```
 LOC   OBJECT CODE   ADDR1   ADDR2   STMT
                                       2 ************************************************************************
                                       3 *
                                       4 *        CU12 cross page boundary instruction tests
                                       5 *
                                       6 *        NOTE: This test is based the CLCL-et-al Test
                                       7 *              modified to only test the CU12 instruction.
                                       8 *
                                       9 *        James Wekel February 2024
                                      10 ************************************************************************


                                      12 ************************************************************************
                                      13 *
                                      14 *            CU12 cross page instruction tests
                                      15 *
                                      16 ************************************************************
                                      17 *  This program tests functioning of the CU12 instruction
                                      18 *  across page boundaties. Only M3=0 is tested and CC=0 is expected.
                                      19 *  Specification exceptions are not tested.
                                      20 *
                                      21 *  PLEASE NOTE that the tests are very SIMPLE TESTS designed to catch
                                      22 *  obvious coding errors.  None of the tests are thorough.  They are
                                      23 *  NOT designed to test all aspects of any of the instructions.
                                      24 *
                                      25 ************************************************************************
                                      26 *
                                      27 *  Example Hercules Testcase:
                                      28 *
                                      29 *        *Testcase CU12-01-xpage (Test cross page CU12 instruction )
                                      30 *
                                      31 *        # ------------------------------------------------------------
                                      32 *        #  This tests only the function of the CU12 instruction where
                                      33 *        #  operands cross page boundaries.
                                      34 *        #  Specification Exceptions are NOT tested.
                                      35 *        # ------------------------------------------------------------
                                      36 *
                                      37 *        mainsize    16
                                      38 *        numcpu      1
                                      39 *        sysclear
                                      40 *        archlvl     z/Arch
                                      41 *
                                      42 *        loadcore    "$(testpath)/CU12-01-xpage.core" 0x0
                                      43 *
                                      44 *        runtest     1
                                      45 *
                                      46 *        *Done
                                      47 *
                                      48 ************************************************************************
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT

                               00000000  000006BB    50 CU12TST START 0
00000000                       00000000              51          USING CU12TST,R0            Low core addressability


00000000                       00000000  000001A0    53          ORG   CU12TST+X'1A0'        z/Architecure RESTART PSW
000001A0  00000001 80000000                          54          DC    X'0000000180000000'
000001A8  00000000 00000200                          55          DC    AD(BEGIN)

000001B0                       000001B0  000001D0    57          ORG   CU12TST+X'1D0'        z/Architecure PROGRAM CHECK PSW
000001D0  00020001 80000000                          58          DC    X'0002000180000000'
000001D8  00000000 0000DEAD                          59          DC    AD(X'DEAD')


000001E0                       000001E0  00000200    61          ORG   CU12TST+X'200'        Start of actual test program...

                                                     63 ********************************************************************************
                                                     64 *                The actual "CU12TST" program itself...
                                                     65 ********************************************************************************
                                                     66 *
                                                     67 *  Architecture Mode: z/Arch
                                                     68 *  Register Usage:
                                                     69 *
                                                     70 *   R0       interation count for current test
                                                     71 *   R1       current target address
                                                     72 *   R2       CU12 - First-Operand Address  - target
                                                     73 *   R3       CU12 - First-Operand Length
                                                     74 *   R4       CU12 - Second-Operand Address  - source
                                                     75 *   R5       CU12 - Second-Operand length
                                                     76 *   R6       (work)
                                                     77 *   R7       CU12CTL base
                                                     78 *   R8       First base register
                                                     79 *   R9       Second base register
                                                     80 *   R10-R13  (work) (copy source)
                                                     81 *   R14      Subroutine call
                                                     82 *   R15      Secondary Subroutine call or current source address
                                                     83 *
                                                     84 ********************************************************************************

00000200                       00000200              86          USING  BEGIN,R8         FIRST Base Register
00000200                       00001200              87          USING  BEGIN+4096,R9    SECOND Base Register

00000200  0580                                       89 BEGIN    BALR  R8,0              Initalize FIRST base register
00000202  0680                                       90          BCTR  R8,0              Initalize FIRST base register
00000204  0680                                       91          BCTR  R8,0              Initalize FIRST base register

00000206  4190 8800                    00000800      93          LA    R9,2048(,R8)      Initalize SECOND base register
0000020A  4190 9800                    00000800      94          LA    R9,2048(,R9)      Initalize SECOND base register
                                                     95 *
                                                     96 **       Run the tests...
