

IMAGE BBS v1.2 b

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Modifications by IRON AXE, RASCAL,
METAL MAGE, PINACOLADA, and many others.

Manual OCREd by JOE COMMODORE.
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DR. BOB, LITTLE JOHN, and others.

Handle: _____ Network Identifier: _____

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This is just a plain text version of the OCRed sysop guide, to remind me which sections belong where. I added commands before each section but I think that makes it too cluttered. Better to have a command summary appendix.

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Command summary appendix

Introduction

In 2007, Dave “Metal Mage” Hartman and I found ourselves pondering why there wasn't an updated version of the manual available to go along with all the fixes and updates which had come out since Image 1.2a was released. To get all “the good stuff” (as we call it) required reading even *more* documentation, merging “mods” into core BBS files (sometimes needing to start over with stock files, trumping any mods the sysop had already made), or setting up an altar to Fred Dart.

(Believe me, I thought about it. For those of you not in the know, he was one of the best Image programmers around; sadly, he's gone on to that great BBS in the sky, where there surely must be an active user base of a few billion people. At least he can party on with Ron Fick, a Lt. Kernal guru, and Jim Butterfield... Imagine: Q-Link, with no plus charges... oh, wait. Another Jim B.'s been there, done that. :)

Metal Mage and I decided this simply wouldn't do; it's a horrible new sysop experience. We hacked together what we called “Image 1.2B” which had what we considered to be the best new changes already put in. For example: There were a few things changed by Bob “Iron Axe” Sisco with his “Year 2000” fix which I changed back for aesthetic reasons (blue lightbar and chat window colors don't fit in with the default grey scheme IMHO).

Overall, we figure we've got it mostly licked.

This version of the manual includes expanded coverage, reorganized sections, documentation of new (at the time) features which were once available as separate add-on disks (some slated for Image 1.3):

- a few games and BBS utilities
- “AutoWeed,” which lets you remove callers who haven't called in a specified amount of time
- the “Extended Command Set,” configurable BBS commands

- the “TurboREL” system, faster access to message sub-boards and “RELEdit,” the sysop-side editor
- Image BBS networking

Web links to the “new” (released long after the original manual was completed) Image BBS programmer's reference guide, a list of every Image BBS “mod” and add-on I possess (including games), a wish list, and much, much more await you in these pages.

Please note that I've tried to introduce each new section in a sensible way, but if you don't understand something because it hasn't been explained yet, or it's unclear—that's a sign of bad documentation. Let me know about it; I'll have myself flogged (let me start the noodles cooking). Having previous experience with the software, I've tried not to fall into the trap of “it's obvious to *me*, not necessarily everyone else.” And while I do try to define possibly unfamiliar terms, you won't find a glossary with “upload” and “download” in it, at least not here. Already being familiar with BBS basics (perhaps having called an Image BBS as a user before?) is extremely helpful. However, don't let my pseudo-gruffness stop you from contacting me if you run into something you don't understand!

99% of the following work is either the New Image crew, Joe Commodore, or someone else. I just ran it all through a blender, baked until golden brown, *et voila!* It *must* be true: Anyone can cook.

Many thanks go to Larry “Joe Commodore” Anderson for OCR'ing the 1.0 manual plus the updates! Also thanks to Rascal, Iron Axe, Metal Mage, Fred Kreuger, and anyone else I forgot.

I just want this to be the bestest, most comprehensive manual available, given all the great fixes that have come out since the first version came out. Who knows, maybe you've got the next hot modification or suggestion—or an answer to some burning Image BBS question which kept me up nights.

Surgeon General's Warning

By no means must you read through this documentation in one sitting, or a day, or a week. Take it in bite-sized (byte-sized?) chunks; I sure remember the intimidation I felt when I saw the original manual... Just take a deep breath, have some milk and cookies, and come back to it later. Scribble stuff in the margins. Tune in, turn on, boot up!

Blatant Begging (On Hands and Knees Even)

Also, I would like to collect any information about Image BBS you or your friends and colleagues have. Back in the 1990's there were *hundreds* of Image sysops—they can't all have died *yet*. :) Any plus-files, programming information, “Reflections” or NISSA (New Image Sysop Support Association) e-zines you've got—in short, *anything Image-related*—please forward it to me.

My goal is to revive Image BBS and its network, to re-ignite the feelings of anticipation when there was a new plus file or modification to download. A brand new sysop disk magazine would fix that in a jiffy! I am working with a Loadstar-inspired programming package to design one similar to LoadStar's “Presenter.”

Anyway, drop me a line—I want to hear from you! plzkthx.

PinaDox (tm & pat. pend.—I've never patted a pend. before but I'm willing to try anything): The only user-friendly documentation with a built-in sense of humor. Well, okay, I amuse myself, and that's what's important.

Some Notes

This version of the manual has some enhanced typographical features. Firstly, by and large a proportional font, DejaVu Serif, is used. I have nothing against monospaced text—after all, it's what a BBS is made of—but in the long run it really makes my eyes bug out looking at pages upon pages of it. Text is spaced one-and-a-half lines apart. Visually, I think it helps make the page look less crowded, and reduce eyestrain.

Text output by the BBS looks like this.

User input or filenames look like this.

Additional sections and information, or changes from the original manual, are italicized and on a grey background like this.

Keys you need to press, like **RETURN**, are in all-capitals on a reversed background.

There are cross-references to where sections are now. I'm just starting this, so be patient, and if you see a missing cross-reference, please let me know.

– Ryan “Pinacolada” Sherwood

September 23, 2014

Larry Anderson's Introduction

Dear Reader:

Here it is, the much-needed documentation of Image 1.2a BBS. This is an OCR of the original documentation, which included the Image 1.0 manual and addendum sheets for Image 1.1 and 1.2. If you are setting up 1.2, make sure to read the 1.2 addendum as well as the 1.0 manual.

Notes:

I have indicated the original document's page breaks to make finding sections with the table of contents or index easier.

If you are setting up Image, use the 1.0 diskette, and copy over the 1.2 files on to a copy of the 1.0 diskette (overwriting the outdated 1.0 files). *Even better: Save yourself the hassle—use Image 1.2b!*

There are special notes if you are using a Supra 2400 baud modem as well as using a CMD or Lt. Kernal hard drive.

The modification diskettes for TurboRELS and BBS-to-BBS networking contain their own install/usage documentation on the disk image. (Note: Using TurboREL message bases on a 1581 drive may be problematic; e-mail me if you need more info on it.)

This is probably because of the "secondary address #1" bug. I have included the BASIC program 81bug.bas to demonstrate it, if you're interested. I need to get in touch with Larry to see whether this is in fact the cause.

In its' time, Image BBS was one of the top-of-the line Commodore 64 BBSes, even compared to PC counterparts of the day. Image held its own in features and adaptability.

The BBS numbers in the following documentation are all long gone, please do not try calling them.

Enjoy!

Larry Anderson

Sysop - Silicon Realms BBS

larry@portcommodore.com

Package intro letter

New Image Software

P.O. Box 525

Salem, UT 84653

801-423-1966

Dear Customer and Friend:

We thank you very much for ordering IMAGE BBS v1.0!! We think that you will be very happy with your purchase, and intend to fully support our customers in any way that we can. If you need any help whatsoever in setting up your BBS or maintaining it, please feel free to contact us by mail, phone, or BBS, and we will do what we can.

This version was "supposed" to be released long ago, but due to problems in relocating our offices and other things, it is late. (Ever have 5,000 screaming sysops on YOUR phone line!?) We apologize immensely for this, but feel that the quality of the program will make you forget about this very soon! Read the manual through and see the options that you have with this BBS program!

Please also notice that we have added a few things that are not documented in the manual. The "L"ist function in the subsystems now shows to the user if the sub-board/library is a "special" one, highlighting the library in color, and also showing an abbreviation at the beginning:

"N-An" means a non-anonymous sub-board.

"Anon" means anonymous sub-board.

"Pass" means password-protected sub-board, and

"Free" means a free UD/UX library.

See the manual for more information on these.


Also, please note that the support BBS and voice numbers for the northern (Michigan) region are no longer valid. The new BBS support line for the north (Lyon's Den BBS) is 313-453-2576.

24 hrs—300-1200 baud.


The new main voice support line will be located in Utah, as listed in the manual, 801-423-1966.

The new southern (Florida) support lines are: voice: 904-756-1206—Ron Fitch, and the Tec-Net BBS is 904-756-2700.

Night Flight BBS listed in the manual is no longer associated with us; the rest of the numbers are all still valid.

Add these variables to the list on page  *BF, CH\$, PO\$, KP%, MM.*

Our plans for the future:

There is no programmer's manual for the software available yet, but we DO plan to write one in the near future. You will be seeing many modules available for IMAGE soon, both translated from old popular winners, and brand new! You will also see utilities for running your BBS, both in module form, and runnable in BASIC to make things easier for you.  We plan to write a terminal program that will interact with IMAGE to allow full sound, high-res graphics and sprites for the user, and will have the same module routines as the BBS does. This will allow you to write a module (plus file) for BOTH the term and the BBS that will interact. A 128 version of IMAGE is also planned. As is our policy, NO release announcements will be made until the new products are ready.

As always, we welcome comments, suggestions, and criticism at any time, so please let us know what you think! Looking forward to a long, happy, and mutually satisfying relationship with you! Keep in touch!

Don Gladden

New Image Software

Addenda for Image 1.2a, page 1

Congratulations on your purchase of IMAGE BBS V1.2a.

We believe that you have purchased the finest BBS program available today for the Commodore 64. The program is continually being updated and refined and some of the latest updates have not yet made it into the manual. For that reason we are including this short addendum. Version 1.2a differs only slightly from 1.2. It includes the "CMD Mods," or the changes necessary to allow the use of partitions from 1 to 255 on that particular drive. It can still be used on any other system, including the Lt. Kernal. Caution should be taken however, as it is now possible to address LU 10, the DOS LU. All of the "mods" are installed so there is no need to download any "CMD Mod" packages.

Some of the features from 1.2 that are not clear in the manual include the selection of the proper modem file. The manual states, incorrectly, that you should choose a modem file that matches your modem and rename it to `+.modem`. That has been changed. There is now a `+.modem` file on the disk that is universal. Be SURE to use that file, and use the `modemconfig` file to select your proper modem type.

NOTE: If you are using ANY 2400 baud modem, you must run the `2400 setup` file first *before booting the BBS*.

The `u.alpha` file has been replaced by `u.index` that is maintained and manipulated by a file called `+.alpha/ind`. Should your index become corrupted, one common complaint is that users can sign on with their ID number but not their handle. If that should occur, run the `+.alpha/ind` from the main prompt and choose the options LOAD, CLEAR, MAKE and SAVE in that order. It is very important that you follow those steps; saving is required, since the program will not save for you.

The "macros" are installed in 1.2. There are "mods" out that call for lines to be added to `setup` and `im` but they are already in, all you need is the `+.ME` (macro editor) that is available on the PlusFile disk #4. After you have



the macro editor, you can define your macros and then turn them on by putting the check mark on the right side of **Exp** on the second page of the lightbar (press **F8**).

The support numbers in the manual are wrong. The one voice support line is 801-423-2209. The BBS numbers are:

Port Commodore 801-423-2734

Lyon's Den East 313-453-2576

GearJammer's II 215-487-0463

We hope you enjoy your IMAGE and if you need help don't hesitate to call.

—NEW IMAGE SOFTWARE

Agenda for Image 1.2a, page 2

Here are some changes that have been made since the manual was printed. Please note them carefully.

Pg 1 DISK DRIVES

Since the release of the CMD hard drive, IMAGE was updated to version 1.2A, which includes the "CMD Mods." IMAGE now has the ability to address partitions 1 through 254.

Pg 4 DESIGNATING DRIVES

IMAGE 1.2 added some new files called `scn.xx` (where `xx` is `t1 t2 t3 t4`, `c1 c2 c3 c4` files. This consists of eight "screen" files. These files must be placed on the plus file drive for proper operation. *They are text and color, respectively, of the screen masks displayed at system idle, or other areas on the BBS.*

Pg 5 COPYING FILES

In this section you are told to choose the modem file that matches your modem and rename it to `+.modem`. That is no longer necessary. There is now only *one* modem file for all 1200 and 2400 baud modems, and it is `+.modem`. After you have completed the configuration of your board, run the `modemconfig` file and select the modem type you are using. It will then write the parameters to the etcetera disk. Any time you change modems it is only necessary to run the `modemconfig` or `+.modemconfig` to re-select your modem type.

NOTE: If you are using ANY 2400 baud modem, it is necessary to run the `2400 setup` file which sets the modem up to respond to IMAGE. With the Aprtek "MiniModem C24" it is necessary to run `2400 setup` any time the computer is turned off for more than a few seconds.

Pg 16 THE LIGHTBAR

There are now two pages to the lightbar. The first page remains the same, the second page has only three functions that are used immediately.

The first is **Asc** which is:

- (L) ASCII on/off
- (R) linefeeds on/off

The second is **Ans** which is:

- (L) ANSI on/off
- (R) IBM Graphics on/off.

The third is **Exp** which is:

- (L) expert mode on/off
- (R) macros on/off (note that they are already installed)

In addition, the Turbo-RELS use **Fn5** for:

- (L) credit when file is uploaded or when validated
- (R) log off after file transfer is complete

The CMD mods (1.2a) also introduced the right side of **Fn1** which turns MCI off when checked.

Pg 29 COMMANDS

There is no longer a BC (baud change) option. *The heck there isn't! I put it back for historical preservation, even though it's unlikely to do anything useful! Yay me.*

Pg 55 THE IMAGE EDITOR

Some commands have been changed and some print modes have been added or changed. Check the menu in the editor for current commands/modes.

Preface

We feel that the program you have just received, IMAGE BBS version 1.2, is the most versatile and elaborate BBS program for the Commodore 64 computer available today! It is the result of over five years of work and many hours of programming time, has taken ideas from modem users and BBS sysops all over the world for its design, and offers many hours of pleasure for both BBS callers and sysops. If you are a programmer, or even a novice programmer, IMAGE BBS is designed to be easy to modify to suit your own tastes, and even to add modules to do any type of function on the BBS that you may wish to have! With some practice, and knowledge of IMAGE programming techniques, virtually anything is possible to add to your BBS. We have included some basic information on technique to get you started, and plan on releasing a more comprehensive programmer's manual in the near future.

Thanks go out to all who have supported us in the past with our programs, and for all the suggestions and ideas that have been shared with us. If you need to contact us for anything at all, please feel free to at any of the voice or BBS numbers supplied on page v of this preface.

Special Thanks To:

Peggy:

For being an understanding wife while this program was being developed, taking over the business end of things at a time when it was needed, and helping to make decisions, some of which were really tough. I don't believe this program would be possible without her.

Jamie, Christy, Billy, and Kim:

For their support, patience and understanding in giving Dad (and sometimes Mom) up for all the extended programming and business sessions.

Ray Kelm (PROFESSOR):

For being the sharpest ML whiz-kid in the world, and all the quality work.

Fred Dart (THE CHIEF):

For the EXTENSIVE beta-testing and bug reports. (Not sure why I'm THANKING him for bugs, but...) Also, for his enormous phone bills in getting this thing done as soon as possible. And for many other things too numerous to detail.

Jay Levitt:

For representing us on QuantumLink for so long, and the work he has helped with on the program, especially the e-mail routines.

Bob DiLorenzo (BLINKY):

For beta-testing, the vacation and tour of Opryland in Tennessee when I needed that break so bad, and for being such a good friend.

Jim Flinn (MUZAK MAN):

For designing the awesome title screen and beta testing.

Mark Verellen (KING TRENT):

For bringing over the Cokes when I was broke, and being official IEEE beta tester.

Mike Coley (THE HAPPY HACKER):

For the voting booth, and so many great ideas! (Where are you, Mike, haven't heard from you!)

Julie Rhodes (BLUE ADEPT):

For the new BBS List program, and all her support.

John Moore (LITTLE JOHN):

For joining up with us, and starting work on the 128 version of IMAGE. Also for the graffiti routines in the logon.

Rich Matteo (SHADOW WARRIOR):

For the use of his modifications for the multi U/D and full disk exchange routines, to make it so much easier for us to add.

Tony DeLiberato (ULTRA LORD):

For his help on the production of this manual and advertising layouts.

John and Paul at QuantumLink:

For their help and support on Q.

Fiscal, Xetec, Trans-Comm, InConTrol, and the many other companies who were so cooperative in helping us develop the program to allow their products to be used.

And finally, to YOU, for trying IMAGE BBS out! We're sure you won't be sorry you did!

Don Gladden

New Image Software

Product Information

This section contains all warranty, program usage, and support information.

Usage Agreement

You have the non-exclusive right to use the enclosed program. Copying the program with the intention of distributing it to others, whether or not for personal gain is illegal and not in accordance with this agreement. Modifications of this program may be made for personal use, and to share with other REGISTERED owners; however, the modifications should be shared as modules. Do not distribute the program in its entirety.

Back-up and Transfer

Backups may be made of this program; however, you must include the copyright notice and serial number on any back-up copies. Transfer of registration may be done by sending signed written notice from the original purchaser, releasing his registration rights. Contact New Image Software for further instructions regarding transfer.

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This program and documentation manual are copyrighted under the laws of the United States *and Canadian* governments. You may not copy the program for distribution purposes at any time, whether for personal gain or not. You may NOT remove the copyright notice or serial number at any time.

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any kind, either express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. New Image Software does not warrant, guarantee, or make any representations regarding the use of, or the results of use of, the program in terms of quality, correctness, accuracy, reliability, currentness, or otherwise, and you rely on the program and results solely at your own risk. New Image Software also does not warrant that the program or manual will meet your requirements, or that the program will be uninterrupted or error-free.

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In order to be able to obtain any customer support or updates of the program, you *must* complete and return the enclosed registration card to New Image Software. If this registration card has not been received by New Image Software, or New Image Software is aware of breach of any part of this agreement by you, New Image Software is under no obligation to make available to you any customer support or updates of the program even though you have made payment of the applicable update fee.

Acknowledgment

You acknowledge that you have read this agreement, understand it, and agree to be bound by its terms and provisions by filling out and returning the enclosed registration card. You also agree that this agreement is the complete and exclusive statement or agreement between the parties and supersedes all proposals or prior agreements, verbal or written, and any other communications between the parties relating to the subject matter of this agreement.

Should you have any questions concerning this agreement, please contact *in writing*:

New Image Software

Customer Sales and Support

P.O. Box 525, Salem, UT 84653

Dead address, of course.

User Support

THANK YOU VERY MUCH FOR PURCHASING IMAGE BBS! This manual is a very detailed description of the features and capabilities of the program. However, if you have any questions left unanswered, or if you discover any problem with any part of the program, please feel free to contact us at any of the following BBS or voice support lines.

LYON'S DEN BBS (Central Region: Michigan)

BBS: 313-453-2576 24 hrs. 300-2400 baud.

System Operator: Ray Kelm (Professor)

PORT COMMODORE BBS (Western Region: Utah)

BBS: 801-423-2734 24 hrs. 300-2400 baud.

9:00AM to 5:00PM MST

Voice Tech line: 801-423-1966

System Operator: Fred Dart (The Chief)

For support, call any of the support boards listed or any of the tech lines listed during the hours listed. These locations are set up for your convenience, you may call any of them but you might want to call the one nearest to you; they are located in the states shown.

The bulletin boards listed all have many users that are IMAGE BBS owners; they love to share modifications and ideas! You can benefit greatly by being a member of any of these BBSes.

Additional support can be found on QuantumLink. Each of the above listed support personnel are available on QLink as: IMAGE Don, IMAGE Fred, and IMAGE Jay and will make every attempt to assist you in any way.

Update 7/2014: *There is a Facebook group and the beginnings of a support web site, "Pinacolada's Projects," located at <<https://sites.google.com/site/pinacoladasprojects/>>.*

Also, stop by Jeff Ledger's "Commodore TelBBS forum," where there is some archived information about Qlink and telnet BBSes: <<httphttp://jledger.proboards19.com/jledger.proboards.com>>

| |
|---|
| <p>Note: Until further notice, this manual covers all current versions of Image BBS: 1.0, 1.1 and 1.2.</p> |
|---|

Setting Up Your Image BBS

Setting up should be very simple. We suggest you read this chapter carefully, following the instructions step by step. The configuration editor also has built-in documentation to help you out.

Hardware Considerations

IMAGE BBS has been tested with many different types of peripherals, and usually has no problem running with any Commodore compatible equipment. If you have any problems, please contact us at one of our support centers listed in this manual for help, and we will do all we can to help you to make IMAGE BBS work with your system. Some modems and drives deviate from the Commodore standard enough to cause some problems, but this is usually fixable with some patches into the program(s). Some of the peripherals tested with IMAGE BBS and found to work well are:

Disk Drives

- All Commodore drives (1541, 1571, 1581, and IEEE drives)
- Xetec Lt. Kernal hard drives
- Creative Micro Designs hard drives
- ICT Datachief and Minichief hard drives (see notes below)

Lt. Kernal Hard Drives

IMAGE was completely developed using a Lt. Kernal drive, using LUs 0 to 9, so is completely compatible with this drive in all respects.

CMD Hard Drives



They work. CMD mods.


ICT Hard Drives

This drive has a problem in chain mode that will not allow more than one file to be open at a time. IMAGE does use more than one file at once in some areas, so we suggest not using the ICT drive for the E-mail or Etcetera disk, or for sub-boards. Any other system function should work fine with the ICT drive.

Modems

| | |
|------------------------|---|
| Commodore 1650 | Hesmodem II |
| Commodore 1660 with CD | Commodore 1670 (both models) |
| MPP 1604 | Avatex 1200hc |
| Total-Tel | Aprotek Trans-Com TCM 1200H & 1200H jr. |
| Westridge | Supra 2400 baud |
| Mitey-Mo | Most Hayes-compatible modems |

Table 1: Supported modems

See the "Questions & Answers"  section in the programming chapter for more information on setting the BBS up for your particular modem or telnet bridge. (NOTE: The modem routines in IMAGE BBS are contained in individual modules, so if a modem is not supported, it is very likely that a module will be written for it that will allow its use soon.)

RAM Expansion Units

IMAGE BBS has been tested successfully on systems using REUs in conjunction with other peripherals. Version 071487 of Commodore's RAMDOS is provided. It is set to define your RAMdisk as device 7, which is how it is supported by Image BBS.


- g (fixme)
- f file copier, copies any file with a two or more character long filename to  disk
- r BBS setup file, modified by Jay Levitt
- s RAMDOS binary

Table 2: RAMDOS files

Printers

Most Commodore compatible printers should work with IMAGE BBS. Standard Commodore routines are used by the program; using logical file #4, device #4, with a secondary address of 7 to allow for upper- and lower-case.

Other Interfaces


Some IEEE or printer interfaces could feasibly cause some problems due to memory conflicts, and would need some customization of the program to allow use. Two IEEE interfaces commonly used and tested with IMAGE BBS are the "IEEE Flash!" by Skyles Electric Works, and the "BusCard II" by Batteries Included, both of which perform well.

RS232 (EIA232) Interfaces


There are two files: `m1.rs232/user` and `m1.rs232/swift`—depending on the type of modem or telnet bridge you'll be using, rename one to `m1.rs232` in order to achieve the proper setup.

Fastload Cartridges

At the present time, we recommend that no fastloader cartridges be used with IMAGE BBS, they may only cause problems.

 *Please give any information about other fastload solutions you have success with using. 1541 fastload routines are present in the as-yet-unreleased Image 2.0!*

Creative Micro Designs SuperCPU

 *There are patches to make the BBS run at 20 mHz. During file transfers, the BBS must be slowed down to 1 mHz with a POKE to the SuperCPU speed register.*

Getting Things Going

Now that you are ready to set up IMAGE BBS, we recommend you first back up your original disk (both sides if you are using a 1541 type disk), then store it in a safe place. *Never* work with the original, just in case something goes wrong.

None of the disk files are copy-protected, so there is no worry about anything not working correctly with a backup disk.

If you are copying with more than one drive, Copy-all, a great public-domain program by Jim Butterfield, is included on the disk to assist you in doing this. Copy-all will copy PRG, SEQ, and REL files with no problems whatsoever on any type of Commodore compatible drives using two drives.

If you need to copy REL files using a single 1541 drive, you can use a program by Jim McAndrew called "Rel-Copy" specifically designed for that purpose.

Designating Drives

IMAGE BBS is designed to use up to eight drives, and possibly use even more with limited functions. It will support:

- single or dual drives
- Lt. Kernal logical units (LUs) 0 through 10 (the DOS LU, a side effect of applying the "CMD Mods" in Image BBS v1.2a—which, among other things, let the BBS access partitions numbered 1-255)

You will want to plan your setup on what space you have available, so read the following information carefully to help you in this regard.

Although it is possible to run Image BBS using only one 1541 disk drive, we highly recommend you use at least two, since you will find that disk and directory space gets used quickly.

Trust the docs when they say this. I suffered with one 1541 for years, then broke down and got a second one. It still wasn't very useful without having 30 sets of floppy disks, because I ran a huge BBS.

When referring to "device," we mean the device number assigned to the particular drive (i.e., one drive online is usually set to device 8, two to 8 and 9, etc.).

When referring to "drive," we are talking about the drive number (or partition if using a hard drive):

- 0/1 on a dual drive such as the MSD-2 floppy drive
- partition 0-10 on a Lt. Kernal hard drive
- partition 1-255 on a Creative Micro Designs hard drive (0 refers to the current partition)
- If you have two physical drives, there may either be a switch somewhere on the drives to change device numbers, or—as with older 1541 drives—you must cut a solder pad (the drive manual should describe how).

You may also “software change” the device number with the BASIC program `dv change` included on your IMAGE BBS disk, or online with the `CD` command. If you only have single drives on your system, then the drive numbers will always be zero.

