KRACKER JAX

PROTECTION BUSTERS
PRESENTS

THE HACKER'S UTILITY KIT

For use with the C64 or the C128 (in the 64 mode) with 1541 or 1571 disk drives.

FAST DATA COPIER – Perfect for backing up data disks or for making error-free copies of your protected software!

1 OR 2 DRIVE NIBBLER – Fast and state of the art!

FILE TRACK AND SECTOR TRACER – Picture this: You've located your target in memory. Unfortunately, it happens to be at the end of a 150 block file. This utility provides you with a fast, easy way of locating your target within that file. No more tedious tracing with a standard track and sector editor. And our dynamic on screen display is totally unique – created to fill the specific needs of our Kracker Jax programmers!

BYTE PATTERN FINDER – Finds ALL occurances of ANY pattern you determine, ANYWHERE on the disk, in UNDER one minute! Unlike some antiquated utilities, this unique tool allows entries in hex, instead of ASCII!

CUSTOM COPIER CREATOR – You've determined the byte changes necessary to archive a given program (or, you've examined the Kracker Jax parameters). Now, to create your own custom copier, just input those bytes into this utility and choose a nibbler or data copier. That's it – your custom copier will be saved as a self running program to any disk!

RELOCATABLE M/L MONITERS – Includes drive monitor – you'll LOVE this package!

FAST FORMATTER – Format ANY range of tracks or the WHOLE disk – YOU choose!

DISK FILE LOG – Quickly find the start and end address of all files on ANY disk!

GCR EDITOR – You've seen the others – well so have we. OUR format is extremely easy to view and use. Now you can view raw data the way your computer reads it – make modifications in GCR and write them back to disk. We're even considering releasing GCR PARAMETERS for you Techies!

K R A C K E R J A X P R E S E N T S

THE HACKER'S UTILITY KIT

Programmed by:
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Paul Rowe / Jeff Spangenberg
Designed by: Les Lawrence

Welcome to The Hacker's Utility Kit. This program represents the finest set of disk examination and manipulation tools ever assembled into one package. We are confident you will find it to be one of the most usful disks in your library. Each and every module included in this package has been put through it's paces in real use. We feel you'll find them not only extremely powerful, but also user friendly. Many extras have been put into The Hacker's Utility Kit. Please be sure to read each segment of this manual before using any of the tools. This will insure that you obtain full use of each and every feature.

Before we get on to the goodies, we want to thank the programers listed above for their efforts in writing this package. We are very proud to present their finest effort ever. They, just like you, are "Hackers" at heart. This program is a showcase of their real talent.

Loading Instructions

Place the Hacker's Utility Kit disk in your disk drive. Type < LOAD "*" ,8,1 > and hit RETURN. (C-128 owners need only place the disk in the drive and power up.) In a short time, the menu will appear. Use the cursor U/D key to move the hand-pointer to the desired feature. Press RETURN and that utility will automatically load in and self start.

We'll discuss each utility in it's order of display on the menu.

Sector Usage and Error Scanner

Selecting input 1 from the main menu will automatically boot this utility. When the menu appears, you may make your selection using the cursor or number keys to position the arrow pointer. Press RETURN to activate your choice.

1. Scan Disk:

   P : Print output after scan (use standard Commodore printer).
   S : Begin scan.
   E : Exit to beginning menu.
   M : Modify range of tracks to scan.Defaults are 1-38.

   The following characters are used in the scan to represent the condition of any scanned diskette.

   S : Sync track (1 sync, no data).
   0 : Block header not found.
   1 : No sync character found.
   2 : Data block not present.
   3 : Checksum error in data block.
   7 : Checksum error in header.
   9 : Disk ID mismatch.
   + : 1571 normal format with no data.
   - : 1541 normal format with no data.
   . : Data in these sectors.

2. Directory : Read any diskette in the drive.

3. Quit : Reboot Hacker's Utility Kit main menu.

Density Scanner

Selecting input 2 from the main menu will automatically boot this utility. When the menu appears, you may make your selection using the cursor or number keys to position the arrow pointer. Press RETURN to activate your choice.

