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MM      MM      PPPPPPPP      WW      WW      IIIIII      NN      NN      DDDDDDDD
MM      MM      PPPPPPPP      WW      WW      IIIIII      NN      NN      DDDDDDDD
MMMM    MMMM    PP          PP      WW      WW      II         NN      NN      DD          DD
MMMM    MMMM    PP          PP      WW      WW      II         NN      NN      DD          DD
MM  MM  MM      PP          PP      WW      WW      II         NNNN     NN      DD          DD
MM  MM  MM      PP          PP      WW      WW      II         NNNN     NN      DD          DD
MM      MM      PPPPPPPP      WW      WW      II         NN      NN      NN      DD          DD
MM      MM      PPPPPPPP      WW      WW      II         NN      NN      NN      DD          DD
MM      MM      PP          WW      WW      WW      II         NN      NNNN     DD          DD
MM      MM      PP          WW      WW      WW      II         NN      NNNN     DD          DD
MM      MM      PP          WWWW    WWWW      WW      II         NN      NN      DD          DD
MM      MM      PP          WWWW    WWWW      WW      II         NN      NN      DD          DD
MM      MM      PP          WW      WW      WW      IIIIII      NN      NN      DDDDDDDD
MM      MM      PP          WW      WW      IIIIII      NN      NN      DDDDDDDD

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```

LL      IIIIII      SSSSSSSS
LL      IIIIII      SSSSSSSS
LL      II         SS
LL      II         SS
LL      II         SS
LL      II         SS
LL      II         SSSSSS
LL      II         SSSSSS
LL      II         SS
LL      II         SS
LL      II         SS
LL      II         SS
LLLLLLLLLLLL IIIIII      SSSSSSSS
LLLLLLLLLLLL IIIIII      SSSSSSSS

```

```

NX
VO
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```

```
0000 1 .TITLE MPWIND - MAP BLOCKS THROUGH FILE WINDOW
0000 2 .IDENT 'V04-000'
0000 3
0000 4
0000 5 *****
0000 6 *****
0000 7 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY *
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0000 24 *
0000 25 *
0000 26 *****
0000 27 *****
0000 28 :++
0000 29 :
0000 30 : FACILITY: F11ACP STRUCTURE LEVEL 1
0000 31 :
0000 32 : ABSTRACT:
0000 33 :
0000 34 : THIS ROUTINE MAPS THE GIVEN VIRTUAL BLOCK(S) INTO THE
0000 35 : CORRESPONDING LOGICAL BLOCKS.
0000 36 :
0000 37 : ENVIRONMENT:
0000 38 :
0000 39 : STARLET OPERATING SYSTEM, INCLUDING PRIVILEGED SYSTEM SERVICES
0000 40 : AND INTERNAL EXEC ROUTINES. THIS ROUTINE MUST BE EXECUTED IN
0000 41 : KERNEL MODE.
0000 42 :
0000 43 :--
0000 44 :
0000 45 : AUTHOR: ANDREW C. GOLDSTEIN, CREATION DATE: 3-MAR-1977 11:15
0000 46 :
0000 47 : MODIFIED BY:
0000 48 :
0000 49 : **
0000 50 :
0000 51 :
0000 52 : INCLUDE FILES:
0000 53 :
0000 54 : .INCLUDE FCPDEF.MAR
0000 55 :
0000 56 :
0000 57 : EQUATED SYMBOLS:
```

```
0000 58 :  
0000 59 : AP OFFSETS  
0000 60 :  
00000004 0000 61 VBN = 4  
00000008 0000 62 WINDOW = 8  
0000000C 0000 63 COUNT = 12  
00000010 0000 64 UNMAPPED= 16  
0000 65  
0000 66  
0000 67  
0000 68 $WCBDEF
```

```
: DESIRED VBN  
: WINDOW ADDRESS  
: BLOCK COUNT TO MAP  
: ADDRESS OF LONGWORD TO STORE  
: COUNT OF UNMAPPED BLOCKS  
  
: DEFINE WINDOW STRUCTURE
```



```

0000 70 :++
0000 71 :
0000 72 : FUNCTIONAL DESCRIPTION:
0000 73 :
0000 74 :     THIS ROUTINE MAPS THE GIVEN VIRTUAL BLOCK(S) INTO THE
0000 75 :     CORRESPONDING LOGICAL BLOCKS.
0000 76 :
0000 77 : CALLING SEQUENCE:
0000 78 :     CALL     MAP_WINDOW (ARG1, ARG2, ARG3, ARG4)
0000 79 :
0000 80 : INPUT PARAMETERS:
0000 81 :     ARG1: DESIRED VBN
0000 82 :     ARG2: ADDRESS OF WINDOW TO USE
0000 83 :     ARG3: NUMBER OF BLOCKS TO MAP
0000 84 :
0000 85 : IMPLICIT INPUTS:
0000 86 :     CURRENT_UCB CONTAINS UCB ADDRESS OF UNIT IN PROCESS
0000 87 :
0000 88 : OUTPUT PARAMETERS:
0000 89 :     ARG4: ADDRESS OF LONGWORD TO RECEIVE UNMAPPED COUNT
0000 90 :
0000 91 : IMPLICIT OUTPUTS:
0000 92 :     NONE
0000 93 :
0000 94 : ROUTINE VALUE:
0000 95 :     LBN IF ANY BLOCKS MAPPED
0000 96 :     -1 IF NONE MAPPED
0000 97 :
0000 98 : SIDE EFFECTS:
0000 99 :     NONE
0000 100 :
0000 101 :--
0000 102 :
00000000 103 : .PSECT $CODE$,NOWRT, LONG
0000 104 :
0000 105 MAP_WINDOW::
10 BC 52 08 AC 003C 0000 106 : .WORD ^M<R2,R3,R4,R5> ; SAVE REGISTERS
55 0000'CF 00 0002 107 : MOVL WINDOW(AP),R2 ; GET WINDOW ADDRESS
51 50 04 AC 00 0006 108 : MOVL W^CURRENT_UCB,R5 ; GET UCB ADDRESS FOR MAPPER
0C AC 09 78 000B 109 :
00000000'9F 16 0014 110 10$: MOVL VBN(AP),R0 ; GET VBN
0A 50 E9 001A 111 : ASHL #9,COUNT(AP),R1 ; GET EXPLICIT COUNT
001D 112 20$: JSB @#IOC$MAPVBLK ; CALL SYSTEM MAPPING ROUTINE
001D 113 : BLBC R0,40$ ; BRANCH IF NO MAP
001D 114 :
001D 115 : SUCCESSFUL MAP - RETURN LBN AND COUNT OF UNMAPPED BLOCKS IF WANTED
001D 116 :
10 BC 50 51 00 001D 117 : MOVL R1,R0 ; LBN TO ROUTINE VALUE
52 F7 8F 78 0020 118 : ASHL #-9,R2,@UNMAPPED(AP) ; STORE RESULT
04 0026 119 30$: RET ; AND RETURN
0027 120 :
0027 121 : WE GET HERE IF THE MAP FAILS COMPLETELY. RETURN -1 AS VALUE.
0027 122 :
10 BC 0C AC 00 0027 123 40$: MOVL COUNT(AP),@UNMAPPED(AP) ; RETURN ENTIRE COUNT AS UNMAPPED
50 01 CE 002C 124 : MNEGL #1,R0 ; VALUE = -1
04 002F 125 : RET
0030 126 :