“Directory space” refers to the number of directory entries available on the drive, which is usually limited, depending on the type of disk drive. A 1541 drive allows 144 directory entries, while an SFD allows 244, etc. Check your drive manual to see what the limitation is.

“Drive space” or “blocks free” mentioned here will refer to actual blocks used/unused on the drive.

Now you will want to plan out which disks you want to use for which functions on the BBS. There are six "designated disks" for BBS functions. These can be combined in any form on any drive or number of drives. They are described as follows:



1: The "system" disk

Contains mostly SEquential (text) files that do *not* change often. Menu files, sub-board entry files, and other text/graphics files are all included on this disk. Also, BBS news files are located here. Will not use too much directory or drive space.

System filenames on this disk start with *s*. News filenames start with *n*.

2: The "e-mail" disk

Contains all user e-mail and forced e-mail files (see page . Will use much more directory space than disk space.

E-mail filenames start with *m*. Forced e-mail filenames start with *f*.

If your BBS is part of a network, the NetMail files are stored here. These may take up a significant amount of drive space, but not too much directory space.

NetMail filenames start with *nm*.

3: The "etcetera" disk

Contains miscellaneous files used to supply BBS information. Many online games and functions use one or more of these files to store their data. Some of these files are RElative files, and most of them change frequently. Storage depends on the number and type of online games and programs you are using. If no online programs use the etcetera disk, it will not use too much disk or directory space.

Etcetera filenames start with *e*.

4: The "directory" disk

Contains all directories used on the BBS, whether for sub-boards, U/D libraries, text file libraries, or similar. These files change often, and this disk will use a fair amount of directory space, but not too much disk space.

Directory filenames start with *d*.

5: The "plus file" disk

Contains all BASIC or ML modules needed to run the BBS. They load when needed to execute various functions. None of these files will change, unless modified offline.

Plus file filenames start with several different prefixes based on these categories:

+ . BASIC modules

++ ML modules

scn. top and bottom sysop screen displays (idle screen, online user screens, Image Terminal screens)

In this revision of Image BBS, the Extended Command Set extension is enabled by default. This gives the sysop more flexibility in several areas. For more information on the ECS system, see page 87.

The initial `m1.ecsdefs` definition file which the ECS system needs should be copied here also.

6: The "user" disk

Contains all user data files, which are expanded as new users sign on. There are two files that keep all user information available to the BBS. Two directory entries, a little over one block per user total.

User data filenames are `u.config` (REL) and `u.index` (PRG).

Different devices and drives can also be assigned to each of the following:

- Sub-board in the message base subsystem
- Upload/Download or user exchange library in the file transfer subsystem
- Plus file in the online programs subsystem
- Movie file in the movie file subsystem
- Text file in the text files subsystem

These need not be the same as any of the six pre-defined system drives, but the above types of files may also be stored on those drives if so desired.

Copying Files

Now, format a new or usable fresh disk (or partition if using a mass-storage device) for each system drive you will have online, and copy over the files from the disk that you backed up. We also suggest that you label each floppy disk with the device and drive number so that you will not get confused as to its purpose.


Unfortunately, Image is somewhat hobbled by a "flat file structure"—i.e., there is no provision for using subdirectories (or even partitions with 1581 drives) on mass-storage devices which support them (the CMD devices are a good example). All files must reside in the root directory to be accessible. This is a shortcoming I plan on addressing in Image BBS 2.0 with the additions of CMD hardware detection (plus any other hardware sysops give me reference material for) and the ability to issue DOS commands where appropriate in what is called the "General Files" section (which can have message bases, text and plus-file subdirectories in a single directory!).

A similar modification is possible for Image 1.2b, I just haven't gotten much further than the planning stage; which is to say, just a bit further than the BBS editor quoting... sigh.

Setting Up Your Image BBS

We'll start by copying the files which the BBS needs to function to their proper system disks.

Boot Disk

- (Note: When you boot your BBS, any device can be used, but you *must* use drive #0. If you wish to use a different drive number to boot, you  must change setup to reflect the proper drive.)

If you are using a floppy-based setup, you need to make a “boot disk,” from which you will load your IMAGE BBS. Just use a blank disk, and copy the following files onto it. This disk is used whenever you are re-loading (booting) your BBS.

- Whether you're using a floppy disk or hard drive partition, copy the following files to the device you want to boot from:

| Filename | Purpose/notes |
|------------------|--|
| image 1.2b | Boot file (LOAD ,device,1) |
| im | Core BBS routines, written in BASIC |
| ml 1.2 | Core machine language routines |
| ml.editor.loader | Swaps BBS text editor into place from RAM underneath ROM when needed |
| ml.editor | BBS text editor routines |
| ml.extra | Fast garbage collect; most are two seconds in length |
| ml.pmodes | Print mode definitions (see "Message Command Interpreter," page 77) |
| ml.rs232 | RS232 communication ML, renamed as above |
| screen 1.2 | Title screen graphic file |
| setup | Initialization routines, written in BASIC |

Table 3: Required boot disk files

- Copy to the System disk all files beginning with s .

- Copy to the Etcetera disk all files beginning with e. (Note: the REL e.say file is optional. This file contains "sayings" displayed to the user both at logon and when SY is entered at the main prompt. Due to the size of this file, some sysops with smaller systems may wish to copy over e.say-smaller as e.say, or not use this feature at all by omitting the file entirely.)
- Copy to the Plus File disk all files beginning with +. (don't forget +.modem), ++, and scn. Also, ml.ecsdefs should be copied here in order for the default Extended Command Set definitions to work properly upon bootup.
- The user files are written during the first-time configuration process, directory and e-mail files after your BBS is up and running.

If you are using a user port modem, rename ml.rs232/user to ml.rs232. If you are using a high-speed modem or telnet bridge program, rename ml.rs232/swift to ml.rs232. config may be modified in the future to make this procedure automatic.

It is fine to put these boot files on your System disk, assuming you have sufficient drive space.


| Filename | Purpose/notes |
|-----------------|--|
| +.modem | Modem communication routines; rename as necessary |
| +.lo | Idle screen (waiting for call) plus-file |
| ml.ecsdefs | Extended Command Set definitions (see page ) |

Table 4: Required plus file disk files

Now you are ready to configure IMAGE BBS!

Setting Up Your Image BBS

For many this is a new experience. You will not be reconfiguring an existing system nor be converting a system over, but rather are starting from scratch. For those that want or need to start fresh, the Configuration Editor will do the job. If you are converting an existing system from CNet 12.0/12.1, there are also convert routines in this program.

The Configuration Editor



bla, some sort of intro.

Configuring a New System

You begin by loading the configuration program from your back-up disk. Use the standard Commodore LOAD command:

```
load"config",8 (assuming 8 is the device number you're booting from)
```

After it is loaded, type run. The configuration editor is very complete and self-documenting. You should follow each step in sequence just as they are listed in the configuration menu.

Device/Drive Assignments

The first menu selection helps define the devices and drives you have to run your BBS on. Selecting the DEVICE/DRIVE menu option will bring up a sub-menu of options. The system of sub-menus will take you completely through your device and drive setup, defining each of the six required system drives, identifying which device and drive they are set to, as decided earlier.

The default values are for device 8, drive 0. To change any value, use the **CRSR ^** and **CRSR v** keys, and to select an option, hit RETURN. Use this procedure to select any menu item in the configuration editor.



Message Base, Upload/Download / Exchange Setup

Since the original configuration editor was written, New Image Software developed improved handling regarding these sections. They are now configured while on the BBS via the "REEdit" system. Eventually they will be removed from both the configuration editor and this section of the documentation.

Refer to the REEdit system on page 96 for further information.

Access Levels

You must then assign access to each of your boards/libraries. Access is calculated using the following method, which is used throughout the BBS. To determine which groups can access a given sub-board/library, add the group's access value:

| Group # | Value | Group # | Value |
|---------|-------|---------|-------|
| Group 0 | 1 | Group 5 | 32 |
| Group 1 | 2 | Group 6 | 64 |
| Group 2 | 4 | Group 7 | 128 |
| Group 3 | 8 | Group 8 | 256 |
| Group 4 | 16 | Group 9 | 512 |

An Example

If you wished groups 3, 5, 7, and 9 to access a given board, you would add:

| | |
|---------|-----|
| Group # | Add |
| ----- | --- |
| Group 3 | 8 |
| Group 5 | 32 |
| Group 7 | 128 |
| Group 9 | 512 |
| | --- |
| Total: | 680 |

680 is what you would enter for the access code value.

Note: you may type ? at most prompts that ask for access levels and the BBS will go through groups 0-9, asking you if that group gets access (type Y for yes, other keys mean no). It then calculates (but doesn't immediately display) the value for you. You may do this in the configuration editor, or any part of the BBS that defines an access level.

You also enter a *subop* (sub-board operator; a user given an area of the BBS to maintain) for each sub-board/library. This is done by typing the ID number of the user desired. If you are configuring a new BBS, you have no users yet. Therefore, assign the subop duties to either yourself (user 1) or to no-one (user -1). Of course, you may change this later.

Each sub-board/library must be defined as to which device and drive to put the files on (posts, responses, U/D files). The device and drive menu options allow you to set these.

When you're done with your selections, select the last option, "Keep Parameters" and you are returned to the prompt to assign another sub-board/library. When you're done, simply select the "Main Menu" option.

Editing Access Groups

You should now define your access groups. There are ten groups, zero through nine. Each one can have different capabilities as you wish. All new users signing on to the BBS are automatically placed into group zero. The parameters for each group consist of:

- Group name
- Number of calls permitted per day (1-254 or infinite [0])
- Time in minutes permitted per call (1-99 or infinite [0])
- Amount of time permitted idling (no activity at a command prompt) (1-9 minutes)
- Number of downloads per call (1-255 or infinite [0])

User Flags

Each group has a set of “flags” assigned to users placed in that group. These flags may be customized for individual users at a later time if desired. With this editor, you set the flags as you wish them assigned when first entering the particular group. The flags usually toggle between “Yes” or “No,” but a few require numeric input.

| Flag | Type | Purpose |
|-------------------------|-------------|---|
| Non-Weed Status | Yes/No | Yes: Group is not deleted from the user log after not having called within a specified number of months. (See “AutoWeed,” page 95.) |
| Credit Ratio | Numeric | The number of credits awarded per lines made in a post or file block uploaded. The ratio is usually 1:1. |
| Local Maintenance | Yes/No | Yes: Group has access to BBS maintenance commands. Only give <i>very</i> trusted users access to this. |
| Post/Respond Capability | Yes/No | Yes: Group can post messages in message bases. |
| UD/UX Access | Yes/No | Yes: Group can use upload/download or user exchange subsystems. |
| Maximum Editor Lines | Numeric | Lines of text (10-100, in multiples of 10: 0=10, 1=20...) group has available to post messages, e-mail, or feedback. |
| Unlimited DL Credit | Yes/No | Yes: no credit is deducted when files are downloaded. |
| Remote Maintenance | Yes/No | Similar to Local Maintenance. Can write/remove forced e-mail, feedback, view system logs. |
| E-mail Access | Yes/No | Yes: group can send/receive e-mail. |
| User List Access | Yes/No | Yes: group can list BBS users. |
| B.A.R./Log Access | Yes/No | Yes: group can view various logs. |
| Sub-board Maintenance | Yes/No | Yes: group can edit or re-configure SIGs or sub-boards, and edit or delete other users' posts. |
| Files Maintenance | Yes/No | Yes: group can edit, validate, award credit to users in the U/D section. |
| MCI Access | Yes/No | Yes: group has access to the Message Command Interpreter (see page 77). |
| UD/UX at Prime Time | Yes/No | Yes: group can upload or download from U/Ds or U/Xs during prime time. |

Table 5: User flags

We also suggest that, at least to start, you define group 9 as the most powerful group. When you first log on to your BBS as sysop, you are assigned group 9 access. You may change your access group after logging on for the first time.

When you have completed all assignments for a group, select the `Keep Parameters` option and move on to another group. When all groups are assigned satisfactorily, choose `Return to Main Menu`.

Note: Any changes in access group information, either with the offline `config` editor or the online `+.reconfig` editor, require a reboot before the changes take effect.

BBS Information

Now you get to identify your BBS. Select the `BBS Info` option from the main menu. It has several specific questions about you and your BBS to help personalize it.

First, the sysop's information:

You are asked for the handle you have chosen to use on your BBS. This information is assigned to user number one, the sysop account.

You are also asked to provide a password. Choose it carefully since this is usually the most powerful account on the BBS, and you will not want it compromised.

Then you are asked a few other questions that are added to the data in your account to start the user file. This information can be changed inside the BBS later, if you desire (using the `ED` or `EP` commands).

| | |
|------------------|--|
| Board Name | Should be self-explanatory. |
| Board Identifier | A two-character abbreviation used to identify your BBS. For example, a board named "Lyon's Den" might use an identifier of <i>LD</i> . |

Table 6: BBS setup information

Prime Time

A period where everyone is limited to being online a certain number of minutes, and U/D access is limited to users with the "U/D at Prime Time" flag set. If you are just starting out, you may wish to wait to see how busy your BBS is before setting up Prime Time. If you decide to set it up, you are asked for:

- The time to start
- The time to end
- The number of minutes you will permit users to stay online

This information may be changed later if you wish.


When you are finished with the Prime Time option, choose `Keep Parameters` to return to the `BBS Info` menu.

Main Prompt

This is a message users see when they are not in any particular subsystem. It can be anything you want, but should be short. The default prompt is `IMAGE`:

After establishing your prompt, return to the `BBS Info` menu.

Credit Points


Credits are points that users accrue or lose depending on their actions on the BBS. They earn more by uploading files, posting bulletins in the message bases, playing games, the  credit exchange and possibly by other methods. They can also be awarded by the sysop for no good reason! The final selection here is to set the number of credit points new users receive when first signing up to your BBS. This can be from 0 to 65,000, but we assume most sysops will not want to assign that many to new users.

This completes the `BBS Info` section of your configuration!

Loading Configuration Files



You may load configuration files at any time to make changes to them as you desire. This can also be done online with the `+.reconfig` program, but the option is included here for any that may wish to reconfigure their BBS off-line.

Saving Configuration Files

The last option is to save the configuration files to disk. You are first prompted to insert all system disks into their proper drives, and then the files are saved to the disks. You are notified if any file(s) have not been written to disk, or if re-writing a particular file will  start the user log, before exiting the configuration editor.

All Done

This completes the configuration of the BBS! You can now select `Exit Configuration Editor` and choose the appropriate option:

```
Return to BASIC
Cold art the machine
Boot PAGE BBS
```

(If you change your mind, you can still escape with `←`.) For now, let's select `Return to BASIC` and continue with setting up the modem.

Modem Configuration

You can run a dial-up BBS (and in fact some people still do), but for convenience's sake, and to get the most callers possible, you'll probably want to have incoming connections via the Internet.

If you're using a real Commodore 64, you'll be using an interface which plugs in to either the user port (for example, an Omnitronix RS232 interface), or expansion port (a Turbo232 or Glink interface). A serial cable connects to a PC which runs TCP/IP to RS232 "bridge" software, allowing the BBS to send and receive modem commands and BBS data even though there's not a real modem connected.

5. 0 = Local off-hook 1 = Not

When you are logged on to the BBS from the local console, should the modem be taken off-hook so people trying to call in get a busy signal?

6. 0 = ATH0 1 = ATH

This is just a matter of semantics: does your modem use ATH or ATH0 to hang up?

7. 0 = Hang-up in modem reset 1 = Not

Choose whether to hang up when resetting the modem.

8. Value for ATX


This controls the number of error reporting (1-4) codes used by the modem (VOICE, ERROR, etc.) It is usually left at 4.

| Numeric | Verbose | Description |
|----------------|----------------|--|
| 0 | OK | The last command sent to the modem was processed correctly. |
| 1 | CONNECT | The modem achieved a connection at 300 bps. |
| 2 | RING | The modem detected an incoming call. |
| 3 | NO CARRIER | The modem could not make a connection or lost a connection due to the absence of the carrier signal. |
| 4 | ERROR | An error has occurred; usually a bad command. |
| 5 | CONNECT 1200 | The modem has achieved a connection at 1200bps. |
| 6 | NO DIAL TONE | The modem did not detect a dialtone. |
| 7 | BUSY | The modem dialed but got a busy signal. |

Table 7: Typical modem result codes

| | |
|----|--|
| X1 | Usually adds connection speed to basic result codes (e.g. CONNECT 1200) |
| X2 | Usually adds dial tone detection (preventing blind dial, and sometimes preventing ATO) |
| X3 | Usually adds busy signal detection. |
| 4 | Usually adds both busy signal and dial tone detection |

Zoom Modem spec sheet:

| Numeric | Verbose | x0 | x1 | x2 | x3 | x4 |  |
|----------------|----------------|-----------|-----------|-----------|-----------|-----------|---|
| 0 | OK | | √ | √ | √ | √ | √ |

Telnet bridge software

Jim Brain's *tcpser-1.0rc6*

Tcpser is a telnet bridge program which can interface with either a real Commodore 64 via a serial cable, or an emulator. It can be downloaded from:

<http://www.jbrain.org/pub/linux/serial>

Using a physical serial port

Even if you're using Windows, its COMx: nomenclature is replaced by Linux's /dev/ttyx. COM1 is equivalent to /dev/ttyS0. This suggested command line for tcpser means "use serial port 0, use incoming port 6400, report the modem connect rate at 19200KBPS, initialize the modem with the following string, log events at level 7, and show incoming and outgoing RS232 and TCPI/IP traffic."

```
tcpser -d /dev/ttyS0 -p 6400 -s 19200 -i"e0v0h0x4&C1&D2&K3" -l7  
-tSsiI
```

Using the VICE emulator

Note: VICE doesn't emulate the CD (carrier detect) line if you're using a user port modem. So while the BBS will answer, it won't necessarily hang up properly if a user should disconnect midway through their call.

Here, the -d parameter is replaced by -v, which is the port VICE is listening on in its RS232 settings. Here is a command line to try:

```
tcpser -i "e0v0" -s 2400 -v 25232 -p 6400
```


If you're using a high-speed expansion port interface, you can increase the -s value to something more appropriate.

tcpser4j

This is the same thing as tcpser, except written in Java. You configure it via an XML file (there is a well-documented sample file included), then have the included .bat (Windows batch) or .sh (Linux shell script) file reference that XML configuration file.

Leif Bloomquist's *BBS Server*

This is a Windows program designed to allow a real Commodore 64 to run Image BBS.

Since telnet bridges don't support BPS rate changes over telnet, you need to rename a custom version of +.modem called  modem/telnet. This is locked at 14.4 KBPS instead of how the original +.modem file stepped through its BPS rates, issuing initialization commands at each speed.

Telnet bridge hardware

These interfaces plug into the Commodore 64.

Link232

Plans are available at <http://www.go4retro.com/projects/link232/>


Lantronix UDS-10

- sends ATA immediately upon answer

CometBBS

- Available soon from <http://www.commodoreserver.com/>

GLink232 interface


- A SwiftLink clone available from <http://gglabs.us/>. X-TEC mentions: 
Tell the seller it's for hooking up to an Image BBS. This makes sure all the control lines are wired correctly.

Booting Up

You are now ready to boot up your new IMAGE BBS and make your first "call!" Most likely you will want to explore and/or continue its configuration, using included tools to:

| | |
|--|---------|
| Learn about the idle screen | Page |
| Log in locally | Page |
| Configure modem/telnet bridge response codes | Page |
| Configure/add message bases | Page |
| Configure/add upload/download or "user exchange" libraries | Page |
| Learn to use The IMAGE Text Editor | Page 72 |
| Learn about system files | |
| View Feedback (VF) system | Page 91 |

First, insert your boot disk into the proper device. (We assume device #8 here.) Type:

 `load "image 1.2b",8,1`

Autobooting Systems

Sysops with Lt. Kernal hard drives may rename `image 1.2b` to `autostart` and have an auto-booting BBS.

Sysops with Commodore 128s and CMD hard drives may rename `image 1.2b` to `copyright cmd 89`, if the partition selected at power-on contains this file.

First Boot

Now, sit back and let your BBS load up. After you see the title screen, the program does a bit of work, loading various files:

| Action | Filename |
|--|-----------------|
| Revision and startup messages display | |
| An RS232 handler loads | ml.rs232 |
| "Print mode" definitions load (see "Message Command Interpreter," page 77) | ml.pmodes |
| System configuration data is read | bd.data |
| Extended Command Set definitions load (see "Extended Command Set Editor," page 87) | ml.ecsdefs |
| System information will be read, and the number of users in the user log is displayed | u.config |
| Blocks free on each system disk are displayed | |

Table 8: Startup files

If your system files are on a different disk than your boot disk, you are prompted to **Insert all system disks and press RETURN**, where you should do just that. If all goes well, you should reach the "idle screen."

System won't start? Need troubleshooting help? There's a good discussion about files needed in "The Boot Process" on page 134.

The Idle Screen

This is shown when no user is connected to the BBS. If no keys are pressed for about ten seconds after the idle screen shows, the screen will blank, protecting your monitor from burn-in. (You may disable the screen blanking: see "The Lightbar," page 29 for more information.)


Press almost any key, or receive an incoming call, and the screen will turn back on.

Setting the Time

Unless your BBS clock is set automatically, you should see a flashing message to **Set Time!** The message continues to flash until you do so. (The BBS runs fine if the time is not set but timestamps for news items, message base posts, and such will be incorrect.)

To automatically set the BBS clock at startup, see "Automatic CMD Device Clock Set," page 130. This shows you how to modify the setup program to poll CMD devices with real-time clocks (and perhaps LtK drives).

For now, we will assume you are setting the BBS clock manually.

To set the time and date, type **1** while at this idle screen.  Type the time and date at the following prompts:

For the day of the week, type one of the following numbers:

| | | | |
|-----------|--------------|-------------|-------------|
| 1: Sunday | 3: Tuesday | 5: Thursday | 7: Saturday |
| 2: Monday | 4: Wednesday | 6: Friday | |


Type the month, date, and last two digits of the year at each separate prompt.

Enter the hour (don't use military or 24-hour time), minute, and **A** or **P** for AM/PM for each following prompt.

The top status line changes to reflect the entered date and time. If the information is correct, respond to the **OK?** prompt by typing **y** (and press RETURN). Type **n** (or any key besides **y**) if you have made a mistake and need to re-enter the data; note that answers to prompts now reflect what you just typed to minimize effort.

Now a large clock is displayed, and the BBS waits for a call. At the top of the idle screen are several items of interest:

The Status Line

 As mentioned previously, this top information line is displayed whenever the screen is not blank, no matter what the BBS is currently doing, whether the top screen mask mentioned in the next section is enabled or disabled.

It shows, from left to right:

- The day of the week, date and system time

Depending on conditions on the BBS and what you or the user online is doing, four different letters can appear next:

- P** Text output is paused, usually with the **CTRL-S** or **HOME** key combinations on the local console or by the user currently connected to the BBS.
- G** A garbage collection is currently in progress. This is usually less than two seconds in length, and can free up memory if it is low.
- A** Text output or a file read has been aborted, typically by holding the spacebar or **^** key.
- S** Parts of the BBS are being swapped out from underneath ROM into RAM. This is done to conserve memory. Parts of the disk I/O and text editor subsystems are handled this way.


The clock and status letters are followed by the minutes and seconds remaining for users while they are online. (Since no one is online at the idle screen, it shows **00:00**.) When you or a user logs in, the number of minutes left is displayed.

100 minutes or more is considered "unlimited time," and time remaining changes to **--:xx** (**xx** being seconds).

There can also be check marks in the left and right corners of this line: the left check mark indicates the user is in Commodore C/G mode, and the right check mark shows when a modem carrier signal is present.

Top Screen Mask

At idle, this area of information just underneath the status line shows the handle of the last caller, followed by their logoff time, and the time of the last log restart (LR). The window to the right shows the number of accounts currently used in the user file (UR).

When a user logs on, these displays will change to show additional information, described on  page 2.

You may toggle this "screen mask" on or off using **F1**, or a programming command (discussed in ",," page 128).

Several functions are available at this screen from the console, which are outlined in a menu if you press any key aside from a "command" key. The functions are as follows:

| Key | Function | Reference |
|----------------|----------------------------------|------------------------------------|
| 1 | Set the time | "Setting the Time," page 24 |
| 2 | Board Activity Register | "Board Activity Register," page 27 |
| 3 | System disk blocks free | |
| 4 | Large clock | |
| 5 | Update memory | |
| 6 | Reset modem | |
| 7 | Reserve BBS | |
| 8 | View today's BBS log | |
| ← | Load IMAGE terminal | "Image Terminal," page 84 |
| + | Turn modem speaker on | |
| - | Turn modem speaker off | |
| SHIFT-A | Start nightly AutoMaintenance | "Nightly AutoMaint," page 103 |
| SHIFT-N | Start nightly NetMail processing | |
| SHIFT-T | Invert carrier detect | |
| SPACE | Redisplay current screen | |
| E | Manual answer | |

Table 17: Idle screen keys

- 1** Allows you to set or reset the date and time as outlined above.
- 2** The Board Activity Register (or BAR) screen displays current data for the BBS in four columns, which cover
 - the last call
 - total since the log was restarted (daily total)
 - current total
 - BBS grand total



The rows on the screen report for each column category:

- feedback messages
- sysop e-mail
- user e-mail
- posts
- responses to posts
- uploads
- downloads
- new users
- calls
- time used in minutes
- time idle in minutes

(The first column shows the idle time between the two previous calls.)

