```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT

                                                     2 ***********************************************************************
                                                     3 *
                                                     4 *                TRTE Performance instruction tests
                                                     5 *
                                                     6 ***********************************************************************
                                                     7 *
                                                     8 *  This program ONLY tests the performance of the TRTE instructions.
                                                     9 *
                                                    10 *
                                                    11 *                     ********************
                                                    12 *                     **   IMPORTANT!   **
                                                    13 *                     ********************
                                                    14 *
                                                    15 *        This test uses the Hercules Diagnose X'008' interface
                                                    16 *        to display messages and thus your .tst runtest script
                                                    17 *        MUST contain a "DIAG8CMD ENABLE" statement within it!
                                                    18 *
                                                    19 *
                                                    20 *  NOTE: This test is based on the CLCL-et-al Test but modified to
                                                    21 *        only test the TRTE instruction. -- James Wekel October 2022
                                                    22 *
                                                    23 ***********************************************************************
                                                    24 *
                                                    25 *  Example Hercules Testcase:
                                                    26 *
                                                    27 *
                                                    28 *      *Testcase TRTE-02-performance (Test TRTE instructions)
                                                    29 *
                                                    30 *      mainsize    16
                                                    31 *      numcpu      1
                                                    32 *      sysclear
                                                    33 *      archlvl     z/Arch
                                                    34 *      loadcore    "$(testpath)/TRTE-02-performance.core" 0x0
                                                    35 *      diag8cmd    enable    # (needed for messages to Hercules console)
                                                    36 *      #r           408=ff    # (enable timing tests)
                                                    37 *      runtest     200       # (test duration, depends on host)
                                                    38 *      diag8cmd    disable   # (reset back to default)
                                                    39 *      *Done
                                                    40 *
                                                    41 *
                                                    42 ***********************************************************************
  LOC        OBJECT CODE       ADDR1     ADDR2    STMT

                                                    44 ***********************************************************************
                                                    45 *
                                                    46 *  Tests:
                                                    47 *
                                                    48 *        All tests are ' TRTE  R2,R4,12 '
                                                    49 *        where the FC table is 128K in length,
                                                    50 *        FC is 2 bytes and an argument length of 2 bytes.
                                                    51 *
                                                    52 *        M3=12 requires page crossover tests for both FC and
                                                    53 *        the argument and has the worst performance compared to
                                                    54 *        M3=0 with the FC table and operand contained within
                                                    55 *        a page. The test should provide a lower bound on
                                                    56 *        performance improvement.
                                                    57 *
                                                    58 *        1. TRTE of 512 bytes
                                                    59 *        2. TRTE of 512 bytes that crosses a page boundary,
                                                    60 *           which results in a CC=3, and a branch back
                                                    61 *           to complete the TRTE instruction.
                                                    62 *        3. TRTE of 2048 bytes
                                                    63 *        4. TRTE of 2048 bytes that crosses a page boundary,
                                                    64 *           which results in a CC=3, and a branch back
                                                    65 *           to complete the TRTE instruction
                                                    66 *
                                                    67 ***********************************************************************


                              00000000  000C3BED    69 TRTE2TST START 0
00000000                      00000000              70          USING TRTE2TST,R0            Low core addressability


00000000                      00000000  000001A0    72          ORG   TRTE2TST+X'1A0'        z/Architecure RESTART PSW
000001A0  00000001 80000000                         73          DC    X'0000000180000000'
000001A8  00000000 00000200                         74          DC    AD(BEGIN)

000001B0                      000001B0  000001D0    76          ORG   TRTE2TST+X'1D0'        z/Architecure PROGRAM CHECK PSW
000001D0  00020001 80000000                         77          DC    X'0002000180000000'
000001D8  00000000 0000DEAD                         78          DC    AD(X'DEAD')

000001E0                      000001E0  00000200    80          ORG   TRTE2TST+X'200'        Start of actual test program...
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2    STMT

                                                    82 ***********************************************************************
                                                    83 *               The actual "TRTE2TST" program itself...
                                                    84 ***********************************************************************
                                                    85 *
                                                    86 *  Architecture Mode: z/Arch
                                                    87 *  Register Usage:
                                                    88 *
                                                    89 *   R0       (work)
                                                    90 *   R1       (work)
                                                    91 *   R2       (work) or MSG subroutine call
                                                    92 *   R3       (work)
                                                    93 *   R4       (work)
                                                    94 *   R5       TRTETEST Base (of current test)
                                                    95 *   R5-R7    (work)
                                                    96 *   R8       (work)
                                                    97 *   R9       Second base register
                                                    98 *   R10-R12  (work)
                                                    99 *   R13      First base register
                                                   100 *   R14      Subroutine call
                                                   101 *   R15      Secondary Subroutine call or work
                                                   102 *
                                                   103 ***********************************************************************

00000200                      00000200             105          USING  BEGIN,R13        FIRST Base Register
00000200                      00001200             106          USING  BEGIN+4096,R9    SECOND Base Register

00000200  05D0                                     108 BEGIN    BALR  R13,0             Initalize FIRST base register
00000202  06D0                                     109          BCTR  R13,0             Initalize FIRST base register
00000204  06D0                                     110          BCTR  R13,0             Initalize FIRST base register

00000206  4190 D800                     00000800   112          LA    R9,2048(,R13)     Initalize SECOND base register
0000020A  4190 9800                     00000800   113          LA    R9,2048(,R9)      Initalize SECOND base register

                                                   115 ***********************************************************************
                                                   116 *        Run the performance test(s)...
                                                   117 ***********************************************************************

0000020E  45E0 D328                     00000528   119          BAL   R14,TEST91       Time TRTE instruction (speed test)


                                                   121 ***********************************************************************
                                                   122 *         Test for normal or unexpected test completion...
                                                   123 ***********************************************************************

00000212  95FF D208                     00000408   125          CLI   TIMEOPT,X'FF'    Was this a timing run?
00000216  4770 DD58                     00000F58   126          BNE   EOJ              No, timing run; just go end normally

0000021A  95FC D200                     00000400   128          CLI   TESTNUM,X'FC'    Did we end on expected test?
0000021E  4770 DD70                     00000F70   129          BNE   FAILTEST         No?! Then FAIL the test!

00000222  9599 D201                     00000401   131          CLI   SUBTEST,X'99'    Did we end on expected SUB-test?
00000226  4770 DD70                     00000F70   132          BNE   FAILTEST         No?! Then FAIL the test!