1. Scan Disk:

   P : Print output after scan (use standard Commodore printer).
   S : Begin scan.
   E : Exit to beginning menu.
   M : Modify range of tracks to scan. Defaults are tracks 1-38.

   The following represents the values you can expect on a normal disk. Any deviation represents a non standard condition.

   1 : Tracks 1-17.
   2 : Tracks 18-24.
   3 : Tracks 25-30.
   4 : Tracks 31-35.

2. Directory : Read any diskette in the drive.

3. Quit : Reboot Hacker's Utility Kit main menu.

KRACKER HACKER GCR EDITOR

The GCR Editor is the most powerful tool you'll ever use to examine a disk. It will allow you to view raw data the way it was written to the disk originally. Our GCR Editor has every feature we could think of to examine and manipulate headers and data. A through knowledge of the makeup of Commodore format is neccesary to have full use of this utility. For complete information on this subject, may we suggest "Inside Commodore DOS", written by Richard Immers. This manual contains a wealth of information on the makeup of the Commodore format and the Disk Operating System (DOS). With this manual and our GCR Editor, a new level of understanding can be yours.

In the following instructions, we will give you all the command features available to you with the Kracker Hacker GCR Editor. Only use and study can make you proficient. Enjoy!

WHAT IS GCR?

When you load and save files from the C-64 to disk, they are not written bit for bit straight to the diskette. The Commodore 1541/71 disk drive cannot write

more than three "0" bits in a row to a disk, so writing a hex byte like $06 poses a problem! Commodore developers created the GCR coding scheme to read and write data to and from the drive. It converts each four bits of hex code into 5 bits of GCR code. For every four bytes of hex data, there are five GCR bytes. Lastly, this data is written at a standard rate, depending on it's placement on the diskette. Standard Bit Rates are as follows: Tracks 1-17 = $60, Tracks 18-24 = $40, Tracks 25-30 = $20, Tracks 31-35 = $00.

Commodore DOS protection is for the most part, simply the placement of NON-STANDARD data on the diskette, either in single bytes, drive speed, or rewriting the format (single sectors, tracks or entire disk). By using your GCR Editor, you can obtain exact knowledge, and even the power to duplicate many protections on non working backups. Let's go through the commands available to you in this powerful utility. From the main start-up menu, choose option 3 and press RETURN.

FIRST SCREEN (HEADER SELECTION)

Track Selection : Track values are entered in decimal. Values from 1-40.5 are accepted.

Bit Rate Selection : Press RETURN for default value, otherwise enter one of four bit rates ($00,$20,$40,$60).

After Scan of Track : Number of headers equals number of syncs on track. Left column = GCR of first 8 bytes. The right column = converted GCR bytes. The message bar just above the list of headers gives you information about the current header the cursor is on. Left hand will say : Sector:XX if the current header is part of a standard formatted track. It will give you the sector number in decimal so you can use the GCR Editor like a sector editor. The right hand will either say DATA or HEADER, depending upon whether the cursor is on the data block header (starts with a $52) or the actual data block itself (starts with a $55).

Commands (first screen)

Shifted H : Help screens.
T : Enter a new track.
R : Enter a new bit rate for the current track.

F1 : Directory of disk in drive.
F3 : Prompt to reboot main menu.
Cursor U/D : Scroll through headers.
Space Bar : Read current selected header and go to edit (2nd) screen.
P : print list of headers to printer (Standard Commodore printers).
+ or - : go back or forwards one track and read.
C : Create a Track : You may access this feature after reading a track.
Options include:

1. Fill track with no-sync: wipes out entire track with $55s.
2. Fill track with full-sync: fills entire track with $FFs.
3. Create Notepad header: Wipes out an entire track with $55s, and then creates a one header/one sync track using Notepad code.

SECOND SCREEN (HEADER EDIT SCREEN)

Header Info : appears at the top of the screen. Sync is the actual length of the sync mark of this header. Length is the length in bytes of the header. Note: if the header has more than $0500 bytes, the buffer for editing will only go up to byte $04FF, since the disk drive cannot read long blocks unless you have expanded memory.

