



DDDDDDDD		AAAAAA	TTTTTTTTTT	AAAAAA	11	
DDDDDDDD		AAAAAA	TTTTTTTTTT	AAAAAA	11	
DD	DD	AA	TT	AA	1111	
DD	DD	AA	TT	AA	1111	
DD	DD	AA	TT	AA	11	
DD	DD	AA	TT	AA	11	
DD	DD	AA	TT	AA	11	
DD	DD	AA	TT	AA	11	
DD	DD	AAAAAAAAAA	TT	AAAAAAAAAA	11	
DD	DD	AAAAAAAAAA	TT	AAAAAAAAAA	11	
DD	DD	AA	TT	AA	11	
DD	DD	AA	TT	AA	11	....
DDDDDDDD		AA	TT	AA	111111	....
DDDDDDDD		AA	TT	AA	111111	....

LL	IIIIII	SSSSSSSS	
LL	IIIIII	SSSSSSSS	
LL	II	SS	
LL	II	SS	
LL	II	SS	
LL	II	SS	
LL	II	SSSSSS	
LL	II	SSSSSS	
LL	II		SS
LL	II		SS
LL	II		SS
LL	II		SS
LLLLLLLLLL	IIIIII	SSSSSSSS	
LLLLLLLLLL	IIIIII	SSSSSSSS	

MACSDATA1  
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V04

(2) 93 DATA STORAGE





DATA STORAGE

```

0000 93          .SBTTL DATA STORAGE
0000 94
0000 95 MAC$AB_DEF_TITL::          ;DEFAULT TITLE STRING
2E 4E 49 41 4D 2E 00' 0000 96          .ASCIC /.MAIN./          ;DEFAULT TITLE
06 0000
0007 97
0007 98 MAC$AB_VERSION::          ;VAX-11 MACRO VERSION STRING
63 61 4D 20 53 4D 56 2F 58 41 56 00' 0007 99          .ASCIC \VAX/VMS Macro V04-00\ ;VAX-11 MACRO VERSION
30 30 2D 34 30 56 20 6F 72 0013
14 0007
001C 100
001C 101 MAC$AB_TOC_MSG::          ;'TABLE OF CONTENTS'
6F 63 20 66 6F 20 65 6C 62 61 54 00' 001C 102          .ASCIC /Table of contents/
73 74 6E 65 74 6E 0028
11 001C
002E 103
002E 104 MAC$AB_STB_MSG::          ;'SYMBOL TABLE'
6C 62 61 74 20 6C 6F 62 6D 79 53 00' 002E 105          .ASCIC /Symbol table/
65 003A
0C 002E
003B 106
003B 107 MAC$AB_RNT_MSG::
72 63 61 4D 20 31 31 2D 58 41 56 00' 003B 108          .ASCIC /VAX-11 Macro Run Statistics/
73 69 74 61 74 53 20 6E 75 52 20 6F 0047
73 63 69 74 0053
1B 003B
0057 109
0057 110 MAC$AB_CRF_MSG::
72 65 66 65 72 20 73 73 6F 72 43 00' 0057 111          .ASCIC /Cross reference/
65 63 6E 65 0063
0F 0057
0067 112
0067 113 MAC$AB_CRF_HDR::
2B 20 2A 35 34 21 0000006F'010E0000' 0067 114          .ASCID \!45* +!24*--+\
2B 2D 2A 34 32 21 0075
007B 115 MAC$AB_CRF_HDRA::
21 20 2A 35 34 21 00000083'010E0000' 007B 116          .ASCID \!45* !! Symbol Cross Reference !!\
6F 72 43 20 6C 6F 62 6D 79 53 20 21 0089
65 63 6E 65 72 65 66 65 52 20 73 73 0095
21 21 20 00A1
00A4 117 MAC$AB_CRF_HDRB::
2B 20 2A 35 34 21 000000AC'010E0000' 00A4 118          .ASCID \!45* +!24*--+\
2B 2D 2A 34 32 21 00B2
00B8 119
00B8 120 MAC$AB_CRF_HD1::
59 53 3C 35 31 21 000000C0'010E0000' 00B8 121          .ASCID \!15<SYMBOL!> !8<VALUE!>!5* !14<DEFINITION!>\-
41 56 3C 38 21 20 3E 21 4C 4F 42 4D 00C6
34 31 21 20 2A 35 21 3E 21 45 55 4C 00D2
21 4E 4F 49 54 49 4E 49 46 45 44 3C 00DE
3E 00EA
45 46 45 52 3C 34 31 21 20 2A 32 21 00EB 122          \!2* !14<REFERENCES...!>\
3E 21 2E 2E 2E 53 45 43 4E 45 52 00F7
0102 123 MAC$AB_CRF_HD1A::
36 21 3C 35 31 21 0000010A'010E0000' 0102 124          .ASCID \!15<!6*--!> !8<!5*--!>!5* !14<!10*--!>\-
2D 2A 35 21 3C 38 21 20 3E 21 2D 2A 0110
31 21 3C 34 31 21 20 2A 35 21 3E 21 011C
3E 21 2D 2A 30 0128

