

[illegible]

```
MM      MM      PPPPPPPP      SSSSSSSSS      HH      HH      WW      WW      PPPPPPPP      FFFFFFFFFF      MM      MM
MM      MM      PPPPPPPP      SSSSSSSSS      HH      HH      WW      WW      PPPPPPPP      FFFFFFFFFF      MM      MM
MMMM     MMMM     PP      PP      SS      SS      HH      HH      WW      WW      PP      PP      FF      FF      MMMM     MMMM
MMMM     MMMM     PP      PP      SS      SS      HH      HH      WW      WW      PP      PP      FF      FF      MMMM     MMMM
MM      MM      MM      PP      PP      SS      SS      HH      HH      WW      WW      PP      PP      FF      FF      MM      MM
MM      MM      MM      PP      PP      SS      SS      HH      HH      WW      WW      PP      PP      FF      FF      MM      MM
MM      MM      PPPPPPPP      SSSSSSS      SS      HH      HH      WW      WW      PP      PP      FFFFFFFF      MM      MM
MM      MM      PPPPPPPP      SSSSSSS      SS      HH      HH      WW      WW      PP      PP      FFFFFFFF      MM      MM
MM      MM      PP      SS      SS      HH      HH      WW      WW      PP      PP      FF      FF      MM      MM
MM      MM      PP      SS      SS      HH      HH      WW      WW      PP      PP      FF      FF      MM      MM
MM      MM      PP      SS      SS      HH      HH      WWW      WWW      PP      PP      FF      FF      MM      MM
MM      MM      PP      SSSSSSSSS      SS      HH      HH      WW      WW      PP      PP      FF      FF      MM      MM
MM      MM      PP      SSSSSSSSS      SS      HH      HH      WW      WW      PP      PP      FF      FF      MM      MM
```

```
LL      IIIIIII      SSSSSSSSS
LL      IIIIIII      SSSSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SSSSSSS
LL      II      SSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LLLLLLLLLLLL      IIIIIII      SSSSSSSSS
LLLLLLLLLLLL      IIIIIII      SSSSSSSSS
```



```
0000 1      .TITLE MPSHWPFM
0000 2      .IDENT 'V04-000'
0000 3
0000 4
0000 5 *****
0000 6
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0000 24
0000 25 *****
0000 26
0000 27
0000 28
0000 29 ++
0000 30
0000 31 Facility: Multi-processor performance measurement display tool
0000 32
0000 33 Abstract: This program displays the multi-processor performance measurements.
0000 34
0000 35 Environment: MODE=Kernel
0000 36
0000 37 Author: Kathleen D. Morse, Creation date: 27-Aug-1981
0000 38
0000 39 Modified by:
0000 40
0000 41 V03-010 KDM0071 Kathleen D. Morse 15-Aug-1983
0000 42 Change the way kernel mode system service names are
0000 43 associated with a CHMK number.
0000 44
0000 45 V03-009 KDM0032 Kathleen D. Morse 22-Nov-1982
0000 46 Remove the secondary wait time for reschedule histogram.
0000 47 Add the secondary kernel mode system service histogram.
0000 48
0000 49 V03-008 KDM0029 Kathleen D. Morse 16-Nov-1982
0000 50 Remove $SNDJBC, since it changed from kernel mode
0000 51 to exec mode.
0000 52
0000 53 V03-007 KDM0023 Kathleen D. Morse 07-Oct-1982
0000 54 Display elapsed time for primary and secondary.
0000 55
0000 56 V03-006 KDM0022 Kathleen D. Morse 07-Oct-1982
0000 57 Add display for $ERAPAT system service.
```



```
0000 58 :  
0000 59 : V03-005 KDM0021 Kathleen D. Morse 07-Oct-1982  
0000 60 : Fix cputime display.  
0000 61 :  
0000 62 : V03-004 KDM0017 Kathleen D. Morse 30-Sep-1982  
0000 63 : Display percentages for system service and SCB histograms.  
0000 64 :  
0000 65 : V03-003 KDM0016 Kathleen D. Morse 30-Sep-1982  
0000 66 : Remove obsolete system services (GETJPP, GTCHAN) and  
0000 67 : add new ones (SNDJBC, GETSYI, GETDVI). Also, display  
0000 68 : overflow counter for system service histogram.  
0000 69 :  
0000 70 : V03-002 KDM0013 Kathleen D. Morse 27-Sep-1982  
0000 71 : Fix bug in cpu time display.  
0000 72 :  
0000 73 :  
0000 74 :--  
0000 75 :  
0000 76 :  
0000 77 : Include files:  
0000 78 :  
0000 79 :  
0000 80 :  
0000 81 : MACROS:  
0000 82 :  
0000 83 : .MACRO ENTRY KSSRV  
0000 84 : .PSECT HIST_SRV_PTR LONG,WRT,NOEXE  
0000 85 : .LONG 0  
0000 86 : .PSECT RO_DATA LONG,NOWRT,NOEXE  
0000 87 : .LONG CMKSC_'KSSRV'  
0000 88 : .ADDRESS 'KSSRV'  
0000 89 : .ENDM  
0000 90 :  
0000 91 :  
0000 92 : Equated Symbols:  
0000 93 :  
0000 94 : $PCBDEF ;Process control block  
0000 95 : $PHDDEF ;Process header block  
00000000 0000 96 CMKSC_CLRAST = ^X0  
00004028 0000 97 CMKSC_ALLJDR = ^X4028  
00004029 0000 98 CMKSC_ASSJNL = ^X4029  
0000403A 0000 99 CMKSC_CONJNLF = ^X403A  
0000402A 0000 100 CMKSC_CONUIC = ^X402A  
0000402B 0000 101 CMKSC_CREJNL = ^X402B  
00004039 0000 102 CMKSC_CRENWV = ^X4039  
0000403B 0000 103 CMKSC_DCNJNLF = ^X403B  
0000402C 0000 104 CMKSC_DEALJDR = ^X402C  
0000402D 0000 105 CMKSC_DEASJNL INT = ^X402D  
0000402E 0000 106 CMKSC_DELJNL = ^X402E  
0000402F 0000 107 CMKSC_DMTJMD = ^X402F  
00004030 0000 108 CMKSC_DSPJNL = ^X4030  
00004031 0000 109 CMKSC_GETJNL = ^X4031  
00004032 0000 110 CMKSC_GETRUI = ^X4032  
00004038 0000 111 CMKSC_MNTJMD = ^X4038  
00004033 0000 112 CMKSC_MODFLT = ^X4033  
00004034 0000 113 CMKSC_POSJNL = ^X4034  
00004035 0000 114 CMKSC_READJNL = ^X4035
```



```
00004036 0000 115 CMK$C_RECOVER = ^X4036
00004037 0000 116 CMK$C_RECOVERW = ^X4037
0000 117
0000 118 ;
0000 119 ; Histogram offsets
0000 120 ;
0000 121
00000000 0000 122 HST_L_CELLCOUNT = 0 ;Count of cells in histogram
00000004 0000 123 HST_L_CELLWIDTH = 4 ;Width of each cell in histo
00000008 0000 124 HST_Q_OVRFLOW = 8 ;Offset to overflow accumulator
00000010 0000 125 HST_L_FIRSTCELL = 16 ;Offset to first cell in histo
0000 126
00000000 127 .PSECT RW_DATA LONG,WRT,NOEXE
0000 128
0000 129 PFM_DATA::
00003400 0000 130 .BLKL ^X0D00 ;Performance data area
00003418 3400 131 CPU2TIME_DATA:: ;Secondary CPU time spent in
00003418 3400 132 .BLKL 6 ; each mode (K,E,S,U,I,C)
00000000 3418 133 CPU2_NULLTIME: ;Secondary CPU null clock ticks
00000000 3418 134 .LONG 0 ;
00003434 341C 135 CPU1TIME_DATA:: ;Primary CPU time spent in
00003434 341C 136 .BLKL 6 ; each mode (K,E,S,U,I,C)
00000000 3434 137 NULL_JOB_TIME:: ;Clock ticks for null job
00000000 3434 138 .LONG 0
00000000 3438 139 NULL_JOB_TIME_D:: ;Clock ticks for null job
00000000 3438 140 .LONG 0 ; in double format
00000000 343C 141
00000000 343C 142 TEMP::
00000000 343C 143 .LONG 0
00000000 3440 144 .LONG 0
00000000 3444 145 TEMP1::
00000000 3444 146 .LONG 0
00000000 3448 147 .LONG 0
00000000 344C 148 TEMP2::
00000000 344C 149 .LONG 0
00000000 3450 150 .LONG 0
00000002 3454 151 TWO_32::
00000002 3454 152 .LONG 2a32
00000000 3458 153 HISTO_TOTAL:: ;Accumulator for histogram
00000000 3458 154 .LONG 0 ; used for % calculations
00000000 345C 155 .LONG 0
00000000 3460 156
000037A0 3460 157 HISTO_PERCENTS:: ;Array to hold histogram
000037A0 3460 158 .BLKL 208 ; percentages - 100 dbl values
00000000 37A0 159
00000000 37A0 160 TIME1_SAMPLE:: ;Total # of primary clock ticks
00000000 37A4 161 .LONG 0 ; accumulated in this sample
00000000 37A8 162 .LONG 0
00000000 37A8 163 TIME2_SAMPLE:: ;Total # of 2ndary clock ticks
00000000 37A8 164 .LONG 0 ; accumulated in this sample
00000000 37AC 165 .LONG 0
00000000 37B0 166 .LONG 0 ; accumulated in this sample
00000000 37B4 167 .LONG 0
00000000 37B8 168
00000000 37B8 169 TIME1_SAMPLE_D:: ;Total accum clock ticks
00000000 37B8 170 .LONG 0 ; in this sample for primary
00000000 37BC 171 .LONG 0 ; in double format
```


