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                                  M  8

EEEEEEEEEEEEEEE  VVV         VVV  LLL
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EEE                 VVV   VVV     LLL
EEEEEEEEEEEEEEE        VVV        LLLLLLLLLLLLLLL
EEEEEEEEEEEEEEE        VVV        LLLLLLLLLLLLLLL
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```
**FILE**ID**EVLJULIAN                                            D  6










          EEEEEEEEEE  VV      VV  LL                  JJ  UU      UU  LL            IIIIII      AAAAAA    NN      NN
          EEEEEEEEEE  VV      VV  LL                  JJ  UU      UU  LL            IIIIII      AAAAAA    NN      NN
          EE          VV      VV  LL                  JJ  UU      UU  LL              II      AA      AA  NN      NN
          EE          VV      VV  LL                  JJ  UU      UU  LL              II      AA      AA  NN      NN
          EE          VV      VV  LL                  JJ  UU      UU  LL              II      AA      AA  NNNN    NN
          EE          VV      VV  LL                  JJ  UU      UU  LL              II      AA      AA  NNNN    NN
          EEEEEEEE    VV      VV  LL                  JJ  UU      UU  LL              II      AA      AA  NN  NN  NN
          EEEEEEEE    VV      VV  LL                  JJ  UU      UU  LL              II      AA      AA  NN  NN  NN
          EE          VV      VV  LL          JJ      JJ  UU      UU  LL              II      AAAAAAAAAA  NN    NNNN
          EE          VV      VV  LL          JJ      JJ  UU      UU  LL              II      AAAAAAAAAA  NN    NNNN
          EE            VV  VV    LL          JJ      JJ  UU      UU  LL              II      AA      AA  NN      NN      ....
          EE            VV  VV    LL          JJ      JJ  UU      UU  LL              II      AA      AA  NN      NN      ....
          EEEEEEEEEE      VV      LLLLLLLLLL    JJJJJJ    UUUUUUUUUU  LLLLLLLLLL    IIIIII    AA      AA  NN      NN      ....
          EEEEEEEEEE      VV      LLLLLLLLLL    JJJJJJ    UUUUUUUUUU  LLLLLLLLLL    IIIIII    AA      AA  NN      NN      ....