- 3** Shows blocks free on the six different system disks.
- 4** Shows the current time using the large clock.
- 5** A garbage collect is forced, displaying the true amount of memory free in the **M=** display, at the bottom left corner of the screen.
- 6** Resets the modem to IMAGE BBS requirements. (fixme: which commands?)
- 7** The BBS can be reserved (the user signing on must know the reservation password to access the BBS) for:

- O**ne call Reserves the BBS for the next call only
- N**o calls Clears the reservation
- A**ll calls All users are prompted for a password

(This is different than RESeRved accounts, discussed on page Er 
Reference source not found, or network reservations, discussed )

- 8** View the daily caller activity log. This lists:
 - Handles of users who signed on
 - What time and date they signed on
 - Which graphics mode they were initially using
 - Any activities they engaged in while using the BBS

← IMAGE Term allows you to call other systems without taking your BBS down. For more details, see page 84.

SHIFT-A Starts nightly "AutoMaint," or system maintenance. For more details, see page 103.

SHIFT-N Starts hourly "NetMaint," or network processing. For more details, see (fixme)


SHIFT-T This inverts the carrier detect signal. (fixme: why, more info needed)

+ or **■** For compatible modems, turns the modem speaker on or off.

SPACE Redisplays the current screen.

Ⓜ Manually answer the modem.

The Lightbar

The fifth screen line is referred to as the "lightbar." This line monitors and changes many features of the BBS. All are toggled by the sysop at the console, or through a utility program (+.1b move, discussed in  "Miscellaneous Plus Files"; this is handy for remote maintenance when you can't be at the console).

F2 and **F4** switch to the opposite lightbar page.

F3 moves the white highlighted portion to the left (switching to the opposite page if you move it "off the edge")

F5 moves the white highlighted portion to the right.

F7 places a check mark to the left of the option that is highlighted in white.

F8 places a check mark to the right of the option.

(If the screen has blanked itself due to inactivity, it is restored when you receive a call or hit a key on the keyboard.)



The first of two pages shows as follows:

Sys Acs Loc Tsr Cht New Prt U/D

These check marks tell the BBS to do various things. The following descriptions assume each check mark described is selected.

Sys

Left: The sysop is available for chat, and you will hear three sirens when "C" is typed at any major prompt by the user.

Right: Turns on acing feature that will show, in the left half of the "Receive" window, the IC line number currently executing. Execution can be slowed down with the **SHIFT** or **SHIFT-LOCK** keys to read line numbers more easily. This is only a debugging tool, normally left off.

You can change the access group of the user who is online.

F3 raises access one group (wraps around 0-9)

F5 lowers access one group (wraps around 9-0)

F7 gives the user the selected access level, exiting this function.

The access group is shown using a different screen mask when a user logs on, in an area titled **Accs**. Access data is read into memory as soon as the user gets to a prompt. However, any U/D libraries or sub-boards that their new group can access are not shown on the menu until they re-enter that subsystem.

Acs

Left: Restricts logons to 1200 baud and over. Low-speed callers are told the the BBS does not accept 300 baud calls at this time.

Right: Used to "log on" from the C64 keyboard ("console"), to make a "call" to the BBS while you're sitting in front of it. This is referred to as "local mode."

Loc Shows that a remote user is in "pseudo-local" mode. This gives them access to certain maintenance commands which require "local mode" to be enabled, but the user isn't (or can't be) at the console.

Tsr Adds or subtracts time for the user online. Function keys are used in a similar manner to changing access levels. When the checkmark is on, function keys allow changes as follows:

F1: zero time (log off as soon as possible)

F2: give unlimited time (shows **--:00** on top right of screen)

F3: add one minute

F4: add ten minutes

F5: subtract one minute

F6: subtract ten minutes

F7: exit this function

Any number of minutes past 100 (fixme?) is considered unlimited time.

Cht

Left Goes into chat mode when a user is on-line. It first displays the message * **Entering Chat Mode** *, then allows the sysop and user to type anything they wish back and forth to each other for the duration of the chat.

Pressing **F7** again ends chat mode, displaying * **Exiting Chat Mode** * and returns the user to the prompt they were at, or the BBS text editor, depending on where they were before entering chat mode.

Right: Toggles local bells, so you hear all the bells the user on-line hears.

New

Left: Makes the BBS private, and will not allow new users to sign up. They are told that the BBS is not accepting new users at this time.

Right: If checked, this turns off the screen blanking mode. The screen remains on between calls.

Prt

Left: Sends all text output to the printer and the screen.

Right: Prints all log entries to the printer as well as the disk log.

U/D

Left: Users cannot access the UD/UX area. They are told the area is closed temporarily.


Right: 300 baud users cannot access the UD/UX area. They are told that they do not have access to that area at this time.

Right: Toggles "prime time" for every user (that is, if it is currently prime time, it will ignore it at logon; if not, it will turn it on). If no prime time is designated for your BBS, then this has no effect.

Table 10: Lightbar, page 1

The second page of lightbar options is as follows:

Asc Ans Exp Fn5 Fn4 Fn3 Fn2 Fn1

| Opti on | Left | Right |
|--------------------|--|--|
| Asc | Enables ASCII (American Standard for Computer Information Interchange) translation for the user. Character layout differs between Commodore and ASCII standards, most notably by reversing the position of upper- and lowercase letters. | Turns on linefeeds for the user. In ASCII mode, terminals need a carriage return (CR) to move the cursor to the beginning of the current line. However, they may also need a linefeed character to move the cursor down a line. (Without one, the user may complain "everything displays on one line." Once online, the EP command [option 3] resolves this problem.) |
| Ans | Instead of Commodore control codes, outputs ANSI ² escape sequences. These are a standardized way to set character colors, plus "screen management" things like scrolling, windowing, clearing to end-of-line, and more. | Turns IBM graphics (line-building characters, many of which have similarities with the Commodore character set) and other special symbols for the user. |
| Exp | Turns expert mode on for the user, which skips many entry screens seen when entering subsystems or changing areas within that subsystem. |  Users see a "macro" ³ --a short saying presented before the main prompt. (Users can toggle them with the "MA" command, or add their own with the "ME" command.) |

² shorthand for the American National Standards Institute Standard X3.64

³ a misleading name, since it doesn't automate anything as the MX or MACS user commands do

| | | |
|--------------------------|---|--|
| Fn5 | User receives credit when an upload is validated. Otherwise, credit is received after the completion of the upload. | User is asked whether they wish to log off after a file transfer is complete. |
| Fn4 Fn3 | Undefined. | Undefined. |
| Fn2 | Undefined. | The Message Command Interpreter (page 77) will not interpret text prefaced with a £ (or \ if using an ASCII terminal). |
| Fn1 | Undefined. | Turns MCI off. |

Table 11: Lightbar, page 2

Bottom Screen Mask

The last two lines on the screen hold more useful information. The line just below the user's text display area contains BBS operating information in this order:

The current bytes free memory for variables available to the BBS. This is constantly updated by machine language as memory is allocated by the BBS, allowing the sysop to see any areas which are causing a build-up of "garbage," which is when BASIC strings no longer needed.

Usually when the BBS does a "garbage collect" (freeing up memory which unused strings occupy), it pauses for a second or two as **M=** drops near or to zero bytes. You also see a brief flash of the letter **G** in the right half of the top status line, indicating "garbage collection in progress."

Note: There is a separate utility available to show (and optionally clear) garbage on the processor stack in the form of unclosed FOR-NEXT loops and un-RETURNed GOSUBs; it is available as an add-on called "System Functions."

| | |
|-----------------------------|---|
| M=xxxxx | The current bytes free memory for variables available to the BBS. This is constantly updated by machine language as memory is allocated by the BBS, allowing the sysop to see any areas which are causing a build-up of "garbage," which is when BASIC strings no longer needed. Usually when the BBS does a "garbage collect" (freeing up memory which unused strings occupy), it pauses for a second or two as M= drops near or to zero bytes. You also see a brief flash of the letter G in the right half of the top status line, indicating "garbage collection in progress." [Note: There is a separate utility available to show (and optionally clear) garbage on the processor stack in the form of unclosed FOR-NEXT loops and un-RETURNed GOSUBs; it is available as an add-on called "System Functions."] |
| TC=xxxxx | Total number of calls placed to the BBS since it was originally configured. |
| CN=xxx | Number of calls to the BBS since it was last re-booted. |
| BF (00:0)=xxx xx | Blocks free (xxxxx) on the last system disk (the first two digits would read <i>01-06</i> indicating one of the six designated system disks), or other storage device (perhaps a U/D or U/X area not contained within one of the six system disks) The single 0 after the colon represents a partition, drive, or Logical Unit (depending on the type of device used). These values change as users go from one area to another, so you can constantly monitor free space. |

Table 12: Bottom two screen line display

The last row on the screen has a Receive window (R:) which displays the last 10 characters received from the modem. When the "trace" function is enabled as described in *Table 11: Lightbar, page 2* on page 32, the BASIC line number currently executing appears in the left half of this window.

The center portion of the bottom line can display any sixteen characters you wish. Typical phrases include:

- *Image BBS 1.2b* at system idle
- The type of computer a caller is using when online
- The reason for chat if a user online requests a chat session and you are unavailable. The window also flashes until either you answer the page, or the user logs off
- It is also available to display custom information (see "Other & Calls," page 128 for more details)

The final section of the bottom line is the Transmit (T:) window. This displays the last 10 characters sent to the modem.

Logging On

You're now ready to go on line and examine your new IMAGE BBS in action! You can log on and edit your *s.* files, configure any sub-boards and U/D libraries, or just look around and get acquainted with its features. You may log on either normally or use the "instant" logon feature.

Normal Logon

- Use the **F3** and/or **F5** key to highlight the *Loc* position on the lightbar.
- Press **F7**, which puts a check mark on the left side of *Loc*.

This starts logging in from the console, and is called a "local login." We suggest that if you have a telephone connected to your modem, take it off the hook at this time. That way, if an incoming call connects with your modem but not the BBS (since you're on locally), the caller won't assume something is wrong with the BBS.

When a user has logged on, either remotely or locally, the program's copyright message and serial number are displayed. With a remote login, the user is prompted to hit their backspace (delete) key to detect whether they are in Commodore color/graphics (hereafter abbreviated as "Commodore C/G") mode, or ASCII mode.

Depending on which mode they are in, the file *s.login 0* (for ASCII), or *s.login 1* (for Commodore C/G) is displayed. For simplicity's sake in the following references, the character at the end of a filename will refer to either the digit "0" (this file is seen by ASCII callers) or 1 (this file is seen by Commodore C/G callers).

Then the user is asked to **PRESS RETURN/ENTER**. Actually, A can be typed, to abort the start screen; you could mention that in the *s.login x* files.

If **RETURN** is pressed, the program will read the disk file *s.start x*.

Next, the BBS instructs the user:

ENTER YOUR HANDLE OR <your board name> ID:

If the user has no account, or makes a mistake entering the information, they are instructed to type **NEW**.

If a mistake is made logging in, and if a file called *s.errmail* exists on the disk, the contents of this file are sent in an e-mail message to the user, informing them of the mistake. If they should get this message in their mailbox, and they weren't the ones to make the mistake, urge them to change their password.

A file called *e.telecheck* is either created or appended to, which contains the login time and date, the missed security question, and the correct answer. This file is viewable using the **VF** (View Feedback) sysop utility.

If the user has made four mistakes and has not entered `NEW` they are logged off for excessive login attempts.

If the user has a "reserved" account, they can enter `RES` at the prompt to enter the `RES` function of the new user program.


Instant Logon

This feature is reserved for the sysop, for it can only be used from the console. It is meant for a fast, easy way for you to log on to your BBS to do maintenance functions, posting, or anything you would normally do on a call.

The main difference from a regular logon is that none of your stats will be updated or saved to disk, and your last call date will be set to your logon time.

To use the instant logon feature, type `I` at the **Hit RETURN/ENTER** prompt. You are prompted for your password, and immediately taken to the main prompt.

"RES" Users

A `RES` user is one that you have set up an account for already using the `RS` or `ED` commands on the `RES` (Perhaps you won't be around to validate the user, for example. See the  "Remote Maintenance Commands" section for more information.)

They are asked to type their `RES` ID number and password—which you should provide them with when you set up their account—and then be taken through the normal new user application. When they are done, they are logged on with the pre-approved access and credit points that you assign to them.

"NEW" Users

If a user enters a handle that is not found in the user log, they are asked if they want to log on as a new user using that handle.

If they type `Y`, the new user procedure is gone through, beginning with the reading of the file `s.new user` (but skips the handle prompt).

The new login procedure consists of four parts:

- I. General information: handle, real name, password
- II. Terminal parameters: computer type, column width, linefeeds, etc.
- III. Miscellaneous questions: address, occupation, baud rate, etc.
- IV. Personal statement: a chance to type a paragraph or two about themselves. This is required; if aborted they are logged off without signing up as `NEW`.

Once the new user login procedure is completed, this user information is put in new user feedback for you to view later with the `VF` command, and they are taken into the BBS with access group zero status.

Existing Users

If a user enters a handle that already exists, plus a password, then they are asked a random security question:

- Their first or last (real) name
- Sections of their phone number: 3-digit area code, 3-digit dialing prefix, or 4-digit suffix

xxx-yyy-zzzz is a format used in the USA and Canada; other countries have differing formats. For now, foreign callers can just make up a phone number: 000-000-0000 works. In Image BBS v2.0, this will change: perhaps be made optional, or at the very least more configurable. It knows whether the sysop is in PAL- or NTSC-land, plus does timezone offsets, so maybe that will figure in the equation.

This is used as an extra security measure. If this question is missed, the same procedure regarding the `s.errmail` and `e.telecheck` files above is taken.

The Top Screen After Logon

Once a user has logged on and their password is verified, the top of the sysop screen changes quite a bit from what it shows at the idle screen.

The very top line is the same as discussed in the section "The Status Line."

The next five lines contain specific information about the user logged on:

- o First is the user's handle, login ID (including the two character BBS identifier), last call date, and number of calls today and total to the BBS.
- o Next is the user's real name, their access group, phone number and five flags--the first four are single digits--which include:
 - Expert mode (0=off, 1=on)
 - Color/graphics mode (0=ASCII, 1=Commodore)
 - Linefeeds (0=off, 1=on)
 - Default file transfer protocol (fixme...)
 - Column width (between 22 and 80 characters wide)

Once a user has successfully logged on to the BBS, either remotely or locally, as either a new user or a user with a login ID and password already, the BBS reads the file entitled `s.welcome x`, and informs them of:

- what their access group is
- how many calls they can make on that particular day (if not an infinite number)
- the amount of time they have for this call

Then it will check for:



function Section
new news files to read
wanting to view the Graffiti wall
"forced" electronic e-mail
normal electronic e-mail

Once all of this has been completed, the user is placed at the main command level.

Editing BBS Info Files

You now should be at the main command level, where you can do many things.

Since this is your first call, you may wish to edit the following files to suit your own tastes and coincide with your BBS plans. Sample files have been included on the disk, but may be edited or replaced with whatever you wish.



While at the main command prompt, you can use the **WF** command (see "Write File," page 90) command for this. It will give you access to a line-oriented text editor you can use to edit files. If you have files other than ones included on the setup disks you would like to use, you can import them into the text editor using a "get file" dot command (type **.G** at the left margin).

*Be sure to type **.c 80 RETURN** to set the editor line length to 80 characters before **.Getting a file**. Otherwise, lines with color/graphics characters in them may exceed the 40-column line length, causing word-wrap and ruining the file.*

*If that happens, type **.A RETURN** to abort your changes. Consider using an offline C/G screen editor such as Kaleidoscope, Digital Paint, Tyron Paint or similar.*

Here is a summary of the files discussed in this section. Remember, the suffix **x** stands for the digits 0 or 1, for ASCII or Commodore Color/Graphics files, respectively.




| Filename | Purpose |
|--|--|
| s.login x | Seen when the BBS answers the call and the caller presses their BACKSPACE key for C/G detect. These files will usually contain the name and hours of the BBS. |
| s.start x | Seen if they press RETURN at the Hit RETURN/ENTER prompt. |
| s.end x | Closing message, seen when logging off the BBS. |
| s.new user | Seen when a user enters NEW just prior to starting the new user signup process, or entering NU at the main prompt. It may contain a disclaimer, and any other information that you wish new users to know. |
| s.errmail | E-mailed to a user when an error occurs logging in. |
| s.config | This file should contain information about your BBS, such as the equipment it is running on, and any other information you wish. It is seen when a user enters CF at any major prompt. |
| s.chat | The message shown to a user if they request chat, and the sysop is not available. |
| s.nu welcome | This is a "form letter" that may be sent, if desired, to new users when you read their new user feedback and grant access. |
| s.phonebook | Contains other BBS numbers that you may autodial when used with the IMAGE terminal program. (See "The Phone Book," page 84, for the file format.) |
| s.SB | The entry file shown whenever a user enters the message base subsystem. |
|  sb | The entry file shown whenever a user enters the U/D subsystem. |
| s.UX | The entry file shown whenever a user enters the U/X subsystem. |

Table 13: Miscellaneous Editable Files

To create or edit these files, use the **WF** option (see "page 90) at the main command level. You can also use the **.Put** and **.Get** options (page Error: Reference source not found) in the editor. (See "The IMAGE Text Editor," page 72 for more information.)

--- 8< --- (snip) -----

NOTE: THE NEXT TWO SECTIONS NEED NOT BE DONE IF YOU HAVE ALREADY NFIGURED YOUR SUB-BOARDS, LIBRARIES, AND ACCESS GROUPS H THE CONFIG PROGRAM.
BULLETIN BOARDS AND LIBRARIES:

After editing these files, you will want to set up your sub-boards and U/D libraries if they have not yet been configured. You can create up to 30 sub-boards, 30 UD libraries, and 30 UX libraries. To do this and to change them at any time after, you can run the *+.reledit* program from the main command level:

Type at the main prompt, then after the *+.* prompt, type *reledit*.



ACCESS GROUPS

You can define or change your access groups on-line if they have not been previously defined.

At the main command level prompt enter *R* and run the file "access" at the *+.* prompt. You can define up to 10 access groups and what they can access on the BBS. They are numbered from 0 (new user) to 9 (usually you, the sysop). New users logging on are put in group 0.

For each of the group numbers that you choose to use, you can select a title for it. You should choose one of the access groups to be the system operator group, for you with highest BBS privileges, For each group you are using, you can select a specific amount of calls per day that that group can make as well as how many minutes per call is allowed, how many minutes at idle is allowed (how many minutes may pass without pressing any keys before the BBS automatically hangs up), and how many downloads can be made per call.

Done!

Now your IMAGE BBS v1.2b is ready to go on-line for calls! You may wish to post a few bulletins and news files to get the BBS started.

We hope you like your BBS, and welcome your comments and suggestions.

General Commands

When you first log on to your BBS, after it checks for your mail, and goes through normal logon procedures, you will be at the "main command level." You will see your main prompt that you defined in the configuration editor. You are now at the area where you have many options as to what you will do next.

This chapter will deal with the commands needed to get to certain functions of the BBS, and how to use them.

The following commands are considered "general" commands because they are not specific to a particular subsystem. They may be typed at the main prompt, or most subsystem prompts as well. A few commands (mostly maintenance in nature) are available *only* from the main prompt, or using local or pseudo-local mode. These commands are discussed in the "Maintenance" chapter.

The nice thing about general commands is the BBS remembers which subsystem you came from, so you can return to it when done with the current subsystem. For example, you have just finished viewing a directory listing of files in the U/D subsystem, and wish to go to the Voting Booth. You type "VB" at the U/D subsystem prompt listing directory information, and when you quit the Voting Booth, you will be returned to the U/D subsystem.

Most general commands consist of two letters, sometimes followed by an argument (parameter) of one or more numbers.

Examples:

SB Enter the message bases. The BBS prompts the user which special interest group or message area they would like to enter, depending on what places they have access to.

SB1 Enter the message bases, but immediately go to the first Special Interest Group they have access to. They are prompted for the message base to enter after that.

SB1,2 Enter the message bases, go to the first Special Interest Group, and the second message base in that SIG with no further prompting.

If you're a Trekkie, this reminds me of Klingon programmers: Their programs do not have parameters, they have arguments, and they always win them...

A few commands consist of only one letter. Here are the descriptions of the general commands and how to use them.

C Chat Request/Chat Mode

This requests a chat with the sysop. A short (38 character) reason for chat is requested; the first sixteen characters of that is displayed at the bottom of the system screen. This reason is also recorded in the call log on disk and printer (if used).

If the left side of **sys** is checked, the user is given a message informing them that the sysop is being paged, and the BBS monitor sounds three sirens.

If there is no checkmark, the user is told that you are not available. The **s.chat x** file is shown, and they are asked if they want to leave feedback instead.

The "reason for request" continues to flash until they log off or you answer the chat page. If the user requests chat more than once without you answering the first chat request, they are told that the page is already on, discouraging them from continuing to type **c**.

F Feedback

Feedback is "mail" left on the BBS to the sysop(s), that any user with local or remote maintenance access may read. It is left to the sysop(s) by entering **F** at most prompts, or when logging off. The user is placed into the editor to write their message.

Any user, including a new user, is allowed to leave up to three feedback messages per call. If they try to leave more, they are informed they have left their limit of feedback for that call.

Feedback, along with new user information and error messages, are read by the sysop by typing **VF** at the main command prompt. (**VF** is described more on page Error: Reference source not found.)

? Help

This reads a menu of commands available at whichever command level the user happens to be. Depending on how much information is in the menu, a "More?" prompt for additional command information may appear (although this is put in the menu file itself, and is not always necessary, depending on the file's length). At this prompt, "Y" (meaning "yes") continues, most others mean "no" and stop reading the file.

If the user is not at the main prompt, the main menu is then read.

CF BBS Information

This shows the file *s.config*. This file should contain general information about your BBS, perhaps the hardware and software it runs on, its hours (if not 24 hours a day) and anything else interesting about it.

LD Change/View Last Call Date/Time

A user can change their effective last call date and time by using this command. The last call date is used to determine which messages on the BBS are new and which are old. If a user is logged off before they have a chance to see all new messages, they can use this command to move their last call date back the next time they call.

O Log Off

The user is asked first if they really wish to log off, and if so, if they would like to leave feedback to the sysops first.

o% saves the last call date, in case they did not read all the new information in the message bases.

o! logs off instantly, without prompting for feedback.

These may be combined: **o%!** logs off instantly and saves the last call date.

Q **Quit**

From most prompts (and in some subsystems, just pressing RETURN) gets the user to the main prompt.

If "Q" is entered at the main prompt, the user is asked whether they wish to log off, as above.

T **Time/Date**

Displays the current time, the time the user logged on, and the amount of time remaining on the BBS this call.

EP **Edit Terminal Parameters**

Enters a menu which allows a user to change the computer type, line length, linefeeds, file transfer protocol, password (use my mod again... more options).

PM **Prompt Mode**

Toggles "Prompt Mode" on or off. When on, when a user reads new messages in the message base (using RN or RA commands), they do not receive the "end-of-bulletin" prompt between message threads, or the "[P]ost [N]ext [Q]uit" prompt between sub-boards.

Useful for callers who want to speed-read or buffer messages.

It also eliminates the prompt after the "A" (About this file) command in the U/D subsystem.

ST **Status**

Allows users to see their status on the BBS, including:

- Their first and last name
- Last call date and time
- Number of times they've called the BBS
- Number of lines in the editor
- Access flags
- Other information

SY **Saying**

Reads a random "saying" or "fortune," such as the one read at logon, from the RELative file *e.say*.

LG **Activity Log**

Designated users may read the daily log, listing what activities callers have done on the BBS.

BA BAR Stats

Designated users may view the Board Activity Register stats as shown between calls. See "Board Activity Register," page 27 for more details.

AT C/G - ASCII - ANSI Mode Toggle

Chooses between Commodore Color/Graphics, plain ASCII, and ANSI graphics. This option is saved to the user file when logging out.

XP Expert Mode

Toggles Expert Mode. When on, subsystem and sub-board entry screens are skipped. This option is saved to the user file when logging out.

NU New User Message

Re-read the *s.new user* file, read when a new user logs on to the BBS for the first time.

Local Mode

This allows users with local mode access to enter pseudo-local mode so they can do maintenance functions remotely. These functions include copying files, reading directories, sending DOS commands, etc. This is very powerful, and should be given to only the most trusted users on your BBS.

Command Stacking

Any of the main commands entered at any prompt can be "stacked" by using the up arrow key (^) between the commands. If the following command were entered at the main prompt:

```
SB9^RN^<^R3^UD^SA
```

Then the BBS would

- SB9 Take you to sub-board 9
- RN Read the new messages there
- < Move backwards, to sub-board 8
- R3 Read post #3
- UD Enter the U/D subsystem
- SA Scan for all new uploads

Certain places, such as choosing "quit" in the "end of bulletin" prompt, usually clear stacked commands—if a user realizes they need to do something in the middle of executing the stacked commands, their only recourse is to hold down the spacebar to stop them.

See the "MACS" command on how to automate command stacking.

Entering/Changing Subsystems

Additional commands available at all major levels of the BBS include those which go to any other subsystem. In other words, a user need not exit to the main command level from the sub-boards before going to U/D's or PlusFiles, but can enter that area directly by typing the command.

Commands which behave this way include:

| | |
|----|---------------------------|
| BB | Bulletin Board listings |
| EM | E-mail subsystem |
| MF | Movie Files subsystem |
| NF | News Files subsystem |
| PF | PlusFiles subsystem |
| SB | Message base subsystem |
| TF | Text Files subsystem |
| UD | Upload/Download subsystem |
| UL | User Listings |
| UX | User Exchange subsystem |
| VB | Voting Booth |

Each of these commands take the user to a separate subsystem of the BBS, which will be discussed in an upcoming chapter.

Common Subsystem Features and Commands

Since several subsystems share similar commands and usage, this section outlines them.

When a user enters the subsystem or a SIG, only the sub-boards/SIGs that their access group can go to are loaded into memory.