```

MPWIND
V04-000

- MAP BLOCKS THROUGH FILE WINDOW K 5

16-SEP-1984 00:44:22 VAX/VMS Macro V04-00
5-SEP-1984 01:08:38 [F11A.SRC]MPWIND.MAR;1

Page 4
(2)

0030 127
0030 128
0030 129 .END

PM
VO

MPWIND
Symbol table

- MAP BLOCKS THROUGH FILE WINDOW L 5

16-SEP-1984 00:44:22 VAX/VMS Macro V04-00
5-SEP-1984 01:08:38 [F11A.SRC]MPWIND.MAR;1

Page 5
(2)

AQB_TYPE = 00000005
BITMAP_TYPE = 00000001
COUNT = 0000000C
CURRENT_UCB ***** X 02
DIRECTORY_TYPE = 00000002
FCB_TYPE = 00000000
HEADER_TYPE = 00000000
INDEX_TYPE = 00000003
IOCSMAPVBLK ***** X 02
MAP_WINDOW 00000000 RG 02
MVL_TYPE = 00000004
RVT_TYPE = 00000003
UNMAPPED = 00000010
VBN = 00000004
VCB_TYPE = 00000002
WCB_TYPE = 00000001
WINDOW = 00000008

! Psect synopsis !

PSECT name	Allocation	PSECT No.	Attributes
. ABS	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$AB\$\$	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
\$CODE\$	00000030 (48.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD NOWRT NOVEC LONG

! Performance indicators !

Phase	Page faults	CPU Time	Elapsed Time
Initialization	36	00:00:00.08	00:00:01.23
Command processing	139	00:00:00.77	00:00:04.45
Pass 1	142	00:00:01.64	00:00:06.04
Symbol table sort	0	00:00:00.07	00:00:00.09
Pass 2	39	00:00:00.60	00:00:02.48
Symbol table output	4	00:00:00.02	00:00:00.06
Psect synopsis output	1	00:00:00.02	00:00:00.06
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	364	00:00:03.21	00:00:14.50

The working set limit was 1050 pages.

6379 bytes (13 pages) of virtual memory were used to buffer the intermediate code.

There were 10 pages of symbol table space allocated to hold 97 non-local and 4 local symbols.

232 source lines were read in Pass 1, producing 13 object records in Pass 2.

12 pages of virtual memory were used to define 11 macros.

! Macro library statistics !

Macro library name	Macros defined
-----	-----
_\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	1
_\$255\$DUA28:[SYSLIB]STARLET.MLB;2	3
TOTALS (all libraries)	4

139 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:MPWIND/OBJ=OBJ\$:MPWIND MSRC\$:FCPPRE/UPDATE=(ENH\$:FCPPRE)+MSRC\$:MPWIND/UPDATE=(ENH\$:MPWIND)+EXECML\$/LIB

The image displays a grid of 100 terminal windows, arranged in 10 rows and 10 columns. Each window contains a program name followed by the letters 'LIS'. The programs are: Row 1: REQUEL, RWATTR; Row 2: MOOTFY; Row 3: SCHFCB; Row 4: MAKACC; Row 5: MPWIND; Row 6: MAPUBN, PMS, RDHEDR, RWJB; Row 7: RETDIR; Row 8: ROBLOK; Row 9: SMALOC; Row 10: MAKMB, MAKSTR, MATHOR. The text is faint and the background is dark, making the individual windows difficult to read in detail.