he is able to use the Download, Extract, * (select), and Grab commands at the mail-read prompt to manipulate the file. The file is NOT deleted after it is downloaded. For more information, see the following section "sending file mail."

**Return a receipt if no reply:** It is sometimes desirable to know whether or not your mail was actually received and read. When you select Yes to this option, you will receive a reply when the recipient reads your mail. If the recipient does not reply himself, CNet will send you a short message informing you that your mail was received. If the recipient also kept the message in his mailbox, or forwarded it to another user, you will know that too. NOTE that sysops may STOP a return receipt from being sent by using the "N" command at the mail-read prompt after they have read a particular message that requested a return receipt.

**Return original message also:** From a user's reply, it is sometimes difficult to recall the exact topic or details of your original conversation. When you select Yes to this option, CNet will automatically "QUOTE" your message back to you when the recipient replies. This allows you to easily see what the user was replying to. This feature also works with the "return receipt" feature.

**Urgent mail (shown at logon):** Users will see this prompt only if they have been granted the proper privilege flag. When you have urgent mail waiting for you, you are automatically taken to read it as soon as you log on. In a sense, you are "forced" to read your urgent mail. Urgent mail can also be thought of as a "second" mailbox. If urgent mail is saved, the MR (mail read) command first reads the urgent mailbox and then the normal mailbox.

## Sending Mail Via Fido-Net

Sending mail through a network on CNet is almost as simple as sending mail to "local" users. Once again, use the "Mail" command followed by the recipient's name, but this time add an "@" symbol and the Fido-Net address. For example, if you are connected to Fido-Net, you can send mail to Ken Pletzer by using:

Mail Ken Pletzer@1:2410/215

The Fido-Net address must be of the format shown (ZONE:NET/NODE). You can add a period and a "point" number if necessary. NOTE that you must have been granted the privilege flag to "send fido-netmail."

CNet uses the Fido-Net "nodelist" to verify network addresses. If CNet is unable to locate an address in the nodelist, you will not be able to send netmail to that address. CNet uses "traplist.library" to access the nodelist. Insure that this file is found in your LIBS: directory and that you are using version 5.2 or greater. Also insure that your nodelist path is set correctly from the CONFIG "paths..." screen.

You should regularly receive updated nodelists from the network(s) that you are a member of. In order to be used by traplist.library, these nodelists must be "compiled." It is recommended that you use "TrapList" to compile your nodelists. TrapList is a very easy to find and easy to use nodelist processor. Before you use it, TrapList must be "configured" by placing some information about your system into a "cfg" file. To get you started, following is a sample "traplist.cfg" file for a BBS using CLink (zone 911) and Fido-Net (zone 1):

```
ZONE 911
NODELISTPATH "mail:nodelist/"
NODELIST "clinklst"
NODELIST "nodelist" DIFF "nodediff"
DELOLDLISTS
DELOLDDIFFS
```

After running TrapList, if everything compiled OK, you should find the files "fidonet.index" and "fidonet.extra" in your nodelist directory.

Once CNet is able to locate the mail destination address in the nodelist, a "verification" prompt is given which gives the system's name and geographical location. Here are the other prompts that you will see:

**Subject:** Just as with local mail, attempt to be as concise but descriptive as space allows.

**Crash-mail, Hold, Normal:** Users will see this prompt only if they have been granted the proper privilege flag. This is sometimes referred to as the "flavor" of the netmail. "Crash-mail" is marked for immediate shipment (as opposed to waiting for the network mail hour). Crash-mail will only work if you have your mailer (TrapDoor) configured to check for crash-mail packets every hour or so. "Hold for pickup" mail is marked to NOT be sent unless the destination address calls YOU (unless you are calling the destination address for some other reason anyway, such as echomail). All other mail is "normal" and is sent during the normal mail hour.

**Request, Attach, or Neither:** Users will see this prompt only if they have been granted the proper privilege flag. This option allows you (sysops) to request files (programs or text files, as opposed to messages) from other systems, or to send files to other systems. In either case, the subject line should be the name of the file that you are requesting or attaching. When requesting a file, a password may be required. In this case, add "!" and the password to the subject line. With this type of file request (as opposed to the FReq command) or file attach, you may also include a small netmail message.

**Request return-receipt:** This option sets the "return receipt requested" flag in the outbound mail packet. There is no guarantee that the destination system supports this option, so you may not actually receive a receipt.

**Use your real name:** Most Fido-Net networks allow only REAL NAMES to be used. This option is included for those networks that don't mind handles.

CNet files netmail into the outbound directory (CONFIG "paths..." screen). The netmail may be "routed" to another system other than the actual destination system. If you are a point, all netmail is routed to your boss. For details on establishing the routing rules for your network, see the CONFIG chapter's "Fido-Net..." section.

