


```

DDDDDDDD      AAAAAA      TTTTTTTTTT      BBBB8888      AAAAAA      SSSSSSSS
DDDDDDDD      AAAAAA      TTTTTTTTTT      BBBB8888      AAAAAA      SSSSSSSS
DD      DD      AA      AA      TT      BB      BB      AA      AA      SS
DD      DD      AA      AA      TT      BB      BB      AA      AA      SS
DD      DD      AA      AA      TT      BB      BB      AA      AA      SS
DD      DD      AA      AA      TT      BB      BB      AA      AA      SS
DD      DD      AA      AA      TT      BBBB8888      AA      AA      SSSSSS
DD      DD      AA      AA      TT      BBBB8888      AA      AA      SSSSSS
DD      DD      AAAAAAAAAA      TT      BB      BB      AAAAAAAAAA      SS
DD      DD      AAAAAAAAAA      TT      BB      BB      AAAAAAAAAA      SS
DD      DD      AA      AA      TT      BB      BB      AA      AA      SS
DD      DD      AA      AA      TT      BB      BB      AA      AA      SS
DDDDDDDD      AA      AA      TT      BBBB8888      AA      AA      SSSSSSSS
DDDDDDDD      AA      AA      TT      BBBB8888      AA      AA      SSSSSSSS

```

```

LL      I11111      SSSSSSSS
LL      I11111      SSSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SSSSSS
LL      II      SSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LLLLLLLLLLLL      I11111      SSSSSSSS
LLLLLLLLLLLL      I11111      SSSSSSSS

```



0001 0
0002 0
0003 0
0004 0
0005 0

Get definitions for \$EQLST and friends
LIBRARY 'SYSS\$LIBRARY:STARLET.L32';

F
P

0006 0
0007 0
0008 0
0009 0
0010 0
0011 0
0012 0
0013 0
0014 0
0015 0
0016 0
0017 0
0018 0
0019 0
0020 0
0021 0
0022 0
0023 0
0024 0
0025 0
0026 0
0027 0
0028 0
0029 0
0030 0
0031 0
0032 0
0033 0
0034 0
0035 0
0036 0
0037 0
0038 0
0039 0
0040 0
0041 0
0042 0
0043 0
0044 0
0045 0
0046 0
0047 0
0048 0
0049 0
0050 0
0051 0
0052 0
0053 0
0054 0
0055 0
0056 0
0057 0
0058 0
0059 0
0060 0
0061 0
0062 0

Version 'V04-000'

```
*****  
*  
* COPYRIGHT (c) 1978, 1980, 1982, 1984 BY  
* DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.  
* ALL RIGHTS RESERVED.  
*  
* THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED  
* ONLY IN ACCORDANCE WITH THE TERMS OF SUCH LICENSE AND WITH THE  
* INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR ANY OTHER  
* COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY  
* OTHER PERSON. NO TITLE TO AND OWNERSHIP OF THE SOFTWARE IS HEREBY  
* TRANSFERRED.  
*  
* THE INFORMATION IN THIS SOFTWARE IS SUBJECT TO CHANGE WITHOUT NOTICE  
* AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT  
* CORPORATION.  
*  
* DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS  
* SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.  
*  
*****
```

++

```
MODULE:      datbas.req  
FACILITY:    linker  
ABSTRACT:    data base compile time formats  
HISTORY:  
    AUTHOR:  T.J. PORTER 01-mar-77  
MODIFICATIONS:  
V03-008 JWT0161      Jim Teague      07-Mar-1984  
    Enlarge cluster name fields -- they take their names  
    from shareable image names, which may now be up to  
    39 characters in length.  
V03-007 ADE0001      Alan D. Eldridge  04-Mar-1984  
    Make CLUSL_GSMATCH its own field rather than multiplexing  
    it between passes in the Linker.  
V03-006 JWT0118      Jim Teague      04-May-1982  
    Added FLG structure.  Consists of bit definitions  
    used in flagstack for processing symbols and  
    expressions in pass 2.
```

0063 0
0064 0
0065 0
0066 0
0067 0
0068 0
0069 0
0070 0
0071 0
0072 0
0073 0
0074 0
0075 0
0076 0
0077 0
0078 0
0079 0
0080 0
0081 0
0082 0

