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Editor

Trevor Eddolls

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An unwanted effect of the new MROFSE SIT parameter

CICS 5.3.0 brings with its set of changes a new System Initialization Table (SIT) parameter – MROFSE. When activated, this parameter can elongate response times for File Owning Regions (FOR).

New parameters are brought into existence for good reasons. You only get the benefit if you turn them on. Here's what we found when we activated MROFSE.

The parameter is designed to bring the Application Owning Region (AOR) in step with the long-running mirror transaction in the FOR. If the AOR transaction issues more than a couple of file requests and user syncpoints, why have CICS go through the overhead of setting up its connection to the mirror task for each syncpoint? Wouldn't it be better to have this stick around for the life of the task? Sounded good to me!

When CICS 5.3.0 was brand new, the documentation was a bit scarce for this SIT parameter. The *CICS Intercommunication Guide* now says, "MROFSE=YES, specified on the front-end region, extends the retention of the mirror task and the session from the next syncpoint to the end of the task". It continues, "Conceptually, MROLRM is specified on the back-end region and MROFSE is specified on the front-end region. However, if the distinction between 'back end' and 'front end' is not clear, it is safe to code both parameters on each region if necessary."

The *System Definition Guide* has been modified to say that MROFSE specifies "whether you want to extend the lifetime of the long-running mirror to keep it allocated until the end of the task rather than after a user syncpoint for function shipping applications". This is subtly different, and it would seem at first glance to be a misleading definition. The long-running mirror is only present in FORs and MROLRM must be specified in order to get it. MROFSE is for AORs, right? Well, it turns out that if you have it coded in your FOR, it really will do just that! The mirror tasks last even longer if you set both these

parameters to YES than if you have just MROLRM turned on. And this can play havoc with your response time reports. We monitor FOR response times fairly closely and were quite surprised to see a 60% increase in the numbers! The averages went from .125 to .2 secs! Average CPU times did not change. Luckily, the AOR response times did not change. The same work was being done as before, but now the long-running mirror stayed connected to the AOR for a longer time – for the life of the task and not just the life of one syncpoint.

Another implication of this parameter is that the session between the AOR and the FOR will stay active longer. In a production environment, with many sessions defined, this should not be a problem. Six active sessions can handle a lot of traffic. Defining 50 would be more likely than just having six, I would think. Test environments might be different – ours was. We have a low number of sessions defined for function shipping in our test regions. We ran into a situation where an application that featured some 'normal' long- running tasks, acquired all the sessions defined to the FOR. No other application in the region could get a file request satisfied! More sessions were added and the problem was eliminated. This also shed light on the FOR numbers. Super long-running AOR transactions used to give up the FOR mirror at every syncpoint. Now they didn't. So if a transaction runs continually, say scanning a queue, now the corresponding FOR mirror transaction will too. That could be bad if you have Max Task (MXT) set low and have a lot of long-running transactions. You might run out of slots and have tasks queue up. It definitely means that the system programmer must scan to see how close your regions run to Max Task.

The *System Definition Guide* concludes its section on MROFSE by saying, "It should be used with caution. For additional information, see the *Performance Guide*." While I (now) agree with the statement, I could not find MROFSE referenced in our on-line copy of the *Performance Guide*. In fairness, and in retrospect, the entries in the manuals do talk about the kinds of effects we saw. However, the entries seem a lot clearer now that I know what can happen first hand!

CONCLUSION

Before you choose to activate MROFSE:

- Make sure you have enough sessions defined in your AORs and FORs to handle your long-running transactions.
- Tell your boss the FOR response time numbers will go up a bit, but the AOR response time numbers will not.
- Make sure the AORs and FORs aren't running close to your MXT value. If they are, you must raise it.

Look for a decrease in AOR CPU times for transactions that do a lot of function shipping and issue many syncpoints.

Paul C Gordon
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Displaying the autoinstall-model-name and the associated terminal-name

This is a simple program to display the autoinstall-model-name and the associated terminal-name, which can be used with CEDC or CEDA to look at its characteristics. The transaction is 'MODE' and the calling program is 'CSMODEL'. This gives you the list shown in Figure 1, which will differ depending on the installation on which the transaction is running.

So you need to define the transaction 'MODE' in your PCT and the program 'CSMODEL' in your PPT. When you have done this, compile the program as a command-level program and run 'MODE'.

CSMODEL

```
*ASM XOPTS(CICS,SP)
*****************************************************************
*                                                               *
*  PROGRAM NAME:   CSMODEL                                      *
*  FUNCTION:       THIS IS A SIMPLE PROGRAM TO DISPLAY THE AUTOINST.- *
*                  MODEL-NAME AND THE ASSOCIATED TERMINAL-NAME.       *
*                                                               *
```

```
16/10 00  MO  16:28 FAX +49 911 531 4733     Benutzerservice


AUTOINSTALL MODEL TO TERMINAL X-REFERENCE
-------------------------------------------------------------------
CICSVER=CICS530  SYSID=SPT0  TRANSID=MODE  PROGRAM=CSMODEL
-------------------------------------------------------------------
AI-MODEL   TERMINAL     AI-MODEL   TERMINAL     AI-MODEL   TERMINAL

DFHLU0E2     L0E2       DFHLU0M2     L0M2       DFHLU0M3     L0M3
DFHLU0M4     L0M4       DFHLU0M5     L0M5       DFHLU2       LU2
DFHLU2E2     L2E2       DFHLU2E3     L2E3       DFHLU2E4     L2E4
DFHLU2E5     L2E5       DFHLU2M2     L2M2       DFHLU2M3     L2M3
DFHLU2M4     L2M4       DFHLU2M5     L2M5       DFHLU3       LU3
DFHLU62T     LU62       DFHSCSP      SCSP       DFH3270      3270
DFH3270P     3284       DFH3767      3767       NLVLU22      L22
NLVLU22F     L22F       NLVLU22G     L22G       NLVLU22N     L22N
NLVLU23G     L23G       NLVPRT2K     PR2K       NLVPRT4K     PR4K
NLV3270      3270
```