0000022A  47F0 DD58                     00000F58   134          B     EOJ              Yes, then normal completion!
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2    STMT

                                                   136 ***********************************************************************
                                                   137 *        Fixed test storage locations ...
                                                   138 ***********************************************************************

0000022E                     0000022E  00000400    140          ORG   TRTE2TST+X'400'


00000400                                           142 TESTADDR DS    0D                Where test/subtest numbers will go
00000400  99                                       143 TESTNUM  DC    X'99'             Test number of active test
00000401  99                                       144 SUBTEST  DC    X'99'             Active test sub-test number

00000408                                           146          DS    0D
00000408  00                                       147 TIMEOPT  DC    X'00'             Set to non-zero to run timing tests

00000410                                           149          DS    0D
00000410  00000000 00000000                        150 SAVE1T4  DC    4F'0'
00000420  00000000                                 151 SAVER2   DC    F'0'
00000424  00000000                                 152 SAVER5   DC    F'0'


00000428                     00000428  00000528    154          ORG   *+X'100'
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2    STMT

                                                   156 *******************************************************************
                                                   157 *        TEST91                 Time TRTE instruction  (speed test)
                                                   158 *******************************************************************

00000528  91FF D208                      00000408  160 TEST91   TM    TIMEOPT,X'FF'        Is timing tests option enabled?
0000052C  078E                                     161          BZR   R14                  No, skip timing tests

0000052E  4150 DE18                      00001018  163          LA    R5,TRTEPERF          Point R5 --> testing control table
00000532                       00000000            164          USING TRTETEST,R5          What each table entry looks like

                               00000532  00000001  166 TST91LOP EQU   *
00000532  5050 D224                      00000424  167          ST    R5,SAVER5            Save current pref table base

00000536  4360 5000                      00000000  169          IC    R6,TNUM              Set test number
0000053A  4260 D200                      00000400  170          STC   R6,TESTNUM
                                                   171 *
                                                   172 **       Initialize operand data  (move data to testing address)
                                                   173 *
0000053E  58A0 5018                      00000018  174          L     R10,OP1WHERE         Where to move operand-1 data to
00000542  58B0 5008                      00000008  175          L     R11,OP1LEN           Get operand-1 length
00000546  50B0 501C                      0000001C  176          ST    R11,OP1WLEN          and save for later
0000054A  5860 5004                      00000004  177          L     R6,OP1DATA           Where op1 data is right now
0000054E  5870 5008                      00000008  178          L     R7,OP1LEN            How much of it there is
00000552  0EA6                                     179          MVCL  R10,R6

00000554  58A0 5014                      00000014  181          L     R10,OP2WHERE         Where to move operand-2 data to
00000558  58B0 5010                      00000010  182          L     R11,OP2LEN           How much of it there is
0000055C  5860 500C                      0000000C  183          L     R6,OP2DATA           Where op2 data is right now
00000560  5870 5010                      00000010  184          L     R7,OP2LEN            How much of it there is
00000564  0EA6                                     185          MVCL  R10,R6
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2    STMT


                                                   188 ***********************************************************************
                                                   189 *     Define come helpful macros to ensure our counts are correct
                                                   190 ***********************************************************************


                                                   192          MACRO
                                                   193          OVERONLY &NUM               &NUM = number of sets
                                                   194          LCLA  &CTR
                                                   195 &CTR     SETA  &NUM
                                                   196 .LOOP    ANOP
                                                   197 .*
                                                   198 *
                                                   199          LM    R1,R4,OPSWHERE
                                                   200          BC    B'0001',*+4
                                                   201 .*
                                                   202 &CTR     SETA  &CTR-1
                                                   203          AIF   (&CTR GT 0).LOOP
                                                   204          MEND


                                                   206          MACRO
                                                   207          DOINSTR &NUM                &NUM = number of sets
                                                   208          LCLA  &CTR
                                                   209 &CTR     SETA  &NUM
                                                   210 .LOOP    ANOP
                                                   211 .*
                                                   212 *
                                                   213          LM    R1,R4,OPSWHERE
                                                   214          TRTE  R2,R4,12
                                                   215          BC    B'0001',*-4
                                                   216 .*
                                                   217 &CTR     SETA  &CTR-1
                                                   218          AIF   (&CTR GT 0).LOOP
                                                   219          MEND
  LOC        OBJECT CODE       ADDR1     ADDR2    STMT

                                                   221 ***********************************************************************
                                                   222 *        Next, time the overhead...
                                                   223 ***********************************************************************

00000566  5870 DD8C                     00000F8C   225          L     R7,NUMLOOPS
0000056A  B205 DD90                     00000F90   226          STCK  BEGCLOCK
0000056E  9014 D210                     00000410   227          STM   R1,R4,SAVE1T4
00000572  0560                                     228          BALR  R6,0
                                                   229 *                                   100 sets of overhead
                                                   230          OVERONLY 2                 (first 2)
                                                   231++*
00000574  9814 5014                     00000014   232+         LM    R1,R4,OPSWHERE
00000578  4710 D37C                     0000057C   233+         BC    B'0001',*+4
                                                   234++*
0000057C  9814 5014                     00000014   235+         LM    R1,R4,OPSWHERE
00000580  4710 D384                     00000584   236+         BC    B'0001',*+4

                                                   238 *        .........ETC.........

                                                   240          PRINT OFF
                                                   530          PRINT ON

                                                   532          OVERONLY 2                 (last 2)
                                                   533++*
00000884  9814 5014                     00000014   534+         LM    R1,R4,OPSWHERE
00000888  4710 D68C                     0000088C   535+         BC    B'0001',*+4
                                                   536++*
0000088C  9814 5014                     00000014   537+         LM    R1,R4,OPSWHERE
00000890  4710 D694                     00000894   538+         BC    B'0001',*+4

00000894  0676                                     540          BCTR  R7,R6
00000896  B205 DD98                     00000F98   541          STCK  ENDCLOCK
0000089A  45F0 DC08                     00000E08   542          BAL   R15,CALCDUR
0000089E  D207 DDA8 DDA0      00000FA8  00000FA0   543          MVC   OVERHEAD,DURATION
```

```
  LOC          OBJECT CODE        ADDR1     ADDR2    STMT

                                                   545 ***********************************************************************
                                                   546 *        Now do the actual timing run...