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

```
0 %TITLE  'Julian Half Day Conversions'
0 MODULE EVLJULIAN (
0                 LANGUAGE (BLISS32),
0                 IDENT = 'V04-000'
0                 ) =
1 BEGIN
1
1 !
1 !****************************************************************************
1 !*                                                                          *
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1 !*  CORPORATION.                                                            *
1 !*                                                                          *
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1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
1 !*                                                                          *
1 !*                                                                          *
1 !****************************************************************************
1 !
1
1 !++
1 ! FACILITY:     DECnet Event Logging (EVL)
1 !
1 ! ABSTRACT:
1 !
1 !       This module contains the routines to convert to and from
1 !       the standard date-time format for event logging, Julian
1 !       halfday.  The internal date-time for DECnet-VAX is VAX
1 !       64 bit absolute time.
1 !
1 ! ENVIRONMENT:  VAX/VMS Operating System
1 !
1 ! AUTHOR:       Darrell Duffy   , CREATION DATE:  8-Jun-1980
1 !
1 ! MODIFIED BY:
1 !
1 !       , : VERSION
1 ! 01    -
1 !--
```

```
:     53         0052   1 %SBTTL  'Definitions'
:     54         0053   1
:     55         0054   1 !
:     56         0055   1 ! TABLE OF CONTENTS:
:     57         0056   1 !
:     58         0057   1
:     59         0058   1 FORWARD ROUTINE
:     60         0059   1         EVL$JULIAN      : ,             ! Convert from abstim to julian
:     61         0060   1         EVL$UNJULIAN    : NOVALUE       ! Convert from julian to abstim
:     62         0061   1         ;
:     63         0062   1
:     64         0063   1 !
:     65         0064   1 ! INCLUDE FILES:
:     66         0065   1 !
:     67         J066   1
:     68         0067   1 LIBRARY 'SYS$LIBRARY:STARLET.L32';
:     69         0068   1
:     70         0069   1 !
:     71         0070   1 ! MACROS:
:     72         0071   1 !
:     73         0072   1
:     74         0073   1 !
:     75         0074   1 ! EQUATED SYMBOLS:
:     76         0075   1 !
:     77         0076   1
:     78         0077   1 LITERAL
:     79         0078   1         SUCCESS = 1,
:     80         0079   1         FAILURE = 0
:     81         0080   1         ;
:     82         0081   1
:     83         0082   1 !
:     84         0083   1 ! OWN STORAGE:
:     85         0084   1 !
:     86         0085   1
:     87         0086   1 !
:     88         0087   1 ! EXTERNAL REFERENCES:
:     89         0088   1 !
:     90         0089   1
:     91         0090   1 !EXTERNAL ROUTINE
:     92         0091   1 !       ;
```

```
;    94        0092  1 %SBTTL  'EVL$JULIAN  Convert Abstim to Julian Half Days'
;    95        0093  1 GLOBAL ROUTINE EVL$JULIAN (ABSTIM, HALFDAY, SECONDS, MILISEC) =
;    96        0094  1
;    97        0095  1 !++
;    98        0096  1 ! FUNCTIONAL DESCRIPTION:
;    99        0097  1 !
;   100        0098  1 !       Convert from VMS abs time to julian half day, seconds and
;   101        0099  1 !       milliseconds.  This computation is taken directly from the
;   102        0100  1 !       DNA Network Management Functional Specification.
;   103        0101  1 !
;   104        0102  1 ! FORMAL PARAMETERS:
;   105        0103  1 !
;   106        0104  1 !       ABSTIM          Address of quadword abs time
;   107        0105  1 !       HALFDAY         Address to return halfday as a longword
;   108        0106  1 !       SECONDS         Address to return seconds in half day as a longword
;   109        0107  1 !       MILISEC         Address to return milliseconds as a longword
;   110        0108  1 !
;   111        0109  1 ! IMPLICIT INPUTS:
;   112        0110  1 !
;   113        0111  1 !       NONE
;   114        0112  1 !
;   115        0113  1 ! IMPLICIT OUTPUTS:
;   116        0114  1 !
;   117        0115  1 !       NONE
;   118        0116  1 !
;   119        0117  1 ! ROUTINE VALUE:
;   120        0118  1 ! COMPLETION CODES:
;   121        0119  1 !
;   122        0120  1 !       Success if data returned, Failure if abs time is out of range
;   123        0121  1 !       of julian half day, or conversion of abstime fails.
;   124        0122  1 !
;   125        0123  1 ! SIDE EFFECTS:
;   126        0124  1 !
;   127        0125  1 !       NONE
;   128        0126  1 !
;   129        0127  1 !--
;   130        0128  1
;   131        0129  2    BEGIN
;   132        0130  2
;   133        0131  2    LOCAL
;   134        0132  2        TIMVEC : VECTOR [7, WORD],      ! Vector of words to return disected
;   135        0133  2                                        ! Abs time
;   136        0134  2        STATUS                          ! Local status
;   137        0135  2        ;
;   138        0136  2
;   139        0137  2    BIND