Figure 1: Example output

```
*  SUPPORTED CICS VERSIONS:                                          *
*                                                                    *
*  CICS/ESA 4.1                                                      *
*  CICS-TS  1.1                                                      *
*  CICS-TS  1.2                                                      *
*  CICS-TS  1.3                                                      *
*                                                                    *
*     THE TERMINAL OUTPUT LOOKS LIKE :                               *
*                                                                    *
*                  AI-MODEL TO TERMINAL X-REFERENCE                  *
*     ---------------------------------------------------------------*
*     CICSVER=CICSXXX  SYSID=YYYY  TRANSID=TTTT  PROGRAM=PPPPPPP     *
*     ---------------------------------------------------------------*
*     AI-MODEL  TERMINAL    AI-MODEL  TERMINAL    AI-MODEL  TERMINAL *
*     NNNNNNNN    TTTT      NNNNNNNN    TTTT      NNNNNNNN    TTTT   *
*     NNNNNNNN    TTTT      NNNNNNNN    TTTT      NNNNNNNN    TTTT   *
*                                                                    *
*                                                                    *
*     AI-MODEL      = NAME OF THE AUTOINSTALL MODEL AS DEFINED IN    *
*                     TERMINAL DEFINITION                            *
*     TERMINAL      = TERMINAL NAME TO BE USED TO DISPLAY BY CEDA    *
**********************************************************************
*   EXPAND THE DFHEISTG FOR THE REQUIRED USER FIELDS
*
DFHEISTG DSECT
```

```
*************************************************************************
*    THE TERMINAL PRESENTATION OUTPUT AREA BEGINS HERE
*************************************************************************
OUT      DS    ØCL18ØØ
************************  HEADER LINE
HDRMSG   DS    XL79
NL       DS    XL1
FILLØ    DS    XL62
NLØ      DS    XL1
************************  ENVIRONMENT LINE
CICSVER  DS    CL8
CICS     DS    CL7
SYSIDENT DS    CL8
SYSID    DS    CL4
TRANID   DS    CL1Ø
TRANSID  DS    CL4
PROGNA   DS    CL1Ø
PROGRAM  DS    CL8
NL1      DS    XL1
************************  STARTER STARS
FILL1    DS    XL62
NL2      DS    XL1
************************  1ST LINE OF DATA OUTPUT
CSMODEL1 DS    CL8
FILL2    DS    CL2
TERMINA1 DS    CL8
FILL3    DS    CL4
CSMODEL2 DS    CL8
FILL4    DS    CL2
TERMINA2 DS    CL8
FILL5    DS    CL4
CSMODEL3 DS    CL8
FILL6    DS    CL2
TERMINA3 DS    CL8
NL3      DS    XL1
NL4      DS    XL1
LIST     DS    CL15ØØ
*************************************************************************
*    THE OUTPUT AREA ENDS HERE
*************************************************************************
*     HERE BEGINS THE CSECT ITSELF                                      *
*************************************************************************
CSMODEL  CSECT
CSMODEL  AMODE 31
CSMODEL  RMODE ANY
         B     START
PROGNAME DC    CL8'CSMODEL'        SET
         DC    CL8'&SYSDATE'       EYECATCHER
         DC    CL8'&SYSTIME'       INFORMATION
```

```
*
BEGIN    DS    ØH
*********************************************************************
*   CICS BASIC CODING                                               *
*********************************************************************
         L     12,X'21C'          ADDRESS CURRENT TCB
         L     12,X'DØ'(,12)      ADDRESS TCB EXTN
         L     12,X'14'(,12)      ADDRESS AFCX
         L     12,X'Ø8'(,12)      ADDRESS THE CSA
         L     5,X'C8'(,12)       ADDRESS THE CSAOPFLA
         L     5,X'1CØ'(,5)       ADDRESS THE STATIC STOR AREA (SSA)
         L     5,X'14'(,5)        ADDRESS THE TMP SSA (SSATMP/TMS)
*********************************************************************
CICS41Ø  DS    ØH
         CLI   X'9F'(12),X'41'    CICS 4.1.Ø ?
         BNE   CICS51Ø            NO CHECK NEXT
         MVC   CICS,=C'CICS41Ø'   MOVE VER/REL INTO OUTPUT FIELD
         L     5,X'1AC'(,5)       ADDRESS THE TMSCATTER TABLE 4.1.Ø