```

MA  
Sy  
MA  
MA  
MA  
MA  
MA  
MA  
MA  
MA  
MA  
OPI  
OPI  
OPI  
OPI  
SYI  
SYI  
X1  
X2  
PSI  
MA  
Ph  
In  
Co  
Pa  
Sy  
Pa  
Sy  
Ps  
Cr  
As  
Th  
21  
Th  
46  
1

```

2A 33 31 21 3C 34 31 21 20 2A 32 21 012D 125
      3E 21 2D 0139
      013C 126
      013C 127
59 53 3C 31 33 21 00000144'010E0000' 013C 128
41 56 3C 38 21 20 3E 21 4C 4F 42 4D 014A
34 31 21 20 2A 35 21 3E 21 45 55 4C 0156
21 4E 4F 49 54 49 4E 49 46 45 44 3C 0162
      3E 016E
45 46 45 52 3C 34 31 21 20 2A 32 21 016F 129
      3E 21 2E 2E 2E 53 45 43 4E 45 52 017B
      0186
36 21 3C 31 33 21 0000018E'010E0000' 0186 130
2D 2A 35 21 3C 38 21 20 3E 21 2D 2A 0194 131
31 21 3C 34 31 21 20 2A 35 21 3E 21 01A0
      3E 21 2D 2A 30 01AC
2A 33 31 21 3C 34 31 21 20 2A 32 21 01B1 132
      3E 21 2D 01BD
      01C0 133
2B 20 2A 35 34 21 000001C8'010E0000' 01C0 134
      2B 2D 2A 34 32 21 01CE 135
      01D4 136
21 20 2A 35 34 21 000001DC'010E0000' 01D4 137
6F 72 43 20 73 6F 72 63 61 4D 20 21 01E2
65 63 6E 65 72 65 66 65 52 20 73 73 01EE
      21 21 20 01FA
2B 20 2A 35 34 21 00000205'010E0000' 01FD 138
      2B 2D 2A 34 32 21 020B 139
      0211 140
41 4D 3C 35 31 21 00000219'010E0000' 0211 141
3C 38 21 20 2A 33 21 3E 21 4F 52 43 021F 142
31 21 20 2A 36 21 3E 21 45 5A 49 53 022B
4E 4F 49 54 49 4E 49 46 45 44 3C 34 0237
      3E 21 0243
45 46 45 52 3C 34 31 21 20 2A 33 21 0245 143
      3E 21 2E 2E 2E 53 45 43 4E 45 52 0251
      025C 144
35 21 3C 35 31 21 00000264'010E0000' 025C 145
21 3C 38 21 20 2A 33 21 3E 21 2D 2A 2A 026A
34 31 21 20 2A 36 21 3E 21 2D 2A 34 0276
      3E 21 2D 2A 30 31 21 3C 0282
2A 33 31 21 3C 34 31 21 20 2A 33 21 028A 146
      3E 21 2D 0296
      0299 147
41 4D 3C 31 33 21 000002A1'010E0000' 0299 148
3C 38 21 20 2A 33 21 3E 21 4F 52 43 02A7 149
31 21 20 2A 36 21 3E 21 45 5A 49 53 02B3
4E 4F 49 54 49 4E 49 46 45 44 3C 34 02BF
      3E 21 02CB
45 46 45 52 3C 34 31 21 20 2A 33 21 02CD 150
      3E 21 2E 2E 2E 53 45 43 4E 45 52 02D9
      02E4
35 21 3C 31 33 21 000002EC'010E0000' 02E4 151
      02E4 152

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```

\!2* !14<!13*-!>\
MAC$AB_CRF_HD1W::
.ASCID \!31<SYMBOL!> !8<VALUE!>!5* !14<DEFINITION!>\-
\!2* !14<REFERENCES...!>\
MAC$AB_CRF_HD1WA::
.ASCID \!31<!6*-!> !8<!5*-!>!5* !14<!10*-!>\-
\!2* !14<!13*-!>\
MAC$AB_CRF_HDM::
.ASCID \!45* +!24*-+\
MAC$AB_CRF_HDMA::
.ASCID \!45* !! Macros Cross Reference !!\
MAC$AB_CRF_HDMB::
.ASCID \!45* +!24*-+\
MAC$AB_CRF_HD2::
.ASCID \!15<MACRO!>!3* !8<SIZE!>!6* !14<DEFINITION!>\-
\!3* !14<REFERENCES...!>\
MAC$AB_CRF_HD2A::
.ASCID \!15<!5*-!>!3* !8<!4*-!>!6* !14<!10*-!>\-
\!3* !14<!13*-!>\
MAC$AB_CRF_HD2W::
.ASCID \!31<MACRO!>!3* !8<SIZE!>!6* !14<DEFINITION!>\-
\!3* !14<REFERENCES...!>\
MAC$AB_CRF_HD2WA::
.ASCID \!31<!5*-!>!3* !8<!4*-!>!6* !14<!10*-!>\-