                                                   547 ***********************************************************************

000008A4  5870 DD8C                     00000F8C   549          L     R7,NUMLOOPS
000008A8  B205 DD90                     00000F90   550          STCK  BEGCLOCK
000008AC  0560                                     551          BALR  R6,0
                                                   552 *                                   100 sets of instructions
                                                   553          DOINSTR 2                  (first 2)
                                                   554++
000008AE  9814 5014                     00000014   555+         LM    R1,R4,OPSWHERE
000008B2  B9BF C024                                556+         TRTE  R2,R4,12
000008B6  4710 D6B2                     000008B2   557+         BC    B'0001',*-4
                                                   558++
000008BA  9814 5014                     00000014   559+         LM    R1,R4,OPSWHERE
000008BE  B9BF C024                                560+         TRTE  R2,R4,12
000008C2  4710 D6BE                     000008BE   561+         BC    B'0001',*-4

                                                   563 *        .........ETC.........

                                                   565          PRINT OFF
                                                   951          PRINT ON

                                                   953          DOINSTR 2                  (last 2)
                                                   954++
00000D46  9814 5014                     00000014   955+         LM    R1,R4,OPSWHERE
00000D4A  B9BF C024                                956+         TRTE  R2,R4,12
00000D4E  4710 DB4A                     00000D4A   957+         BC    B'0001',*-4
                                                   958++
00000D52  9814 5014                     00000014   959+         LM    R1,R4,OPSWHERE
00000D56  B9BF C024                                960+         TRTE  R2,R4,12
00000D5A  4710 DB56                     00000D56   961+         BC    B'0001',*-4

00000D5E  0676                                     963          BCTR  R7,R6
00000D60  B205 DD98                     00000F98   964          STCK  ENDCLOCK

00000D64  9814 D210                     00000410   966          LM    R1,R4,SAVE1T4
00000D68  D204 DDE9 DD80      00000FE9  00000F80   967          MVC   PRTLINE+33(5),=CL5'TRTE'
00000D6E  45F0 DB86                     00000D86   968          BAL   R15,RPTSPEED
                                                   969 *
                                                   970 **       More performance tests?
                                                   971 *
00000D72  5850 D224                     00000424   972          L     R5,SAVER5          Restore perf table base
00000D76  4150 5034                     00000034   973          LA    R5,TRTENEXT        Go on to next table entry
00000D7A  D503 DD74 5000      00000F74  00000000   974          CLC   =F'0',0(R5)        End of table?
00000D80  4770 D332                     00000532   975          BNE   TST91LOP           No, loop...
00000D84  07FE                                     976          BR    R14                Return to caller or FAILTEST
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT

                                                   978 ***********************************************************************
                                                   979 *        RPTSPEED                 Report instruction speed
                                                   980 ***********************************************************************

00000D86  50F0 DBF0                     00000DF0   982 RPTSPEED ST    R15,RPTSAVE        Save return address
00000D8A  5050 DBF4                     00000DF4   983          ST    R5,RPTSVR5         Save R5

00000D8E  45F0 DC08                     00000E08   985          BAL   R15,CALCDUR        Calculate duration

00000D92  4150 DDA8                     00000FA8   987          LA    R5,OVERHEAD        Subtract overhead
00000D96  4160 DDA0                     00000FA0   988          LA    R6,DURATION        From raw timing
00000D9A  4170 DDA0                     00000FA0   989          LA    R7,DURATION        Yielding true instruction timing
00000D9E  45F0 DC5C                     00000E5C   990          BAL   R15,SUBDWORD       Do it

00000DA2  98AB DDA0                     00000FA0   992          LM    R10,R11,DURATION   Convert to...
00000DA6  8CA0 000C                     0000000C   993          SRDL  R10,12             ... microseconds

00000DAA  4EA0 DDB0                     00000FB0   995          CVD   R10,TICKSAAA       Convert HIGH part to decimal
00000DAE  4EB0 DDB8                     00000FB8   996          CVD   R11,TICKSBBB       Convert LOW  part to decimal

00000DB2  F877 DDC0 DDB0      00000FC0  00000FB0   998          ZAP   TICKSTOT,TICKSAAA           Calculate...
00000DB8  FC75 DDC0 DD85      00000FC0  00000F85   999          MP    TICKSTOT,=P'4294967296'      ...decimal...
00000DBE  FA77 DDC0 DDB8      00000FC0  00000FB8  1000          AP    TICKSTOT,TICKSBBB           ...microseconds

00000DC4  D20B DDF3 DE0C      00000FF3  0000100C  1002          MVC   PRTLINE+43(L'EDIT),EDIT          (edit into...