Header and Data tables : Rows of ten GCR bytes appear on the left. The converted eight hex bytes appear on the right. Remember, five GCR bytes equal 4 Hex bytes.

Commands (second screen)

R : Reread the header data.
W : Write altered data back to disk.
Z : Find zero GCR bytes and mark them.
P : Print out data to printer.
SPACE Bar : Enter edit mode.(See more info below.)
+ or - : Increment or decrement sync length by one.
Cursor U/D/R/L : Move cursor around data table.
< : delete one byte from cursor spot.
> : Insert one byte ($00) at cursor spot.
DEL : Delete bytes (from end of table)
S : Switch column editing from left to right.
A : Toggle Hex display Hex and ASCII (right hand of screen).

D : Enter disassemble mode.(See more info below.)
C : Repairs checksum of header or data block. Use before W command to prevent checksum error.
Shifted R : Lets you re-read current header at a different clock rate than the entire track was read at.
Shifted H : Help screens.
Left Arrow : Return to first screen.

Edit Mode : Hit SPACE BAR to enter, border will turn light grey. Type in hex bytes, or ASCII, whichever is appropriate. DEL key will backup cursor. Hit RETURN to exit edit mode.

Note: On the display screen, double dots ".." mark bytes that aren't used. If you try to hit SPACE BAR to enter the edit mode on one of these bytes, it won't work.(Except, on the first ".." to the right of the last data byte displayed.) Hitting SPACE BAR here allows you to append to the current data, the length of the header will change appropriately.

Disassembly Mode : Hit D to enter Disassembly mode. The disassembled code will appear in the GCR column on the left. Type in assembly text and hit RETURN to enter. Hit CURSOR U/D to escape Assembly mode.

SPACE BAR : Enter disassembly mode.
Cursor U/D : Scroll back and forth through the disassembly.
RETURN : Exit disassembly mode.
P : Send disasembled code to printer.

Notepad Feature : At times when using the GCR Editor, you may want to save a header, look at another one, and later retrieve the original header without re-reading it. Our GCR Editor features a scratch pad (called the Notepad) that lets you save one header in memory. You can also edit the notepad header.

T : Toggles editing mode from current header to notepad. The border will turn blue and the message "NOTEPAD" will appear in the top left corner. You can't use any disk commands like R,W,& Z in Notepad mode. Hit T to return to normal header program.
SHIFTED S : Save header to disk as a Notepad file. Save either Notepad or selected header.
SHIFTED L : Load saved header from disk.

UP ARROW : Saves current header to Notepad.
CONTROL I : Only works in the non-Notepad mode in GCR editing. Inserts NOTEPAD header code at cursor position.(Use to retrieve Notepad.
CONTROL A : Appends notepad header to disk at cursor spot. If you have a long data block with extra room at the end, and you wish to add an extra sync to disk, move the cursor to the end of block, have the desired new header saved to the Notepad, and hit CONTROL A. The GCR Editor will automatically rescan the track.

GCR EDITOR HINTS,TIPS, AND TRICKS

Use caution when using the W command repeatedly. The GCR Editor writes each header back to the disk as perfectly as possible (ie:correct length, correct sync). If you make a header longer than it was before and write it back to disk, it may destroy the header that follows it.

The same goes for the CONTROL A append command.

Changing sync lengths and writing the header back to disk is also dangerous. Use caution.

After you use the W command, you should verify that it wrote correctly by using the R command to re-read it.

Use the C checksum command after editing a data block before you write it back to disk. This repairs the datablock checksum. Otherwise normal Commodore DOS will get a 23 read error when it tries to read the block.

Well, there you have it. The most powerfull, easiest to use GCR Editor on the market today. If you feel confused or overwhelmed, don't be put off. A little study and practice will have you feeling right at home.

Fast Data Copier

Selecting input 4 from the main menu will automatically boot this utility. This utility is designed to remove any non standard conditions that exist on your diskette. It will attempt to repair and normalize the disk. The following key strokes represent the user options.