                                                     97 *
0000020E  45E0 8302                    00000502      98          BAL   R14,TEST01        Test CU12   instruction
                                                     99 *
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT
                                                    101 ************************************************************************
                                                    102 *         Test for normal or unexpected test completion...
                                                    103 ************************************************************************

00000212  9501 8200                       00000400  105          CLI   TESTNUM,X'01'    Did we end on expected test?
00000216  4770 83F0                       000005F0  106          BNE   FAILTEST         No?! Then FAIL the test!

0000021A  9504 8201                       00000401  108          CLI   SUBTEST,X'04'    Did we end on expected SUB-test?
0000021E  4770 83F0                       000005F0  109          BNE   FAILTEST         No?! Then FAIL the test!

00000222  47F0 83D8                       000005D8  111          B     EOJ              Yes, then normal completion!




                                                    113 ************************************************************************
                                                    114 *        Fixed test storage locations ...
                                                    115 ************************************************************************


00000226                        00000226  00000400  117          ORG   BEGIN+X'200'
                                                    118
00000400                                            119 TESTADDR DS    0D         Where test/subtest numbers will go
00000400  99                                        120 TESTNUM  DC    X'99'      Test number of active test
00000401  99                                        121 SUBTEST  DC    X'99'      Active test sub-test number

00000402                        00000402  00000502  123          ORG   *+X'100'
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT
                                                    125 ********************************************************************************
                                                    126 *        TEST01                    Test CU12 instruction
                                                    127 ********************************************************************************

00000502  9201 8200                        00000400  129 TEST01   MVI   TESTNUM,X'01'
                                                    130
00000506  4170 83F8                        000005F8  131          LA    R7,CU12CTL          Point R7 --> testing control table
0000050A                         00000000           132          USING CU12TEST,R7         What each table entry looks like
                                                    133
                                 0000050A  00000001  134 TST1LOOP EQU   *
0000050A  4360 7000                        00000000  135          IC    R6,TNUM             Set test number
0000050E  4260 8200                        00000400  136          STC   R6,TESTNUM
                                                    137
00000512  5800 7010                        00000010  138          L     R0,OP2LEN           source length
                                                    139 *
00000516  58F0 7014                        00000014  140          L     R15,OP1WHERE        Calculate Target address
0000051A  1BF0                                      141          SR    R15,R0
0000051C  41F0 F001                        00000001  142          LA    R15,1(,R15)
                                                    143 *
00000520  5810 7018                        00000018  144          L     R1,OP2WHERE          Calculate source address
00000524  1B10                                      145          SR    R1,R0
00000526  4110 1001                        00000001  146          LA    R1,1(,R1)
                                                    147 *
                                                    148 **       Initialize source operand data (move data to testing address)
                                                    149 *
                                 0000052A  00000001  150 TST1INIT EQU   *
                                                    151 *                                  Source
0000052A  18A1                                      152          LR    R10,R1              Where to move operand-2 data to
0000052C  58B0 7010                        00000010 153          L     R11,OP2LEN            How much of it there is
00000530  58C0 700C                        0000000C 154          L     R12,OP2DATA         Where op2 data is right now
00000534  58D0 7010                        00000010 155          L     R13,OP2LEN            How much of it there is
00000538  0EAC                                      156          MVCL  R10,R12
                                                    157

                                                    159 *       Execute CU12 instruction and check for expected condition code

0000053A  182F                                      161          LR    R2,R15               Target
0000053C  5830 7008                        00000008 162          L     R3,OP1LEN              target length
00000540  1841                                      163          LR    R4,R1               source
00000542  5850 7010                        00000010 164          L     R5,OP2LEN              source length
                                                    165
00000546  1B66                                      166          SR    R6,R6              get M3 bits for CU12
00000548  4360 7003                        00000003 167          IC    R6,M3              (M3)
0000054C  4260 835E                        0000055E 168          STC   R6,CU12MOD+2       DYNAMICALLY MODIFIED CODE
                                                    169
00000550  58B0 701C                        0000001C 170          L     R11,FAILMASK       (failure CC)
00000554  89B0 0004                        00000004 171          SLL   R11,4              (shift to BC instr CC position)
                                                    172
00000558  9200 8201                        00000401 173          MVI   SUBTEST,X'00'      (primary CU12)
0000055C  B2A7 0024                                 174 CU12MOD  CU12  R2,R4              Start with CU12 and m3=0
00000560  4710 835C                        0000055C 175          BC    B'0001',CU12MOD     cc=3, not finished
                                                    176
00000564  44B0 83C4                        000005C4 177          EX    R11,CU12BC          fail if...