- V03-005 JWT0071 Jim Teague 02-Dec-1982
Added NAME and IDENTIFICATION options. Need CTLMSK flag
to indicate that the image id has been set via an option.
- V03-004 JWT0061 Jim Teague 22-Oct-1982
Add DCM and DCP structures to aid in the creation
of a debugger image section for debug images.
- V03-003 JWT0050 Jim Teague 11-Aug-1982
Add LNK\$V_CLI flag for cli images.
- V03-002 JWT0044 Jim Teague 30-Jul-1982
Add word to FDB to save IFI.
- V03-001 JWT0033 Jim Teague 25-May-1982
Add FDB\$V_OMDNOBIN flag to indicate that at least one
obj mod in the file had no TIR records.

```
0083 0
0084 00
0085 00
0086 00
0087 00
0088 00
0089 00
0090 00
0091 00
0092 00
0093 00
0094 00
0095 00
0096 00
0097 00
0098 00
0099 00
0100 00
0101 00
0102 00
0103 00
0104 00
0105 00
0106 00
0107 00
0108 00
0109 00
0110 00
0111 00
0112 00
0113 00
0114 00
0115 00
0116 00
0117 00
0118 00
0119 00
0120 00
0121 00
0122 00
0123 00
0124 00
0125 00
0126 00
0127 00
0128 00
0129 00
0130 00
0131 00
0132 00
0133 00
0134 00
0135 00
0136 00
0137 00
0138 00
0139 00

++
Functional description:
This is a require file that defines the layout (at compile time)
of most of the internal data structures of the linker.
--

define the collection cluster list
...$CCDDEF
MACRO          CCD$N_NXTCLU      = 0,0,32,0%;      ! link to next descriptor
MACRO          CCD$B_NAMLANG     = 4,0,8,0%;          ! length of cluster name
MACRO          CCD$T_NAME        = 5,0,0,0%;          ! cluster name (** NOTE SIZE **)
LITERAL        CCD$S_NAME        = 39;
MACRO          CCD$N_PSCLST      = 44,0,32,0%;        ! listhead of psects to collect
MACRO          CCD$B_PROTECT     = 48,0,8,0%;        ! protection flag
LITERAL        CCD$C_SIZE        = 49;
LITERAL        CCD$K_SIZE        = 49;

define the layout of a cluster descriptor
...$CLUDEF
MACRO          CLU$N_NXTCLU      = 0,0,32,0%;        ! next cluster pointer
MACRO          CLU$N_PREVCLU     = 4,0,32,0%;        ! pointer to previous cluster
MACRO          CLU$N_FSTFDB      = 8,0,32,0%;        ! first file in this cluster
MACRO          CLU$N_LSTFDB      = 12,0,32,0%;       ! last file in this cluster
MACRO          CLU$N_LPSLST      = 16,0,32,0%;       ! list head for local psects
MACRO          CLU$N_GPSLST      = 20,0,32,0%;       ! list head for global psects
MACRO          CLU$N_FSTISD      = 24,0,32,0%;       ! first isect descriptor
MACRO          CLU$N_LSTISD      = 28,0,32,0%;       ! last isect descriptor
MACRO          CLU$N_CLUOFF      = 32,0,32,0%;       ! offset to base of next contained image
MACRO          CLU$N_LASTCLU     = 36,0,32,0%;       ! pointer to cluster descriptor of last contained image
MACRO          CLU$N_SPCRLST     = 40,0,32,0%;       ! listhead of special g^ references
MACRO          CLU$N_SHRSYMS     = 44,0,32,0%;       ! number of symbols referenced in this shareable image

! SHRLST and ADRCNT are used before pass 1 to hold the 64-bit binary creation
! date/time of the shareable image symbol table (if image acquired that way)

MACRO          CLU$N_SHRLST      = 48,0,32,0%;        ! pointer to first symbol referenced in this shareable image
MACRO          CLU$N_ADRCNT      = 52,0,32,0%;        ! number of .ADDRESSES referencing this cluster

MACRO          CLU$Q_CREDAT      = 48,0,0,0%;        ! binary creation date/time
LITERAL        CLU$S_CREDAT      = 8;
MACRO          CLU$N_ADRLEFT     = 56,0,32,0%;        ! number slots left in current address block
LITERAL
$EQU_LST (CLU$C_GBL 0,1
          {ADRBLOCK, 128)
          ! number of slots per address block
};
```

```

0140 0 MACRO CLUSL_FSTADRL = 60,0,32,0%; ! pointer to first block of .ADDRESS references
0141 0 MACRO CLUSL_USRBASE = 60,0,32,0%; ! base address as specified by user
0142 0 MACRO CLUSL_LSTADRL = 64,0,32,0%; ! pointer to last block of .ADDRESS references
0143 0 MACRO CLUSL_FIXISD = 68,0,32,0%; ! pointer to fixup isect descriptor
0144 0 MACRO CLUSL_NISECTS = 72,0,32,0%; ! number of isects in this cluster
0145 0 MACRO CLUSL_BASE = 76,0,32,0%; ! base address of cluster
0146 0 MACRO CLUSL_PAGES = 80,0,32,0%; ! pages in this cluster
0147 0 MACRO CLUSL_OWNCPU = 84,0,32,0%; ! pointer to owning cluster if contained in another shr imag
0148 0 MACRO CLUSW_FLAGS = 88,0,16,0%; ! cluster flags
0149 0
0150 0 MACRO CLUSV_BASED = 88,0,1,0%; ! base address specified
0151 0 LITERAL CLUSM_BASED = 1^1 - 1^0;
0152 0 MACRO CLUSV_SYMBAS = 88,1,1,0%; ! symbolically
0153 0 LITERAL CLUSM_SYMBAS = 1^2 - 1^1;
0154 0 MACRO CLUSV_SHRIMG = 88,2,1,0%; ! contains a shareable image
0155 0 LITERAL CLUSM_SHRIMG = 1^3 - 1^2;
0156 0 MACRO CLUSV_PIC = 88,3,1,0%; ! which is position independent
0157 0 LITERAL CLUSM_PIC = 1^4 - 1^3;
0158 0 MACRO CLUSV_COPY = 88,4,1,0%; ! take private copy of shareable image sections
0159 0 LITERAL CLUSM_COPY = 1^5 - 1^4;
0160 0 MACRO CLUSV_OPEN = 88,5,1,0%; ! file is open
0161 0 LITERAL CLUSM_OPEN = 1^6 - 1^5;
0162 0 MACRO CLUSV_WRT = 88,6,1,0%; ! at least one section is wrt/non-crf
0163 0 LITERAL CLUSM_WRT = 1^7 - 1^6;
0164 0 MACRO CLUSV_PROTECT = 88,7,1,0%; ! cluster is protected
0165 0 LITERAL CLUSM_PROTECT = 1^8 - 1^7;
0166 0 MACRO CLUSV_PREFIXUP = 88,8,1,0%; ! image does not have fixup section - created under v1 or v2
0167 0 LITERAL CLUSM_PREFIXUP = 1^9 - 1^8;
0168 0 MACRO CLUSV_INTCLU = 88,9,1,0%; ! cluster is internally created
0169 0 LITERAL CLUSM_INTCLU = 1^10 - 1^9;
0170 0 MACRO CLUSV_USRBASED = 88,10,1,0%; ! cluster is based by user
0171 0 LITERAL CLUSM_USRBASED = 1^11 - 1^10;
0172 0 MACRO CLUSV_SPARE2 = 88,11,1,0%;
0173 0 LITERAL CLUSM_SPARE2 = 1^12 - 1^11;
0174 0 MACRO CLUSV_SPARE3 = 88,12,1,0%;
0175 0 LITERAL CLUSM_SPARE3 = 1^13 - 1^12;
0176 0 MACRO CLUSV_MATCHCTL = 88,13,3,0%; ! i-sect match control
0177 0 LITERAL CLUSM_MATCHCTL = 1^16 - 1^13;
0178 0
0179 0 MACRO CLUSB_PFC = 90,0,8,0%; ! page fault cluster factor
0180 0 MACRO CLUSB_NAMLNG = 92,0,8,0%; ! length of cluster name
0181 0 MACRO CLUST_NAME = 93,0,0,0%; ! cluster name (** NOTE SIZE **)
0182 0 LITERAL CLUSS_NAME = 39;
0183 0 MACRO CLUSL_GSMATCH = 132,0,32,0%; ! global section match
0184 0 LITERAL CLUSC_SIZE = 136;
0185 0 LITERAL CLUSK_SIZE = 136; ! Size of a cluster descriptor
0186 0
0187 0 ! define the collect list psect descriptor
0188 0
0189 0 !...$CPDDEF
0190 0
0191 0 MACRO CPDSL_NXTPSC = 0,0,32,0%; ! link to next descriptor
0192 0 MACRO CPDSB_NAMLNG = 4,0,8,0%; ! length of psect name
0193 0 MACRO CPDST_NAME = 5,0,0,0%; ! psect name (** NOTE SIZE **)
0194 0 LITERAL CPDSS_NAME = 31;
0195 0 LITERAL CPDSC_SIZE = 36;
0196 0 LITERAL CPDSK_SIZE = 36;

```

F E L L M L

```

0197 0
0198 0
0199 0
0200 0
0201 0
0202 0
0203 0
0204 0
0205 0
0206 0
0207 0
0208 0
0209 0
0210 0
0211 0
0212 0
0213 0
0214 0
0215 0
0216 0
0217 0
0218 0
0219 0
0220 0
0221 0
0222 0
0223 0
0224 0
0225 0
0226 0
0227 0
0228 0
0229 0
0230 0
0231 0
0232 0
0233 0
0234 0
0235 0
0236 0
0237 0
0238 0
0239 0
0240 0
0241 0
0242 0
0243 0
0244 0
0245 0
0246 0
0247 0
0248 0
0249 0
0250 0
0251 0
0252 0
0253 0

```

```

: define Debugger symbol table Contribution by Module block
: ...$DCMDEF
MACRO      DCMSL_DSTOFF    = 0,0,32,0%;      ! offset into DST of this objmod's contribution
MACRO      DCMSL_DSTLEN   = 4,0,32,0%;      ! length of this objmod's DST contribution
MACRO      DCMSW_NUMPSC   = 8,0,16,0%;      ! number of psects in this objmod
LITERAL    DCMSC_SIZE     = 12;
LITERAL    DCMSK_SIZE     = 12;

: define Debugger symbol table Contrib. Psect block
: ...$DCPDEF
MACRO      DCP$L_BASE     = 0,0,32,0%;      ! base of psect for this module
MACRO      DCP$L_LENGTH   = 4,0,32,0%;      ! length of psect for this module
LITERAL    DCP$C_SIZE     = 8;
LITERAL    DCP$K_SIZE     = 8;

: define the debug location information block
: ...$DLIDEF
MACRO      DLISL_LEFT     = 0,0,32,0%;      ! Left tree pointer
MACRO      DLISL_RIGHT    = 4,0,32,0%;      ! Right tree pointer
MACRO      DLISW_BAL      = 8,0,16,0%;      ! Balance this node
MACRO      DLISL_INDEX    = 10,0,32,0%;     ! index of this dli block
MACRO      DLISL_LOC      = 14,0,32,0%;     ! location counter associated with this index
LITERAL    DLISC_SIZE     = 18;
LITERAL    DLISK_SIZE     = 18;

: define the layout of and accessing macros for the file descriptor blocks which
: linked list in the order of specification by the user. the fdb contains an rms
: name block so that the file may be opened by file id after the first time. the
: name block contains a descriptor of the resultant file name string (after all
: defaults have been applied by rms on the first open) so that this complete nam
: error messages and the map. note however that there is also a descriptor of th
: supplied in the command.
: ...$FDBDEF
MACRO      FDB$N_NXTFDB   = 0,0,32,0%;      ! forward link
MACRO      FDB$N_OMDLST  = 4,0,32,0%;      ! listhead for object module descriptors
MACRO      FDB$W_LIBLSTLNG = 8,0,16,0%;     ! also used to point to module name list
MACRO      FDB$W_LIBLSTLNG = 8,0,16,0%;     ! length of the string which is the module
MACRO      FDB$W_LIBLSTLNG = 8,0,16,0%;     ! name list if this is a library with explicit
MACRO      FDB$W_LIBLSTLNG = 8,0,16,0%;     ! extraction
MACRO      FDB$B_FILFLGS  = 10,0,8,0%;      ! file specific flags
MACRO      FDB$V_NEWUDF   = 10,0,1,0%;      ! a module from library added a new undefined symbo
LITERAL    FDB$M_NEWUDF  = 1^1 - 1^0;
MACRO      FDB$V_LIBR     = 10,1,1,0%;      ! library flag bit
LITERAL    FDB$M_LIBR    = 1^2 - 1^1;

