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User Note 36

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Title:

SUPERSNAP

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Synopsis

SUPERSNAP provides a tool for the detailed examination of an EMAS file. It can also be used as a simple editor by providing a means to alter specified bytes or words.

Keywords

Hash commands

SUPERSNAP provides a tool for the detailed examination of an EMAS file. It can also be used as a simple editor by providing a means to alter specified bytes or words. It incorporates all the facilities of the 'hash' commands #CONNECT, #SNAP, #SNAPCH, #SWORD and #SBYTE, as well as adding some new features. EMAS files begin with a header followed by data, if any; all is accessible to SUPERSNAP. (For a brief description of the '#' commands and file headers, see User Note 35.) N.B. It should be noted that the SUPERSNAP viewpoint of the file is that provided by the file header and not that of the file index; in most cases this should not prove to be a restriction.

SUPERSNAP may be accessed if CONLIB.GENERAL is in your directory search list. On typing the command 'SUPERSNAP filename' an attempt is made to connect the file in write mode. If this attempt fails there will be either a subsystem message giving the reason, or a message that the file cannot be connected in write mode. In the latter case the file contents can be examined but not altered. Note that this default call always updates the date and time at which the file was deemed to have been last altered even if no 'real' alterations were made to the file. Should you wish to connect the file in 'read mode only', you may call 'SUPERSNAP filename/R' - the file use is not updated, nor can the file be altered.

After connection, the following information is provided:

The VM connect address (called here, VMCA)

'CONAD' - the connect address relative to VMCA (X00000000).
'DS' - the data start address relative to VMCA.
'DE' - the data end address relative to VMCA - actually the address of the first free location in the file.
'DL' - the data length, in hex and decimal (DE-DS).

Whether eight or seven bits are significant to determine the printable/non-printable character of the bytes in the file (user selectable).

The following SUPERSNAP facilities are available (see Table opposite for command format):

(S)ubstitute: replace the original contents of an area in the file with character or hex string. Beware of irretrievably altering a file by carelessly specifying the area!

(D)ump: dump a section of the file - specified as a start address together with either an end address or a number of bytes or words. The result is in both hex and character formats, and can be directed to a file or output device if required.

(F)ind: search through the file for a particular sequence - specified either as a character string in the format "....." or in hex as Xxxxx.

(H)eader: print the file's header - which includes such information as the type and size of the file, the amount and format of the data in it, and the date and time when it was last altered.

(R)ecall: recall the connect address (CONAD) and the start, end and length of the data (DS, DE and DL).

= : repeat the previous dump command.

+ : dump 16 bytes on from the last dump (step through file).

- : dump 16 bytes previous to last dump (step back through file).

? : print list of available command mnemonics.

B7 : only seven bits significant in print/noprint decision.

B8 : all eight bits significant in print/noprint decision.

(E)nd: exit from SUPERSNAP.

The commands and their arguments for each of these SUPERSNAP operations are as follows:

Operation	Command	1st Arg	2nd Arg	3rd Arg
Substitute	S	start address	replacement (hex or char)	—
Dump	D	start address	end address	file/device (default=.OUT)
OR	D	start address	m (==m bytes)	file/device
End	E	—	—	—
Find text	F	start address	hex or text	—
Show header	H	—	—	—
Recall conad	R	—	—	—
Repeat dump	=	—	—	—
Dump more	+	—	—	—
Dump more previous	-	—	—	—
Help	?	—	—	—
Seven bit	B7	—	—	—
Eight bit	B8	—	—	—

(The arguments are separated by SPACES - NOT commas.)
Commands and arguments may be entered in upper or lower case.

There are several relative addresses which are used regularly when examining a file (all addresses relative to VMCA): these are the fixed addresses 'CONAD' (the file's connect address), 'DS' (the data start address), and 'DE' (the data end address); and the variable addresses returned after a Find or Dump operation. SUPERSNAP allows these

addresses to be specified as mnemonics, to save the bother of looking up and re-typing the hex address each time. Thus, for example, the entire file (together with its header) can be printed on device LP by the command:

```
D CONAD DE .LP
```

When dumping out small sections of a file, the mnemonic 'D+' can be used as a start address, and means 'follow straight on from the previous dump'. Thus the commands:

```
D CONAD 16 .LP
D D+ 16 .LP
```

will print the first 16 bytes of the file, then the second 16 bytes. The command 'D?' returns the current value of 'D+'.