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2    STMT
                                                    179 **       Verify R3,R5  contain (or still contain!) expected values
00000568  9201 8201                       00000401  180          MVI   SUBTEST,X'01'      (R3 result - TARGET remaining len)
0000056C  5930 7020                       00000020  181          C     R3,ENDLN1             R3 correct?
00000570  4770 83BE                       000005BE  182          BNE   CU12FAIL           No, FAILTEST!
                                                    183
00000574  9202 8201                       00000401  184          MVI   SUBTEST,X'02'      (R5 result - SOURCE remaining len)
00000578  5950 7024                       00000024  185          C     R5,ENDLN2             R5 correct
0000057C  4770 83BE                       000005BE  186          BNE   CU12FAIL           No, FAILTEST!
                                                    187
00000580  9203 8201                       00000401  188          MVI   SUBTEST,X'03'      (TARGET IS CORRECT?)
00000584  182F                                     189          LR    R2,R15             conversion result
00000586  5830 7008                       00000008  190          L     R3,OP1LEN
0000058A  5840 7004                       00000004  191          L     R4,OP1DATA         expected result
0000058E  5850 7008                       00000008  192          L     R5,OP1LEN
00000592  0F24                                     193          CLCL  R2,R4
00000594  4710 8390                       00000590  194          BC    B'0001',*-4          not finished?
00000598  4770 83BE                       000005BE  195          BNE   CU12FAIL          No, FAILTEST!
                                                    196 *
                                                    197 *        shift source/target addresses and try again to
                                                    198 *        ensure multiple cross page bounday tests
                                                    199 *
0000059C  4110 1001                       00000001  200          LA    R1,1(,R1)
000005A0  41F0 F001                       00000001  201          LA    R15,1(,R15)
000005A4  4600 832A                       0000052A  202          BCT   R0,TST1INIT
                                                    203
000005A8  4170 7028                       00000028  204          LA    R7,CU12NEXT        Go on to next table entry
000005AC  D503 83F4 7000      000005F4    00000000  205          CLC   =F'0',0(R7)        End of table?
000005B2  4770 830A                       0000050A  206          BNE   TST1LOOP           No, loop...
                                                    207
000005B6  9204 8201                       00000401  208          MVI   SUBTEST,X'04'       Done
000005BA  47F0 83C2                       000005C2  209          B     CU12DONE            Done! (success!)


000005BE  41E0 83F0                       000005F0  211 CU12FAIL LA    R14,FAILTEST       Unexpected results!
000005C2  07FE                                      212 CU12DONE BR    R14                Return to caller or FAILTEST


000005C4  4700 83BE                       000005BE  214 CU12BC   BC    0,CU12FAIL          (fail if unexpected condition code)


000005C8                                            216          DROP  R7
000005C8                      00000200              217          USING BEGIN,R8
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT
                                                    219 ********************************************************************************
                                                    220 *        Normal completion or Abnormal termination PSWs
                                                    221 ********************************************************************************

000005C8  00020001 80000000                         223 EOJPSW   DC    0D'0',X'0002000180000000',AD(0)
000005D8  B2B2 83C8                 000005C8        225 EOJ      LPSWE EOJPSW                Normal completion

000005E0  00020001 80000000                         227 FAILPSW  DC    0D'0',X'0002000180000000',AD(X'BAD')
000005F0  B2B2 83E0                 000005E0        229 FAILTEST LPSWE FAILPSW               Abnormal termination

                                                    231 ********************************************************************************
                                                    232 *        Working Storage
                                                    233 ********************************************************************************

000005F4                                            235          LTORG ,                     Literals pool
000005F4  00000000                                  236                =F'0'

                            00000400  00000001      238 K        EQU   1024                  One KB
                            00001000  00000001      239 PAGE     EQU   (4*K)                 Size of one page
                            00004000  00000001      240 K16      EQU   (16*K)                16 KB
                            00008000  00000001      241 K32      EQU   (32*K)                32 KB
                            00010000  00000001      242 K64      EQU   (64*K)                64 KB
                            00100000  00000001      243 MB       EQU   (K*K)                  1 MB
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT
                               00000000  000006BB   245 CU12TST CSECT  ,

                                                    247 ********************************************************************************
                                                    248 *        CU12TEST DSECT
                                                    249 ********************************************************************************


                                                    251 CU12TEST DSECT ,
00000000  00                                        252 TNUM     DC    X'00'          CU12 test number
00000001  00                                        253          DC    X'00'
00000002  00                                        254          DC    X'00'
00000003  00                                        255 M3       DC    X'00'          M3 byte stored into CU12 instruction


                                                    257
00000004  00000000                                  258 OP1DATA  DC    A(0)           Pointer to Operand 1       - result
00000008  00000000                                  259 OP1LEN   DC    F'0'             length                   - result
0000000C  00000000                                  260 OP2DATA  DC    A(0)           Pointer to Operand-2 data  - source
00000010  00000000                                  261 OP2LEN   DC    F'0'             length                   - source


                               00000014  00000001   263 OPSWHERE EQU   *
00000014  00000000                                  264 OP1WHERE DC    A(0)           result - Where should be placed
00000018  00000000                                  265 OP2WHERE DC    A(0)           source - Where should be placed


0000001C  00000000                                  267 FAILMASK DC    A(0)           Failure Branch on Condition mask


                                                    269 *                             Ending register values
00000020  00000000                                  270 ENDLN1   DC    A(0)              target length
00000024  00000000                                  271 ENDLN2   DC    A(0)              source length
                                                    272


                              00000028  00000001   274 CU12NEXT EQU   *              Start of next table entry...