So, if you have five sub-boards, but a user logs on with an access group which can only access boards one and five, they'll see only two boards, re-numbered as 1 and 2. In this way, they aren't aware of other areas they can't access existing.

Listing Sub-Boards

A user can list which sub-boards they have access to when they first enter the SIG by typing L (optionally followed by the board number to start the listing from)

If they are subop of a particular sub-board, the board name is preceded with a ">".

If you have set up Special Interest Groups, only SIGs the user has access to are displayed. In this way, they are not aware of areas they cannot access. When they get the "What SIG?" prompt, they may type either:

- The SIG number by itself
- The SIG number, a comma, and the board number within that SIG (this works for SB, UD, and UX subsystems)

For example, if a user responded to the "What SIG?" prompt with "4,10", they are taken into SIG #4, Sub #10 (or U/D #10, etc.), assuming they have access to it.

When a user enters a SIG number that is too high, the available SIGs are re-listed, instead of exiting to the main prompt.

When a user enters a sub-board/library number that is too high, available boards are re-listed.

Pressing RETURN/ENTER at the "Which Sub (or U/D or U/X)?" prompts return the user to the list of available SIGs. (If SIGs are not active, they exit to the main prompt.)

N Sub-Board Name

This displays the current sub-board's name.

Moving To Other Sub-Boards or SIGs

A user can change the current sub-board by

Entering the new sub-board number at the "Sub #x: " prompt

"<" or ";" takes then to the previous sub-board

">" or "=" takes them to the next sub-board

If a number is typed after the previous two commands, (ie, >>4 or <<5) the user is taken to the previous/next SIG, plus the specified board number.

If a user moves to a board they are subop of, they are informed of this.

If a move cannot be made, the user is told the board number they requested does not exist.

Sub-Boards (Message Bases)

This is IMAGE BBS's public message base, where users can write messages about anything they want, replying to other users in "threads" which keep responses organized. Users access message bases by typing SB at most prompts.

If the user knows which SIG they want, they can combine the SB command and the SIG number:

SB3 This takes the user to SIG 3, assuming they have access.

If the user knows which SIG and sub-board they want, they can combine the SB command, the SIG number, a comma, and the sub-board number:

SB3,2 This takes the user to SIG 3, sub-board 2, assuming they have access.

Upon entering the message bases, the file "s.SB" is read, regardless of their expert mode setting.

If SIGs are set up, the SIG list is shown. They get a "Which SIG?: " prompt. As above, if the user knows which SIG and sub-board number they want, they can enter them here, as above (example: 3 or 3,2).

Upon entering the board, they are told:

- How many bulletins there are
- How many have new responses since their last call date
- Total number of responses



8. The [Q]uit function (in the [P]ost [N]ext [Q]uit prompt) now clears any stacked commands. This is for the people who have stacked commands and then in the middle of reading the posts remembered they had to do something (i.e., kill a post, weed the Subs, etc.) but were locked into a command stack. Now they are not.

9. Response titles are now available in the Subs. Setting the variable RT to 1 in line 901 of +.MM.sb-post will turn the ability to title responses on (it comes with RT set to 1). The response system is 100% compatible with older posts and NO CONVERSION IS NECESSARY.

A new version of the +.NM.netsub files will soon be available that allows the response titles to be transferred to other NetSub boards as well as to allow "overflow" NetSubs to be defined.

Setting RT to 0 will NOT prevent any existing response titles from being displayed, nor will it block NetSub response titles from being shown once the new +.NM.netsub files are released.

The RT variable only controls the user's ability to title responses on your board.

Scanning Bulletins

This means to display

- The number of the bulletin
- How many responses have been made, if any
- The bulletin's status:

| Status | Means |
|---------------|---|
| --- | Normal bulletin, no new replies |
| *FZN* | Frozen bulletin, no response possible |
| *NEW* | New bulletin since last call date |
| *NRB* | New response to bulletin since last call date |

Table 14: Bulletin status indicators

- The bulletin's title (in quotes)

Typing "S" begins scanning at either the first bulletin, or after the bulletin most recently read on the sub-board.

"S" followed by a bulletin number starts scanning at that bulletin.

The slash (/) key or the space bar abort a scan at any time.

About Bulletins

This displays the

- Subject
- Author (and node number if in a NetSub)
- Date and time of creation
- Number of responses to a bulletin
- Date and time of the latest response

Typing "A" tells a user about the bulletin following the one most recently read or manipulated.

"A" followed by a number finds out about that specific bulletin.

Reading Bulletins

This displays the same information as the "about" function, but reads the text body of the message, followed by each response until the end of the "thread" (group of bulletins under that title).

Typing "R" (or just pressing RETURN) reads the next bulletin in the sub.

"R" followed by a number reads that specific bulletin.

While reading a bulletin, a user can:

Press the space bar to skip to the next response in the thread

Press "/" to skip directly to the end of the bulletin.

Once at the end of a bulletin, a user has several options in, appropriately enough, the "end-of-bulletin" prompt. (This prompt is only displayed if the user's Prompt Mode is enabled.)

Press RETURN to continue to the next message in the sub-board

"P" sends a private e-mail message to the user that posted the original message

"R" responds to the post

"O" reads the post over from the beginning
"Q" or "/" stops the "RN" or "RA" function
"K" lets a subop or sysop kill the post. The original poster may also kill the post, if there are no responses.
A question mark at this prompt brings up a menu of these options.

New Messages

The following commands work on the current sub-board, with messages considered new since the user's last call. To do the following:
Scan SN
Find out about AN
Read new RN or *
To stop an "RN" in progress, press the "/" key while reading a message.
To scan or read new messages on the current sub-board, plus all higher-numbered sub-boards, type "RA" or "SA", respectively.
To stop an "RA" or "SA" at the current sub-board, press the "/" key.
During an RA, if the user reaches the last board and has any stacked commands remaining (for example, **RA^UD**), the **[P]ost [N]ext [Q]uit** prompt is displayed to allow the user to post to the last sub before executing the next stacked command.

Posting New Bulletins

If a user types "P" and there is room in the directory (a limit of 60 posts per sub-board exists), the user is asked for the post's title. If this title is unique to the directory, the user is asked:
If they wish to post anonymously, if the board is not set up to be non-anonymous. If they elect to post anonymously, the author will appear as **Anonymous** to normal users.
* followed by the user's handle, to users with subop, sysop, or sub-board maintenance access.
The user is then placed into the BBS text editor subsystem to write their message. .s on a blank line exits, as usual.

Killing Entire Threads

This removes the original post concerned, along with all its responses, from the sub-board and its message directory.
"K" begins listing all bulletins starting with the first one
"Kx" starts with bulletin #x
The user is asked whether they want to kill the bulletin:
Y(es) N)o A)bort or S)tart
k followed by a number begins the listing with that number, offering the same choices. Once the end of the list is reached (or s is typed), the directory is re-written to disk.
A regular user can kill their bulletin only if there are no responses to it. Once responses are added, only a subop can kill it.

KO and KA

There are two more commands available to persons with SubOp access (SubOps, Sub-board Maintenance and SIGOp access users).
KO Lists any messages in the SB section older than the maintainer's last call date, giving them the option to kill them.
KA The same as KO, but is automatic - it will *not* ask if you want to keep the post(s) killed, so be *very careful* with this command!
Remember, these commands are keyed to your last call date, so use LD to set the cutoff date for deleting old messages *first*.

Editing Bulletins

To edit a previously written bulletin, enter **E** followed by the post number to edit. The bulletin is opened, and the BBS searches through the bulletin for messages that the user can edit (if they are the author, or sub-board operator).

If such a message is encountered, the user is prompted with:

K)keep, D)delete, R)read, E)dit, or A)abort:

K)keep Keeps the message with the thread

D)delete Removes the message from the thread

R)read Reads the current message

E)edit Take the user to the editor subsystem to edit the message

A)abort Return the user to the sub-board prompt.

In the Edit function, SubOp access users have an added command: **(K) i11 Old Resp**. This function first asks if you want to auto delete old responses: "No" asks for confirmation before deleting each response. ("A" aborts the operation, but any deleted responses *stay* deleted!)

"Yes" deletes any responses made before your last call date.

Both functions stop when they reach responses posted on or after your last call date. Remember, this function is tied to your last call date, so use **LD** to set the cutoff date first.

Also remember, the Auto Delete function *cannot be aborted* once started and is *only* available to SubOp access users!

Frozen Bulletins

If a user does not want responses added to a post, begin the title with an up arrow (^) character. The BBS reports this bulletin as frozen during a scan or About, and will not allow responses to be made to it.

Bulletins can be un-frozen by the original poster reading the message with Prompt Mode enabled, so you get the end-of-bulletin prompt. There, type **F**, which toggles the bulletin's Frozen status. The current status is then reported, and the user is returned to the end-of-bulletin prompt.

Sub-Board Operators

"V" views the current sub-board's operator

"M" sends a private e-mail message to them

Maintenance Mode

Only sub-board or users with general sub-board maintenance can access this function. Type **z**. The sub-board maintenance menu has two options:

1) Edit the entry file.

You have a choice between ASCII and C/G. A sub-board's entry file is displayed upon entering the sub-board. If there is an entry file already, it is loaded into the BBS text editor. Use the usual editor commands, and type **.s** to save.

2) Edit board detail.

The user can change

Sub-board title

Sub-board type

Open/closed status

Access level required to enter the sub-board

If the user is in local or pseudo-local mode, they also have the option to change the current sub-board operator and device/drive assignment.

While defining sub-boards using the **+.reedit** program, you may specify any of your sub-boards to be:

Message Bases:

| Abbreviation | Meaning | Purpose |
|--------------|--------------------------------|---|
| Anon | Anonymous | All posts are completely anonymous |
| N-AN | Non-Anonymou s | Users are never allowed to make anonymous posts |
| P-An | Password, Anonymous | A password is required to access the sub-board where anonymous posts are allowed |
| P-NA | Password, Non-Anonymou s | A password is required to access the sub-board, where anonymous posts are never allowed |
| Pswd | Password-prote cted | A password must be entered to access the sub-board |
| Std | Standard | Users are asked whether they wish to post anonymously each time they write or respond |
| + | Networked sub-board | Able to transfer messages to/from other BBSes |

Table 15: Message base abbreviations

| | |
|--|--|
| | |
| | |

Table 16:

Upload/Download/Exchange:

| Abbreviation | Meaning | Purpose |
|---------------------|---------------------------------|---|
| Upld | Uploads only | No downloads possible |
| Dnld | Downloads only | No uploads possible |
| DO-C | Downloads only, credit deducted | No uploads possible, credits deducted for downloads |
| DO-F | Free downloads only | |
| Free | Free downloads | Credit is never deducted for downloads |
| PW (fixme: more) | Password protected | User must enter a password to gain entry to the U/D or U/X. |

Table 33: U/D and U/X types

EITHER:

> You're the subop User has ability to edit/delete posts and generally maintain the sub-board.

* A "password" board:

This requires a password to enter. The BBS asks any user that has access to that board for the password upon entering it. If they get the password wrong, they are asked if they want to try again.

If they guess wrong three times in the same call, they are not allowed to guess again. This can be used either for fun, by putting hints to a password up other places in the BBS, or to add a measure of security for certain boards that you do not want all users to access.

* An "anonymous" board:

All bulletins and responses will show as anonymous, even to the sub-board operator and sysops. Great for those "war boards."

* A "non-anonymous" board:

No anonymous messages are permitted, and users are not asked if they would like the post/response to be anonymous.

The RELedit System

This is from the documentation on the TurboREL disk, with slight modifications.

Image V1.2 REL SIG's Upload/Download, Exchange Subsystems

Thank you for selecting the new U/D and exchange systems for use on your BBS. Many long hours were put into this software to make it the best system we could possibly offer. This documentation provides you with everything you need to know about the system, plus just a bit more. It consists of four general parts:

- System Overview
- Setup
- Available commands
- Sysop commands

Part One: System Overview

The program makes available to you several new features which enhance your BBS to its maximum potential, including:

- Enhanced board types
- Separate password for each board

In the case of U/D's or U/X's:

- Last download date
- Local mode multi-uploads and downloads
- Expanded "about" function
- Online program reader

The User Exchange bases have all the same features above, plus:

- The "E" command when downloading multiple files to select all files matching a selected pattern, with one easy keystroke.

Part Two: General Setup

A few variables can be set in line 1 of `+.UD: YY% and IT`. (They are currently defaulted to zero.)

- Setting `YY%` to 1 deducts credits for files read online. Setting `YY%` to 2 deducts double credits, and so on.
- Setting `IT` to 1 freezes the user's remaining time on the BBS while they are in the U/D's, giving it back at exit.

Some more things to consider:

- If you have no SIGs defined, you are limited to 30 board names.
- With SIGs defined, you are allowed 999 board names (30 libraries per SIG).

Part Three: Available Commands

Toggling Fn5's right check on, you activate the "no credit until validated" feature of the BBS. This check mark can be toggled on or off any time a user is online and uploading, until the point the "End Of Transfer" message appears.

- If the check is off, the number of times downloaded is set to 0, and credits awarded to the user according to their credit ratio.

* If the check is on, the times downloaded is set to -1, but no credits awarded until the file is validated by the subop or SIGop.

Toggling Fn5's left check on activates the "Log off after file transfer complete?" prompt.

A, Ax THE "ABOUT" OPTION

When this option is selected, the the user sees information about the file, including:

- * the date and time it was first uploaded
- * the date and time it was last downloaded
- * the type of computer it's for
(If a C128 user views a file meant for the C64, they are told it is for the C128 in 64 mode.)
- * approximate download time
- * if any user-submitted comments exist for the file *and if so, the first one is displayed; a quick mod by Pinacolada.*

After that information is displayed, the user is prompted with the following options:

C Comments read/add. *This feature was written by DER DEUTSCHER.* If the user would like to add a comment, they may.

D Download the file. If the user has selected a multi-file transfer protocol, this adds the file to the download queue. (fixme: correct?)

N Move to the next file in the directory; if they are on the last file, they wrap around to the first file.

L Move to the previous file in the directory; if they are on the first file, they wrap around to the last file.

M E-mail the file uploader.

R Read any file, whether SEQuential or PProGram.

- A program with a hexadecimal load addresses of:
 - o \$0401 (CBM PET?)
 - o \$0801 (The Commodore 64's BASIC 2.0)
 - o \$C101
 - o \$4001 (The Commodore 128's BASIC 7.0 (fixme))

display the program just as if LISTed with that computer's respective version of BASIC.

- You can also opt to display "control characters" such as clear/home, delete, or color codes in quotes in an expanded, easy-to-read format.
- A program with any other load address (or a BASIC "head" and machine language "tail") produces a "hex dump" like a machine language monitor would:

```
MMMM HH HH HH HH HH HH HH PPPPPPPP
```

MMMM: Memory address

HH: Hex value of each byte

P: PETSCII code of each byte

Discovered recently: This also works in 80 columns!

- As previously mentioned in the setup of the U/D system, credits can be charged for reading programs online by setting the variable YY% to the number of credits you want subtracted per block read.

For users with maintenance access:

U Unvalidate a file, taking back credit for the upload.

V Validate new uploads.

For the user who uploaded the file:

E Edit the file (computer it's for, and filename)

All commands selected here, including Download, return you to the same file in the listing you were on before selecting the command.

Hitting RETURN (or any key not listed/not applicable to the user) aborts the About function.

SCANNING FILES

S Scan files normally

This has been enhanced to use both 40- and 80-column screens. A normal file scan will list files in this format:

Bk's Dl'd Name

001 [200] [001] "file.txt,s"

From left to right, the columns represent:

001 The number of the listing in the directory

[200] The number of Commodore 254-byte blocks (or Kilobytes if using another computer type)

[001] The number of times the file has been downloaded

"file.txt,s" The filename and file type. Unvalidated files have a star in front of the name, if the user is the uploader or subop.

After all files have been selected, the total estimated download time is displayed to the screen with a new prompt allowing you to:

[S]can selected files

[D]ownload selected files

[C]lear list and restart

[K]ill a file from the list

(All other user features are the same except having been moved into mini-plus files to make the system easily expandable.)

SS Sorted scan


The scanned files can be sorted by:

* Size

* Number of times downloaded

* Alphabetically

DM Download Multiple Files

As with the "D" command above, this command now shows a  complete description of each file:

UM Upload multiple files

With the Copier protocol loaded, the BBS gives you a directory of the designated drive of the current U/D board. You are prompted to select either:

[Y]es, [N]o or [A]bort

(This is similar to downloading multiple files in the U/X base.)

After all files have been selected, you are prompted:

"Manual or Auto descriptions?"

* Auto descriptions:

Asks you for one description to add it to all files selected before writing the directory.

* Manual:

Asks for a description of each file selected.

Sysop commands are now active whenever the Copier is loaded as a protocol, not when local or pseudo-local modes are on. In addition, if you are logged onto the BBS from console mode, you are forced to use the copier. Anyone accessing the BBS as a sysop must turn on pseudo-local mode to use the copier with the PR command.

Vx, VN The Validate or Validate New commands allow you to validate all uploads to the current U/D library.

If the "no credit" option is active:

(fixme: until validated?)

* You may type "%" to award a percentage of credits to the user for uploading the file.

* Otherwise, the full amount of credits is added to the uploader's account.

UM If the copier protocol is loaded, to Upload Multiple files you are prompted for a pattern. (RETURN defaults to "*"). You are prompted with each filename matching the pattern, and have the ability to reply:

[Y]es [N]o [S]tart or [A]bort the upload.

When all files have been selected, you are given a list of files selected, then an "Are You Sure?" prompt.

* [Y]es continues with the multi-upload.

* [N]o aborts.

DM Just like the Upload Multiple command, you can also Download Multiple files from the current library to the destination drive of your choice.

AS Users can apply for access as the subop of the current board if there is not currently one assigned.

AC Any user with subop or remote maintenance access may add up to 500 credits to any user's account.

IDx Displays user information just like a UL user list. Posts, responses, uploads and downloads are shown to subops and SIGops.

A few notes:

* The current protocol is saved to the user's stats by using the variable UL (which was previously used for upper/lowercase flag—not needed but still supported in the user file).

* Any C-64 or C-128 user who currently has this flag set to 1 will have a default protocol of Xmodem. Be sure to inform your users of this when you put the system up. Once they change their protocol to Punter, it will remain Punter unless they change it.

UD Upload/Download System

This is the IMAGE BBS "file transfer base." All users read the file *s.ud* when entering the U/D section, regardless of whether they are in "Expert Mode" or not. (fixme: correct?)

Moving To Another Library

Main Prompt

The user is shown the

- Total number of files in the directory
- Number of new files uploaded since his last call
- Total number of credit points they have
- Current protocol in memory
- Blocks free if in local/pseudo-local mode (fixme?)

If they are the library's subop, they are informed of this.

If a move cannot be made, they are told the requested library number does not exist.

Typing "N" displays the name of the current library.

Libraries which a user can access are listed by typing "L".

PR Changing Protocols

New Punter, Slow Punter (for noisy telephone lines) and Xmodem-CRC/1K protocols are available for use with IMAGE BBS. Commodore 64/128 and Amiga users default to Punter; all others use Xmodem.

[I have no idea what Starlink is, but I'm including this info anyway:]

"Slow Punter" has relaxed timing that works very well with Starlink. If your BBS is reachable by Starlink, people will be able to use the "Slow Punter" for file transfer, or you can use it to call boards using Starlink.

(NOTE: These protocols have been updated for IMAGE v1.2a, and are very efficient. We think you'll be very happy with them.)

U SINGLE FILE UPLOAD

Each library allows a maximum of 60 files. The user is asked for information describing the file, which is saved along with their handle, ID number, and the current date and time. They receive credit points at the ratio of whatever his access group or flag allows per block uploaded.

There is also an option to add a file comment, used to describe what the file is for. Other users can view this comment, and add their own.

UM MULTI FILE UPLOAD

(The user must be using a Multi-Punter protocol.) The BBS prompts:

Go to multi-send mode!

The BBS records filenames as they are received, entering them into the directory, along with the

Uploader's handle

BBS ID number

Current date and time

A description which says "Multi-Upload" (fixme: wasn't this changed?)

Users may edit the entry to provide descriptions. Credit is given just as with a single file upload.

(NOTE: Occasionally, noise on the phone line will cause multi-uploaded file titles to be corrupted. While impossible to prevent, it is a rare occurrence, and should not cause much trouble. You could just use the "E" option afterwards to edit the filename.)

D, Dx SINGLE FILE DOWNLOAD

Type "D" followed by the file number, from the main U/D prompt

Type "D" at the "About" prompt.

Note that a user can download a file if:

The files downloaded that call are less than the number of files allowed per call, as dictated by their access group settings, unless the user's status includes unlimited downloads per call.

The time remaining is sufficient (to begin with; errors causing delays during transfers are ignored, since they can't be known in advance).

They must have at least as many credit points as the number of blocks that the file contains, unless their status includes unlimited downloads (in this case, no credits are subtracted for a download).

DM Multi File Downloads

The user is asked for a starting file number, then shown each file in the directory from that file number, and prompted

[Y]es [N]o [S]tart [A]bort

Each [Y]es selection: the approximate download time is shown for their baud rate. All the requirements to add the file to the download queue are the same as for downloading a single file. If everything is okay, they can continue adding files until they reach the maximum number of files, or choose to stop at any time.

[S]tart: The BBS shows the list of files chosen, asking them to confirm the list. If they do so, they are given 20 seconds to go to receive mode, and the files will be transferred.

NOTE: Users can abort any file transfer in any mode and any protocol by sending **CTRL-X** three times: that is, holding down the **CONTROL** key and then typing the letter **x** three times.

Listing Files

Scanning the file directory shows:

The directory file number

Number of blocks (or kilobytes, blocks divided by four) depending on the user's computer type)

Number of times downloaded

Filename and file type (PRG or SEQ)
Several scanning variations exist:
S, Sx Scan titles from first entry, or starting from entry #x
SA Scan titles uploaded after last call date (all libraries in current SIG)
SN Scan titles uploaded after last call date (current library only)
SS Scan titles sorted by:
 • Number of blocks
 • Number of times downloaded
 • Alphabetically
SU Scan for unvalidated files
Spacebar or / aborts.

er Commands

A, Ax About first file, or file #x. This shows, in addition to information displayed by the "scan" command above:

- The uploader's user ID and handle
- The date and time it was uploaded
- The date and time it was last downloaded
- The computer type it's meant for
- Comments about the file

Kx Killing Files

A sysop, subop, or the user that uploaded the file may enter "K" followed by the file number to delete it from the file directory. They are also asked if the file should be scratched from the disk.

If they answer "No" to this prompt, an entry to the daily activity log titled **kill**: plus the filename is made. If a printer is online, the same notation is printed there also. This shows a file on disk is not in the file directory.

When a file is killed, credit points are deducted equal to the number of points they were given when they uploaded the file when they kill a file.

Ex Editing Files

A sysop, subop, or the user who uploaded the file may type "E" followed by the file number to change information about it.
(fixme)

Rx Reading a File

A user may enter "R" followed by the number of the file to display a SEQ or PRG file. They may also select "R" when doing an "About" on a file.
(fixme: dupe)

Validating Files

Sysops, subops, and the user who uploaded the file can "see" all unvalidated (ie, not downloaded and/or tested) files. When downloaded and verified to be working files, they are validated, available for other users to download and add comments to. In the process of downloading a file to validate, subops:

- Will not have credit deducted
- The download does not count against the number of downloads per day (if not unlimited)
- The time remaining is not checked when subops download in their own libraries.

Subops or sysops validate files by typing:

- "V", "Vx" to validate either the first unvalidated file (or file #x)
- "VN" to validate new files since their last call
- "VA" to validate all files in the library

Unvalidated files will have a leading asterisk in the filename, and show zero for times downloaded:

```
### Bk's Dl'd Name
-----
001 [200] [000] *"file,s"
-----
```

When a file is validated, the number of downloads changes to one.

A user who uploaded a file that is not yet validated has full access to read or download it, but will *not* have the power to validate it (unless they happen to be the library's subop).

Dx Copying Files

If a user is in true local mode (from the console), when they enter the U/D subsystem, the "copier" protocol is loaded. To copy a file, type "Dx" (where x is the file number). The BBS tells them the approximate copy time, allowing a filename change, or to be copied to a different device/drive.

If no destination device is specified, it defaults to one number higher than the source device. (NOTE: Any device may be the target device, but this function will ONLY copy files to drive #0.)

Mx Moving Files

If a user is in local or pseudo-local mode, type "M" and the file number. They are prompted for the new directory to move the file to.

* "L" lists all available boards.

* If the directory is to a different device/drive, the file is copied to that device/drive, otherwise only the directory entry is moved.

* If the file is moved, an option is given to scratch the file from its source device/drive after the move is completed.

UX Full Disk Exchange

Full disk exchange operates very similarly to the U/D section, except files are not placed in directories, but directly read from the device itself (a floppy drive, for example).

UX is sub-divided into libraries just as UD is. Each can have its own subop, entry file, access and configuration. Multi upload and download functions the same as in the UD section.

Users may enter **ux** at most prompts to enter the full disk exchange area.

The file **s.ux** will be read regardless of Expert Mode status. (fixme: correct?)

\$, S Listing Files

A listing of files may be obtained by entering \$ or S. The user is prompted for a pattern (if none is given, the default is * for all files).

Free UD/UX Library

While defining libraries using the **+.reledit** program, you may specify any of your libraries in the U/D or U/X to be FREE libraries; that is, no credit is deducted from the user when he downloads from these areas. To specify a FREE board, use the **+.reledit** program or the Z command for local maintenance.

In a FREE download board, the number of files per call and credit points are not checked prior to starting a download.