         B     CONTINUE           GO AHEAD
CICS51Ø  DS    ØH
         CLI   X'9F'(12),X'51'    CICS 5.1.Ø ?
         BNE   CICS52Ø            NO TRY NEXT
         MVC   CICS,=C'CICS51Ø'   MOVE VER/REL INTO OUTPUT FIELD
         L     5,X'1E8'(,5)       ADDRESS THE TMSCATTER TABLE 5.1.Ø
         B     CONTINUE           GO AHEAD
CICS52Ø  DS    ØH
         CLI   X'9F'(12),X'52'    CICS 5.2.Ø ?
         BNE   CICS53Ø            CICS VERSION/RELEASE NOT SUPPORTED
         MVC   CICS,=C'CICS52Ø'   MOVE VER/REL INTO OUTPUT FIELD
         L     5,X'1E8'(,5)       ADDRESS THE TMSCATTER TABLE 5.2.Ø
         B     CONTINUE           GO AHEAD
CICS53Ø  DS    ØH
         CLI   X'9F'(12),X'53'    CICS 5.3.Ø ?
         BNE   ERRMSG1            CICS VERSION/RELEASE NOT SUPPORTED
         MVC   CICS,=C'CICS53Ø'   MOVE VER/REL INTO OUTPUT FIELD
         L     5,X'1E8'(,5)       ADDRESS THE TMSCATTER TABLE 5.3.Ø
*********************************************************************
CONTINUE DS    ØH
         L     7,X'24'(,5)        ADDRESS THE AITM DIR ELEMENT
         L     6,X'Ø'(,7)         ADDRESS THE 1ST MODEL ELEMENT
         LA    5,LIST             POINT TO LIST
LOOP     DS    ØH
         LA    4,3                SET COUNT TO 3
NEXT     DS    ØH
         MVC   Ø(8,5),Ø(6)        MOVE CSMODELNAME TO LIST
         CLI   X'9F'(12),X'53'    CICS 5.3.Ø ?
         BNE   PRE53Ø
         MVC   12(4,5),X'2E'(6)   MOVE TERMID TO LIST  CICS53Ø
         B     GOON
```

```
PRE53Ø   DS    ØH
         MVC   12(4,5),X'2D'(6)  MOVE TERMID TO LIST PRE CICS53Ø
GOON     DS    ØH
         LR    8,5               SAVE REG5 VALUE
         L     7,X'1Ø'(,7)       LOAD NEXT MODEL ELEMENT
         LTR   7,7               IS THERE A NEXT ENTRY ?
         BZ    SENDLIST          NO, PUT OUT LIST
         L     6,X'Ø'(,7)        ADDRESS NEXT MODEL DEFINITION
         LA    5,22(,5)          POINT TO NEXT HORIZ BUFFER LOC
         BCT   4,NEXT            PUT OUT 3 COLUMNS
         MVI   17(8),X'15'       MOVE NL FOR THIS LINE
         LA    5,18(,8)          POINT TO NEXT LINE LOC Ø
         B     LOOP
*****************************************************************
ERRMSG1  DS    ØH
         EXEC CICS SEND TEXT FROM(MSGDAT1) ERASE FREEKB
         B     RETURN
*****************************************************************
SENDLIST DS    ØH
         MVI   17(8),X'15'       MOVE FINAL NL TO BUFFER
         EXEC CICS ASSIGN SYSID(SYSID) PROGRAM(PROGRAM)
         MVC   TRANSID,EIBTRNID
         EXEC CICS SEND TEXT FROM(OUT) ERASE FREEKB PAGING
*****************************************************************
RETURN   DS    ØH
         EXEC CICS RETURN
*****************************************************************
START    DS   ØH
*****************************************************************
*     LOAD DFHEISTG USER FIELDS                                 *
*****************************************************************
         LA    5,LIST
         MVC   Ø(255,5),BLANKS
         MVC   CICSVER,=C'CICSVER='
         MVC   SYSIDENT,=C'  SYSID= '
         MVC   TRANID,=C'  TRANSID='
         MVC   PROGNA,=C'  PROGRAM='
         MVC   CSMODEL1,=C'AI-MODEL'
         MVC   TERMINA1,=C'TERMINAL'
         MVC   CSMODEL2,=C'AI-MODEL'
         MVC   TERMINA2,=C'TERMINAL'
         MVC   CSMODEL3,=C'AI-MODEL'
         MVC   TERMINA3,=C'TERMINAL'
         MVI   NL,X'15'
         MVI   NL1,X'15'
         MVI   NL2,X'15'
         MVI   NL3,X'15'
         MVI   NL4,X'15'
         MVI   FILLØ,C'-'
```

```
         MVC   FILLØ+1,FILLØ
         MVI   NLØ,X'15'
         MVC   FILL1,FILLØ
         MVC   HDRMSG,MSGDAT
         B     BEGIN
*************************************************************************
*        CONSTANTS                                                      *
*************************************************************************
MSGDAT   DC    CL79'AUTOINSTALL MODEL TO TERMINAL X-REFERENCE    '
MSGDAT1  DC    CL80'CICS VERSION/RELEASE NOT SUPPORTED !         '
BLANKS   DC    CL256' '
         END   CSMODEL
```