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT
                               00000000  000006BB   277 CU12TST CSECT  ,

                                                     279 ********************************************************************************
                                                     280 *        CU12 Testing Control tables   (ref: CU12TEST DSECT)
                                                     281 ********************************************************************************
                                                     282          PRINT DATA
000005F8                                             283 CU12CTL  DC    0A(0)    start of table
                                                     284 ********************************************************************************
                                                     285 *        tests with CC=0 M3=0
                                                     286 ********************************************************************************


000005F8                                             288 CC0T1    DS    0F
000005F8  01                                         289          DC    X'01'                        Test Num
000005F9  0000                                       290          DC    X'00',X'00'
000005FB  00                                         291          DC    X'00'                        M3
                                                     292 *
000005FC  00000678 00000044                          293          DC    A(UTF16A),A(UTF16AED-UTF16A)   target - Op1 & length
00000604  00000630 0000003D                          294          DC    A(UTF8A),A(UTF8AEND-UTF8A)     Source - Op2 & length
                                                     295
0000060C  00100000                                   296          DC    A(1*MB+(0*K16))                target
00000610  00200000                                   297          DC    A(2*MB+(0*K16))                source
                                                     298 *
00000614  00000007                                   299          DC    A(7)                           FailCC - not CC0
00000618  00000000                                   300          DC    A(0)                           Result - target len
0000061C  00000000                                   301          DC    A(0)                           Result - source len


00000620  00000000                                   303          DC    A(0)     end of table
00000624  00000000                                   304          DC    A(0)     end of table
00000628  00000000                                   305          DC    A(0)     end of table
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT
                                                     307 ************************************************************************
                                                     308 *        CU12  UTF-8 tests
                                                     309 ************************************************************************

0000062C  0000003D                                   311 UTF8ALN  DC    A(UTF8AEND-UTF8A)
00000630                                             312 UTF8A    DS    0H
00000630  00                                         313          DC    XL1'00'  first UTF-8 1 Byte character
00000631  31                                         314          DC    XL1'31'  1
00000632  39                                         315          DC    XL1'39'  9
00000633  40                                         316          DC    XL1'40'  @
00000634  41                                         317          DC    XL1'41'  A
00000635  42                                         318          DC    XL1'42'  B
00000636  7F                                         319          DC    XL1'7F'  last UTF-8 1 Byte character

00000637  C280                                       321          DC    XL2'C280'  first UTF-8 2 Byte character
00000639  C380                                       322          DC    XL2'C380'  c3 80 LATIN CAPITAL LETTER A WITH GRAVE
0000063B  C3B8                                       323          DC    XL2'C3B8'  c3 b8 LATIN SMALL LETTER O WITH STROKE
0000063D  D09C                                       324          DC    XL2'D09C'  D0 9C Đœ Cyrillic Capital Letter Em
0000063F  DFBF                                       325          DC    XL2'DFBF'  last UTF-8 2 Byte character DF BF ß¿

00000641  43                                         327          DC    XL1'43'  C

00000642  E0A080                                     329          DC    XL3'E0A080'  first UTF-8 3 Byte character