EM Electronic Mail Subsystem

This is IMAGE BBS's private mail section. If a user has access to this section, on logon they will be informed if they have mail waiting, and given the option to enter the e-mail subsystem at this time. Upon entering the mail system, they are told how many messages they have waiting.

A user may also enter the e-mail subsystem by entering "EM" at any major prompt. The prompt for this section is "E-Mail: ".

L, Lx Listing E-mail

To obtain a list of the e-mail a user has waiting in the order they were received, type "L" (or "L" followed by a number to begin listing at a specific message) at the "E-Mail: " prompt. This lists all messages, reporting

- Handle of the sender
- Date and time it was sent
- Message subject

Rx READING E-MAIL

Press RETURN to begin reading (or read the next message in a series).

Once the last message is read, they are told "No more mail."

To read a specific message, type "R" and that message's number.

To read all messages, type "A". All messages are displayed in succession.

Typing "N" reads any new messages since their last call.

RESPONDING TO A MESSAGE

This replies privately to the user who sent the message being read. After reading a message, the user is presented with several options:

"Reply to <sender's handle>: "

* [Y]es:

This replies to the author.

(fixme)

To respond to a specific message from the list of messages received, a user may type "R" followed by the number of the message to respond to.

S SENDING PRIVATE E-MAIL

The BBS prompts for the handle or user ID number who will receive this message. If the ID number is entered, the user log is searched, and the handle (if found) is shown. The sender confirms this is the user they intended to send the message to, and are placed in the BBS text editor.

D DELETING E-MAIL FILES

(This option also appears when they leave the e-mail subsystem, if there are messages left in their mailbox. This encourages users to keep their mailboxes tidy and not use un-necessary disk space.)

When a user deletes their e-mail, they get the following prompt:

Delete [A]ll, [S]ome or [N]one of your mail?

* [A]ll



Deletes every message held in their mailbox, after confirming an "Are you sure" prompt with [Y]es.

* [N]one

Keeps every message held in their mailbox.

* [S]ome

Goes through all messages in the user's mailbox, prompting them:

[D]elete, [K]eep, [R]ead, [F]ile away:
* [D]elete Exactly as described above.
* [K]eep Holds the message in the user's mailbox.
* [R]ead Views the message to help decide whether they wish to keep or delete it.
* [F]ile away oves the message from the user's mailbox, but places it in a separate file  the e-mail disk. These stored messages can be later accessed with the **FR** (File Retrieval) command at the e-mail prompt.

FR Personal File Storage

Using this command, users can

- Read previously "filed away" e-mail messages
- Get a directory of their personal e-mail files with "\$"
- (fixme) is there a delete option?

V VERIFYING E-MAIL

Type "V" (and the user's handle when prompted) to see how many e-mail messages they have, and how many are from you.

VE EDITING E-MAIL

Type "VE" (and the user's handle when prompted) to edit any e-mail you have already sent to that user.

FM FORCED E-MAIL

A user with remote maintenance access may send "forced e-mail," that is, e-mail which is displayed to a user when they log on to the BBS. It is unabortable, and cannot be deleted by the user.

The user creating this e-mail is asked whether they want to create or remove a "forced e-mail" file, and prompted for the user's handle the forced e-mail is for.

When reading a forced e-mail file, if either of the last two lines contain the single word

ERASE the forced e-mail file is erased.

OFF the user is logged off immediately after reading the forced e-mail.

Note that **ERASE** and/or **OFF** must both be entered with all capital letters.

Q Leaving the E-Mail Subsystem

Type **Q** or a command that takes you to any other subsystem.

If the user has any messages left in their e-mail inbox, they are prompted whether they want to delete them.

News Files Subsystem

The news files are structurally different from the other file areas of the BBS—such as Movie Files or Program Files—and for that reason they are covered separately here.

Typing **NF** at most prompts takes you to the News File library. Here, users can re-read BBS news files they see at login, and you can write new ones.

If you have "File Maint Access" you will be placed in **News-Maint**: Otherwise, the prompt users see is
News:

A Adding a News Item

To add a file to a directory, you are asked for the title. This is what the user will see when they list news items; it also names the file on disk where the news text is stored.

If the filename begins with a **\$** (dollar sign), it becomes a "repeating" news file, shown to users each time they log on to the BBS.

All News files are non-abortable the first time they are shown to a user.

Reading News

Type the number of a news file (see List) to read that item.

Kx Killing a News File

A maintenance operation, type **k** followed by the number of the news file you wish to kill. (fixme: confirmation?)

Ex EDITING A FILE

If you have maintenance access, type "E" followed by the number of the entry to edit. You may then change the information you entered using "**A**": (fixme: news file name, whether it's a repeating news item) and the file will be loaded into the editor for editing. When the file is re-saved, you are given the opportunity to update the date of the file so it again appears as a new file.

Lx LISTING NEWS FILES

Type "L" or "Lx" (x is the starting number to list from) at the prompt to list all news files available to that access level. Each is given a number, and if you have News-Maint access, you can also see access information for that file.

Q LEAVING

Entering "Q" will return a user to the main command level. A user may also go to any other section of the board by entering the appropriate command.

The File Libraries (Movie, Plus, RLE, Text)

There are three sections of the IMAGE BBS that provide very different functions but the sections themselves are functionally identical. They use the same routines and all of the same commands.

Explanation of Subsystems

There are four separate types of files handled by the same program:

- Movie files Files containing cursor movement, color, and uppercase/graphics characters, displayed if the user is in Commodore C/G mode).
- Plus files Sysops can add games or BBS utilities in this section.
- Text files Plain Commodore PETSCII or ASCII text files.
- RLE files Short for "Run-Length Encoded," this is a black-and-white high-resolution file format which requires certain telecommunications or viewer programs. Graphics data is represented by ASCII text. Control sequences begin and end the file, telling the terminal or viewer to switch into or out of high-resolution modes.

We describe the Movie File Library here, but the same principles apply to other libraries.

MF Movie File Library

Type this at any prompt to enter the Movie-File library.

If you have "File Maint Access," you are placed in "Movie-Maint 1".

Since the Movie File libraries may have sub-directories and sub-directories under those sub-directories, the number following the prompt refers to the directory level you are at. When you first enter the Movie Files section, you are placed in directory level 1.

Adding Sub-Directories

To add a sub-directory, you must have Movie-File Maint access. Select "A" at the "Movie-Maint" prompt.

* You are asked for the Title.

This is the title the user sees when listing the directory. It has no relation to the actual filename about to be created.

* Next, you are asked for the filename.

o To create a directory, type "d." followed by the sub-directory filename you want to have on the Directory disk.

For example, if you enter "d.movies", the BBS adds "m." to the name, and the sub-directory is saved as "d.m.movies".

The letter added depends on the subsystem used:

m. movie files

p. plus files

r. RLE files

t. text files

- Next, enter the access level(s) which see that sub-directory when listing the files available. Access is determined in the usual way; either from the chart shown earlier, or by typing "?" and answering "Y" or "N" for each group.
- Finally, you are asked for how many credits to charge users to enter this sub-directory. You can charge credits for:
 - o entering the sub-directory, but make accessing the files free
 - o viewing the files within, but not entering the directory itself
 - o both entering the sub-directory and viewing the files within

Or you need charge nothing if you wish. It's up to you! The credits charged here are put into the BBS-wide credit pool. Refer to section ... to learn how to set that up.

Adding a File

To add a file to a directory or sub-directory, enter the directory or sub-directory where you wish to add the file, type "A" at the prompt. Here is a discussion of the following prompts:

* Title: As above. Again, this is just what the user sees, and has no relation to the actual filename viewed when the item is selected.

* Filename: Type the filename as it appears on disk. (In the PlusFile area, there is no need to type the leading "+.", the program adds that automatically.)

* Device: Type the device number where the item can be found.

* Drive: Type the drive number where the file can be found.

If you do not have a dual drive (or the file is not on a dual drive), just press RETURN.

* Access: Type the access level you will allow to view this file. (Remember, you can enter a ? at the access prompt to let the BBS help calculate it.)

* Credits: Type the number of credits (if any) you will charge users for viewing this file.

x **Entering a Sub-Directory/Running a File**

Type the number (see LIST) of a file to read/run it, or sub-directory to enter it.

If you wish to go back one level when in a sub-directory (for example: you are at "Movie-Maint 2" and wish to return to "Movie-Maint 1"), type "B" or "<" at the prompt.

Type "M" to return you to "Movie-Maint 1" (the Main Directory) from any sub-directory level.

Kx **Killing a File/Sub-Directory**

A maintenance only operation, type "K" followed by the number of the file or sub-directory you wish to kill. You will also have the option of scratching the file referenced by the directory entry off the disk. Killing a sub-directory is not possible if there are files present in that directory.


Ex Editing a File/Sub-Directory

If you are have Movie-Maint access, type "E" and the number of the entry to edit. You can change any of the information you entered originally.

L List

Typing "L" lists all files and/or sub-directories available at that level. Each is listed by number. If you have "File-Maint" access, you can see the filename, access, credit, device and drive information for that file or sub-directory.

QL QuickList

This lists the items in the directory like List does, 

Q Leaving

To leave the file areas, Q takes users to the main command level, or type a command taking you to any other area of the BBS.

BB BBS Database Subsystem

This takes users to a bulletin board listing program that allows users to add, list, or delete the numbers for other bulletin board systems. When first entering the system they are presented with a menu of options and arrive at the BBS database prompt *dBASE*:

Commands

The active commands for this module are:

- L)ist BBS Numbers
- Q)uit To Main Menu
- D)isplay Notes
- A)dd A Number
- R)emove An Entry
- E)dit An Entry

The last three options only appear if the user has post and respond capabilities.

L Listing a Number

This brings up another menu of options which allow users to narrow down the scope of the listing they would like:

| | |
|-------------------|---|
| B)aud rate | Prompts for the minimum baud rate they want to search for. BBSes listed support that baud rate or less. |
| A)rea code | Prompts for the area code they want to search for. Telephone numbers of BBSes listed have that area code. |
| C)omplete listing | Lists all BBSes entered in the database. |

Table 18: Bulletin board listing options

The spacebar or / key aborts any of the listings.

A Adding a Number

Typing this at the "dBASE" prompt allows users with post/respond capabilities to add a BBS number to the listing. They are prompted for the complete information on the board they wish to add, including

- The BBS name
- Phone number
- Baud rate

- Hours of operation

Several characteristics of the BBS are asked about (and listed when a user lists that BBS):

- o If it charges a fee
- o Has U/D areas
- o Has online dating, games or role-playing games
- o Is PC Pursuitable, networked, etc.

The database is checked for a duplicate under this phone number. If there is one, the user is notified, and returned to the "dBase" prompt.

After all prompts have been answered, the results are shown, and they can

- change any answers they've given
- continue and write the entry to the database
- or abort back to the "dBASE" prompt

Adding an entry first uses any previously deleted entries, otherwise adds to the end of the list.

R **Removing An Entry**

Only the sysop, a user with maintenance access, or the user that posted a number may remove it. Anyone else attempting to remove a number is told the entry can only be removed by the original poster.

A BBS name is prompted for. The list will be searched and if the entry was posted by the same user, it will be deleted.

E **Editing Information**

A sysop or the user who posted a BBS number may edit the information. The program asks for the entry number to edit, checking to make sure the user has access. If so, they may change any information in the entry, and re-file it.

D **Display Notes**

This brings up a listing of abbreviations used in the BBS listings. These include CBM for Commodore, etc.

Q **All Done**

To leave the BBS Lister, type **q** (which takes users to the main command level), or a command taking you to any other area of the BBS.

VB VOTING BOOTH

This takes you to the Voting Booth. If you have Remote Maint Access, you see the prompt "Vote-Maint->", otherwise you will see "Vote->".

If there are no topics available and you do not have Vote-Maint access, you are returned to the main command level.

A ADD A TOPIC

Only available in Vote-Maint. This allows you to add a new vote topic. An explanation of the prompts:

- * Subject: Enter a short but descriptive title of the vote topic.
- * Access: Enter the access level this topic may be seen by. This is set as with other areas of the BBS.

Now you are placed in the IMAGE text editor. Type the question text. (Do not include the answers, these are entered separately after you save the question text.) When done, enter .S on the first column to save the text and continue to the next section.

Now enter the choices a user has for this topic, and a short amount of text which better describes this option.

There is a limit of 9 choices, after which the voting booth automatically saves the topic. If you have fewer choices, hit RETURN at the last one, and you save the choices then.

Kx KILL A TOPIC

This function is only available to users with Vote-Maint access. Type "K" and the topic number (see LIST below) to be killed. You are asked to verify killing the topic. If you answer "Y", the topic is killed from the Voting Booth topic directory, and erased from the disk.

VOTE/VIEW RESULTS

Available to all users, typing the topic number allows you to vote on it (if you have not yet voted on that topic) and/or view the results. The voting booth uses ID numbers and handles to keep track of who voted, so a user cannot vote twice on the same topic.

L LIST TOPICS

Available to all users, this lists all topics available to that user's access level and the date each topic was created.

If you have Vote-Maint access, the access level for each topic is also listed.

LEAVING

Users may leave the voting area by typing "Q" to return to the main command level, or type a command which takes them to any other area of the BBS.

UL USER LIST

Available to those who have their User List flag set, this lists either all users, or a subset of users according to specific attributes.

Q QUICK LISTING

A "quick list" displays the user list sorted one of two ways:

Numerically
Alphabetically

This list shows you only the handle and ID numbers. You can start listing at any number or alphabetic character(s) depending on the type of sort you select.

R REGULAR LISTING

To search for a particular user or attribute (or if you want more information than just the handle and ID), use this option.

Type the number of attribute(s) to search for, then fill in the information to narrow down the search.

When you are done, or if you wish to list all users, hit RETURN.

Next, type the number to start the listing from. The program continues from that point to the end of the user file.

The space bar or slash key aborts the list at any time.

If a user has remote maintenance access, the list shows all information about a user:

handle
ID number
last call date
computer type
area code and phone number
access group
real name

Otherwise, the list only shows:

handle
ID number
last call date
computer type
area code

Q Leaving

To leave the user list, type "Q" or hit RETURN (which takes users to the main command level), or a command taking you to any other area of the BBS.

The IMAGE Text Editor

The text editor is where any messages on the BBS will be entered. It works by letting users type anything they want to type.

This is a line-based editor; you cannot use cursor keys to move up and down a line like you can in most modern text editors/word processors.

Entering Text

Simply type it into the editor. There is no need to press **RETURN** at the end of each line; the editor "wraps" words, so they aren't chopped in half.

When you reach the end of the text buffer, or if you type a **.** at the first column, you will be automatically put into *Command Mode* (see below).

As the sysop, you can define how many lines of text (in multiples of ten) a user can type into the editor. (See *Table 5: User flags*, page 15, for more information.) If a user is in local or pseudo-local mode, they are allowed 253 lines in the editor.

The amount of free memory (not filled with text) is kept track of. If this amount becomes too small (less than 256 bytes), the message

***** End Of Memory *****

appears, and you must use **.S** to save, or **.A** to abort.

Entering the editor in local or pseudo-local also mode reports how many bytes are free.

Editor Commands

Commands

Type a **.** (period) as the first character on a line. This displays **Command:** and waits for you to press another key (called a "dot command"). This is Command Mode.

- If you press **DELETE** or **RETURN** keys, the **Command:** prompt is removed, and you are returned to the editor.
- If you press an unrecognized command key, the editor exits to BASIC to check if you have added that command before assuming it is an illegal command. (The `+.WF` program uses this technique extensively. The "put", "get", and "view directory" commands in `im` also use it. If you wish to program your own commands, we suggest you examine these files to see how it is done. No documentation is available for this as yet.)

If you press a key corresponding to a command, the editor displays the command, waiting for you to either

- enter a line range (or another character, for some commands) [You can tell a command accepts a line range when the cursor ends up one space to the right of a command.]
- press the RETURN key to accept the command.

Line Ranges

Most commands allow a line range to be entered after the command, just like BASIC's LIST command. A line range can be specified in one of the following ways:

```
x      Just line #x
x-     Line #x to the end of the message
x-y    Lines #x to #y
-y     From the beginning to line #y
```

Any delimiter (comma, etc.) may be used in place of the -, depending on one's preference.

The commands available in the editor are grouped into related commands, and discussed here.

Exiting The Editor

There are two ways to get out of the editor:

- The first way is to abort the message you were typing, with the **.Abort** command. *There is no confirmation, unfortunately.*
- The second way is to save the message with the **.Save Text** command.
- Neither command requires or allows line ranges.

Reading What You Have Typed

There are several options to view the text you have already typed:

- First, the ".Read" command. This displays each line just as it was typed. You can see each color change character and MCI command; this might be useful to "proofread" your message.
- Next, the ".MCI Read" command. This interprets MCI commands, and displays color change codes.
- Finally, you can also ".List" the text, which displays line numbers, used in line ranges for other commands.

If no line range is given for the ".Read", ".List", or ".MCI Read" commands, all text in the buffer is read or listed.

You can pause text with CTRL-S or HOME keys at any time. Messages may be aborted while paused with the spacebar or / keys.

Manipulating Text

".Delete" removes lines of text from your message permanently; there is no "undo" capability.

- Any line range you type after ".Delete" is removed from the buffer.
- If no line range is specified, the last line of text is deleted.
- ".Edit" changes lines of text. When a line is edited this way, the line number is displayed, then the text itself, just like the ".List" command does. You may then type the new line below it. (See the section on "Control Keys" for editing.)
- Pressing DELETE or RETURN as the first character on the line causes the editor responds with "(No Change)" and returns to the main editor.
- Typing "." as the first character causes "Command: Exit" to appear and abort the Edit command.
- If no line range is specified, "E" defaults to the last line of text entered.

Editor Modes

The ".Insert" command enters Insert Mode. This is shown by displaying "Ix:" (where x is the line number you are inserting at).

The line you specify is where you start inserting. If no line number is specified, the first line is assumed.
As you type each line of text, text on subsequent lines is moved down in the buffer, then your line is put in its place.
You can exit Insert Mode by typing a "." as the first character on the line. This responds with "Command: Exit" and goes back to the normal editor.
The ".O" command toggles Line Numbering Mode on or off. This mode, when on, displays line numbers as you type text.

Shaping Your Text

The ".Justify" command allows you to format your text in one of 7 different ways. After typing the "J" command, you are prompted:
"Justify (C,E,I,P,L,R,U): "
These are the seven Justify commands. Press the key corresponding to which justification mode you want, or to escape, type (fixme: period?) DELETE or RETURN.

If a valid command is selected, the editor displays the command name, and then allows you to enter a line range.

If you do not specify a line range, the Justify commands default to all text in the buffer.

The Justify commands are:

- "C"enter Center text
- "E"xpand Insert spaces between words to fill out lines
- "I"ndent Move text right by one column, if possible
- "P"acked Remove all extra spaces put in by Justify
- "L"eft Remove leading spaces
- "R"ight Push text to the right margin (set this with ".Columns" dot command first, if you wish)
- "U"n-indent Moves text to the left one column, if possible

The ".Border" command puts a border around your text. If you do not specify a line range, it will default to all text entered. If there is not enough room on a particular line to add both border characters, that line is ignored. [Tip: Set the .Columns width to 2-4 characters less than your current line width before typing the text to be bordered.]

The **.Columns** command *followed by a one- or two-digit number between 22 and 80* changes the number of characters the editor allows you to type on a line *before wrapping overly-long lines to the next line* between 22 *columns* (for VIC-20s) and 80.

If you do not specify a column width after the command, the current column width is displayed.

A related command is ".#" -- this displays a 40-column scale for manually centering text, among other purposes. There is no prompt for a line range; the scale gets displayed as soon as you hit "#".

Starting Over

The ".New" (Clear Text) command re-starts the editor, erasing all text you have typed. *There is no confirmation, unfortunately, something I plan on remedying in Image BBS 2.0!*

Searching For Text

The ".Find" command allows you to search for any occurrence of a character, word or phrase. If no line range is entered, all text will be searched. Find will prompt you for the text to search for, and will list all occurrences of it.

Replacing Text

The **.R** (Replace) command will prompt you for an optional line range, then a **Search Phrase:** as **.F** does, but also ask what phrase you want to replace it with. Then it will go through the text. If the replacement phrase is too large to fit within the current line length, the editor will display **Too big, can't fit.** and skip that line.

Disk Access

(These commands are available from local/pseudo-local mode only.) The **.Put** and **.Get** commands allow you to load and save files from any device and drive, edit them, rename them, etc., and resave them to the same device/drive, or a different device/drive if desired.

The ".Get" command appends the file specified to the text already in the editor, if any. This can be handy for working with SEQ files.

*A suggestion: if you are trying to work with SEQ files with C/G codes in them, use **.Columns 80** first, so lines don't word-wrap un-necessarily.*

The **.S** (View Directory) command views a disk directory of any device and drive, with a pattern if desired.

Getting Help

Type **.?** or **.H** to read a condensed version of this manual section.

Control Keys

Certain key combinations are used to edit your text while you are typing it, whether in the BBS editor or at a BBS prompt. For example, any character that you delete with the **DELETE** key can be "re-typed" with **CTRL-U**. Other control keys:

| Key | Function |
|---------------|---|
| DELETE | Move back one character |
| CTRL-B | Move back to beginning of line |
| CTRL-D | Delete character under cursor |
| CTRL-I | Insert character under cursor |
| CTRL-N | Move forward to end of line |
| CTRL-O | Duplicate all text on current line |
| CTRL-U | Re-type one character from buffer (move forward one character) |
| CTRL-V | Verify (re-display) current line; useful for noisy telephone connections |
| CTRL-W | Move back one word |
| CTRL-X | Abort input (prints a British pound sign on Commodore equipment, or a backslash on ASCII terminals) |
| CTRL-Y | Re-type word from buffer (move forward one word) |

Table 19: Text editor & BBS prompt control keys

Message Command Interpreter

The Message Command Interpreter (MCI) allows you to do a variety of things within messages you type. Each MCI command consists of:

- the British pound character (£) for Commodore users, or backslash (\) for other computers
- a command letter (can be either upper- or lowercase)
- a number or letter
- any arguments/parameters.

Numbers must be entered in a certain way. Since the parameter after a command letter may only be one character, letters are substituted in some cases, as follows:

| Number | Letter | Number | Letter |
|---------------|---------------|---------------|---------------|
| 1 | 1 or A | 9 | 9 or I |
| 2 | 2 or B | 10 | J |
| 3 | 3 or C | 11 | K |
| 4 | 4 or D | 12 | L |
| 5 | 5 or E | 13 | M |
| 6 | 6 or F | 14 | N |
| 7 | 7 or G | 15 | O |
| 8 | 8 or H | | |

Table 20: MCI numbering system

Think of it as "extended hexadecimal." And by the way, this next good-sized chunk was pretty extensively reworked; I think the examples in the original manual don't always explain themselves very well.

Plus, one thing to mention: If ever you need to output a British pound sign, type two of them. This is technically called "escaping" MCI; the first prepares to interpret the following character as an MCI command, the second cancels it.

In general, MCI is what "spices up" an IMAGE BBS. It allows you to add color, cursor movement, and a "personal touch." The MCI commands available in IMAGE BBS are:

£AnTEXT£ **About**
 Compare MCI variable £Vn to TEXT. Notice the ending pound sign which delimits the comparison. (For a list of MCI variables, see the £V command.) The comparison result can be used with £D or £T.

£A2SYSOP£ Compares the user's handle (£V2) to SYSOP.

£Bx **Bells**
 Send x bell characters [CHR\$(7)] to the user; if the user's terminal supports bells, they hear them.
 • Tip: Speed up or slow down by using the £Sx command!

£Cx **Color**
 Set the current display color to x, where x is from the following table:

| | | | | | |
|-----|------------|-----|------------|---|----------------------------|
| a/1 | white | f/6 | dark blue | k | dark gray ⁴ (+) |
| b/2 | red | g/7 | yellow | l | medium gray |
| c/3 | cyan | h/8 | orange (+) | m | light green |
| d/4 | purple | i/9 | brown | n | light blue |
| e/5 | dark green | j | light red | o | light gray |

Table 21: MCI color codes

- 0, black, is omitted since that is usually the color choice for terminal backgrounds.
- Commodore users can use **CTRL-** or **C= 1-8** instead of fCx .

fDx **Jump if not equal**
 Skips x lines when the result of the last compare command (fA or fT) was not equal.

Display an appropriate message based on whether the user's handle is or is not SYSOP:

```

fA2SYSOPfD1          Compare user's handle to SYSOP, skip next line if not
Hello, Sysop!fD1      Output "Hello, Sysop!", skip next line
Hey, you can't read this! Output message, continue
fX1                  Abort the file or message
  
```

fEx **Jump if equal**
 Skip x lines if the result of the last compare command (fA or fT) was equal.

Display a message based on whether the user's handle is USER:

```

fA2USERfE1
Congratulations, your handle is USER!fE1
Too bad your handle isn't USER!
fX1                          Abort the file or message
  
```

fF1 **Form feed**
 This command sends a "clear screen" character to the user. [CHR\$(147) on Commodore equipment, or CHR\$(12)--a form feed -- in ASCII mode].

fGx **Get character**
 Wait until the user presses a key. The keypress is stored in an\$ (MCI variable fv7).

⁴ in ANSI graphics or Commodore 128 80-column mode: fC8 : dark purple, fCK : dark cyan

If x=1, only uppercase input is allowed. If x=0, both uppercase and lowercase are allowed.

Press a key: fG1 Prompts the user and waits for one keypress (only uppercase input is accepted).

fHx Backspaces

Display x backspaces/deletes (depending on the user's terminal requirements).

ApplefH5Banana This displays Apple, immediately erases it with five backspace/delete characters, then Banana is displayed in its place.

fIx Line input

Pauses output, allowing the user to input a line of text. The input is stored in AN\$ (MCI variable fV7).