	37C0	172			
	37C0	173	TIME2_SAMPLE D::		;Total accum of clock ticks
00000000	37C0	174	.LONG 0		; in this sample for secondary
00000000	37C4	175	.LONG 0		; in double format
	37C8	176			
	37C8	177	CPU1TIME_PERCENTS::		;Percentage of cpu time spent
00003800	37C8	178	.BLKL 14		; in each mode (K,E,S,U,I,C)
	3800	179	CPU2TIME_PERCENTS::		;Percentage of cpu time spent
00003838	3800	180	.BLKL 14		; in each mode (K,E,S,U,I,C)
	3838	181			
	3838	182			
00000000	3838	183	ASCTIM_LENGTH:: .LONG 0		;Length of ascii time
	383C	184			
	383C	185	ASCTIM_BUFFER::		
0000388C	383C	186	.BLKB 80		
	388C	187			
	388C	188	ASCTIM_BUFFER_DSC::		
00000050	388C	189	.LONG 80		
0000383C'	3890	190	.ADDRESS	ASCTIM_BUFFER	
	3894	191			
	3894	192	ASCTIM_DSC_PTR::		
0000388C'	3894	193	.ADDRESS	ASCTIM_BUFFER_DSC	
	3898	194			
00000000	3898	195	ASCII1_LENGTH:: .LONG 0		;Length of ascii text
	389C	196			
	389C	197	ASCII1_BUFFER::		
000038EC	389C	198	.BLKB 80		
	38EC	199			
	38EC	200	ASCII1_BUFFER_DSC::		
00000050	38EC	201	.LONG 80		
0000389C'	38F0	202	.ADDRESS	ASCII1_BUFFER	
	38F4	203			
	38F4	204	ASCII1_DSC_PTR::		
000038EC'	38F4	205	.ADDRESS	ASCII1_BUFFER_DSC	
	38F8	206			
00000000	38F8	207	ASCII2_LENGTH:: .LONG 0		;Length of ascii text
	38FC	208			
	38FC	209	ASCII2_BUFFER::		
0000394C	38FC	210	.BLKB 80		
	394C	211			
	394C	212	ASCII2_BUFFER_DSC::		
00000050	394C	213	.LONG 80		
000038FC'	3950	214	.ADDRESS	ASCII2_BUFFER	
	3954	215			
	3954	216	ASCII2_DSC_PTR::		
0000394C'	3954	217	.ADDRESS	ASCII2_BUFFER_DSC	
	3958	218			
00000000	3958	219	OUTPUT_LENGTH:: .LONG 0		
	395C	220			
	395C	221	OUTPUT_BUFFER::		
00003A24	395C	222	.BLKB 200		
	3A24	223			
	3A24	224	OUTPUT_BUFFER_DSC::		
000000C8	3A24	225	.LONG 200		
0000395C'	3A28	226	.ADDRESS	OUTPUT_BUFFER	
	3A2C	227			
	3A2C	228	HISTO_1_FAO_PTR::		


```
00000000 3A2C 229 .LONG 0
3A30 230
3A30 231
00000000 232 .PSECT RO_DATA LONG,NOWRT,NOEXE
0000 233
0000 234 HISTO_KSRV_DSC::
0000 235 .ASCID \!!!!/KERNEL SYSTEM SERVICES EXECUTED ON SECONDARY!/\

45 4B 2F 21 2F 21 00000008'010E0000' 0000
20 4D 45 54 53 59 53 20 4C 45 4E 52 000E
45 58 45 20 53 45 43 49 56 52 45 53 001A
43 45 53 20 4E 4F 20 44 45 54 55 43 0026
2F 21 59 52 41 44 4E 4F 0032
003A 236
003A 237 HISTO_TIME_DSC::
003A 238 .ASCID \!!!!/TIME PROCESSES SPENT ON SECONDARY!/\

49 54 2F 21 2F 21 00000042'010E0000' 003A
53 45 53 53 45 43 4F 52 50 20 45 4D 0048
45 53 20 4E 4F 20 54 4E 45 50 53 20 0054
2F 21 59 52 41 44 4E 4F 43 0060
0069 239
0069 240 HISTO_SRV_DSC::
0069 241 .ASCID \!!!!/SYSTEM SERVICE REQUESTED WHILE ON SECONDARY!/\

59 53 2F 21 2F 21 00000071'010E0000' 0069
45 43 49 56 52 45 53 20 4D 45 54 53 0077
57 20 44 45 54 53 45 55 51 45 52 20 0083
4F 43 45 53 20 4E 4F 20 45 4C 49 48 008F
2F 21 59 52 41 44 4E 009B
00A2 242
00A2 243 HISTO_CTX_DSC::
00A2 244 .ASCID \!!!!/REASONS FOR CONTEXT SWITCH OFF SECONDARY!/\

45 52 2F 21 2F 21 000000AA'010E0000' 00A2
4F 43 20 52 4F 46 20 53 4E 4F 53 41 00B0
48 43 54 49 57 53 20 54 58 45 54 4E 00BC
41 44 4E 4F 43 45 53 20 46 46 4F 20 00C8
2F 21 59 52 00D4
00D8 245
00D8 246 HISTO_KSRV_HDR::
00D8 247 .ADDRESS HISTO_KSRV_DSC
00DC 248
00DC 249 HISTO_TIME_HDR::
00DC 250 .ADDRESS HISTO_TIME_DSC
0000003A' 00DC 251 .ADDRESS HISTO_1_SUBTITLE
0000023B' 00E0 252 .ADDRESS HISTO_1_SUBTITLE2
00000292' 00E4 253 HISTO_SRV_HDR::
00E8 254 .ADDRESS HISTO_SRV_DSC
00000069' 00E8 255 HISTO_CTX_HDR::
00EC 256 .ADDRESS HISTO_CTX_DSC
000000A2' 00EC 257
00F0 258 HIST_DSC_PTR::
00F0 259 .ADDRESS HISTO_COUNT
00000104' 00F0 260 .ADDRESS HISTO_WIDTH
00000132' 00F4 261 HIST_LIN_PTR::
00F8 262 .ADDRESS HISTO_LINE
0000015F' 00F8 263 HIST_OVR_PTR::
00FC 264 .ADDRESS HISTO_OVERFLOW
00000178' 00FC 265
0100 266 SRV_OVR_PTR::
0100 267 .ADDRESS SRV_OVERFLOW
00000199' 0100 268 HISTO_COUNT::
0104 269 .ASCID \!/\ Number of histogram cells: !ZL \
69 68 20 66 6F 20 72 65 62 6D 75 4E 0112
```



```
6C 6C 65 63 20 6D 61 72 67 6F 74 73 011E
20 4C 5A 21 20 20 3A 73 012A
0132
20 20 20 20 2F 21 0000013A'010E0000' 0132
73 69 68 20 66 6F 20 68 74 64 69 57 0140
3A 6C 6C 65 63 20 6D 61 72 67 6F 74 014C
20 4C 5A 21 20 20 20 0158
015F
21 43 41 21 5F 21 00000167'010E0000' 015F
25 20 53 41 21 5F 21 4C 5A 21 5F 016D
0178
6C 66 72 65 76 4F 00000180'010E0000' 0178
21 5F 21 5F 21 6C 6C 65 63 20 77 6F 0186
53 41 21 5F 21 4C 5A 0192
0199
6C 66 72 65 76 4F 000001A1'010E0000' 0199
4C 5A 21 5F 21 6C 6C 65 63 20 77 6F 01A7
01B3
6F 54 5F 21 2F 21 000001BB'010E0000' 01B3
20 64 65 73 70 61 6C 65 20 6C 61 74 01C1
70 6D 61 73 20 6E 69 20 65 6D 69 74 01CD
20 6C 61 76 72 65 74 6E 69 20 65 6C 01D9
20 79 72 61 6D 69 72 70 20 72 6F 66 01E5
53 41 21 20 3D 01F1
01F6
6F 54 5F 21 2F 21 000001FE'010E0000' 01F6
20 64 65 73 70 61 6C 65 20 6C 61 74 0204
70 6D 61 73 20 6E 69 20 65 6D 69 74 0210
20 6C 61 76 72 65 74 6E 69 20 65 6C 021C
72 61 64 6E 6F 63 65 73 20 72 6F 66 0228
53 41 21 20 3D 20 79 0234
023B
65 43 20 20 20 20 00000243'010E0000' 023B
20 20 20 20 20 20 20 20 20 20 6C 6C 0249
20 20 20 20 6C 6C 65 43 20 20 20 20 0255
20 20 20 6D 75 63 63 41 20 20 20 20 0261
20 20 20 6C 66 67 50 20 20 20 20 20 026D
68 74 4F 20 20 20 20 48 4D 48 43 20 0279
74 73 61 4C 20 20 20 20 20 20 72 65 0285
20 0291
0292
6D 69 4C 20 20 20 0000029A'010E0000' 0292
20 20 20 20 20 20 20 20 20 73 74 69 02A0
20 20 20 20 74 6E 75 6F 43 20 20 20 02AC
20 20 20 20 25 20 20 20 20 20 20 02B8
20 20 20 74 6E 63 20 20 20 20 20 20 02C4
6E 63 20 20 20 20 20 74 6E 63 20 20 02D0
72 53 20 73 79 53 20 20 20 20 20 74 02DC
2F 21 76 02E8
02EB
```

```
270
271 HISTO_WIDTH::
272 .ASCID \!/ Width of histogram cell: !ZL \

273
274 HISTO_LINE::
275 .ASCID \!_!AC!_!ZL!_!AS %\

276
277 HISTO_OVERFLOW::
278 .ASCID \Overflow cell!_!_!ZL!_!AS\

279
280 SRV_OVERFLOW::
281 .ASCID \Overflow cell!_!ZL\

282
283 CPUTIM1_DSC_TOT::
284 .ASCID \!/_!_Total elapsed time in sample interval for primary = !AS\

285 CPUTIM2_DSC_TOT::
286 .ASCID \!/_!_Total elapsed time in sample interval for secondary = !AS\

287
288 HISTO_1_SUBTITLE::
289 .ASCID \ Cell Cell Accum Pgfl CHMK Othe

290
291 HISTO_1_SUBTITLE2::
292 .ASCID \ Limits Count % cnt cnt cnt

293
```



```
000001B3' 02EB 294 TIME1_DSC_PTR::
000001F6' 02EB 295 .ADDRESS CPUTIM1_DSC_TOT
02EF 296 TIME2_DSC_PTR::
02EF 297 .ADDRESS CPUTIM2_DSC_TOT
02F3 298
02F3 299 TITLE::
300 .ASCID \!_MULTI-PROCESSING PERFORMANCE MEASUREMENTS ON SECONDARY PROCESSOR!

54 4C 55 4D 5F 21 000002FB'010E0000' 02F3
47 4E 49 53 53 45 43 4F 52 50 2D 49 0301
45 43 4E 41 4D 52 4F 46 52 45 50 20 030D
54 4E 45 4D 45 52 55 53 41 45 4D 20 0319
41 44 4E 4F 43 45 53 20 4E 4F 20 53 0325
52 4F 53 53 45 43 4F 52 50 20 59 52 0331
2F 21 033D
033F 301
033F 302 TITLE_PTR::
033F 303 .ADDRESS TITLE
0343 304
0343 305 CPUTIM_DSC_K::
65 4B 5F 21 2F 21 0000034B'010E0000' 0343
21 5F 21 65 64 6F 6D 20 6C 65 6E 72 0351
53 41 21 5F 21 53 41 21 5F 035D
63 65 78 45 5F 21 0000036E'010E0000' 0366
53 41 21 5F 21 5F 21 65 64 6F 6D 20 0366
53 41 21 5F 21 0374
0380 307 CPUTIM_DSC_E::
0385 308 .ASCID \!_Exec mode!_!_!AS!_!AS\
65 70 75 53 5F 21 0000038D'010E0000' 0385
41 21 5F 21 5F 21 65 64 6F 6D 20 72 0393
53 41 21 5F 21 53 039F
72 65 73 55 5F 21 000003AD'010E0000' 03A5
53 41 21 5F 21 5F 21 65 64 6F 6D 20 03A5
53 41 21 5F 21 03B3
03BF 311 CPUTIM_DSC_U::
03C4 312 .ASCID \!_User mode!_!_!AS!_!AS\
69 20 6E 4F 5F 21 000003CC'010E0000' 03C4
61 74 53 20 74 70 75 72 72 65 74 6E 03D2
53 41 21 5F 21 53 41 21 5F 21 6B 63 03DE
70 6D 6F 43 5F 21 000003F2'010E0000' 03EA
6F 6D 20 79 74 69 6C 69 62 61 74 61 03EA
53 41 21 5F 21 53 41 21 5F 21 65 64 03F8
0404 313 CPUTIM_DSC_I::
65 6C 64 49 5F 21 00000418'010E0000' 0410
21 5F 21 53 41 21 5F 21 5F 21 5F 21 0410
53 41 041E
042A 314 .ASCID \!_On interrupt Stack!_!AS!_!AS\
042C 315 CPUTIM_DSC_C::
042C 316 .ASCID \!_Compatability mode!_!AS!_!AS\
00000434' 0430 317 CPUTIM_DSC_N::
0000046E' 0430 318 .ASCID \!_Idle!_!_!AS!_!AS\
0434 319
0434 320 TIME_ARRAY_PTR::
0434 321 .ADDRESS TIME_1_DSC
0442 322 .ADDRESS TIME_2_DSC
044E 323
045A 324 TIME_1_DSC::
70 73 20 65 6D 69 54 5F 21 20 20 20 045A
65 66 66 69 64 20 6E 69 20 74 6E 65 0466
73 73 65 63 6F 72 70 20 74 6E 65 72 046E
73 65 64 6F 6D 20 72 6F 046E
325 .ASCID \!_Time spent in different processor modes\
326 TIME_2_DSC::
```

```
20 20 5F 21 2F 21 00000476'010E0000' 046E
50 20 5F 21 5F 21 65 64 6F 4D 20 20 047C
63 65 53 20 5F 21 79 72 61 6D 69 72 0488
79 72 61 64 6E 6F 0494
049A
049A
00000343' 049A
00000366' 049E
00000385' 04A2
000003A5' 04A6
000003C4' 04AA
000003EA' 04AE
00000410' 04B2
04B6
04B6
5F 21 2F 21 2F 21 000004BE'010E0000' 04B6
6F 63 20 66 6F 20 72 65 62 6D 75 4E 04C4
68 63 74 69 77 73 20 74 78 65 74 6E 04D0
64 6E 6F 63 65 73 20 6E 6F 20 73 65 04DC
4C 5A 21 20 3D 20 79 72 61 04E8
04F1
62 6D 75 4E 5F 21 000004F9'010E0000' 04F1
65 68 63 73 65 72 20 66 6F 20 72 65 04FF
74 73 65 75 71 65 72 20 65 6C 75 64 050B
65 73 20 79 62 20 65 64 61 6D 20 73 0517
5A 21 20 3D 20 79 72 61 64 6E 6F 63 0523
4C 052F
0530
62 6D 75 4E 5F 21 00000538'010E0000' 0530
73 65 63 63 75 73 20 66 6F 20 72 65 053E
64 65 68 63 73 65 72 20 6C 75 66 73 054A
73 74 73 65 75 71 65 72 20 65 6C 75 0556
4C 5A 21 20 3D 20 0562
0568
62 6D 75 4E 5F 21 00000570'010E0000' 0568
6E 61 68 63 78 65 20 66 6F 20 72 65 0576
69 72 70 20 6D 6F 72 66 20 73 65 67 0582
6F 63 65 73 20 6F 74 20 79 72 61 6D 058E
4C 5A 21 20 3D 20 79 72 61 64 6E 059A
05A5
62 6D 75 4E 5F 21 000005AD'010E0000' 05A5
65 68 63 73 65 72 20 66 6F 20 72 65 05B3
76 20 65 6E 6F 64 20 73 65 6C 75 64 05BF
65 64 6F 6D 20 63 65 78 65 20 61 69 05CB
4C 5A 21 20 3D 20 54 53 41 20 05D7
05E1
62 6D 75 4E 5F 21 000005E9'010E0000' 05E1
69 6C 61 76 6E 69 20 66 6F 20 72 65 05EF
73 65 75 71 65 72 20 73 65 74 61 64 05FB
4C 5A 21 20 3D 20 64 65 74 0607
0610
62 6D 75 4E 5F 21 00000618'010E0000' 0610
69 6C 61 76 6E 69 20 66 6F 20 72 65 061E
6F 6C 20 74 69 61 77 20 65 74 61 64 062A
64 65 74 75 63 65 78 65 20 73 70 6F 0636
4C 5A 21 20 3D 20 0642
0648
```

```
327 .ASCID \!/_ Mode!/_ Primary!_ Secondary\

328
329 CPUTIM_DSC_PTR::
330 .ADDRESS CPUTIM_DSC_K
331 .ADDRESS CPUTIM_DSC_E
332 .ADDRESS CPUTIM_DSC_S
333 .ADDRESS CPUTIM_DSC_U
334 .ADDRESS CPUTIM_DSC_I
335 .ADDRESS CPUTIM_DSC_C
336 .ADDRESS CPUTIM_DSC_N
337
338 CNT_CTXSW_DSC::
339 .ASCID \!/_/_/_/_Number of context switches on secondary = !ZL\

340 CNT_RESCHD_DSC::
341 .ASCID \!/_Number of reschedule requests made by secondary = !ZL\

342 CNT_SCHDS_DSC::
343 .ASCID \!/_Number of successful reschedule requests = !ZL\

344 CNT_EXCHG_DSC::
345 .ASCID \!/_Number of exchanges from primary to secondary = !ZL\

346 CNT_ASTSC_DSC::
347 .ASCID \!/_Number of reschedules done via exec mode AST = !ZL\

348 CNT_INVAL_DSC::
349 .ASCID \!/_Number of invalidates requested = !ZL\

350 CNT_IVWAIT_DSC::
351 .ASCID \!/_Number of invalidate wait loops executed = !ZL\

352
```



```
000004B6' 0648 353 CNTRS_DSC_PTR::
000004F1' 0648 354 .ADDRESS CNT_CTXSW_DSC
00000530' 064C 355 .ADDRESS CNT_RESCHD_DSC
00000568' 0650 356 .ADDRESS CNT_SCHDS_DSC
000005A5' 0654 357 .ADDRESS CNT_EXCHG_DSC
000005E1' 0658 358 .ADDRESS CNT_ASTSC_DSC
00000610' 065C 359 .ADDRESS CNT_INVALID_DSC
00000668' 0660 360 .ADDRESS CNT_IVWAIT_DSC
00000668' 0664 361
00000668' 0664 362 CNT_NWAIT_PTR::
00000668' 0664 363 .ADDRESS CNT_NWAIT_DSC
00000668' 0668 364
00000670' 010E0000' 0668 365 CNT_NWAIT_DSC::
00000670' 010E0000' 0668 366 .ASCID \!//!_Number of times $WAITEF continued on secondary = !ZL\

5F 21 2F 21 2F 21 00000670' 010E0000' 0668
69 74 20 66 6F 20 72 65 62 6D 75 4E 0676
20 46 45 54 49 41 57 24 20 73 65 6D 0682
6E 6F 20 64 65 75 6E 69 74 6E 6F 63 068E
3D 20 79 72 61 64 6E 6F 63 65 73 20 069A
20 65 6E 6F 6E 20 00' 06A6
4B 54 53 4A 44 41 00' 06AA
4C 53 57 4A 44 41 00' 06AA
50 4E 44 43 4C 41 00' 06B1
43 4F 4C 4C 41 00' 06B1
43 46 45 43 53 41 00' 06B8
4E 47 49 53 53 41 00' 06B8
4C 45 43 4E 41 43 00' 06BF
4D 49 54 4E 41 43 00' 06BF
4B 41 57 4E 41 43 00' 06C6
43 53 50 4D 52 43 00' 06C6
52 41 50 52 4C 43 00' 06C6
4C 4E 52 4B 4D 43 00' 06CC
46 45 52 4C 43 00' 06CC
47 45 52 54 4E 43 00' 06D3
49 54 50 54 45 47 00' 06D3
58 42 4D 45 52 43 00' 06DA
43 52 50 45 52 43 00' 06DA
41 56 54 45 52 43 00' 06E1
06 0704
06 070A
06 0711
06 0718
06 071F
06 0726
06 0726

367 CLRAST: .ASCIC \ none \
368 ADJSTK: .ASCIC \ADJSTK\
369 ADJWSL: .ASCIC \ADJWSL\
370 ALCDNP: .ASCIC \ALCDNP\
371 ALLOC: .ASCIC \ALLOC\
372 ASCEFC: .ASCIC \ASCEFC\
373 ASSIGN: .ASCIC \ASSIGN\
374 CANCEL: .ASCIC \CANCEL\
375 CANTIM: .ASCIC \CANTIM\
376 CANWAK: .ASCIC \CANWAK\
377 CRMPSC: .ASCIC \CRMPSC\
378 CLRPAR: .ASCIC \CLRPAR\
379 CMKRNL: .ASCIC \CMKRNL\
380 CLREF: .ASCIC \CLREF\
381 CNTREG: .ASCIC \CNTREG\
382 GETPTI: .ASCIC \GETPTI\
383 CREMBX: .ASCIC \CREMBX\
384 CREPRC: .ASCIC \CREPRC\
385 CRETVA: .ASCIC \CRETVA\
```

47 46 45 43 41 44	00'	072D	386 DACEFC: .ASCIC	\DACEFC\
	06	072D		
43 4F 4C 4C 41 44	00'	0734	387 DALLOC: .ASCIC	\DALLOC\
	06	0734		
4E 47 53 53 41 44	00'	073B	388 DASSGN: .ASCIC	\DASSGN\
	06	073B		
54 53 41 4C 43 44	00'	0742	389 DCLAST: .ASCIC	\DCLAST\
	06	0742		
48 58 45 4C 43 44	00'	0749	390 DCLEXH: .ASCIC	\DCLEXH\
	06	0749		
58 42 4D 4C 45 44	00'	0750	391 DELMBX: .ASCIC	\DELMBX\
	06	0750		
43 52 50 4C 45 44	00'	0757	392 DELPRC: .ASCIC	\DELPRC\
	06	0757		
41 56 54 4C 45 44	00'	075E	393 DELTVA: .ASCIC	\DELTVA\
	06	075E		
43 53 4C 42 47 44	00'	0765	394 DGBLSC: .ASCIC	\DGBLSC\
	06	0765		
50 4E 44 43 4C 44	00'	076C	395 DLCDDNP: .ASCIC	\DLCDDNP\
	06	076C		
43 46 45 43 4C 44	00'	0773	396 DLCEFC: .ASCIC	\DLCEFC\
	06	0773		
43 45 53 44 50 55	00'	077A	397 UPDSEC: .ASCIC	\UPDSEC\
	06	077A		
52 52 45 44 4E 53	00'	0781	398 SNDERR: .ASCIC	\SNDERR\
	06	0781		
54 49 58 45	00'	0788	399 EXIT: .ASCIC	\EXIT\
	04	0788		
47 45 52 50 58 45	00'	078D	400 EXPREG: .ASCIC	\EXPREG\
	06	078D		
58 45 43 52 4F 46	00'	0794	401 FORCEX: .ASCIC	\FORCEX\
	06	0794		
52 45 42 49 48	00'	079B	402 HIBER: .ASCIC	\HIBER\
	05	079B		
47 41 50 4B 43 4C	00'	07A1	403 LCKPAG: .ASCIC	\LCKPAG\
	06	07A1		
54 45 53 57 4B 4C	00'	07A8	404 LKWSET: .ASCIC	\LKWSET\
	06	07A8		
43 53 4C 42 47 4D	00'	07AF	405 MGBLSC: .ASCIC	\MGBLSC\
	06	07AF		
53 57 47 52 55 50	00'	07B6	406 PURGWS: .ASCIC	\PURGWS\
	06	07B6		
4F 49 51	00'	07BD	407 QIO: .ASCIC	\QIO\
	03	07BD		
46 45 44 41 45 52	00'	07C1	408 READEF: .ASCIC	\READEF\
	06	07C1		
45 4D 55 53 45 52	00'	07C8	409 RESUME: .ASCIC	\RESUME\
	06	07C8		
4E 57 44 4E 55 52	00'	07CF	410 RUNDWN: .ASCIC	\RUNDWN\
	06	07CF		
4B 57 44 48 43 53	00'	07D6	411 SCHDWK: .ASCIC	\SCHDWK\
	06	07D6		
54 53 41 54 45 53	00'	07DD	412 SETAST: .ASCIC	\SETAST\
	06	07DD		
46 45 54 45 53	00'	07E4	413 SETEF: .ASCIC	\SETEF\
	05	07E4		
56 58 45 54 45 53	00'	07EA	414 SETEXV: .ASCIC	\SETEXV\

4E 52 50 54 45 53	06 07EA	415 SETPRN: .ASCIC	\SETPRN\
	00' 07F1		
41 52 50 54 45 53	06 07F1	416 SETPRA: .ASCIC	\SETPRA\
	00' 07F8		
52 4D 49 54 45 53	06 07F8	417 SETIMR: .ASCIC	\SETIMR\
	00' 07FF		
49 52 50 54 45 53	06 07FF	418 SETPRI: .ASCIC	\SETPRI\
	00' 0806		
54 52 50 54 45 53	06 0806	419 SETPRT: .ASCIC	\SETPRT\
	00' 080D		
4D 57 52 54 45 53	06 080D	420 SETRWM: .ASCIC	\SETRWM\
	00' 0814		
4D 46 53 54 45 53	06 0814	421 SETSFM: .ASCIC	\SETSFM\
	00' 081B		
4D 57 53 54 45 53	06 081B	422 SETSWM: .ASCIC	\SETSWM\
	00' 0822		
44 4E 50 53 55 53	06 0822	423 SUSPND: .ASCIC	\SUSPND\
	00' 0829		
47 41 50 4B 4C 55	06 0829	424 ULKPAG: .ASCIC	\ULKPAG\
	00' 0830		
54 45 53 57 4C 55	06 0830	425 ULWSET: .ASCIC	\ULWSET\
	00' 0837		
52 46 54 49 41 57	06 0837	426 WAITFR: .ASCIC	\WAITFR\
	00' 083E		
45 4B 41 57	06 083E	427 WAKE: .ASCIC	\WAKE\
	00' 0845		
44 4E 41 4C 46 57	04 0845	428 WFLAND: .ASCIC	\WFLAND\
	00' 084A		
52 4F 4C 46 57	06 084A	429 WFLOR: .ASCIC	\WFLOR\
	00' 0851		
48 4D 43 4C 43 44	05 0851	430 DCLCMH: .ASCIC	\DCLCMH\
	00' 0857		
4D 46 50 54 45 53	06 0857	431 SETPFM: .ASCIC	\SETPFM\
	00' 085E		
42 4D 4C 52 45 44	06 085E	432 DERLMB: .ASCIC	\DERLMB\
	00' 0865		
48 58 45 4E 41 43	06 0865	433 CANEXH: .ASCIC	\CANEXH\
	00' 086C		
4E 48 43 54 45 47	06 086C	434 GETCHN: .ASCIC	\GETCHN\
	00' 0873		
56 45 44 54 45 47	06 0873	435 GETDEV: .ASCIC	\GETDEV\
	00' 087A		
49 50 4A 54 45 47	06 087A	436 GETJPI: .ASCIC	\GETJPI\
	00' 0881		
45 4D 49 54 45 53	06 0881	437 SETIME: .ASCIC	\SETIME\
	00' 0888		
56 52 50 54 45 53	06 0888	438 SETPRV: .ASCIC	\SETPRV\
	00' 088F		
51 4E 45	06 088F	439 ENQ: .ASCIC	\ENQ\
	00' 0896		
51 45 44	03 0896	440 DEQ: .ASCIC	\DEQ\
	00' 089A		
46 53 53 54 45 53	03 089A	441 SETSSF: .ASCIC	\SETSSF\
	00' 089E		
4B 54 53 54 45 53	06 089E	442 SETSTK: .ASCIC	\SETSTK\
	00' 08A5		
	06 08A5		