;   140        0138  2        YEAR    = TIMVEC [0] : WORD,    ! Each piece of the disected time
;   141        0139  2        MONTH   = TIMVEC [1] : WORD,
;   142        0140  2        DAY     = TIMVEC [2] : WORD,
;   143        0141  2        HOUR    = TIMVEC [3] : WORD,
;   144        0142  2        MINUTE  = TIMVEC [4] : WORD,
;   145        0143  2        SECND   = TIMVEC [5] : WORD,
;   146        0144  2        HNDRTH  = TIMVEC [6] : WORD
;   147        0145  2        ;
;   148        0146  2
;   149        0147  2    IF NOT                              ! Disect the abs time
;   150      P 0148  3        (STATUS = $NUMTIM
;  151       P 0149  3                (
;  152       P 0150  3                TIMBUF = TIMVEC,            ! Buffer to place disected time
;  153       P 0151  3                TIMADR = .ABSTIM            ! Place to obtain 64 bit time
;  154         0152  4                )
;  155         0153  3            )
;  156         0154  2        THEN
;  157         0155  2            RETURN .STATUS                  ! It was not valid
;  158         0156  2        ;
;  159         0157  2
;  160         0158  3        IF  (                               ! Check the range of the date
;  161         0159  3            .YEAR GTRU 2021
;  162         0160  3            AND
;  163         0161  3            .MONTH GTR 10
;  164         0162  3            )
;  165         0163  2            OR
;  166         0164  2            .YEAR LSSU 1977
;  167         0165  2        THEN
;  168         0166  2            RETURN FAILURE                  ! Not expressible in julian halfday
;  169         0167  2        ;
;  170         0168  2
;  171         0169  2        .HALFDAY =                          ! Compute the half day
;  172         0170  3            (
;  173         0171  4            ( (3055 * (.MONTH+2) / 100) - ( (.MONTH+10) / 13) * 2 - 91)
;  174         0172  3            +
;  175         0173  4            ( (1 - (.YEAR - .YEAR / 4 * 4 + 3) / 4) * (.MONTH+10) / 13 + .DAY - 1)
;  176         0174  3            +
;  177         0175  4            ( (.YEAR-1977) * 365 + (.YEAR-1977) / 4)
;  178         0176  2            )* 2
;  179         0177  2            ;
;  180         0178  2
;  181         0179  2        .HALFDAY = ..HALFDAY + (.HOUR/12);  ! Adjust for the odd half day
;  182         0180  2        HOUR = .HOUR MOD 12;
;  183         0181  2
;  184         0182  2        .SECONDS = ( .HOUR*3600 + .MINUTE*60 + .SECND ); ! Now the second in day
;  185         0183  2
;  186         0184  2        .MILISEC = .HNDRTH * 10;            ! And the millisecond in the second
;  187         0185  2
;  188         0186  2        RETURN SUCCESS
;  189         0187  2
;  190         0188  1        END;


                                                                  .TITLE  EVLJULIAN Julian Half Day Conversions
                                                                  .IDENT  \V04-000\

                                                                  .EXTRN  SYS$NUMTIM

                                                                  .PSECT  $CODE$,NOWRT,2

                                              001C 00000          .ENTRY  EVL$JULIAN, Save R2,R3,R4                 ; 0093
                              5E          10    C2 00002          SUBL2   #16, SP                                   ;
                                    04    AC    DD 00005          PUSHL   ABSTIM                                    ; 0152
                                    04    AE    9F 00008          PUSHAB  TIMVEC                                    ;
                   00000000G  00          02    FB 0000B          CALLS   #2, SYS$NUMTIM                            ;
                              01          50    E8 00012          BLBS    STATUS, 1$                                ;
                                                04 00015          RET                                               ;
                              54          6E    3C 00016 1$:      MOVZWL  YEAR, R4                                  ; 0159
```

```
                                07E5   8F            54 B1 00019            CMPW     R4, #2021                               :
                                                     09 1B 0001E            BLEQU    3$                                      :
                                       0A        02  AE B1 00020            CMPW     MONTH, #10                              : 0161
                                                     03 1B 00024            BLEQU    3$                                      :
                                                   00BB 31 00026 2$:        BRW      4$                                      :
                                07B9   8F            54 B1 00029 3$:        CMPW     R4, #1977                               : 0164
                                                     F6 1F 0002E            BLSSU    2$                                      :
                                       52        02  AE 3C 00030            MOVZWL   MONTH, R2                               : 0171