```

```

21 3C 38 21 20 2A 33 21 3E 21 2D 2A 02F2
34 31 21 20 2A 36 21 3E 21 2D 2A 34 02FE
      3E 21 2D 2A 30 31 21 3C 030A
2A 33 31 21 3C 34 31 21 20 2A 33 21 0312
      3E 21 2D 031E
      0321 154
      0321 155 MAC$AB_CRF_HDO::
      0321 156 .ASCID \!45* +!24*--\
      032F
2B 20 2A 35 34 21 00000329'010E0000' 0335
      2B 2D 2A 34 32 21 0335
21 20 2A 35 34 21 0000033D'010E0000' 0335
6F 72 43 20 65 64 6F 63 70 4F 20 21 0343
65 63 6E 65 72 65 66 65 52 20 73 73 034F
      21 21 20 035B
      035E 159 MAC$AB_CRF_HDOB::
      035E 160 .ASCID \!45* +!24*--\
      036C
      0372 161
      0372 162 MAC$AB_CRF_HD3::
      0372 163 .ASCID \!15<OPCODE!>!5<VALUE!>!5* !14<REFERENCES...!>\
50 4F 3C 35 31 21 0000037A'010E0000' 0380
4C 41 56 3C 35 21 3E 21 45 44 4F 43 038C
3C 34 31 21 20 2A 35 21 3E 21 45 55 0398
2E 2E 53 45 43 4E 45 52 45 46 45 52 03A4
      3E 21 2E 03A7
36 21 3C 35 31 21 000003AF'010E0000' 03A7
21 2D 2A 35 21 3C 35 21 3E 21 2D 2A 03B5
33 31 21 3C 34 31 21 20 2A 35 21 3E 03C1
      3E 21 2D 2A 03CD
      03D1 166
      03D1 167 MAC$AB_CRF_HDD::
      03D1 168 .ASCID \!43* +!28*--\
      03DF
      03E5 169 MAC$AB_CRF_HDDA::
      03E5 170 .ASCID \!43* !! Directives Cross Reference !!\
73 65 76 69 74 63 65 72 69 44 20 21 03F3
72 65 66 65 52 20 73 73 6F 72 43 20 03FF
      21 21 20 65 63 6E 65 040B
      0412 171 MAC$AB_CRF_Hddb::
      0412 172 .ASCID \!43* +!28*--\
      0420
      0426 173
      0426 174 MAC$AB_CRF_HD4::
      0426 175 .ASCID \!15<DIRECTIVE!>!14<REFERENCES...!>\
49 44 3C 35 31 21 0000042E'010E0000' 0426
34 31 21 3E 21 45 56 49 54 43 45 52 0426
2E 53 45 43 4E 45 52 45 46 45 52 3C 0440
      3E 21 2E 2E 044C
      0450 176 MAC$AB_CRF_HD4A::
      0450 177 .ASCID \!15<9*--!>!14<!13*--!>\
      046A
      046D 178
      046D 179 MAC$AB_CRF_HDG::
      046D 180 .ASCID \!44* +!26*--\
      047B
2B 20 2A 34 34 21 00000475'010E0000' 0481
      2B 2D 2A 36 32 21 0481
21 20 2A 34 34 21 00000489'010E0000' 0481

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153 \!3* .14<!13*--!>\
154
155 MAC$AB_CRF_HDO::
156 .ASCID \!45* +!24*--\
157 MAC$AB_CRF_HDOA::
158 .ASCID \!45* !. Opcode Cross Reference !!\
159 MAC$AB_CRF_HDOB::
160 .ASCID \!45* +!24*--\
161
162 MAC$AB_CRF_HD3::
163 .ASCID \!15<OPCODE!>!5<VALUE!>!5* !14<REFERENCES...!>\
164 MAC$AB_CRF_HD3A::
165 .ASCID \!15<!6*--!>!5<!5*--!>!5* !14<!13*--!>\
166
167 MAC$AB_CRF_HDD::
168 .ASCID \!43* +!28*--\
169 MAC$AB_CRF_HDDA::
170 .ASCID \!43* !! Directives Cross Reference !!\
171 MAC$AB_CRF_Hddb::
172 .ASCID \!43* +!28*--\
173
174 MAC$AB_CRF_HD4::
175 .ASCID \!15<DIRECTIVE!>!14<REFERENCES...!>\
176 MAC$AB_CRF_HD4A::
177 .ASCID \!15<9*--!>!14<!13*--!>\
178
179 MAC$AB_CRF_HDG::
180 .ASCID \!44* +!26*--\
181 MAC$AB_CRF_HDGA::
182 .ASCID \!44* !! Register Cross Reference !!\