                                                     330 *                           E0 A0 80 à € Samaritan Letter Alaf
00000645  E0A18D                                     331          DC    XL3'E0A18D'  E0 A1 8D à¡• Mandaic Letter An
00000648  EA9FBD                                     332          DC    XL3'EA9FBD'  EA 9F BD êŸ½ Latin Epigraphic Inverted M
0000064B  EFBF87                                     333          DC    XL3'EFbf87'  EF BF 87 ï¿‡ Halfwidth Hangul Letter E
0000064E  EFBFBF                                     334          DC    XL3'EFBFBF'  last UTF-8 3 Byte character EF BF BF

00000651  44                                         336          DC    XL1'44'  D

00000652  F0908080                                   338          DC    XL4'F0908080'  first UTF-8 4 Byte character
                                                     339 *                          F0 90 80 80 ð•€€ Linear B Syllable B008 A
00000656  F0908487                                   340          DC    XL4'F0908487' F0 90 84 87 ð•„‡ Aegean Number One
0000065A  F09294B5                                   341          DC    XL4'F09294B5' F0 92 94 B5 Cuneiform Sign She Plus Sar
0000065E  F09082B8                                   342          DC    XL4'F09082B8'  F0 90 82 B8 ð•‚¸ Linear B Ideogram B177
00000662  F096AB83                                   343          DC    XL4'F096AB83'  F0 96 A8 83 ð–¨ƒ Bamum Letter Phase-f Ka
00000666  F0989A9F                                   344          DC    XL4'F0989A9F'  last UTF-8 4 Byte character

0000066A  45                                         346          DC    XL1'45'  E
0000066B  4E                                         347          DC    XL1'4E'  N
0000066C  44                                         348          DC    XL1'44'  D
0000066D                                             349 UTF8AEND DS    0X
                                                     350

                                                     352 ************************************************************************
                                                     353 *        CU12  UTF-12 Result
                                                     354 ************************************************************************
0000066D  E4C6E3F3 F27A                              355          DC    C'UFT32:'
00000674  00000044                                   356 UTF16ALN DC    A(UTF16AED-UTF16A)
00000678                                             357 UTF16A   DC    0X
00000678  0000                                       358          DC    X'0000'
0000067A  0031                                       359          DC    X'0031'
0000067C  0039                                       360          DC    X'0039'
0000067E  0040                                       361          DC    X'0040'
00000680  0041                                       362          DC    X'0041'
```

```
  LOC        OBJECT CODE       ADDR1     ADDR2     STMT

00000682  0042                                     363          DC    X'0042'
00000684  007F                                     364          DC    X'007F'
00000686  0080                                     365          DC    X'0080'
00000688  00C0                                     366          DC    X'00C0'
0000068A  00F8                                     367          DC    X'00F8'
0000068C  041C                                     368          DC    X'041C'
0000068E  07FF                                     369          DC    X'07FF'
00000690  0043                                     370          DC    X'0043'
00000692  0800                                     371          DC    X'0800'
00000694  084D                                     372          DC    X'084D'
00000696  A7FD                                     373          DC    X'A7FD'
00000698  FFC7                                     374          DC    X'FFC7'
0000069A  FFFF                                     375          DC    X'FFFF'
0000069C  0044                                     376          DC    X'0044'
                                                   377 *                        utf16 pairs
0000069E  D800                                     378          DC    X'D800'
000006A0  DC00                                     379          DC    X'DC00'
000006A2  D800                                     380          DC    X'D800'
000006A4  DD07                                     381          DC    X'DD07'
000006A6  D809                                     382          DC    X'D809'
000006A8  DD35                                     383          DC    X'DD35'
000006AA  D800                                     384          DC    X'D800'