                                       52 00000BEF   8F C4 00034            MULL2    #3055, R2                               :
                                       52      17DE  C2 9E 0003B            MOVAB    6110(R2), R2                            :
                                       52 00000064   8F C6 00040            DIVL2    #100, R2                                :
                                       53        02  AE 3C 00047            MOVZWL   MONTH, R3                               :
                                       53            0A C0 0004B            ADDL2    #10, R3                                 :
                         50            53            0D C7 0004E            DIVL3    #13, R3, R0                             :
                                       50            02 C4 00052            MULL2    #2, R0                                  :
                                       52            50 C2 00055            SUBL2    R0, R2                                  :
                         51            54            04 C7 00058            DIVL3    #4, R4, R1                              : 0173
                                       51            04 C4 0005C            MULL2    #4, R1                                  :
                                       51            54 C2 0005F            SUBL2    R4, R1                                  :
                                       51            03 C2 00062            SUBL2    #3, R1                                  :
                                       51            04 C6 00065            DIVL2    #4, R1                                  :
                                       50        01  A1 9E 00068            MOVAB    1(R1), R0                               :
                                       50            53 C4 0006C            MULL2    R3, R0                                  :
                                       50            0D C6 0006F            DIVL2    #13, R0                                 :
                                       51        04  AE 3C 00072            MOVZWL   DAY, R1                                 :
                                       50            51 C0 00076            ADDL2    R1, R0                                  :
                                       50            52 C0 00079            ADDL2    R2, R0                                  : 0172
                         51            54 0000016D   8F C5 0007C            MULL3    #365, R4, R1                            : 0175
                                       52      F847  C4 9E 00084            MOVAB    -1977(R4), R2                           :
                                       52            04 C6 00089            DIVL2    #4, R2                                  :
                                       51            52 C0 0008C            ADDL2    R2, R1                                  :
                                       50 FFF4FCDF E140 9E 0008F            MOVAB    -721697(R1)[R0], R0                     : 0170
                    08   BC            50            01 78 00097            ASHL     #1, R0, @HALFDAY                        : 0176
                                       50        06  AE 3C 0009C            MOVZWL   HOUR, R0                                : 0179
                                       50            0C C6 000A0            DIVL2    #12, R0                                 :
                                  08   BC            50 C0 000A3            ADDL2    R0, @HALFDAY                            :
                                       50        06  AE 3C 000A7            MOVZWL   HOUR, R0                                : 0180
           7E            00            50            01 7A 000AB            EMUL     #1, R0, #0, -(SP)                       :
           50            50            8E            0C 7B 000B0            EDIV     #12, (SP)+, R0, R0                      :
                                  06   AE            50 B0 000B5            MOVW     R0, HOUR                                :
                                       50        06  AE 3C 000B9            MOVZWL   HOUR, R0                                : 0182
                                       50 00000E10   8F C4 000BD            MULL2    #3600, R0                               :
                                       51        08  AE 3C 000C4            MOVZWL   MINUTE, R1                              :
                                       51            3C C4 000C8            MULL2    #60, R1                                 :
                                       50            51 C0 000CB            ADDL2    R1, R0                                  :
                                       51        0A  AE 3C 000CE            MOVZWL   SECND, R1                               :
                    0C   BC            50            51 C1 000D2            ADDL3    R1, R0, @SECONDS                        :
                                       50        0C  AE 3C 000D7            MOVZWL   HNDRTH, R0                              : 0184
                    10   BC            50            0A C5 000DB            MULL3    #10, R0, @MILISEC                       :