## Sending Mail Via UUCP

To send mail through the internet (UUCP), again use the Mail command with the @ symbol separating the

recipient's name and the destination address. For example:

Mail future@engin.umich.edu

was once the way to send mail to Ken Pletzer via the internet. *NOTE that this actual address is no longer valid.* CNet prompts the sender ONLY for a subject (topic). There are no other options for sending UUCP mail. You must have been granted the "send UUCP mail" privilege flag to send UUCP mail.

Before UUCP netmail will operate, you must have installed and configured Matt Dillon's UUCP programs, version 1.16 or higher. CNet calls the "sendmail" command to actually spool the outgoing mail. CNet does no error checking itself insofar as checking for valid destination addresses. It is up to the mailer to bounce-back a reply stating that a specified destination address is invalid.

## Reading Your Mail

To read your mail, you may use the "MR" command at any command prompt. Another way to read your NEW mail is to respond "Yes" to the prompt to read your new mail at logon.

You are first shown a summary of the mail you have. Each mail item has a number, a date, an author, and a subject. You might see symbols to the left of the mail number. These symbols represent:

›: Marks the "current" item. It points at the item you have most recently read. If you have not yet read any of your mail, it points to the first item that you will read by pressing ENTER. By default, the first item to be read is the first "new" item.

N: Marks a "new" item. A new item is one that has not yet been read. In the case of a "shared" mailbox, like feedback or new user applications, once ANY user has read the item, it is no longer considered "new."

C: Marks a "carbon copy" item. This item was posted (or was a response to a post) in a subboard. The author addressed the message to you. The subboard is configured

to allow carbon copies. If you REPLY to this item, you have the option of replying publically in the subboard or privately in mail.

F: Marks "file mail." The subject of a file mail item is the path and filename of a downloadable file. The mail-read commands Download, Extract, Grab, and * (select) become active on this item. When the item is killed, the file is not deleted. See the "file mail" section for information on sending file mail.

The mail-read prompt is "Again, Kill, Quit, Reply, Scan, [pass]". Pressing ENTER will always read the next item. Once you have reached the end of the messages, pressing ENTER again will begin reading at the FIRST item. To get out of mail-read, or once you have killed all of your messages, use the "Quit" command. If a mail item has expired, it will be automatically killed the first time you attempt to read it.

Following are mail-read commands:

**Again:** Read the message you most recently read (marked with "› " on the scan list) again.

**Download:**
Download file mail.

**EA:** (sysop) When reading mail, the EA command defaults to the author of the current message.

**Examine:**
Examine the archive contents of file mail. Operates just like the Examine subboard command.

**FInger:**
When reading mail, the FInger command (to read a user's general information text file) defaults to the author of the current message.

**FOrward:**
If the proper privilege flag has been granted, the FOrward command can be used to send a copy of the item to another user's mailbox. The original is not automatically killed.

**GRAB:**
Display the file contents of file mail.
Operates just like the GRAB subboard command.

**Group:** (sysop) Change the author's access group number. This command is especially helpful when reading multiple new user applications!

**Kill:** Remove the item from your mailbox. Using the Kill command again will "un-Kill" the item.

**List:** Display the list of recipients of this message. This message works only for Bulk mail that has a "route file" on disk. See the "bulk mail" section for more information.

**Noreceipt:**
(sysop) Disable the return receipt for this item. If for some reason you do not reply to a message, and do not wish the author to receive a return receipt, this command will prevent CNet from sending a return receipt for the item. To re-enable the return receipt for the item, re-read the item.

**Pass:** Read the next item. This happens automatically by just pressing ENTER at the mail-read prompt.

**Quit:** End the mail-read session. All un-killed messages are kept in the mailbox. If you did not kill any messages, you will be asked if you would like to kill the messages that you just read.

**Reply:** Send a reply to the author of the current message. Your reply will by default have the same subject as the original message.

**Scan:** Re-display the list of mail items.

**Write:** (sysop) Enter the editor with this item. This is NOT an "Edit" command. The Write command allows you to manipulate the text, and then use the editor's GET and PUT commands to write the message to disk. When you "Save" from the editor, your

changes are not saved to the mailbox. At present, this command is mainly supplied for the convenience of sysops who want an easy way to save (PUT) important mail items outside of their mailbox for future reference.

**Yank**: Use the yank-task (background process) to pack mail for downloading. See the subboard "yank" section for more information on the use of the yank-task.

*: Add file mail to your file select buffer for later downloading.

Mail-read commands operate by default on the "current" or most recently read item. You may also specify a RANGE of items with most commands.

You will receive a system OLM if your mailbox receives a message from another user currently online. This can also occur if network mail is imported into your box on another port while you are online. Due to the method CNet uses to store and access mail, if you happen to receive an OLM notifying you of a new message, WHILE you are already reading your mail, that new message will NOT be visible to you until you exit the Mail Read system and re-enter.