F1/F2 : Increment or decrement starting track of copy range.
F3/F4 : Increment or decrement ending track of copy range.

F5/F6 : Increment or decrement Source device number(must be hardwired).
F7/F8 : Increment or decrement Destination device number(must be hardwired).
S/D : Directory of diskette in source or destination drive.
Q : Quit.
C : Begin copy process.

Nibble Copier

Selecting input 5 from the main menu will automatically boot this feature. This utility has been designed to copy non standard material. It will in many cases, make a perfect copy of your protected diskette. Please keep in mind as you use this, or any nibbler, that nibblers are limited in their abilities. The following key strokes represent the user options.

F1/F2 : Increment or decrement starting track of copy range.
F3/F4 : Increment or decrement ending track of copy range.
F5/F6 : Increment or decrement Source device number(must be hardwired).
F7/F8 : Increment or decrement Destination device number(must be hardwired).
S/D : Directory of diskette in source or destination drive.
Q : Quit.
C : Begin copy process.

File Track & Sector Linker/Tracer

At the "Filename" prompt, enter the file you wish to see linked. Press RETURN and the drive will search for that file. If the file is found on the disk, it will be visually linked on the Track/Sector map. After the file has been read in, a blinking cursor will appear on the beginning Track/Sector of that file along with the address of the first two bytes of that Sector.

1st Screen Commands:

F1 : Directory of Diskette.
F3 : Prompt to reboot main menu.
RESTORE : Resets program and drive at any time except during linking.
Cursor Down : Move forward link by link thru file (slow scan).

Cursor Up : Move backwards link by link (slow scan).
Cursor Right: Move forward eight links (fast scan).
Cursor Left : Move backwards eight links (fast scan).
HOME : Return Cursor back to first link.
Space Bar : Enter 2nd Screen (edit mode).

Notice that as you use the Cursor commands, the address counter is incremented to reflect the true address of first two bytes of the highlighted Sector.

2nd Screen Commands:

Left Arrow : Return to first screen.
W : Write altered Sector to disk.
M : Toggle edit mode between Disassebly and Hex/ASCII display.

Disassembly Mode Commands:

Home : Home Cursor back to first byte.
Cursor U/D : Slow scroll through disassembly.
Cursor L/R : Fast scroll through disassembly.
Space : Enter edit mode. Type in assembly mnemonics. Be sure to use proper spacing. Hit RETURN after each change. A bad instruction will exit edit mode.

Hex ASCII Mode Commands:

Home : Home Cursor back to first byte.
Cursor R/L/U/D : Move cursor around display.

Type in a Hex Byte at blinking Cursor to change values. The ASCII display will change accordingly. Remember, all 2nd screen commands also apply to this screen.

Byte Pattern Finder

At the beginning prompt you may enter the bytes you are trying to loacte in any of three forms (one at a time please). Hex, Decimal, or ASCII will be acceptable. You are limited to two lines of input. An incorrect input will not

be accepted.

Enter Hex data as : $8D,$53,$22 (Notice the "$" and the "," placements.)
Enter Decimal data as : 200,255,36 (Notice the "," placements.
Enter ASCII data as : "welcome to " (Notice the quotes around the string.)
Combination of the above as: "welcome to ",$8D,$53,$22,200,255,36 (Notice commas)

At the next prompt, choose the range of tracks (1-35 only) you wish to search. Hit RETURN to begin scan.

The drive will then begin a fast search for the inputed data. Each time the data is found on the disk, the searcher will pause and report the occurance. Press Space Bar to Continue the search, or RESTORE to return to the beginning menu and reset the drive.

Other Commands (while Cursor is blinking) are:

F1 : Directory of disk in drive.
F3 : Prompt to reboot Hacker's Utility Kit main menu.

Kracker Jax Parameter/Copier Creator

Selecting input 8 from the main menu will automatically boot this feature. This utility will give you the ability to easily create a parameter, and incorperate that parameter into a copier utility. From the main menu, you will be presented a number of commands. The following keys represent your main input keys.

