IDENTIFICATION

Product Code: DEC-D8-CDD0-D

Product Name: DISC DDT-8

Date Created: December 13, 1967

Maintainer: Software Services Group

DDT-8 DISK SYSTEM

1.   <u>GENERAL</u>

The Disk DDT is in two parts: (1) the resident driver containing the core swapping and breakpoint logic and (2) DDT proper including search, modify, examine and control logic.

DDT operates as described in the DDT Programming Manual (Digital-8-4-S) with the following differences in instruction repertoire.

The <ALT MODE> key precedes each command character and is echoed as a [.

[O, [S, [L, [M (See command summary)	are temporary modifications to their respective constants and are reset at every entrance to DDT from a [G or [C.
↟P <Control> P	continue to command more after [R, [X command. The monitor types A↟ to signal that it is waiting for ↟P.
↟C <Control> C	restore user core image and return to Monitor.
n[Bk	has been added to allow three break points; n is the address of the break, k is 1,2,3. If the user tries to put two break points at a single address a ? is given and no action occurs.
n[B, [T, a;b[P, [E	have been removed.
[R	is switch independent.

2.   <u>Instructions for saving DDT on the disk are shown below.</u>

DDT uses core from LOC through LOC-377 (2 pages).

Initially it also uses 170-177, LOC-1200 through LOC+377 to prepare the Driver for use.

DDT overlays core from 200-4577 and uses cells 3,4,5. The Driver may be anywhere above 5577 and is set by selecting a value for "LOC"[†]. An origin "BRKCEL" controls the 3 contiguous cells in the Driver used by the break-point logic.

This is the procedure for loading and saving DDT (see Monitor manual). (system responses underlined)

1)   Load DDT Proper as follows:

```
.LOAD
*IN-R:
*
*OPT-1        (1 pass load)
```

[†] In the library version LOC=7200

```
*ST=7600    (transfer control back to monitor when finished loading tape)
↑ ↑         (first ↑ indicates system waiting for paper tape to be loaded
.SAVE .DDT:  200 - 4577;0    and <control P> ↑P to be typed; second
                             ↑ waiting for ↑P)
```

2) Save a block of cells the same length as DDT Proper as:

```
.SAVE .███:  200 - 4577;0
    • Sym:
```

3) Load in DDT Driver and start at LOC-200 as:

```
.LOAD
*IN-R:
*

*OPT-2      (2 pass load)
ST=7000     (transfer to the once only code at 7000 when finished loading tape)
↑ ↑ ↑ ↑
███████████████████ * S : <.DDT>, S : <USER>
██████████████      * IN- S:.DDT, S: .SYM
*
*
.
```

4) Save DDT Driver as a System program:

```
.SAVE DDT!  7200 - 7577;  7200
```

Note that "DDT?" indicates that some error occurred at DDT setup time.

Errors may be caused by the following:

a) User file too large. (Not as shown above.)

b) System device read error.

c) No command decoder.

Note that the two pages saved start at the location LOC (7200 in furnished version) which is also the starting address. Note also that this is always 200 cells above the DDT driver address (7000 in furnished version) which sets up the DDT driver. The code at LOC-200 is once only code----do not try to restart at LOC-200.

CAUTION

Do not remove either file (.USR of .DDT) from the Disk file and then use DDT. The file search is done at setup time and not thereafter.

3. DDT DRIVER

A source of DDT driver is furnished and may be modified by the user in the following ways:

A. Break point locations are 3,4,5 but may be changed to be any three contiguous locations in page 0 by setting the equivalence "BRKCEL=3" to the lowest of the three cells desired.

B. DDT (Driver) may be located anywhere above 4577 (octal) by setting the equivalence "LOC=7200" to any value from 4600-7200 (octal) in the source program. (DDT Driver occupies 2 pages.)
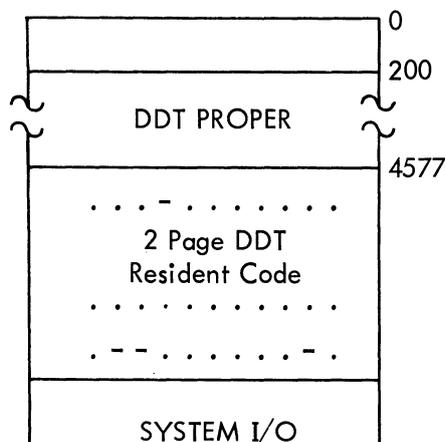
4. Variations in commands from DDT-8.

Deleted	Added	Changed	Comments
1) K ⌐ B			see item Z
2)	K ⌐ B n		n 1,2,3 is the breakpoint #.
3)	<Control> C		return to monitor
4)		⌐ R	switch option is removed, use ⌐ X to clear symbols.
5)	<Rubout>		start command over.
6) a; b ⌐ P			
7) ⌐ E			
8)	↑ C		return to monitor
9)	↑ P		continue from ⌐ X, ⌐ R

5. Core Requirements

DDT "Driver" occupies 2 pages and may be assembled to go anywhere above 4600_8.

DDT "Proper" must be loaded into and expected to overlay core from 200_8-4577_8.

DDT DRIVER - 2 pages above 4577; for setup it uses 5 more pages, 1 for once only code plus 4 for the command decoder. The command decoder expects 2 inputs: S: <DDT PROPER>, S: USER FILE NAME> to be assigned as those files used by DDT Driver. This is only used once unless the system is changed or destroyed. The start location is 200 (octal) below the LOC in DDT Driver and only 2 pages are to be saved as DDT (system program).*

DDT (PROPER)	200 - 4577
USER CORE FILE	200 - 4577

SUMMARY OF COMMANDS

Character	Action
space	Separation character.
+	Arithmetic plus.
-	Arithmetic minus.
/	Register examination character. When it follows the address register, it causes the register to be opened and its contents printed.
carriage return	Make modifications, if any, and close register.
line-feed	Make modifications, if any, close register, and open next sequential register. When it immediately follows a register printout, it causes the register addressed therein to be opened.
=	Type last quantity as an octal integer.
. (Period)	Current location.
	Delete the line currently being typed.
⌈S	Sets the mode in which DDT types out locations to relative (symbolic).
⌈O	Sets the mode in which DDT types out locations to octal.
N ⌈W	Word search for all occurrences masked with C(⌈M) of the expression N.
k ⌈Bn	Insert a breakpoint n at the location specified by k. If no address is specified, remove any breakpoint n. (n 1,2, or 3)
n ⌈C	Continue from a breakpoint n times automatically. If n is absent, it is assumed to be 1.
k ⌈G	Go to the location specified by k.
⌈R	Append symbol table into external symbol table or define symbols on line.

*In the library version LOC=7200.

The following symbols are the address tags of certain registers in DDT whose contents are available to the user.

[A	Accumulator storage (at break points).
[Y	Link storage (at break points).
[M	Mask used in search.
[L	Lower limit of search.
[U	Upper limit of search.