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Yet another cold start next time – revisited

Since my article was published in *CICS Update* Issue 182, January 2001, I have corrected an error I made in the first version of the program.

This error regards the management of the CICS TS 1.3 global catalog. Instead of checking for four characters in the CICS TS 1.3 global catalog, the program must check for only one character because, in certain cases, CICS writes its applid shifted to the right by two or three characters so it hides a portion of the checking area.

The differences are shown below.

Old version:

```
    Ø3  FILLER PIC X(16).
    Ø3  GCD-KEYPOINT-TS13 PIC X(4).
        88 GCD-WARMKEYP-TS13 VALUE '   '.
    * WHAT YOU SEE    '    ' *
    * WHAT YOU WRITE X'ØØØØ  *
    * WITH HEX ON      ØØØ3' *
        88 GCD-EMERKEYP-TS13 VALUE '   £'.
    * WHAT YOU SEE    '    ' *
    * WHAT YOU WRITE X'ØØØØ  *
    * WITH HEX ON      ØØØ4' *
```

New version:

```
     03  FILLER PIC X(19).
     03  GCD-KEYPOINT-TS13 PIC X(1).
         88 GCD-WARMKEYP-TS13 VALUE ''.
     * WHAT YOU SEE    ' ' *
     * WHAT YOU WRITE X'0  *
     * WITH HEX ON      3' *
         88 GCD-EMERKEYP-TS13 VALUE '£'.
     * WHAT YOU SEE    ' ' *
     * WHAT YOU WRITE X'0  *
     * WITH HEX ON      4' *
```

Editor's note: we also received the following e-mail:

The article *Yet another cold start next time* contains an error in the code – the author has assumed that the field for the warm keypoint indicator in the CTS 1.3 GCD is 000003. This is because his Netid and Applid take up only 13 characters! Other sites might use the full 17 characters. So, the code should only check for 03 at offset 20 rather than 000003 at offset 18, because the 0000 may be part of the applid! as in NETIDXYZ.CICSABCD.

Gianluca Bonzano (Italy)
J P Lemon (UK)

CICS dynamic hardcopy printer assignment – part 2

This month we conclude the code that allows you to dynamically change the hardcopy assignment for your users.