```



```

0254 0 MACRO FDBSV_SHR = 10,2,1,0%: ! shareable image file flag **NOTE** SHR, SELSER mu
0255 0 LITERAL FDBSM_SHR = 1^3 - 1^2:
0256 0 MACRO FDBSV_SELSER = 10,3,1,0%: ! selective search file **NOTE** to correspond with
0257 0 LITERAL FDBSM_SELSER = 1^4 - 1^3:
0258 0 MACRO FDBSV_OPTION = 10,4,1,0%: ! option file (and input file contained in one)
0259 0 LITERAL FDBSM_OPTION = 1^5 - 1^4:
0260 0 MACRO FDBSV_DEBUGER = 10,5,1,0%: ! file contains the debugger
0261 0 LITERAL FDBSM_DEBUGER = 1^6 - 1^5:
0262 0 MACRO FDBSV_LIBEXTR = 10,6,1,0%: ! explicit module extraction from library
0263 0 LITERAL FDBSM_LIBEXTR = 1^7 - 1^6:
0264 0 MACRO FDBSV_LIBSRCH = 10,7,1,0%: ! library to be searched for undefined symbols
0265 0 LITERAL FDBSM_LIBSRCH = 1^8 - 1^7:
0266 0
0267 0 LITERAL
0268 0 SEQUALST (FDBSS_GBL,0,1
P 0269 0 ,(NEWUDF,)
P 0270 0 ,(LIBR,)
P 0271 0 ,(SHR,)
P 0272 0 ,(SELSER,)
P 0273 0 ,(OPTION,)
P 0274 0 ,(DEBUGER,)
P 0275 0 ,(LIBEXTR,)
P 0276 0 ,(LIBSRCH,)
0277 0 );
0278 0 MACRO FDBSB_FLAG2 = 11,0,8,0%: ! Second flags word
0279 0
0280 0 MACRO FDBSV_IMGLIB = 11,0,1,0%: ! library is library of shr img stb's
0281 0 LITERAL FDBSM_IMGLIB = 1^f - 1^0:
0282 0 MACRO FDBSV_P1 = 11,1,1,0%: ! file has been processed in pass 1
0283 0 LITERAL FDBSM_P1 = 1^2 - 1^1:
0284 0 MACRO FDBSV_OMDNOBIN = 11,2,1,0%: ! file has an obj mod without TIR recs
0285 0 LITERAL FDBSM_OMDNOBIN = 1^3 - 1^2:
0286 0
0287 0 MACRO FDBSQ_USRNAME_DSC = 12,0,0,0%: ! string descriptor of the user supplied filename
0288 0 LITERAL FDBSS_USRNAME_DSC = 8:
0289 0 MACRO FDBSW_USRNAME_LEN = 12,0,16,0%: ! length of user supplied name
0290 0 MACRO FDBSL_USRNAME_ADR = 16,0,32,0%: ! address of user supplied name string
0291 0 MACRO FDBSQ_FILENAME = 20,0,0,0%: ! string descriptor of final file name
0292 0 LITERAL FDBSS_FILENAME = 8:
0293 0 MACRO FDBSW_DEFNAME_LEN = 20,0,16,0%: ! used as default name string descriptor before opening
0294 0 MACRO FDBSL_DEFNAME_ADR = 24,0,32,0%:
0295 0 MACRO FDBSQ_LIBNAME_DSC = 28,0,0,0%: ! string descriptor for shr img stb library that this module
0296 0 LITERAL FDBSS_LIBNAME_DSC = 8:
0297 0 MACRO FDBSW_LIBNAME_LEN = 28,0,16,0%:
0298 0 MACRO FDBSL_LIBNAME_ADR = 32,0,32,0%:
0299 0 MACRO FDBSW_IFI = 36,0,16,0%: ! internal file id
0300 0 MACRO FDBST_AUXFNB = 38,0,0,0%: ! the rms auxilliary filename block
0301 0 LITERAL FDBSC_SIZE = 38:
0302 0 LITERAL FDBSK_SIZE = 38: ! **NOTE** To allocate an fdb the size to allocate i
0303 0
0304 0
0305 0 ! define flag bits for flagstack used in lnk_objpass2
0306 0 ! symbol processing
0307 0
0308 0 !...$FLGDEF
0309 0
0310 0

```

```

! a module from library added a new undefined symbol to list
! library flag bit
! shareable image file flag
! selective search file
! option file (and input file contained in one)
! file contains the debugger
! explicit module extraction from library
! library to be searched for undefined symbols

```

```

0311 0 MACRO          FLGSV_UNDEF      = 0,0,1,0%;           ! symbol is undefined
0312 0 LITERAL       FLGSM_UNDEF      = 1^1 - 1^0;
0313 0 MACRO          FLGSV_SHRIMGSYM = 0,1,1,0%;           ! symbol is shareable image symbol
0314 0 LITERAL       FLGSM_SHRIMGSYM = 1^2 - 1^1;
0315 0 MACRO          FLGSV_SHRSYMEXP = 0,2,1,0%;           ! stack value is part of shr img expression
0316 0 LITERAL       FLGSM_SHRSYMEXP = 1^3 - 1^2;
0317 0
0318 0
0319 0
0320 0 | define structure of free virtual memory descriptors
0321 0 | ...$FVMDFF
0322 0
0323 0
0324 0 MACRO          FVMSL_NXTFVM      = 0,0,32,0%;           ! next descriptor address
0325 0 MACRO          FVMSL_ADDRESS    = 4,0,32,0%;           ! address this descriptor describes
0326 0 MACRO          FVMSL_BYTES     = 8,0,32,0%;           ! size of vm this describes
0327 0 LITERAL       FVMSC_SIZE      = 12;
0328 0 LITERAL       FVMSC_SIZE      = 12;
0329 0
0330 0 | Define the fields of the GSMATCH
0331 0 | ...$GMTDEF
0332 0
0333 0
0334 0 MACRO          GMTSB_MINORID    = 0,0,24,0%;           ! Minor ident is 3 bytes long
0335 0 MACRO          GMTSB_MAJORID   = 3,0,8,0%;            ! Major ident is 1 byte
0336 0
0337 0 | Define ident check data structure
0338 0 | ...$IDCDDEF
0339 0
0340 0
0341 0 MACRO          IDCDSL_LEFT      = 0,0,32,0%;           ! Left subtree
0342 0 MACRO          IDCDSL_RIGHT    = 4,0,32,0%;           ! Right subtree
0343 0 MACRO          IDCDSW_BAL      = 8,0,16,0%;           ! Balance
0344 0 MACRO          IDCDSW_FLAGS    = 10,0,16,0%;          ! Flags
0345 0
0346 0 MACRO          IDCDSV_BINIDENT  = 10,0,1,0%;           ! Binary rather than ASCII ident
0347 0 MACRO          IDCDSV_IDMATCH  = 10,1,2,0%;           ! Match control for binary ident
0348 0 MACRO          IDCDSV_ERRSEV   = 10,3,3,0%;           ! Error severity for message
0349 0
0350 0 MACRO          IDCDSL_DEFOMD     = 12,0,32,0%;           ! Index of defining OMD
0351 0 MACRO          IDCDSL_DEFFDB    = 16,0,32,0%;           ! Address of defining FDB
0352 0 MACRO          IDCDSB_IDLNG     = 20,0,8,0%;           ! Length of ident
0353 0 MACRO          IDCDSB_OBJLNG    = 21,0,8,0%;           ! Length of object type name
0354 0 MACRO          IDCDSL_IDENT     = 22,0,32,0%;           ! Binary ident or pointer to ascii idnt
0355 0 MACRO          IDCDSL_OBJNAM     = 26,0,32,0%;           ! Pointer to object type name
0356 0 MACRO          IDCDSB_NAMLNG    = 30,0,8,0%;           ! Length of entity name
0357 0 MACRO          IDCDSI_NAME       = 31,0,0,0%;           ! Start of entity name
0358 0 LITERAL       IDCDSI_SIZE      = 31;
0359 0 LITERAL       IDCDSK_SIZE      = 31;           ! Length of fixed part of block
0360 0
0361 0 | define the isect generation control table entries
0362 0 | ...$ISCDEF
0363 0
0364 0
0365 0 MACRO          ISCSW_MASK        = 0,0,16,0%;           ! psect AND mask
0366 0 MACRO          ISCSW_MATCH      = 2,0,16,0%;           ! psect attribute match
0367 0 MACRO          ISCSB_CODE       = 4,0,8,0%;            ! isect type

