


```

MM       MM      MM      MM      GGGGGGGG    CCCCCCCC    RRRRRRRR    TTTTTTTTTT    DDDDDDDD    EEEEEEEEEEE    LL
MM       MM      MM      MM      GGGGGGGG    CCCCCCCC    RRRRRRRR    TTTTTTTTTT    DDDDDDDD    EEEEEEEEEEE    LL
MMM      MMM     MMM     MMM     GG         CC         RR          RR       TT          DD          DD    EE           LL
MMM      MMM     MMM     MMM     GG         CC         RR          RR       TT          DD          DD    EE           LL
MM       MM      MM      MM      GG         CC         RR          RR       TT          DD          DD    EE           LL
MM       MM      MM      MM      GG         CC         RR          RR       TT          DD          DD    EE           LL
MM       MM      MM      MM      GG         CC         RRRRRRRR    TTT          DD          DD    EEEEEEEEEE    LL
MM       MM      MM      MM      GG         CC         RRRRRRRR    TTT          DD          DD    EEEEEEEEEE    LL
MM       MM      MM      MM      GG   GGGGGG    CC         RR   RR     TT          DD          DD    EE           LL
MM       MM      MM      MM      GG   GGGGGG    CC         RR   RR     TT          DD          DD    EE           LL
MM       MM      MM      MM      GG           GG    CC         RR      RR  TT          DD          DD    EE           LL
MM       MM      MM      MM      GG           GG    CC         RR      RR  TT          DD          DD    EE           LL
MM       MM      MM      MM      GGGGGG      CCCCCCCC    RR          RR     TT          DDDDDDDD    EEEEEEEEEEE    LLLLLLLLLLL
MM       MM      MM      MM      GGGGGG      CCCCCCCC    RR          RR     TT          DDDDDDDD    EEEEEEEEEEE    LLLLLLLLLLL

```

```

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       S;
LLLLLLLLLLLL      IIIIII    SSSSSSSS
LLLLLLLLLLLL      IIIIII    SSSSSSSS

```

(2)	48	DECLARATIONS
(2)	52	MACROS
(3)	139	DATA STORAGE AND MESSAGE STRINGS
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(10)	446	MISCELLANEOUS SUBROUTINES

```
0000 1 :  
0000 2 : MEMORY MANAGEMENT SERVICES TEST #3  
0000 3 :  
0000 4 :  
0000 5 : .TITLE MMGCRTDEL - TEST OF SCRETVA/$DELTVA SYSTEM SERVICES  
0000 6 : ..IDENT 'V04-000'  
0000 7 :  
0000 8 : *****  
0000 9 : *  
0000 10 : * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY *  
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0000 28 : *  
0000 29 : *****  
0000 30 :  
0000 31 : **  
0000 32 : FACILITY: USER MODE MEMORY MANAGEMENT SERVICES TEST  
0000 33 :  
0000 34 : ABSTRACT: THIS SET OF ROUTINES TESTS THE MEMORY MANAGEMENT SERVICES  
0000 35 :  
0000 36 : ENVIRONMENT: USER MODE DIAGNOSTIC  
0000 37 :  
0000 38 : AUTHOR: PETER H. LIPMAN , CREATION DATE: 6-JAN-77  
0000 39 :  
0000 40 : MODIFIED BY:  
0000 41 :  
0000 42 : V02-012 SHZ0003 Stephen Zalewski 20-Aug-1980  
0000 43 : Added further tests to system services tested in this  
0000 44 : program. Also incorporated program into MMG test  
0000 45 : package.  
0000 46 :
```

```

0000 48      .SBTTL  DECLARATIONS
0000 49      :
0000 50      : INCLUDE FILES:
0000 51      :
0000 52      :      .SBTTL  MACROS
0000 53      :
0000 54      :      MACROS:
0000 55      :
0000 56      .MACRO  LIST
0000 57      .LIST   MEB
0000 58      .ENDM   LIST
0000 59
0000 60      .MACRO  NLIST
0000 61      .NLIST  MEB
0000 62      .ENDM   NLIST
0000 63
0000 64      .MACRO  CRETVA STARTVA,ENDVA,STATUS=S^#SS$ NORMAL,-
0000 65      LIST      INADR=W^INRANGE,RETADR=W^RETRANGE
0000 66
0000 67      .IF      NB,STARTVA
0000 68      MOVL    STARTVA,W^INRANGE
0000 69      .ENDC
0000 70      .IF      NB,ENDVA
0000 71      MOVL    ENDVA,W^INRANGE+4
0000 72      .ENDC
0000 73      MOVZWL  STATUS,R3
0000 74      MOVAL   INADR,R0
0000 75      MOVAL   RETADR,R1
0000 76      BSBW    CRETVA$UBR
0000 77      NLIST
0000 78      .ENDM   CRETVA
0000 79
0000 80      .MACRO  DELTVA STARTVA,ENDVA,STATUS=S^#SS$ NORMAL,-
0000 81      LIST      INADR=W^INRANGE,RETADR=W^RETRANGE
0000 82
0000 83      .IF      NB,STARTVA
0000 84      MOVL    STARTVA,W^INRANGE
0000 85      .ENDC
0000 86      .IF      NB,ENDVA
0000 87      MOVL    ENDVA,W^INRANGE+4
0000 88      .ENDC
0000 89      MOVZWL  STATUS,R3
0000 90      MOVAL   INADR,R0
0000 91      MOVAL   RETADR,R1
0000 92      BSBW    DELTVA$UBR
0000 93      NLIST
0000 94      .ENDM   DELTVA
0000 95
0000 96      .MACRO  EXPREG  PAGCNT,REGION=#0,STATUS=S^#SS$_NORMAL,-
0000 97      LIST      RETADR=W^RETRANGE
0000 98
0000 99      MOVZWL  STATUS,R3
0000 100     MOVL    PAGCNT,R4
0000 101     MOVAL   RETADR,R1
0000 102     .IF      IDN,<REGION>,<#0>
0000 103     CLRL    R5
0000 104     .IFF
  