```



MAC\$DATA1  
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```

43 20 72 65 74 73 69 67 65 52 20 21 048F
6E 65 72 65 66 65 52 20 73 73 6F 72 049B
      21 21 20 65 65 04A7
2B 20 2A 34 34 21 000004B4'010E0000' 04AC 183 MAC$AB_CRF_HDGB::
      2B 2D 2A 36 32 21 04AC 184 .ASCID \!44* +!26*--+\\
      04BA 185
      04C0 186 MAC$AB_CRF_HD5::
      04C0 187 .ASCID \!10<REGISTER!>!14<NO. REFERENCES!>!5* !14<REFERENCES...!>\\
45 52 3C 30 31 21 000004C8'010E0000' 04C0
3C 34 31 21 3E 21 52 45 54 53 49 47 04CE
43 4E 45 52 45 46 45 52 20 2E 4F 4E 04DA
3C 34 31 21 20 2A 35 21 3E 21 53 45 04E6
2E 2E 53 45 43 4E 45 52 45 46 45 52 04F2
      3E 21 2E 04FE
38 21 3C 30 31 21 00000509'010E0000' 0501 188 MAC$AB_CRF_HD5A::
2A 34 31 21 3C 34 31 21 3E 21 2D 2A 0501 189 .ASCID \!10<!8*--!>!14<!14*--!>!5* !14<!13*--!>\\
21 3C 34 31 21 20 2A 35 21 3E 21 2D 050F
      3E 21 2D 2A 33 31 051B
      0527
2B 20 2A 35 34 21 00000535'010E0000' 052D 190
      2B 2D 2A 34 32 21 052D 191 MAC$AB_IND_HDR::
      053B 192 .ASCID \!45* +!24*--+\\
21 20 2A 35 34 21 00000549'010E0000' 0541 193 MAC$AB_IND_HDRA::
63 6E 61 6D 72 6F 66 72 65 50 20 21 0541 194 .ASCID \!45* !! Performance indicators !!\\
73 72 6F 74 61 63 69 64 6E 69 20 65 054F
      21 21 20 055B
      0567
2B 20 2A 35 34 21 00000572'010E0000' 056A 195 MAC$AB_IND_HDRB::
      2B 2D 2A 34 32 21 056A 196 .ASCID \!45* +!24*--+\\
      0578
68 50 3C 35 32 21 00000586'010E0000' 057E 197
67 61 50 3C 35 31 21 3E 21 65 73 61 057E 198 MAC$AB_RUN_HDR::
31 21 3E 21 73 74 6C 75 61 66 20 65 058C 199 .ASCID \!25<Phase!>!15<Page faults!>!15<CPU Time!>!15<Elapsed Time!>\\
3E 21 65 6D 69 54 20 55 50 43 3C 35 0598
20 64 65 73 70 61 6C 45 3C 35 31 21 05A4
      3E 21 65 6D 69 54 0580
      058C
35 21 3C 35 32 21 000005CA'010E0000' 05C2 200 MAC$AB_RUN_HDRA::
2A 31 31 21 3C 35 31 21 3E 21 2D 2A 05C2 201 .ASCID \!25<!5*--!>!15<!11*--!>!15<!8*--!>!15<!12*--!>\\
21 2D 2A 38 21 3C 35 31 21 3E 21 2D 05D0
3E 21 2D 2A 32 31 21 3C 35 31 21 3E 05DC
      05E8
2B 20 2A 34 34 21 000005FC'010E0000' 05F4 202
      2B 2D 2A 36 32 21 05F4 203 MAC$AB_MLB_HDR::
      0602 204 .ASCID \!44* +!26*--+\\
21 20 2A 34 34 21 00000610'010E0000' 0608 205 MAC$AB_MLB_HDRA::
72 62 69 6C 20 6F 72 63 61 4D 20 21 0608 206 .ASCID \!44* !! Macro Library statistics !!\\
69 74 73 69 74 61 74 73 20 79 72 61 0616
      21 21 20 73 63 0622
      0633
2B 20 2A 34 34 21 0000063B'010E0000' 0633 207 MAC$AB_MLB_HDRB::
      2B 2D 2A 36 32 21 0641 208 .ASCID \!44* +!26*--+\\
      0647 209

```

61 4D 3C 35 34 21 0000064F'010E0000'	0647	210	MAC\$AB_MLB_HD2::
20 79 72 61 72 62 69 6C 20 6F 72 63	0647	211	.ASCID \!45<Macro library name!>\-
	0655		
	0661		
64 20 73 6F 72 63 61 4D 3C 30 32 21	0667	212	\!20<Macros defined!>\
	0673		
	0678		
31 21 3C 35 34 21 00000683'010E0000'	0678	213	MAC\$AB_MLB_HD2A::
	0678	214	.ASCID \!45<!18*-!>\-
	0689		
	068E	215	\!20<!14*-!>\
	0699	216	
	0699	217	MAC\$AB_MLB_FAO::
41 21 3C 35 34 21 000006A1'010E0000'	0699	218	.ASCID \!45<!AS!>!12SL:8* \
20 2A 38 21 4C 53 32 31 21 3E 21 53	06A7		
	06B3	219	
	06B3	220	MAC\$AB_MLB_TOT::