                                       50            01 D0 000E0            MOVL     #1, R0                                  : 0186
                                                        04 000E3            RET                                              :
                                                     50 D4 000E4 4$:        CLRL     R0                                      : 0188
                                                        04 000E6            RET                                              :

; Routine Size.  231 bytes,     Routine Base:  $CODE$ + 0000
```

```
1 %SBTTL  'EVL$UNJULIAN  Convert Julian Halfday to Abs Time'
1 GLOBAL ROUTINE EVL$UNJULIAN (JULIAN, SECNDS, MILSECS, ABSTIM) :NOVALUE =
1
1 !++
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       Convert julian halfday, seconds and milliseconds to VMS 64 bit
1 !       absolute time.  We need to do lots of monkeying around to not have
1 !       the one EMUL instruction overflow.  The important conversion factor
1 !       in this computation is the number of days between 17-NOV-1858 and
1 !       1-JAN-1977.
1 !
1 ! FORMAL PARAMETERS:
1 !
1 !       JULIAN          Address of longword containing julian halfdays
1 !       SECNDS          Address of longword containing seconds in halfday
1 !       MILSECS         Address of longword containing milliseconds in second
1 !       ABSTIM          Address of quadword for abs time
1 !
1 ! IMPLICIT INPUTS:
1 !
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 ! COMPLETION CODES:
1 !
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !
1 !       NONE
1 !
1 !--
1
2    BEGIN
2
2    BUILTIN EMUL ;                          ! Extended multiply instruction
2
2    LOCAL
2        NANOSECS,                           ! 100 nanosecs to add
2        JULIAN_MINS,                        ! Minutes since 1-jan-1977
2        NANOSPERMIN                         ! 100 nanosecs in a minute
2        ;
2
2    BIND
2        DATEOFFSET = 43144                  ! Days between 17-NOV-1858 and
2        ;                                   ! 1-Jan-1977
2
2    NANOSPERMIN = 60*10*1000*1000;
2    NANOSECS = ( ( (..SECNDS MOD 60) *1000) + ..MILSECS ) * (10*1000);
2    JULIAN_MINS = (..JULIAN + (DATEOFFSET*2) ) * (12*60) + (..SECNDS / 60);
2    EMUL (JULIAN_MINS, NANOSPERMIN, NANOSECS, .ABSTIM)
2
```

```
; 249          0246 1     END;


                                                                  DATEOFFSET=         43144


                                                       000C 00000   .ENTRY  EVL$UNJULIAN, Save R2,R3                    ; 0190
                                       53 23C34600   8F  D0 00002    MOVL    #600000000, NANOSPERMIN                     ; 0241
           7E            00       08   BC            01  7A 00009    EMUL    #1, @SECNDS, #0, -(SP)                      ; 0242
           50            50            8E            3C  7B 0000F    EDIV    #60, (SP)+, R0, R0                          ;
                                       50 000003E8   8F  C4 00014    MULL2   #1000, R0                                   ;
                                       50       0C   BC  C0 0001B    ADDL2   @MILSECS, R0                                ;
                         52            50 00002710   8F  C5 0001F    MULL3   #10000, R0, NANOSECS                        ;
                         50       04   BC 000002D0   8F  C5 00027    MULL3   #720, @JULIAN, R0                           ; 0243
                         51       08   BC            3C  C7 00030    DIVL3   #60, @SECNDS, R1                            ;
                                       50 03B3FD00 E140  9E 00035    MOVAB   62127360(R1)[R0], JULIAN_MINS               ;
      10   BC            52            53            50  7A 0003D    EMUL    JULIAN_MINS, NANOSPERMIN, NANOSECS, @ABSTIM ; 0244
                                                         04 00043    RET                                                 ; 0246

; Routine Size:  68 bytes,    Routine Base:  $CODE$ + 00E7
;   251          0247  1 END                                !End of module
;   252          0248  0 ELUDOM




;                                    PSECT SUMMARY
;
;       Name                       Bytes                         Attributes
;
;  $CODE$                              299  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)




;                             Library Statistics
;
;                                                --------- Symbols --------        Pages        Processing
;       File                                     Total     Loaded    Percent       Mapped       Time
;
;  _$255$DUA28:[SYSLIB]STARLET.L32;1               9776          3          0         581          00:01.0





;                                     COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:EVLJULIAN/OBJ=OBJ$:EVLJULIAN MSRC$:EVLJULIAN/UPDATE=(ENH$:EVLJULIAN)

; Size:          299 code + 0 data bytes
; Run Time:         00:05.6
; Elapsed Time:     00:13.2
; Lines/CPU Min:     2647
; Lexemes/CPU-Min:  9256
; Memory Used:  68 pages
; Compilation Complete
```