MSYS160.BMS

```
MSYS160  DFHMSD TYPE=DSECT,LANG=COBOL,MODE=INOUT,                      -
               MAPATTS=(COLOR,                                         -
               HILIGHT,                                                -
               PS,                                                     -
               VALIDN),                                                -
               STORAGE=AUTO,                                           -
               TIOAPFX=NO
```

```
*   MF500DF MSDSC=Converted by HMMFB060
MSYS160  DFHMDI SIZE=(024,080),TIOAPFX=NO,LINE=NEXT,COLUMN=SAME,       -
               CTRL=(FREEKB),                                          -
               MAPATTS=(COLOR,                                         -
               PS,                                                     -
               HILIGHT,                                                -
               VALIDN),                                                -
               JUSTIFY=(LEFT)
*   MF500DF DFC=_ CASE=M APFX=    GSEQ=000 HNAM=N
*   MF500DF MPDSC=Converted by HMMFB060
*   MF500DF MDATT=YYYYNNNNNNNNNN
*   MF500DF NFATT=
*   MF500DF CFATT=  X
         DFHMDF POS=(01,001),                                          -
               LENGTH=006,                                             -
               INITIAL='BASLER',                                       -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
         DFHMDF POS=(01,008),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
         DFHMDF POS=(01,028),                                          -
               LENGTH=031,                                             -
               INITIAL='T E R M I N A L / D R U C K E R',              -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(01,060),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
         DFHMDF POS=(01,073),                                          -
               LENGTH=007,                                             -
               INITIAL='MSYS160',                                      -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
TRMID    DFHMDF POS=(02,001),                                          -
               LENGTH=004,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
         DFHMDF POS=(02,006),                                          -
               LENGTH=065,                                             -
               INITIAL='-------------------------- Z U O R D N U N G --
               ----------------',                                      -
               COLOR=DEFAULT,                                          -
```

```
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
DATUM     DFHMDF POS=(Ø2,Ø72),                                         -
                LENGTH=ØØ8,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
          DFHMDF POS=(Ø3,ØØ1),                                         -
                LENGTH=ØØ1,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
ACICS     DFHMDF POS=(Ø3,Ø76),                                         -
                LENGTH=ØØ4,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
          DFHMDF POS=(Ø4,ØØ1),                                         -
                LENGTH=Ø79,                                            -
                INITIAL='-----------------------------------------------
                --------------------------------',                     -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
          DFHMDF POS=(Ø5,ØØ1),                                         -
                LENGTH=Ø1Ø,                                            -
                INITIAL='? Terminal',                                  -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
          DFHMDF POS=(Ø5,Ø12),                                         -
                LENGTH=ØØ8,                                            -
                INITIAL=' Drucker',                                    -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
          DFHMDF POS=(Ø5,Ø21),                                         -
                LENGTH=ØØ1,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
ATEXT     DFHMDF POS=(Ø5,Ø34),                                         -
                LENGTH=Ø45,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
          DFHMDF POS=(Ø5,Ø8Ø),                                         -
                LENGTH=ØØ1,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
```

```
         DFHMDF POS=(06,001),                                          -
               LENGTH=079,                                             -
               INITIAL='-----------------------------------------------
               --------------------------------',                      -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
CMD1     DFHMDF POS=(07,001),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(UNPROT,BRT,FSET)
PAR1     DFHMDF POS=(07,003),                                          -
               LENGTH=004,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(07,008),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
ARG1     DFHMDF POS=(07,013),                                          -
               LENGTH=004,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(07,018),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
CMD2     DFHMDF POS=(08,001),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(UNPROT,BRT,FSET)
PAR2     DFHMDF POS=(08,003),                                          -
               LENGTH=004,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(08,008),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
ARG2     DFHMDF POS=(08,013),                                          -
               LENGTH=004,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
```

```
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(Ø8,Ø18),                                          -
               LENGTH=ØØ1,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
CMD3     DFHMDF POS=(Ø9,ØØ1),                                          -
               LENGTH=ØØ1,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(UNPROT,BRT,FSET)
PAR3     DFHMDF POS=(Ø9,ØØ3),                                          -
               LENGTH=ØØ4,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(Ø9,ØØ8),                                          -
               LENGTH=ØØ1,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
ARG3     DFHMDF POS=(Ø9,Ø13),                                          -
               LENGTH=ØØ4,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(Ø9,Ø18),                                          -
               LENGTH=ØØ1,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
CMD4     DFHMDF POS=(1Ø,ØØ1),                                          -
               LENGTH=ØØ1,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(UNPROT,BRT,FSET)
PAR4     DFHMDF POS=(1Ø,ØØ3),                                          -
               LENGTH=ØØ4,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(1Ø,ØØ8),                                          -
               LENGTH=ØØ1,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
ARG4     DFHMDF POS=(1Ø,Ø13),                                          -
               LENGTH=ØØ4,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
```

```
         DFHMDF POS=(10,018),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
CMD5     DFHMDF POS=(11,001),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(UNPROT,BRT,FSET)
PAR5     DFHMDF POS=(11,003),                                          -
               LENGTH=004,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(11,008),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
ARG5     DFHMDF POS=(11,013),                                          -
               LENGTH=004,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(11,018),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
CMD6     DFHMDF POS=(12,001),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(UNPROT,BRT,FSET)
PAR6     DFHMDF POS=(12,003),                                          -
               LENGTH=004,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(12,008),                                          -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
ARG6     DFHMDF POS=(12,013),                                          -
               LENGTH=004,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
         DFHMDF POS=(12,018),                                          -
```

```
                LENGTH=ØØ1,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
CMD7     DFHMDF POS=(13,ØØ1),                                          -
                LENGTH=ØØ1,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(UNPROT,BRT,FSET)
PAR7     DFHMDF POS=(13,ØØ3),                                          -
                LENGTH=ØØ4,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP,BRT)
         DFHMDF POS=(13,ØØ8),                                          -
                LENGTH=ØØ1,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
ARG7     DFHMDF POS=(13,Ø13),                                          -
                LENGTH=ØØ4,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP,BRT)
         DFHMDF POS=(13,Ø18),                                          -
                LENGTH=ØØ1,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
CMD8     DFHMDF POS=(14,ØØ1),                                          -
                LENGTH=ØØ1,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(UNPROT,BRT,FSET)
PAR8     DFHMDF POS=(14,ØØ3),                                          -
                LENGTH=ØØ4,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP,BRT)
         DFHMDF POS=(14,ØØ8),                                          -
                LENGTH=ØØ1,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP)
ARG8     DFHMDF POS=(14,Ø13),                                          -
                LENGTH=ØØ4,                                            -
                COLOR=DEFAULT,                                         -
                HILIGHT=OFF,                                           -
                ATTRB=(ASKIP,BRT)
         DFHMDF POS=(14,Ø18),                                          -
                LENGTH=ØØ1,                                            -
```

```
                COLOR=DEFAULT,                                          -
                HILIGHT=OFF,                                            -
                ATTRB=(ASKIP)
CMD9        DFHMDF POS=(15,001),                                        -
                LENGTH=001,                                             -
                COLOR=DEFAULT,                                          -
                HILIGHT=OFF,                                            -
                ATTRB=(UNPROT,BRT,FSET)
PAR9        DFHMDF POS=(15,003),                                        -
                LENGTH=004,                                             -
                COLOR=DEFAULT,                                          -