00000DCA  DE0B DDF3 DDC3      00000FF3  00000FC3  1003          ED    PRTLINE+43(L'EDIT),TICKSTOT+3     ...print line)



                                                  1005 *
                                                  1006 *        Use Hercules Diagnose for Message to console
                                                  1007 *
00000DD0  9002 DBF8                     00000DF8  1008          STM   R0,R2,RPTDWSAV     Save regs used by MSG
00000DD4  4100 0044                     00000044  1009          LA    R0,PRTLNG          Message length
00000DD8  4110 DDC8                     00000FC8  1010          LA    R1,PRTLINE         Message address
00000DDC  4520 DC90                     00000E90  1011          BAL   R2,MSG             Call Hercules console MSG display
00000DE0  9802 DBF8                     00000DF8  1012          LM    R0,R2,RPTDWSAV     Restore regs


00000DE4  5850 DBF4                     00000DF4  1014          L     R5,RPTSVR5         Restore R5
00000DE8  58F0 DBF0                     00000DF0  1015          L     R15,RPTSAVE        Restore return address
00000DEC  07FF                                    1016          BR    R15                Return to caller

00000DF0  00000000                                1018 RPTSAVE  DC    F'0'               R15 save area
00000DF4  00000000                                1019 RPTSVR5  DC    F'0'               R5 save area

00000DF8  00000000 00000000                       1021 RPTDWSAV DC    2D'0'              R0-R2 save area for MSG call
```

```
  LOC         OBJECT CODE       ADDR1     ADDR2     STMT

                                                  1023 ***********************************************************************
                                                  1024 *        CALCDUR                       Calculate DURATION
                                                  1025 ***********************************************************************

00000E08  50F0 DC4C                     00000E4C  1027 CALCDUR  ST    R15,CALCRET        Save return address
00000E0C  9057 DC50                     00000E50  1028          STM   R5,R7,CALCWORK     Save work registers

00000E10  9867 DD90                     00000F90  1030          LM    R6,R7,BEGCLOCK     Remove CPU number from clock value
00000E14  8C60 0006                     00000006  1031          SRDL  R6,6                            "
00000E18  8D60 0006                     00000006  1032          SLDL  R6,6                            "
00000E1C  9067 DD90                     00000F90  1033          STM   R6,R7,BEGCLOCK                  "

00000E20  9867 DD98                     00000F98  1035          LM    R6,R7,ENDCLOCK     Remove CPU number from clock value
00000E24  8C60 0006                     00000006  1036          SRDL  R6,6                            "
00000E28  8D60 0006                     00000006  1037          SLDL  R6,6                            "
00000E2C  9067 DD98                     00000F98  1038          STM   R6,R7,ENDCLOCK                  "

00000E30  4150 DD90                     00000F90  1040          LA    R5,BEGCLOCK        Starting time
00000E34  4160 DD98                     00000F98  1041          LA    R6,ENDCLOCK        Ending time
00000E38  4170 DDA0                     00000FA0  1042          LA    R7,DURATION        Difference
00000E3C  45F0 DC5C                     00000E5C  1043          BAL   R15,SUBDWORD       Calculate duration

00000E40  9857 DC50                     00000E50  1045          LM    R5,R7,CALCWORK     Restore work registers
00000E44  58F0 DC4C                     00000E4C  1046          L     R15,CALCRET        Restore return address
00000E48  07FF                                    1047          BR    R15                Return to caller

00000E4C  00000000                                1049 CALCRET  DC    F'0'               R15 save area
00000E50  00000000 00000000                       1050 CALCWORK DC    3F'0'              R5-R7 save area



                                                  1052 ***********************************************************************
                                                  1053 *        SUBDWORD                      Subtract two doublewords
                                                  1054 *        R5 --> subtrahend, R6 --> minuend, R7 --> result
                                                  1055 ***********************************************************************

00000E5C  9014 DC80                     00000E80  1057 SUBDWORD STM   R1,R4,SUBDWSAV     Save registers

00000E60  9812 5000                     00000000  1059          LM    R1,R2,0(R5)        Subtrahend  (value to subtract)
00000E64  9834 6000                     00000000  1060          LM    R3,R4,0(R6)        Minuend     (what to subtract FROM)
00000E68  1F42                                    1061          SLR   R4,R2              Subtract LOW part
00000E6A  47B0 DC72                     00000E72  1062          BNM   *+4+4              (branch if no borrow)
00000E6E  5F30 DD78                     00000F78  1063          SL    R3,=F'1'           (otherwise do borrow)
00000E72  1F31                                    1064          SLR   R3,R1              Subtract HIGH part
00000E74  9034 7000                     00000000  1065          STM   R3,R4,0(R7)        Store results

00000E78  9814 DC80                     00000E80  1067          LM    R1,R4,SUBDWSAV     Restore registers
00000E7C  07FF                                    1068          BR    R15                Return to caller

00000E80  00000000 00000000                       1070 SUBDWSAV DC    2D'0'              R1-R4 save area
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2    STMT

                                                  1072 ***********************************************************************
                                                  1073 *        Issue HERCULES MESSAGE pointed to by R1, length in R0
                                                  1074 *              R2 = return address
                                                  1075 ***********************************************************************

00000E90  4900 DD7C                     00000F7C  1077 MSG      CH    R0,=H'0'                Do we even HAVE a message?
00000E94  07D2                                    1078          BNHR  R2                      No, ignore

00000E96  9002 DCC8                     00000EC8  1080          STM   R0,R2,MSGSAVE           Save registers

00000E9A  4900 DD7E                     00000F7E  1082          CH    R0,=AL2(L'MSGMSG)       Message length within limits?
00000E9E  47D0 DCA6                     00000EA6  1083          BNH   MSGOK                   Yes, continue
00000EA2  4100 005F                     0000005F  1084          LA    R0,L'MSGMSG             No, set to maximum

00000EA6  1820                                    1086 MSGOK    LR    R2,R0                   Copy length to work register
00000EA8  0620                                    1087          BCTR  R2,0                    Minus-1 for execute
00000EAA  4420 DCD4                     00000ED4  1088          EX    R2,MSGMVC               Copy message to O/P buffer

00000EAE  4120 200A                     0000000A  1090          LA    R2,1+L'MSGCMD(,R2)      Calculate true command length
00000EB2  4110 DCDA                     00000EDA  1091          LA    R1,MSGCMD               Point to true command

00000EB6  83120008                                1093          DC    X'83',X'12',X'0008'     Issue Hercules Diagnose X'008'
00000EBA  4780 DCC0                     00000EC0  1094          BZ    MSGRET                  Return if successful
00000EBE  0000                                    1095          DC    H'0'                    CRASH for debugging purposes

00000EC0  9802 DCC8                     00000EC8  1097 MSGRET   LM    R0,R2,MSGSAVE           Restore registers
00000EC4  07F2                                    1098          BR    R2                      Return to caller




00000EC8  00000000 00000000                       1100 MSGSAVE  DC    3F'0'                   Registers save area
00000ED4  D200 DCE3 1000      00000EE3  00000000  1101 MSGMVC   MVC   MSGMSG(0),0(R1)         Executed instruction