```

```

0368 0 MACRO      ISCSB_SIZE      = 5,0,8,0%;           ! size of isd
0369 0 MACRO      ISCSB_PFC       = 6,0,8,0%;           ! page fault cluster
0370 0 MACRO      ISCSB_FLAGS     = 7,0,8,0%;           ! isd flags
0371 0 MACRO      ISCSB_MATCTL    = 8,0,8,0%;           ! match control field of isd
0372 0 LITERAL     ISCS_C_SIZE      = 9;
0373 0 LITERAL     ISCS_K_SIZE      = 9;
0374 0
0375 0 ! define the image section descriptor block. The isd that goes in the image hea
0376 0 ! is appended to this structure
0377 0
0378 0 !...$ISLDEF
0379 0
0380 0 MACRO      ISL$NXTISD        = 0,0,32,0%;           ! next isd
0381 0 MACRO      ISL$PREVISD      = 4,0,32,0%;           ! previous isd
0382 0 MACRO      ISL$BUFDSC      = 8,0,0,0%;           ! image buffer descriptor
0383 0 LITERAL     ISL$BUFDSC      = 8;
0384 0 MACRO      ISL$BUFADR       = 8,0,32,0%;           ! image buffer address (do not separate
0385 0 MACRO      ISL$BUFEND       = 12,0,32,0%;          ! end of image buffer
0386 0 MACRO      ISL$CLUDSC       = 16,0,32,0%;          ! pointer to cluster descriptor
0387 0 MACRO      ISL$W_FLAGS      = 20,0,16,0%;          ! flags
0388 0
0389 0 MACRO      ISL$V_REPROT      = 20,0,1,0%;           ! section must be reprotected
0390 0 MACRO      ISL$V_MEMALO      = 20,1,1,0%;           ! memory allocated for this isect (fixup section onl
0391 0
0392 0 MACRO      ISL$B_NEWPRT      = 22,0,8,0%;           ! new protection
0393 0 MACRO      ISL$T_HDRISD      = 24,0,0,0%;           ! start of isd that goes to image header
0394 0 LITERAL     ISL$T_HDRISD
0395 0 P $EQU_LST (ISL$C_GBL, 0, 1 ! define types of image sections
0396 0 P (SHRFXD, 1)
0397 0 P (PRVFXD, 2)
0398 0 P (SHRPIC, 3)
0399 0 P (PRVPIC, 4)
0400 0 );
0401 0 LITERAL     ISL$C_SIZE       = 24;
0402 0 LITERAL     ISL$K_SIZE       = 24;
0403 0
0404 0 ! define the linker version array. its content is written to image
0405 0 ! header.
0406 0
0407 0 !...$LIDDEF
0408 0
0409 0 MACRO      LIDSW_MAJOR        = 0,0,16,0%;           ! major ident
0410 0 MACRO      LIDSW_MINOR       = 2,0,16,0%;           ! minor ident
0411 0 LITERAL     LIDSC_SIZE       = 4;
0412 0 LITERAL     LIDSK_SIZE       = 4;
0413 0 ! Size of version array
0414 0 ! Define structure for link-time literals
0415 0
0416 0 !...$LITDEF
0417 0
0418 0 MACRO      LIT$LEFT           = 0,0,32,0%;           ! Left sub-tree pointer
0419 0 MACRO      LIT$RIGHT          = 4,0,32,0%;           ! Right sub-tree pointer
0420 0 MACRO      LIT$BAL            = 8,0,16,0%;           ! Balance this node
0421 0 MACRO      LIT$B_FLAGS        = 10,0,8,0%;          ! Flags
0422 0
0423 0 MACRO      LIT$V_PDL           = 10,0,7,0%;           ! Position dependence level
0424 0 MACRO      LIT$V_STAPX        = 10,7,1,0%;           ! value is psect base plus offset
    
```