53 4C 41 54 4F 54 000006BB'010E0000'	06B3	221	.ASCID /TOTALS (all libraries)/
72 61 72 62 69 6C 20 6C 6C 61 28 20	06C1		
	06CD		
	06D1	222	
	06D1	223	MAC\$AB_MLB_SUM::
45 47 20 4C 53 21 000006D9'010E0000'	06D1	224	.ASCID \!SL GET!%S !AC required to define !SL macros.\
71 65 72 20 43 41 21 20 53 25 21 54	06DF		
66 65 64 20 6F 74 20 64 65 72 69 75	06EB		
72 63 61 6D 20 4C 53 21 20 65 6E 69	06F7		
	0703		
	0706	225	
	0706	226	MAC\$AB_FAO_TIM::
41 21 3C 35 32 21 0000070E'010E0000'	0706	227	.ASCID \!25<!AC!>!10SL!5* !2ZL:!2ZL:!2ZL.!2ZL!4* !%T\
20 2A 35 21 4C 53 30 31 21 3E 21 43	0714		
32 21 3A 4C 5A 32 21 3A 4C 5A 32 21	0720		
21 20 2A 34 21 4C 5A 32 21 2E 4C 5A	072C		
	0738		
	073A	228	
	073A	229	MAC\$AB_PSS_MSG::
70 6F 6E 79 73 20 74 63 65 73 50 00'	073A	230	.ASCIC /Psect synopsis/
	0746		
	073A		
	0749	231	
	0749	232	MAC\$AB_PSC_HDR::
2B 20 2A 38 34 21 00000751'010E0000'	0749	233	.ASCID \!48* +!16*-+\
	0757		
	075D	234	MAC\$AB_PSC_HDRA::
21 20 2A 38 34 21 00000765'010E0000'	075D	235	.ASCID \!48* !! Psect synopsis !!\
6F 6E 79 73 20 74 63 65 73 50 20 21	076B		
	0777		
	077E	236	MAC\$AB_PSC_HDRB::
2B 20 2A 38 34 21 00000786'010E0000'	077E	237	.ASCID \!48* +!16*-+\
	078C		
	0792	238	
	0792	239	MAC\$AB_PSC_HD2::
53 50 3C 31 33 21 0000079A'010E0000'	0792	240	.ASCID \!31<PSECT name!>!1* !18<Allocation!>!2* \-
31 21 3E 21 65 6D 61 6E 20 54 43 45	07A0		
61 63 6F 6C 6C 41 3C 38 31 21 20 2A	07AC		
	07B8		
2E 6F 4E 20 54 43 45 53 50 3C 39 21	07C2	241	\!9<PSECT No.!>!2* !15<Attributes!>\
74 41 3C 35 31 21 20 2A 32 21 3E 21	07CE		

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3E 21 73 65 74 75 62 69 72 74 07DA
07E4
31 21 3C 31 33 21 000007EC'010E0000' 07E4 242 MAC$AB_PSC_HD2A::
38 31 21 20 2A 31 21 3E 21 2D 2A 30 07F2 243 .ASCID \!31<!10*-!>!1* !18<!10*-!>!2* \-
20 2A 32 21 3E 21 2D 2A 30 31 21 3C 07FE
2A 32 21 3E 21 2D 2A 39 21 3C 39 21 080A 244 \!9<!9*-!>!2* !15<!10*-!>\
3E 21 2D 2A 30 31 21 3C 35 31 21 20 0816
0822
0822 245
0822 246 MAC$AB_LPG_FMT::
29 4C 53 28 23 21 2E 2A 23 21 4C 53 0830 247 .ASCID \!14<!5SL!#*!.#(SL) (!SL)!> \
20 3E 21 29 4C 53 21 28 20 083C
0845
0845 248
0845 249 MAC$AB_PSS_FAO::
41 21 3C 31 33 21 0000084D'010E0000' 0845 250 .ASCID \!31<!AC!>!9XL (!5SL.) !2XB (!3SL.) \
35 21 28 20 20 4C 58 39 21 3E 21 43 0853
28 20 42 58 32 21 20 20 29 2E 4C 53 085F
20 20 29 2E 4C 53 33 21 086B
0873
0873 251
0873 252 MAC$AB_WAS_MSG::
73 61 77 00' 0873 253 .ASCIC /was/
03 0873
0877
0877 254
0877 255 MAC$AB_WERE MG::
65 72 65 77 00' 0877 256 .ASCIC /were/
04 0877
087C
087C 257
087C 258 MAC$AB_NOERRM::
20 65 72 65 68 54 00000884'010E0000' 087C 259 .ASCID \There were no errors, warnings or information messages.\
6F 72 72 65 20 6F 6E 20 65 72 65 77 088A
73 67 6E 69 6E 72 61 77 20 2C 73 72 0896
74 61 6D 72 6F 66 6E 69 20 72 6F 20 08A2
73 65 67 61 73 73 65 6D 20 6E 6F 69 08AE
2E 08BA
08BB
08BB 260
08BB 261 MAC$AB_ERRM::
20 65 72 65 68 54 000008C3'010E0000' 08BB 262 .ASCID \There were !SL error!%S, !SL warning!%S and \ -
72 72 65 20 4C 53 21 20 2C 53 25 21 72 6F 08C9
77 20 4C 53 21 20 2C 53 25 21 72 6F 08D5
6E 61 20 53 25 21 67 6E 69 6E 72 61 08E1
20 64 08ED