```

```

0000 105          MOVL   REGION,R5
0000 106          .ENDC
0000 107          BSBW   EXPREGSUBR
0000 108          NLIST
0000 109          .ENDM  EXPREG
0000 110
0000 111          .MACRO RANGECHK ONOROFF
0000 112          LIST
0000 113          .IF    IDN <ONOROFF>,<OFF>
0000 114          BICL   #CTLSM_RNGCHK,W^CTLFLG
0000 115          .IFF
0000 116          BISL   #CTLSM_RNGCHK,W^CTLFLG
0000 117          .ENDC
0000 118          NLIST
0000 119          .ENDM  RANGECHK
0000 120
0000 121          :
0000 122          : EQUATED SYMBOLS:
0000 123          :
0000 124          $SSDEF
0000 125          $SECDEF
0000 126          $PRTDEF
0000 127          $GBLINI
0000 128          $VIELD CTL,0,<-
0000 129          <MEMLOOP,,MASK>,-
0000 130          <TSTLOOP,,MASK>,-
0000 131          <PIDMSG,,MASK>,-
0000 132          <RNGCHK,,MASK>-
0000 133          >
00000010 0000 134          PRT$C_NONE=104
0000 135          :
0000 136          : OWN STORAGE:
0000 137          :

```

```

;DEFINE CONTROL BITS IN R3
;LOOP IN MEMORY WRITE LOOP
;REDO ENTIRE TEST FROM TOP
;PUT PROCESS ID IN EACH TYPEOUT
;ON IF CHECKING RETURN RANGE

```

MMG
Syr
SS
SS
SS
SS
SS
SS
BI
CHE
CHE
CRI
CRI
CRI
CRI
CTI
CTI
CTI
CTI
CTI
CTI
CTI
DEI
DEI
DEI
DEI
EXI
EXI
EXI
FAI
FAI
FAI
FAI
FAI
FAI
FAI
FAI
FAI
HIC
IDI
IDI
INI
MA
MSI
MSI
MSI
MSI
OU
OU

```

0000 139 .SBTTL DATA STORAGE AND MESSAGE STRINGS
00000000 140 .PSECT DATA0,PAGE,WRT,NOEXE
00000008 0000 141 INRANGE:
00000008 0000 142 .BLKL 2
00000010 0008 143 RETRANGE:
00000006 0010 144 .BLKL 2
00000018 0014 145 CTLFLG: .LONG CTL$M_TSTLOOP!CTL$M_PIDMSG
00000018 0018 146 SAVEND: .BLKL 1
0000001C 0018 147 HIGHPOADR:
00000020 001C 148 .BLKL 1 ;LAST BYTE ADDRESS IN PO SPACE
00000020 0020 149 PID: .BLKL 1 ;PROCESS ID
00000003 0020 150 MAXPASSCNT:
00000024 0024 151 .LONG 3 ;NUMBER OF PASSES TO RUN
00000028 0024 152 PASSCNT:
00000028 0028 153 .BLKL 1 ;PASS COUNTER
00000028 0028 154 PREVPROT:
00000078 0078 155 FAB: $FAB FAC=PUT, FNA=OUTNAMADR, FNS=OUTNAMSIZ ;FAB FOR OUTPUT
000000C0 00BC 156 RAB: $RAB FAB=FAB ;RECORD ACCESS BLOCK FOR OUTPUT
000000DE'000000A0' 00C0 157 MSGLEN: .BLKL 1 ;RETURN LENGTH FROM FAO
000000DA'00000004' 00C8 158 MSGBUFD: .LONG MSGBUFSIZ,MSGBUF ;MESSAGE BUFFER DESCRIPTOR
000000DA'00000004' 00C8 159 PIDMSGD:
00D0 160 .LONG MSGBUF-PIDMSG,PIDMSG
00D0 161 :
00D0 162 : ***** DO NOT SEPARATE OR REORDER THE FOLLOWING LINES
00D0 163 :
00D0 164 MSGBUFID:
20 53 53 45 43 0A 0D 00D0 165 CRLF: .BYTE ^015,^012
20 20 20 20 00D2 166 .ASCII $PROCESS $
0000017E 00DE 167 PIDMSG: .ASCII $ $
000000A0 017E 168 MSGBUF: .BLKB 160 ;MESSAGE BUFFER USED BY FAO
017E 169 MSGBUFSIZ=-MSGBUF
017E 170 :
017E 171 : ***** DO NOT SEPARATE OR REORDER THE PRECEEDING LINES
017E 172 :