49 59 53 54 45 47 00'	08AC	443 GETSYI: .ASCIC \GETSYI\
06	08AC	
49 56 44 54 45 47 00'	08B3	444 GETDVI: .ASCIC \GETDVI\
06	08B3	
54 41 50 41 52 45 00'	08BA	445 ERAPAT: .ASCIC \ERAPAT\
06	08BA	
54 4E 4C 45 52 43 00'	08C1	446 CRELNT: .ASCIC \CRELNT\
06	08C1	
4D 4E 4C 45 52 43 00'	08C8	447 CRELNM: .ASCIC \CRELNM\
06	08C8	
4D 4E 4C 4C 45 44 00'	08CF	448 DELLNM: .ASCIC \DELLNM\
06	08CF	
4D 4E 4C 4E 52 54 00'	08D6	449 TRNLNM: .ASCIC \TRNLNM\
06	08D6	
49 4B 4C 54 45 47 00'	08DD	450 GETLKI: .ASCIC \GETLKI\
06	08DD	
55 52 48 54 4B 52 42 00'	08E4	451 BRKTHRU: .ASCIC \BRKTHRU\
07	08E4	
52 44 4A 4C 4C 41 00'	08EC	452 ALLJDR: .ASCIC \ALLJDR\
06	08EC	
4C 4E 4A 53 53 41 00'	08F3	453 ASSJNL: .ASCIC \ASSJNL\
06	08F3	
43 49 55 4E 4F 43 00'	08FA	454 CONUIC: .ASCIC \CONUIC\
06	08FA	
4C 4E 4A 45 52 43 00'	0901	455 CREJNL: .ASCIC \CREJNL\
06	0901	
52 44 4A 4C 41 45 44 00'	0908	456 DEALJDR: .ASCIC \DEALJDR\
07	0908	
54 4E 49 5F 4C 4E 4A 53 41 45 44 00'	0910	457 DEASJNL_INT: .ASCIC \DEASJNL_INT\
08	0910	
4C 4E 4A 4C 45 44 00'	091C	458 DELJNL: .ASCIC \DELJNL\
06	091C	
44 4D 4A 54 4D 44 00'	0923	459 DMTJMD: .ASCIC \DMTJMD\
06	0923	
4C 4E 4A 50 53 44 00'	092A	460 DSPJNL: .ASCIC \DSPJNL\
06	092A	
4C 4E 4A 54 45 47 00'	0931	461 GETJNL: .ASCIC \GETJNL\
06	0931	
49 55 52 54 45 47 00'	0938	462 GETRUI: .ASCIC \GETRUI\
06	0938	
54 4C 46 44 4F 4D 00'	093F	463 MODFLT: .ASCIC \MODFLT\
06	093F	
4C 4E 4A 53 4F 50 00'	0946	464 POSJNL: .ASCIC \POSJNL\
06	0946	
4C 4E 4A 44 41 45 52 00'	094D	465 READJNL: .ASCIC \READJNL\
07	094D	
52 45 56 4F 43 45 52 00'	0955	466 RECOVER: .ASCIC \RECOVER\
07	0955	
57 52 45 56 4F 43 45 52 00'	095D	467 RECOVERW: .ASCIC \RECOVERW\
08	095D	
44 4D 4A 54 4E 4D 00'	0966	468 MNTJMD: .ASCIC \MNTJMD\
06	0966	
56 57 4E 45 52 43 00'	096D	469 CRENWV: .ASCIC \CRENWV\
06	096D	
46 4C 4E 4A 4E 4F 43 00'	0974	470 CONJNLF: .ASCIC \CONJNLF\
07	0974	
46 4C 4E 4A 4E 43 44 00'	097C	471 DCNJNLF: .ASCIC \DCNJNLF\

07	097C			
	0984	472		
0000	0984	473	.PSECT	RO_DATA LONG,NOWRT,NOEXE
	0984	474	HIST_SRV_TBL::	
0000	0000	475	.PSECT	HIST_SRV_PTR LONG,WRT,NOEXE
	0000	476	HIST_SRV_PTR::	
	0000	477	ENTRY	CRELNT
	098C	478	ENTRY	CRELNM
	0994	479	ENTRY	DELLNM
	099C	480	ENTRY	TRNLNM
	09A4	481	ENTRY	GETLKI
	09AC	482	ENTRY	BRKTHRU
	09B4	483	ENTRY	ALLJDR
	09BC	484	ENTRY	ASSJNL
	09C4	485	ENTRY	CONUIC
	09CC	486	ENTRY	CREJNL
	09D4	487	ENTRY	DEALJDR
	09DC	488	ENTRY	DELJNL
	09E4	489	ENTRY	DEASJNL_INT
	09EC	490	ENTRY	DMTJMD
	09F4	491	ENTRY	DSPJNL
	09FC	492	ENTRY	GETJNL
	0A04	493	ENTRY	GETRUI
	0A0C	494	ENTRY	MODFLT
	0A14	495	ENTRY	POSJNL
	0A1C	496	ENTRY	READJNL
	0A24	497	ENTRY	RECOVER
	0A2C	498	ENTRY	RECOVERW
	0A34	499	ENTRY	MNTJMD
	0A3C	500	ENTRY	CRENWV
	0A44	501	ENTRY	CONJNLF
	0A4C	502	ENTRY	DCNJNLF
	0A54	503	ENTRY	CLRAST
	0A5C	504	ENTRY	ADJSTK
	0A64	505	ENTRY	ADJWSL
	0A6C	506	ENTRY	ALCDNP
	0A74	507	ENTRY	ALLOC
	0A7C	508	ENTRY	ASCEFC
	0A84	509	ENTRY	ASSIGN
	0A8C	510	ENTRY	CANCEL
	0A94	511	ENTRY	CANTIM
	0A9C	512	ENTRY	CANWAK
	0AA4	513	ENTRY	CRMPSC
	0AAC	514	ENTRY	CLRPAR
	0AB4	515	ENTRY	CMKRNL
	0ABC	516	ENTRY	CLREF
	0AC4	517	ENTRY	CNTREG
	0ACC	518	ENTRY	GETPTI
	0AD4	519	ENTRY	CREMBX
	0ADC	520	ENTRY	CREPRC
	0AE4	521	ENTRY	CRETVA
	0AEC	522	ENTRY	DACEFC
	0AF4	523	ENTRY	DALLOC
	0AFC	524	ENTRY	DASSGN
	0B04	525	ENTRY	DCLAST
	0B0C	526	ENTRY	DCLEXH
	0B14	527	ENTRY	DELMBX

	OB1C	528	ENTRY	DELPRC
	OB24	529	ENTRY	DELTVA
	OB2C	530	ENTRY	DGBLSC
	OB34	531	ENTRY	DLCDNP
	OB3C	532	ENTRY	DLCEFC
	OB44	533	ENTRY	UPDSEC
	OB4C	534	ENTRY	SNDERR
	OB54	535	ENTRY	EXIT
	OB5C	536	ENTRY	EXPREG
	OB64	537	ENTRY	FORCEX
	OB6C	538	ENTRY	HIBER
	OB74	539	ENTRY	LCKPAG
	OB7C	540	ENTRY	LKWSET
	OB84	541	ENTRY	MGBLSC
	OB8C	542	ENTRY	PURGWS
	OB94	543	ENTRY	QIO
	OB9C	544	ENTRY	READEF
	OBA4	545	ENTRY	RESUME
	OBAC	546	ENTRY	RUNDWN
	OB84	547	ENTRY	SCHDWK
	OBBC	548	ENTRY	SETAST
	OBCC	549	ENTRY	SETEF
	OBCC	550	ENTRY	SETEXV
	OBDC	551	ENTRY	SETPRN
	OBDC	552	ENTRY	SETPRA
	OBE4	553	ENTRY	SETIMR
	OBEC	554	ENTRY	SETPRI
	OBFC	555	ENTRY	SETPRT
	OBFC	556	ENTRY	SETRWM
	OC04	557	ENTRY	SETSFM
	OC0C	558	ENTRY	SETSWM
	OC14	559	ENTRY	SUSPND
	OC1C	560	ENTRY	ULKPAG
	OC24	561	ENTRY	ULWSET
	OC2C	562	ENTRY	WAITFR
	OC34	563	ENTRY	WAKE
	OC3C	564	ENTRY	WFLAND
	OC44	565	ENTRY	WFLOR
	OC4C	566	ENTRY	DCLCMH
	OC54	567	ENTRY	SETPFM
	OC5C	568	ENTRY	DERLMB
	OC64	569	ENTRY	CANEXH
	OC6C	570	ENTRY	GETCHN
	OC74	571	ENTRY	GETDEV
	OC7C	572	ENTRY	GETJPI
	OC84	573	ENTRY	SETIME
	OC8C	574	ENTRY	SETPRV
	OC94	575	ENTRY	ENQ
	OC9C	576	ENTRY	DEQ
	OCA4	577	ENTRY	SETSSF
	OCAC	578	ENTRY	SETSTK
	OCB4	579	ENTRY	GETSYI
	OCBC	580	ENTRY	GETDVI
	OCB4	581	ENTRY	ERAPAT
	OCB4	582	ENTRY	ERAPAT
00000000	OCB4	583	.PSECT	RO_DATA LONG,NOWRT,NOEXE
00000000	OCB4	584	.LONG	0
00000000	OCB4	584	.LONG	0

; Null entry indicates the
; end of HIST_SRV_TBL

73 65 52 20 2C 64 65 73 75 6E 55 00' 0000	OCD4	585			
67 69 44 20 6F 74 20 64 65 76 72 65	OCD4	586	.PSECT	RO_DATA LONG,NOWRT,NOEXE	
20 20 20 20 20 20 20 20 6C 61 74 69	OCD4	587			
20 20 20 20 20 20 20 20 20 20 20 20	OCE0	588	SCB_000:	.ASCIC \Unused, Reserved to Digital	\
	OCEC				
	OCF8				
65 68 63 20 65 6E 69 68 63 61 4D 00'	OCD4	589	SCB_004:	.ASCIC \Machine check handler	\
20 20 72 65 6C 64 6E 61 68 20 68 63	OCFA				
20 20 20 20 20 20 20 20 20 20 20 20	OD06				
	OD12				
	OD1E				
63 61 74 73 20 6C 65 6E 72 65 4B 00'	OCFA	590	SCB_008:	.ASCIC \Kernel stack not valid halt	\
20 64 69 6C 61 76 20 74 6F 6E 20 68	OD20				
20 20 20 20 20 20 20 20 74 6C 20 68	OD2C				
	OD38				
	OD44				
	OD20				
20 6C 69 61 66 20 72 65 77 6F 50 00'	OD46	591	SCB_00C:	.ASCIC \Power fail interrupt	\
20 20 20 74 70 75 72 72 65 74 6E 69	OD52				
20 20 20 20 20 20 20 20 20 20 20 20	OD5E				
	OD6A				
	OD46				
72 70 2F 64 65 76 72 65 73 65 52 00'	OD6C	592	SCB_010:	.ASCIC \Reserved/privileged instruction fault\	
73 6E 69 20 64 65 67 65 6C 69 76 69	OD78				
75 61 66 20 6E 6F 69 74 63 75 72 74	OD84				
	OD90				
	OD6C				
65 72 20 72 65 6D 6F 74 73 75 43 00'	OD92	593	SCB_014:	.ASCIC \Customer reserved instruction fault	\
72 74 73 6E 69 20 64 65 76 72 65 73	OD9E				
74 6C 75 61 66 20 6E 6F 69 74 63 75	ODAA				
	ODB6				
	OD92				
70 6F 20 64 65 76 72 65 73 65 52 00'	ODB8	594	SCB_018:	.ASCIC \Reserved operand fault/halt	\
2F 74 6C 75 61 66 20 64 6E 61 72 65	ODC4				
20 20 20 20 20 20 20 20 74 6C 61 68	ODD0				
	ODDC				
	ODB8				
64 61 20 64 65 76 72 65 73 65 52 00'	ODDE	595	SCB_01C:	.ASCIC \Reserved addressing mode fault	\
64 6F 6D 20 67 6E 69 73 73 65 72 64	ODEA				
20 20 20 20 20 74 6C 75 61 66 20 65	ODF6				
	OE02				
	ODDE				
74 6E 6F 63 20 73 73 65 63 63 41 00'	OE04	596	SCB_020:	.ASCIC \Access control violation fault	\
6F 69 74 61 6C 6F 69 76 20 6C 6F 72	OE10				
20 20 20 20 20 74 6C 75 61 66 20 6E	OE1C				
	OE28				
	OE04				
6E 6F 69 74 61 6C 73 6E 61 72 54 00'	OE2A	597	SCB_024:	.ASCIC \Translation not valid fault	\
66 20 64 69 6C 61 76 20 74 6F 6E 20	OE36				
20 20 20 20 20 20 20 20 74 6C 75 61	OE42				
	OE4E				
	OE2A				
20 74 6C 75 61 66 20 74 69 62 54 00'	OE50	598	SCB_028:	.ASCIC \Tbit fault	\
20 20 20 20 20 20 20 20 20 20 20 20	OE5C				
20 20 20 20 20 20 20 20 20 20 20 20	OE68				
	OE74				

20 74 6E 69 6F 70 6B 61 65 72 42 25	0E50			
20 20 20 20 20 20 20 74 6C 75 61 00	0E76	599 SCB_02C:	.ASCIC \Breakpoint fault	\
20 20 20 20 20 20 20 20 20 20 20 20	0E82			
20 20 20 20 20 20 20 20 20 20 20 25	0E8E			
	0E9A			
	0E76			
69 6C 69 62 69 74 61 70 6D 6F 43 00	0E9C	600 SCB_030:	.ASCIC \Compatibility fault	\
20 20 20 20 74 6C 75 61 66 20 79 74	0EA8			
20 20 20 20 20 20 20 20 20 20 20 20	0EB4			
	0EC0			
	0E9C			
20 63 69 74 65 6D 68 74 69 72 41 00	0EC2	601 SCB_034:	.ASCIC \Arithmetic trap	\
20 20 20 20 20 20 20 20 70 61 72 74	0ECE			
20 20 20 20 20 20 20 20 20 20 20 20	0EDA			
	0EE6			
	0EC2			
66 6F 20 2D 20 20 64 65 73 75 6E 55 00	0EE8	602 SCB_038:	.ASCIC \Unused - offset 38	\
20 20 20 20 20 20 38 33 20 74 65 73 66	0EF4			
20 20 20 20 20 20 20 20 20 20 20 20	0F00			
	0F0C			
	0EE8			
66 6F 20 2D 20 20 64 65 73 75 6E 55 00	0F0E	603 SCB_03C:	.ASCIC \Unused - offset 3C	\
20 20 20 20 20 20 43 33 20 74 65 73 66	0F1A			
20 20 20 20 20 20 20 20 20 20 20 20	0F26			
	0F32			
	0F0E			
20 20 70 61 72 74 20 4B 4D 48 43 00	0F34	604 SCB_040:	.ASCIC \CHMK trap	\
20 20 20 20 20 20 20 20 20 20 20 20	0F40			
20 20 20 20 20 20 20 20 20 20 20 20	0F4C			
	0F58			
	0F34			
20 20 70 61 72 74 20 45 4D 48 43 00	0F5A	605 SCB_044:	.ASCIC \CHME trap	\
20 20 20 20 20 20 20 20 20 20 20 20	0F66			
20 20 20 20 20 20 20 20 20 20 20 20	0F72			
	0F7E			
	0F5A			
20 20 70 61 72 74 20 53 4D 48 43 00	0F80	606 SCB_048:	.ASCIC \CHMS trap	\
20 20 20 20 20 20 20 20 20 20 20 20	0F8C			
20 20 20 20 20 20 20 20 20 20 20 20	0F98			
	0FA4			
	0F80			
20 20 70 61 72 74 20 55 4D 48 43 00	0FA6	607 SCB_04C:	.ASCIC \CHMU trap	\
20 20 20 20 20 20 20 20 20 20 20 20	0FB2			
20 20 20 20 20 20 20 20 20 20 20 20	0FBE			
	0FCA			
	0FA6			
66 6F 20 2D 20 20 64 65 73 75 6E 55 00	0FCC	608 SCB_050:	.ASCIC \Unused - offset 50	\
20 20 20 20 20 20 30 35 20 74 65 73 66	0FD8			
20 20 20 20 20 20 20 20 20 20 20 20	0FE4			
	0FF0			
	0FCC			
65 64 6E 65 70 65 64 2D 75 70 43 00	0FF2	609 SCB_054:	.ASCIC \Cpu-dependent fault	\
20 20 20 20 74 6C 75 61 66 20 74 6E	0FFE			
20 20 20 20 20 20 20 20 20 20 20 20	100A			
	1016			
	0FF2			
65 64 6E 65 70 65 64 2D 75 70 43 00	1018	610 SCB_058:	.ASCIC \Cpu-dependent fault	\