00000EDA  D4E2C7D5 D6C8405C                       1103 MSGCMD   DC    C'MSGNOH * '            *** HERCULES MESSAGE COMMAND ***
00000EE3  40404040 40404040                       1104 MSGMSG   DC    CL95' '                 The message text to be displayed
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT

                                                  1106 ***********************************************************************
                                                  1107 *        Normal completion or Abnormal termination PSWs
                                                  1108 ***********************************************************************

00000F48  00020001 80000000                       1110 EOJPSW   DC    0D'0',X'0002000180000000',AD(0)

00000F58  B2B2 DD48                     00000F48  1112 EOJ      LPSWE EOJPSW               Normal completion


00000F60  00020001 80000000                       1114 FAILPSW  DC    0D'0',X'0002000180000000',AD(X'BAD')

00000F70  B2B2 DD60                     00000F60  1116 FAILTEST LPSWE FAILPSW              Abnormal termination



                                                  1118 ***********************************************************************
                                                  1119 *        Working Storage
                                                  1120 ***********************************************************************

00000F74                                          1122          LTORG ,                Literals pool
00000F74  00000000                                1123                =F'0'
00000F78  00000001                                1124                =F'1'
00000F7C  0000                                    1125                =H'0'
00000F7E  005F                                    1126                =AL2(L'MSGMSG)
00000F80  E3D9E3C5 40                             1127                =CL5'TRTE'
00000F85  04294967 296C                           1128                =P'4294967296'

                              00000400  00000001  1130 K        EQU   1024             One KB
                              00001000  00000001  1131 PAGE     EQU   (4*K)            Size of one page
                              00010000  00000001  1132 K64      EQU   (64*K)           64 KB
                              00100000  00000001  1133 MB       EQU   (K*K)             1 MB

00000F8C  00002710                                1135 NUMLOOPS DC    F'10000'         10,000 * 100 = 1,000,000

00000F90  BBBBBBBB BBBBBBBB                       1137 BEGCLOCK DC    0D'0',8X'BB'     Begin
00000F98  EEEEEEEE EEEEEEEE                       1138 ENDCLOCK DC    0D'0',8X'EE'     End
00000FA0  DDDDDDDD DDDDDDDD                       1139 DURATION DC    0D'0',8X'DD'     Diff
00000FA8  FFFFFFFF FFFFFFFF                       1140 OVERHEAD DC    0D'0',8X'FF'     Overhead

00000FB0  00000000 0000000C                       1142 TICKSAAA DC    PL8'0'           Clock ticks high part
00000FB8  00000000 0000000C                       1143 TICKSBBB DC    PL8'0'           Clock ticks low part
00000FC0  00000000 0000000C                       1144 TICKSTOT DC    PL8'0'           Total clock ticks

00000FC8  40404040 40404040                       1146 PRTLINE  DC    C'         1,000,000 iterations of XXXXX'
00000FEE  40A39696 9240F9F9                       1147          DC    C' took 999,999,999 microseconds'
                              00000044  00000001  1148 PRTLNG   EQU   *-PRTLINE
0000100C  40202020 6B202020                       1149 EDIT     DC    X'402020206B2020206B202120'
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT

                                                   1151 ***********************************************************************
                                                   1152 *        TRTETEST DSECT
                                                   1153 ***********************************************************************

                                                   1155 TRTETEST DSECT ,
00000000  00                                       1156 TNUM     DC    X'00'           TRTE table Number
00000001  00                                       1157          DC    X'00'
00000002  00                                       1158          DC    X'00'
00000003  00                                       1159 M3       DC    X'00'           M3 byte stored into TRTE instruction


00000004  00000000                                 1161 OP1DATA  DC    A(0)            Pointer to Operand-1 data
00000008  00000000                                 1162 OP1LEN   DC    F'0'            How much data is there - 1
0000000C  00000000                                 1163 OP2DATA  DC    A(0)            Pointer to FC table data
00000010  00000000                                 1164 OP2LEN   DC    F'0'            How much data is there - FC Table

                               00000014  00000001  1166 OPSWHERE EQU   *
00000014  00000000                                 1167 OP2WHERE DC    A(0)            Where FC Table  data should be placed
00000018  00000000                                 1168 OP1WHERE DC    A(0)            Where Operand-1 data should be placed
0000001C  00000000                                 1169 OP1WLEN  DC    F'0'            How much data is there - 1
00000020  00000000                                 1170          DC    A(0)            pollute - found FC

00000024  00000000                                 1172 FAILMASK DC    A(0)            Failure Branch on Condition mask

                                                   1174 *                              Ending register values
00000028  00000000                                 1175 ENDREGS  DC    A(0)               Operand 1 address
0000002C  00000000                                 1176          DC    A(0)               Operand 1 length
00000030  00000000                                 1177          DC    A(0)               Function Code

                               00000034  00000001  1179 TRTENEXT EQU   *               Start of next table entry...



                               AABBCCDD  00000001  1181 REG2PATT EQU   X'AABBCCDD'     Polluted Register pattern
                               000000DD  00000001  1182 REG2LOW  EQU         X'DD'     (last byte above)
  LOC        OBJECT CODE       ADDR1     ADDR2    STMT

                                                  1184 ***********************************************************************
                                                  1185 *        TRTE Performace Test data...
                                                  1186 ***********************************************************************

                              00000000  000C3BED  1188 TRTE2TST CSECT ,
00001018                                          1189 TRTEPERF DC    0A(0)                       Start of table



                                                  1191 ***********************************************************************
                                                  1192 *        tests with   M3: A=1,F=1,L=0, reserved=0    (12)
                                                  1193 *                     FC Table : SIZE: 131,072 (2 BYTE ARGUMENT)
                                                  1194 *                               Function Code is 2 bytes
                                                  1195 *
                                                  1196 *              Note: Op1 length must be a multiple of 2
                                                  1197 ***********************************************************************



00001018                                          1199 F12T8    DS    0F
00001018  F8                                      1200          DC    X'F8'                        Test Num
00001019  0000                                    1201          DC    X'00',X'00'
0000101B  C0                                      1202          DC    X'C0'                        M3: A=1,F=1,L=0,--=0
0000101C  000013F0 00000200                       1203          DC    A(TRTOP1F1),A(512)           Source - Op 1 & length
00001024  000A39EE 00020000                       1204          DC    A(TRTOPCF1),A(2*K64)         Source - FC Table & length
                                                  1205 *                                           Target -