                HILIGHT=OFF,                                            -
                ATTRB=(ASKIP,BRT)
            DFHMDF POS=(15,008),                                        -
                LENGTH=001,                                             -
                COLOR=DEFAULT,                                          -
                HILIGHT=OFF,                                            -
                ATTRB=(ASKIP)
ARG9        DFHMDF POS=(15,013),                                        -
                LENGTH=004,                                             -
                COLOR=DEFAULT,                                          -
                HILIGHT=OFF,                                            -
                ATTRB=(ASKIP,BRT)
            DFHMDF POS=(15,018),                                        -
                LENGTH=001,                                             -
                COLOR=DEFAULT,                                          -
                HILIGHT=OFF,                                            -
                ATTRB=(ASKIP)
CMD10       DFHMDF POS=(16,001),                                        -
                LENGTH=001,                                             -
                COLOR=DEFAULT,                                          -
                HILIGHT=OFF,                                            -
                ATTRB=(UNPROT,BRT,FSET)
PAR10       DFHMDF POS=(16,003),                                        -
                LENGTH=004,                                             -
                COLOR=DEFAULT,                                          -
                HILIGHT=OFF,                                            -
                ATTRB=(ASKIP,BRT)
            DFHMDF POS=(16,008),                                        -
                LENGTH=001,                                             -
                COLOR=DEFAULT,                                          -
                HILIGHT=OFF,                                            -
                ATTRB=(ASKIP)
ARG10       DFHMDF POS=(16,013),                                        -
                LENGTH=004,                                             -
                COLOR=DEFAULT,                                          -
                HILIGHT=OFF,                                            -
                ATTRB=(ASKIP,BRT)
            DFHMDF POS=(16,018),                                        -
                LENGTH=001,                                             -
                COLOR=DEFAULT,                                          -
```

```
              HILIGHT=OFF,                                             -
              ATTRB=(ASKIP)
CMD11    DFHMDF POS=(17,001),                                         -
              LENGTH=001,                                              -
              COLOR=DEFAULT,                                           -
              HILIGHT=OFF,                                             -
              ATTRB=(UNPROT,BRT,FSET)
PAR11    DFHMDF POS=(17,003),                                         -
              LENGTH=004,                                              -
              COLOR=DEFAULT,                                           -
              HILIGHT=OFF,                                             -
              ATTRB=(ASKIP,BRT)
         DFHMDF POS=(17,008),                                         -
              LENGTH=001,                                              -
              COLOR=DEFAULT,                                           -
              HILIGHT=OFF,                                             -
              ATTRB=(ASKIP)
ARG11    DFHMDF POS=(17,013),                                         -
              LENGTH=004,                                              -
              COLOR=DEFAULT,                                           -
              HILIGHT=OFF,                                             -
              ATTRB=(ASKIP,BRT)
         DFHMDF POS=(17,018),                                         -
              LENGTH=001,                                              -
              COLOR=DEFAULT,                                           -
              HILIGHT=OFF,                                             -
              ATTRB=(ASKIP)
CMD12    DFHMDF POS=(18,001),                                         -
              LENGTH=001,                                              -
              COLOR=DEFAULT,                                           -
              HILIGHT=OFF,                                             -
              ATTRB=(UNPROT,BRT,FSET)
PAR12    DFHMDF POS=(18,003),                                         -
              LENGTH=004,                                              -
              COLOR=DEFAULT,                                           -
              HILIGHT=OFF,                                             -
              ATTRB=(ASKIP,BRT)
         DFHMDF POS=(18,008),                                         -
              LENGTH=001,                                              -
              COLOR=DEFAULT,                                           -
              HILIGHT=OFF,                                             -
              ATTRB=(ASKIP)
ARG12    DFHMDF POS=(18,013),                                         -
              LENGTH=004,                                              -
              COLOR=DEFAULT,                                           -
              HILIGHT=OFF,                                             -
              ATTRB=(ASKIP,BRT)
         DFHMDF POS=(18,018),                                         -
              LENGTH=001,                                              -
              COLOR=DEFAULT,                                           -
              HILIGHT=OFF,                                             -
```

```
               ATTRB=(ASKIP)
CMD13     DFHMDF POS=(19,001),                                          -
               LENGTH=001,                                              -
               COLOR=DEFAULT,                                           -
               HILIGHT=OFF,                                             -
               ATTRB=(UNPROT,BRT,FSET)
PAR13     DFHMDF POS=(19,003),                                          -
               LENGTH=004,                                              -
               COLOR=DEFAULT,                                           -
               HILIGHT=OFF,                                             -
               ATTRB=(ASKIP,BRT)
          DFHMDF POS=(19,008),                                          -
               LENGTH=001,                                              -
               COLOR=DEFAULT,                                           -
               HILIGHT=OFF,                                             -
               ATTRB=(ASKIP)
ARG13     DFHMDF POS=(19,013),                                          -
               LENGTH=004,                                              -
               COLOR=DEFAULT,                                           -
               HILIGHT=OFF,                                             -
               ATTRB=(ASKIP,BRT)
          DFHMDF POS=(19,018),                                          -
               LENGTH=001,                                              -
               COLOR=DEFAULT,                                           -
               HILIGHT=OFF,                                             -
               ATTRB=(ASKIP)
          DFHMDF POS=(20,001),                                          -
               LENGTH=079,                                              -
               INITIAL='  +-----------------------------------------
               --------------------------------',                       -
               COLOR=DEFAULT,                                           -
               HILIGHT=OFF,                                             -
               ATTRB=(ASKIP)
          DFHMDF POS=(21,001),                                          -
               LENGTH=001,                                              -
               COLOR=DEFAULT,                                           -
               HILIGHT=OFF,                                             -
               ATTRB=(ASKIP)
ERFPAR    DFHMDF POS=(21,003),                                          -
               LENGTH=004,                                              -
               COLOR=DEFAULT,                                           -
               HILIGHT=OFF,                                             -
               ATTRB=(UNPROT,BRT,FSET,IC)
          DFHMDF POS=(21,008),                                          -
               LENGTH=001,                                              -
               COLOR=DEFAULT,                                           -
               HILIGHT=OFF,                                             -
               ATTRB=(ASKIP)
ERFARG    DFHMDF POS=(21,013),                                          -
               LENGTH=004,                                              -
               COLOR=DEFAULT,                                           -
```

```
               HILIGHT=OFF,                                            -
               ATTRB=(UNPROT,BRT,FSET)
          DFHMDF POS=(21,018),                                         -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
          DFHMDF POS=(22,001),                                         -
               LENGTH=079,                                             -
               INITIAL='-----------------------------------------------
               --------------------------------',                      -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
          DFHMDF POS=(23,001),                                         -
               LENGTH=004,                                             -
               INITIAL='===>',                                         -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
MELDUNG   DFHMDF POS=(23,006),                                         -
               LENGTH=060,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP,BRT)
          DFHMDF POS=(23,067),                                         -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
          DFHMDF POS=(24,001),                                         -
               LENGTH=054,                                             -
              INITIAL='Dat.Freig. F3=Back  F7=Backwards  F8=Forwards  F-
               12=End',                                                -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
          DFHMDF POS=(24,056),                                         -
               LENGTH=001,                                             -
               COLOR=DEFAULT,                                          -
               HILIGHT=OFF,                                            -
               ATTRB=(ASKIP)
          DFHMSD TYPE=FINAL
          END
```

