HAL/S COMPILER PHASE 1 -- VERSION OF JULY 15, 2024. CLOCK TIME = 12:11:17.00.

TODAY IS JULY 15, 2024. CLOCK TIME = 20:22:5.29.

PARM FIELD: LISTING2,LIST,NOADDRS,NOTABLES,TRACE

COMPLETE LIST OF COMPILE-TIME OPTIONS IN EFFECT

*** TYPE 1 OPTIONS ***

```
 NOADDRS
 NODECK
 NODUMP
 NOHALMAT
 NOHIGHOPT
   LFXI
   LIST
   LISTING2
   MICROCODE
 NOREGOPT
 NOSDL
 NOSREF
 NOSRN
 NOTABDMP
 NOTABLES
 NOTABLST
 NOTEMPLATE
 NOVARSYM
   ZCON
```

*** TYPE 2 OPTIONS ***

```
 BLOCKSUM = 400
 CARDTYPE =
 COMPUNIT = 0
      DSR = 1
LABELSIZE = 1200
   LINECT = 59
LITSTRINGS = 2000
MACROSIZE = 500
     MFID =
    PAGES = 2500
  SYMBOLS = 200
    TITLE =
 XREFSIZE = 2000
```

*** NO LANGUAGE SUBSET IN EFFECT ***

```
STMT                                        SOURCE                                                  REVISION

   1 M| DEMO:                                                                                       |DEMO
   1 M| PROGRAM;                                                                                    |DEMO

     C|                                                                                             |DEMO
     C|        THIS IS A DEMONSTRATION PROGRAM TO SHOW THE LISTING PRODUCED BY                      |DEMO
     C|        THE HAL/S-360 COMPILER                                                               |DEMO
     C|                                                                                             |DEMO
   2 M|   REPLACE PRINTER BY "6";                                                                   |DEMO
   3 M|   DECLARE INTEGER INITIAL(1),                                                               |DEMO
   3 M|              A, B, C;                                                                       |DEMO
   4 M|   DECLARE D, F, G;                                                                          |DEMO
   5 M|   DECLARE E VECTOR(4);                                                                      |DEMO
   6 M|   DECLARE H, I, J,                                                                          |DEMO
   6 M|           K ARRAY(5) MATRIX(3, 4),                                                          |DEMO
   6 M|           L, M, N,                                                                          |DEMO
   6 M|           O SCALAR;                                                                         |DEMO
   7 M|   STRUCTURE AA:                                                                             |DEMO
   7 M|     1 BB,                                                                                   |DEMO
   7 M|       2 CC MATRIX(4, 3),                                                                    |DEMO
   7 M|     1 DD,                                                                                   |DEMO
   7 M|       2 EE ARRAY(4) MATRIX(3, 4);                                                           |DEMO
   8 M|   STRUCTURE QQ:                                                                             |DEMO
   8 M|     1 RR,                                                                                   |DEMO
   8 M|       2 AAREF AA-STRUCTURE,                                                                 |DEMO
   8 M|       2 SS CHARACTER(5);                                                                    |DEMO
   9 M|   DECLARE MY_STRUCTURE QQ-STRUCTURE(5);                                                     |DEMO
```

```
STMT                                                    SOURCE                                                  CURRENT SCOPE

  10 M| PROC1:                                                                                                  |PROC1
  10 M| PROCEDURE;                                                                                              |PROC1
  11 M|   DECLARE A INTEGER;                                                                                    |PROC1
  12 M|   IF A = B THEN DO;                                                                                     |DO=ST#13
  14 M| LABEL1:                                                                                                 |PROC1
  14 M| 1   B = C;                                                                                              |PROC1

     E|                                -                                      -                                 |
  15 M| 1   {MY_STRUCTURE.RR.AAREF.DD.EE}        = {MY_STRUCTURE.RR.AAREF.BB.CC}     ;                          |PROC1
     S|                                  *;3:2,*                                *;*,2                           |

  16 M|   END;                                                                                                  |ST#13
  17 M|   ELSE                                                                                                  |PROC1
  17 M|     A = C;                                                                                              |PROC1
  18 M| CLOSE PROC1;                                                                                            |PROC1


**** B L O C K   S U M M A R Y ****

OUTER VARIABLES USED
    B, B*, C, MY_STRUCTURE*, MY_STRUCTURE

OUTER STRUCTURE TEMPLATES USED
     QQ,  AA
```

```
STMT                                                         SOURCE                                                          CURRENT SCOPE

  19 M|   DO FOR C = 1 TO 100;                                                                                              |DEMO
  20 M| 1   D = K     ;                                                                                                     |DEMO
     S|         C:2,3                                                                                                       |

  21 M|   END;                                                                                                              |ST#19
  22 M|   DO CASE A;                                                                                                        |DEMO
  23 M| 1   A = B;                                                                                                          |CASE 1

     E|     -   -                                                                                                           |
  24 M| 1   E = K     ;                                                                                                     |CASE 2
     S|         B:A,*                                                                                                       |

  25 M|   END;                                                                                                              |ST#22

     E|    *                                                                                                                |
  26 M|   [K] = 0;                                                                                                          |DEMO

     E|                                       *                                       *                                     |
  27 M|   WRITE(PRINTER) MY_STRUCTURE.RR.AAREF.BB.CC          , [MY_STRUCTURE.RR.AAREF.DD.EE]         , D,                 |DEMO
               ^^^^^^^
     S|                                      3;1 TO 3,*                              2;2 TO 4:                              |

     E|   -                  *                                                                                              |
  27 M|   E, F, G, H, I, J, [K], L, M, N, O;                                                                                |DEMO
  28 M| CLOSE DEMO;                                                                                                         |DEMO
```