F1: Directory of diskette in drive.
F3: Reboot Hacker's Utility Kit main menu.
F5: Fast Format a work disk. Will ask for disk name and ID number.
1. Parameter Name : Enter the parameter title (also used as it's file name).
2: Starting Track : Increment only. (Use default value of 1 in most cases.)
3: Ending Track : Increment only. (Use default value of 35 in most cases.)
4: Type of copier : Toggle between Data copier or Nibbler.
We recommend the data copier in most cases. Occasionally only a Nibbler will do.
5: Enter Data : Data may be entered in Hex or Decimal. Toggle mode with left

arrow key. Important : Data MUST be entered as follows. Starting at position zero in the buffer, enter the Track. Position one, enter the Sector to modify. Position two, enter the number of bytes you will be modifing. Position three, input the starting position of that change in the sector to be modified. The bytes from four on represent the actual byte changes. After the byte changes have been inputed, you have three situations. NUMBER ONE : Another change in the same sector. In this case, enter one zero byte and enter position, number of bytes and actual changes again. NUMBER TWO : Another change on disk. Enter two zero bytes and then enter all new information just as you did in the beginning. Remember, just continue on with your changes. Don't start over at position zero. NUMBER THREE : Done. If all modifications are entered, enter three zero bytes. This will flag the utility that you are finished. Press RETURN to lock in all changes.

S: Save copier/parameter to formatted work disk. Your modifications will be automatically executed after the created copier has been used. The created copier will contain the proper title, tracking information, and byte modifications. The user may simply load and run the copier. It will allow the use of either one or two drives.

Kracker-Mon with Relocater and Op-Code Editor

From the main menu choose option 9 to access this utility. When the monitor menu screen comes up, use the cursor U/D keys or the 1,2,3,4 keys to choose an option. Press RETURN to execute that option.

Kracker Mon is completly relocatable in memory. The + and - keys will increment and decrement the monitor address. Hitting the RETURN key while the "Monitor=$X000" is highlighted will also increment the monitor.

F1 : Directory of disk in drive.
F3 : Prompt to reboot Hacker's Utility Kit main menu.
RESTORE : Restart program to beginning menu
OPTION 1 : Execute chosen monitor. (See Kracker-Mon commands).
OPTION 2 : Save chosen monitor to a work disk
  Saves autoboot file under name : "MONX000"
  Just LOAD "MONX000",8,1 to autoboot other save files.
  The op-codes listings will be saved as "OPS".

The monitor will be saved as "X0"

OPTION 3 : Edit the op-code file (OPS) on any WORK DISK.

CURSOR U/D : Slow scroll through list.

CURSOR R/L : Fast scroll through list.

RESTORE : Reset to previous menu.

SPACE : Allows you to change the mnemonic.

A : Steps through the addressing modes (changes them).

HOME : Returns cursor to beginning ($00 byte).

S : Resaves changed opcode file to a WORK DISK.

KRACKER-MON COMMANDS

R : Displays status of A,X,Y registers and Stack pointer

G : XXXX - Executes code starting at $XXXX

X : Returns user to Basic

M : FFFF LLLL - Displays in hex, memory between 2 two addresses. If a second address isn't specified, scrolls forever. RUN/STOP halts.

@ : Sends disk command. Alone returns drive status. @$ for directory of disk. SPACE during dirctory pauses, RUN/STOP aborts.

L : Load file from disk. L "FILENAME",device#,address(optional). For example- L "FILE",08,C000 (IF an address is given, it WILL load to that address.)

V : Verify file in memory. V "FILENAME",device,address(optional). Same as Load command but Verify instead. A "?" stands for verify error.

S : Save File - S "FILENAME",device,FFFF,LLLL+1
Example : S "FILENAME",08,C000,D001

F : FFFF LLLL XX - Fills memory from $FFFF to $LLLL with $XX byte.

D : FFFF LLLL ($LLLL Optional) - Disassembles memory. Use CURSOR U/D to scroll through listing. Editing is posible using mnemonic changes.