20 20 20 20 74 6C 75 61 66 20 74 6E 1024
20 20 20 20 20 20 20 20 20 20 20 20 1030
20 20 20 20 20 20 20 20 20 20 20 20 103C
20 20 20 20 20 20 20 20 20 20 20 20 1018
65 64 6E 65 70 65 64 2D 75 70 43 00' 103E 611 SCB_05C: .ASCIC \Cpu-dependent fault \
20 20 20 20 74 6C 75 61 66 20 74 6E 104A
20 20 20 20 20 20 20 20 20 20 20 20 1056
20 20 20 20 20 20 20 20 20 20 20 20 1062
20 20 20 20 20 20 20 20 20 20 20 20 103E
65 64 6E 65 70 65 64 2D 75 70 43 00' 1064 612 SCB_060: .ASCIC \Cpu-dependent fault \
20 20 20 20 74 6C 75 61 66 20 74 6E 1070
20 20 20 20 20 20 20 20 20 20 20 20 107C
20 20 20 20 20 20 20 20 20 20 20 20 1088
20 20 20 20 20 20 20 20 20 20 20 20 1064
66 6F 20 2D 20 64 65 73 75 6E 55 00' 108A 613 SCB_064: .ASCIC \Unused - offset 64 \
20 20 20 20 20 34 36 20 74 65 73 66 1096
20 20 20 20 20 20 20 20 20 20 20 20 10A2
20 20 20 20 20 20 20 20 20 20 20 20 10AE
20 20 20 20 20 20 20 20 20 20 20 20 108A
66 6F 20 2D 20 64 65 73 75 6E 55 00' 10B0 614 SCB_068: .ASCIC \Unused - offset 68 \
20 20 20 20 20 38 36 20 74 65 73 66 10BC
20 20 20 20 20 20 20 20 20 20 20 20 10C8
20 20 20 20 20 20 20 20 20 20 20 20 10D4
20 20 20 20 20 20 20 20 20 20 20 20 10B0
66 6F 20 2D 20 64 65 73 75 6E 55 00' 10D6 615 SCB_06C: .ASCIC \Unused - offset 6C \
20 20 20 20 20 43 36 20 74 65 73 66 10E2
20 20 20 20 20 20 20 20 20 20 20 20 10EE
20 20 20 20 20 20 20 20 20 20 20 20 10FA
20 20 20 20 20 20 20 20 20 20 20 20 10D6
66 6F 20 2D 20 64 65 73 75 6E 55 00' 10FC 616 SCB_070: .ASCIC \Unused - offset 70 \
20 20 20 20 20 30 37 20 74 65 73 66 1108
20 20 20 20 20 20 20 20 20 20 20 20 1114
20 20 20 20 20 20 20 20 20 20 20 20 1120
20 20 20 20 20 20 20 20 20 20 20 20 10FC
66 6F 20 2D 20 64 65 73 75 6E 55 00' 1122 617 SCB_074: .ASCIC \Unused - offset 74 \
20 20 20 20 20 34 37 20 74 65 73 66 112E
20 20 20 20 20 20 20 20 20 20 20 20 113A
20 20 20 20 20 20 20 20 20 20 20 20 1146
20 20 20 20 20 20 20 20 20 20 20 20 1122
66 6F 20 2D 20 64 65 73 75 6E 55 00' 1148 618 SCB_078: .ASCIC \Unused - offset 78 \
20 20 20 20 20 38 37 20 74 65 73 66 1154
20 20 20 20 20 20 20 20 20 20 20 20 1160
20 20 20 20 20 20 20 20 20 20 20 20 116C
20 20 20 20 20 20 20 20 20 20 20 20 1148
66 6F 20 2D 20 64 65 73 75 6E 55 00' 116E 619 SCB_07C: .ASCIC \Unused - offset 7C \
20 20 20 20 20 43 37 20 74 65 73 66 117A
20 20 20 20 20 20 20 20 20 20 20 20 1186
20 20 20 20 20 20 20 20 20 20 20 20 1192
20 20 20 20 20 20 20 20 20 20 20 20 116E
66 6F 20 2D 20 64 65 73 75 6E 55 00' 1194 620 SCB_080: .ASCIC \Unused - offset 80 \
20 20 20 20 20 30 38 20 74 65 73 66 11A0
20 20 20 20 20 20 20 20 20 20 20 20 11AC
20 20 20 20 20 20 20 20 20 20 20 20 11B8
20 20 20 20 20 20 20 20 20 20 20 20 1194
65 6C 20 65 72 61 77 74 66 6F 53 00' 11BA 621 SCB_084: .ASCIC \Software level 1 interrupt \
72 72 65 74 6E 69 20 31 20 6C 65 76 11C6
20 20 20 20 20 20 20 20 20 20 74 70 75 11D2


```

20 20 11DE
25 11BA
65 6C 20 65 72 61 77 74 66 6F 53 00' 11E0
72 72 65 74 6E 69 20 32 20 6C 65 76 11EC
65 64 20 54 53 41 20 20 20 74 70 75 11F8
79 72 65 76 69 6C 1204
29 11E0
65 6C 20 65 72 61 77 74 66 6F 53 00' 120A
72 72 65 74 6E 69 20 33 20 6C 65 76 1216
20 20 20 20 20 20 20 20 20 74 70 75 1222
20 20 122E
25 120A
65 6C 20 65 72 61 77 74 66 6F 53 00' 1230
72 72 65 74 6E 69 20 34 20 6C 65 76 123C
20 20 20 20 20 20 20 20 20 74 70 75 1248
20 20 1254
25 1230
65 6C 20 65 72 61 77 74 66 6F 53 00' 1256
72 72 65 74 6E 69 20 35 20 6C 65 76 1262
20 20 20 20 20 20 20 20 20 74 70 75 126E
20 20 127A
25 1256
65 6C 20 65 72 61 77 74 66 6F 53 00' 127C
72 72 65 74 6E 69 20 36 20 6C 65 76 1288
20 20 20 20 20 20 20 20 20 74 70 75 1294
20 20 12A0
25 127C
65 6C 20 65 72 61 77 74 66 6F 53 00' 12A2
72 72 65 74 6E 69 20 37 20 6C 65 76 12AE
75 74 6E 61 75 51 20 20 20 74 70 75 12BA
64 6E 65 20 6D 12C6
28 12A2
65 6C 20 65 72 61 77 74 66 6F 53 00' 12CB
72 72 65 74 6E 69 20 38 20 6C 65 76 12D7
20 20 20 20 20 20 20 20 20 74 70 75 12E3
20 20 12EF
25 12CB
65 6C 20 65 72 61 77 74 66 6F 53 00' 12F1
72 72 65 74 6E 69 20 39 20 6C 65 76 12FD
20 20 20 20 20 20 20 20 20 74 70 75 1309
20 20 1315
25 12F1
65 6C 20 65 72 61 77 74 66 6F 53 00' 1317
72 65 74 6E 69 20 30 31 20 6C 65 76 1323
20 20 20 20 20 20 20 20 20 74 70 75 132F
20 20 133B
25 1317
65 6C 20 65 72 61 77 74 66 6F 53 00' 133D
72 65 74 6E 69 20 31 31 20 6C 65 76 1349
20 20 20 20 20 20 20 20 20 74 70 75 1355
20 20 1361
25 133D
65 6C 20 65 72 61 77 74 66 6F 53 00' 1363
72 65 74 6E 69 20 32 31 20 6C 65 76 136F
20 20 20 20 20 20 20 20 20 74 70 75 137B
20 20 1387
25 1363

```

```

622 SCB_088: .ASCIC \Software level 2 interrupt - AST delivery\
623 SCB_08C: .ASCIC \Software level 3 interrupt \
624 SCB_090: .ASCIC \Software level 4 interrupt \
625 SCB_094: .ASCIC \Software level 5 interrupt \
626 SCB_098: .ASCIC \Software level 6 interrupt \
627 SCB_09C: .ASCIC \Software level 7 interrupt - Quantum end\
628 SCB_0A0: .ASCIC \Software level 8 interrupt \
629 SCB_0A4: .ASCIC \Software level 9 interrupt \
630 SCB_0A8: .ASCIC \Software level 10 interrupt \
631 SCB_0AC: .ASCIC \Software level 11 interrupt \
632 SCB_0B0: .ASCIC \Software level 12 interrupt \

```



```
65 6C 20 65 72 61 77 74 66 6F 53 00' 1389
72 65 74 6E 69 20 33 31 20 6C 65 76 1395
20 20 20 20 20 20 20 20 74 70 75 72 13A1
20 20 20 20 20 20 20 20 20 20 20 20 13AD
20 20 20 20 20 20 20 20 20 20 20 20 1389
65 6C 20 65 72 61 77 74 66 6F 53 00' 13AF
72 65 74 6E 69 20 34 31 20 6C 65 76 13BB
20 20 20 20 20 20 20 20 74 70 75 72 13C7
20 20 20 20 20 20 20 20 20 20 20 20 13D3
20 20 20 20 20 20 20 20 20 20 20 20 13AF
65 6C 20 65 72 61 77 74 66 6F 53 00' 13D5
72 65 74 6E 69 20 35 31 20 6C 65 76 13E1
20 20 20 20 20 20 20 20 74 70 75 72 13ED
20 20 20 20 20 20 20 20 20 20 20 20 13F9
20 20 20 20 20 20 20 20 20 20 20 20 13D5
69 74 20 6C 61 76 72 65 74 6E 49 00' 13FB
72 65 6D 1407
20 20 20 20 20 20 20 20 20 20 20 20 13FB
66 6F 20 2D 20 20 64 65 73 75 6E 55 00' 140A
20 20 20 20 20 20 34 43 20 74 65 73 66 1416
20 20 20 20 20 20 20 20 20 20 20 20 1422
20 20 20 20 20 20 20 20 20 20 20 20 142E
20 20 20 20 20 20 20 20 20 20 20 20 140A
66 6F 20 2D 20 20 64 65 73 75 6E 55 00' 1430
20 20 20 20 20 20 38 43 20 74 65 73 66 143C
20 20 20 20 20 20 20 20 20 20 20 20 1448
20 20 20 20 20 20 20 20 20 20 20 20 1454
20 20 20 20 20 20 20 20 20 20 20 20 1430
66 6F 20 2D 20 20 64 65 73 75 6E 55 00' 1456
20 20 20 20 20 20 43 43 20 74 65 73 66 1462
20 20 20 20 20 20 20 20 20 20 20 20 146E
20 20 20 20 20 20 20 20 20 20 20 20 147A
20 20 20 20 20 20 20 20 20 20 20 20 1456
66 6F 20 2D 20 20 64 65 73 75 6E 55 00' 147C
20 20 20 20 20 20 30 44 20 74 65 73 66 1488
20 20 20 20 20 20 20 20 20 20 20 20 1494
20 20 20 20 20 20 20 20 20 20 20 20 14A0
20 20 20 20 20 20 20 20 20 20 20 20 147C
66 6F 20 2D 20 20 64 65 73 75 6E 55 00' 14A2
20 20 20 20 20 20 34 44 20 74 65 73 66 14AE
20 20 20 20 20 20 20 20 20 20 20 20 14BA
20 20 20 20 20 20 20 20 20 20 20 20 14C6
20 20 20 20 20 20 20 20 20 20 20 20 14A2
66 6F 20 2D 20 20 64 65 73 75 6E 55 00' 14C8
20 20 20 20 20 20 38 44 20 74 65 73 66 14D4
20 20 20 20 20 20 20 20 20 20 20 20 14E0
20 20 20 20 20 20 20 20 20 20 20 20 14EC
20 20 20 20 20 20 20 20 20 20 20 20 14C8
66 6F 20 2D 20 20 64 65 73 75 6E 55 00' 14EE
20 20 20 20 20 20 43 44 20 74 65 73 66 14FA
20 20 20 20 20 20 20 20 20 20 20 20 1506
20 20 20 20 20 20 20 20 20 20 20 20 1512
20 20 20 20 20 20 20 20 20 20 20 20 14EE
66 6F 20 2D 20 20 64 65 73 75 6E 55 00' 1514
20 20 20 20 20 20 30 45 20 74 65 73 66 1520
20 20 20 20 20 20 20 20 20 20 20 20 152C
20 20 20 20 20 20 20 20 20 20 20 20 1538
```

```
633 SCB_0B4: .ASCIC \Software level 13 interrupt \
634 SCB_0B8: .ASCIC \Software level 14 interrupt \
635 SCB_0BC: .ASCIC \Software level 15 interrupt \
636 SCB_0C0: .ASCIC \Interval timer\
637 SCB_0C4: .ASCIC \Unused - offset C4 \
638 SCB_0C8: .ASCIC \Unused - offset C8 \
639 SCB_0CC: .ASCIC \Unused - offset CC \
640 SCB_0D0: .ASCIC \Unused - offset D0 \
641 SCB_0D4: .ASCIC \Unused - offset D4 \
642 SCB_0D8: .ASCIC \Unused - offset D8 \
643 SCB_0DC: .ASCIC \Unused - offset DC \
644 SCB_0E0: .ASCIC \Unused - offset E0 \
```

```

25 1514
66 6F 20 2D 20 64 65 73 75 6E 55 00' 153A
20 20 20 20 20 34 45 20 74 65 73 66 1546
20 20 20 20 20 20 20 20 20 20 20 20 1552
20 20 20 20 20 20 20 20 20 20 20 20 155E
25 153A
66 6F 20 2D 20 64 65 73 75 6E 55 00' 1560
20 20 20 20 20 38 45 20 74 65 73 66 156C
20 20 20 20 20 20 20 20 20 20 20 20 1578
20 20 20 20 20 20 20 20 20 20 20 20 1584
25 1560
66 6F 20 2D 20 64 65 73 75 6E 55 00' 1586
20 20 20 20 20 43 45 20 74 65 73 66 1592
20 20 20 20 20 20 20 20 20 20 20 20 159E
20 20 20 20 20 20 20 20 20 20 20 20 15AA
25 1586
66 6F 20 2D 20 64 65 73 75 6E 55 00' 15AC
20 20 20 20 20 30 46 20 74 65 73 66 15B8
20 20 20 20 20 20 20 20 20 20 20 20 15C4
20 20 20 20 20 20 20 20 20 20 20 20 15D0
25 15AC
66 6F 20 2D 20 64 65 73 75 6E 55 00' 15D2
20 20 20 20 20 34 46 20 74 65 73 66 15DE
20 20 20 20 20 20 20 20 20 20 20 20 15EA
20 20 20 20 20 20 20 20 20 20 20 20 15F6
25 15D2
74 6E 69 20 65 6C 6F 73 6E 6F 43 00' 15F8
69 20 72 6F 66 20 74 70 75 72 72 65 1604
20 20 20 20 20 20 20 20 74 75 70 6E 1610
20 20 20 20 20 20 20 20 20 20 20 20 161C
25 15F8
74 6E 69 20 65 6C 6F 73 6E 6F 43 00' 161E
6F 20 72 6F 66 20 74 70 75 72 72 65 162A
20 20 20 20 20 20 20 20 74 75 70 74 75 1636
20 20 20 20 20 20 20 20 20 20 20 20 1642
25 161E
1644
1644

```

```

645 SCB_0E4: .ASCIC \Unused - offset E4 \
646 SCB_0E8: .ASCIC \Unused - offset E8 \
647 SCB_0EC: .ASCIC \Unused - offset EC \
648 SCB_0F0: .ASCIC \Unused - offset F0 \
649 SCB_0F4: .ASCIC \Unused - offset F4 \
650 SCB_0F8: .ASCIC \Console interrupt for input \
651 SCB_0FC: .ASCIC \Console interrupt for output \

```

```

00000CD4' 1644 652 HIST_CTX_PTR::
00000CFA' 1648 653 .ADDRESS SCB_000
00000D20' 164C 654 .ADDRESS SCB_004
00000D46' 1650 655 .ADDRESS SCB_008
00000D6C' 1654 656 .ADDRESS SCB_00C
00000D92' 1658 657 .ADDRESS SCB_010
00000DB8' 165C 658 .ADDRESS SCB_014
00000DDE' 1660 659 .ADDRESS SCB_018
00000E04' 1664 660 .ADDRESS SCB_01C
00000E2A' 1668 661 .ADDRESS SCB_020
00000E50' 166C 662 .ADDRESS SCB_024
00000E76' 1670 663 .ADDRESS SCB_028
00000E9C' 1674 664 .ADDRESS SCB_02C
00000EC2' 1678 665 .ADDRESS SCB_030
00000EE8' 167C 666 .ADDRESS SCB_034
00000F0E' 1680 667 .ADDRESS SCB_038
00000F34' 1684 668 .ADDRESS SCB_03C
00000F5A' 1688 669 .ADDRESS SCB_040
00000F80' 168C 670 .ADDRESS SCB_044
671 .ADDRESS SCB_048
672 .ADDRESS

```


00000FA6'	1690	673	.ADDRESS	SCB-04C
00000FCC'	1694	674	.ADDRESS	SCB-050
00000FF2'	1698	675	.ADDRESS	SCB-054
00001018'	169C	676	.ADDRESS	SCB-058
0000103E'	16A0	677	.ADDRESS	SCB-05C
00001064'	16A4	678	.ADDRESS	SCB-060
0000108A'	16A8	679	.ADDRESS	SCB-064
000010B0'	16AC	680	.ADDRESS	SCB-068
000010D6'	16B0	681	.ADDRESS	SCB-06C
000010FC'	16B4	682	.ADDRESS	SCB-070
00001122'	16B8	683	.ADDRESS	SCB-074
00001148'	16BC	684	.ADDRESS	SCB-078
0000116E'	16C0	685	.ADDRESS	SCB-07C
00001194'	16C4	686	.ADDRESS	SCB-080
000011BA'	16C8	687	.ADDRESS	SCB-084
000011E0'	16CC	688	.ADDRESS	SCB-088
0000120A'	16D0	689	.ADDRESS	SCB-08C
00001230'	16D4	690	.ADDRESS	SCB-090
00001256'	16D8	691	.ADDRESS	SCB-094
0000127C'	16DC	692	.ADDRESS	SCB-098
000012A2'	16E0	693	.ADDRESS	SCB-09C
000012CB'	16E4	694	.ADDRESS	SCB-0A0
000012F1'	16E8	695	.ADDRESS	SCB-0A4
00001317'	16EC	696	.ADDRESS	SCB-0A8
0000133D'	16F0	697	.ADDRESS	SCB-0AC
00001363'	16F4	698	.ADDRESS	SCB-0B0
00001389'	16F8	699	.ADDRESS	SCB-0B4
000013AF'	16FC	700	.ADDRESS	SCB-0B8
000013D5'	1700	701	.ADDRESS	SCB-0BC
000013FB'	1704	702	.ADDRESS	SCB-0C0
0000140A'	1708	703	.ADDRESS	SCB-0C4
00001430'	170C	704	.ADDRESS	SCB-0C8
00001456'	1710	705	.ADDRESS	SCB-0CC
0000147C'	1714	706	.ADDRESS	SCB-0D0
000014A2'	1718	707	.ADDRESS	SCB-0D4
000014C8'	171C	708	.ADDRESS	SCB-0D8
000014EE'	1720	709	.ADDRESS	SCB-0DC
00001514'	1724	710	.ADDRESS	SCB-0E0
0000153A'	1728	711	.ADDRESS	SCB-0E4
00001560'	172C	712	.ADDRESS	SCB-0E8
00001586'	1730	713	.ADDRESS	SCB-0EC
000015AC'	1734	714	.ADDRESS	SCB-0F0
000015D2'	1738	715	.ADDRESS	SCB-0F4
000015F8'	173C	716	.ADDRESS	SCB-0F8
0000161E'	1740	717	.ADDRESS	SCB-0FC

6F	74	20	4C	5A	21	0000174C'	010E0000'	1744
65	73	6F	72	63	69	6D	20 4C 5A 21 20	1752
41	21	5F	21	4C	5A	21 5F 21 20 20 63		175E
21	4C	5A	21	5F	21	4C 5A 21 5F 21 53		176A
		43	41	21	5F	21 4C 5A 21 5F		1776

6F	74	20	4C	5A	21	00001787'	010E0000'	177F
65	73	6F	72	63	69	6D	20 4C 5A 21 20	178D
41	21	5F	21	4C	5A	21 5F 21 20 20 63		1799

719 HIST_TIME DSC::
720 .ASCID \!ZL to !ZL microsec !_!ZL!_!AS!_!ZL!_!ZL!_!ZL!_!AC\

721
722 HIST_RSCH DSC::
723 .ASCID \!ZL to !ZL microsec !_!ZL!_!AS\


```
53 17A5 724
17A6 725
00000000 726 SHWPFM:: .PSECT CODE BYTE,NOWRT,EXE
0000 727 .ENABL LSB
0000 728 .WORD 0
0000 729 $CMKRNLS GETDATA
59 50 E8 0011 730 BLBS R0,10$
05FA 31 0014 731 BRW ERROR
0017 732
0017 733 : GETDATA - This routine goes into kernel mode and copies the performance
0017 734 : data into a local buffer.
0017 735
0017 736 GETDATA::
007C 0017 737 .WORD ^M<R2,R3,R4,R5,R6>
D4 0019 738 CLRL R0 ;Assume failure
56 00000000'GF D0 001B 739 MOVL G^EXESGL_MP,R6 ;Get adr of loaded MP code
48 13 0022 740 BEQL ERR_EXIT ;Br if MP not loaded
50 56 00000000'8F C1 0024 741 ADDL3 #PFMSL_START,R6,R0 ;Find start of perf meas data
51 60 D0 002C 742 MOVL (R0),R7 ;Get size of performance data
00000000'EF 60 51 28 002F 743 MOVCL R1,(R0),PFM_DATA ;Copy perf meas data to buffer
50 56 00000000'8F C1 0037 744 ASSUME CPU2_NULLTIME EQ <CPU2TIME_DATA + 24>
51 1C 9A 003F 745 ADDL3 #MPSAL_CPUTIME,R6,R0 ;Get adr of cpu time mode % vec
00003400'EF 60 51 28 0042 746 MOVZBL #28,R1 ;Seven longwords of data
0000341C'EF 00000000'GF 18 28 004A 747 MOVCL R1,(R0),CPU2TIME_DATA ;Copy cpu time mode % data
50 00000000'GF 9E 0056 748 MOVCL #24,G^PMSSGL_KERNEL,CPU1TIME_DATA ;Get cpu time mode % data
50 6C A0 D0 005D 749 MOVAB G^SCHSGL_NULLPCB,R0 ;Get address of null job's pcb
00003434'EF 38 A0 D0 0061 750 MOVL PCB$$_PHD(R0),R0 ;Get address of null job's phd
50 01 9A 0069 751 MOVL PHD$$_CPUTIME(R0),NULL_JOB_TIME ;Copy accum null job cpu time
006C 752 MOVZBL #1,R0 ;Set success status
04 006C 753 ERR_EXIT:
006D 754 RET
006D 755 : NOW FORMAT AND OUTPUT DATA.
006D 756
006D 757 10$:
50 00000000'EF 9E 006D 758 MOVAB HIST_SRV_PTR,R0 ;Address of name text pointers
51 00000984'EF 9E 0074 759 MOVAB HIST_SRV_TBL,R1 ;Address of table of CHMK codes
007B 760 ; and associated ASCII names
007B 761 11$:
52 81 D0 007B 762 MOVL (R1)+,R2 ;Get CHMK code
61 D5 007E 763 TSTL (R1) ;Is this the end of the table?
14 13 0080 764 BEQL 13$ ;Br if end of table
52 FFFFFFF00 8F D3 0082 765 BITL #^XFFFFFFF00,R2 ;Check if loadable service
06 12 0089 766 BNEQ 12$ ;Br if loadable service, do nothing
6042 81 D0 008B 767 MOVL (R1)+,(R0)[R2] ;Move adr of ASCII name into
008F 768 ; name text pointer table
51 EA 11 008F 769 BRB 11$ ;Loop for each kernel sys srv
04 C0 0091 770 ADDL #4,R1 ;Point past adr of sys srv name
E5 11 0094 771 BRB 11$ ;Loop for each kernel sys srv
0096 772 13$:
0096 773
0096 774
57 01 9A 0096 775 MOVZBL #1,R7 ;Number of one liners to output
58 0000033F'EF 9E 0099 776 MOVAB TITLE_PTR,R8 ;Address of FAO cmd descriptor
59 00000000'EF 9E 00A0 777 MOVAB PFM_DATA,R9 ;Address of data to output
0570 30 00A7 778 BSBW OUTPUT_LINE ;Call to output one line
00AA 779
```