```

MMG
Psc

PSI
-
\$AI
DA
COI

Ph
-
In
Co
Pa
Syl
Pa
Syl
Psc
Cre
As

The
64
The
48
41

Ma
-
-
TO
11
Th
MA

```

00000000 174 .PSECT CODE,PAGE,NOWRT,EXE
0000 175
54 55 50 54 55 4F 24 53 59 53 0000 176 OUTNAMADR:
0000000A 000A 177 .ASCII /SYS$OUTPUT/
000A 178 OUTNAMSIZ=-OUTNAMADR
000A 179
52 52 45 20 41 56 54 45 52 43 2F 21 000A 180 CRETVAERRADR:
58 21 20 3D 20 43 50 20 2D 20 52 4F 0016 181 .ASCII $!/CRETVA ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
41 57 20 53 55 54 41 54 53 20 2C 4C 0022
4C 55 4F 48 53 20 2C 4C 58 21 20 53 002E
21 20 3D 20 52 44 41 4E 49 09 2F 21 003A
52 20 20 2C 4C 58 21 20 2D 20 4C 58 0042 182 .ASCII $!/ INADR = !XL - !XL, RETADR = !XL - !XL!/$
20 4C 58 21 20 3D 20 52 44 41 54 45 004E
2F 21 4C 58 21 20 2D 005A
00000063 006D 183 CRETVAERRSIZ=-CRETVAERRADR
006D 184
52 52 45 20 41 56 54 4C 45 44 2F 21 006D 185 DELTVAERRADR:
58 21 20 3D 20 43 50 20 2D 20 52 4F 0079 186 .ASCII $!/DELTVA ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
41 57 20 53 55 54 41 54 53 20 2C 4C 0085
4C 55 4F 48 53 20 2C 4C 58 21 20 53 0091
21 20 3D 20 52 44 41 4E 49 09 2F 21 009D
52 20 20 2C 4C 58 21 20 2D 20 4C 58 00A5 187 .ASCII $!/ INADR = !XL - !XL, RETADR = !XL - !XL!/$
20 4C 58 21 20 3D 20 52 44 41 54 45 00B1
2F 21 4C 58 21 20 2D 00C9
00000063 00D0 188 DELTVAERRSIZ=-DELTVAERRADR
00D0 189
52 52 45 20 47 45 52 50 58 45 2F 21 00D0 190 EXPREGERRADR:
58 21 20 3D 20 43 50 20 2D 20 52 4F 00DC 191 .ASCII $!/EXPREG ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
41 57 20 53 55 54 41 54 53 20 2C 4C 00E8
4C 55 4F 48 53 20 2C 4C 58 21 20 53 00F4
20 3D 20 54 4E 43 47 41 50 09 2F 21 0100
20 4E 4F 49 47 45 52 20 2C 4C 53 21 0108 192 .ASCII $!/ PAGCNT = !SL, REGION = P!UB SPACE, $
45 43 41 50 53 20 42 55 21 50 20 3D 0114
20 2C 0120
4C 58 21 20 3D 20 52 44 41 54 45 52 012C
2F 21 4C 58 21 20 2D 20 013A 193 .ASCII $RETADR = !XL - !XL!/$
00000072 0142 194 EXPREGERRSIZ=-EXPREGERRADR
0142 195
4E 41 52 20 4E 52 55 54 45 52 2F 21 0142 196 RANGERRADR:
4C 20 2D 20 52 4F 52 52 45 20 45 47 014E 197 .ASCII $!/RETURN RANGE ERROR - LOCATION = !XL$
58 21 20 3D 20 4E 4F 49 54 41 43 4F 015A
21 20 3D 20 52 44 41 4E 49 09 2F 21 0166
45 52 20 2C 4C 58 21 20 2D 20 4C 58 0167 198 .ASCII $!/ INADR = !XL - !XL, RETADR = !XL - !XL!/$
2D 20 4C 58 21 20 3D 20 52 44 41 54 0173
2F 21 4C 58 21 20 017F
0000004F 018B 199 RANGERRSIZ=-RANGERRADR
0191 200
4E 41 4D 20 59 52 4F 4D 45 4D 2F 21 0191 201 IDMSGADR:
0191 202 .ASCII $!/MEMORY MANAGEMENT SERVICES TEST #3 (CRTDEL), PASS !UL!/$

```


56	52	45	53	20	54	4E	45	4D	45	47	41	019D
33	23	20	54	53	45	54	20	53	45	43	49	01A9
50	20	2C	29	4C	45	44	54	52	43	28	20	01B5
			2F	21	4C	55	21	20	53	53	41	01C1
									00000039			01CA
												01CA
												01CA
20	20	2A	2A	2A	2A	2A	20	20	20	2F	21	01CA
4E	20	4C	4C	49	57	20	54	53	45	54	20	01D6
53	55	20	4E	55	52	20	45	42	20	57	4F	01E2
20	52	41	4C	55	47	45	52	20	47	4E	49	01EE
2A	20	20	20	45	43	41	50	53	20	41	56	01FA
								2A	2A	2A	2A	0206
								20	2F	21		020A
								00000043				020D
												020D
												020D
												020D
												020D
												0210
												0210

```

203          IDMSGsiz=-IDMSGADR
204
205 RUN1_MSGADR:
206          .ASCII $!/ ***** TEST WILL NOW BE RUN USING REGULAR VA SPACE *****$

207          .ASCII $!/ $
208          RUN1_MSGsiz=-RUN1_MSGADR
209
210 PIDCTLADR:
211          .ASCII $!UL$
212          PIDCTLSiz=-PIDCTLADR

