

DHANDL - Overlay Handler
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```
1      .MCALL .MODULE
2 000000 .MODULE DHANDL, RELEASE=V05, VERSION=01, COMMENT=<Overlay Handler>, IDENT=NO, LIB=YES
3
4      ;
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```
1      ; MAS, SHD
2
3      .SBTTL THE RUN-TIME OVERLAY HANDLER
4      .ENABL GBL
5
6      ;+
7      ; THE FOLLOWING CODE IS INCLUDED IN THE USER'S PROGRAM BY THE
8      ; LINKER WHENEVER LOW MEMORY OVERLAYS ARE REQUESTED BY THE USER.
9      ; THE RUN-TIME LOW MEMORY OVERLAY HANDLER IS CALLED BY A DUMMY
10     ; SUBROUTINE OF THE FOLLOWING FORM:
11     ;
12     ;       JSR      R5, $OVRH      ; CALL TO COMMON CODE FOR LOW MEMORY OVERLAYS
13     ;       .WORD   <OVERLAY # *6> ; # OF DESIRED SEGMENT
14     ;       .WORD   <ENTRY ADDRESS> ; ACTUAL CORE ADDRESS (VIRTUAL ADDRESS)
15     ;
16     ; ONE DUMMY ROUTINE OF THE ABOVE FORM IS STORED IN THE RESIDENT PORTION
17     ; OF THE USER'S PROGRAM FOR EACH ENTRY POINT TO A LOW MEMORY OVERLAY SEGMENT.
18     ; ALL REFERENCES TO THE ENTRY POINT ARE MODIFIED BY THE LINKER TO BE
19     ; REFERENCES TO THE APPROPRIATE DUMMY ROUTINE. EACH OVERLAY SEGMENT
20     ; IS CALLED INTO CORE AS A UNIT AND MUST BE CONTIGUOUS IN CORE. AN
21     ; OVERLAY SEGMENT MAY HAVE ANY NUMBER OF ENTRY POINTS, TO THE LIMITS
22     ; OF CORE MEMORY. ONLY ONE SEGMENT AT A TIME MAY OCCUPY AN OVERLAY REGION.
23     ;
24     ; THERE IS ONE WORD PREFIXED TO EVERY OVERLAY REGION THAT IDENTIFIES THE
25     ; SEGMENT CURRENTLY RESIDENT IN THAT OVERLAY REGION. THIS WORD IS AN INDEX
26     ; INTO THE OVERLAY TABLE AND POINTS AT THE OVERLAY SEGMENT INFORMATION.
27     ;
28     ; UNDEFINED GLOBALS IN THE OVERLAY HANDLER MUST BE NAMED "$OVDF1" TO
29     ; "$OVDFn" SUCH THAT A RANGE CHECK MAY BE DONE BY LINK TO DETERMINE IF
30     ; THE UNDEFINED GLOBAL NAME IS FROM THE OVERLAY HANDLER. A CHECK IS
31     ; DONE ON THE .RAD50 CHARACTERS "$OV", AND THEN A RANGE CHECK IS DONE ON
32     ; THE .RAD50 CHARACTERS "DF1" TO "DFn". THESE GLOBAL SYMBOLS DO NOT APPEAR
33     ; ON LINK MAPS, SINCE THEIR VALUE IS NOT KNOWN UNTIL AFTER THE MAP HAS BEEN
34     ; PRINTED. CURRENTLY $OVDF1 TO $OVDF5 ARE IN USE.
35     ;
36     ; GLOBAL SYMBOLS O$READ AND O$DONE ARE USEFUL WHEN DEBUGGING OVERLAID
37     ; PROGRAMS.
38     ;
39     ;       O$READ:: WILL APPEAR IN THE LINK MAP AND LOCATES THE .READW
40     ;       STATEMENT IN THE OVERLAY HANDLER.
41     ;
42     ;       O$DONE:: WILL APPEAR IN THE LINK MAP AND LOCATES THE FIRST
43     ;       INSTRUCTION AFTER THE .READW IN THE OVERLAY HANDLER.
44     ;-
```

```
1          .MCALL .READW,..V1..
2 000000          ..V1..          ;V1 FORMAT
3
4          .SBTTL $OVTAB OVERLAY TABLE
5
6 000000          .PSECT $OTABL,D,GBL,OVR
7
8          ;+
9          ; OVERLAY TABLE STRUCTURE:
10         ;
11         ; LOC 64 ->  $OVTAB:
12         ;          .WORD <CORE ADDR>,<RELATIVE BLK>,<WORD COUNT> /O OVERLAYS
13         ;          DUMMY SUBROUTINES FOR ALL OVERLAY SEGMENTS
14         ; -
15
16
17 000000          $OVTAB:
```