			00AA	780	ASSUME	CPU2_NULLTIME EQ <CPU2TIME_DATA + 24>	
			00AA	781	ASSUME	NULL_JOB_TIME EQ <CPU1TIME_DATA + 24>	
	50	06	9A	00AA	MOVZBL	#6,R0	;Get number of cpu time cells
	000037B8'EF		7C	00AD	CLRD	TIME1_SAMPLE_D	;Initialize cpu1 time sample
54	000037C0'EF		7C	00B3	CLRD	TIME2_SAMPLE_D	;Initialize cpu2 time sample
55	0000341C'EF		9E	00B9	MOVAB	CPU1TIME_DATA,R4	;Address of cpu time data
58	000037C8'EF		9E	00C0	MOVAB	CPU2TIME_DATA,R5	;Address of cpu time data
59	00003800'EF		9E	00CE	MOVAB	CPU1TIME_PERCENTS,R8	;Address for % data
	6840	6440	6E	00D5	MOVAB	CPU2TIME_PERCENTS,R9	;Address for % data
	6940	6540	6E	00DA	CVTLD	(R4)[R0],(R8)[R0]	;Convert time to double format
	F3	50	F4	00DF	CVTLD	(R5)[R0],(R9)[R0]	;Convert time to double format
				00E2	SOBGEQ	R0,20\$;Once per mode: K,E,S,U,I,C,Null
	50	06	9A	00E2	MOVZBL	#6,R0	;Get index to idle time cell
	51	04	9A	00E5	MOVZBL	#4,R1	;Get index to interrupt time
	6840	6940	62	00E8	SUBD2	(R9)[R0],(R8)[R0]	;Subtract secondary idle time
	68	6840	62	00ED	SUBD2	(R8)[R0],(R8)	;Subtract idle from kernel time
	6941	6940	62	00F1	SUBD2	(R9)[R0],(R9)[R1]	;Subtract idle from interrupt
	6440	6540	C2	00F6	SUBL	(R5)[R0],(R4)[R0]	;Subtract secondary idle time
	64	6440	C2	00FB	SUBL	(R4)[R0],(R4)	;Subtract idle from kernel time
	6541	6540	C2	00FF	SUBL	(R5)[R0],(R5)[R1]	;Subtract idle from interrupt
				0104			
	50	06	9A	0104	MOVZBL	#6,R0	;Get index to idle time cell
	000037B8'EF	6840	60	0107	ADD	(R8)[R0],TIME1_SAMPLE_D	;Accum cpu1 sample time in dbl
	000037C0'EF	6940	60	010F	ADD	(R9)[R0],TIME2_SAMPLE_D	;Accum cpu2 sample time in dbl
	000037A0'EF	6440	C0	0117	ADDL	(R4)[R0],TIME1_SAMPLE	;Accumulate total time measured
	000037A8'EF	6540	C0	011F	ADDL	(R5)[R0],TIME2_SAMPLE	;Accumulate total time measured
	DD	50	F4	0127	SOBGEQ	R0,30\$;Once per mode: K,E,S,U,I,C,Null
				012A			
	50	06	9A	012A	MOVZBL	#6,R0	;Get number of cpu time cells
6840	00000000	000043C8 8F	64	012D	MULD2	#100,(R8)[R0]	;Amount of time * 100
6940	00000000	000043C8 8F	64	0139	MULD2	#100,(R9)[R0]	;Amount of time * 100
	6840	000037B8'EF	66	0145	DIVD2	TIME1_SAMPLE_D,(R8)[R0]	;Compute % of cpu time
		000037C0'EF	D5	014D	TSTL	TIME2_SAMPLE_D	;Is secondary active at all?
		05	12	0153	BNEQ	45\$;Br on active
		6940	7C	0155	CLRD	(R9)[R0]	;Indicate nothing to display
		08	11	0158	BRB	46\$;Continue
	6940	000037C0'EF	66	015A	DIVD2	TIME2_SAMPLE_D,(R9)[R0]	;Compute % of cpu time
		C8 50	F4	0162	SOBGEQ	R0,40\$;Once per mode (K,E,S,U,I,C)
				0165			
	00003838'EF		D4	0165	CLRL	ASCTIM_LENGTH	
	0000388C'EF	10	D0	016B	MOVL	#16,ASCTIM_BUFFER_DSC	;Initialize output buffer dsc
00	000037A0'EF	000037A0'EF	CE	0172	MNEGL	TIME1_SAMPLE,TIME1_SAMPLE	
	000037A0'EF	000186A0 8F	7A	017D	EMUL	#100000,TIME1_SAMPLE,#0,TIME1_SAMPLE	
		000037A0'EF		0189			
				018E			
				018E			
				018E			
				018E			
	03	50	E8	01A9	BLBS	R0,50\$	
	0462		31	01AC	BRW	ERROR	
	0000388C'EF	00003838'EF	D0	01AF	MOVL	ASCTIM_LENGTH,ASCTIM_BUFFER_DSC	
	57	01	9A	01BA	MOVZBL	#1,R7	;Number of one liners to output
58	000002EB'EF		9E	01BD	MOVAB	TIME1_DSC_PTR,R8	;Address of FA0 cmd descriptor
59	00003894'EF		9E	01C4	MOVAB	ASCTIM_DSC_PTR,R9	;Address of data to output
	044C		30	01CB	BSBW	OUTPUT_LINE	;Call to output one line
	00003838'EF		D4	01CE	CLRL	ASCTIM_LENGTH	


```
00 000037A8'EF 000037A8'EF 10 DO 01D4 836
    000037A8'EF 000186A0 8F CE 01DB 837
    000037A8'EF 000037A8'EF 7A 01E6 838
    01F2 839
    01F7 840
    01F7 841
    01F7 842
    0212 843
    0215 844
    0218 845
    0223 846
    0226 847
    022D 848
    0234 849
    0237 850
    0237 851
    023A 852
    0241 853
    0248 854
    0248 855
    0248 856
    024E 857
    0255 858
    025C 859
    0263 860
    0266 861
    0266 862
    0269 863
    0270 864
    0277 865
    027A 866
    027A 867
    0281 868
    0281 869
    0284 870
    028B 871
    0290 872
    0292 873
    0297 874
    02A3 875
    02AB 876
    02B6 877
    02BE 878
    02C6 879
    02CA 880
    02D2 881
    02D9 882
    02E4 883
    02EC 884
    02F8 885
    0303 886
    030B 887
    0311 888
    0318 889
    031F 890
    0327 891

    03 50
    03F9
    0000388C'EF 00003838'EF
    57 01
    58 000002EF'EF
    59 00003894'EF
    03E3
    57 02
    58 0000042C'EF
    59 00000000'EF
    03CF
    57 07
    58 0000049A'EF
    59 000037C8'EF
    5A 00003800'EF
    0605
    57 07
    59 00000000'EF
    58 00000648'EF
    03A0
    59 00000000'EF
    50 69
    57 00003460'EF
    6740 08 A9
    11
    6740 6740
    00000000 00000000 8F
    0000343C'EF 0C A9
    0000343C'EF 00003454'EF
    6740 0000343C'EF
    00003458'EF 6740
    50 69 01
    00003444'EF 04 A9
    0000344C'EF 69
    0000344C'EF 00003444'EF
    00003444'EF 04 A9
    00003444'EF 00003444'EF
    0000344C'EF 00003444'EF
    00003444'EF 04 A9
    6740 10 A940
    52 0000344C'EF
    51 00003444'EF
    6740 0000344C'EF
    00003458'EF 6740

    55$:
    MOVL #16,ASCTIM_BUFFER_DSC ;Initialize output buffer dsc
    MNEGL TIME2_SAMPLE,TIME2_SAMPLE
    EMUL #100000,TIME2_SAMPLE,#0,TIME2_SAMPLE

    SASCTIM_S TIMLEN=ASCTIM_LENGTH,-
    TIMBUF=ASCTIM_BUFFER_DSC,-
    TIMADR=TIME2_SAMPLE,-
    CVTFLG=#0
    BLBS R0,55$
    BRW ERROR
    MOVL ASCTIM_LENGTH,ASCTIM_BUFFER_DSC
    MOVZBL #1,R7 ;Number of one liners to output
    MOVAB TIME2_DSC_PTR,R8 ;Address of FA0 cmd descriptor
    MOVAB ASCTIM_DSC_PTR,R9 ;Address of data to output
    BSBW OUTPUT_LINE ;Call to output one line

    MOVZBL #2,R7 ;Number of one liners to output
    MOVAB TIME_ARRAY_PTR,R8 ;Address of FA0 cmd descriptor
    MOVAB PFM_DATA,R9 ;Dummy address to make rtn work
    BSBW OUTPUT_LINE ;Call to output one line

    MOVZBL #7,R7 ;Number of one liners to output
    MOVAB CPUTIM_DSC_PTR,R8 ;Address of FA0 cmd descriptors
    MOVAB CPU1TIME_PERCENTS,R9 ;Address of data to output
    MOVAB CPU2TIME_PERCENTS,R10 ;Address of data to output
    BSBW OUTPUT_LINE_2 ;Call to output one liners

    MOVZBL #7,R7 ;Number of one liners to output
    MOVAB PFM_DATA+<PFMSL_CNT_CTXSW-PFMSL_START>,R9 ;Point past data size
    MOVAB CNTRS_DSC_PTR,R8 ;Address of FA0 cmd descriptors
    BSBW OUTPUT_LINE ;Call to output one liners

    MOVAB PFM_DATA+<PFMSA_HIST_TIME-PFMSL_START>,R9 ;Point past data size

    MOVL HST_L_CELLCOUNT(R9),R0 ;Index to overflow accumulator
    MOVAB HISTO_PERCENTS,R7 ;Address of percentage array
    CVTLD HST_Q_OVRFLOW(R9),(R7)[R0] ;Convert overflow accumulator
    BGEQ 60$ ;Br if bit 31 not set
    MNEGD (R7)[R0],(R7)[R0] ;Negate as bit 31 was set
    ADDD2 #<2^31>,(R7)[R0] ;Add in bit 31 count
    CVTLD HST_Q_OVRFLOW+4(R9),TEMP ;Convert high bits of overflow
    MULD2 TWO_32,TEMP ;Raise to appropriate power
    ADDD2 TEMP,(R7)[R0] ;Add in high order longword acc
    MOVD (R7)[R0],HISTO_TOTAL ;Add in overflow
    SUBL3 #1,HST_L_CELLCOUNT(R9),R0 ;Index into histogram
    CVTLD HST_L_CELLWIDTH(R9),TEMP1 ;Remember cell width
    CVTLD HST_L_CELLCOUNT(R9),TEMP2 ;Get count of cells
    MULD2 TEMP1,TEMP2 ;Get high limit of largest cell
    CVTLD HST_L_CELLWIDTH(R9),TEMP1 ;Get width of one cell
    DIVD3 #2,TEMP1,TEMP1 ;Get median of cell width
    SUBD2 TEMP1,TEMP2 ;Get median of last cell
    CVTLD HST_L_CELLWIDTH(R9),TEMP1 ;Get width of one cell
    CVTLD HST_L_FIRSTCELL(R9)[R0],(R7)[R0] ;Convert number to float dbl
    CVTLD TEMP2,R2
    CVTLD TEMP1,R1
    MULD2 TEMP2,(R7)[R0] ;Multiply by median cell value
    ADDD2 (R7)[R0],HISTO_TOTAL ;Accumulate total for % calc
```


0000344C'EF	51 50 01 6740 6741 00003444'EF C5 50	C1 032F 892 60 0333 893 62 0338 894 F4 0343 895 0346 896 0346 897	ADDL3 #1,R0,R1 ;Get index to next cell ADDD2 (R7)[R1],(R7)[R0] ;Add sum of other cells to this SUBD2 TEMP1,TEMP2 ;Get median of next cell SOBGEQ R0,70\$;Repeat for each cell
6740 00000000 6740	57 50 69 00003460'EF 000043C8 8F 00003458'EF E9 50	D0 0346 897 9E 0349 898 64 0350 899 80\$: 66 035C 900 F4 0364 901 0367 902 0367 903 9A 036E 904 30 0371 905	MOVL HST_L_CELLCOUNT(R9),R0 ;Index into histogram MOVAB HISTO_PERCENTS,R7 ;Address of percentage array MULD2 #100,(R7)[R0] ;Get ready to calculate % DIVD2 HISTO_TOTAL,(R7)[R0] ;Calculate % time SOBGEQ R0,80\$;Repeat for each cell & ovrflw
00003A2C'EF	58 000000DC'EF 57 03 02A6	9E 0367 903 9A 036E 904 30 0371 905 9E 0374 906 9E 037F 907 9E 0386 908 9E 038D 909 9E 0394 910 9E 039B 911 9E 03A2 912 30 03A9 913 03AC 914	MOVAB HISTO_TIME_HDR,R8 ;Address of FAO cmd descriptors MOVZBL #3,R7- ;Number of one liners to output BSBW OUTPUT_LINE ;Call to output one liners MOVAB HIST_TIME_DSC,HISTO_1_FAO_PTR ;Address of FAO cmd descriptors MOVAB PFM_DATA+<PFMSA_HIST_TIME-PFMSL_START>,R2 ;Skip past local indic MOVAB HISTO_PERCENTS,R3 ;Address of second FAO argument MOVAB PFM_DATA+<PFMSA_HIST_PGFL-PFMSL_START>,R4 ;Skip past local indic MOVAB PFM_DATA+<PFMSA_HIST_CHMK-PFMSL_START>,R5 ;Skip past local indic MOVAB PFM_DATA+<PFMSA_HIST_OTHR-PFMSL_START>,R6 ;Skip past local indic MOVAB PFM_DATA+<PFMSA_HIST_SSRV-PFMSL_START>,R7 ;Skip past local indic BSBW OUTPUT_HISTO_1 ;Output an entire histogram
59 00000000'EF	59 00000000'EF	9E 03AC 915 03B3 916 D0 03B3 917 9E 03B6 918 6E 03BD 919 18 03C2 920 72 03C4 921 60 03C9 922	MOVAB PFM_DATA+<PFMSA_HIST_SRV-PFMSL_START>,R9 ;Point past data size MOVL HST_L_CELLCOUNT(R9),R0 ;Index to overflow accumulator MOVAB HISTO_PERCENTS,R7 ;Address of percentage array CVTLD HST_Q_OVRFLOW(R9),(R7)[R0] ;Convert overflow accumulator BGEQ 72\$;Br if bit 31 not set MNEGD (R7)[R0],(R7)[R0] ;Negate as bit 31 was set ADDD2 #<2031>,(R7)[R0] ;Add in bit 31 count CVTLD HST_Q_OVRFLOW+4(R9),TEMP ;Convert high bits of overflow MULD2 TWO_32,TEMP ;Raise to appropriate power ADDD2 TEMP,(R7)[R0] ;Add in high order longword acc MOVD (R7)[R0],HISTO_TOTAL ;Add in overflow SUBL3 #1,HST_L_CELLCOUNT(R9),R0 ;Index into histogram
6740 00000000 0000343C'EF 0000343C'EF 6740 0000343C'EF 00003458'EF 50 69 01	57 50 69 00003460'EF 6740 08 A9 11 6740 6740 00000000 8F 0000343C'EF 0C A9 00003454'EF 6740 0000343C'EF 00003458'EF 6740 50 69 01	6E 03FC 928 6E 03FC 929 73\$: 60 0402 930 F4 040A 931 040D 932 D0 040D 933 9E 0410 934 64 0417 935 74\$: 66 0423 936 F4 042B 937 042E 938 9E 042E 939 9E 0435 940 9A 043C 941 30 043F 942 9E 0442 943 9E 0449 944 9E 0450 945 30 0457 946 9E 045A 947 C5 0461 948	CVTLD HST_L_FIRSTCELL(R9)[R0],(R7)[R0] ;Convert number to float dbl ADDD2 (R7)[R0],HISTO_TOTAL ;Accumulate total for % calc SOBGEQ R0,73\$;Repeat for each cell MOVL HST_L_CELLCOUNT(R9),R0 ;Index into histogram MOVAB HISTO_PERCENTS,R7 ;Address of percentage array MULD2 #100,(R7)[R0] ;Get ready to calculate % DIVD2 HISTO_TOTAL,(R7)[R0] ;Calculate % sys srv SOBGEQ R0,74\$;Repeat for each cell & ovrflw
59 00000000'EF 58 000000E8'EF 57 01 01D8	59 00000000'EF 5A 00000000'EF 56 00003460'EF 0217 59 00000000'EF 50 69 04	9E 0442 943 9E 0449 944 9E 0450 945 30 0457 946 9E 045A 947 C5 0461 948	MOVAB PFM_DATA+<PFMSA_HIST_SRV-PFMSL_START>,R9 ;Skip past local indic MOVAB HISTO_SRV_HDR,R8 ;Address of FAO cmd descriptors MOVZBL #1,R7- ;Number of one liners to output BSBW OUTPUT_LINE ;Call to output one liners MOVAB PFM_DATA+<PFMSA_HIST_SRV-PFMSL_START>,R9 ;Skip past local indic MOVAB HIST_SRV_PTR,R10 ;Address of second FAO argument MOVAB HISTO_PERCENTS,R6 ;Address of third FAO argument BSBW OUTPUT_HISTO ;Output an entire histogram MOVAB PFM_DATA+<PFMSA_HIST_SRV-PFMSL_START>,R9 ;Get adr of srv histo MULL3 #4,HST_L_CELLCOUNT(R9),R0 ;Offset to overflow cell