OSYS160.CED

```
EXP GROUP(BASTPRT*)
  ENTER COMMANDS
```

```
NAME     TYPE         GROUP                          DATE   TIME
MSYS16Ø  PROGRAM      BASTPRT  _                     97.Ø62 14.Ø5.58
OSYS16Ø  PROGRAM      BASTPRT                        97.Ø62 14.Ø5.58
SY16     TRANSACTION  BASTPRT                        97.Ø62 16.15.15
SY17     TRANSACTION  BASTPRT    Display only        97.Ø63 Ø9.56.Ø9
TERMPRT  FILE         BASTPRT1                       97.297 13.35.32
TERMPRT  FILE         BASTPRT2                       97.Ø59 1Ø.58.2Ø
TERMPRT  FILE         BASTPRT3                       97.Ø63 Ø9.57.36
```

OSYS160.PRO

```
***   FFONAM   ***
       IDENTIFICATION DIVISION.
       PROGRAM-ID.    OSYS16Ø.
      *P---------------------------------------------------------------*
      *P                                                               *
      *P    Kurzbeschr. : TERMPRT-dataset display and management       *
      *P                                                               *
      *P---------------------------------------------------------------*
      *P                                                               *
      *P    Transaction : SY16 bzw. SY17 (display only)                *
      *P                                                               *
      *P    Hauptmaske  : MSYS16Ø                                      *
      *P                                                               *
      *P---------------------------------------------------------------*
      *P                                                               *
      *P    Function  :                                                *
      *P                                                               *
      *P    Forward and backward browsing (scrolling) is possible      *
      *P    within the displayed table.                                *
      *P    Delete and Modify functions are provided for a line when   *
      *P    the cursor is placed over it. After a line in the table    *
      *P    is selected, it is changed to the appropriate line.        *
      *P                                                               *
      *P---------------------------------------------------------------*
      *P                                                               *
      *P                  P G M - R E S O U R C E                      *
      *P                                                               *
      *P---------------------------------------------------------------*
      *P Data                        ! Typ   ! Sel ! Ins ! Upd ! Del *
      *P-----------------------------+-------+-----+-----+-----+-----*
      *P TERMPRT                     ! VSAM  !  X  !  X  !  X  !  X  *
      *P---------------------------------------------------------------*
      *P                                                               *
      *P---------------------------------------------------------------*
      *P Copy-Files                                                    *
      *P---------------------------------------------------------------*
       ENVIRONMENT DIVISION.
      *****************************************************************
       DATA DIVISION.
```

```
      *****************************************************************
       WORKING-STORAGE SECTION.
      *****************************************************************
       Ø1  LEER                        PIC X(1)  VALUE SPACE.
       Ø1  ZEILE                       PIC S9(4) COMP.
       Ø1  ZEILEN-INDEX                PIC S9(4) COMP.
       Ø1  KOMMANDO                    PIC X.
      *
       Ø1  COMBER.
           Ø5 DSZ-C                    PIC X.
           Ø5 WAHL-C                   PIC X.
           Ø5 FIRSTKEY-C               PIC X(4).
           Ø5 LASTKEY-C                PIC X(4).
           Ø5 PREVKEY-C                PIC X(4).
           Ø5 NEXTKEY-C                PIC X(4).
           Ø5 FILLER                                 OCCURS 13.
              1Ø PAR-C                 PIC X(4).
              1Ø ARG-C                 PIC X(4).
      *****************************************************************
           COPY DFHAID.
           COPY DFHBMSCA.
           COPY MSYS16Ø.
      *****************************************************************
       Ø1  FILLER REDEFINES MSYS16ØI.
           Ø5 FILLER                   PIC X(85).
           Ø5 FILLER                   OCCURS 13.
              1Ø CMDL                  PIC S9(4) COMP.
              1Ø CMDA                  PIC X.
              1Ø CMD                   PIC X.
              1Ø FILLER                PIC X(3).
              1Ø PAR                   PIC X(4).
              1Ø FILLER                PIC X(3).
              1Ø ARG                   PIC X(4).
      *****************************************************************
       Ø1  TERMPRT-SATZ.
           Ø5 TERMPRT-TERM             PIC X(4).
           Ø5 TERMPRT-SPACE            PIC X(1).
           Ø5 TERMPRT-PRT              PIC X(4).
       Ø1  WRK-APPLID.
           Ø5 FILLER                   PIC X(4).
           Ø5 WRK-CICS                 PIC X(4).
      *****************************************************************
$INCLUDE CICSCODE
      *****************************************************************
       LINKAGE SECTION.
      *****************************************************************
       Ø1  DFHCOMMAREA                 PIC X(122).
      *****************************************************************
       PROCEDURE DIVISION.
      *****************************************************************
       STEUER SECTION.
```

```
*
     MOVE LOW-VALUE TO MSYS160O.
*
     EXEC CICS HANDLE ABEND
          LABEL(STEUER-ENDE)
     END-EXEC.
*
     EXEC CICS IGNORE CONDITION
          NOTFND
          ENDFILE
     END-EXEC.
*
     IF EIBCALEN = 0
        MOVE SPACES TO COMBER
        MOVE "0"    TO DSZ-C
     ELSE
        MOVE DFHCOMMAREA TO COMBER.
*
     IF DSZ-C = "0"
        PERFORM MAP-AUFBAU
     ELSE
        MOVE LOW-VALUES TO MSYS160O
        MOVE SPACES TO MELDUNGO
        PERFORM ANZEIGEN.
*
*
      EXEC CICS RETURN
           TRANSID(EIBTRNID)
           COMMAREA(COMBER)
           LENGTH(122)
      END-EXEC.
*
 STEUER-ENDE.
      PERFORM CLEAR.
      EXEC CICS RETURN
      END-EXEC.
     GOBACK.
*****************************************************************
 MAP-AUFBAU SECTION.
*
     EXEC CICS ASKTIME
          ABSTIME(DATUMO)
          END-EXEC.
     EXEC CICS FORMATTIME
          ABSTIME(DATUMO)
          DDMMYY (DATUMO)
          DATESEP("/")
          END-EXEC.
     EXEC CICS  ASSIGN                APPLID(WRK-APPLID)
                                      END-EXEC.
```

