Re. HP64000, aka offering help to duplicate HP64K disquettes

RMaxwell at atlantissi.com RMaxwell at atlantissi.com
Thu Apr 29 18:46:21 CDT 2004

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Terry,

I contacted Michel Bissonette regarding his post: his MS-DOS utility could duplicate HP64000 floppies, but made no effort at extracting content. Since I wanted to port the data to DOS, it wasn't what I needed.

I have been recovering HP64000 files from floppies written by a 64000 that no longer boots. To save myself from too much low-level programming, I've been using a Kaypro 4/84 to do the first stage: it has MFDISK, a multi-format utility that reads HP-125 CP/M disks, which happen to have the same track/sector/low level layout as the 64000 format.

With a quasi-compatible link to the low level, I use DUU (V8.7), a CP/M utility that allows read/write/view access to the tracks and sectors. This allows me to access the directory (completely incompatible with CP/M or DOS), locate the files' start- and end-points, and trace their content along the disk.

HP64000 data are in 2044-byte sectors, with an additional two byte pointer to the previous sector at the start, and another two bytes at the end pointing to the next sector (total 2048). DUU just copies sectors verbatim to a native Kaypro CP/M disk via a RAM buffer (files bigger than 32K come out in chunks due to the fact that DUU, CP/M and the buffer all share one 64K RAM space).

Kaypro CP/M disk files port to MS-DOS using the 22DSK utility (incidentally, 22DSK's HP-125 emulation doesn't help on HP64000 disks, because the first thing it looks for is the CP/M directory). I have quick-and-dirty Turbo Pascal conversion programs that extract ASCII-format text from editor files, and binary images from assembler objects: each editor record ("line") of a file starts with a byte indicating the length of the PREVIOUS record and a second byte indicating the length of the CURRENT one.

Line lengths are measured in 16-bit words - the editor pads odd-length lines with a space character. Lengths of zero mark beginning-of-file in the previous-length byte, and end-of-file for the current-length byte. This clever technique allows an editor to move quickly back and forth through a file line-by-line, but would get seriously messed up if it lost synchronization.

I have technical details of where I found directory entries, what I've decoded and how the operating system refers to individual sectors and can provide you with that, probably best if I do that off-list (unless somebody REALLY wants it posted!). Now that I've detailed my less-than-direct solution, I'm waiting for some enterprising person who's willing to do the low-level floppy operations on a PC so one machine can do the whole thing in

a step...

Bob Maxwell

> *-----Original Message-----*
> *From: Terry Barnaby <terry at beam.ltd.uk>*
> *Subject: Re. HP64000, aka offering help to duplicate HP64K disquettes*
> *Hi,*
> *I noticed a post you made some time ago about recovering files from old HP64000 5.25inch floppy disks. I have the same problem, some old HP64000 floppies which I would like to get the contents off. I would be gratefull for any information on the HP64000 disk format and any tools you found to do this.*
> *Cheers*
> *Terry*
> *--*
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> *BEAM for: Visually Impaired X-Terminals, Parallel Processing, Software*
> *"Tandems are twice the fun !"*
> *----------*

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