ISC
VO

00C
00C

```

0425 0
0426 00 MACRO LIT$B_INDEX = 11,0,8,0%; ! index value of this literal
0427 00 MACRO LIT$L_SHRSYM = 12,0,32,0%; ! saved shrmsym
0428 00 MACRO LIT$L_SHREXP = 16,0,32,0%; ! saved shrsymexpr
0429 00 MACRO LIT$L_VALUE = 20,0,32,0%; ! value of this literal
0430 00 LITERAL LIT$C_SIZE = 24;
0431 00 LITERAL LIT$K_SIZE = 24;
0432 00
0433 00 ! Define general LNK items
0434 00
0435 00 !...$LNKDEF
0436 00
0437 00
0438 00 MACRO LN$SV_IMAGE = 0,0,1,0%; ! set if image to be produced
0439 00 LITERAL LN$SM_IMAGE = 1^1 - 1^0;
0440 00 MACRO LN$SV_EXE = 0,1,1,0%; ! set if an executable image
0441 00 LITERAL LN$SM_EXE = 1^2 - 1^1;
0442 00 MACRO LN$SV_SHR = 0,2,1,0%; ! set if shareable image
0443 00 LITERAL LN$SM_SHR = 1^3 - 1^2;
0444 00 MACRO LN$SV_SYS = 0,3,1,0%; ! set if system image
0445 00 LITERAL LN$SM_SYS = 1^4 - 1^3;
0446 00 MACRO LN$SV_MAP = 0,4,1,0%; ! set if map to be produced
0447 00 LITERAL LN$SM_MAP = 1^5 - 1^4;
0448 00 MACRO LN$SV_MAPOPN = 0,5,1,0%; ! set when map file is opened
0449 00 LITERAL LN$SM_MAPOPN = 1^6 - 1^5;
0450 00 MACRO LN$SV_DBG = 0,6,1,0%; ! set if debugger requested
0451 00 LITERAL LN$SM_DBG = 1^7 - 1^6;
0452 00 MACRO LN$SV_CROS = 0,7,1,0%; ! set for cross referenced map (8)
0453 00 LITERAL LN$SM_CROS = 1^8 - 1^7;
0454 00 MACRO LN$SV_LONG = 0,8,1,0%; ! set if long map
0455 00 LITERAL LN$SM_LONG = 1^9 - 1^8;
0456 00 MACRO LN$SV_BRIEF = 0,9,1,0%; ! set if brief map
0457 00 LITERAL LN$SM_BRIEF = 1^10 - 1^9;
0458 00 MACRO LN$SV_SYSLIB = 0,10,1,0%; ! set if system library to be
0459 00 LITERAL LN$SM_SYSLIB = 1^11 - 1^10;
0460 00 ! searched for undefined symbols
0461 00 MACRO LN$SV_INTFIL = 0,11,1,0%; ! set when about to open an internally
0462 00 LITERAL LN$SM_INTFIL = 1^12 - 1^11;
0463 00 ! materialized file for first time
0464 00 MACRO LN$SV_VERIFY = 0,12,1,0%; ! use same bit for options file verification
0465 00 LITERAL LN$SM_VERIFY = 1^13 - 1^12;
0466 00 ! during command processing
0467 00 MACRO LN$SV_SYMTBL = 0,13,1,0%; ! set when symbol table output is required
0468 00 LITERAL LN$SM_SYMTBL = 1^14 - 1^13;
0469 00 MACRO LN$SV_SUPSYS = 0,14,1,0%; ! set when suppression of system library symbols and
0470 00 LITERAL LN$SM_SUPSYS = 1^15 - 1^14;
0471 00 MACRO LN$SV_SUPDBG = 0,15,1,0%; ! set when suppression of debugger symbols and p-sec
0472 00 LITERAL LN$SM_SUPDBG = 1^16 - 1^15;
0473 00 MACRO LN$SV_DBGREC = 0,16,1,0%; ! set in pass 2 when current record is a debug data
0474 00 LITERAL LN$SM_DBGREC = 1^17 - 1^16;
0475 00 MACRO LN$SV_PICIMG = 0,17,1,0%; ! set when a position independent image
0476 00 LITERAL LN$SM_PICIMG = 1^18 - 1^17;
0477 00 MACRO LN$SV_TRACE = 0,18,1,0%; ! set when traceback enabled
0478 00 LITERAL LN$SM_TRACE = 1^19 - 1^18;
0479 00 MACRO LN$SV_CONTIG = 0,19,1,0%; ! image must be made contiguous
0480 00 LITERAL LN$SM_CONTIG = 1^20 - 1^19;
0481 00 MACRO LN$SV_SYSSHR = 0,20,1,0%; ! system shareable image(s) enabled
    
```

```

0482 0 LITERAL LNK$M_SYSSHR = 1^21 - 1^20;
0483 0 MACRO LNK$V_NOPOBUFS = 0,21,1,0%; ! p0 space not available for rms buffers
0484 0 LITERAL LNK$M_NOPOBUFS = 1^22 - 1^21;
0485 0 MACRO LNK$V_USRLIB = 0,22,1,0%; ! user default libraries are enabled
0486 0 LITERAL LNK$M_USRLIB = 1^23 - 1^22;
0487 0 MACRO LNK$V_PROTECT = 0,23,1,0%; ! image is protected with /protect (24)
0488 0 LITERAL LNK$M_PROTECT = 1^24 - 1^23;
0489 0 MACRO LNK$V_POIMAGE = 0,24,1,0%; ! image is p0-only image
0490 0 LITERAL LNK$M_POIMAGE = 1^25 - 1^24;
0491 0 MACRO LNK$V_SYSHEADR = 0,25,1,0%; ! system image with header
0492 0 LITERAL LNK$M_SYSHEADR = 1^26 - 1^25;
0493 0 MACRO LNK$V_ALLUNIV = 0,26,1,0%; ! all globals promoted to universal
0494 0 LITERAL LNK$M_ALLUNIV = 1^27 - 1^26;
0495 0 MACRO LNK$V_UBASED = 0,27,1,0%; ! user specified base address of image
0496 0 LITERAL LNK$M_UBASED = 1^28 - 1^27;
0497 0 MACRO LNK$V_LBASED = 0,28,1,0%; ! linker based image due to l^ or w^ shr img referen
0498 0 LITERAL LNK$M_LBASED = 1^29 - 1^28;
0499 0 MACRO LNK$V_CLI = 0,29,1,0%; ! resulting image is a CLI
0500 0 LITERAL LNK$M_CLI = 1^30 - 1^29;
0501 0 MACRO LNK$V_IMGIDOPT = 0,30,1,0%; ! image id set in options file
0502 0 LITERAL LNK$M_IMGIDOPT = 1^31 - 1^30;
0503 0
0504 0 LITERAL
0505 0 P SEQUST (LNK$$,GBL,0,1
0506 0 P .(IMAGE,) ! set if image to be produced
0507 0 P .(EXE,) ! set if an executable image
0508 0 P .(SHR,) ! set if shareable image
0509 0 P .(SYS,) ! set if system image
0510 0 P .(MAP,) ! set if map to be produced
0511 0 P .(MAPOPN,) ! set when map file is opened
0512 0 P .(DBG,) ! set if debugger requested
0513 0 P .(CROS,) ! set for cross referenced map
0514 0 P .(LONG,) ! set if long map
0515 0 P .(BRIEF,) ! set if brief map
0516 0 P .(SYSLIB,) ! set if system library to be
0517 0 P ! searched for undefined symbols
0518 0 P .(INTFIL,) ! set when about to open an internally
0519 0 P ! materialized file for first time
0520 0 P .(VERIFY,) ! use same bit for options file verification
0521 0 P ! during command processing
0522 0 P .(SYMTBL,) ! set when symbol table output is required
0523 0 P .(SUPSYS,) ! set when suppression of system library symbols and p-sections
0524 0 P .(SUPDBG,) ! set when suppression of debugger symbols and p-sections
0525 0 P .(DBGREC,) ! set in pass 2 when current record is a debug data record
0526 0 P .(PICIMG,) ! set when a position independent image
0527 0 P .(TRACE,) ! set when traceback enabled
0528 0 P .(CONTIG,) ! image must be made contiguous
0529 0 P .(SYSSHR,) ! system shareable image(s) enabled
0530 0 P .(NOPOBUFS,) ! p0 space not available for rms buffers
0531 0 P .(USRLIB,) ! user default libraries are enabled
0532 0 P .(PROTECT,) ! image is protected with /protect
0533 0 P .(POIMAGE,) ! image is p0-only image
0534 0 P .(SYSHEADR,) ! system image with header
0535 0 P .(ALLUNIV,) ! promote all globals to universal
0536 0 P .(UBASED,) ! user specified image base address
0537 0 P .(LBASED,) ! linker was forced to base image
0538 0 P .(CLI,) ! resulting image is a CLI
    
```

P 0539 0
 0540 0
 P 0541 0
 P 0542 0
 P 0543 0
 P 0544 0
 0545 0
 0546 0
 0547 0
 0548 0
 0549 0
 0550 0
 0551 0
 0552 0
 0553 0
 0554 0
 0555 0
 0556 0
 0557 0
 0558 0
 0559 0
 0560 0
 0561 0
 0562 0
 0563 0
 0564 0
 0565 0
 0566 0
 0567 0
 0568 0
 0569 0
 0570 0
 0571 0
 0572 0
 0573 0
 0574 0
 0575 0
 0576 0
 0577 0
 0578 0
 0579 0
 0580 0
 0581 0
 0582 0
 0583 0
 0584 0
 0585 0
 0586 0
 0587 0
 0588 0
 0589 0
 0590 0
 0591 0
 0592 0
 0593 0
 0594 0
 0595 0

```

    (IMGIDOPT,)          ! image id set in options file
    );
LITERAL
SEQULST (LNK$C_,GBL,0,1
        (NLITS_,256)      ! Maximum number of literals
        (MAXPSECTS_,65535) ! Maximum number of psects allowed
    );

!
! define the layout of a module's p-section contribution data block
!
!...$MPCDEF
MACRO      MPC$NXTMPC      = 0,0,32,0%;      ! forward pointer
MACRO      MPC$NOWNOMD    = 4,0,32,0%;      ! pointer to module descriptor
MACRO      MPC$NOFFSET    = 8,0,32,0%;      ! offset of this contribution from base
MACRO      MPC$NLENGTH    = 12,0,32,0%;     ! length of this contribution
MACRO      MPC$NALIGN     = 16,0,8,0%;      ! alignment of this contribution
MACRO      MPC$NPSCTNUM   = 17,0,16,0%;     ! psect number in this module
LITERAL    MPC$NCSIZE     = 19;
LITERAL    MPC$NKSIZ     = 19;

!
! Define the layout of a general binary tree node
!
!...$NODEDEF
MACRO      NODE$NLEFT     = 0,0,32,0%;      ! pointer to left subtree
MACRO      NODE$NRIGHT    = 4,0,32,0%;     ! pointer to right subtree
MACRO      NODE$NBAL      = 8,0,16,1%;     ! balance this node
LITERAL    NODE$NSHORT   = 10;
LITERAL    NODE$N$SHORT  = 10;           ! length of short node
MACRO      NODE$NPTR      = 10,0,32,0%;     ! pointer to associated data
LITERAL    NODE$N$LONG   = 14;
LITERAL    NODE$N$LONG   = 14;           ! length of long node

!
! Define the layout of an environment data block
!
!...$NVDDEF
MACRO      NVDS$NUDFLINK  = 0,0,32,0%;     ! forward link in undefined list
MACRO      NVDS$NUDBLINK = 4,0,32,0%;     ! backward link in undefined list
MACRO      NVDS$NSYMTBL   = 8,0,32,0%;     ! pointer to this env symbol table
MACRO      NVDS$NOMDNUM   = 12,0,32,0%;    ! number of defining module
MACRO      NVDS$NFLAGS    = 16,0,16,0%;    ! flags
MACRO      NVDS$NDEF      = 16,0,1,0%;     ! defined
MACRO      NVDS$N$NAMLNG = 18,0,8,0%;     ! length of environment name
MACRO      NVDS$N$NAME   = 19,0,0,0%;     ! environment name
LITERAL    NVDS$N$SIZE   = 19;
LITERAL    NVDS$N$SIZE   = 19;           ! size of block

!
! Define the layout of an object module error block (also used to hold
! option file text for printing in the map)
!
!...$OEDEF