- If x=0, the input can be in both upper- and lowercase.
- If x=1, the input is in uppercase only.


Enter your name: fI1 Prompts the user, then accepts input in all uppercase characters.
Hello, fV7! Echo the user's input.

fJx Jump

Do not display the next x lines of the message or file.

DisplayedfJ1 This skips the next line.
Not displayed
Displayed again

fKx Kolorific mode

Changes the color of each character output. 

- If x=0 (zero), Kolorific mode is turned off.
- If x is any other color code (see fCx), Kolorific mode is enabled, starting with fCx.

fK2This is a testfK0 Turn Kolorific mode on, starting with the color red. Displays "This is a test", then turns Kolorific mode off.

fLx Printer

Control the printer attached to the BBS, if online.

- If x=0, printed output is stopped.
- If x=1, printed output is started (or resumed).

Note: Printed output stops at the end of each line; you must include fL1 on each line to be printed.

fL1Hello Print "Hello" on the printer.

fNx New line

Display x carriage returns.

fOx "Over"

This command repeats a character 19 times. It is useful for making menus, etc.

Parameters: Replace "x" with the character wanted.

f0-f0-

Displays the following:

fPx **Print mode**
Sometimes referred to as "cursor dancing," print modes allow each character output to be displayed in a variety of ways, usually to move the cursor, or perform "special effects." Replace x with the print mode number. The print mode is set back to 0 at the end of each line.

There are thirteen very powerful print modes in IMAGE BBS. We suggest trying to come up with interesting ways to use them -- it is possible to create an entire "movie" file entirely within the IMAGE BBS editor with these commands!

ASCII:
=====

- 0 - normal printing
- 1 - character, backspace, character
- 2 - character, 8 spaces, 8 backspaces
- 3 - character, backspace
- 4 - space, character, 2 backspaces, character
- 5 - character, bell

COMMODORE C/G:
=====

- 6 - character, 2 cursor lefts (displays !drawkcab)
 - 7 - character, cursor left, cursor up (displays up)
 - 8 - character, cursor left, cursor down (displays down)
- (fixme: add the rest, 4 diagonals)

fQx **Reset MCI defaults**
Turns off the following features:
* Printer mode (see fLx)
* Reverse mode (see fRx)
* Uppercase mode (see fUx)
The current print mode (see fPx) and print speed (see fSx) are set to 0 for normal output at the fastest speed.
Parameters: * If x=0, then the current color is set to the default color.
* Otherwise, the default color and current color is set to x.
(fixme)

fRx **Reverse mode**
Controls displaying text in normal or reverse modes.
Parameters:
* If x=0, reverse mode is turned off
* If x=1, reverse mode is turned on
Notes:
* Reverse mode turns off at the end of every line.
* Commodore users can also use CTRL-9 / CTRL-0.

fSx **Print speed**
Delay character output by a multiple of tenths of a second.
Parameters: * x ranges from 1-J (.1 to 1 second)

The Image Terminal Program

IMAGE BBS has a built in Commodore 1670/Hayes-compatible terminal program for dialing out to other BBSes without having to take your BBS off-line. It is equipped with several features, including:

- a phone book
- auto dialer
- X-modem and Punter file transfer
- full Commodore C/G capabilities

For the most part it is self-documenting, with several on-line menus to help you.

Using the Terminal Program

To load and use the term program, press ← at BBS idle mode, and the term will load and display the opening menu, along with several parameters displayed on the top right window of the screen. To change any of these parameters, select the "Term Parameters" option from the main menu.


From here, you are able to change

- ASCII/C-G mode
- baud rate
- U/D protocol
- dial mode (tone or pulse)

Other options on the main menu include terminal mode, file operations, phone book, disconnect, return to the BBS environment, and send line break (for the MERIT system).

The Phone Book

Here is where you may dial numbers entered into your *s.phonebook* file, or any other number that you wish. When you choose the phone book option from the main menu, you see the first five numbers (if you have the file), along with "dial number not

 write this file, you should include three items of data for each BBS you want in the phone book:

| Item | Example |
|----------------------|----------------|
| the name of the BBS | LYON'S DEN |
| the phone number | 1-313-437-9486 |
| the baud rate | 1200 |
| [...missing text...] | |

This section will be altered after adding high-speed +.t to the mix...
but keep BBSes for historical preservation)

These should be separated by a carriage return, and can be added at any time, Example:

```
LYON'S DEN
1-313-437-9486
1200
PORT COMMODORE
1-801-423-2734
2400
NIGHT FLIGHT
1-615-824-5488
1200
```

(NOTE: Make sure that the *first* line of the file contains the first BBS name and not a carriage return, and that there are *no* extra carriage returns before, between, or after the information, or the BBS will not read the information in correctly.)

"next page", or "previous page". Simply hitting return at the prompt will take you back to the main menu. Selecting next or previous page will go on through the list in your phonebook. Selecting any of the numbers, or "Dial number not shown", and entering the number when prompted, will then prompt you for the autodial (repeat) option.

If the autodial option is selected, it will keep track of how many tries for that number (Press "/" to abort the autodialer).

Once a connection is made, you are put into term mode for the connection.

To go back to the main menu, press CTRL plus the Commodore key.

File Operations

You can change communication parameters or use file operation functions here, which include:

- getting a disk directory
- sending a disk command
- changing device/drive
- read/send a SEQ file
- upload/download functions (including multi-upload & download)

Maintenance Functions

There are several maintenance commands available, with differing availability:

- only at the main prompt
- at all prompts
- from local or pseudo-local mode
- to users with remote maintenance access

Each type of command is described in this chapter. Here is a brief synopsis of each command, followed by a more complete description. Commands marked with * are available only from local/pseudo local mode.

| Command | Purpose | Reference |
|----------------|---|------------------|
| CD | Change a device number | Page 5 |
| * CP | Online file copier | |
| ECS | Extended Command Set editor | Page 87 |
| * ED | Edit a user's stats | |
| * R | Run a plus file (which must be on the plus file disk) | |
| RS | Reserve a new account | |
| VF | View feedback, new user feedback, error log | |
| * WF | Online "word processor" | Page 90 |

Table 23: Maintenance functions

Local Maintenance Commands

ECS Extended Command Set Editor

The Extended Command Set or ECS allows you to add or delete commands from your BBS without the need to modify your *im* module or re-boot the BBS. It also gives you flexibility in these areas:

- enabling or disabling commands
- password-protecting access
- restricting availability of sysop-only commands to local or pseudo-local mode
- restricting certain commands to specific security levels

- configuring whether a command calls a plus-file module on disk or a specific line in the memory-resident *im* module (and whether that call requires a GOTO or GOSUB)

However, it will *not* allow you to make changes to the BASIC program. The ECS will allow you to add both main level and all level commands either by loading a module or calling a pre-positioned line in your *im* module. Each command has several flags attached to it:

| Flag | Purpose |
|-------------|---|
| Access | Allows you to adjust which access level(s) are allowed to access this command. |
| File/Line | Tells ECS to either load a +.module or call a specified line number in your im module. |
| GOTO/GOSUB | Tells ECS whether the command is a main level command (ie, SB, UD, VB) or an all level command (ie, XP, EP, F, C). |
| Credits | Allows you to charge x credits each time the user enters this command. If the user has insufficient credits, they are not able to access it. |
| Password | Allows you to password-protect a command. If left blank, the command is unprotected. |
| ZZ Lock | Allows you to lock the command so that only a console or pseudo-local user can access it. |
| Ignore | Tell the ECS whether it should ignore extra characters on a command (ie; SB2,1, BF4). On: extra characters are ignored and can be used as flags such as with SB. Off: it is assumed the entire string is a command. |

Table 47: Extended Command Set flags

Using The ECS Editor

Using the ECS command editor is really very simple—there are just a few things that you should know.

1. If you Add or Edit *any* commands while you are in the editor, you should first (S)ave the new configuration then (M)ake it active.
2. A pre-configured *m1.ecsdefs* has been included with this package that contains all the standard IMAGE v1.2 commands plus the commands **MA** (macro toggle) and **ECS** which loads the ECS editor (*+.ecs*).

Re-boot your BBS and add or edit any commands that you wish using `+.ecs` by entering ECS at the main prompt.

NOTE: `ml.ecsdefs` is a ML file and must be COPIED. Also if you plan to use the MACS (also included on this diskette) you must install the ECS prior to installing MACS.

ED User Edit

Edit your users' information whenever needed. Type the handle or ID number of the user to edit.

- If entering the ID number, do not enter the BBS identifier (if your identifier is SS, and you want to edit user number 50, you would enter 50, not SS50)

The BBS then loads the user's stats into memory. Anyone with pseudo-local maintenance access may change anything they wish.

- One exception to this is the password, which can only be seen or changed by the sysop (ID#1).

The first page of user information is shown. If you wish to change anything, type its number at the prompt, or N to view the next page of information.

Then enter the new information. Don't worry if you make a mistake: you can change it again if you wish, nothing is permanently changed until you answer Y to the **Save changes?** prompt when you are done.

If the information you wish to change concerns the user's "flags"—that is, certain functions the user can access—then you get a list like in the BBS configuration editor (page Error: Reference source not found).

No matter how much I read and re-read this next paragraph, it never made much sense to me. So I'm re-writing it, hopefully keeping the spirit and intent of the original wording... hurty head bad...

These flags reflect the default settings whenever you first change the access group you gave the user. Afterwards, they may be customized on a per-user basis. Changing one flag will not affect any other flags for that user.

You may also delete an account or reserve an account with this function by changing the user's handle.

- To delete the account, change their handle to an ^ (up arrow). The BBS prompts with "Delete this user?" before any action is taken. If "yes" is selected, the account is considered deleted, and it is now available for a NEW or REServed user (although it is not overwritten, making it possible to "resurrect" a deleted user by changing the handle back, before another new user takes that account).
- REServed users get prompted for a password, number of credits, and access level. (More on this in the "RS" function below.)

CP File Copier

This command allows you to access the online file copier, patterned after the popular "Copy-All" program by Jim Butterfield. Our thanks go to him for supplying us with the source code to help us write this version. The online copier will copy PRG, SEQ, and USR files from one device or drive to another with little effort.

NOTES: CP will NOT copy files to the same device and drive. Use the "DC" command for this, with standard Commodore DOS commands [ex.

C0:FILE2=FILE1].

CP will also not copy REL files.

Use  "CP-rel" online, or "Copy-All" or "rel copy" offline to do this.

Write File

You may access the IMAGE editor as a mini word-processor, to write or edit any sequential (SEQ) file. When you type the WF command at the main prompt, the editor will load, and you are able to use it to .put (save) and .get (load) files from any device and drive you have online. This makes it easy to write, edit, or—in the case of "putting" to a file which already exists, append to—a file.

Additional Dot Commands

There are also additional editor commands built into the WF function not normally available from the editor subsystem:

- .G Get file
- .P Put file
- .Q Query lines
- .U Unborder
- .\$ View directory
- .& Read text file
- .! DOS command

Table 72: WF editor dot commands

.Get

You are prompted for a filename, then the device and drive the file is on. The file will be loaded (assuming no errors occur) and you can edit it as necessary or create a new file if you wish. (fixme: correct?)

When finished, you have two choices:

.Save

Saves the file (prompting for a filename if one hasn't been established with the Put command). It checks for the presence of an existing file under the given name, and if one is found, it prompts:

[A]ppend [R]eplace [Q]uit:

Here, you can:

- [A]ppend the text in the editor to the existing file
- [R]eplace the file on disk with the text in the editor
- [Q]uit to the editor (keeping existing text intact) without saving changes

.Put

Allows you to save the file wherever you wish, returning to where you left off in the editor to continue working. You are prompted for a filename in the same way as above (if you used .Get, the filename you got is displayed serving as a reminder and the default filename). You are prompted for the device and drive to save to (the default is 8:0).

.Query

Re-displays the editor's opening message, showing how many lines used so far, remaining, and bytes of free memory.

.Unborder

Removes a border or partial border that you have done. It removes the first and last lines, and first and last characters from each line *if* they are the same character.

R **Run a Plus-File**

Run any plus file you have on your plus file disk from the main prompt. You are prompted

Run +.

Type the filename after that. (Pressing RETURN by itself exits to the main command level.)

Remote Maintenance Commands



[View Feedback](#)

Only those with remote maintenance access may use the VF function. When first entered, it counts the number of messages which fall into the following categories:

- Feedback
- Error log
- New user log
- Telecheck

- Canned messages

I'll let Fred Dart explain the operation of some features, with slight formatting changes to the file:

The following article appeared in the January issue of "The Reflection"

It is reproduced here for the benefit of any that may have missed it. It may be used as a text file on other boards, if used in its entirety.

"+.VF"

By: Fred Dart (THE CHIEF)

This month we are going to look at one of the truly outstanding features of IMAGE 1.2, the enhanced "+.VF" program.

The basic "+.VF" from the version 1.0 has been expanded and enhanced by Dr.Bob of the "Enchanted Forest BBS" in Philadelphia. Bob has worked very closely with Little John and has really done a tremendous job with the "+.VF".

Some of the new features include "canned" messages and selective deletion of feedback, new user feedback, etc. We'll look at all of the different commands.

The feature that seems to cause the most questions is the "canned message" feature. A "canned message" is simply a pre-written message or "form letter" that you may wish to send to a user, much like the "new user welcome".

From the initial VF: prompt, selecting c will bring up an option menu consisting of A/dd, E/dit, K/ill, L/ist, or S/end. Selecting the Add option will ask you for a title for the message, and then put you in the editor to write your message. Your message can be as brief or as long as you'd like and can contain any MCI or color just as any message entered in the editor.

The Edit option will ask which message to edit. A numeric input is required. If you don't remember which one you want to edit, simply entering the ? will bring up a list of titles and numbers, enter the number of the message you wish to edit and it will be loaded into the editor for whatever editing you desire.

The Kill option works the same way, the number of the message you want killed. Better be sure here as there is no safety check: if you say kill, it is gone.

List does just that, it will provide a list of available "canned messages". You can have up to 60 of them if you desire.

The final option is Send, which simply asks which one to send. Again, if you don't know a question mark will bring up the list. Very neat.

When reading any of the feedback, new user feedback, telecheck log or error log you have several other options available as well, they are:

Accs/Can/CRed/Del/View/Fwd/Rspd/Next/Over/Quit/New #.

The ones that are new or changed include the Can/CRed/Del and View. The others are unchanged, or have minor changes.

Selecting can will give you the option of sending the user any of the "canned messages." You might even have one that you want to send to people that continually have trouble with the telecheck or you might have one that you send to anyone that runs into an error on your system (though he should have gotten error e-mail). When you select c you will be asked "which one" and a ? will bring up the list of those you have available.

CRed is very handy for giving credit. I'm sure you have all had occasion to need to restore some credit to a user for a bad download or as a reward for something, now you can do it from here, no need to go into *ED* just to give him credit.

Del is one of my own favorites. The user that signs on with an obviously fake account or the irate user that says "just delete me from your system if I can't....." whatever. The D works *wonders...* and really feels *good* afterwards. May not get a lot of use but when it does it is worth having.

Finally the View. Particularly good on systems where more than one person may give access. You can View the person's account to see what his status is. If he has been given access or if he wants some credit or whatever, the View is particularly useful.

In addition to these great features there has also been added the "Selective delete" option so you can delete all or any part of your feedback or other messages. When Delete is selected from the VF: prompt, you select which to delete then have an option of selective or auto delete.

Selective delete picks which messages you want to retain through a menu of options:

[D]elete [K]eep [A]bort

The options should be self-explanatory, I hope.

All in all the VF is now about anything a busy sysop could want to maintain his daily message traffic from his users. This is really one of the better "hidden" features of 1.2. Well done Dr. Bob.

(A late note here, someone that just converted to IMAGE from 12.0 said that the "+.VF" was one of the best features he had noticed since his conversion.)

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Permission to reprint is granted provided the file is printed in its entirety.

If the user is in "Local" or "pseudo-local" mode, they are given an option to delete the entries.

Entering "N", "E", or "F" will allow them to read the entries beginning with the first entry or with any entry number he may wish to enter (Example: if there were 10 feedback messages, they could start reading number 5 by entering a 5 at the prompt, or enter "N" to begin reading those entries that are NEW since his last call, if the feedback was not deleted previously).

After each message he has several options, including:

- advancing to any message by typing the message number
- **N** or **RETURN** continues on to the next message
- **R** responds to the message
- **A** changes the user's access
- **F** forwards the message to any other user as e-mail
- **Q** quits back to the options menu

After all messages have been read, the user is returned to the options menu. If access is assigned to a new user the Sysop is given the option of sending the new user a "New User Welcome" that consists of the file *s.nu welcome*. (This can be created using the **WF** command shown above.)

New user feedback may also be archived if desired. This copies your new user feedback to a file called *e.nark* (which could be backed up from time to time, as many sysops like to do). This eliminates the search through older messages each time **VF** starts up.

RS Reserve Account

A reserved account (an account with a pre-assigned password, number of credits and access level) can be established using this command. A reserved account is useful for a new user who may sign up when you are not available to validate them.

The **RS** command establishes any deleted account (where the handle is ^) as a reserved account. When first entered, you are prompted to enter the starting account number.

- Typing a number starts searching at that account number
- If **E** is typed, or no deleted accounts are found in the user file, the next valid account is assigned as the reserved account.

A password, access level, and number of credits will be prompted for.

After this information is entered, the BBS reserves that account.

+.weed

The weed program allows you to automatically go through your user files, and delete users who have not called within a specified amount of time.

To use it, run **+.weed**. You are asked if you would like auto-weed, or selective weed.

- "Selective weed" prompts whether you want to delete each user that it finds before deleting them.


It also includes users with non-weed status, since you will be prompted.

- Auto-weed doesn't prompt, but deletes each user it finds that has not called since the cut-off date. (Non-weed status users are ignored in this mode.) You are asked for the cut-off date, which will be the date that is checked against the last call date.

Enter it in the format shown, then tell the program which ID number to start from. Everything else works automatically, and you hear a beep when the program is finished.

toWeed system

+.access

This is used to  your access groups. You must reboot in order for the access information to take effect.

+.reconfig

This program allows you to re-define such things as number of calls to the system, board name, prime time, etc. Simply run it and follow the prompts to use.

+ .reledit

This documentation was modified slightly from the text files on the REEdit and Networking plus-file disks. I in no way take credit for the original documentation, just the cleanup and integration into these more current, streamlined docs.

REEdit is a program which eases the setup and administration of message and file transfer bases. Just run `+ .reledit` from the main prompt.

After a short delay as REEdit reads the system configuration, you see the main menu. Across the top is the title of the program and a copyright message. Below that is data on your BBS that includes the number of Subs, U/Ds, etc. that are defined, as well as your node number if you are on the network. Below that are 5 options:

S - Sub
U - U/D
X - U/X
G - SIG
N - NetSubs

Select S, U, X, G or N.

Note: If you are not part of a network, the NetSubs option will not appear. This documentation assumes you are networked. If not, operation is exactly the same, you just can't use the NetSub option.

Editing Sub-Boards

If you select S, the BBS enters the Sub-board list editor's first screen. It consists of a listing of the Subs (if any) you have defined.

The list of Subs show:

- The title
- Type
- Whether it is open or closed
- The device and drive the messages are saved to
- The ID number of the SubOp (ID# 0 means no SubOp)
- The password (if any)
- The access level required to see/enter it
- If it is a NetSub, a small "n" will appear after the access level.

To add a Sub, type A and hit RETURN.

Ranges

Typing ranges of sub-boards to add, delete, move, or insert works similar to BASIC's LIST command.

- L To list all the Subs
- L3 Optionally, follow that by a number to start listing the Subs at.
- L3- You can follow this with a comma or dash to list from this number to the end of the list.
- L3-19 You can follow this with a final number to list to.

Type the board number you want to edit, then press **RETURN**. (Pressing **RETURN** by itself exits to the main REEdit menu.)

Editing Sub-Board Options

A menu appears with 9 options:

- 1 Title** The title of the sub-board. --- deletes a Sub when entered as the title, and does not add it if you are adding a sub).
- 2 Access** The Access levels that can see this Sub. Entering ? when prompted for the access level calculates access values as described on page Error: Reference source not found. If the access level is left at 0 when you exit the editor, any other changes are deleted and the board is not added.
- 3 SubOp** The handle and ID of the SubOp. When editing, you can enter the ID number or handle.
- 4 Device** The device number where the messages are saved.
- 5 Drive** The drive number (for dual drive, Lt. Kernal and other multi-drive devices) where the messages are saved. (Serial drive owners normally put 0 here.) The drive number can be 3 digits long to accommodate CMD hard drives.
- 6 Status** Toggles between opening and closing the sub-board. A sub-board can be closed for maintenance if necessary; users do not see the sub-board listed when first entering the sub-system.
- 7 Type** Std, N-An, etc. You are presented with Yes and No questions which help select the type of board it will be. The questions are:

Upload/Download Boards:

| | |
|-------------------|---|
| 1 DO-C DO-F type. | (Refer to the table on page |
| 3 Password | Yes asks users for a password before they can enter the Sub-board (see option 8 below). |

Message Bases

| | |
|--------------------|---|
| 1 "Non-Anonymous?" | Yes forces the message base to display who posted each message. It skips the second question. |
| 2 "Anonymous?" | Yes makes the board completely Anonymous. No to both questions makes the board a "Standard" type which asks users if they want to make the post anonymous or not. |

- 8 Passwd** The password needed to enter the sub-board if the sub-board type requires a password.
- 9 Scrns** This allows you to edit the entry screens for this Sub:
 - Select A to edit the ASCII screen
 - Select C to edit the C/G screen
 Any pre-existing screen will be loaded into the editor, and you may use all the usual editing commands.

Table 26: REEdit sub-board definitions

These 9 options are the same for the U/D and U/X editors as well. The only difference is the **Type** question which asks **Downloads Only?** and **Free Downloads?** as well as Password.

If the access is 0 or the title is ---, the data will not be saved (or deleted if editing an existing record). The BBS also goes through the SIGs (if defined) and removes the board from any SIGs it is on.

The SIG Editor

This is much like the Sub, U/D and U/X editors. The list displays:

- the SIG title
- access
- the SIGop ID
- whether the Subs, U/Ds and U/Xs are open in that SIG

Another new feature found in this version of REEdit (when coupled with the newest version of the TurboRELS) is the ability to "close" a section of the board to a SIG. What this does is prevent the SIG from being listed when the user enters the "closed" section.

For example, if you have a SIG that shows the U/X section closed, when a user types "UX", the SIG will not display, appearing as if the SIG does not exist in that area.

When you type the number of the SIG you wish to edit, the following options appear:

1. Title SIG title.
2. Access Access levels that can use this SIG.
3. SIGop The SIGop for this SIG. Like SubOp in the Sub, U/D or U/X editors, you can enter either the ID number or handle of the user.
4. Subs Toggles Subs open or closed.
5. U/Ds Toggles U/Ds open or closed.
6. U/Xs Toggles U/Xs open or closed.
7. SB Lst Edit the list of Subs in this SIG.
8. UD Lst Edit the list of U/Ds in this SIG.
9. UX Lst Edit the list of U/Xs in this SIG.
10. Scrns Edit the entry screens for this SIG (ASCII or C/G).

Table 27: REEdit SIG editing options

Editing Lists

Using options 7 through 9, you are presented with a list of the Subs, U/Ds or U/Xs (depending on what option you select) that looks very much like the one users see when listing the available boards in SB/UD/UX.

Everything is keyed off of the position of the board in that list. For example, if you enter D5 it will delete the 5th board in the list of boards for that SIG.

The commands are as follows:

[A]dd board

Add a board to the end of the list of boards for this SIG. This command accepts ranges, or type just **A** and you are asked for the board number (which is the record number you saw in the Sub, U/D and U/X editors).

Typing **I** at the main **Edit** prompt or the **Add Which** prompt lists the defined Subs/UDs/UXs (depending on which type you are editing).

The Add command also allows multiple adds by giving it a range to add. For example, **A5-10** will add Subs 5 to 10. Range commands also work at the "Add Which" prompt.

[I]nsert board

Identify the number *before* the board(s) you want inserted. Typing **s** at the edit prompt or the **Insert Before Which** prompt lists the boards in that SIG (again, you can enter a range here as well). You can give the board number you want the new boards inserted before by typing **I** followed by the number.

[M]ove boards You are asked which boards you want to move in the list of boards for that SIG. Type **M** and the range at the "Edit" prompt. Next, you are asked which board you want the selected boards to be moved after.

[D]elete boards You are asked which boards you wish to delete. Again, ranges work here, in the same way. This *only* deletes the boards from the SIG list, not from the main Sub/UD/UX lists. As before, **I** lists Subs/UDs/UXs, **s** scans the list of boards selected for that SIG list.

Pressing **RETURN** saves the list, returning you to the editing screen for the SIG information.

When you hit RETURN at the SIG Edit prompt, the data is saved unless the title is --- or the access is 0.

If a SIG is deleted, the SIG list for that SIG is also deleted.

Netsub Editor

This editor lets you list all of the NetSub IDs you have (you can have up to 60) and edit the lists of boards they are linked to as well as what sub-boards on your BBS are part of that NetSub.

To define a networked sub, first set it up (Editing Sub-Boards, page 96).

When you hit N at the main prompt, the BBS looks on your disk for the NetSub data files. These files are program files that are loaded into memory using one of the new protocol files written for the NetSubs.

NOTE: If you have a Lt. Kernal, have the Autoload feature turned on, and have a floppy drive with the same device number as the Lt. Kernal, you get a flashing error light on the floppy drive when you enter the NetSub editor as well as every time the new `+.NM.netsub` files are executed during Network Maint. You might want to remove the floppy drive from your system if this bugs you, but it will not hurt the operation of REEdit or the BBS.

The list only displays the NetSub IDs you have defined on your BBS.