```

```
0210 214 :  
0210 215 : STRING DESCRIPTORS  
0210 216 :  
0210 217 .ALIGN LONG  
0210 218  
0210 219 CRETVAERR:  
0000000A'00000063 0210 220 .LONG CRETVAERRSIZ,CRETVAERRADR  
0218 221 DELTVAERR:  
0000006D'00000063 0218 222 .LONG DELTVAERRSIZ,DELTVAERRADR  
0220 223 EXPREGERR:  
000000D0'00000072 0220 224 .LONG EXPREGERRSIZ,EXPREGERRADR  
0228 225 RANGERR:  
00000142'0000004F 0228 226 .LONG RANGERRSIZ,RANGERRADR  
0230 227 IDMSG:  
00000191'00000039 0230 228 .LONG IDMSGsiz,IDMSGADR  
0238 229 RUN1_MSG:  
000001CA'00000043 0238 230 .LONG RUN1_MSGSIZ,RUN1_MSGADR  
0240 231 PIDCTL:  
0000020D'00000003 0240 232 .LONG PIDCTLSIZ,PIDCTLADR  
0248 233
```

```

0248 235 .SBTTL INITIALIZATION
0248 236 :*****
0248 237 :PROGRAM DESCRIPTION:
0248 238 :
0248 239 : THIS PROGRAM TESTS THE FOLLOWING SYSTEM SERVICES:
0248 240 : $CRETVA, $DELTVA
0248 241 :
0248 242 : THE PROGRAM FORCES POSSIBLE ERROR PATHS FOR THE ABOVE MENTIONED
0248 243 : SYSTEM SERVICES. THREE PASSES ARE MADE THROUGH THE TEST LOOP
0248 244 : TO ENSURE PATH REPEATABILITY. ONLY REGULAR VA SPACE IS USED IN
0248 245 : THIS TEST PROGRAM.
0248 246 :
0248 247 : REFER TO MASDS:[MMGSTS.COM]MMGTST.RAP FOR FURTHER INFORMATION
0248 248 : REGARDING JUST HOW COMPLETELY THE ABOVE MENTIONED SYSTEM SERVICES
0248 249 : ARE TESTED BY THIS PROGRAM.
0248 250 :
0248 251 : *PRIVILEGES:
0248 252 : THIS PROGRAM NEEDS NO SPECIAL PRIVILEGES TO EXECUTE.
0248 253 :*****
0248 254 :
0248 255 : START HERE
0248 256 :
0000 0248 257 START: .WORD 0 ;ENTRY MASK
OE 50 E9 024A 258 $OPEN W^FAB ;OPEN THE FILE '$OUTPUT'
09 50 E8 0255 259 BLBC RO,10$ ;BRANCH IF ERROR
00000024'EF 01 D0 0258 260 $CONNECT W^RAB ;CONNECT THE RECORD ACCESS BLOCK
50 0000001C'EF 3C 0263 261 BLBS RO,20$
0266 262 10$: $EXIT_S RO ;EXIT WITH STATUS IN RO
026F 263 20$: MOVL #1,PASSCNT ;INITIALIZE THE PASS COUNT
0276 264 $RESUME_S PID ;SET UP PROCESS ID
0285 265 MOVZWL -PID,RO
028C 266 $FAO_S PIDCTL,MSGLEN,PIDMSGD,RO ;INIT THE PROCESS ID STRING
02A4 267 :
02A4 268 : INFORM OPERATOR THAT TESTS WILL BE RUN USING ONLY NORMAL VA SPACE
02A4 269 :
0010'CF 038A 30 02A4 270 $FAO_S RUN1 MSG,MSGLEN,MSGBUFD ;INFORM OPR NORMAL VA USED FOR TESTS
0010'CF 04 CA 02BA 271 BSBW TYPEMSGBUF
02BD 272 BICL #CTL$M_PIDMSG,W^CTLFLG ;STOP PROCESS ID FROM PRINTING
02C2 273 RSTART:
0010'CF 08 C8 02C2 274 RANGECHK ON
02C7 275 $FAO_S IDMSG,MSGLEN,MSGBUFD,PASSCNT
0360 30 02E4 276 BSBW TYPEMSGBUF
02E7 277 EXPREG #1
53 01 3C 02E7 MOVZWL S^#SS$ _NORMAL,R3
54 01 D0 02EA MOVL #1,R4
51 0008'CF DE 02ED MOVAL W^RETRANGE,R1
55 D4 02F2 CLRL R5
026D 30 02F4 BSBW EXPREGSUBR
52 0008'CF 7D 02F7 278 MOVQ W^RETRANGE,R2
0000'CF 52 7D 02FC 279 MOVQ R2,W^INRANGE
0014'CF 52 D0 0301 280 MOVL R2,W^SAVEND
0306 281

```

```

0306 283 .SBTTL FORCE ERRORS IN CRETVA
0306 284 :
0306 285 : FORCE ERRORS FROM CRETVA
0306 286 :
0306 287 :
0000'CF 80000200 8F DO 0306 CRETVA #^X80000200,#^X80000A00,#SS$ NOPRIV ;SYSTEM ADDRESS
0004'CF 80000A00 8F DO 030F MOVL #^X80000200,W^INRANGE
53 24 3C 0318 MOVL #^X80000A00,W^INRANGE+4
50 0000'CF DE 031B MOVZWL #SS$ NOPRIV,R3
51 0008'CF DE 0320 MOVAL W^INRANGE,R0
01C1 30 0325 MOVAL W^RETRANGE,R1
0328 288 CRETVA #^X7FFEC801,#^X7FFECD01,#SS$ PAGOWNVIO ;KERNAL STACK
0000'CF 7FFEC801 8F DO 0328 MOVL #^X7FFEC801,W^INRANGE
0004'CF 7FFECD01 8F DO 0331 MOVL #^X7FFECD01,W^INRANGE+4
53 01EC 8F 3C 033A MOVZWL #SS$ PAGOWNVIO,R3
50 0000'CF DE 033F MOVAL W^INRANGE,R0
51 0008'CF DE 0344 MOVAL W^RETRANGE,R1
019D 30 0349 BSBW CRETVASUBR
034C 289 CRETVA W^SAVEND,#1@30-1,#SS$ VASFULL ;FILL THE PAGE TABLE
0000'CF 0014'CF DO 034C MOVL W^SAVEND,W^INRANGE
0004'CF 3FFFFFFF 8F DO 0353 MOVL #1@30-1,W^INRANGE+4
53 0244 8F 3C 035C MOVZWL #SS$ VASFULL,R3
50 0000'CF DE 0361 MOVAL W^INRANGE,R0
51 0008'CF DE 0366 MOVAL W^RETRANGE,R1
017B 30 036B BSBW CRETVASUBR
0018'CF 000C'CF DO 036E 290 MOVL W^RETRANGE+4,W^HIGHPOADR ;SAVE HIGH ADDRESS
0000'CF 0008'CF 7D 0375 291 MOVQ W^RETRANGE,W^INRANGE
037C 292 CRETVA
53 01 3C 037C MOVL S^#SS$ NORMAL,R3
50 0000'CF DE 037F MOVAL W^INRANGE,R0
51 0008'CF DE 0384 MOVAL W^RETRANGE,R1
015D 30 0389 BSBW CRETVASUBR
038C 293 :
038C 294 : CONTINUE FORCING CRETVA ERRORS
038C 295 :
038C 296 :
53 01 3C 038C DELTVA ;DELETE WHAT WAS CREATED
50 0000'CF DE 038F MOVL S^#SS$ NORMAL,R3
51 0008'CF DE 0394 MOVAL W^INRANGE,R0
0161 30 0399 MOVAL W^RETRANGE,R1
52 0014'CF DO 039C 297 MOVL W^SAVEND,R2
0000'CF 52 DO 03A1 298 MOVL R2,W^INRANGE
0004'CF 0600 C2 DE 03A6 299 MOVAL ^X600(R2),W^INRANGE+4
03AD 300 CRETVA ;CREATE 4 PAGES
53 01 3C 03AD MOVL S^#SS$ NORMAL,R3
50 0000'CF DE 03B0 MOVAL W^INRANGE,R0
51 0008'CF DE 03B5 MOVAL W^RETRANGE,R1
012C 30 03BA BSBW CRETVASUBR
0200 C2 62 62 90 03BD 301 MOV B(R2),R2
0200 C2 90 03C0 302 MOV B ^X200(R2),^X200(R2) ;REFERENCE FIRST 2
03C7 303 CRETVA ;CREATE OVER THEM (DELETE 1ST)
53 01 3C 03C7 MOVL S^#SS$ NORMAL,R3
50 0000'CF DE 03CA MOVAL W^INRANGE,R0
51 0008'CF DE 03CF MOVAL W^RETRANGE,R1
0112 30 03D4 BSBW CRETVASUBR
53 01 3C 03D7 304 DELTVA ;DELETE THEM ALL
03D7