The mnemonics 'P' and 'P+' can be used as addresses in conjunction with the Find command, to represent - respectively - the address of the start of the found text, and that address plus one. The mnemonic 'T' can be used to mean 'the text of the previous Find command', when a search is to be continued. They are used as follows:

```
F CONAD "OLD"          (i.e. search the whole file for the first
                        occurrence of the string "OLD")

F P+ T                 (move on to the next occurrence of the same
                        text)

S P X20  or  " "       (replace the '0' of this "OLD" with a SPACE
                        (hex 20))
```

The command 'P?' is available to discover the current setting of the Find pointer.

* * *

In summary the SUPERSNAP commands are:

S a b - replace the file contents starting at address 'a' with 'b'.

D i j k - dump the file from address 'i' to address 'j', on device 'k'.

D i m k - dump 'm' bytes, starting at address 'i'.

D? - gives the start address represented by the mnemonic 'D+' in the command 'dump D+ 10'.

E - exit from SUPERSNAP.

F p q - find the first occurrence of the text 'q' ("....." or Xxxxx) following the address 'p'.

H - for the EMAS file header.

P? - for the address of the Find pointer: this is the address at which replacement text will be inserted by the command 'S' if the mnemonic 'P' is used for the address.

R - recall the connect address and the data's start address, end address and length ('CONAD', 'DS', 'DE' & 'DL').

T? - print the stored string for the last successful Find operation.

= - repeat the previous dump (if one done).

- - dump 16 bytes previous to last dump.

+ - dump 16 bytes on from previous dump.

? - give list of command mnemonics.

B7 - seven bits significant.

B8 - eight bits significant.

And the following address mnemonics (address relative to VMCA) are available:

CONAD - the address at which the file is connected.

DE - the address of the first free location in the file - i.e. the location following the last data entry in the file.

DS - the address of the first data byte in the file.

D+ - as the start address in a Dump command for the dump to follow on from the previous one.

P - the start address of the field found by the last successful Find.

P+ - used in a Find command to continue a search from the address at which the previous Find command was successful.

* * *

The following example illustrates the use of SUPERSNAP:

```
Command:LIST TEST
THIS IS A TEST FILE 1
THIS IS A TEST FILE 2

Command:SUPERSNAP TEST
TEST connected at VMCA=X01180000
CONAD=00000000 DS=00000020 DE=0000004C DL=0000002C (= 44)
(Addresses relative to VMCA)
All eight bits are significant.

Op: H
00000000>     0000004C 00000020 00001000 00000003 ---L--- --------
00000010>     00000000 98AFB62E 00000000 00000000 -------.--------

Op: D X20 X4D
00000020>     54484953 20495320 41205445 53542046 THIS IS A TEST F
00000030>     494C4520 310A5448 49532049 53204120 ILE 1-THIS IS A
00000040>     54455354 2046494C 4520320A 00000000 TEST FILE 2-----

Op: D DS 10
00000020>     54484953 20495320 41205445 53542046 THIS IS A TEST F

Op: F CONAD "THIS"
00000020>     54484953 20495320 41205445 53542046 THIS IS A TEST F
Start address: 00000020 End address: 00000023

Op: P?
P = X00000020

Op: F P+ T
00000030>     494C4520 310A5448 49532049 53204120 ILE 1-THIS IS A
Start address: 00000036 End address: 00000039

Op: P?
P = X00000036

Op: S P X30
00000030>     494C4520 310A3048 49532049 53204120 ILE 1-0HIS IS A

Op: D P 1
00000030>     494C4520 310A3048 49532049 53204120 ILE 1-0HIS IS A

Op: R
TEST connected at VMCA=X01180000
CONAD=00000000 DS=00000020 DE=0000004C DL=0000002C (= 44)
(Addresses relative to VMCA)
All eight bits are significant.

Op: S X34 X58585858
00000030>     494C4520 58585858 49532049 53204120 ILE XXXXIS IS A

Op: E

Supersnap TEST completed

Command:LIST TEST
THIS IS A TEST FILE XXXXIS IS A TEST FILE 2
```