```

ISI
 SYM
 ISI
 ISI
 ISI
 ISI
 ISI
 ISI
 ISI
 ISI
 ISI
 LNF
 NUP
 SHE
 SOF
 STE
 PSE

 \$AE
 \$CC
 Ph

 In
 Com
 Pa
 Sym
 Pa
 Sym
 Pse
 Cri
 As
 Th
 63
 Th
 12
 9

```

0596 0 MACRO OEB$$_NXTOEB = 0,0,32,0%; ! pointer to next or 0 if last
0597 0 MACRO OEB$$_BYTCNT = 4,0,16,0%; ! number of text bytes
0598 0 MACRO OEB$$_TEXT = 6,0,0,0%; ! address of text string
0599 0 LITERAL OEB$$_SIZE = 6;
0600 0 LITERAL OEB$$_SIZE = 6; ! Size of fixed part of block
0601 0
0602 0 ! define the layout of an object module descriptor
0603 0
0604 0 !...$OMDDEF
0605 0
0606 0 MACRO OMD$$_NXTOMD = 0,0,32,0%; ! Link to next in file
0607 0 MACRO OMD$$_DLILST = 4,0,32,0%; ! debug location information listhead for module
0608 0 MACRO OMD$$_OWNFDB = 4,0,32,0%; ! pointer to owning fdb during pass 1
0609 0 MACRO OMD$$_ALLOC = 8,0,32,0%; ! module's allocation to memory
0610 0 MACRO OMD$$_RFA = 12,0,0,0%; ! rfa of module
0611 0 LITERAL OMD$$_RFA = 6;
0612 0 MACRO OMD$$_MODVBN = 12,0,32,0%; ! virtual block number
0613 0 MACRO OMD$$_BYTOFF = 16,0,16,0%; ! and byte offset
0614 0 MACRO OMD$$_HIPSCT = 18,0,16,0%; ! highest p-sect number
0615 0 MACRO OMD$$_FLAGS = 20,0,8,0%; ! module flags
0616 0
0617 0 MACRO OMD$$_NOPSCT = 20,0,1,0%; ! set until a p-section is seen
0618 0 LITERAL OMD$$_NOPSCT = 1^1 - 1^0;
0619 0 MACRO OMD$$_NOBIN = 20,1,1,0%; ! set until binary or debug records in module
0620 0 LITERAL OMD$$_NOBIN = 1^2 - 1^1;
0621 0 MACRO OMD$$_SHRIMG = 20,2,1,0%; ! module is a shareable image **NOTE** SHRIMG and S
0622 0 LITERAL OMD$$_SHRIMG = 1^3 - 1^2;
0623 0 MACRO OMD$$_SELSEK = 20,3,1,0%; ! set if selective search module **NOTE** to corres
0624 0 LITERAL OMD$$_SELSEK = 1^4 - 1^3;
0625 0 MACRO OMD$$_MAPMOD = 20,4,1,0%; ! set if module to be mapped
0626 0 LITERAL OMD$$_MAPMOD = 1^5 - 1^4;
0627 0 MACRO OMD$$_DEBUGER = 20,5,1,0%; ! this is a module of the debugger
0628 0 LITERAL OMD$$_DEBUGER = 1^6 - 1^5;
0629 0 MACRO OMD$$_P256 = 20,6,1,0%; ! module has more than 256 psects
0630 0 LITERAL OMD$$_P256 = 1^7 - 1^6;
0631 0 MACRO OMD$$_NOENV = 20,7,1,0%; ! set until an environment seen
0632 0 LITERAL OMD$$_NOENV = 1^8 - 1^7;
0633 0
0634 0 MACRO OMD$$_FLAGS1 = 21,0,8,0%; ! more flags
0635 0
0636 0 MACRO OMD$$_E256 = 21,0,1,0%; ! module has more than 256 environments
0637 0 LITERAL OMD$$_E256 = 1^1 - 1^0;
0638 0
0639 0 MACRO OMD$$_HIENV = 22,0,16,0%; ! highest environment assigned
0640 0 MACRO OMD$$_ENVMAP = 24,0,32,0%; ! Pointer to environment mapping table
0641 0 MACRO OMD$$_OMDNUM = 28,0,32,0%; ! object module number
0642 0 MACRO OMD$$_ERRTXT = 32,0,32,0%; ! pointer to first pass 1 error msg
0643 0 MACRO OMD$$_NXTADR = 32,0,32,0%; ! pointer to next omd with .address
0644 0 MACRO OMD$$_LSTERR = 36,0,32,0%; ! pointer to last pass 1 error msg
0645 0 MACRO OMD$$_ADRCNT = 36,0,32,0%; ! Number of .addresses found in pass 2
0646 0 MACRO OMD$$_NAMLNG = 40,0,8,0%; ! name length
0647 0 MACRO OMD$$_NAME = 41,0,0,0%; ! module name field (** NOTE SIZE **)
0648 0 LITERAL OMD$$_NAME = 31;
0649 0 MACRO OMD$$_PSCMAP = 72,0,0,0%; ! p-sect mapping table start
0650 0 LITERAL OMD$$_OMDSIZ = 72;
0651 0 LITERAL OMD$$_OMDSIZ = 72;
0652 0 LITERAL OMD$$_OMDSIZ = 72;