0000102C  00710000 00910000                       1206          DC    A(7*MB+(1*K64)),A(9*MB+(1*K64)),A(0)  FC, Op1, Op1L
00001038  AABBCCDD                                1207          DC    A(REG2PATT)
0000103C  0000000B                                1208          DC    A(11) CC1
00001040  009101FE 00000002                       1209          DC    A(9*MB+(1*K64)+510),A(2),XL4'F1'



0000104C                                          1211 F12T8A   DS    0F
0000104C  F9                                      1212          DC    X'F9'                        Test Num
0000104D  0000                                    1213          DC    X'00',X'00'
0000104F  C0                                      1214          DC    X'C0'                        M3: A=1,F=1,L=0,--=0
00001050  000013F0 00000200                       1215          DC    A(TRTOP1F1),A(512)           Source - Op 1 & length
00001058  000A39EE 00020000                       1216          DC    A(TRTOPCF1),A(2*K64)         Source - FC Table & length
                                                  1217 *                                           Target - FC, Op1, Op1L
00001060  0072FF81 0092FF81                       1218          DC    A(7*MB+(3*K64)-127),A(9*MB+(3*K64)-127),A(0)
0000106C  AABBCCDD                                1219          DC    A(REG2PATT)
00001070  0000000A                                1220          DC    A(10) CC1 or CC3
00001074  0093017F 00000002                       1221          DC    A(9*MB+(3*K64)-127+510),A(2),XL4'F1'
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT

00001080                                          1223 F12T11   DS    0F
00001080  FB                                      1224          DC    X'FB'                       Test Num
00001081  0000                                    1225          DC    X'00',X'00'
00001083  C0                                      1226          DC    X'C0'                       M3: A=1,F=1,L=0,--=0
00001084  000025F0 00000800                       1227          DC    A(TRTO1LF0),A(2048)         Source - Op 1 & length
0000108C  000837F0 00020000                       1228          DC    A(TRTOPCF0),A(2*K64)        Source - FC Table & length
                                                  1229 *                                          Target -
00001094  00760000 00960000                       1230          DC    A(7*MB+(6*K64)),A(9*MB+(6*K64)),A(0) FC, Op1, Op1L
000010A0  AABBCCDD                                1231          DC    A(REG2PATT)
000010A4  0000000B                                1232          DC    A(11) CC1
000010A8  009607FE 00000002                       1233          DC    A(9*MB+(6*K64)+2048-2),A(2),XL4'F0'



000010B4                                          1235 F12T11A  DS    0F
000010B4  FC                                      1236          DC    X'FC'                       Test Num
000010B5  0000                                    1237          DC    X'00',X'00'
000010B7  C0                                      1238          DC    X'C0'                       M3: A=1,F=1,L=0,--=0
000010B8  000025F0 00000800                       1239          DC    A(TRTO1LF0),A(2048)         Source - Op 1 & length
000010C0  000837F0 00020000                       1240          DC    A(TRTOPCF0),A(2*K64)        Source - FC Table & length
                                                  1241 *                                          Target - FC, Op1, Op1L
000010C8  0078FE1F 0098FE1F                       1242          DC    A(7*MB+(9*K64)-481),A(9*MB+(9*K64)-481),A(0)
000010D4  AABBCCDD                                1243          DC    A(REG2PATT)
000010D8  0000000A                                1244          DC    A(10) CC1 or CC3
000010DC  0099061D 00000002                       1245          DC    A(9*MB+(9*K64)-481+2048-2),A(2),XL4'F0'




000010E8  00000000                                1247          DC    A(0)        end of table
000010EC  00000000                                1248          DC    A(0)        end of table
```

```
                                                  1250 ***********************************************************************
                                                  1251 *        TRTE op1 scan data...
                                                  1252 ***********************************************************************

000010F0  78125634 78125634                       1254 TRTOP10  DC    64XL4'78125634'                               (CC0)

000011F0  78125634 78125634                       1256 TRTOP111 DC    04XL4'78125634',X'00110000',59XL4'78125634'   (CC1)

000012F0  78125634 78125634                       1258 TRTOP1F0 DC    63XL4'78125634',X'000000F0'                   (CC1)

000013F0  78125634 78125634                       1260 TRTOP1F1 DC    127XL4'78125634',X'000000F1'                  (CC1)

000015F0  98765432 98765432                       1262 TRTO1L0  DC    512XL4'98765432'                              (CC0)

00001DF0  98765432 98765432                       1264 TRTO1L11 DC    256XL4'98765432',X'00110000',255XL4'98765432' (CC1)

000025F0  98765432 98765432                       1266 TRTO1LF0 DC    511XL4'98765432',X'000000F0'                  (CC1)



                                                  1268 ***********************************************************************
                                                  1269 *        Function Code (FC) Tables (GR1)
                                                  1270 ***********************************************************************

00002DF0  00000000 00000000                       1272 TRTOP20  DC    256X'00'                           no stop
00002EF0                      00002EF0  00022EF0  1273          ORG   *+2*K64

00022EF0  00000000 00000000                       1275 TRTOP211 DC    17X'00',X'11',238X'00'             stop on X'11'

00022FF0  00000000 00000000                       1277 TRTOP2F0 DC    240X'00',X'F0',15X'00'             stop on X'F0'

000230F0  00000000 00000000                       1279 TRTOP411 DC    34X'00',X'0011',476X'00'           stop on X'11'

000232F0  00000000 00000000                       1281 TRTOP4F0 DC    480X'00',X'00F0',30X'00'           stop on X'F0'

000234F0  00000000 00000000                       1283 TRTOP811 DC    17X'00',X'11',238X'00'             stop on X'11'
000235F0                      000235F0  000435F0  1284          ORG   *+2*K64

000435F0  00000000 00000000                       1286 TRTOP8F0 DC    240X'00',X'F0',15X'00'             stop on X'F0'
000436F0                      000436F0  000636F0  1287          ORG   *+2*K64

000636F0  00000000 00000000                       1289 TRTOP8F1 DC    240X'00',X'00',X'F1',14X'00'       stop on X'F1'
000637F0                      000637F0  000837F0  1290          ORG   *+2*K64

000837F0  00000000 00000000                       1292 TRTOPCF0 DC    480X'00',X'00F0',28X'00'           stop on X'F0'
000839EE                      000839EE  000A39EE  1293          ORG   *+2*K64

000A39EE  00000000 00000000                       1295 TRTOPCF1 DC    480X'00',X'0000',X'00F1',28X'00'   stop on X'F1'
000A3BEE                      000A3BEE  000C3BEE  1296          ORG   *+2*K64
```

```
  LOC        OBJECT CODE        ADDR1     ADDR2     STMT

                                                    1298 ***********************************************************************
                                                    1299 *        Register equates
                                                    1300 ***********************************************************************


                              00000000  00000001  1302 R0        EQU   0
                              00000001  00000001  1303 R1        EQU   1
                              00000002  00000001  1304 R2        EQU   2
                              00000003  00000001  1305 R3        EQU   3
                              00000004  00000001  1306 R4        EQU   4
                              00000005  00000001  1307 R5        EQU   5
                              00000006  00000001  1308 R6        EQU   6
                              00000007  00000001  1309 R7        EQU   7
                              00000008  00000001  1310 R8        EQU   8
                              00000009  00000001  1311 R9        EQU   9