## Verifying Mail You've Already Sent

Many times you send mail and wish to later make changes to what you've written, or even pull the mail altogether. Or, perhaps, you are just curious as to whether or not someone is still holding your mail in his mailbox. This is called "verifying" mail, and is available from the Main prompt with the "MV" command. Normal system users will only be able to see and verify mail that THEY sent. Sysops can see all mail. You may not verify a user's mail if he is currently reading it.

Each mail item is displayed in turn, followed by the prompt "#, Again, Edit, Kill, Quit, [next]." The options at this prompt are as follows:

#: This stands for a number. Enter the mail item number which you would like to immediately read. You may skip forward or backward.

**Again:** Read again the message you have just read.

**Edit:** Change the message. You may edit and re-edit mail as many times as you need to.

**Kill:** Remove the item from the mailbox. Using the Kill command again will "un-kill" the item.

**Quit:** Immediately end the mail-verify session. An option is given to "save your changes." Answering No will leave the mailbox unaffected.

**Next:** Read the next message. This happens automatically by just pressing ENTER at the mail-verify prompt. After you have read the last message, mail-verify will automatically go to the "quit" command.

You may only verify mail sent to local users. Once mail is sent through the network, it may not be killed or edited.

A system operator can use the "MV ?" command to obtain a list of all accounts that have mail.

## Sending Bulk and Party Mail

Bulk mail is a convenient way to send the same message to a group of users. Party mail is actually bulk mail with one enhancement--all replies to party mail are sent automatically to ALL original party mail recipients. Replies to non-party mail go only to the message author. You must have the proper privilege flags to send either bulk or party mail.

To send bulk mail (which may later be changed into party mail), use the "MM" command from any command prompt. The initial setup of the mail message is identical to normal local mail. You will be asked for a subject, and will be asked to answer yes or no to several prompts. You will then use the editor to write the mail.

The next prompt will be "Enter route file name." You are being asked for a filename to store the recipients' account information. If you plan to send mail to this group of users again, you should assign a route file name. A route file

name is REQUIRED if you plan to make this bulk mail into party mail. Party mail MUST have a list of the original recipients in order to again send mail to those same users. To send your bulk mail to a group of users to whom you've sent bulk mail in the past, enter the previous route file name at the "Enter route file name" prompt.

If you are not using an existing route file, CNet will now prompt for users to send the mail to. You will first be prompted with "Access groups to include." You may enter a RANGE of access groups at this prompt. If you select No to "All members of these groups?" CNet will prompt you with the name of each member of those groups.

If you just press ENTER at the "Access groups to include" prompt, you will be given a series of "Enter an ID number of Handle" prompts. This prompt will repeat, and you may continue to enter as many user IDs or handles as you desire. After the last one has been entered, just press ENTER at the prompt.

If you selected a route file name, and you answer Yes to the "Is this party mail" prompt, the party mail flag will be enabled in the message. Each response to party mail will be sent to all original recipients of the message. Use party mail with discretion!

CNet will display a final recipient count.

## Sending Files via E-Mail

Users may not directly upload files into other users' mailboxes. CNet supports a couple of easy ways to simulate this, however.

The first is for sysops only, or for users with the "send file mail" privilege flag. This method allows you to attach any file on the system to a mail message. Use the Mail command to send mail. Set the subject of the mail to be the path and filename of the file you want to "send." When you are prompted with "is this file mail" respond Yes. If CNet is unable to find the file, you are returned to the subject prompt.

When the user reads the file mail, he may use the

Download, Extract, Grab, and * (select) commands. The file is not deleted when the mail is killed.

The second file mail method is much better suited for general user to user file sending. And it does not involve the normal (message) Mail Send procedure at all! Inside a SUBBOARD, when a message (or file) is created, addressed TO a specific user, and the subboard's "carbon copy" option is enabled, CNet will make a copy of that message in the addressee's mailbox. If it was a FILE that was addressed, the file mail commands (Download, etc.) will be enabled when the user reads his mail. With the help of several subboard flags, it is possible to create a custom "file mail" subboard. Users wishing to send file mail would simply have to enter the file mail subboard and use the Upload command. Your file mail subboard should be easy for users to find. Perhaps the first or second subboard on the main list of file transfer subboards. Set the following flags in that subboard's configuration:

Address messages: set to "FORCE" if you want ALL files in that subboard to be addressed to someone (therefore making carbon copies for them all).

Default purge status: set to "@DL" if you want files to be deleted after they are downloaded. This is usually what you would want for temporary "mail" files.

Private messages: set to "FORCE" so that only the addressee of the file will be able to download the file.

Carbon copy to email: set to "yes/def on" to enable the carbon copy messages.

**Notes:**

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