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      59 10 C0 0465 949 ADDL #HST_L_FIRSTCELL,R9 ;Point to first cell
      59 50 C0 0468 950 ADDL R0,R9 ;Point to overflow cell
      69 D5 046B 951 TSTL (R9) ;Any overflow?
      OD 13 046D 952 BEQL 75$ ;Br if none, no new sys srv
58 00000100'EF 9E 046F 953 MOVAB SRV_OVR_PTR,R8 ;Address of FA0 cmd descriptor
      57 01 9A 0476 954 MOVZBL #1,R7 ;One line to output
      019E 30 0479 955 BSBW OUTPUT_LINE ;Call to output one line
      047C 956 75$: MOVAB PFM_DATA+<PFMSA_HIST_CTX-PFMSL_START>,R9 ;Point past data size
59 00000000'EF 9E 047C 957 MOVAB PFM_DATA+<PFMSA_HIST_CTX-PFMSL_START>,R9 ;Point past data size
      50 69 D0 0483 958 MOVAB HISTO_PERCENTS,R7 ;Address of percentage array
57 00003460'EF 9E 0486 960 CVTLD HIST_Q_OVRFLOW(R9),(R7)[R0] ;Convert overflow accumulator
      6740 08 A9 6E 048D 961 BGEQ 76$ ;Br if bit 31 not set
      11 18 0492 962 MNEGD (R7)[R0],(R7)[R0] ;Negate as bit 31 was set
      6740 6740 72 0494 963 ADDD2 #<2^31>,(R7)[R0] ;Add in bit 31 count
6740 00000000 00000000 8F 60 0499 964 CVTLD HIST_Q_OVRFLOW+4(R9),TEMP ;Convert high bits of overflow
      0000343C'EF 0C A9 6E 04A5 965 MUL2 TWO_32,TEMP ;Raise to appropriate power
      0000343C'EF 00003454'EF 64 04AD 966 ADDD2 TEMP,(R7)[R0] ;Add in high order longword acc
      6740 0000343C'EF 60 04B8 967 MOVD (R7)[R0],HISTO_TOTAL ;Add in overflow
      00003458'E? 6740 70 04C0 968 SUBL3 #1,HST_L_CELLCOUNT(R9),R0 ;Index into histogram
      50 69 01 C3 04C8 969
      04CC 970
      6740 10 A940 6E 04CC 971 77$: CVTLD HST_L_FIRSTCELL(R9)[R0],(R7)[R0] ;Convert number to float dbl
      00003458'EF 6740 60 04D2 972 ADDD2 (R7)[R0],HISTO_TOTAL ;Accumulate total for % calc
      EF 50 F4 04DA 973 SOBGEQ R0,77$ ;Repeat for each cell
      04DD 974
      50 69 D0 04DD 975 MOVAB HISTO_PERCENTS,R7 ;Index into histogram
57 00003460'EF 9E 04E0 976 MOVAB HISTO_PERCENTS,R7 ;Address of percentage array
6740 00000000 000043C8 8F 64 04E7 977 78$: MUL2 #100,(R7)[R0] ;Get ready to calculate %
      6740 00003458'EF 66 04F3 978 DIVD2 HISTO_TOTAL,(R7)[R0] ;Calculate % SCB entries
      E9 50 F4 04FB 979 SOBGEQ R0,78$ ;Repeat for each cell & ovrlw
      04FE 980
      04FE 981
59 00000000'EF 9E 04FE 982 MOVAB PFM_DATA+<PFMSA_HIST_CTX-PFMSL_START>,R9 ;Point past data size
58 000000EC'EF 9E 0505 983 MOVAB HISTO_CTX_HDR,R8 ;Address of FA0 cmd descriptors
      57 01 9A 050C 984 MOVZBL #1,R7 ;Number of one liners to output
      0108 30 050F 985 BSBW OUTPUT_LINE ;Call to output one liners
59 00000000'EF 9E 0512 986 MOVAB PFM_DATA+<PFMSA_HIST_CTX-PFMSL_START>,R9 ;Skip past local indic
5A 00001644'EF 9E 0519 987 MOVAB HIST_CTX_PTR,R10 ;Address of second FA0 argument
56 00003460'EF 9E 0520 988 MOVAB HISTO_PERCENTS,R6 ;Address of third FA0 argument
      0147 30 0527 989 BSBW OUTPUT_HISTO ;Output an entire histogram
      052A 990
      052A 991
      052A 992 ; Output histogram of kernel system services executed on secondary.
      052A 993 ;
      052A 994
59 00000000'EF 9E 052A 995 MOVAB PFM_DATA+<PFMSA_HIST_KSRV-PFMSL_START>,R9 ;Point past data size
      50 69 D0 0531 996 MOVAB HISTO_PERCENTS,R7 ;Address of percentage array
57 00003460'EF 9E 0534 998 CVTLD HIST_Q_OVRFLOW(R9),(R7)[R0] ;Convert overflow accumulator
      6740 08 A9 6E 053B 999 BGEQ 82$ ;Br if bit 31 not set
      11 18 0540 1000 MNEGD (R7)[R0],(R7)[R0] ;Negate as bit 31 was set
      6740 6740 72 0542 1001 ADDD2 #<2^31>,(R7)[R0] ;Add in bit 31 count
6740 00000000 00000000 8F 60 0547 1002 CVTLD HIST_Q_OVRFLOW+4(R9),TEMP ;Convert high bits of overflow
      0000343C'EF 0C A9 6E 0553 1003 MUL2 TWO_32,TEMP ;Raise to appropriate power
      0000343C'EF 00003454'EF 64 055B 1004 ADDD2 TEMP,(R7)[R0] ;Add in high order longword acc
      6740 0000343C'EF 60 0566 1005
```


Address	Op-Code	Op-Code Hex	Op-Code Dec	Op-Code Name	Op-Code Description	Op-Code Comment
00003458'EF	70	056E	1006	MOV	(R7)[R0],HISTO_TOTAL	;Add in overflow
50 69 01	C3	0576	1007	SUB	#1,HST_L_CELLCOUNT(R9),R0	;Index into histogram
6740 10 A940	6E	057A	1008			
00003458'EF	60	0580	1009	83\$:	CVTLD	HST_L_FIRSTCELL(R9)[R0],(R7)[R0] ;Convert number to float dbl
EF 50	F4	0588	1010	ADD	(R7)[R0],HISTO_TOTAL	;Accumulate total for % calc
		058B	1011	SOB	R0,83\$;Repeat for each cell
50 69	D0	058B	1012			
57 00003460'EF	9E	058E	1013	84\$:	MOVL	HST_L_CELLCOUNT(R9),R0 ;Index into histogram
000043C8 8F	64	0595	1014	MOV	HISTO_PERCENTS,R7	;Address of percentage array
00003458'EF	66	05A1	1015	MUL	#100,(R7)[R0]	;Get ready to calculate %
E9 50	F4	05A9	1016	DIV	HISTO_TOTAL,(R7)[R0]	;Calculate % sys KSRV
		05AC	1017	SOB	R0,84\$;Repeat for each cell & ovrflw
59 00000000'EF	9E	05AC	1018			
58 000000D8'EF	9E	05B3	1019	MOV	PFM_DATA+<PFMSA_HIST_KSRV-PFMSL_START>,R9 ;Skip past local indic	
57 01	9A	05BA	1020	MOV	HISTO_KSRV_HDR,R8	;Address of FAO cmd descriptors
005A	30	05BD	1021	MOV	#1,R7	;Number of one liners to output
59 00000000'EF	9E	05C0	1022	BSB	OUTPUT_LINE	;Call to output one liners
5A 00000000'EF	9E	05C7	1023	MOV	PFM_DATA+<PFMSA_HIST_KSRV-PFMSL_START>,R9 ;Skip past local indic	
56 00003460'EF	9E	05CE	1024	MOV	HIST_SRV_PTR,R10	;Address of second FAO argument
0099	30	05D5	1025	MOV	HISTO_PERCENTS,R6	;Address of third FAO argument
59 00000000'EF	9E	05D8	1026	BSB	OUTPUT_HISTO	;Output an entire histogram
50 69 04	C5	05DF	1027	MOV	PFM_DATA+<PFMSA_HIST_KSRV-PFMSL_START>,R9 ;Get adr of KSRV histo	
59 10	C0	05E3	1028	MUL	#4,HST_L_CELLCOUNT(R9),R0	;Offset to overflow cell
59 50	C0	05E6	1029	ADD	#HST_L_FIRSTCELL,R9	;Point to first cell
69	D5	05E9	1030	ADD	R0,R9	;Point to overflow cell
0D	13	05EB	1031	TST	(R9)	;Any overflow?
58 00000100'EF	9E	05ED	1032	BEQ	85\$;Br if none, no new sys KSRV
57 01	9A	05F4	1033	MOV	SRV_OVR_PTR,R8	;Address of FAO cmd descriptor
0020	30	05F7	1034	MOV	#1,R7	;One line to output
		05FA	1035	BSB	OUTPUT_LINE	;Call to output one line
		05FA	1036			
		05FA	1037			
		05FA	1038			
		05FA	1039			
		05FA	1040			
		05FA	1041			
		05FA	1042			
59 00000000'EF	9E	05FA	1043			
58 00000664'EF	9E	0601	1044	MOV	PFM_DATA+<PFMSL_CNT_NWAIT-PFMSL_START>,R9 ;Point to nowait data	
57 01	9A	0608	1045	MOV	CNT_NWAIT_PTR,R8	;Address of FAO cmd descriptor
000C	30	060B	1046	MOV	#1,R7	;Number of one liners to output
		060E	1047	BSB	OUTPUT_LINE	;Call to output one liners
50 01	9A	060E	1048			
		0611	1049	MOV	#1,R0	
		0611	1050			
		061A	1051			
		061A	1052			
		061A	1053			
		061A	1054			
		061A	1055			
		061A	1056			
		061A	1057			
		061A	1058			
		061A	1059			
00003A24'EF	D4	0620	1060	CL	OUTPUT_LENGTH	
000000C8 8F	D0	062B	1061	MOV	#200,OUTPUT_BUFFER_DSC	;INITIALIZE OUTPUT BUFFER DSC
		062B	1062	\$FAO_S	CTRSTR=@(R8),-	
					OUTLEN=OUTPUT_LENGTH,-	

Address	Hex	Op	Op2	Op3	Op4	Op5	Op6	Op7	Op8	Op9	Op10	Op11	Op12	Op13	Op14	Op15	Op16	Op17	Op18	Op19	Op20	Op21	Op22	Op23	Op24	Op25	Op26	Op27	Op28	Op29	Op30	Op31	Op32	Op33	Op34	Op35	Op36	Op37	Op38	Op39	Op40	Op41	Op42	Op43	Op44	Op45	Op46	Op47	Op48	Op49	Op50	Op51	Op52	Op53	Op54	Op55	Op56	Op57	Op58	Op59	Op60	Op61	Op62	Op63	Op64	Op65	Op66	Op67	Op68	Op69	Op70	Op71	Op72	Op73	Op74	Op75	Op76	Op77	Op78	Op79	Op80	Op81	Op82	Op83	Op84	Op85	Op86	Op87	Op88	Op89	Op90	Op91	Op92	Op93	Op94	Op95	Op96	Op97	Op98	Op99	Op100	Op101	Op102	Op103	Op104	Op105	Op106	Op107	Op108	Op109	Op110	Op111	Op112	Op113	Op114	Op115	Op116	Op117	Op118	Op119	Op120	Op121	Op122	Op123	Op124	Op125	Op126	Op127	Op128	Op129	Op130	Op131	Op132	Op133	Op134	Op135	Op136	Op137	Op138	Op139	Op140	Op141	Op142	Op143	Op144	Op145	Op146	Op147	Op148	Op149	Op150	Op151	Op152	Op153	Op154	Op155	Op156	Op157	Op158	Op159	Op160	Op161	Op162	Op163	Op164	Op165	Op166	Op167	Op168	Op169	Op170	Op171	Op172	Op173	Op174	Op175	Op176	Op177	Op178	Op179	Op180	Op181	Op182	Op183	Op184	Op185	Op186	Op187	Op188	Op189	Op190	Op191	Op192	Op193	Op194	Op195	Op196	Op197	Op198	Op199	Op200	Op201	Op202	Op203	Op204	Op205	Op206	Op207	Op208	Op209	Op210	Op211	Op212	Op213	Op214	Op215	Op216	Op217	Op218	Op219	Op220	Op221	Op222	Op223	Op224	Op225	Op226	Op227	Op228	Op229	Op230	Op231	Op232	Op233	Op234	Op235	Op236	Op237	Op238	Op239	Op240	Op241	Op242	Op243	Op244	Op245	Op246	Op247	Op248	Op249	Op250	Op251	Op252	Op253	Op254	Op255	Op256	Op257	Op258	Op259	Op260	Op261	Op262	Op263	Op264	Op265	Op266	Op267	Op268	Op269	Op270	Op271	Op272	Op273	Op274	Op275	Op276	Op277	Op278	Op279	Op280	Op281	Op282	Op283	Op284	Op285	Op286	Op287	Op288	Op289	Op290	Op291	Op292	Op293	Op294	Op295	Op296	Op297	Op298	Op299	Op300	Op301	Op302	Op303	Op304	Op305	Op306	Op307	Op308	Op309	Op310	Op311	Op312	Op313	Op314	Op315	Op316	Op317	Op318	Op319	Op320	Op321	Op322	Op323	Op324	Op325	Op326	Op327	Op328	Op329	Op330	Op331	Op332	Op333	Op334	Op335	Op336	Op337	Op338	Op339	Op340	Op341	Op342	Op343	Op344	Op345	Op346	Op347	Op348	Op349	Op350	Op351	Op352	Op353	Op354	Op355	Op356	Op357	Op358	Op359	Op360	Op361	Op362	Op363	Op364	Op365	Op366	Op367	Op368	Op369	Op370	Op371	Op372	Op373	Op374	Op375	Op376	Op377	Op378	Op379	Op380	Op381	Op382	Op383	Op384	Op385	Op386	Op387	Op388	Op389	Op390	Op391	Op392	Op393	Op394	Op395	Op396	Op397	Op398	Op399	Op400	Op401	Op402	Op403	Op404	Op405	Op406	Op407	Op408	Op409	Op410	Op411	Op412	Op413	Op414	Op415	Op416	Op417	Op418	Op419	Op420	Op421	Op422	Op423	Op424	Op425	Op426	Op427	Op428	Op429	Op430	Op431	Op432	Op433	Op434	Op435	Op436	Op437	Op438	Op439	Op440	Op441	Op442	Op443	Op444	Op445	Op446	Op447	Op448	Op449	Op450	Op451	Op452	Op453	Op454	Op455	Op456	Op457	Op458	Op459	Op460	Op461	Op462	Op463	Op464	Op46
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00003A24'EF 7F 06E9 1120 PUSHAQ OUTPUT_BUFFER_DSC
00000000'GF 01 FB 06EF 1121 CALLS #1,G^LIB$PUT_OUTPUT
03 50 E8 06F6 1122 BLBS R0,410$
FF15 31 06F9 1123 BRW ERROR
59 04 C0 06FC 1124 410$: ADDL #4,R9 ;Point to next argument
5A 04 C0 06FF 1125 ADDL #4,R10 ;Point to next argument
56 08 C0 0702 1126 ADDL #8,R6 ;Point to next argument
01 57 F5 0705 1127 SOBGTR R7,NXT_LINE1
05 0708 1128 RSB
0709 1129 NXT_LINE1:
FF73 31 0709 1130 BRW NXT_LINE
070C 1131
070C 1132 :
070C 1133 :
070C 1134 : This outputs a histogram with descriptions that are the start and
070C 1135 : end of each cell, instead of a specific text.
070C 1136 :
070C 1137 : R2 - Address of first FAO argument for each output line
070C 1138 : R3 - Address of second FAO argument for each output line
070C 1139 : R4 - Address of third FAO argument for each output line
070C 1140 : R5 - Address of fourth FAO argument for each output line
070C 1141 : R6 - Address of fifth FAO argument for each output line
070C 1142 : R7 - Address of sixth FAO argument for each output line
070C 1143 : R8 - Address of FAO command descriptor
070C 1144 :
070C 1145 OUTPUT_HISTO 1::
070C 1146 : PUSHR #^M<R0,R1,R2,R3,R4,R5,R6,R7,R8,R9,R10>
070C 1147 : MOVL R2,R9
070C 1148 : MOVAB HIST_DSC_PTR,R8
070C 1149 : MOVZBL #2,R7
070C 1150 : ASSUME HST_L_CELLCOUNT EQ 0
070C 1151 : ASSUME HST_L_CELLWIDTH EQ <HST_L_CELLCOUNT + 4>
070C 1152 : BSBW OUTPUT_LINE
070C 1153 : POPR #^M<R0,R1,R2,R3,R4,R5,R6,R7,R8,R9,R10>
59 04 A2 D0 070C 1154 MOVL HST_L_CELLWIDTH(R2),R9 ;Remember cell width
5A 01 D4 0710 1155 CLRL R10 ;Initialize cell boundary
5B 59 01 C3 0712 1156 SUBL3 #1,R9,R11 ;Initialize cell boundary
58 62 D0 0716 1157 MOVL HST_L_CELLCOUNT(R2),R8 ;Count of lines to output
52 10 A2 9E 0719 1158 MOVAB HST_L_FIRSTCELL(R2),R2 ;Get address of first histo cell
54 10 A4 9E 071D 1159 MOVAB HST_L_FIRSTCELL(R4),R4 ;Get address of first histo cell
55 10 A5 9E 0721 1160 MOVAB HST_L_FIRSTCELL(R5),R5 ;Get address of first histo cell
56 10 A6 9E 0725 1161 MOVAB HST_L_FIRSTCELL(R6),R6 ;Get address of first histo cell
57 10 A7 9E 0729 1162 MOVAB HST_L_FIRSTCELL(R7),R7 ;Get address of first histo cell
0000388C'EF 08 D0 072D 1163 NXT_LINE 1:
00 00 DD 0734 1164 MOVL #8,ASCTIM_BUFFER_DSC ;Set number of output characters
03 DD 0736 1165 PUSHL #0 ;Number of digits in exponent
00 DD 0738 1166 PUSHL #3 ;Number of digits in integer
04 DD 073A 1167 PUSHL #0 ;No scale factor
0000388C'EF 9F 073C 1168 PUSHL #4 ;Number of digits in fraction
53 DD 0742 1169 PUSHAB ASCTIM_BUFFER_DSC ;Address of output string dsc
00000000'GF 06 FB 0744 1170 PUSHL R3 ;Address of value to convert
03 50 E8 074B 1172 CALLS #6,G^FOR$CVT_D_TF
FEC0 31 074E 1173 BRW ERROR
00003A24'EF 00003958'EF D4 0751 1174 500$: CLRL OUTPUT_LENGTH
50 000009C8 8F D0 0757 1175 MOVL #200,OUTPUT_BUFFER_DSC ;INITIALIZE OUTPUT BUFFER DSC
00003A2C'EF D0 0762 1176 MOVL HISTO_1_FAO_PTR,R0
```