Type the number on the left of the NetSub ID you wish to edit and you are taken to the editing screen.

You will now see 18 options:

Option #1 lets you modify the NetSub ID.

Options #2 through #17 are Network IDs of the boards that this NetSub is linked to. This list should only contain the IDs of boards that you send NetSubs directly to, not every board that is linked to that NetSub anywhere on the network.

The board IDs are *not* verified. This is inline with the new network design and the reasons for this will be explained when the Image Network is reorganized to make use of the new network features.

Option #18 lets you define which boards on your BBS are parts of this particular NetSub.

The editor that is entered when you select option #18 is very much like the SIG list editor. (As a matter of fact, both the SIG editor and NetSub editor use the same routines!) The only differences are as follows:

- Up to 60 boards can be defined as being part of a particular NetSub.
- You can only add boards that are not already identified as being Networked. [To remove Network status from a particular sub-board, it must be deleted and re-added using the Subs editor.]
- The "Multi-Add" and "Multi-Insert" functions skip not only deleted records, but already networked boards.

While the order of the subs in this list does not in any way affect the order in which they are listed to users, it does affect the order in which they are scanned when `+.NM.netsub` is run. When a message comes in to a board, the boards are searched for a post of the same name in the order defined in this section. If none are found, the boards are scanned in the same order again for a place to post a new message.

You may want to rearrange the order of the Subs to speed up NetSub operation. For example: if you have a sub containing older posts not responded to as often as a sub found later in the list, you might want to switch their order so the board with more activity comes first. This way the BBS does not read through older posts for no reason.

Overflow Subs

This is a system allowing you to set multiple boards as being part of a particular NetSub ID. When a network message comes in, all subs part of a particular NetSub ID are searched, and the response (or new post) is added where appropriate.

That should just about cover the options available to you in the new REEdit. I hope you enjoy it and find it useful in maintaining your BBS.

Nightly AutoMaint

The "AutoMaint" feature in *+ .lo* is designed as a building block to add nightly maintenance functions—you may add any sort of functions you wish.

As it now stands, it will rotate the caller and AutoMaintenance logs every night at midnight (or as soon as possible thereafter, if a user happens to be online at around that time, AutoMaintenance is delayed until after they log off).

A week's worth of logs are maintained under the filenames *e.log x* (where *x* is the day of the week: 1=Sun...7=Sat, like setting the weekday when changing the BBS clock manually). They may be viewed with the *LG* command online.

Anyone with limited disk space who does not wish to use this feature can set the variable *am* to *0* in line 1 of *+ .lo*, and use *+ .NL* (New Log) whenever the log reaches a certain size.

Networking

About NetMail



NEW IMAGE NETMAIL V1.2.4 DOCUMENTATION

Copyright 1990, New Image Software

UPDATED 7-1-90

NetMail 1.0 is a system which allows files to be transferred between BBSes automatically. In this version of NetMail, it supports E-Mail transfers among users, and general file transfers among sysops. Also, if the TurboREL SIGs are used, Network Sub-Boards are available.

All of this is accomplished by means of a program called `+.NMauto`. This program is run automatically by the system at regular intervals. (Usually one hour apart.) The program checks for the existence of files that need to be transferred to other systems. If any exist, the necessary phone calls are made, and the files are transferred.

Each node in the network will need to pick a node ID. This is just a 3 character identifier that will represent that node. We suggest that an abbreviation of the BBS name be used so that it will be familiar.

NetMail Paths

To avoid the problems of having your BBS call *all* of the other nodes on your network, the number of connections that can be made to any node is four. At first, this may seem like a small number. However, in our testing, we have found that it keeps the traffic through any one node low enough, and limits the number of calls that any one node has to make.

Node IDs are used in paths. For example, say you had a network with 6 nodes in it. The path from, say LDE to GFD might be `/LDE/WZK/GFD/`, whereas the path from JMS to PGN might be `/JMS/LDE/PGN/`. The path

describes how to send files from one place to the other. For the most part, you will not need to worry about paths. You just need to know that they are there.

One other restriction is placed on the layout of the network. That is that there can only be one path between any two nodes in the network. If the network is planned with *any* loops in it (places where files could be sent in circles) then the network will have problems.

Network Maintenance

One BBS on the network will be responsible for network maintenance. It is the sysop of this BBS who will set up the paths that were described above. It is not up to this sysop to plan all of the paths, just to configure them into the network.

The sysop in charge of the network also has the ability to send "NetNews." This is a news file that will be automatically installed on all of the nodes in the network. The purpose of this is to provide a way to relay current information about the network to all of its users. Such information might include new nodes that have been added or local news that is of interest to everyone.

Network Planning

Planning a network is not as difficult as it may seem. There is a simple method of planning a network of any size. You get a piece of paper, and write the node ID of your BBS in the middle of it. Then draw four long lines, one going up, down, right, and left. These are places where you can add nodes. Write the IDs of the nodes at the ends of the lines. Then draw three short lines from each of these. (See Figure 1: Simple network.) Add nodes on the end of each line. The process can be continued indefinitely.

Note that you could not connect PCM to JMS because that would cause a loop, as mentioned above.

Installing NetMail

You will need to make two small changes to Image in order to make NetMail run on your system. Line 1 of the program `+.1o` has `nf=.` or `nf=0` in it. It needs to be changed to read `nf=1`. The same is true of the program `+.EM`.

If you have a very busy BBS, you may also want to change the `rs=.` (or `rs=0`) in line 1 of `+.1o`, to read `rs=1`. This will reserve your system from 3-4 AM each night, so that NetMail will get through.

Getting Ready to Go!

This is the most important part. You need to find someone to network with. Once you find someone, or a group, you need to decide who is going to be the network operator. At this point you would skip forward to the appropriate section. If you are the network operator, read the section entitled **Creating A New Network**, and if you are not, then read the section entitled **Joining An Existing Network**. If you want to join the existing Image Network that we are running, contact THE CHIEF on Port Commodore (THE CHIEF @ PCM, in Net-Lingo).

Creating a New Network

Network Planning

Plan your network. Get out paper and a pencil, and draw a map. Try to avoid long distance calls by "chaining" nodes together. You will need to get all of the available information about the BBSes that will be in your network. It's not hard to add new nodes later, but it is hard to remove them once they are there. One of the easiest ways to plan the network is to first find 4 nodes to connect to your node. Then work on finding 4 to connect to each of those. However, it is not necessary to fill up all of the connections. You can leave some open so that you can later expand. See Figure 2: NetMap 6-20-90 which has the current map of the network that we are running.

Note that we have left plenty of room left to expand, and welcome anyone to join.

Assign each of your nodes a number. Start with 1, which will be your node, and then number the rest. This will be important later.

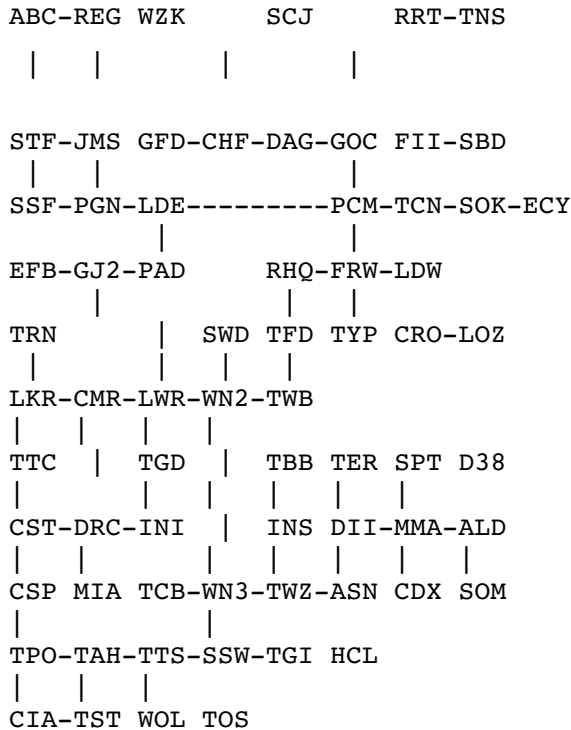


Figure 2: NetMap 6-20-90

Configuring Your Network

Now comes the fun part. From within Image, run the + file +.NM/utlils. Since you have never configured a network on your system, it will ask you if you want to create a network. Say Yes.

Then, you will be taken to the Utilities menu. There are several options available. You will need to edit the nodes, using option A.

You need to edit node 1, and put your info into it. Make sure to set *everything*. Then, add the other nodes in the same way.

Note that you need to change the connections while in the node editor. When changing a connection, you need to make sure that you edit *both* nodes to make the connection complete. Leave any empty connections as 0. When you are done, press **RETURN** to get back to the utilities menu, and select the option to **Make 'nm.create'**. This will make the file that you must give to each of the sysops in your network so they can configure themselves in. You must also tell each sysop what his/her node # will be.

You will also have to tell the sysop of each node who will be connected to them. They will all need to make up passwords for their nodes, and each one will need to give their passwords to the sysops of the nodes that are connected to them.

When you are done, run the program `+.NM/config`. You need to set *all* of the different options, so just go through each of the menu items.

Everything in the section **Joining an Existing Network** will apply to you as well, so you should read that section also.


Adding a New Node

When you need to add new nodes, just enter the Node List Editor again, and add them in. Make sure to edit the nodes they are connected to so that they will be connected in both directions. When you are finished, make the `nm.create` file again, and be sure to give this to the new network members. They will configure just as the original members did. Don't forget to give them their node numbers.

Next, you *must* send a Node Update. This will send a file out to the other BBSes in your network to tell them what changes have been made. It will automatically install the changes in their system.

Joining an Existing Network

Configuring Your System

 will need to get a copy of the file `nm.create` from your network operator. Put this file on your Email disk. Also, you need to find out what your node number is, and what BBSes are connected to you. You will need to

make up a password, and give it to each of the sysops of the BBSes who are connected to you. They will have to give you their passwords as well. Be sure to go through each of the options in the configuration menu to make sure that they are set correctly.

If you wish to have the modem be off hook while NetMail is doing its work, turn the "Off Hook" flag on. Note that this will not work with *all* modems. Also note that NetMail will not work with modems that do not accept Hayes-type commands.

An explanation is needed for the connection editor. What you must first do is decided when you want calls to be made by the BBS, based on what "type" of day it is. For example, perhaps on weekends you want to allow 24 hour calling, while on weekdays you only want calling at night. The 24 hour type is pre-defined as "+". So you must configure another type to have the hours you want for the weekends.

The option "Change call times" is what you use to edit the types. You would set the first call type "0" to the hours you want to allow. If you want to define other types, you have the "1" to "9" to work with as well.

After defining the types, you should use the option to "Edit connections". That will bring you to another menu. Choose "Normal Connections". (The other option, "Shortcuts" is not yet fully implemented, but will be in future versions.)

When editing the nodes, you can enter the passwords, define the type of day for each day of the week (for calling hours) and set the number of calls per day for each day of the week.) When setting the calls/day, "+" means infinite calls. When setting the types of days, "+" means 24 hours and "-" means no calls that day.

Once you finish configuring, you are all set! NetMail is up and running on your system. Any time more nodes are added, it will automatically add them into your system.

E-Mail Forwarding

E-mail forwarding lets you pick a few people whose E-mail will be automatically sent from your BBS, through the network, and end up on some other BBS. For example, it might be nice to forward E-mail for the sysops of the other BBSes on the network. There is an option on the configuration menu for this. You need to specify what their handle is on your BBS, and what it is on the destination BBS, and, of course, what the destination BBS is.

NetMail Online Functions

NetMail adds several commands into the e-mail section of Image BBS. Those commands are listed here, along with descriptions of what they do:

User Commands

| | | |
|----|-------------------|--|
| NA | List all nodes | This will display a list of all the nodes that are in your network. |
| LN | List active nodes | This will list only the active nodes. Nodes can be marked as inactive by the network operator. |
| NI | Node Information | This requests information about a specific node. For example, NI1 will display info about node #1. |
| NM | View Net Map | This will display the file nm.map. Note that this file is <i>not</i> automatically created and someone <i>must</i> hand-draw the map which you will save on your system. |
| NS | Net Send | This is the command to send NetMail. |

Sysop Commands

| | | |
|----|----------------|--|
| VL | View Log | This will view the log of Network calls. The log displays when calls were made or received, and what files were transferred. |
| SL | View Sysop Log | This will display the log of NetMail sent. This is useful in case someone is abusing the network. |

Table 56: NetMail Commands

Network File Transfers

Files may be transferred between sysops through the network. There is a separate program to do this, it is called `+ .NM/file`. When files are transferred, they are put into a special `nm.F` file. This allows multiple files to be sent at one time, by just sending a single file. When you receive files, it will notify you in your e-mail. You should then run this program.

When you run the program, it will scan to see if any of these `nm.F` files are waiting for you. If any are, it will ask you if you want to extract the files. Extracting the files will put them on the Email disk, so be sure you have enough room. The program will tell you the length of the `nm.F` file. The extracted files will have approximately the same number of blocks total.

When that is finished, or if there were no files received, it will ask you if you want to send files. The prompts are self-explanatory here.

Keep in mind that some of the Nodes that you send files through may not have enough disk space to hold the file (even temporarily) while it is waiting to be sent on to the next node. It is not generally a good idea to send a *lot* of files at a time for this reason, or very large files. Also, since some of the connections may be long distance, you may be running up someone's phone bill considerably. (And yes, they will know exactly who did it because they will know where the files came from, and where they were going. You don't want to get your fellow network members mad at you!)

NetGrf/NetWall

Two versions of the Network "Wallwriter" are supplied with the Network. One is the *normal* Wallwriter with network abilities added. The other is a 10-line version that allows a lot more text. MCI commands are *not* allowed on the wall, but color codes and graphics are. Both versions can be accessed by the program `+ .NW`.

The easiest way to install NetWall is by adding it into your PF section. Or, you could add it in as a command in your im file. (This is only suggested if you are familiar with doing such things.) The other option, and some people have already done so, is to merge it into your +.on file, so that it can be used during the logon sequence, just as Wallwriter is.

There is one important thing to know about the NetWall. It will get *big! Very big!* As responses come in from all over the network, they will accumulate. It is up to you to keep it to a useable amount. When you run +.NW while in Local Mode, it will ask you if you want to edit the wall. This will allow you to selectively delete messages from the wall. Deleting them on your system *will not* delete them from other systems, so you are free to keep as many as you like, or as few as you like. We suggest that you check the size of the file at least once a week.

There is also a Weed option that will do this for you. You only need to tell it how many days back to set the cutoff point, then it will delete the messages older than that day.

If you do *not* want to use the NetWall, then you should change the g1=1 in line 801 of +.NW.walls to g1=0. This will turn the 10-line version off.

If you do *not* want to use the Network WallWriter, then you should change the g2=1 in line 801 of +.NW.walls to g1=0. This will turn the 1-line version off.

NetMail Support/Information

If you wish to have any further information about netmail, you can contact PROFESSOR, on Lyon's Den East. The phone number is (313) 453-2576.

Compatibility Notes

This software has been tested on the following list of equipment:

COMPUTERS

Commodore 64
Commodore 128 in 64 mode

MODEMS

Commodore 1670 (old and new)
Supra 2400
Transcom 1200H
Aprtek 2400 (minimodem)

DISK DRIVES

Commodore 1541, 1571, and 1581
Commodore SFD 1001 W/IEEE Flash
Lt. Kernal Hard Drives

Please note that we cannot guarantee that it will work with anything that is not on this list. However, most modems are compatible with those tested, as are most disk drives. As a general rule, most equipment that will work with IMAGE BBS, will work with NetMail.

The IMAGE Network

As we have mentioned in several places in this manual, we are running this network software on our Image Support BBSes. This network is growing fast, and any who have bought the NetMail software are welcome to join it. There is only one catch. In order to join our network, you have to find someone who is already on our network who is willing to sponsor you. If you are local to one of our nodes, then this is usually not a problem. But if you are not local, then you must find someone who is willing to connect you *long distance* to their BBS.

This is not usually a problem. A typical long distance network call lasts about 3-4 minutes, and they do not necessarily occur every night. Using 2400 baud helps a lot for the phone bill, as it will take only half the time to send the same files. Estimates are at about \$30 a month for a long distance connection.

In the future, we may request that sysops who do not have long distance connections on their nodes to voluntarily contribute \$15 - \$25 per month, which would be given to those sysops that do have long distance connections. The idea being to share the costs a bit, so no one has to bear the whole burden.

Programming Notes

E-Mail System

The e-mail system for Image 1.2 was written while the Network was in the planning stages, over a year ago. Several "hooks" were put into it so that when the Network was available, E-Mail would be ready. The file `+.NMextra` is a mini-module that E-Mail loads when NetMail is active. The routines in `+.NMextra` handle all of the network functions that the users can access.

Configuration Editors

The file `+.NM/config` is a stand-alone module that handles all of the network configuration that a sysop would need to be able to do.

The file `+.NM/utlils` is a stand-alone module that handles the Network Administrator's functions.

Network Maintenance

The file `+.NMauto` is loaded by the `+.lo` program whenever Network Maintenance needs to be done. It is this module that handles incoming and outgoing calls. In addition to `+.NMauto` there are several mini-modules that process files as they are received. These include processors for Mail, the Netwall, NetNews, Updates, and so on. Also, when the TurboREL Sigs are used, there are processors for NetSubs.

ML Support

There are a few `++` files that do a lot of the "dirty work" for the network.

- ++ 2 A replacement for the normal Image copier. This file handles the work for the network sysop-to-sysop file transfers.
- ++ path A fast ML pathfinder which is used to route files. (In previous versions, a BASIC routine was used, which was MUCH slower.)
- ++ net A proprietary file transfer protocol that is used when one BBS calls another. It is based on the standard "Punter 10" protocol, but implements a much more reliable multi-file transfer, and adds some options which make Net transfers much simpler.

Table 57: NetMail Plus Files

Future Changes

More additions are planned for the network system. A few online games that send results via the net are planned, and some new features are going to be added to e-mail. Updates will be available on Lyon's Den East, and other Image Support BBSes.

Programming and Troubleshooting

This chapter provides programming information for those interested in the programming details of IMAGE BBS, and troubleshooting information for those that may be having problems.

Overall Description

IMAGE BBS is a modular program, consisting of both BASIC and machine language files interchanged by the program to add the capability of never running out of memory for program space! It performs this miracle by loading modules (overlays) when needed to perform specific tasks. Using this technique, you may do about anything you wish to on the BBS, not worrying about memory constraints.

Of course, every great concept has its drawbacks, and this one is no exception. The price we have to pay for it is the fact that loading these modules takes time, slowing down the BBS somewhat, since you must wait for them to load. However, we feel the trade-off is well worth it! If you have a RAM Expansion Unit, CMD RAMLink, or faster disk drive (IEEE, Lt. Kernal, CMD HD, etc.), the load process is sped up considerably *or is in some cases instantaneous*, and helps quite a bit! Those that do not experience more waiting, but no loss of capabilities on the BBS.

The BBS was written with the programmer in mind. Special attention was given to making it easy to modify and customize. Several custom features can be added without even changing the program, but if you can program in BASIC a little, you'll be surprised at how easy it is to add your own ideas.

Modules

IMAGE uses a main BASIC program (*im*), and several machine language modules (the *m1.** files) which remain in memory at all times. It also uses BASIC modules (*+.** files), and machine language modules (*+++* files). You may write as many of your own modules as you'd like, adding them at any time. The main consideration is to know which variables and

subroutines to use, and how to use them. Be careful when modifying the main program (im) so you do not add too much, or you will find yourself running short on memory, slowing down or possibly crashing due to being short on free memory.

Adding to a plus-file cannot hurt, as long as you do not go over 56 CBM disk blocks for any individual module. However, defining new variables—especially arrays—can eat up memory and cause the same problems mentioned above, so be selective in your variable usage. There are many routines in the program which are available for you to use. We will describe a few of the most commonly used here. This is *not* meant to be a detailed guide to programming, only a brief description so you may get the idea.

I have HTMLized the programmer's reference guide, and am working on continuing to improve it.

Common Subroutines

| Line | Routine setup/results | Variables returned |
|-------------|--|---|
| 1001 | Position pointer on relative file. | x=number of record |
| 1005 | Input routine (upper/lower case) | returned in an\$ |
| 1006 | Input routine (uppercase only) | returned in an\$ |
| 1007 | Get routine (uppercase only) | returned in an\$ and a\$ |
| 1011 | Open file | a\$=filename, dr= system disk# to use (1-6) |
| 1012 | Read error channel | e%=error e\$=error name t%=track s%=sector |
| 1013 | Load plusfile from plusfile disk a\$=filename | |
| 1023 | Scratch and reopen SEQ file to write a\$=filename dr=system disk# | |
| 1024 | Scratch a file a\$=filename dr=system disk | |
| 1029 | Output a\$ | |

| Line | Routine setup/results | Variables returned |
|-------------|---|---|
| 1030 | Read open file until † encountered hh=logical file# | |
| 1062 | Open e-mail file | tt\$=user handle a\$="r" or "w" (read/write) |
| 1070 | Write all user stats to disk | |
| 1075 | Clear screen, fall through to... | |
| 1076 | Read SEQ file | a\$=filename dr=system disk# |
| 1081 | Update blocks free | dr=system disk# |
| 1085 | Check for directory error | dr=system disk# a=1 if error occurred |
| 1089 | Get disk directory | |
| 1093 | Clear all arrays | |
| 1096 | Print a\$ to printer | |
| 1360 | Display CM\$ in "area" window | |
| 1372 | Update free memory | |
| 1490 | Print A\$ to log | |
| 1500 | "Untranslate" IMAGE translated characters in AN\$ | |
| 1530 | Sound beeps | x=number of beeps |
| 1604 | Enter IMAGE editor | |
| 1694 | Logoff | |
| 1736 | Load ML protocol | A=protocol number: (0=Punter, 1=XModem, 2=Copier, 3=Editor) |
| 1812 | Main command level | |
| 1914 | Reset print modes to default | |
| 1915 | Detect local mode | |
| 2000 | Error trapping routine | |

Table 29: Common subroutines

Variable Handling in Modules (Plus-Files)

IMAGE variable usage in programming modifications and modules should be done carefully. If you were to change any variables that the BBS uses for particular functions, you could be in serious trouble! This could corrupt your user files, or do any number of nasty things! Because of this, we are giving you a list here of all system variables that you should *never* use. Even if you are using "temporary" variables, make sure any subroutines in the main program or program module you are modifying do not change these variables and wreak havoc! Most one-letter variables, integer variables, and string variables are usually OK to use (with a few exceptions noted below).

Variables not in this list are cleared when the main prompt is reached, so don't use one to count the number of times a game is played per call in that manner; the BBS will not permanently remember it. However, the same routine allows you to DIMension variables and arrays in modules without worrying about a "?redim'd array error". Be careful not to waste memory with excess variables, or your modules will run slowly, and possibly even crash the BBS.

Here is a list of reserved system variables that you should NEVER use, except for their intended system functions:

Since I think it's sort of important to know what the variables are actually *used* for, and not just their names, I'm going to steal a page from the *Image BBS Programmer's Reference Guide* and explain their meanings to the best of my ability. Feel free to set the record straight if you know otherwise, 'k?