```

CR
SY
SS
SS
SS
SS
SS
SS
EX
FAI
FAI
FAI
FAI
FAI
FAI
FAI
FAI
FAI
FAI
FAI
FAI
FAI
FAI
NEI
NEI
NOI
RAI
RAI
RAI
RAI
RAI
STA
SY
SY
SY
SY

PSI
--
DA
SA
SR
MA

50	0000'CF	DE	03DA		MOVAL	W^INRANGE,R0	
51	0008'CF	DE	03DF		MOVAL	W^RETRANGE,R1	
	0116	30	03E4		BSBW	DELTVASUBR	
			03E7	305	CRETVA	STATUS=#SS\$_ACCVIO,-	
			03E7	306		INADR=W^4	;INACCESSIBLE INPUT RANGE
	53 OC	3C	03E7		MOVZWL	#SS\$_ACCVIO,R3	
50	0004'CF	DE	03EA		MOVAL	W^4,R0	
51	0008'CF	DE	03EF		MOVAL	W^RETRANGE,R1	
	00F2	30	03F4		BSBW	CRETVASUBR	
			03F7	307	CRETVA	STATUS=#SS\$_ACCVIO,-	
			03F7	308		RETADR=W^8	;INACCESSIBLE RETURN RANGE
	53 OC	3C	03F7		MOVZWL	#SS\$_ACCVIO,R3	
50	0000'CF	DE	03FA		MOVAL	W^INRANGE,R0	
51	0008'CF	DE	03FF		MOVAL	W^8,R1	
	00E2	30	0404		BSBW	CRETVASUBR	

```

0407 310 .SBTTL FORCE ERRORS FROM DELTVA
0407 311 :
0407 312 : FORCE ERRORS FROM DELTVA
0407 313 :
0407 314
0010'CF 08 CA 0407 RANGECHK OFF
                                BICL #CTLSM_RNGCHK,W^CTLFLG
040C 315 DELTVA ;DELETE LENVIO
                                MOVZWL S^#SS$ NORMAL,R3
50 53 01 3C 040C
0000'CF DE 040F MOVAL W^INRANGE,R0
51 0008'CF DE 0414 MOVAL W^RETRANGE,R1
                                OOE1 30 0419 BSBW DELTVASUBR
                                041C 316 RANGECHK ON
0010'CF 08 CB 041C
                                0421 317 DELTVA #X80000200,#X80000A00,#SS$ NOPRIV ;SYSTEM ADDRESS
0000'CF 80000200 8F DO 0421 MOVL #X80000200,W^INRANGE
0004'CF 80000A00 8F DO 042A MOVL #X80000A00,W^INRANGE+4
                                53 24 3C 0433 MOVZWL #SS$ NOPRIV,R3
50 0000'CF DE 0436 MOVAL W^INRANGE,R0
51 0008'CF DE 043B MOVAL W^RETRANGE,R1
                                O0BA 30 0440 BSBW DELTVASUBR
0000'CF 00 DO 0443 DELTVA #0,#0 ;ALREADY DELETED
0004'CF 00 DO 0448 MOVL #0,W^INRANGE
                                53 01 3C 044D MOVL #0,W^INRANGE+4
50 0000'CF DE 0450 MOVZWL S^#SS$ NORMAL,R3
51 0008'CF DE 0455 MOVAL W^INRANGE,R0
                                O0A0 30 045A MOVAL W^RETRANGE,R1
                                045D 319 DELTVA BSBW DELTVASUBR
0000'CF 7FFEFFFF 8F DO 045D MOVL #<1231-<12829>-1>,W^INRANGE,#SS$ PAGOWNVIO ;ACCESS POINTER PAGE
0004'CF 0000'CF DO 0466 MOVL #<1231-<12829>-1>,W^INRANGE
                                53 01EC 8F 3C 046D MOVL W^INRANGE,W^INRANGE+4
50 0000'CF DE 0472 MOVZWL #SS$ PAGOWNVIO,R3
51 0008'CF DE 0477 MOVAL W^INRANGE,R0
                                007E 30 047C MOVAL W^RETRANGE,R1
0000'CF 0014'CF DO 047F 320 BSBW DELTVASUBR
0014'CF 00000600 8F C1 0486 321 MOVL W^SAVEND,W^INRANGE
                                048F ADDL3 #X600,W^SAVEND,W^INRANGE+4
                                0492 322 DELTVA STATUS=#SS$ _ACCVIO,-
                                0492 323 INADR=W^4 ;INPUT RANGE NOT ACCESSIBLE
50 53 0C 3C 0492 MOVZWL #SS$ _ACCVIO,R3
0004'CF DE 0495 MOVAL W^4,R0
51 0008'CF DE 049A MOVAL W^RETRANGE,R1
                                005B 30 049F BSBW DELTVASUBR
                                04A2 324 DELTVA STATUS=#SS$ _ACCVIO,-
                                04A2 325 RETADR=W^8 ;RETURN RANGE INACCESSIBLE
50 53 0C 3C 04A2 MOVZWL #SS$ _ACCVIO,R3
0000'CF DE 04A5 MOVAL W^INRANGE,R0
51 0008'CF DE 04AA MOVAL W^8,R1
                                004B 30 04AF BSBW DELTVASUBR
                                04B2 326 CRETVA ;GET SOME PAGES
50 53 01 3C 04B2 MOVZWL S^#SS$ NORMAL,R3
0000'CF DE 04B5 MOVAL W^INRANGE,R0
51 0008'CF DE 04BA MOVAL W^RETRANGE,R1
                                0027 30 04BF BSBW CRETVASUBR
                                04C2 327 DELTVA STATUS=#SS$ _ACCVIO,-
                                04C2 328 RETADR=@W^INRANGE ;DELETE PAGE CONTAINING RETURN RANGE
50 53 0C 3C 04C2 MOVZWL #SS$ _ACCVIO,R3