51	00000000'EF	41	D0	0769	1177	MOVL	(R7),R1		;Get number of system service
			D0	076C	1178	MOVL	HIST_Srv_PTR[R1],R1		;Get name of system service
				0774	1179	\$FAO_S	CTRSTR=(R0),-		
				0774	1180		OUTLEN=OUTPUT_LENGTH,-		
				0774	1181		OUTBUF=OUTPUT_BUFFER_DSC,-		
				0774	1182		P1=R10,-		
				0774	1183		P2=R11,-		
				0774	1184		P3=(R2),-		
				0774	1185		P4=ASCTIM_DSC_PTR,-		
				0774	1186		P5=(R4),-		
				0774	1187		P6=(R5),-		
				0774	1188		P7=(R6),-		
				0774	1189		P8=R1		
	03	50	E8	079D	1190	BLBS	R0,510\$		
	FE	6E	31	07A0	1191	BRW	ERROR		
00003A24'EF	00003958'EF		D0	07A3	1192	510\$:	MOVL	OUTPUT_LENGTH,OUTPUT_BUFFER_DSC	
	00003A24'EF		7F	07AE	1193		PUSHAQ	OUTPUT_BUFFER_DSC	
	00000000'GF	01	FB	07B4	1194		CALLS	#1,G*LIB\$PUT_OUTPUT	
	03	50	E8	07BB	1195		BLBS	R0,520\$	
	FE	50	31	07BE	1196		BRW	ERROR	
	52	04	C0	07C1	1197	520\$:	ADDL	#4,R2	;Point to next argument
	53	08	C0	07C4	1198		ADDL	#8,R3	;Point to next argument
	54	04	C0	07C7	1199		ADDL	#4,R4	;Point to next argument
	55	04	C0	07CA	1200		ADDL	#4,R5	;Point to next argument
	56	04	C0	07CD	1201		ADDL	#4,R6	;Point to next argument
	57	04	C0	07D0	1202		ADDL	#4,R7	;Point to next argument
	5A	59	C0	07D3	1203		ADDL	R9,R10	;Next cell boundary
	5B	59	C0	07D6	1204		ADDL	R9,R11	;Next cell boundary
	02	58	F5	07D9	1205		SOBGR	R8,530\$	
	03		11	07DC	1206		BRB	540\$	
	FF	4C	31	07DE	1207	530\$:	BRW	NXT_LINE 1	
	06	FF	8F	07E1	1208	540\$:	PUSHR	#*M<R0,RT,R2,R3,R4,R5,R6,R7,R9,R10>	
0000388C'EF	00		D0	07E5	1209		MOVL	#8,ASCTIM_BUFFER_DSC	;Set number of output characters
	03		DD	07EC	1210		PUSHL	#0	;Number of digits in exponent
	00		DD	07EE	1211		PUSHL	#3	;Number of digits in integer
	04		DD	07F0	1212		PUSHL	#0	;No scale factor
	0000388C'EF	9F	07F2	1213			PUSHL	#4	;Number of digits in fraction
	53		DD	07FA	1214		PUSHAB	ASCTIM_BUFFER_DSC	;Address of output string dsc
	00000000'GF	06	FB	07FC	1215		PUSHL	R3	;Address of value to convert
	03	50	E8	0803	1216		CALLS	#6,G*FOR\$CVT_D_TF	
	FE	08	31	0806	1217		BLBS	R0,550\$	
	00003958'EF		D4	0809	1218	550\$:	BRW	ERROR	
00003A24'EF	000000C8'8F		D0	080F	1220		CLRL	OUTPUT_LENGTH	
50	00003A2C'EF		D0	081A	1221		MOVL	#200,OUTPUT_BUFFER_DSC	;INITIALIZE OUTPUT BUFFER DSC
				0821	1222		MOVL	HISTO_1_FAO_PTR,R0	
				0821	1223		\$FAO_S	CTRSTR=HISTO_OVERFLOW,-	
				0821	1224			OUTLEN=OUTPUT_LENGTH,-	
				0821	1225			OUTBUF=OUTPUT_BUFFER_DSC,-	
				0821	1226			P1=(R2),-	
				0821	1227			P2=ASCTIM_DSC_PTR	
	03	50	E8	0842	1227	560\$:	BLBS	R0,560\$	
	FDC	9	31	0845	1228		BRW	ERROR	
00003A24'EF	00003958'EF		D0	0848	1229		MOVL	OUTPUT_LENGTH,OUTPUT_BUFFER_DSC	
	00003A24'EF		7F	0853	1230		PUSHAQ	OUTPUT_BUFFER_DSC	
	00000000'GF	01	FB	0859	1231		CALLS	#1,G*LIB\$PUT_OUTPUT	
	03	50	E8	0860	1232		BLBS	R0,570\$	
	FDAB	31		0863	1233		BRW	ERROR	


```
06FF 8F BA 0866 1234 570$: POPR #^M<R0,R1,R2,R3,R4,R5,R6,R7,R9,R10>
05 086A 1235 RSB
086B 1236
086B 1237 :
086B 1238 : R7 - Number of one liners to output
086B 1239 : R8 - Address of FA0 command descriptors
086B 1240 : R9 - Address of list of first argument (one per FA0 command descriptor)
086B 1241 : R10 - Address of list of first argument (one per FA0 command descriptor)
086B 1242 :
086B 1243 OUTPUT_LINE_2::
00003958'EF D4 086B 1244 CLRC OUTPUT_LENGTH
00003A24'EF 000000C8 8F DO 0871 1245 MOVL #200,OUTPUT_BUFFER_DSC ;INITIALIZE OUTPUT BUFFER DSC
000038EC'EF 08 DO 087C 1246 MOVL #8,ASCII1_BUFFER_DSC ;Set number of output characters
00 DD 0883 1247 PUSHL #0 ;Number of digits in exponent
03 DD 0885 1248 PUSHL #3 ;Number of digits in integer
00 DD 0887 1249 PUSHL #0 ;No scale factor
04 DD 0889 1250 PUSHL #4 ;Number of digits in fraction
000038EC'EF 9F 088B 1251 PUSHAB ASCII1_BUFFER_DSC ;Address of output string dsc
59 DD 0891 1252 PUSHL R9 ;Address of value to convert
00000000'GF 06 FB 0893 1253 CALLS #6,G^FOR$CVT_D_TF
03 50 E8 089A 1254 BLBS R0,600$
FD71 31 089D 1255 BRW ERROR
0000394C'EF 08 DO 08A0 1256 600$: MOVL #8,ASCII2_BUFFER_DSC ;Set number of output characters
00 DD 08A7 1257 PUSHL #0 ;Number of digits in exponent
03 DD 08A9 1258 PUSHL #3 ;Number of digits in integer
00 DD 08AB 1259 PUSHL #0 ;No scale factor
04 DD 08AD 1260 PUSHL #4 ;Number of digits in fraction
0000394C'EF 9F 08AF 1261 PUSHAB ASCII2_BUFFER_DSC ;Address of output string dsc
5A DD 08B5 1262 PUSHL R10 ;Address of value to convert
00000000'GF 06 FB 08B7 1263 CALLS #6,G^FOR$CVT_D_TF
03 50 E8 08BE 1264 BLBS R0,610$
FD4D 31 08C1 1265 BRW ERROR
00003A24'EF 00003958'EF D4 08C4 1266 610$: CLRL OUTPUT_LENGTH
000000C8 8F DO 08CA 1267 MOVL #200,OUTPUT_BUFFER_DSC ;INITIALIZE OUTPUT BUFFER DSC
08D5 1268 $FA0_S CTRSTR=@(R8),-
08D5 1269 OUTLEN=OUTPUT_LENGTH,-
08D5 1270 OUTBUF=OUTPUT_BUFFER_DSC,-
08D5 1271 P1=ASCII1_DSC_PTR,-
08D5 1272 P2=ASCII2_DSC_PTR
03 50 E8 08F7 1273 BLBS R0,620$
FD14 31 08FA 1274 BRW ERROR
00003A24'EF 00003958'EF DO 08FD 1275 620$: MOVL OUTPUT_LENGTH,OUTPUT_BUFFER_DSC
00003A24'EF 7F 0908 1276 PUSHAQ OUTPUT_BUFFER_DSC
00000000'GF 01 FB 090E 1277 CALLS #1,G^LIB$PUT_OUTPUT
03 50 E8 0915 1278 BLBS R0,630$
FCF6 31 0918 1279 BRW ERROR
58 04 C0 091B 1280 630$: ADDL #4,R8 ;Point to next FA0 cmd dsc
59 08 C0 091E 1281 ADDL #8,R9 ;Point to next argument
5A 08 C0 0921 1282 ADDL #8,R10 ;Point to next argument
01 57 F5 0924 1283 SOBGTR R7,640$
05 0927 1284 RSB
FF40 31 0928 1285 640$: BRW OUTPUT_LINE_2
092B 1286
092B 1287 :
092B 1288 :
092B 1289 : This outputs a histogram with descriptions that are the start and
092B 1290 : end of each cell, instead of a specific text.
```

```
092B 1291 :  
092B 1292 : R2 - Address of first FAO argument for each output line  
092B 1293 : R3 - Address of second FAO argument for each output line  
092B 1294 :  
092B 1295 OUTPUT_HISTO 2::  
092B 1296 : PUSH R0,R1,R2,R3,R4,R5,R6,R7,R8,R9,R10>  
092B 1297 : MOV R2,R9  
092B 1298 : MOVAB HIST_DSC_PTR,R8  
092B 1299 : MOVZBL #2,R7  
092B 1300 : ASSUME HST_L_CELLCOUNT EQ 0  
092B 1301 : ASSUME HST_L_CELLWIDTH EQ <HST_L_CELLCOUNT + 4>  
092B 1302 : BSBW OUTPUT_LINE  
092B 1303 : POP R0,R1,R2,R3,R4,R5,R6,R7,R8,R9,R10>  
59 04 A2 D0 092B 1304 : MOVL HST_L_CELLWIDTH(R2),R9 ;Remember cell width  
5A D4 092F 1305 : CLRL R10 ;Initialize cell boundary  
5B 59 01 C3 0931 1306 : SUBL3 #1,R9,R11 ;Initialize cell boundary  
58 62 D0 0935 1307 : MOVL HST_L_CELLCOUNT(R2),R8 ;Count of lines to output  
52 10 A2 9E 0938 1308 : MOVAB HST_L_FIRSTCELL(R2),R2 ;Get address of first histo cell  
0000388C'EF 08 D0 093C 1309 NXT_LINE 2:  
00 00 DD 0943 1310 : MOVL #8,ASCTIM_BUFFER_DSC ;Set number of output characters  
03 DD 0945 1311 : PUSHL #0 ;Number of digits in exponent  
00 DD 0947 1312 : PUSHL #3 ;Number of digits in integer  
04 DD 0949 1313 : PUSHL #0 ;No scale factor  
0000388C'EF 9F 094B 1314 : PUSHL #4 ;Number of digits in fraction  
53 DD 094B 1315 : PUSHAB ASCTIM_BUFFER_DSC ;Address of output string dsc  
00000000'GF 06 FB 0951 1316 : PUSHL R3 ;Address of value to convert  
03 50 E8 0953 1317 : CALLS #6,G^FOR$CVT_D_TF  
FCB1 31 095A 1318 : BLBS R0,700$  
00003958'EF D4 095D 1319 : BRW ERROR  
000000C8 8F D0 0960 1320 700$: CLRL OUTPUT_LENGTH  
00003A2C'EF D0 0966 1321 : MOVL #200,OUTPUT_BUFFER_DSC ;INITIALIZE OUTPUT BUFFER DSC  
50 D0 0971 1322 : MOVL HISTO_1_FAO_PTR,R0  
0978 1323 : CTRSTR=(R0),-  
0978 1324 : OUTLEN=OUTPUT_LENGTH,-  
0978 1325 : OUTBUF=OUTPUT_BUFFER_DSC,-  
0978 1326 : P1=R10,-  
0978 1327 : P2=R11,-  
0978 1328 : P3=(R2),-  
0978 1329 : P4=ASCTIM_DSC_PTR  
03 50 E8 0999 1330 : BLBS R0,710$  
FC72 31 099C 1331 : BRW ERROR  
00003A24'EF 00003958'EF D0 099F 1332 710$: MOVL OUTPUT_LENGTH,OUTPUT_BUFFER_DSC  
00003A24'EF 7F 09AA 1333 : PUSHAB OUTPUT_BUFFER_DSC  
00000000'GF 01 FB 09B0 1334 : CALLS #1,G^LIB$PUT_OUTPUT  
03 50 E8 09B7 1335 : BLBS R0,720$  
FC54 31 09BA 1336 : BRW ERROR  
52 04 C0 09BD 1337 720$: ADDL #4,R2 ;Point to next argument  
53 08 C0 09C0 1338 : ADDL #8,R3 ;Point to next argument  
5A 59 C0 09C3 1339 : ADDL R9,R10 ;Next cell boundary  
5B 59 C0 09C6 1340 : ADDL R9,R11 ;Next cell boundary  
02 58 F5 09C9 1341 : SOBGTR R8,730$  
03 11 09CC 1342 : BRB 740$  
FF6B 31 09CE 1343 730$: BRW NXT_LINE 2  
0000388C'EF 06FF 8F BB 09D1 1344 740$: PUSH R0,R1,R2,R3,R4,R5,R6,R7,R9,R10>  
08 D0 09D5 1345 : MOVL #8,ASCTIM_BUFFER_DSC ;Set number of output characters  
00 DD 09DC 1346 : PUSHL #0 ;Number of digits in exponent  
03 DD 09DE 1347 : PUSHL #3 ;Number of digits in integer
```



```
00 DD 09E0 1348
04 DD 09E2 1349
0000388C'EF 9F 09E4 1350
53 DD 09EA 1351
00000000'GF 06 FB 09EC 1352
03 50 E8 09F3 1353
FC18 31 09F6 1354
00003958'EF D4 09F9 1355 750$:
000000C8 8F D0 09FF 1356
00003A2C'EF D0 0A0A 1357
0A11 1358
0A11 1359
0A11 1360
0A11 1361
0A11 1362
03 50 E8 0A32 1363
FBD9 31 0A35 1364
00003A24'EF D0 0A38 1365 760$:
00003A24'EF 7F 0A43 1366
00000000'GF 01 FB 0A49 1367
03 50 E8 0A50 1368
FBBB 31 0A53 1369
06FF 8F BA 0A56 1370 770$:
05 0A5A 1371
0A5B 1372
0A5B 1373

PUSHL #0 ;No scale factor
PUSHL #4 ;Number of digits in fraction
PUSHAB ASCTIM_BUFFER_DSC ;Address of output string dsc
PUSHL R3 ;Address of value to convert
CALLS #6,G^FOR$CVT_D_TF
BLBS R0,750$
BRW ERROR
CLRL OUTPUT_LENGTH
MOVL #200,OUTPUT_BUFFER_DSC ;INITIALIZE OUTPUT BUFFER DSC
MOVL HISTO_1_FAO_PTR,R0
$FAO_S CTRSTR=HISTO_OVERFLOW,-
OUTLEN=OUTPUT_LENGTH,-
OUTBUF=OUTPUT_BUFFER_DSC,-
P1=(R2),-
P2=ASCTIM_DSC_PTR
BLBS R0,760$
BRW ERROR
MOVL OUTPUT_LENGTH,OUTPUT_BUFFER_DSC
PUSHAB OUTPUT_BUFFER_DSC
CALLS #1,G^LIB$PUT_OUTPUT
BLBS R0,770$
BRW ERROR
POPR #^M<R0,R1,R2,R3,R4,R5,R6,R7,R9,R10>
RSB
.END SHWPFM
```

MPSHWPFM
Symbol table

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\$ST2	= 00000005		
ADJSTK	000006B1	R	03
ADJWSL	000006B8	R	03
ALCDNP	000006BF	R	03
ALLJDR	000008EC	R	03
ALLOC	000006C6	R	03
ASCEFC	000006CC	R	03
ASCII11_BUFFER	0000389C	RG	02
ASCII11_BUFFER_DSC	000038EC	RG	02
ASCII11_DSC_PTR	000038F4	RG	02
ASCII11_LENGTH	00003898	RG	02
ASCII12_BUFFER	000038FC	RG	02
ASCII12_BUFFER_DSC	0000394C	RG	02
ASCII12_DSC_PTR	00003954	RG	02
ASCII12_LENGTH	000038F8	RG	02
ASCTIM_BUFFER	0000383C	RG	02
ASCTIM_BUFFER_DSC	0000388C	RG	02
ASCTIM_DSC_PTR	00003894	RG	02
ASCTIM_LENGTH	00003838	RG	02
ASSIGN	000006D3	R	03
ASSJNL	000008F3	R	03
BRKTHRU	000008E4	R	03
CANCEL	000006DA	R	03
CANEXH	0000086C	R	03
CANTIM	000006E1	R	03
CANWAK	000006E8	R	03
CLRAST	000006AA	R	03
CLREF	00000704	R	03
CLRPAR	000006F6	R	03
CMKSC_ADJSTK	*****	X	03
CMKSC_ADJWSL	*****	X	03
CMKSC_ALCDNP	*****	X	03
CMKSC_ALLJDR	= 00004028		
CMKSC_ALLOC	*****	X	03
CMKSC_ASCEFC	*****	X	03
CMKSC_ASSIGN	*****	X	03
CMKSC_ASSJNL	= 00004029		
CMKSC_BRKTHRU	*****	X	03
CMKSC_CANCEL	*****	X	03
CMKSC_CANEXH	*****	X	03
CMKSC_CANTIM	*****	X	03
CMKSC_CANWAK	*****	X	03
CMKSC_CLRAST	= 00000000		
CMKSC_CLREF	*****	X	03
CMKSC_CLRPAR	*****	X	03
CMKSC_CMKRNL	*****	X	03
CMKSC_CNTREG	*****	X	03
CMKSC_CONJNLF	= 0000403A		
CMKSC_CONUIC	= 0000402A		
CMKSC_CREJNL	= 0000402B		
CMKSC_CRELNM	*****	X	03
CMKSC_CRELNT	*****	X	03
CMKSC_CREMBX	*****	X	03
CMKSC_CRENWV	= 00004039		
CMKSC_CREPRC	*****	X	03
CMKSC_CRETVA	*****	X	03
CMKSC_CRMPSC	*****	X	03

CMKSC_DACEFC	*****	X	03
CMKSC_DALLOC	*****	X	03
CMKSC_DASSGN	*****	X	03
CMKSC_DCLAST	*****	X	03
CMKSC_DCLCMH	*****	X	03
CMKSC_DCLEXH	*****	X	03
CMKSC_DCNJNLF	= 0000403B		
CMKSC_DEALJDR	= 0000402C		
CMKSC_DEASJNL_INT	= 0000402D		
CMKSC_DELJNL	= 0000402E		
CMKSC_DELLNM	*****	X	03
CMKSC_DELMBX	*****	X	03
CMKSC_DELPRC	*****	X	03
CMKSC_DELTVA	*****	X	03
CMKSC_DEQ	*****	X	03
CMKSC_DERLMB	*****	X	03
CMKSC_DGBLSC	*****	X	03
CMKSC_DLCDNP	*****	X	03
CMKSC_DLCEFC	*****	X	03
CMKSC_DMTJMD	= 0000402F		
CMKSC_DSPJNL	= 00004030		
CMKSC_ENQ	*****	X	03
CMKSC_ERAPAT	*****	X	03
CMKSC_EXIT	*****	X	03
CMKSC_EXPREG	*****	X	03
CMKSC_FORCEX	*****	X	03
CMKSC_GETCHN	*****	X	03
CMKSC_GETDEV	*****	X	03
CMKSC_GETDVI	*****	X	03
CMKSC_GETJNL	= 00004031		
CMKSC_GETJPI	*****	X	03
CMKSC_GETLKI	*****	X	03
CMKSC_GETPTI	*****	X	03
CMKSC_GETRUI	= 00004032		
CMKSC_GETSYI	*****	X	03
CMKSC_HIBER	*****	X	03
CMKSC_LCKPAG	*****	X	03
CMKSC_LKWSET	*****	X	03
CMKSC_MGBLSC	*****	X	03
CMKSC_MNTJMD	= 00004038		
CMKSC_MODFLT	= 00004033		
CMKSC_POSJNL	= 00004034		
CMKSC_PURGWS	*****	X	03
CMKSC_QIO	*****	X	03
CMKSC_READEF	*****	X	03
CMKSC_READJNL	= 00004035		
CMKSC_RECOVER	= 00004036		
CMKSC_RECOVERW	= 00004037		
CMKSC_RESUME	*****	X	03
CMKSC_RUNDWN	*****	X	03
CMKSC_SCHDWK	*****	X	03
CMKSC_SESTAT	*****	X	03
CMKSC_SETEF	*****	X	03
CMKSC_SETEXV	*****	X	03
CMKSC_SETIME	*****	X	03
CMKSC_SETIMR	*****	X	03
CMKSC_SETPFM	*****	X	03