**** C O M P I L A T I O N L A Y O U T ****

```
 DEMO: PROGRAM;

    PROC1: PROCEDURE;
```

S T R U C T U R E T E M P L A T E S Y M B O L & C R O S S R E F E R E N C E T A B L E L I S T I N G :

(CROSS REFERENCE FLAG KEY: 4 = ASSIGNMENT, 2 = REFERENCE, 1 = SUBSCRIPT USE, 0 = DEFINITION)

DCL	NAME	TYPE	ATTRIBUTES & CROSS REFERENCE
7	AA	STRUCTURE TEMPLATE	ALIGNED XREF: 0 0007 2 0008 2 0015 2 0027
			USED BY: AAREF
7	BB	1 MINOR NODE	ALIGNED XREF: 0 0007 POSSIBLY NOT USED
7	CC	2 4 X 3 MATRIX	SINGLE, ALIGNED XREF: 0 0007 2 0015 2 0027 POSSIBLY NOT ASSIGNED
7	DD	1 MINOR NODE	ALIGNED XREF: 0 0007 POSSIBLY NOT USED
7	EE	2 3 X 4 MATRIX ARRAY	ARRAY(4), SINGLE, ALIGNED XREF: 0 0007 4 0015 2 0027
8	QQ	STRUCTURE TEMPLATE	ALIGNED XREF: 0 0008 2 0009 2 0015 2 0027
			USED BY: MY_STRUCTURE
8	RR	1 MINOR NODE	ALIGNED XREF: 0 0008 POSSIBLY NOT USED
8	AAREF	2 STRUCTURE	AA-STRUCTURE, ALIGNED XREF: 0 0008 6 0015 2 0027
8	SS	2 CHARACTER(5)	ALIGNED XREF: 0 0008 POSSIBLY NOT USED

S Y M B O L & C R O S S R E F E R E N C E T A B L E L I S T I N G :

(CROSS REFERENCE FLAG KEY: 4 = ASSIGNMENT, 2 = REFERENCE, 1 = SUBSCRIPT USE, 0 = DEFINITION)