                              0000000A  00000001  1312 R10       EQU   10
                              0000000B  00000001  1313 R11       EQU   11
                              0000000C  00000001  1314 R12       EQU   12
                              0000000D  00000001  1315 R13       EQU   13
                              0000000E  00000001  1316 R14       EQU   14
                              0000000F  00000001  1317 R15       EQU   15



                                                    1319           END
```

```
     SYMBOL        TYPE   VALUE      LENGTH    DEFN  REFERENCES

BEGCLOCK            D    00000F90           8  1137   226   550  1030  1033  1040
BEGIN               I    00000200           2   108    74   105   106
CALCDUR             I    00000E08           4  1027   542   985
CALCRET             F    00000E4C           4  1049  1027  1046
CALCWORK            F    00000E50           4  1050  1028  1045
DURATION            D    00000FA0           8  1139   543   988   989   992  1042
EDIT                X    0000100C          12  1149  1002  1003
ENDCLOCK            D    00000F98           8  1138   541   964  1035  1038  1041
ENDREGS             A    00000028           4  1175
EOJ                 I    00000F58           4  1112   126   134
EOJPSW              D    00000F48           8  1110  1112
F12T11              F    00001080           4  1223
F12T11A             F    000010B4           4  1235
F12T8               F    00001018           4  1199
F12T8A              F    0000104C           4  1211
FAILMASK            A    00000024           4  1172
FAILPSW             D    00000F60           8  1114  1116
FAILTEST            I    00000F70           4  1116   129   132
IMAGE               1    00000000      801774     0
K                   U    00000400           1  1130  1131  1132  1133
K64                 U    00010000           1  1132  1273  1284  1287  1290  1293  1296  1204  1206  1209  1216  1218  1221  1228
                                                     1230  1233  1240  1242  1245
M3                  X    00000003           1  1159
MB                  U    00100000           1  1133  1206  1209  1218  1221  1230  1233  1242  1245
MSG                 I    00000E90           4  1077  1011
MSGCMD              C    00000EDA           9  1103  1090  1091
MSGMSG              C    00000EE3          95  1104  1084  1101  1082
MSGMVC              I    00000ED4           6  1101  1088
MSGOK               I    00000EA6           2  1086  1083
MSGRET              I    00000EC0           4  1097  1094
MSGSAVE             F    00000EC8           4  1100  1080  1097
NUMLOOPS            F    00000F8C           4  1135   225   549
OP1DATA             A    00000004           4  1161   177
OP1LEN              F    00000008           4  1162   175   178
OP1WHERE            A    00000018           4  1168   174
OP1WLEN             F    0000001C           4  1169   176
OP2DATA             A    0000000C           4  1163   183
OP2LEN              F    00000010           4  1164   182   184
OP2WHERE            A    00000014           4  1167   181
OPSWHERE            U    00000014           1  1166   232   235   243   246   249   252   255   258   261   264   267   270   273
                                                      276   279   282   285   288   291   294   297   300   303   306   309   312
                                                      315   318   321   324   327   330   333   336   339   342   345   348   351
                                                      354   357   360   363   366   369   372   375   378   381   384   387   390
                                                      393   396   399   402   405   408   411   414   417   420   423   426   429
                                                      432   435   438   441   444   447   450   453   456   459   462   465   468
                                                      471   474   477   480   483   486   489   492   495   498   501   504   507
                                                      510   513   516   519   522   525   528   534   537   555   559   568   572
                                                      576   580   584   588   592   596   600   604   608   612   616   620   624
                                                      628   632   636   640   644   648   652   656   660   664   668   672   676
                                                      680   684   688   692   696   700   704   708   712   716   720   724   728
                                                      732   736   740   744   748   752   756   760   764   768   772   776   780
                                                      784   788   792   796   800   804   808   812   816   820   824   828   832
                                                      836   840   844   848   852   856   860   864   868   872   876   880   884
                                                      888   892   896   900   904   908   912   916   920   924   928   932   936
                                                      940   944   948   955   959
OVERHEAD            D    00000FA8           8  1140   543   987
```

```
     SYMBOL        TYPE   VALUE      LENGTH    DEFN  REFERENCES

PAGE                U    00001000           1  1131
PRTLINE             C    00000FC8          38  1146  1148   967  1002  1003  1010
PRTLNG              U    00000044           1  1148  1009
R0                  U    00000000           1  1302    70  1008  1009  1012  1077  1080  1082  1084  1086  1097
R1                  U    00000001           1  1303   227   232   235   243   246   249   252   255   258   261   264   267   270
                                                      273   276   279   282   285   288   291   294   297   300   303   306   309
                                                      312   315   318   321   324   327   330   333   336   339   342   345   348
                                                      351   354   357   360   363   366   369   372   375   378   381   384   387
                                                      390   393   396   399   402   405   408   411   414   417   420   423   426
                                                      429   432   435   438   441   444   447   450   453   456   459   462   465
                                                      468   471   474   477   480   483   486   489   492   495   498   501   504
                                                      507   510   513   516   519   522   525   528   534   537   555   559   568
                                                      572   576   580   584   588   592   596   600   604   608   612   616   620
                                                      624   628   632   636   640   644   648   652   656   660   664   668   672
                                                      676   680   684   688   692   696   700   704   708   712   716   720   724
                                                      728   732   736   740   744   748   752   756   760   764   768   772   776
                                                      780   784   788   792   796   800   804   808   812   816   820   824   828
                                                      832   836   840   844   848   852   856   860   864   868   872   876   880
                                                      884   888   892   896   900   904   908   912   916   920   924   928   932
                                                      936   940   944   948   955   959   966  1010  1057  1059  1064  1067  1091
                                                     1101
R10                 U    0000000A           1  1312   174   179   181   185   992   993   995
R11                 U    0000000B           1  1313   175   176   182   992   996
R12                 U    0000000C           1  1314
R13                 U    0000000D           1  1315   105   108   109   110   112
R14                 U    0000000E           1  1316   119   161   976
R15                 U    0000000F           1  1317   542   968   982   985   990  1015  1016  1027  1043  1046  1047  1068
R2                  U    00000002           1  1304   556   560   569   573   577   581   585   589   593   597   601   605   609