```

1
2          .SBTTL  OVERLAY HANDLER CODE
3
4 000000   .PSECT  $DHAND, GBL
5 000000   .PSECT  ZOHAND, GBL, OVR
6
7          .ENABL  LSB
8
9          ; $OVRH IS THE ENTRY POINT TO THE OVERLAY HANDLER
10
11 000000  060502          .RAD50  /OVR/          ; THIS KEEPS HANDLER THE SAME SIZE AS V03
12 000002  010046 $OVRH:  MOV      RO, -(SP)          ; /O OVERLAY ENTRY POINT
13 000004  010146          MOV      R1, -(SP)          ; SAVE REGISTERS
14 000006  010246          MOV      R2, -(SP)
15
16 000010          1$:
17 000010  000422          BR       5$          ; FIRST CALL ONLY * * *
18
19 000012  062701  177772'  MOV      @R5, R1          ; PICK UP OVERLAY NUMBER
20 000016  012102          ADD      #$OVTAB-6, R1      ; CALC TABLE ADDR
21 000020  022512          MOV      (R1)+, R2          ; GET FIRST ARG. OF OVERLAY SEG. ENTRY
22 000022  001406          2$:  CMP      (R5)+, @R2          ; IS OVERLAY ALREADY RESIDENT?
23
24
25
26          ; +
27          ; THE .READW ARGUMENTS ARE AS FOLLOWS:
28          ; CHANNEL NUMBER, CORE ADDRESS, LENGTH TO READ, RELATIVE BLOCK ON DISK.
29          ; THESE ARE USED IN REVERSE ORDER FROM THAT SPECIFIED IN THE CALL.
30
31 000024          0$READ:  .READW  17, R2, @R1, (R1)+ ; READ FROM OVERLAY FILE
32 000036  103405          0$DONE:  BCS      4$
33 000040  012602          3$:  MOV      (SP)+, R2          ; RESTORE USERS REGISTERS
34 000042  012601          MOV      (SP)+, R1
35 000044  012600          MOV      (SP)+, R0
36 000046  011505          MOV      @R5, R5          ; GET ENTRY ADDRESS
37 000050  000205          RTS      R5          ; ENTER OVERLAY ROUTINE AND RESTORE USER'S R5
38
39 000052  104376          4$:  EMT      376          ; SYSTEM ERROR 10 (OVERLAY I/O)
40 000054  000 373          .BYTE  0, 373
41
42 000056  012767  011501  177724  5$:  MOV      #11501, 1$          ; RESTORE SWITCH INSTR (MOV @R5, R1)
43 000064  016701  000012          MOV      $ODF1, R1          ; START ADDR FOR CLEAR OPERATION
44 000070  005021          6$:  CLR      (R1)+          ; CLEAR ALL OVERLAY REGIONS
45 000072  020167  000006          CMP      R1, $ODF2          ; DONE?
46 000076  103774          BLO     6$          ; LD -> NO, REPEAT
47 000100  000743          BR      1$          ; AND RETURN TO CALL IN PROGRESS
48
49 000102  000000G          $ODF1:  .WORD  $OVDF1          ; HIGH ADDR OF ROOT SEGMENT + 2 (NXT AVAIL)
50 000104  000000G          $ODF2:  .WORD  $OVDF2          ; HIGH ADDRESS OF /O OVERLAYS +2 (NXT AVAIL)
51
52          .DSABL  LSB
53 000001          .END

```

Errors detected: 0

*** Assembler statistics

DHANDL - Overlay Handler
OVERLAY HANDLER CODE

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Work file reads: 0
Work file writes: 0
Size of work file: 10442 Words (41 Pages)
Size of core pool: 18176 Words (71 Pages)
Operating system: RT-11

Elapsed time: 00:00:07.25
,LP:DHANDL=DK:DHANDL/C/N:SYM

... CM0	3-2#	4-30	4-30	4-30
... CM1	3-2#			
... CM2	3-2#			
... CM3	3-2#			
... CM4	3-2#			
... CM5	3-2#	4-30		
... CM6	3-2#			
... CM7	3-2#	4-30		
.. V1..	3-1#	3-2		
. AUDIT	1-2#			
. MODUL	1-1#	1-2		
. NLCSI	1-2#			
. READW	3-1#	4-30		
. RMODU	1-2#			