DCL	NAME	TYPE	ATTRIBUTES & CROSS REFERENCE
3	A	INTEGER	SINGLE, ALIGNED, STATIC, INITIAL XREF: 0 0003 2 0022 4 0023 1 0024
11	A	INTEGER	SINGLE, ALIGNED, STATIC XREF: 0 0011 2 0012 4 0017
8	AAREF	STRUCTURE	**** SEE STRUCTURE TEMPLATE QQ
3	B	INTEGER	SINGLE, ALIGNED, STATIC, INITIAL XREF: 0 0003 2 0012 4 0014 2 0023 1 0024
7	BB	MINOR NODE	**** SEE STRUCTURE TEMPLATE AA
3	C	INTEGER	SINGLE, ALIGNED, STATIC, INITIAL XREF: 0 0003 2 0014 2 0017 4 0019 1 0020
7	CC	4 X 3 MATRIX	**** SEE STRUCTURE TEMPLATE AA
4	D	SCALAR	SINGLE, ALIGNED, STATIC XREF: 0 0004 4 0020 2 0027
7	DD	MINOR NODE	**** SEE STRUCTURE TEMPLATE AA
1	DEMO	PROGRAM	XREF: 0 0001
5	E	4 - VECTOR	SINGLE, ALIGNED, STATIC XREF: 0 0005 4 0024 2 0027
7	EE	3 X 4 MATRIX ARRAY	**** SEE STRUCTURE TEMPLATE AA
4	F	SCALAR	SINGLE, ALIGNED, STATIC XREF: 0 0004 2 0027
			***** ERROR ***** REFERENCED BUT NOT ASSIGNED
4	G	SCALAR	SINGLE, ALIGNED, STATIC XREF: 0 0004 2 0027
			***** ERROR ***** REFERENCED BUT NOT ASSIGNED
6	H	SCALAR	SINGLE, ALIGNED, STATIC XREF: 0 0006 2 0027
			***** ERROR ***** REFERENCED BUT NOT ASSIGNED
6	I	SCALAR	SINGLE, ALIGNED, STATIC XREF: 0 0006 2 0027
			***** ERROR ***** REFERENCED BUT NOT ASSIGNED
6	J	SCALAR	SINGLE, ALIGNED, STATIC XREF: 0 0006 2 0027
			***** ERROR ***** REFERENCED BUT NOT ASSIGNED
6	K	3 X 4 MATRIX ARRAY	ARRAY(5), SINGLE, ALIGNED, STATIC XREF: 0 0006 2 0020 2 0024 4 0026 2 0027
6	L	SCALAR	SINGLE, ALIGNED, STATIC XREF: 0 0006 2 0027
			***** ERROR ***** REFERENCED BUT NOT ASSIGNED
14	LABEL1	STATEMENT LABEL	XREF: 0 0014 NOT REFERENCED
6	M	SCALAR	SINGLE, ALIGNED, STATIC XREF: 0 0006 2 0027
			***** ERROR ***** REFERENCED BUT NOT ASSIGNED
9	MY_STRUCTURE	STRUCTURE(5)	QQ-STRUCTURE, ALIGNED, STATIC XREF: 0 0009 6 0015 2 0027
6	N	SCALAR	SINGLE, ALIGNED, STATIC XREF: 0 0006 2 0027
			***** ERROR ***** REFERENCED BUT NOT ASSIGNED
6	O	SCALAR	SINGLE, ALIGNED, STATIC XREF: 0 0006 2 0027
			***** ERROR ***** REFERENCED BUT NOT ASSIGNED
2	PRINTER	REPLACE MACRO	MACRO TEXT="6" XREF: 0 0002 2 0027
10	PROC1	PROCEDURE	XREF: 0 0010 NOT REFERENCED
8	RR	MINOR NODE	**** SEE STRUCTURE TEMPLATE QQ
8	SS	CHARACTER(5)	**** SEE STRUCTURE TEMPLATE QQ

***** BI105 ERROR #2 OF SEVERITY 2 OCCURRED *****
***** DURING CONVERSION OF HAL/S STATEMENT 29.*****
***** ERROR ONE OR MORE VARIABLES REFERENCED BUT NOT ASSIGNED.

OPTIONAL TABLE SIZES

NAME	REQUESTED	USED
LITSTRINGS	2000	0
SYMBOLS	200	30
MACROSIZE	500	2
XREFSIZE	2000	75
BLOCKSUM	400	14

```
CALLS TO SCAN        = 311
CALLS TO IDENTIFY    = 85
NUMBER OF REDUCTIONS = 857
MAX STACK SIZE       = 11
MAX IND. STACK SIZE  = 10
END IND. STACK SIZE  = 1
END ARRAY STACK SIZE = 0
MAX EXT_ARRAY INDEX  = 5
STATEMENT COUNT      = 28
MINOR COMPACTIFIES   = 0
MAJOR COMPACTIFIES   = 0
REALLOCATIONS        = 0
MAX NESTING DEPTH    = 2
FREE STRING AREA     = 16628536


END OF HAL/S PHASE 1, JULY 15, 2024.  CLOCK TIME = 20:22:5.30.

39 CARDS WERE PROCESSED.
2 ERRORS WERE DETECTED IN PHASE 1.

**** SUMMARY OF ERRORS DETECTED IN PHASE 1 ****
   ERROR #1 OF SEVERITY 1 IN CROSS-REFERENCE
   ERROR #2 OF SEVERITY 2 IN PHASE 1 SET UP


NUMBER OF FILE 6 LOCATES          = 1
NUMBER OF FILE 6 READS            = 0
NUMBER OF FILE 6 WRITES           = 0


TOTAL CPU TIME FOR PHASE 1      0:0:0.01.
CPU TIME FOR PHASE 1 SET UP     0:0:0.00.
CPU TIME FOR PHASE 1 PROCESSING 0:0:0.01.
CPU TIME FOR PHASE 1 CLEAN UP   0:0:0.00.
PROCESSING RATE: 234000 CARDS PER MINUTE.
```

***** C O M P I L A T I O N A B A N D O N E D *****