74 61 6D 72 6F 66 6E 69 20 4C 53 21 08EF 263 \!SL information message!%S, on lines:\
21 65 67 61 73 73 65 6D 20 6E 6F 69 08FB
73 65 6E 69 6C 20 6E 6F 20 2C 53 25 0907
3A 0913
0914
0914 264 MAC$AB_WSL_FAO::
6F 77 20 65 68 54 0000091C'010E0000' 0914 265 .ASCID \The working set limit was !SL pages.\
69 6C 20 74 65 73 20 67 6E 69 6B 72 0922
20 4C 53 21 20 73 61 77 20 74 69 6D 092E
2E 73 65 67 61 70 093A
0940
0940 266
0940 267 MAC$AB_IFP_FAO::
79 62 20 4C 53 21 00000948'010E0000' 0940 268 .ASCID \!SL bytes (!SL page!%S) of virtual memory\ -
67 61 70 20 4C 53 21 28 20 73 65 74 094E
72 69 76 20 66 6F 20 29 53 25 21 65 095A
79 72 6F 6D 65 6D 20 6C 61 75 74 0966
74 20 64 65 73 75 20 65 72 65 77 20 0971 269 \ were used to buffer the intermediate code.\

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65 68 74 20 72 65 66 66 75 62 20 6F 097D
74 61 69 64 65 6D 72 65 74 6E 69 20 0989
      2E 65 64 6F 63 20 65 0995
      099C 270
      099C 271 MAC$AB_SYP_FAO::
      099C 272      .ASCID \There !AC !SL page!%S of symbol table space allocated\
20 65 72 65 68 54 000009A4'010E0000' 099C
65 67 61 70 20 4C 53 21 20 43 41 21 09AA
6F 62 6D 79 73 20 66 6F 20 53 25 21 09B6
63 61 70 73 20 65 6C 62 61 74 20 6C 09C2
      64 65 74 61 63 6F 6C 6C 61 20 65 09CE
4C 53 21 20 64 6C 6F 68 20 6F 74 20 09D9 273
61 20 6C 61 63 6F 6C 2D 6E 6F 6E 20 09E5
6C 61 63 6F 6C 20 4C 53 21 20 64 6E 09F1
      2F 73 6C 6F 62 6D 79 73 20 09FD
      0A06 274
      0A06 275 MAC$AB_OBSR_FAO::
      0A06 276      .ASCID \!SL source line!%S !AC read in Pass 1, producing\
6F 73 20 4C 53 21 00000A0E'010E0000' 0A06
53 25 21 65 6E 69 6C 20 65 63 72 75 0A14
6E 69 20 64 61 65 72 20 43 41 21 20 0A20
6F 72 70 20 2C 31 20 73 73 61 50 20 0A2C
      67 6E 69 63 75 64 0A38
20 74 63 65 6A 62 6F 20 4C 53 21 20 0A3E 277
6E 69 20 53 25 21 64 72 6F 63 65 72 0A4A
      2E 32 20 73 73 61 50 20 0A56
      0A5E 278
      0A5E 279 MAC$AB_MCD_FAO::
      0A5E 280      .ASCID \!SL page!%S of virtual memory !AC used to define \
61 70 20 4C 53 21 00000A66'010E0000' 0A5E
72 69 76 20 66 6F 20 53 25 21 65 67 0A6C
20 79 72 6F 6D 65 6D 20 6C 61 75 74 0A78
20 6F 74 20 64 65 73 75 20 43 41 21 0A84
      20 65 6E 69 66 65 64 0A90
53 25 21 6F 72 63 61 6D 20 4C 53 21 0A97 281
      2E 0AA3      \!SL macro!%S.\
      0AA4 282
      0AA4 283 MAC$AB_CMD_FAO::
      0AA4 284      .ASCID \!AD\
      0AAF 285
      0AAF 286 :
      0AAF 287 : STRINGS FOLLOWING DESCRIBE THE DIFFERENT TIMES KEPT BY ASSEMBLER
      0AAF 288 :
      0AAF 289 MAC$S_IND_INI:
74 61 7A 69 6C 61 69 74 69 6E 49 00' 0AAF 290      .ASCIC /Initialization/
      6E 6F 69 0ABB
      0E 0AAF
      0ABE 291 MAC$S_IND_CMD:
6F 72 70 20 64 6E 61 6D 6D 6F 43 00' 0ABE 292      .ASCIC /Command processing/
      67 6E 69 73 73 65 63 0ACA
      12 0ABE
      0AD1 293 MAC$S_IND_P1:
      0AD1 294      .ASCIC /Pass 1/
      0AD1
      0AD8 295 MAC$S_IND_SSort:
6C 62 61 74 20 6C 6F 62 6D 79 53 00' 0AD8 296      .ASCIC /Symbol table sort/
      74 72 6F 73 20 65 0AE4
      11 0AD8
      0AEA 297 MAC$S_IND_P2:
      0AEA 298      .ASCIC /Pass 2/
32 20 73 73 61 50 00'