```

ISE
 VA)
 Mac

 -S
 -S
 -S
 TO1
 14E
 The
 MAC

```
P 0653 0 $EQU$ (OMD$C_GBL, 0, 1
P 0654 0 (SIZE, OMD$C_OMDSIZ+2048)
0655 0 );
0656 0
0657 0 ! define the psect definition list descriptor
0658 0
0659 0 !...$PDDDEF
0660 0
0661 0 MACRO PDDL_LEFT = 0,0,32,0%; ! pointer to left subtree
0662 0 MACRO PDDL_RIGHT = 4,0,32,0%; ! pointer to right subtree
0663 0 MACRO PDDSW_BAL = 8,0,16,0%; ! balance at this node
0664 0 MACRO PDDSW_FLAGS = 10,0,16,0%; ! flags set by psect option
0665 0 MACRO PDDSW_FLGMSK = 12,0,16,0%; ! mask of flags set/cleared by option
0666 0 MACRO PDDSB_ALIGN = 14,0,8,0%; ! alignment set by psect option
0667 0 MACRO PDDSB_NAMLANG = 1,0,8,0%; ! length of name
0668 0 MACRO PDDST_NAME = 5,0,0,0%; ! psect name
0669 0 LITERAL PDD$C_SIZE = 16;
0670 0 LITERAL PDD$K_SIZE = 16;
0671 0
0672 0 ! define offsets into a p-section mapping table (appended
0673 0 ! to module descriptors) NOTE: This structure is also used in the
0674 0 ! environment mapping table
0675 0
0676 0
0677 0 !...$PMTDEF
0678 0
0679 0 MACRO PMT$P_PSCDES = 0,0,32,0%; ! pointer to p-section descriptor
0680 0 MACRO PMT$P_SECPMT = 0,0,32,0%; ! pointer to secondary psect mapping table
0681 0 MACRO PMT$P_MODCON = 4,0,32,0%; ! pointer to module contribution data block
0682 0 MACRO PMT$P_SYMLST = 4,0,32,0%; ! forward list of prematurely defined symbols
0683 0 LITERAL PMT$C_SIZE = 8;
0684 0 LITERAL PMT$K_SIZE = 8; ! size of an entry
0685 0
0686 0 ! define the layout of a program section descriptor
0687 0
0688 0 !...$PSCDEF
0689 0
0690 0 MACRO PSC$P_LEFT = 0,0,32,0%; ! left subtree pointer
0691 0 MACRO PSC$P_RIGHT = 4,0,32,0%; ! right subtree pointer
0692 0 MACRO PSC$P_BAL = 8,0,16,0%; ! balance this node
0693 0 MACRO PSC$P_FLAGS = 10,0,16,0%; ! p-sect flags
0694 0
0695 0 MACRO PSC$V_PIC = 10,0,1,0%; ! position independent ** these bits must parallel
0696 0 LITERAL PSC$M_PIC = 1^1 - 1^0; ! from a shareable image
0697 0 MACRO PSC$V_LIB = 10,1,1,0%;
0698 0 LITERAL PSC$M_LIB = 1^2 - 1^1;
0699 0 MACRO PSC$V_OVR = 10,2,1,0%; ! overlaid memory allocation
0700 0 LITERAL PSC$M_OVR = 1^3 - 1^2;
0701 0 MACRO PSC$V_REL = 10,3,1,0%; ! relocatable
0702 0 LITERAL PSC$M_REL = 1^4 - 1^3;
0703 0 MACRO PSC$V_GBL = 10,4,1,0%; ! global scope
0704 0 LITERAL PSC$M_GBL = 1^5 - 1^4;
0705 0 MACRO PSC$V_SHR = 10,5,1,0%; ! shareable
0706 0 LITERAL PSC$M_SHR = 1^6 - 1^5;
0707 0 MACRO PSC$V_EXE = 10,6,1,0%; ! executable
0708 0 LITERAL PSC$M_EXE = 1^7 - 1^6;
0709 0 MACRO PSC$V_RD = 10,7,1,0%; ! readable
```



```

0710 0 LITERAL PSCSM_RD = 1^8 - 1^7;
0711 0 MACRO PSCSV_WRT = 10,8,1,0%; ! writeable
0712 0 LITERAL PSCSM_WRT = 1^9 - 1^8;
0713 0 MACRO PSCSV_VEC = 10,9,1,0%; ! vector psect ** end of bits from $GPSDEF
0714 0 LITERAL PSCSM_VEC = 1^10 - 1^9;
0715 0 MACRO PSCSV_OPTPSC = 10,10,1,0%; ! p-sect defined in option file
0716 0 LITERAL PSCSM_OPTPSC = 1^11 - 1^10;
0717 0 MACRO PSCSV_USRPSC = 10,11,1,0%; ! p-sect definition seen in object source
0718 0 LITERAL PSCSM_USRPSC = 1^12 - 1^11;
0719 0 MACRO PSCSV_SUPRES = 10,12,1,0%; ! p-sect is suppressed
0720 0 LITERAL PSCSM_SUPRES = 1^13 - 1^12;
0721 0 MACRO PSCSV_SHRIMG = 10,13,1,0%; ! p-sect is from a shareable image
0722 0 LITERAL PSCSM_SHRIMG = 1^14 - 1^13;
0723 0 MACRO PSCSV_DELETED = 10,14,1,0%; ! p-sect has been deleted from this cluster and mov
0724 0 LITERAL PSCSM_DELETED = 1^15 - 1^14;
0725 0 MACRO PSCSV_NEWDEF = 10,15,1,0%; ! p-sect was from shr image, defined with SGPS
0726 0 LITERAL PSCSM_NEWDEF = 1^16 - 1^15;
0727 0
0728 0 MACRO PSCSL_MPCLST = 12,0,32,0%; ! module contribution list
0729 0 MACRO PSCSL_LSTMPCLST = 16,0,32,0%; ! address of last module contrib. block
0730 0 MACRO PSCSL_SYMLST = 20,0,32,0%; ! owned relocatable symbol list
0731 0 MACRO PSCSL_BASE = 24,0,32,0%; ! base address
0732 0 MACRO PSCSL_LENGTH = 28,0,32,0%; ! accumulated (if con) / maximum (if ovr) length
0733 0 MACRO PSCSL_ISECT = 32,0,32,0%; ! address of image section descriptor
0734 0 MACRO PSCSL_CLUDSC = 36,0,32,0%; ! address of cluster descriptor
0735 0 MACRO PSCSL_OMDNUM = 40,0,32,0%; ! Number of obj. module defined in
0736 0 MACRO PSCSB_ALIGN = 44,0,8,0%; ! alignment of p-sect base
0737 0 MACRO PSCSB_NAMLANG = 45,0,8,0%; ! p-sect name length
0738 0 MACRO PSCST_NAME = 46,0,0,0%; ! p-sect name (variable)
0739 0 LITERAL PSCSC_SIZE = 46;
0740 0 LITERAL PSCSK_SIZE = 46;
0741 0
0742 0 ! define record file address (RFA) acces
0743 0 ! ....$RFADEF
0744 0
0745 0
0746 0 MACRO RFASL_VBN = 0,0,32,0%; ! Virtual block number in file
0747 0 MACRO RFASW_OFFSET = 4,0,16,0%; ! Byte offset within block
0748 0 LITERAL
0749 0 P $EQU (RFASC_GBL,0,1
0750 0 P (INDEX,65535) ! Offset = FFFF indicate index
0751 0 );
0752 0 LITERAL RFASC_LENGTH = 6;
0753 0 LITERAL RFASK_LENGTH = 6; ! Length of RFA pointer
0754 0
0755 0 ! define symbol name block
0756 0 ! ....$SNBDEF
0757 0
0758 0
0759 0 MACRO SNBSL_COLIST = 0,0,32,0%; ! collision list pointer
0760 0 MACRO SNBSB_NAMLANG = 4,0,8,0%; ! symbol name length
0761 0 MACRO SNBST_NAME = 5,0,0,0%; ! symbol name
0762 0 LITERAL SNBSC_FXDLEN = 5;
0763 0 LITERAL SNBSK_FXDLEN = 5; ! length of fixed part of symbol name block
0764 0
0765 0 ! define layout of the store pic code ref data block
0766 0

```

```

0767 0 !...$SPCRDEF
0768 0
0769 0 MACRO SPCRSL_LEFT = 0,0,32,0%; ! Left sub-tree pointer
0770 0 MACRO SPCRSL_RIGHT = 4,0,32,0%; ! right sub-tree pointer
0771 0 MACRO SPCRSL_BAL = 8,0,16,0%; ! balance this node
0772 0 MACRO SPCRSL_OFFSET = 10,0,32,0%; ! Offset into target image
0773 0 MACRO SPCRSL_FIXADR = 14,0,32,0%; ! VA in fixup section assigned
0774 0 LITERAL SPCRSC_SIZE = 18;
0775 0 LITERAL SPCRSK_SIZE = 18; ! Size of an SPCR block
0776 0
0777 0 ! define layout of the store control table use for store commands in pass 2
0778 0
0779 0 !...$STOCTLDEF
0780 0
0781 0 MACRO STOCTL$B_FLAGS = 0,0,8,0%; ! flags byte
0782 0
0783 0 MACRO STOCTL$V_REP = 0,0,1,0%; ! command is repeated store
0784 0 LITERAL STOCTL$M_REP = 1^1 - 1^0;
0785 0 MACRO STOCTL$V_DISPL = 0,1,1,0%; ! command is a displaced store
0786 0 LITERAL STOCTL$M_DISPL = 1^2 - 1^1;
0787 0 MACRO STOCTL$V_CONMBZ = 0,2,1,0%; ! mbz field is conditional
0788 0 LITERAL STOCTL$M_CONMBZ = 1^3 - 1^2;
0789 0 MACRO STOCTL$V_MBZBIT = 0,3,5,0%; ! mbz bit field
0790 0 LITERAL STOCTL$M_MBZBIT = 1^8 - 1^3;
0791 0
0792 0 LITERAL
0793 0 P SEQUST (STOCTL$C, GBL, 0, 1
0794 0 P (MBZBIT, 3) ! shift count to shift into field
0795 0 );
0796 0 MACRO STOCTL$B_BYTES = 1,0,8,0%; ! output byte count
0797 0 LITERAL STOCTL$C_SIZE = 2;
0798 0 LITERAL STOCTL$K_SIZE = 2;
0799 0
0800 0 ! define the symbol table entry format
0801 0
0802 0 !...$SYMBOLBLK
0803 0
0804 0 LITERAL
0805 0 P SEQUST (SYM$C, GBL, 0, 1
0806 0 P (TBL$IZ, 277) ! size of symbol table (should be prime)
0807 0 P (MAXLNG, 31) ! Maximum symbol length
0808 0 P (SHORTNAME, 15) ! Short symbol length
0809 0 );
0810 0 MACRO SYM$V_VALUE = 0,0,32,0%; ! symbol value
0811 0 MACRO SYM$V_UDFLINK = 0,0,32,0%; ! which is also forward link in undefined list
0812 0 MACRO SYM$V_PSCLST = 4,0,32,0%; ! thread from defining psect
0813 0 MACRO SYM$V_UDFBLINK = 4,0,32,0%; ! which is also backward link in undefined list
0814 0 MACRO SYM$V_ENTMSK = 8,0,16,0%; ! entry point mask
0815 0 MACRO SYM$V_FLAGS = 10,0,16,0%; ! symbol flags
0816 0
0817 0 MACRO SYM$V_WEAK = 10,0,1,0%; ! Weak symbol ** These MUST parallel $OBJFMT
0818 0 LITERAL SYM$M_WEAK = 1^1 - 1^0;
0819 0 MACRO SYM$V_DEF = 10,1,1,0%; ! Definition
0820 0 LITERAL SYM$M_DEF = 1^2 - 1^1;
0821 0 MACRO SYM$V_UNI = 10,2,1,0%; ! Universal
0822 0 LITERAL SYM$M_UNI = 1^3 - 1^2;
0823 0 MACRO SYM$V_REL = 10,3,1,0%; ! Relocatable