```

```
50 0000'CF DE 04C5 MOVAL W^INRANGE,R0
51 0000'DF DE 04CA MOVAL @W^INRANGE,R1
    002B 30 04CF BSBW DELTVASUBR
      04D2 329 :
      04D2 330 :END OF LOOP
      04D2 331 :
OC 0024'CF 0020'CF F3 04D2 332 : AOBLEQ W^MAXPASSCNT,W^PASSCNT,160$
    50 01 D0 04DA 333 150$: MOVL #1,R0
      FDD9 31 04DD 334 $EXIT,S RO
      04E6 335 160$: BRW - RSTART
      04E9 336
```

```

04E9 338      .SBTTL SUBROUTINES TO CALL THE SERVICES
04E9 339      :
04E9 340      : INPUT:
04E9 341      :
04E9 342      :     R0 = INADR
04E9 343      :     R1 = RETADR
04E9 344      :     R3 = DESIRED STATUS
04E9 345      :
04E9 346      : OUTPUT:
04E9 347      :
04E9 348      :     R2 PRESERVED
04E9 349      :
04E9 350      CRETVASUBR:
04E9 351      $CRETVA_S (R0),(R1)
51  FD16 CF  DE 04F6 352      MOVAL  W^CRETVAERR,R1      ;ERROR CONTROL STRING
      14  11 04FB 353      BRB     CHECK1
04FD 354      :
04FD 355      : INPUT:
04FD 356      :
04FD 357      :     R0 = INADR
04FD 358      :     R1 = RETADR
04FD 359      :     R3 = DESIRED STATUS
04FD 360      :
04FD 361      : OUTPUT:
04FD 362      :
04FD 363      :     R2 PRESERVED
04FD 364      :
04FD 365      DELTVASUBR:
04FD 366      $DELTVA_S (R0),(R1)
51  FDOA CF  DE 050A 367      MOVAL  W^DELTVAERR,R1      ;ERROR CONTROL STRING
      00  11 050F 368      BRB     CHECK1
      53  50  D1 0511 369      CHECK1:
      4B  13 0514 370      CML    R0,R3      ;STATUS AS DESIRED
53  0244 8F  B1 0516 371      BEQL   10$      ;BRANCH IF YES
      05  12 051B 372      CMPW   #SS$_VASFULL,R3      ;IF EXPECTING VIRTUAL ADDRESS SPACE FULL
      50  1C  B1 051D 373      BNEQ   5$
      3F  13 0520 374      CMPW   #SS$_EXQUOTA,R0      ;THEN EXCEEDS QUOTA MAY ALSO BE RETURNED
      54  DD 0522 375      BEQL   10$
54  04 AE  D0 0524 376 5$:  PUSHL  R4
      0528 377      MOVL   4(SP),R4      ;ADDRESS OF ERROR
      0528 378      $FAO_S (R1),MSGLEN,MSGBUF,R4,R0,R3,-
      055B 379      INRANGE,INRANGE+4,RETRANGE,RETRANGE+4
      10  BA 055B 380      POPR   #^M<R4>
      00E7 30 055D 381      BSBW  TYPMSGBUF
      05  05 0560 382      RSB
      0561 383 10$:
      0069 31 0561 384      BRW   RANGECHK      ;GO CHECK THE RETURN RANGE
      0564 385      :
      0564 386      : INPUT:
      0564 387      :
      0564 388      :     R1 = RETADR
      0564 389      :     R3 = DESIRED STATUS
      0564 390      :     R4 = PAGCNT
      0564 391      :     R5 = REGION
      0564 392      :
      0564 393      : OUTPUT:
      0564 394      :

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0564 395 : R2 PRESERVED
0564 396 :
0564 397 EXPREGSUBR:
0564 398 $EXPREG_S R4,(R1),R5
51 FCA9 CF DE 0573 399 MOVAL W^EXPREGERR,R1 ;ERROR CONTROL STRING
0578 400 CHECK2:
53 50 D1 0578 401 CMPL R0,R3 ;STATUS AS DESIRED?
39 13 057B 402 BEQL 10$ ;BRANCH IF YES
56 04 AE DD 057D 403 PUSHL R6
057F 404 MOVL 4(SP),R6 ;ADDRESS OF ERROR
0583 405 $FAO_S (R1),MSGLEN,MSGBUFD,R6,R0,R3,R4,R5,-
0583 406 RETRANGE,RETRANGE+4
0040 8F BA 05AE 407 POPR #^M<R6>