```

```

270
271 MAC$AB_SYP_FAO::
272      .ASCID \There !AC !SL page!%S of symbol table space allocated\
273
      \ to hold !SL non-local and !SL local symbols.\
274
275 MAC$AB_OBSR_FAO::
276      .ASCID \!SL source line!%S !AC read in Pass 1, producing\
277
      \ !SL object record!%S in Pass 2.\
278
279 MAC$AB_MCD_FAO::
280      .ASCID \!SL page!%S of virtual memory !AC used to define \
281
      \!SL macro!%S.\
282
283 MAC$AB_CMD_FAO::
284      .ASCID \!AD\
285
286 :
287 : STRINGS FOLLOWING DESCRIBE THE DIFFERENT TIMES KEPT BY ASSEMBLER
288 :
289 MAC$S_IND_INI:
290      .ASCIC /Initialization/
291
292
293 MAC$S_IND_CMD:
294      .ASCIC /Command processing/
295
296
297 MAC$S_IND_P1:
298      .ASCIC /Pass 1/
299
300
301 MAC$S_IND_SSort:
302      .ASCIC /Symbol table sort/
303
304
305 MAC$S_IND_P2:
306      .ASCIC /Pass 2/

```



DATA STORAGE

```

0B7F 347 :
0B7F 348 :
0B7F 349 : POINTER TO CREF HEADER MESSAGES (THE ONES SURROUNDED BY BOXES).
0B7F 350 :
0B7F 351 MACSAL_CRF_TB1::
00000067' 0B7F 352 .LONG MACSAB_CRF_HDR ;SYMBOLS
000001C0' 0B83 353 .LONG MACSAB_CRF_HDM ;MACROS
00000321' 0B87 354 .LONG MACSAB_CRF_HDO ;OPCODES
000003D1' 0B8B 355 .LONG MACSAB_CRF_HDD ;DIRECTIVES
0000046D' 0B8F 356 .LONG MACSAB_CRF_HDG ;REGISTERS
0B93 357 :
0B93 358 MACSAL_CRF_TB1A::
0000007B' 0B93 359 .LONG MACSAB_CRF_HDRA ;SYMBOLS
000001D4' 0B97 360 .LONG MACSAB_CRF_HDMA ;MACROS
00000335' 0B9B 361 .LONG MACSAB_CRF_HDOA ;OPCODES
000003E5' 0B9F 362 .LONG MACSAB_CRF_HDDA ;DIRECTIVES
00000481' 0BA3 363 .LONG MACSAB_CRF_HDGA ;REGISTERS
0BA7 364 :
0BA7 365 MACSAL_CRF_TB1B::
000000A4' 0BA7 366 .LONG MACSAB_CRF_HDRB ;SYMBOLS
000001FD' 0BAB 367 .LONG MACSAB_CRF_HDMB ;MACROS
0000035E' 0BAF 368 .LONG MACSAB_CRF_HDOB ;OPCODES
00000412' 0BB3 369 .LONG MACSAB_CRF_Hddb ;DIRECTIVES
000004AC' 0BB7 370 .LONG MACSAB_CRF_HDGB ;REGISTERS
0BBB 371 :
0BBB 372 :
0BBB 373 : POINTER TO CREF SECONDARY HEADER MESSAGES (NAME, VALUE, REFERENCES...)
0BBB 374 :
0BBB 375 MACSAL_CRF_TB2::
00000088' 0BBB 376 .LONG MACSAB_CRF_HD1 ;SYMBOLS
00000211' 0BBF 377 .LONG MACSAB_CRF_HD2 ;MACROS
00000372' 0BC3 378 .LONG MACSAB_CRF_HD3 ;OPCODES
00000426' 0BC7 379 .LONG MACSAB_CRF_HD4 ;DIRECTIVES
000004C0' 0BCB 380 .LONG MACSAB_CRF_HD5 ;REGISTERS
0BCF 381 :
0BCF 382 MACSAL_CRF_TB2A::
00000102' 0BCF 383 .LONG MACSAB_CRF_HD1A ;SYMBOLS
0000025C' 0BD3 384 .LONG MACSAB_CRF_HD2A ;MACROS
000003A7' 0BD7 385 .LONG MACSAB_CRF_HD3A ;OPCODES
00000450' 0BDB 386 .LONG MACSAB_CRF_HD4A ;DIRECTIVES
00000501' 0BDF 387 .LONG MACSAB_CRF_HD5A ;REGISTERS
0BE3 388 :
0BE3 389 : POINTER TO CREF SECONDARY HEADER MESSAGES (NAME, VALUE, REFERENCES...)
0BE3 390 : FOR WIDE COLUMN LISTINGS
0BE3 391 :
0BE3 392 MACSAL_CRF_TB2W::
0000013C' 0BE3 393 .LONG MACSAB_CRF_HD1W ;SYMBOLS
00000299' 0BE7 394 .LONG MACSAB_CRF_HD2W ;MACROS
00000372' 0BEB 395 .LONG MACSAB_CRF_HD3 ;OPCODES
00000426' 0BEF 396 .LONG MACSAB_CRF_HD4 ;DIRECTIVES
000004C0' 0BF3 397 .LONG MACSAB_CRF_HD5 ;REGISTERS
0BF7 398 :
0BF7 399 MACSAL_CRF_TB2WA::
00000186' 0BF7 400 .LONG MACSAB_CRF_HD1WA ;SYMBOLS
000002E4' 0BFB 401 .LONG MACSAB_CRF_HD2WA ;MACROS
000003A7' 0BFF 402 .LONG MACSAB_CRF_HD3A ;OPCODES
00000450' 0C03 403 .LONG MACSAB_CRF_HD4A ;DIRECTIVES