P : Send code to printer - PD FFFF LLLL sends disassembly listing.
PM FFFF LLLL sends Hex Memory listing.(Commodore 1525 compatibles only)

A : XXXX mnemonic commands - Assemble code beginning at $XXXX (Be sure to use proper spacing between characters.)

H : FFFF LLLL PATTERN - Hunts from $FFFF to $LLLL for up to an eight byte pattern. Use quotes on either side of an ASCII pattern. ASCII and Hex may be mixed.

T : FFFF LLLL XXXX - Transfers memory from $FFFF through $LLLL to $XXXX.

TC : Use same syntax as T command. Will transfer computer memory to drive.

TD : Use same syntax as T command. Will transfer drive memory to the computer.

TF : Same syntax as T command. Fast command version of TC. Warning: $XXXX can't be between $0001 and $0147.

O : (this is the letter O not a zero) O followed by an 8,9,A,B(device number) will put you in the drive-mon mode for the specified drive. The above commands are the same for the drive-mon except the P feature is inactive. For printer listings of drive memory, send the code to the computer, then the printer. O and RETURN sends you back to the computer memory. A "]" lets you know your in drive memory, while a "." denotes computer memory.

To assemble/disassemble beneath ROMS and VIC CHIP, change location $0002 as if it were $0001. $0001 can't be changed through the monitor.

$0002: $37 = All ROMS in.
$36 = Bank out BASIC.($A000-$BFFF)
$35 = Bank out Kernal & BASIC.
$30 = Bank in RAM under $D000.
$31 = Bank in character ROM under $D000.

Single Track or Whole Disk Formatter

Selecting input 10 from the main menu will automatically boot this feature. This utility has been designed to allow you to fast format either a single track (perfect for creating 29 Errors) or the whole disk. When the menu appears, you may select an option by using the cursor or number keys to move the arrow pointer. Use the RETURN key to activate your selection. The following keystrokes represent your options.

1. Format one track.
   F1/F2 : Increment or decrement to proper track.
   F : You will be prompted for a two character ID number. Formatting will follow.
   R : Return to format menu.
   Restore : Return to menu at any input pause.

2. Standard Format.
   You will be prompted for new name and ID number. Five characters are accepted. The last two characters will become the true disk ID Numbers.

3. Directory diskette in drive.

4. Exit back to Hacker's Utility Kit main menu.

Disk File Logger

At the "Log Which Files?" prompt, either press RETURN to accept the "*" default (which will log all files) or enter an individual filename to log that file.

Examples:

```
Log Which Files? : *    = log all files
Log Which Files? : B*   = log all file starting with "B"
Log Which Files? : DISK = log file called DISK.
```

At the next prompt, "Do you want a printout?", press RETURN to accept the default value of "NO". Hit the "Y" key to send output to the printer (Commodore compatible) as well as the screen. The logger will mark files as "Bad" if they have illegal Track or Sector numbers. You can assume these are either dummy files or files that are maniplulated by special DOS routines.

As a disk is logged, the disk name and ID number will appear at the top of the screen. Below, a list of each filename will be displayed with their start and ending addresses in Hex.

Other Commands:

F1: Directory disk in drive.
F3: Reboot prompt to return to main menu
RESTORE : Reset the program and the drive back to beginning .
RUN/STOP : Pause key - active only while logging.
SPACE : Continue after pause.

In Closing

Well, there you have it. The most powerful set of disk tools ever assembled

into one package. Again, we want to thank the programmers that put up with our nitpicking. Their persistent pursuit of excellance has produced a utility that we are proud to present to you, our valued customer.

As you use this utility, please keep in mind that it is a tool. It can be used for good as well as bad purposes. We do not condone nor encourage any activities that harm or in any way rob programmers of their just due for their efforts. As you use these tools, we hope you'll respect the effort that is put into a good computer program. These programs should be supported by sales. Let's face it, without solid customer support, the quality programs you want will not be produced. In short, this program is provided for those of you with a desire to explore and learn. Please don't abuse the rights of others. Thank you.

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