0092 30 05B2 408 BSBW TYPMSGBUF
05 05B5 409 RSB
0000'CF 0008'CF DD 05B6 410 10$: MOVL W^RETRANGE,W^INRANGE ;MAKE INPUT RANGE LOOK LIKE CRETVA/D
54 54 09 D7 05BD 411 DECL R4
0004'CF 0000'CF 54 C1 05BF 412 ASHL #9,R4,R4
00 11 05C3 413 ADDL3 R4,W^INRANGE,W^INRANGE+4
05CD 414 BRB RANGECHK ;AND CHECK THE RETURN RANGE
73 0010'CF 03 E1 05CD 415 RANGECHK:
70 50 E9 05D3 416 BBC #CTLSV_RNGCHK,W^CTLFLG,40$ ;BRANCH IF RANGE CHECK IS DISABLED
50 0000'CF 7D 05D6 417 BLBC R0,40$- ;IF ERROR IN SERVICE, SKIP THE RANGE
51 50 D1 05DB 418 MOVQ W^INRANGE,R0 ;R0 = STARVA, R1 = ENDVA
12 1A 05DE 419 CMPL R0,R1 ;WHICH DIRECTION?
04 1F 05E0 420 BGTRU 10$ ;BRANCH IF BACKWARDS
OC 50 1E E0 05E2 421 BLSSU 5$ ;BRANCH IF FORWARDS
05E6 422 BBS #30,R0,10$ ;FOR EQUAL, P0 SPACE FORWARDS, P1 BA
05E6 423 :
05E6 424 : REQUESTED RANGE IS FORWARDS
05E6 425 :
50 01FF 8F AA 05E6 426 5$: BICW #^X1FF,R0 ;FROM BYTE 0 OF STARTVA
51 01FF 8F AB 05EB 427 BISW #^X1FF,R1 ;THROUGH LAST BYTE OF ENDVA
0A 11 05F0 428 BRB 20$
05F2 429 :
05F2 430 : GOING BACKWARDS IN VIRTUAL ADDRESS SPACE
05F2 431 :
50 01FF 8F AB 05F2 432 10$: BISW #^X1FF,R0 ;LAST BYTE OF STARTVA
51 01FF 8F AA 05F7 433 BICW #^X1FF,R1 ;THROUGH FIRST BYTE OF ENDVA
0008'CF 50 D1 05FC 434 20$: CMPL R0,W^RETRANGE ;IS THIS WHAT WAS RETURNED?
07 12 0601 435 BNEQ 30$ ;BRANCH IF NOT, ERROR
000C'CF 51 D1 0603 436 CMPL R1,W^RETRANGE+4 ;THIS ONE OK TOO?
3C 13 0608 437 BEQL 40$ ;BRANCH IF YES, RANGE OK
53 04 AE DD 060A 438 30$: PUSHL R3 ;SAVE REGISTER
060C 439 MOVL 4(SP),R3 ;TO USE FOR ERROR PC
0610 440 $FAO_S <W^RANGERR>,MSGLEN,MSGBUFD,R3,- ;FORMAT THE ERROR MESSAGE
0610 441 INRANGE,INRANGE+4,RETRANGE,RETRANGE+4
08 BA 0641 442 POPR #^M<R3> ;RESTORE SAVE REGISTER
0001 30 0643 443 BSBW TYPMSGBUF ;OUTPUT THE ERROR MESSAGE
05 0646 444 40$: RSB ;AND RETURN

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0647 446 .SBTTL MISCELLANEOUS SUBROUTINES
0647 447 :
0647 448 : TYPE A MESSAGE
0647 449 : MSGBUF IS THE ADDRESS OF THE BEGINNING OF THE STRING
0647 450 : MSGLEN CONTAINS THE SIZE (IN BYTES) OF THE STRING
0647 451 :
0647 452 TYPEMSGBUF:
0647 453 MOVL W^MSGLEN,R0 ;SIZE TO R0
0647 454 MOVAL W^MSGBUF,R1 ;ADDRESS TO R1
08 0010'CF 02 E1 0651 455 BBC #CTL$V PIDMSG,W^CTLFLG,5$ ;BRANCH IF NO PROCESS ID REQUIRED
0647 456 MOVAL W^MSGBUFID,R1 ;ADDRESS INCLUDING PID MSG
0647 457 ADDL S^#<MSGBUF-MSGBUFID>,R0 ;INCLUDE EXTRA BYTES IN COUNT
0647 458 5$:
0647 459 MOVL R1,W^RAB+RAB$RBF ;SET BUFFER ADDRESS
0647 460 MOVW R0,W^RAB+RAB$RBSZ ;AND SIZE
0647 461 $PUT W^RAB ;OUTPUT THE MESSAGE
0647 462 BLBC R0,20$
0647 463 RSB
0647 464 20$: $EXIT,S R0 ;EXIT WITH ERROR STATUS
0647 465 :
0647 466 : INPUTS:
0647 467 :
0647 468 : 0(SP) = ADDRESS OF ERROR
0647 469 : R1 = ADDRESS OF FORMAT CONTROL STRING
0647 470 :
0647 471 : OUTPUTS:
0647 472 :
0647 473 : R2 PRESERVED
0647 474 :
0647 475 PROBERR:
0647 476 PUSHL R5
0647 477 MOVL 4(SP),R5
0647 478 $FAD,S (R1),MSGLEN,MSGBUFD,R5
0647 479 POPR #^M<R5>
0647 480 BSBW TYPEMSGBUF
0647 481 RSB
0647 482
0647 483
0647 484 .END START