0156 AH-BT13A-SE
VAX/VMS V4.0

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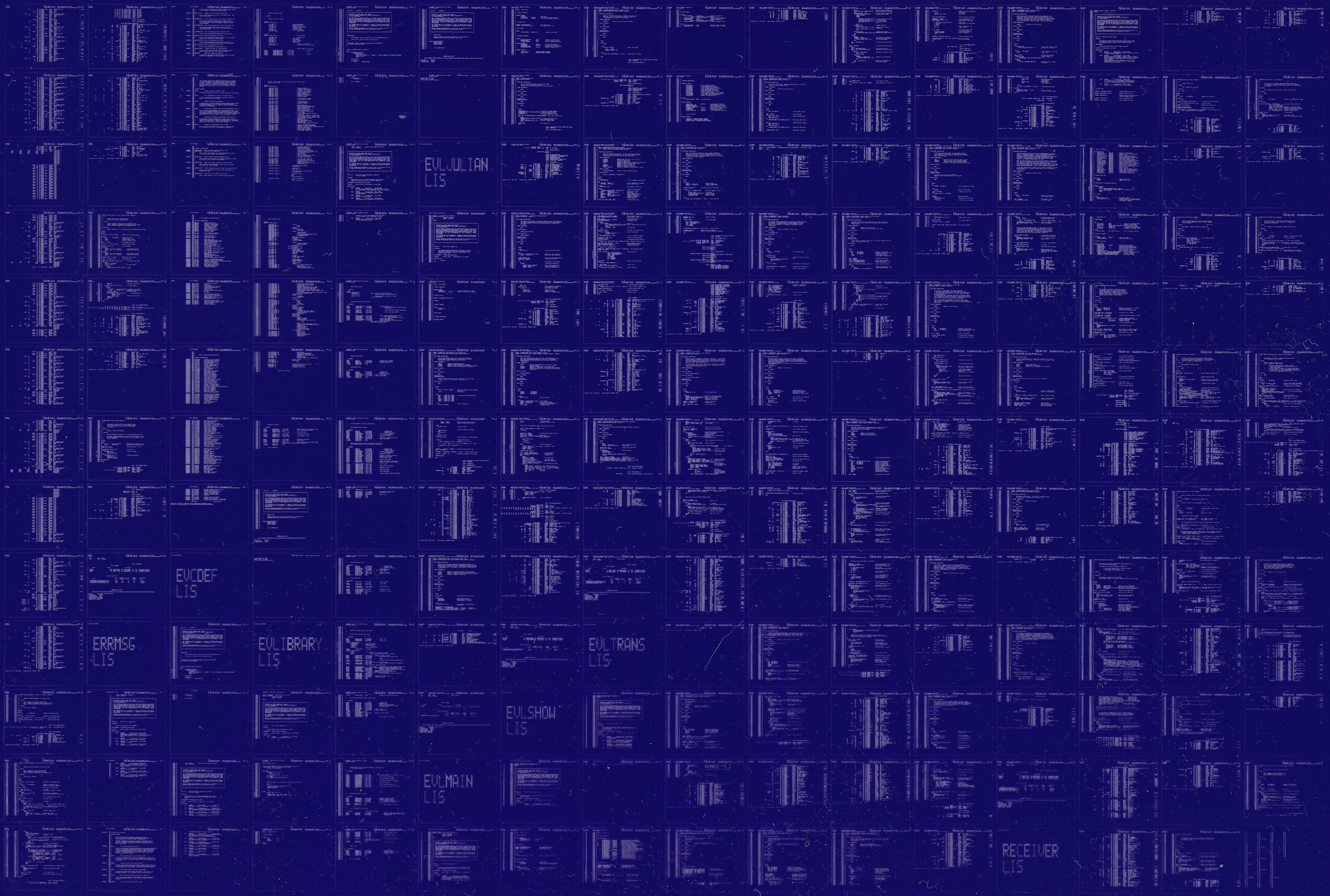

EVLJULIAN
LIS

EVCDEF
LIS

ERRMSG
LIS

EVLIBRARY
LIS

EVLTRANS
LIS

EVLSHOW
LIS

EVLMAIN
LIS

RECEIVER
LIS