000006AC  DCB8                                     385          DC    X'DCB8'
000006AE  D81A                                     386          DC    X'D81A'
000006B0  DEC3                                     387          DC    X'DEC3'
000006B2  D821                                     388          DC    X'D821'
000006B4  DE9F                                     389          DC    X'DE9F'
                                                   390
000006B6  0045                                     391          DC    X'0045'
000006B8  004E                                     392          DC    X'004E'
000006BA  0044                                     393          DC    X'0044'
000006BC                                           394 UTF16AED DS    0X
```

```
 LOC        OBJECT CODE       ADDR1     ADDR2     STMT
                                                   396 ********************************************************************************
                                                   397 *        Register equates
                                                   398 ********************************************************************************

                                 00000000  00000001   400 R0       EQU   0
                                 00000001  00000001   401 R1       EQU   1
                                 00000002  00000001   402 R2       EQU   2
                                 00000003  00000001   403 R3       EQU   3
                                 00000004  00000001   404 R4       EQU   4
                                 00000005  00000001   405 R5       EQU   5
                                 00000006  00000001   406 R6       EQU   6
                                 00000007  00000001   407 R7       EQU   7
                                 00000008  00000001   408 R8       EQU   8
                                 00000009  00000001   409 R9       EQU   9
                                 0000000A  00000001   410 R10      EQU   10
                                 0000000B  00000001   411 R11      EQU   11
                                 0000000C  00000001   412 R12      EQU   12
                                 0000000D  00000001   413 R13      EQU   13
                                 0000000E  00000001   414 R14      EQU   14
                                 0000000F  00000001   415 R15      EQU   15

                                                   417          END
```

SYMBOL	TYPE	VALUE	LENGTH	DEFN	REFERENCES
BEGIN	I	000200	2	89	117 55 86 87 217
CC0T1	F	0005F8	4	288	
CU12BC	I	0005C4	4	214	177
CU12CTL	A	0005F8	4	283	131
CU12DONE	I	0005C2	2	212	209
CU12FAIL	I	0005BE	4	211	182 186 195 214
CU12MOD	I	00055C	4	174	168 175
CU12NEXT	U	000028	1	274	204
CU12TEST	4	000000	40	251	132
CU12TST	J	000000	1724	50	53 57 61 51
ENDLN1	A	000020	4	270	181
ENDLN2	A	000024	4	271	185
EOJ	I	0005D8	4	225	111
EOJPSW	D	0005C8	8	223	225
FAILMASK	A	00001C	4	267	170
FAILPSW	D	0005E0	8	227	229
FAILTEST	I	0005F0	4	229	106 109 211
IMAGE	1	000000	1724	0	
K	U	000400	1	238	239 240 241 242 243
K16	U	004000	1	240	296 297
K32	U	008000	1	241	
K64	U	010000	1	242	
M3	X	000003	1	255	167
MB	U	100000	1	243	296 297
OP1DATA	A	000004	4	258	191
OP1LEN	F	000008	4	259	162 190 192
OP1WHERE	A	000014	4	264	140
OP2DATA	A	00000C	4	260	154
OP2LEN	F	000010	4	261	138 153 155 164
OP2WHERE	A	000018	4	265	144
OPSWHERE	U	000014	1	263	
PAGE	U	001000	1	239	
R0	U	000000	1	400	51 138 141 145 202
R1	U	000001	1	401	144 145 146 152 163 200
R10	U	00000A	1	410	152 156
R11	U	00000B	1	411	153 170 171 177
R12	U	00000C	1	412	154 156
R13	U	00000D	1	413	155
R14	U	00000E	1	414	98 211 212
R15	U	00000F	1	415	140 141 142 161 189 201
R2	U	000002	1	402	161 174 189 193
R3	U	000003	1	403	162 181 190
R4	U	000004	1	404	163 174 191 193
R5	U	000005	1	405	164 185 192
R6	U	000006	1	406	135 136 166 167 168
R7	U	000007	1	407	131 132 204 205 216
R8	U	000008	1	408	86 89 90 91 93 217
R9	U	000009	1	409	87 93 94
SUBTEST	X	000401	1	121	108 173 180 184 188 208
TEST01	I	000502	4	129	98
TESTADDR	D	000400	8	119	
TESTNUM	X	000400	1	120	105 129 136
TNUM	X	000000	1	252	135
TST1INIT	U	00052A	1	150	202
TST1LOOP	U	00050A	1	134	206
UTF16A	X	000678	1	357	293 356

SYMBOL	TYPE	VALUE	LENGTH	DEFN	REFERENCES
UTF16AED	X	0006BC	1	394	293 356
UTF16ALN	A	000674	4	356	
UTF8A	H	000630	2	312	294 311
UTF8AEND	X	00066D	1	349	294 311
UTF8ALN	A	00062C	4	311	
=F'0'	F	0005F4	4	236	205

MACRO DEFN REFERENCES

No defined macros

```
   DESC      SYMBOL   SIZE    POS      ADDR

Entry: 0

Image       IMAGE    1724  000-6BB  000-6BB
  Region             1724  000-6BB  000-6BB
    CSECT   CU12TST  1724  000-6BB  000-6BB
```

```
   STMT                FILE NAME
1     /devstor/dev/tests/./CU12-01-xpage.asm

** NO ERRORS FOUND **
```