```

```

50 00BC'CF DO
51 00DE'CF DE
08 0010'CF 02 E1
51 00D0'CF DE
50 0E' CO

00A0'CF 51 DO
009A'CF 50 B0

01 50 E9
05

55 DD
55 04 AE DO
20 BA
FFA4 30
05

```

\$\$TAB	= 00000078	R	02	PASSCNT	00000024	R	02
\$\$TABEND	= 0000008C	R	02	PID	0000001C	R	02
\$\$TMP	= 00000000			PIDCTL	00000240	R	03
\$\$TMP1	= 00000001			PIDCTLADR	0000020D	R	03
\$\$TMP2	= 000000CF			PIDCTLSIZ	= 00000003		
\$\$T1	= 00000000			PIDMSG	000000DA	R	02
\$\$T2	= 00000004			PIDMSGD	000000C8	R	02
BIT...	= 00000004			PREVPROT	00000028	R	02
CHECK1	00000511	R	03	PROBERR	00000681	R	03
CHECK2	00000578	R	03	PRT\$C_NONE	= 00000010		
CRETVAERR	00000210	R	03	RAB	00000078	R	02
CRETVAERRADR	0000000A	R	03	RAB\$B_RAC	= 0000001E		
CRETVAERRSIZ	= 00000063			RAB\$C_BID	= 00000001		
CRETVASUBR	000004E9	R	03	RAB\$C_BLN	= 00000044		
CRLF	000000D0	R	02	RAB\$C_SEQ	= 00000000		
CTLSM_MEMLOOP	= 00000001			RAB\$C_CTX	= 00000018		
CTLSM_PIDMSG	= 00000004			RAB\$C_RBF	= 00000028		
CTLSM_RNGCHK	= 00000008			RAB\$C_ROP	= 00000004		
CTLSM_TSTLOOP	= 00000002			RAB\$W_RSZ	= 00000022		
CTLSV_MEMLOOP	= 00000000			RANGECHK	000005CD	R	03
CTLSV_PIDMSG	= 00000002			RANGERR	00000228	R	03
CTLSV_RNGCHK	= 00000003			RANGERRADR	00000142	R	03
CTLSV_TSTLOOP	= 00000001			RANGERSIZ	= 0000004F		
CTLFLG	00000010	R	02	RETRANGE	00000008	R	02
DELTVAERR	00000218	R	03	RSTART	000002C2	R	03
DELTVAERRADR	0000006D	R	03	RUN1_MSG	00000238	R	03
DELTVAERRSIZ	= 00000063			RUN1_MSGADR	000001CA	R	03
DELTVASUBR	000004FD	R	03	RUN1_MSGSIZ	= 00000043		
EXPREGERR	00000220	R	03	SAVE\$D	00000014	R	02
EXPREGERRADR	000000D0	R	03	SIZ...	= 00000001		
EXPREGERRSIZ	= 00000072			\$\$\$_ACC\$VIO	= 0000000C		
EXPREGSUBR	00000564	R	03	\$\$\$_EXQUOTA	= 0000001C		
FAB	00000028	R	02	\$\$\$_NOPRIV	= 00000024		
FAB\$C_BID	= 00000003			\$\$\$_NORMAL	= 00000001		
FAB\$C_BLN	= 00000050			\$\$\$_PAGOWNVIO	= 000001EC		
FAB\$C_SEQ	= 00000000			\$\$\$_VAFULL	= 00000244		
FAB\$C_VAR	= 00000002			START	00000248	R	03
FAB\$L_ALQ	= 00000010			SYSSCONNECT	*****	GX	03
FAB\$L_FOP	= 00000004			SYSSCRETVA	*****	GX	03
FAB\$V_CHAN_MODE	= 00000002			SYSSDELTVA	*****	GX	03
FAB\$V_FILE_MODE	= 0000C004			SYSSEXIT	*****	GX	03
FAB\$V_LNM_MODE	= 00000000			SYSSEXPREG	*****	GX	03
FAB\$V_PUT	= 000^0000			SYSSFAO	*****	X	03
FAB\$W_GBC	= 00000048			SYSSOPEN	*****	GX	03
HIGHPOADR	00000018	R	02	SYSSPUT	*****	GX	03
IDMSG	00000230	R	03	SYSSRESUME	*****	GX	03
IDMSGADR	00000191	R	03	TYP\$MSG\$BUF	00000647	R	03
IDMSGSIZ	= 00000039						
INRANGE	00000000	R	02				
MAXPASSCNT	00000020	R	02				
MSG\$BUF	000000DE	R	02				
MSG\$BUFD	000000C0	R	02				
MSG\$BUFDID	000000D0	R	02				
MSG\$BUFSIZ	= 0000000A						
MSGLEN	0000008C	R	02				
OUTNAMADR	00000000	R	03				
OUTNAMSIZ	= 0000000A						

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

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$ABSS	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
DATA0	0000017E (382.)	02 (2.)	NOPIC USR CON REL LCL NOSHR NOEXE RD WRT NOVEC PAGE
CODE	000006A4 (1700.)	03 (3.)	NOPIC USR CON REL LCL NOSHR EXE RD NOWRT NOVEC PAGE

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

Phase	Page faults	CPU Time	Elapsed Time
Initialization	10	00:00:00.09	00:00:02.13
Command processing	82	00:00:00.78	00:00:05.80
Pass 1	306	00:00:10.95	00:00:39.66
Symbol table sort	0	00:00:01.15	00:00:03.94
Pass 2	112	00:00:02.38	00:00:09.66
Symbol table output	12	00:00:00.09	00:00:00.19
Psect synopsis output	3	00:00:00.04	00:00:00.07
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	527	00:00:15.49	00:01:01.45

The working set limit was 1350 pages.
64539 bytes (127 pages) of virtual memory were used to buffer the intermediate code.
There were 50 pages of symbol table space allocated to hold 856 non-local and 14 local symbols.
484 source lines were read in Pass 1, producing 20 object records in Pass 2.
41 pages of virtual memory were used to define 34 macros.

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

Macro library name	Macros defined
-\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	0
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	25
TOTALS (all libraries)	25

1120 GETS were required to define 25 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:MMGCRTDEL/OBJ=OBJ\$:MMGCRTDEL MSRCS:MMGCRTDEL/UPDATE=(ENHS:MMGCRTDEL)+EXECMLS/LIB

MMGEXPNT LIS	MMGNSFWSL LIS	MOM MAP
MMGRTDEL LIS		
MMGCRDLS LIS		
MMGRTFIL LIS	MMGLKWLW LIS	MMGXQUOTA LIS
		MMGSETPRT LIS
		MOM