```

\$\$SY  
\$\$SY  
\$\$SY  
\$\$SY  
\$\$SY  
\$\$SY  
\$\$SY  
\$\$SY  
\$\$SY

\$\$SY  
\$\$SY  
\$\$SY  
\$\$SY  
\$\$SY  
\$\$SY

:++

:-

=0

PSC  
PSC  
PSC  
PSC  
PSC  
PSC  
PSC

:++

:-



MACSDATA1  
V04-000

N 3

16-SEP-1984 01:52:47 VAX/VMS Macro V04-00  
5-SEP-1984 01:47:53 [MACRO.SRC]DATA1.MAR;1

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DATA STORAGE

00000000'	OC5D	461
00000000'	OC61	462
	OC65	463
	OC65	464

.LONG	SYMBOLFIELD_31	; Symbols
.LONG	MACROFIELD_31	; Macros
.END		

```

.==
.==0
INP
INP
INP
INP
INP
INP
INP
INP
INP

INP
INP
INP

.=0
INP

.==
.==0
MNB
MNB
MNB
MNB
MNB
MNB
MNB
MNB
MNB
MNB
MNB
MNB
MNB

```







MACSS\_IND\_CRF 00000B1B R 01  
MACSS\_IND\_INI 00000AAF R 01  
MACSS\_IND\_P1 00000AD1 R 01  
MACSS\_IND\_P2 00000AEA R 01  
MACSS\_IND\_PSY 0C000B05 R 01  
MACSS\_IND\_S SORT 00000AD8 R 01  
MACSS\_IND\_SYOUT 00000AF1 R 01  
MACSS\_IND\_TOT 00000B32 R 01  
MACROFIELD \*\*\*\*\* X 01  
MACROFIELD\_31 \*\*\*\*\* X 01  
OPFSM\_LASTOPR = 00002000  
OPFSM\_OPTEXP = 00001000  
OPFSV\_LASTOPR = 0000000D  
OPFSV\_OPTEXP = 0000000C  
SYMBOLFIELD \*\*\*\*\* X 01  
SYMBOLFIELD\_31 \*\*\*\*\* X 01  
X1 = 00000033  
X2 = 00080000

-----  
! Psect synopsis !  
-----

PSECT name	Allocation	PSECT No.	Attributes
ABS	00000000 ( 0.)	00 ( 0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
MACRO_DATA	00000C65 ( 3173.)	01 ( 1.)	NOPIC USR CON REL GBL NOSHR NOEXE RD NOWRT NOVEC LONG

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

Phase	Page faults	CPU Time	Elapsed Time
Initialization	35	00:00:00.07	00:00:03.80
Command processing	154	00:00:00.44	00:00:04.74
Pass 1	160	00:00:01.46	00:00:06.13
Symbol table sort	0	00:00:00.21	00:00:00.50
Pass 2	123	00:00:00.99	00:00:03.62
Symbol table output	29	00:00:00.13	00:00:00.36
Psect synopsis output	1	00:00:00.01	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	504	00:00:03.32	00:00:19.18

The working set limit was 1050 pages.  
21942 bytes (43 pages) of virtual memory were used to buffer the intermediate code.  
There were 20 pages of symbol table space allocated to hold 246 non-local and 0 local symbols.  
464 source lines were read in Pass 1, producing 27 object records in Pass 2.  
1 page of virtual memory was used to define 1 macro.

MTX  
MTX  
MTX  
MTX  
MTX  
MTX  
MTX

M  
M  
M  
M  
M

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

Macro library name	Macros defined
-----	-----
_\$255\$DUA28:[MACRO.OBJ]MACRO.MLB;1	2
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	0
TOTALS (all libraries)	2

88 GETS were required to define 2 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:DATA1/OBJ=OBJ\$:DATA1 MSRC\$:DATA1/UPDATE=(ENHS\$:DATA1)+LIB\$:MACRO/LIB

. = 0  
MLF  
MLF  
MLF  
MLF  
MLF

The image displays a grid of 100 small terminal window screenshots, arranged in 10 rows and 10 columns. Each window shows a different VAX/VMS command and its corresponding output. The windows are densely packed and cover most of the page. Several windows are clearly legible and labeled with their command names:

- DATA LIS
- DEFINE LIS
- FLOAT LIS
- ERRMSG LIS
- GETARG LIS
- DATA LIS
- INPUT LIS
- ERROR LIS
- FINISH LIS
- GETCMD LIS

The other windows show various system outputs, including file listings, directory structures, and command execution results. The overall appearance is that of a comprehensive reference manual for VAX/VMS commands.