                                                      613   617   621   625   629   633   637   641   645   649   653   657   661
                                                      665   669   673   677   681   685   689   693   697   701   705   709   713
                                                      717   721   725   729   733   737   741   745   749   753   757   761   765
                                                      769   773   777   781   785   789   793   797   801   805   809   813   817
                                                      821   825   829   833   837   841   845   849   853   857   861   865   869
                                                      873   877   881   885   889   893   897   901   905   909   913   917   921
                                                      925   929   933   937   941   945   949   956   960  1008  1011  1012  1059
                                                     1061  1078  1080  1086  1087  1088  1090  1097  1098
R3                  U    00000003           1  1305  1060  1063  1064  1065
R4                  U    00000004           1  1306   227   232   235   243   246   249   252   255   258   261   264   267   270
                                                      273   276   279   282   285   288   291   294   297   300   303   306   309
                                                      312   315   318   321   324   327   330   333   336   339   342   345   348
                                                      351   354   357   360   363   366   369   372   375   378   381   384   387
                                                      390   393   396   399   402   405   408   411   414   417   420   423   426
                                                      429   432   435   438   441   444   447   450   453   456   459   462   465
                                                      468   471   474   477   480   483   486   489   492   495   498   501   504
                                                      507   510   513   516   519   522   525   528   534   537   555   556   559
                                                      560   568   569   572   573   576   577   580   581   584   585   588   589
                                                      592   593   596   597   600   601   604   605   608   609   612   613   616
                                                      617   620   621   624   625   628   629   632   633   636   637   640   641
                                                      644   645   648   649   652   653   656   657   660   661   664   665   668
                                                      669   672   673   676   677   680   681   684   685   688   689   692   693
                                                      696   697   700   701   704   705   708   709   712   713   716   717   720
                                                      721   724   725   728   729   732   733   736   737   740   741   744   745
                                                      748   749   752   753   756   757   760   761   764   765   768   769   772
                                                      773   776   777   780   781   784   785   788   789   792   793   796   797
                                                      800   801   804   805   808   809   812   813   816   817   820   821   824
                                                      825   828   829   832   833   836   837   840   841   844   845   848   849
     SYMBOL        TYPE   VALUE      LENGTH    DEFN  REFERENCES

                                                      852   853   856   857   860   861   864   865   868   869   872   873   876
                                                      877   880   881   884   885   888   889   892   893   896   897   900   901
                                                      904   905   908   909   912   913   916   917   920   921   924   925   928
                                                      929   932   933   936   937   940   941   944   945   948   949   955   956
                                                      959   960   966  1057  1060  1061  1065  1067
R5                  U    00000005           1  1307   163   164   167   972   973   974   983   987  1014  1028  1040  1045  1059
R6                  U    00000006           1  1308   169   170   177   179   183   185   228   540   551   963   988  1030  1031
                                                     1032  1033  1035  1036  1037  1038  1041  1060
R7                  U    00000007           1  1309   178   184   225   540   549   963   989  1028  1030  1033  1035  1038  1042
                                                     1045  1065
R8                  U    00000008           1  1310
R9                  U    00000009           1  1311   106   112   113
REG2LOW             U    000000DD           1  1182
REG2PATT            U    AABBCCDD           1  1181  1207  1219  1231  1243
RPTDWSAV            D    00000DF8           8  1021  1008  1012
RPTSAVE             F    00000DF0           4  1018   982  1015
RPTSPEED            I    00000D86           4   982   968
RPTSVR5             F    00000DF4           4  1019   983  1014
SAVE1T4             F    00000410           4   150   227   966
SAVER2              F    00000420           4   151
SAVER5              F    00000424           4   152   167   972
SUBDWORD            I    00000E5C           4  1057   990  1043
SUBDWSAV            D    00000E80           8  1070  1057  1067
SUBTEST             X    00000401           1   144   131
TEST91              I    00000528           4   160   119
TESTADDR            D    00000400           8   142
TESTNUM             X    00000400           1   143   128   170
TICKSAAA            P    00000FB0           8  1142   995   998
TICKSBBB            P    00000FB8           8  1143   996  1000
TICKSTOT            P    00000FC0           8  1144   998   999  1000  1003
TIMEOPT             X    00000408           1   147   125   160
TNUM                X    00000000           1  1156   169
TRTE2TST            J    00000000      801774    69    72    76    80   140    70
TRTENEXT            U    00000034           1  1179   973
TRTEPERF            A    00001018           4  1189   163
TRTETEST            4    00000000          52  1155   164
TRTO1L0             X    000015F0           4  1262
TRTO1L11            X    00001DF0           4  1264
TRTO1LF0            X    000025F0           4  1266  1227  1239
TRTOP10             X    000010F0           4  1254
TRTOP111            X    000011F0           4  1256
TRTOP1F0            X    000012F0           4  1258
TRTOP1F1            X    000013F0           4  1260  1203  1215
TRTOP20             X    00002DF0           1  1272
TRTOP211            X    00022EF0           1  1275
TRTOP2F0            X    00022FF0           1  1277
TRTOP411            X    000230F0           1  1279
TRTOP4F0            X    000232F0           1  1281
TRTOP811            X    000234F0           1  1283
TRTOP8F0            X    000435F0           1  1286
TRTOP8F1            X    000636F0           1  1289
TRTOPCF0            X    000837F0           1  1292  1228  1240
TRTOPCF1            X    000A39EE           1  1295  1204  1216
TST91LOP            U    00000532           1   166   975
=AL2(L'MSGMSG)      R    00000F7E           2  1126  1082
=CL5'TRTE'          C    00000F80           5  1127   967
```

```
     SYMBOL        TYPE   VALUE      LENGTH    DEFN  REFERENCES

=F'0'               F    00000F74           4  1123   974
=F'1'               F    00000F78           4  1124  1063
=H'0'               H    00000F7C           2  1125  1077
=P'4294967296'      P    00000F85           6  1128   999
```

```
 MACRO    DEFN  REFERENCES

DOINSTR    207    553    566    953
OVERONLY   193    230    241    532
```

```
   DESC     SYMBOL    SIZE       POS          ADDR

Entry: 0

Image       IMAGE     801774  00000-C3BED  00000-C3BED
  Region              801774  00000-C3BED  00000-C3BED
    CSECT   TRTE2TST  801774  00000-C3BED  00000-C3BED
   STMT                                                          FILE NAME

1     c:\Users\Fish\Documents\Visual Studio 2008\Projects\MyProjects\ASMA-0\TRTE-02-performance\TRTE-02-performance.asm

** NO ERRORS FOUND **
```