MPSHWPFM
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CMKSC_SETPRA	*****	X	03	DACEFC	0000072D	R	03
CMKSC_SETPRI	*****	X	03	DALLOC	00000734	R	03
CMKSC_SETPRN	*****	X	03	DASSGN	00000738	R	03
CMKSC_SETPRT	*****	X	03	DCLAST	00000742	R	03
CMKSC_SETPRV	*****	X	03	DCLCMH	00000857	R	03
CMKSC_SETRWM	*****	X	03	DCLEXH	00000749	R	03
CMKSC_SETSFM	*****	X	03	DCNJNLF	0000097C	R	03
CMKSC_SETSSF	*****	X	03	DEALJDR	00000908	R	03
CMKSC_SETSTK	*****	X	03	DEASJNL_INT	00000910	R	03
CMKSC_SETSWM	*****	X	03	DELJNL	0000091C	R	03
CMKSC_SNDERR	*****	X	03	DELLNM	000008CF	R	03
CMKSC_SUSPND	*****	X	03	DELMBX	00000750	R	03
CMKSC_TRNLNM	*****	X	03	DELPRC	00000757	R	03
CMKSC_ULKPAG	*****	X	03	DELTVA	0000075E	R	03
CMKSC_ULWSET	*****	X	03	DEQ	0000089A	R	03
CMKSC_UPDSEC	*****	X	03	DERLMB	00000865	R	03
CMKSC_WAITFR	*****	X	03	DGBLSC	00000765	R	03
CMKSC_WAKE	*****	X	03	DLCDNP	0000076C	R	03
CMKSC_WFLAND	*****	X	03	DLCEFC	00000773	R	03
CMKSC_WFLOR	*****	X	03	DMTJMD	00000923	R	03
CMKRNL	000006FD	R	03	DSPJNL	0000092A	R	03
CNTREG	0000070A	R	03	ENQ	00000896	R	03
CNTRS_DSC_PTR	00000648	RG	03	ERAPAT	000008BA	R	03
CNT_ASTSC_DSC	000005A5	RG	03	ERROR	00000611	R	05
CNT_CTXSW_DSC	000004B6	RG	03	ERR_EXIT	0000006C	R	05
CNT_EXCHG_DSC	00000568	RG	03	EXESGL_MP	*****	X	05
CNT_INVALID_DSC	000005E1	RG	03	EXIT	00000788	R	03
CNT_IVWAIT_DSC	00000610	RG	03	EXPREG	0000078D	R	03
CNT_NWAIT_DSC	00000668	RG	03	FOR\$CVT_D_TF	*****	X	05
CNT_NWAIT_PTR	00000664	RG	03	FORCEX	00000794	R	03
CNT_RESCHD_DSC	000004F1	RG	03	GETCHN	00000873	R	03
CNT_SCHDS_DSC	00000530	RG	03	GETDATA	00000017	RG	05
CONJNLF	00000974	R	03	GETDEV	0000087A	R	03
CONUIC	000008FA	R	03	GETDVI	000008B3	R	03
CPU1TIME_DATA	0000341C	RG	02	GETJNL	00000931	R	03
CPU1TIME-PERCENTS	000037C8	RG	02	GETJPI	00000881	R	03
CPU2TIME_DATA	00003400	RG	02	GETLKI	000008DD	R	03
CPU2TIME-PERCENTS	00003800	RG	02	GETPTI	00000711	R	03
CPU2_NULTIME	00003418	R	02	GETRUI	00000938	R	03
CPUTIM1_DSC_TOT	000001B3	RG	03	GETSYI	000008AC	R	03
CPUTIM2_DSC_TOT	000001F6	RG	03	HIBER	0000079B	R	03
CPUTIM_DSC_C	000003EA	RG	03	HISTO_1_FAO_PTR	00003A2C	RG	02
CPUTIM_DSC_E	00000366	RG	03	HISTO_1-SUBTITLE	0000023B	RG	03
CPUTIM_DSC_I	000003C4	RG	03	HISTO_1-SUBTITLE2	00000292	RG	03
CPUTIM_DSC_K	00000343	RG	03	HISTO_COUNT	00000104	RG	03
CPUTIM_DSC_N	00000410	RG	03	HISTO_CTX_DSC	000000A2	RG	03
CPUTIM_DSC_PTR	0000049A	RG	03	HISTO_CTX_HDR	000000EC	RG	03
CPUTIM_DSC_S	00000385	RG	03	HISTO_KSRV_DSC	00000000	RG	03
CPUTIM_DSC_U	000003A5	RG	03	HISTO_KSRV_HDR	000000D8	RG	03
CREJNL	00000901	R	03	HISTO_LINE	0000015F	RG	03
CRELNM	000008C8	R	03	HISTO_OVERFLOW	00000178	RG	03
CRELNT	000008C1	R	03	HISTO-PERCENTS	00003460	RG	02
CREMBX	00000718	R	03	HISTO_SRV_DSC	00000069	RG	03
CRENVV	0000096D	R	03	HISTO_SRV_HDR	000000E8	RG	03
CREPRC	0000071F	R	03	HISTO_TIME_DSC	0000003A	RG	03
CRETVA	00000726	R	03	HISTO_TIME_HDR	000000DC	RG	03
CRMPSC	000006EF	R	03	HISTO_TOTAL	00003458	RG	02

MPSHWPFM
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HISTO_WIDTH	00000132	RG	03
HIST_CTX_PTR	00001644	RG	03
HIST_DSC_PTR	000000F0	RG	03
HIST_LIN_PTR	000000F8	RG	03
HIST_OVR_PTR	000000FC	RG	03
HIST_RSCR_DSC	0000177F	RG	03
HIST_SRV_PTR	00000000	RG	04
HIST_SRV_TBL	00000984	RG	03
HIST_TIME_DSC	00001744	RG	03
HST_C_CELLCOUNT	= 00000000		
HST_L_CELLWIDTH	= 00000004		
HST_L_FIRSTCELL	= 00000010		
HST_Q_OVRFLOW	= 00000008		
LCKPAG	000007A1	R	03
LIB\$PUT_OUTPUT	*****	X	05
LKWSET	000007A8	R	03
MGBLSC	000007AF	R	03
MNTJMD	00000966	R	03
MODFLT	0000093F	R	03
MPSSAL_CPUTIME	*****	X	05
NULL_JOB_TIME	00003434	RG	02
NULL_JOB_TIME_D	00003438	RG	02
NXT_CINE	0000067F	R	05
NXT_LINE1	00000709	R	05
NXT_LINE_1	0000072D	R	05
NXT_LINE_2	0000093C	R	05
OUTPUT_BUFFER	0000395C	RG	02
OUTPUT_BUFFER_DSC	00003A24	RG	02
OUTPUT_HISTO	00000671	RG	05
OUTPUT_HISTO_1	0000070C	RG	05
OUTPUT_HISTO_2	0000092B	RG	05
OUTPUT_LENGTH	00003958	RG	02
OUTPUT_LINE	0000061A	RG	05
OUTPUT_LINE_2	0000086B	RG	05
PCBSL_PHD	= 0000006C		
PFMSA_HIST_CHMK	*****	X	05
PFMSA_HIST_CTX	*****	X	05
PFMSA_HIST_KSRV	*****	X	05
PFMSA_HIST_OTHR	*****	X	05
PFMSA_HIST_PGFL	*****	X	05
PFMSA_HIST_SRV	*****	X	05
PFMSA_HIST_SSRV	*****	X	05
PFMSA_HIST_TIME	*****	X	05
PFMSL_CNT_CTXSW	*****	X	05
PFMSL_CNT_NWAIT	*****	X	05
PFMSL_START	*****	X	05
PFM_DATA	00000000	RG	02
PHDSL_CPUTIM	= 00000038		
PMSSGL_KERNEL	*****	X	05
POSJNL	00000946	R	03
PURGWS	000007B6	R	03
QIO	000007BD	R	03
READEP	000007C1	R	03
READJNL	0000094D	R	03
RECOVER	00000955	R	03
RECOVERW	0000095D	R	03
RESUME	000007C8	R	03

RUNDWN	000007CF	R	03
SCB-000	00000CD4	R	03
SCB-004	00000CFA	R	03
SCB-008	00000D20	R	03
SCB-00C	00000D46	R	03
SCB-010	00000D6C	R	03
SCB-014	00000D92	R	03
SCB-018	00000DB8	R	03
SCB-01C	00000DDE	R	03
SCB-020	00000E04	R	03
SCB-024	00000E2A	R	03
SCB-028	00000E50	R	03
SCB-02C	00000E76	R	03
SCB-030	00000E9C	R	03
SCB-034	00000EC2	R	03
SCB-038	00000EE8	R	03
SCB-03C	00000F0E	R	03
SCB-040	00000F34	R	03
SCB-044	00000F5A	R	03
SCB-048	00000F80	R	03
SCB-04C	00000FA6	R	03
SCB-050	00000FCC	R	03
SCB-054	00000FF2	R	03
SCB-058	00001018	R	03
SCB-05C	0000103E	R	03
SCB-060	00001064	R	03
SCB-064	0000108A	R	03
SCB-068	000010B0	R	03
SCB-06C	000010D6	R	03
SCB-070	000010FC	R	03
SCB-074	00001122	R	03
SCB-078	00001148	R	03
SCB-07C	0000116E	R	03
SCB-080	00001194	R	03
SCB-084	000011BA	R	03
SCB-088	000011E0	R	03
SCB-08C	0000120A	R	03
SCB-090	00001230	R	03
SCB-094	00001256	R	03
SCB-098	0000127C	R	03
SCB-09C	000012A2	R	03
SCB-0A0	000012CB	R	03
SCB-0A4	000012F1	R	03
SCB-0A8	00001317	R	03
SCB-0AC	0000133D	R	03
SCB-0B0	00001363	R	03
SCB-0B4	00001389	R	03
SCB-0B8	000013AF	R	03
SCB-0BC	000013D5	R	03
SCB-0C0	000013FB	R	03
SCB-0C4	0000140A	R	03
SCB-0C8	00001430	R	03
SCB-0CC	00001456	R	03
SCB-0D0	0000147C	R	03
SCB-0D4	000014A2	R	03
SCB-0D8	000014C8	R	03
SCB-0DC	000014EE	R	03

**F

MPSHWPFM
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SCB_OEO	00001514	R	03
SCB_OE4	0000153A	R	03
SCB_OE8	00001560	R	03
SCB_OEC	00001586	R	03
SCB_OF0	000015AC	R	03
SCB_OF4	000015D2	R	03
SCB_OF8	000015F8	R	03
SCB_OFC	0000161E	R	03
SCH\$GL_NULLPCB	*****	X	05
SCHDWK	000007D6	R	03
SETAST	000007DD	R	03
SETEF	000007E4	R	03
SETEXV	000007EA	R	03
SETIME	00000888	R	03
SETIMR	000007FF	R	03
SETPFM	0000085E	R	03
SETPRA	000007F8	R	03
SETPRI	00000806	R	03
SETPRN	000007F1	R	03
SETPRT	0000080D	R	03
SETPRV	0000088F	R	03
SETRWM	00000814	R	03
SETSFM	0000081B	R	03
SETSSF	0000089E	R	03
SETSTK	000008A5	R	03
SETSWM	00000822	R	03
SHWPFM	00000000	RG	05
SNDERR	00000781	R	03
SRV_OVERFLOW	00000199	RG	03
SRV_OVR_PTR	00000100	RG	03
SUSPND	00000829	R	03
SYSSASCTIM	*****	GX	05
SYSSCMKRNL	*****	GX	05
SYSEXIT	*****	GX	05
SYSSFAO	*****	X	05
TEMP	0000343C	RG	02
TEMP1	00003444	RG	02
TEMP2	0000344C	RG	02
TIME1_DSC_PTR	000002EB	RG	03
TIME1_SAMPLE	000037A0	RG	02
TIME1_SAMPLE_D	000037B8	RG	02
TIME2_DSC_PTR	000002EF	RG	03
TIME2_SAMPLE	000037A8	RG	02
TIME2_SAMPLE_D	000037C0	RG	02
TIME_T_DSC	00000434	RG	03
TIME-2-DSC	0000046E	RG	03
TIME-ARRAY_PTR	0000042C	RG	03
TITLE	000002F3	RG	03
TITLE_PTR	0000033F	RG	03
TRNLNR	000008D6	R	03
TWO_32	00003454	RG	02
ULKPAG	00000830	R	03
ULWSET	00000837	R	03
UPDSEC	0000077A	R	03
WAITFR	0000083E	R	03
WAKE	00000845	R	03
WFLAND	0000084A	R	03

WFLOR

00000851 R 03

MP
Tat

+-----+
! 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
RW_DATA	00003A30 (14896.)	02 (2.)	NOPIC USR CON REL LCL NOSHR NOEXE RD WRT NOVEC LONG
RO_DATA	000017A6 (6054.)	03 (3.)	NOPIC USR CON REL LCL NOSHR NOEXE RD NOWRT NOVEC LONG
HIST_SRV_PTR	000001A4 (420.)	04 (4.)	NOPIC USR CON REL LCL NOSHR NOEXE RD WRT NOVEC LONG
CODE	00000A5B (2651.)	05 (5.)	NOPIC USR CON REL LCL NOSHR EXE RD NOWRT NOVEC BYTE

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	36	00:00:00.11	00:00:00.36
Command processing	143	00:00:00.74	00:00:05.22
Pass 1	328	00:00:10.68	00:00:29.19
Symbol table sort	0	00:00:01.02	00:00:02.02
Pass 2	319	00:00:04.93	00:00:14.04
Symbol table output	47	00:00:00.39	00:00:00.91
Psect synopsis output	3	00:00:00.03	00:00:00.03
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	879	00:00:17.90	00:00:51.78

The working set limit was 1950 pages.

71477 bytes (140 pages) of virtual memory were used to buffer the intermediate code.

There were 40 pages of symbol table space allocated to hold 649 non-local and 51 local symbols.

1373 source lines were read in Pass 1, producing 61 object records in Pass 2.

17 pages of virtual memory were used to define 15 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name	Macros defined
_\$255\$DUA28:[MP.OBJ]MP.MLB;1	0
_\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	2
_\$255\$DUA28:[SYSLIB]STARLET.MLB;2	9
TOTALS (all libraries)	11

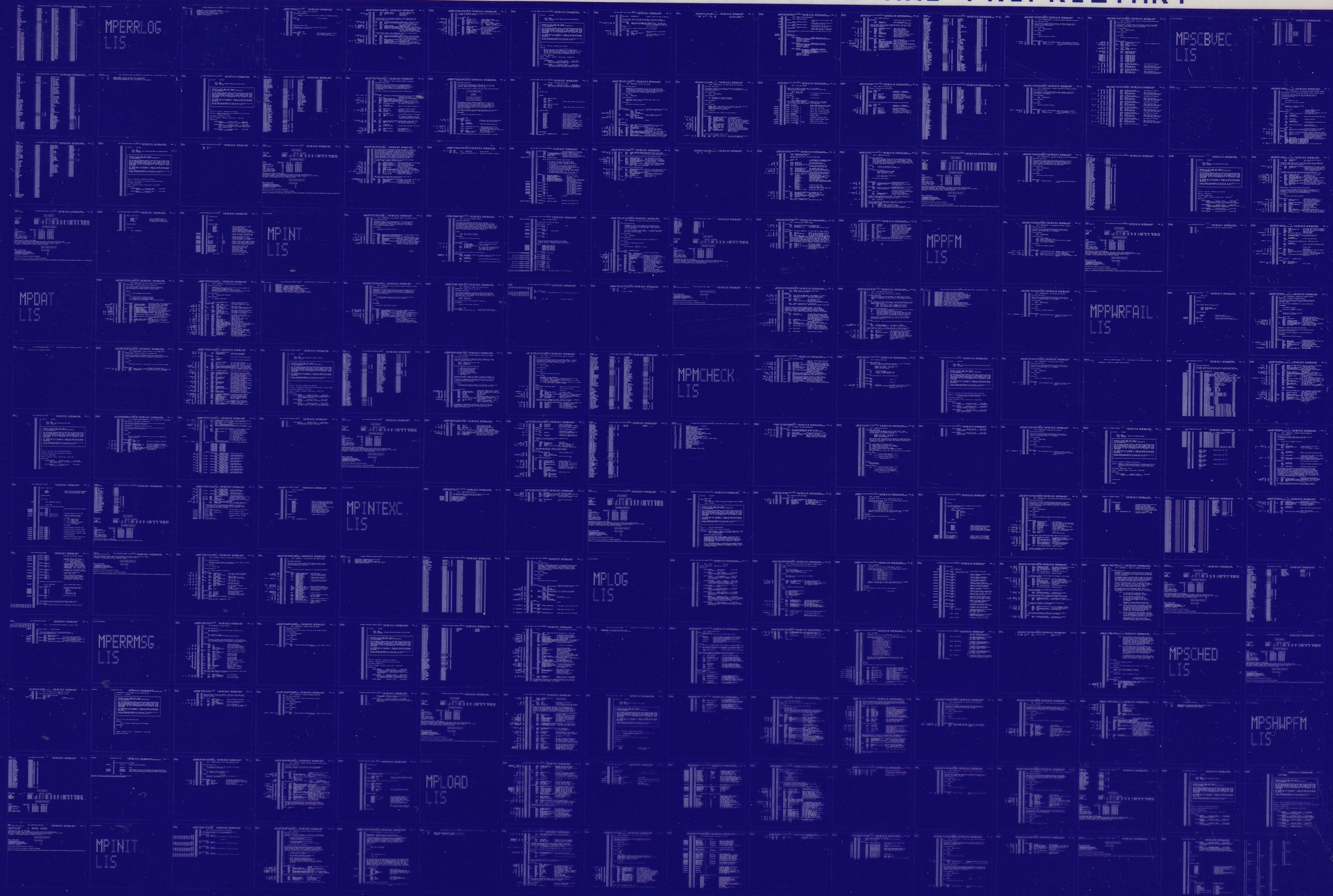
361 GETS were required to define 11 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:MPSHWPFM/OBJ=OBJ\$:MPSHWPFM MSRC\$:MPSHWPFM/UPDATE=(ENH\$:MPSHWPFM)+EXECML\$/LIB+LIB\$:MP.MLB/LIB

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