Reserved String Variables

- a\$ Reserved for output to screen and modem.
- ag\$ Access group name of user currently online. (Also fvm)
- ak\$ Separator line: " " + ("-" * LL% -2) + R\$. (Also fvj)

an\$ Last user input. (Also fv7)

bn\$ Current name of your BBS. (Also fv5)

c1\$ Chat mode entry message.

c2\$ Chat mode exit message.

c3\$ "Returning To The Editor" message.

cc\$ 2 character system identifier (Also fvn)

cm\$ Current location in AREA window.

d1\$ Current time and date information in 11 digit format. (Also fv0)

d2\$ Time and date of last logoff, also Library name at entry. (Also fv8)

d3\$ Handle of last user on the system. (Also fv9)

d4\$ Current ML protocol in memory. (Also fvl)

d5\$ True last call date of user online in 11 digit format. (Also fvk)

d6\$ Logoff time of last user.

dd\$ System identifier + user ID number.

dr\$ Currently active drive/LU number + ":".

ff\$ Real first name of user online.

f1\$ 15 character string which determines the user's online flags.

i1\$ Access level + handle of the sysop.

i2\$ Expert flag + phone number + first name + " " + last name of sysop

i3\$ Access group name of sysop

ld\$ Last call date of user online in 11 digit format. Used for new message reads.

l1\$ Real last name of user online.

lt\$ Logon time of user online.

na\$ Handle of current user online. (Also fv2)

n1\$ Null character [CHR\$(0)].

nm\$ Last network sort in 11 digit format.


| | |
|------|--|
| p\$ | Current prompt text. |
| ph\$ | Phone number of current user online. (Also fv4) |
| po\$ | Text for system main level prompt. |
| pp\$ | System password  change with PC command). |
| pr\$ | Name of current plus file in memory. |
| pw\$ | Password of current online user. |
| qt\$ | Quotation mark [CHR\$(34)]. |
| r\$ | Return [CHR\$(13)]. |
| rn\$ | Real name of user online (FF\$ + " " + LL\$, also fv3) |
| sy\$ | Current subsystem active. |
| ti\$ | C= Time-Of-Day clock. |
| u\$ | Reserved for command stack. |
| x\$ | System drive/LU designators. |

Table 30: Reserved string variables

Reserved Integer Variables

The current reserved integer variables for Image v1.2 are as follows:


| | |
|-----|--|
| ac% | Access level (0-9) of user online. (if ao%<>ac%, access level was changed) |
| ao% | Access level of user at login. |
| co% | Computer type of user online (1-9) |
| ct% | Number of calls today by the user online. |
| d1% | Currently active device number. |
| d2% | Currently active drive/LU number. |
| d3% | Currently active drive/LU number. |
| da% | Number of downloads allowed per call (0=unlimited). |
| dc% | Number of downloads this call by user online. |
| dv% | Active device number. |

| | |
|-----|---|
| i% | Instant mode flag. |
| kp% | Last key pressed. |
| ll% | Line length (38-80) of user online. |
| p1% | Time allowed during prime time. |
| p2% | Time that prime time begins. |
| p3% | Time that prime time ends. |
| pt% | Prime time flag (1=active). |
| tc% | Total calls to the system by the user online. |
| tr% | Time remaining on system, in minutes. |

Table 31: Reserved integer variables

Reserved Floating Point Variables

The current reserved floating point variables for Image v1.2 are as follows:

| | |
|---|---|
| bd | Total number of CBM blocks downloaded by user online. |
| bu | Total number of CBM blocks uploaded by user online. |
| ca | Total number of calls since system start. |
| cn | Total number of calls since last reboot. |
| cr | Total credit points of user online. |
| dc | Total number of files downloaded by user online. |
| dr | Currently active system device (1-6). |
| e1 | Reserved for future expansion. |
| em | Expert mode flag. |
| f1 | System flag. |
| f2 | System flag. |
| f3 | System flag. |
| f4 | System flag. |
| id | ID number of user online. |
| i1 | Next available user account. |
| i2 | Flag for reserved system. |
| i3 | Flag for reserved system. |
| lc | Flag for active subsystem menu. |
|  | Editor lines allowed for user online. |


| | |
|----|---|
| lf | Linefeed flag. |
| lp | Output control flag. (fixme: what does this do?) |
| mf | Reserved for ML use. |
| nl | C/G mode flag. |
| nm | Network flag. |
| pl | Input control flag. |
| pm | Prompt mode flag. |
| pr | Active ML protocol in memory. |
| ps | Total posts by user online. |
| qb | Modem speed (BPS rate: "current baud"). |
| qe | Reserved for ML use. |
| rc | Abort flag. |
| rq | Reserved for ML use. |
| sh | Checks whether spacebar hit (0=no, 1=yes). |
| sr | Reserved for ML use (usually current logical file number). |
| st | Commodore BASIC reserved variable; I/O status. |
| uc | Total files uploaded by user online. |
| uh | Number of active user accounts. |
| ul | Upper/lowercase flag (default protocol for  TurboRel subs). |
| ur | Highest user ID +1. |

Table 32: Reserved floating point variables

Arrays

The following arrays are dimensioned by the BBS. Most can be used for your own programs, except where noted.

| | |
|-----------|--|
| ac%(31) | Can be used for any plus file outside of UD/UX/SB. |
| bf(x,y) | Blocks free on system drives. Should never be used. |
| co\$(9) | Text for computer types supported. Should never be used. |
| dv%(x) | Device numbers for system drives. Should never be used. |
| fl\$(9) | Default flags for access groups 0-9. Should never be used. |
| so%(31) | Can be used for any plus file outside of UD, UX, SB. |
| st(60) | Status. Should never be used. |
| tt\$(254) | Can be used anywhere that does not use the editor. |

Table 33: Reserved Arrays

(from programmer's ref guide)

AC% User's current access level
AC%(
AG\$ Access group name
AK\$ "Line divider;" space, LL%-2 "-"'s, RETURN character
AN\$ Last user input
AO% User's old access level (used in access level change situations)
BD
BF(Number of blocks free on the six system disks
BN\$ BBS name
BU
CL\$ I think this is C1\$ instead; "Entering chat" message
C2\$ "Exiting chat" message
C3\$ "Returning to editor" message (fixme: pretty sure anyway)
CA
CC\$ 2-character BBS identifier
CM\$ Displayed in the "Area" section [when the top screen mask is enabled]
CN
CO\$(User's computer type name array
CO% User's computer type number array
CR
CT
CT% BBS calls today?
D1\$ 11-digit current date/time
DL\$ Again, D1\$? bad ocr?
DL% Again, D1%? bad ocr?
D2\$
D2%
D3\$ Last user on BBS
D4\$ Current ML protocol
D5\$ True last call (date? fixme: more info)
D6\$
DA%
DC
DC%
DD\$
DR Set 1-6 to designate system drive #
DR\$
DV%
DV%(
EL
EM User's expert mode: 0=off, 1=on
F1
F2
F3
FF\$ User's real first name
FL
FL\$
F1\$(
GS
I1\$

I2\$
 I3\$
 ID User's ID number
 KK Lines of text in BBS editor; if 0, aborted or time limit expired
 L1
 LC
 LD\$ User's last call date (11 digits, like D1\$)
 LE
 LF User's linefeed flag?
 LL\$ User's last name
 LL% User's line length
 LP
 LT\$
 MF 11-digit date format of user's last call
 MW
 NA\$ User's handle
 NC
 ND
 NL User's current graphics mode: 0=ASCII, 1=Commodore C/G
 NL\$ CHR\$(0), a null character
 NP
 NR
 NV
 OC\$
 P\$
 PL% P1%?
 P2%
 P3%
 PH\$ User's phone number
 PL
 PM
 PO\$ Main prompt string
 PP\$
 PQ
 PR
 PR\$
 PS # of posts?
 PT% Probably a prime time flag
 PU\$
 PW\$ some password
 QB bits per second rate ("current baud")
 QE
 QT\$ CHR\$(34), a quote character
 R\$ CHR\$(13), a RETURN character
 RC
 RN\$ User's real name (FF\$ + " " + LL\$)
 RP # of responses
 RQ
 RS
 SH Updated by ML routines; "spacebar hit": 0=no, 1=yes
 SO%(Subop array, used in SB, UD, UX subsystems
 SR Logical file number in certain routines
 ST Commodore BASIC reserved variable; serial status

ST(
 SY\$
 T1
 TC% Total calls to system (grand total?)
 TF
 TI Commodore BASIC reserved variable; jiffy clock
 TI\$ Commodore BASIC reserved variable; 24-hour clock
 TR% User's time remaining, in minutes
 TT\$(Lines of text stored in editor
 U\$ Stacked commands
 UC
 UH Highest user account # in user file?
 UL
 UR
 X\$

Image Output Routine

In order to send text to the modem and screen (PRINT, for you BASIC people) as easily as possible, we have developed a routine that works very similar to the BASIC PRINT statement. Used properly, this routine also eliminates much of the garbage collection that the C64 is notorious for. Just as many are used to using the question mark as a shortcut to PRINT something in BASIC:

```
? "Hello There!"
```

You may use the ampersand (&), IMAGE's "print" character, to do the job:

```
& "Hello There!"
```

will have the desired effect in the BBS environment! Well, almost. By default, Image displays the above like using PRINT with a semicolon on the end. (That does not move down to the next line when finished PRINTing the current line.) If you want a carriage return to separate lines, add one anywhere inside quotations by typing function key **F6**, which displays **K**.

```
& "Hello There!K"
```

You may also:

```
&an$ or &tt$(x) (anything using a string variable)
```

- BUT -

```
&str$(i) (numeric variable output is not supported yet.)
```

Some oddities in syntax:

- You must follow a THEN clause with a colon before using the ampersand. In other words:

```
if b then &"hello"      (will not work)
```

```
if b then:&"hello"     (must be used instead)
```

- If the ampersand is used all by itself:

```
b=b+1:&:if b then ... (& outputs the contents of a$)
```

Other & Calls

The ampersand is also used with arguments to call all of the machine language routines in IMAGE BBS. The table of arguments that are useful in BASIC and a brief description follow:

| <i>Argument</i> | <i>Description</i> | <i>Variable(s) Used</i> |
|------------------------|---------------------------------|--|
| & or &,0 | output a\$ | |
| &,1 | input an\$ | |
| &,2,x | input an\$ from disk | x=logical file # |
| &,3,x | read file from disk | x=logical file # |
| &,4 | get character from modem | a\$=character |
| &,5 | enter chat mode | |
| &,6 | masked (password) input routine | |
| &,7,x | load plus file | x=device# |
| &,8,x,y | disk directory | x=logical file #; y=1: 1 line, 0=entire directory |
| &,9 | print an\$ at bottom of screen | |
| &,10 | enter terminal mode | |
| &,11,x | clear array | x=number of array in order of definition |
| &,12,x | non-abortable file read | x=logical file # |

| Argument | Description | Variable(s) Used |
|-----------------|---|-------------------------|
| &,13 | get char to an\$ | |
| &,14 | sound bell | |
| &,15 | convert 11 digit date in an\$ to English | |
| &,16 | Do a SYS 49152 (useful for calling protocols) | |
| &,18,x | load protocol file x=device # | |
| &,19 | display online top of screen | |
| &,20 | display offline top of screen | |
| &,21 | display bottom of screen | |
| &,22,x | wait x tenths of a second | |
| &,25 | sound beep | |
| &,27 | save variable pointers | |
| &,28 | restore variable pointers | |
| &,37 | enable error trapping | |
| &,38 | disable error trapping | |
| &,39,x | output tt\$(x) | |

Table 34: & calls

POKEs

This is a list of some of the memory locations used by IMAGE that can be usefully POKEd:

| Location | Use |
|-----------------------|---|
| <i>\$07ef / 2031</i> | MCI on/off (1 = on) |
| <i>\$d000 / 53248</i> | Flag for local mode (1 = on) |
| <i>\$d001 / 53249</i> | Case lock (1 = uppercase only) |
| <i>\$d003 / 53251</i> | Time allowed (1-99 minutes; 100+: unlimited) |
| <i>\$d004 / 53252</i> | Number of characters allowed for input, 0-255 |
| <i>\$d008 / 53258</i> | Modem carrier invert (either 0 or 16 depending on modem type) |

| Location | Use |
|----------------|-------------------------|
| \$d020 / 53280 | Uppercase mode (1 = on) |

Table 35: Useful POKE locations

Common Modifications

Hidden LtK User

In setup, line 93 has a REMmed out line that Lt. Kernal SysOps might be interested in. If you unREM this line and move your boot disk files to another user on your drive, you can boot from that user and the BBS automatically switches back to user 0 during initialization. This lets Lt. Kernal SysOps "hide" their boot files on a normally unseen user and boot the BBS as normal.

LtK Fast Blocks Free Read

In line 1081 of *im*, about ¼ of the way through the line, there is a statement that looks like this:

```
on-(dv%<>0)goto1083
```

Changing the *dv%<>0* to *dv%<>8* tells the BBS you have a Lt. Kernal running DOS v7.2 or higher set up as device 8. This mod allows the Lt. Kernal fast blocks free reads to be done on just the Lt. Kernal and the standard routines for all other drives, thus allowing you to easily mix a Lt. Kernal and standard serial drives without losing the fast blocks free read on the Kernal.

For users of Lt. Kernal DOS v7.1 and earlier, do *not* change this line. You can still access all of the LUs, but the fast blocks free read routines will not work and will lock up your system.

Automatic CMD Device Clock Set

In setup, line 117 is REMed out. It contains the hook for routines to set the Image BBS system clock based on the CMD's internal clock.

Blocks Free Array Usage Change

The use of the `bf()` array has been changed. There is no longer a need to change the number of devices or drives when you add new drives to your system. With CMD systems, someone defining large numbers of partitions would end up with almost no RAM free, so the array was cut down to only include the system disks.

Enabling Macros

If you have Macros defined and would like them to come up automatically, simply add the following to the end of line 82 in `setup`:

```
:&,52,21,1
```

Removing Extra Login Security Checks

From Marc Honey:

One thing that really annoys me is the extra security checks after entering your login id and password. To get rid of those extra checks all you have to do is remove the following lines from the `+.lo` file on the Plus Disk.

```
673 &"Additional Information:" :a=int(rnd(1)*5)+1:on a goto
675,676,677,678
674 p$="FIRST name ":t$=ff$:goto679
675 p$="LAST name ":t$=ll$:goto679
676 p$="AREA CODE (???)XXX-YYYY ":t$=mid$(ph$,2,3):goto679
677 p$="DIALING PREFIX (XXX)/???-YYYY ":t$=mid$(ph$,7,3):goto679
678 p$="LAST FOUR DIGITS (XXX)/YYY-???? ":t$=right$(ph$,4)
```

Change line 679

```
from : 679 gosub1006:c$=an$:goto156
to : 679 goto156
```

Change line 157

```
from : 157 ifpw$=z$andt$=c$andz$<>"andc$<>"then160
to : 157 ifpw$=z$andz$<>"then160
```

That's all there is to it! As an added bonus, removing those few lines will drop your `+.lo` file size from 40 blocks to 39 blocks and every little bit helps on space and speed ;)

Troubleshooting / Q & A

Here are some of the most common questions and problems that people have:

Q: I load the program, and it never gets to the idle screen. What is wrong?

A: There are several things that could cause this. Check all the following:

1. Has your BBS been properly and completely configured using the instructions in the setup chapter under CONFIG?
2. Is each system disk in the correct device/drive?
3. Are all the files copied to the correct system disks, especially the plus-file disk? If an error light is flashing on any of the drives, it usually means that it cannot find a needed file. *Also, have a look at [The Boot Process, page 134.](#)*
4. Are all disk units in proper alignment?
5. Is everything connected to the computer (printers, drives, etc.) turned on? Problems can arise if they aren't, even if the BBS is not using them.
6. The disk or disk image could be faulty. Try re-copying or re-downloading it.

Leif Bloomquist's BBS Server 1.4

If the BBS doesn't connect. Says ring and answered but it is never getting a carrier I guess.

From Larry "X-TEC" Hedman:

Jeff, I experienced the same problems you described when I started using BBS Server with an Omnitronix RS232 interface plugged into the modem port. I never could get it to work at any of the 2400 baud settings but 1200 baud works fine and connections say connected at 1200 baud but in actuality, the speed is much faster.

On my Image 1.0 version, I am using the Avatex 1200 +.modem file. If using 1.2a I think I used the 1670 modem file but you can try any of the 1200 baud modem files until you find one that works. In BBS Server, you must build and use the TelBBS Standard Cable as described in the docs.

On the Comms page, set for 1200,N,8,1. Set the serial cable type to option 1 and click on **Set Defaults**. You should have check marks for Enable hardware flow control and ATE1 (local Echo) set by default.

On the Connecting page set checkmarks on Raise DTR when caller connects and Send RING to BBS when Telnet caller connects.

On the Disconnecting page, check Disconnect if BBS drops DCD, Disconnect if BBS drops DSR, Send NO CARRIER to BBS on disconnect, and Lower DTR when caller disconnects.

On the Diagnostics page, check mark Detailed RS-232 Diagnostics Logging and Detailed Hayes Emulation Logging. This will give you much information about what is going on with your RS232 communication between the PC and the BBS in the Activity Log.

On the Emulation page, checkmark Allow Outgoing Calls, Send this string when Telnet session connects: CONNECT, Send Winsock error messages to Terminal Program and Enable Hayes Emulation.

Click on **Save Changes** which will take you back to BBS Server's status page. Make sure the IP address is set for the IP of your PC running BBS Server and type in the Telnet Port you will be using. The standard port is 23 but using port 23, you will experience hundreds of spurious connect attempts all from Asian IP addresses. You're better off to use a different port but for now just use 23 until you can make connections successfully.

If all that is set up and Image is booted to the call waiting screen, you should see red blocks for CTS and DCD and a green block for RTS. At that point you should be ready to receive calls. Try connecting to the BBS using

whatever method you are using, and watch the RX and TX blocks. If it doesn't work use a different 1200 baud +.modem file until you find one that works. Hope this helps.

The Boot Process

* The following article appeared in *

* the May issue of *

* "The Reflection" *

* *

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IN THE BEGINNING:

By: Fred Dart (THE CHIEF)

This month we'll take a look at the 'boot up' process and show what files are accessed and in what order.

There has been a lot of confusion and thus a lot of questions about what was happening and when, this should help a bit.

IMAGE is loaded by a LOADER program called "IMAGE", "IMAGE 1.1", or "IMAGE 1.2" as appropriate. This loader program then loads the "ml" (machine language) portion of the program, called simply, "ml", or "ml" plus the appropriate version number. We will not continue to indicate the various versions unless such designation is essential.

After the "ml" is loaded program control and execution is turned over to that portion of the program, which, in turn, loads the file called "screen", "im", and finally, "setup" (these files vary from version to version with some additional "ml" routines loaded both before and after "setup") and then program control is turned over to the BASIC portion of the program by RUNNING the "setup" program.

"setup" will "set up" all of the system variables, DIM all variables that the system needs to operate and load additional files, if necessary, and will then look for a file called "bd.data" which contains all of the device and drive information for the system.

"bd.data" is a sequential file and can be on the boot disk, if there is a separate boot disk, or on the disk that the system is booted from. If the "bd.data" file is not found there will be a prompt to "INSERT ALL SYSTEM DISKS".

If "bd.data" is found the program will next open the "u.config" file and read the information from record one, the sysop information, which is stored in the variables i1\$ and i2\$. On later versions the "u.index" is then opened and the actual number of users is read. (Note that the "index" is manipulated and read with the file "++ 4").

Following the "u.config" the file called "e.data", a relative file that contains 31 or 32 records of 31 bytes each is accessed. The information that is read in from "e.data" at this time is the total number of calls to the system (record 1), the total number of users (record 12), the total number of HANDLES in version 1.0, from record 16, the last user on the system (d3\$) from record 17, the system password for password subs (pp\$) from record 18, the last date/time the system was accessed in record 19, whether there is a prime time and what the time limits are in record 20, the information for the user FLAGS is read in from records 21 to 30, and the next id number to be assigned to a new user in record 31 (l1).

If the "bd.data", "u.config" or "e.data" files are not found on the device and drive that they are assigned the system will prompt with the same message, "INSERT ALL SYSTEM DISKS AND PRESS RETURN".

After the information has been read from "e.data" the relative file "e.stats" is opened and the first 30 records are read. "e.stats" contains the information shown on the BAR STATS and is a file consisting of 38 records of 10 bytes each.

The program file "+.lo" is then loaded and program control is turned over to that file. The "+.lo" file is a smaller file and cannot exceed 40 blocks, since it must load another file, the "+.modem" file, into a protected area of memory reserved for "little modem files". The "little modem files" are finding much more widespread use in the system than just as modem files and are now being used in on-line games, such as "Wallstreet" and in other areas of the board.

After the modem file is loaded it will send the proper set of commands to the modem to prepare it to answer a call and then the board will go to the "System Idle" screen and the load sequence will be completed.

Some additional information about a couple of the files here may be in order. "bd.data" contains several important board parameters in addition to the device/drive designations for all of the assigned system drives. The information is stored sequentially, with the first 12 entries being the device/drives for the six system drives, (dr=1 through dr=6), followed by the board identifier that you use on your board (LD, CH, TN or whatever). That is followed by the number of credits you give to new users when they sign on the system, then by a number that represents the highest device number you have attached to your system MINUS 7. For example, if you are using devices 8, 9, 10, and 11 the number in field 15 would be a 4 (11-7). For a Lt. Kernal system using device 8 only the number is a 1.

The following number in field 16 is the number of DRIVES attached to your system. If you have all 1541/71/81 types it would be a 1 since they are all SINGLE drive units, if you had a Lt. Kernal with 9 LUs accessed it would be a 9. The next field, number 17 contains your board name. This is the information that is printed out with the MCI variable \v5 or the string bn\$.

The last information to be accessed is the prompt information, which is read in and stored in po\$. The final line of "bd.data" contains the copyright information.

The information contained in "e.data" is detailed above for the most part, since most of it is accessed. There is some that is not accessed by "setup" though and is not read in until it is needed. We'll examine, briefly, some of the other information in "e.data". Record one, as stated, is the total number of calls to the system. Records two through 11 are the names of the access groups, from "New User" to "Sysop" or whatever names you have on yours. In addition to the NAME of the group there is a bit of information attached to the very beginning of the name. The first CHARACTER of the name of each group contains some access information that is stored in BITS. This information is the calls per day, time per call, minutes allowed to idle and so on. If you simply TYPE the "e.data" on a Lt. Kernal the first character could appear as a color or some other strange character, the program "edata edit" properly interprets the characters and can be used to view the entries, "+.access" or the off-line "config" program should be used for editing. Record 12 is the total number of users PLUS 1, 13, 14 and 15 contain the

flags for whether your individual message bases, UD libraries, or UX libraries are open or closed. If all are OPEN then the three records would contain 30 zeros each, if any were closed there would be a one in the position corresponding to the closed board. Record 16 contains the total number of HANDLES you have on version 1.0. It is not used on the enhanced versions. Record 17 is the HANDLE of the last user on the system, 18 the password for the password subs. 19 is the date/time the last user signed off. 20 is for prime time, whether you have a prime time and, if so, the start and end times. The information is stored as three numbers separated by commas. For example: 0, 0, 0 is no prime time, of course. If the first number is not a 0 it would indicate that you had a prime time, the second number would be the start time and the third number would be the end time. The variables pt%, p1%, p2% and p3% are used. Records 21 through 31 have been covered previously. 32 is used to hold the modem string, a string of seven characters with the information for each individual modem on version 1.2. In addition version 1.3 will contain some new data in the "e.data" file. More information will be available later.

"u.config" contains all of the user data and will not be covered here.

There is one additional bit of information that is worth mentioning in the "setup" file. Many people have asked WHERE the message "Entering Chat Mode" or "Exiting Chat Mode" is stored. The information is put in c1\$, c2\$ and c3\$ during the boot process and remains there. It can be changed in "setup" if desired.

An additional "tidbit" for the enhanced version is the location of the password mask. The location is 17138 and can be 'poked' with about any printable character, just decide what character you want, say a "?" for example, use the statement `print asc("?")` and it would print out the number 63.

You would then poke that value into 17138 and change the password mask from an X to a ?. Note that you could also use this: `poke 17138, asc("?")` and achieve the same results. It is even possible to 'randomize' the password mask by adding the poke in "+.lo" and having it poke a random value from a string of acceptable characters.

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If you want physical 1541/1571/1581 disks sent through postal mail, please send an e-mail to sym_rsherwood@yahoo.com, specifying the format(s). We'll make arrangements regarding shipping cost—not that it'll be much. My goal is not to make money off this—unless you want to donate some—but see a revival of one of the top Commodore 64 BBSes into common usage again.

Q: As reported by Ray "The Wiz" LeJuez: the bootup process seems to freeze with his C128D in C64 mode, after the message

Reading System Configuration...

The internal 1571 drive is set to device #8, his Lt. Kernal HD is device #10. bd.data devices/drives were set for device 10, drive 0.

A: There is some speculation that a modification to the Lt. Kernal HD for burst mode in 128 mode may have caused the problem; it boots to the "waiting for call" screen just fine on his C64.

Q: My users cannot log on or send e-mail using the handle. Using the ID number works fine. Why?

A: Files can sometimes get corrupted by what we call an "act of God" (why does He always get blamed for this stuff?). A power brownout/blackout, surge, etc. during a write can do nasty things like this.

This particular problem is caused by the u.config file being corrupted. Run +.alpha/ind, and it should clear things up. (This program can take quite a while to run, especially if you have a lot of users, so be patient here!)

Select the options in the following order: LOAD, CLEAR, MAKE, SAVE. The `u.index` file will be re-generated.

Notice as the list is created, it shows what alphabetical position the user is in for the `u.index` file; this has no bearing on the user's BBS ID number. Also, a bit of debugging information (the `a%` and `b%` values, used in the call to the indexer) is shown.

Notes About Users


From Marc Honey:

If for some reason you find yourself with a corrupted `u.config` file (where the users are stored) and have to re-create one from scratch, don't forget to edit the `e.data` file to reset both the user count and the next available user #. If you don't do this then someone can login and type a user # that was previously assigned but no longer exists. When this happens the person logging in will get a password prompt but once they type in a password and hit enter the BBS will lock-up. Another odd side effect of not updating the `e.data` file is that should someone login as NEW they will get id 0 for their login id which is invalid. There is a basic program called `edata edit` which is on disk #2 of the image 1.2a BBS distro.

If this still does not remedy the situation, go into ED and see if user information is still correct. If not, contact Pinacolada for help. He is working on (as of 1/2008) a user file backup/restore program; after losing half his users' information due to random binary garbage in the user file, he vowed that would never happen again.

Q: My BBS has started to do (any number of strange things) it was not doing before. What is wrong? *This question gets asked frequently during beta-testing.*

A: This is usually caused by some modification that has been made to the BBS or a plus-file module. It may not show up for days after a modification has been made, so the problem may not be readily apparent. The fix is to:


- Copy the original file in question over from your back-up copy of IMAGE BBS, or previous system file(s) you were running
- Isolate which file the problem is in, perhaps using the  "IMAGE Mod Maker"
- Correct the error, or notify the program maintainer, if there is one.

Also, have you added anything new (hardware, a new game plus file) to your BBS recently? What has changed since the problem started? Many times, some of the smallest changes can create the largest problems.

Q: My modem (or telnet bridge device) will not work correctly. What can I do?

A: First of all, *don't panic*. (Apologies to the late, great Douglas Adams.) Seriously... since the advent of Rascal's `e.modrc` fix which adds a configurable modem initialization string and the ability to customize modem response codes, there are many more options to consider than in the old days.

Plus, if you're running a telnet BBS with a bridge program, there are additional things to consider, some of which I will touch upon in

- DCD/carrier detect options in `tcpser` & D 

If you have a Supra 2400 baud modem, you will need to set it up specially before you put it on line. Run the `2400 setup` program on the IMAGE disk with the modem on-line and turned on, and then boot your IMAGE BBS!

Thanks again for trying IMAGE BBS! We plan on supplying all of our customers with the best of quality in our products, support, and service! If you have any problems at all, or want to comment on the program or offer suggestions, feel free to contact us at any time!

That holds as true for Pinacolada and other Image sysops as it did for the original Image crew. Please: feedback, flames, kudos, suggestions, amen.

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