```

```

0824 0 LITERAL SYMSM_REL = 1^4 - 1^3:
0825 0 MACRO SYMSV_SPARE1 = 10,4,1,0%:
0826 0 LITERAL SYMSM_SPARE1 = 1^5 - 1^4:
0827 0 MACRO SYMSV_SPARE2 = 10,5,1,0%:
0828 0 LITERAL SYMSM_SPARE2 = 1^6 - 1^5:
0829 0 MACRO SYMSV_SPARE3 = 10,6,1,0%:
0830 0 LITERAL SYMSM_SPARE3 = 1^7 - 1^6:
0831 0 MACRO SYMSV_SPARE4 = 10,7,1,0%:
0832 0 LITERAL SYMSM_SPARE4 = 1^8 - 1^7:
0833 0 MACRO SYMSV_LCLSYM = 10,8,1,0%: ! local symbol
0834 0 LITERAL SYMSM_LCLSYM = 1^9 - 1^8:
0835 0 MACRO SYMSV_OPTSYM = 10,9,1,0%: ! symbol defined by option ** First Linker flag
0836 0 LITERAL SYMSM_OPTSYM = 1^10 - 1^9:
0837 0 MACRO SYMSV_INTSYM = 10,10,1,0%: ! internally created symbol
0838 0 LITERAL SYMSM_INTSYM = 1^11 - 1^10:
0839 0 MACRO SYMSV_SHRIMG = 10,11,1,0%: ! symbol is from shareable image
0840 0 LITERAL SYMSM_SHRIMG = 1^12 - 1^11:
0841 0 MACRO SYMSV_REDEF = 10,12,1,0%: ! symbol is to be redefined
0842 0 LITERAL SYMSM_REDEF = 1^13 - 1^12:
0843 0 MACRO SYMSV_SUPRES = 10,13,1,0%: ! suppressed symbol
0844 0 LITERAL SYMSM_SUPRES = 1^14 - 1^13:
0845 0 MACRO SYMSV_GREF = 10,14,1,0%: ! symbol has been entered into shr lst
0846 0 LITERAL SYMSM_GREF = 1^15 - 1^14:
0847 0 MACRO SYMSV_ENTMSK = 10,15,1,0%: ! has an entry mask
0848 0 LITERAL SYMSM_ENTMSK = 1^16 - 1^15:
0849 0
0850 0 MACRO SYMSW_FLAG2 = 12,0,16,0%: ! second flags word
0851 0
0852 0 MACRO SYMSV_GSTMIS = 12,0,1,0%: ! gst miss
0853 0 LITERAL SYMSM_GSTMIS = 1^1 - 1^0:
0854 0 MACRO SYMSV_CROSREF = 12,1,1,0%: ! symbol has been cross referenced
0855 0 LITERAL SYMSM_CROSREF = 1^2 - 1^1:
0856 0 MACRO SYMSV_REREL = 12,2,1,0%: ! symbol needs to be made relocatable
0857 0 LITERAL SYMSM_REREL = 1^3 - 1^2:
0858 0 ! when it is redefined
0859 0
0860 0 MACRO SYMSB_DATYP = 14,0,8,0%: ! data type
0861 0 MACRO SYMSB_NAMLEN = 15,0,8,0%: ! symbol name length
0862 0 MACRO SYMSL_NEWVAL = 16,0,32,0%: ! re-definition value (set in pass 2, used in lnk$symbtblout)
0863 0 MACRO SYMSL_OFFSET = 16,0,32,0%: ! offset of this symbol into shareable image (set in lnk$svma)
0864 0 ! (symbol will either be redefined or be in another image, but not both)
0865 0 MACRO SYMSL_OMDNUM = 20,0,32,0%: ! owning obj module number
0866 0 MACRO SYMSL_VALDATA = 24,0,32,0%: ! pointer to argument validation data
0867 0 MACRO SYMSL_SHRLNK = 28,0,32,0%: ! pointer to next symbol this shareable image
0868 0 MACRO SYMSL_CLUDSC = 32,0,32,0%: ! pointer to cluster descriptor of owning cluster
0869 0 LITERAL SYMSC_SIZE = 36:
0870 0 LITERAL SYMSK_SIZE = 36:
    
```

Library Statistics

File	----- Symbols -----			Pages Mapped	Processing Time
	Total	Loaded	Percent		
_\$255\$DUA28:[SYSLIB]STARLET.L32;1	9776	4	0	581	00:01.0

COMMAND QUALIFIERS

BLISS/LIST=LISS:DATBAS/LIBRARY=LIBS:DATBAS SYSS\$INPUT+LIBS:DATBAS.B32

: Run Time: 00:13.7
: Elapsed Time: 00:45.5
: Lines/CPU Min: 3824
: Lexemes/CPU-Min: 42074
: Memory Used: 121 pages
: Library Precompilation Complete

Thumbnail 1	Thumbnail 2	Thumbnail 3	Thumbnail 4	Thumbnail 5	Thumbnail 6	Thumbnail 7	Thumbnail 8	Thumbnail 9	Thumbnail 10
Thumbnail 11	Thumbnail 12	Thumbnail 13	Thumbnail 14	Thumbnail 15	Thumbnail 16	Thumbnail 17	Thumbnail 18	Thumbnail 19	Thumbnail 20
Thumbnail 21	Thumbnail 22	Thumbnail 23	Thumbnail 24	Thumbnail 25	Thumbnail 26	Thumbnail 27	Thumbnail 28	Thumbnail 29	Thumbnail 30
Thumbnail 31	Thumbnail 32	Thumbnail 33	Thumbnail 34	Thumbnail 35	Thumbnail 36	Thumbnail 37	Thumbnail 38	Thumbnail 39	Thumbnail 40
Thumbnail 41	Thumbnail 42	Thumbnail 43	Thumbnail 44	Thumbnail 45	Thumbnail 46	Thumbnail 47	Thumbnail 48	Thumbnail 49	Thumbnail 50
Thumbnail 51	Thumbnail 52	Thumbnail 53	Thumbnail 54	Thumbnail 55	Thumbnail 56	Thumbnail 57	Thumbnail 58	Thumbnail 59	Thumbnail 60
Thumbnail 61	Thumbnail 62	Thumbnail 63	Thumbnail 64	Thumbnail 65	Thumbnail 66	Thumbnail 67	Thumbnail 68	Thumbnail 69	Thumbnail 70
Thumbnail 71	Thumbnail 72	Thumbnail 73	Thumbnail 74	Thumbnail 75	Thumbnail 76	Thumbnail 77	Thumbnail 78	Thumbnail 79	Thumbnail 80
Thumbnail 81	Thumbnail 82	Thumbnail 83	Thumbnail 84	Thumbnail 85	Thumbnail 86	Thumbnail 87	Thumbnail 88	Thumbnail 89	Thumbnail 90
Thumbnail 91	Thumbnail 92	Thumbnail 93	Thumbnail 94	Thumbnail 95	Thumbnail 96	Thumbnail 97	Thumbnail 98	Thumbnail 99	Thumbnail 100