```
     MOVE WRK-CICS       TO ACICSO.
     MOVE EIBTRMID       TO TRMIDO.
*
     IF EIBTRNID = "SY16"
        MOVE DFHUNIMD    TO ERFARGA
        MOVE "( Commands : L = Delete / A = Modify )"
                         TO ATEXTO
     ELSE
        MOVE SPACE       TO ATEXTO
        MOVE DFHBMASF    TO ERFARGA.
     MOVE DFHUNIMD    TO ERFPARA
     MOVE -1          TO ERFPARL.
*
     MOVE SPACES  TO TERMPRT-TERM.
     PERFORM START-BROWSING.
*
     IF CICS-NOTFND
        PERFORM BLAETTERN-SPERREN
        PERFORM LEERE-ZEILE
           VARYING ZEILEN-INDEX FROM 1 BY +1
           UNTIL (ZEILEN-INDEX > 13)
        MOVE "TABELLE-LEER" TO MELDUNGO
     ELSE
        MOVE "ANFG" TO PREVKEY-C
        PERFORM VORWAERTS-BLAETTERN
        PERFORM END-BROWSING.
*
     IF WAHL-C = "C"
        MOVE PAR-C (1) TO ERFPARO
        MOVE ARG-C (1) TO ERFARGO.
*
     EXEC CICS SEND
          MAP("MSYS16Ø")
          ERASE
          CURSOR
     END-EXEC.
*
     MOVE "1" TO DSZ-C.
*
 MAP-AUFBAU-ENDE.
     EXIT.
*****************************************************************
 ANZEIGEN SECTION.
*
     IF EIBAID = DFHPF3 OR DFHPF12 OR DFHCLEAR
        PERFORM CLEAR
        EXEC CICS RETURN
        END-EXEC.
*
     IF EIBAID = DFHPF8
```

```
            IF NEXTKEY-C = "ENDE"
               MOVE "End of data" TO MELDUNGO
            ELSE
               IF NEXTKEY-C  = "NORM"
                  MOVE LASTKEY-C TO TERMPRT-TERM
                                    PREVKEY-C
                  PERFORM START-BROWSING
                  PERFORM VORWAERTS-BLAETTERN
                  PERFORM END-BROWSING
                  IF EIBTRNID = "SY16"
                     MOVE PAR-C (1)  TO ERFPARO
                     MOVE SPACES     TO ERFARGO
                  ELSE
                     CONTINUE
               ELSE
                  MOVE NEXTKEY-C TO LASTKEY-C
                  MOVE "NORM"  TO NEXTKEY-C
         ELSE
            IF EIBAID = DFHPF7
               IF PREVKEY-C = "ANFG"
                  MOVE "Start of data" TO MELDUNGO
               ELSE
                  IF PREVKEY-C = "NORM"
                     MOVE FIRSTKEY-C TO TERMPRT-TERM
                     PERFORM START-BROWSING
                     PERFORM RUECKWAERTS-BLAETTERN
                     PERFORM END-BROWSING
                     IF EIBTRNID = "SY16"
                        MOVE PAR-C (ZEILE) TO ERFPARO
                        MOVE SPACES        TO ERFARGO
                     ELSE
                        CONTINUE
                  ELSE
                     MOVE PREVKEY-C TO FIRSTKEY-C
                     MOVE "NORM"  TO PREVKEY-C
            ELSE
               IF EIBAID = DFHENTER
                  EXEC CICS RECEIVE
                       MAP("MSYS16Ø")
                  END-EXEC
*
                  IF EIBTRNID = "SY16"
                     PERFORM EINGABE-AUSWERTEN
                  ELSE
                     PERFORM ANZEIGE-AUSWERTEN
               ELSE
                  MOVE "Key not pressed" TO MELDUNGO.
*
         MOVE -1 TO ERFPARL.
         EXEC CICS SEND
```

```
           MAP("MSYS16Ø")
           CURSOR
           DATAONLY
      END-EXEC.
*
 ANZEIGEN-ENDE.
      EXIT.
*****************************************************************
 ANZEIGE-AUSWERTEN SECTION.
*
      IF ERFPARA = DFHBMEOF
         MOVE SPACES TO ERFPARI.
*
      IF ERFPARI NOT = SPACES
         MOVE ERFPARI TO TERMPRT-TERM
         MOVE ERFPARI TO FIRSTKEY-C
         MOVE "NORM"  TO PREVKEY-C
         PERFORM SEITE-AUFFRISCHEN.
 ANZEIGE-AUSWERTEN-ENDE.
      EXIT.
*****************************************************************
 EINGABE-AUSWERTEN SECTION.
*
      IF ERFPARA = DFHBMEOF
         MOVE SPACES TO ERFPARI.
*
      IF ERFARGA = DFHBMEOF
         MOVE SPACES TO ERFARGI.
*
      MOVE SPACE TO KOMMANDO.
      PERFORM CMD-SUCHEN
         VARYING ZEILEN-INDEX FROM 13 BY -1
         UNTIL (ZEILEN-INDEX < 1).
*
      IF KOMMANDO = "L"
         PERFORM SATZ-LOESCHEN
         GO TO EINGABE-AUSWERTEN-ENDE.
*
      IF KOMMANDO = "A"
         MOVE PAR-C (ZEILE) TO ERFPARO
         MOVE ARG-C (ZEILE) TO ERFARGO
         GO TO EINGABE-AUSWERTEN-ENDE.
*
      IF KOMMANDO NOT = SPACE
         MOVE "INCORRECT-FUNCTION" TO MELDUNGO
         GO TO EINGABE-AUSWERTEN-ENDE.
      IF (ERFPARI NOT = SPACES)  AND (ERFARGI = SPACES)
         MOVE ERFPARI TO TERMPRT-TERM
         MOVE ERFPARI TO FIRSTKEY-C
         MOVE "NORM"  TO PREVKEY-C
         PERFORM SEITE-AUFFRISCHEN
```

```
           GO TO EINGABE-AUSWERTEN-ENDE.
        IF (ERFPARI = SPACES)  OR  (ERFARGI = SPACES)
           MOVE "ZU-WENIG-DATEN" TO MELDUNGO
        ELSE
           PERFORM SATZ-ERFASSEN
           PERFORM SEITE-AUFFRISCHEN
           MOVE "DATEN-GESICHERT" TO MELDUNGO.
*
 EINGABE-AUSWERTEN-ENDE.
        EXIT.
*****************************************************************
 CMD-SUCHEN SECTION.
*
        INSPECT CMD (ZEILEN-INDEX) REPLACING ALL "_" BY SPACE.
*
        IF (CMD (ZEILEN-INDEX) NOT = SPACES)  AND
           (CMDA (ZEILEN-INDEX) NOT = DFHBMEOF)
           MOVE CMD (ZEILEN-INDEX) TO KOMMANDO
           MOVE ZEILEN-INDEX TO ZEILE.
*
        MOVE "_" TO CMD (ZEILEN-INDEX).
*
 CMD-SUCHEN-ENDE.
        EXIT.
*****************************************************************
 SATZ-ERFASSEN SECTION.
*
        MOVE ERFPARI  TO TERMPRT-TERM.
        MOVE ERFARGI  TO TERMPRT-PRT.
*
        EXEC CICS DELETE
             DATASET("TERMPRT")
             RIDFLD(TERMPRT-TERM)
        END-EXEC.
*
        EXEC CICS WRITE
             DATASET("TERMPRT")
             RIDFLD(TERMPRT-TERM)
             FROM(TERMPRT-SATZ)
        END-EXEC.
*
        MOVE SPACES   TO ERFARGO.
        IF FIRSTKEY-C = SPACES
           MOVE TERMPRT-TERM TO FIRSTKEY-C.
*
 SATZ-ERFASSEN-ENDE.
        EXIT.
*****************************************************************
 SEITE-AUFFRISCHEN SECTION.
*
```

```
     IF FIRSTKEY-C = SPACES
        PERFORM LEERE-ZEILE
           VARYING ZEILEN-INDEX FROM 1 BY +1
           UNTIL (ZEILEN-INDEX > 13)
        PERFORM BLAETTERN-SPERREN
        GO TO SEITE-AUFFRISCHEN-ENDE.
     MOVE FIRSTKEY-C TO TERMPRT-TERM
     PERFORM START-BROWSING
     IF CICS-NOTFND
        MOVE "Terminal not available" TO MELDUNGO
        GO TO SEITE-AUFFRISCHEN-ENDE.
     PERFORM VORWAERTS-BLAETTERN.
     PERFORM END-BROWSING.
*
 SEITE-AUFFRISCHEN-ENDE.
     EXIT.
*****************************************************************
 START-BROWSING SECTION.
*
     EXEC CICS STARTBR
          DATASET("TERMPRT")
          RIDFLD(TERMPRT-TERM)
     END-EXEC.
     MOVE EIBRCODE TO CICS-CODE.
*
 START-BROWSING-ENDE.
     EXIT.
*****************************************************************
 END-BROWSING SECTION.
*
     EXEC CICS ENDBR
          DATASET("TERMPRT")
     END-EXEC.
*
 END-BROWSING-ENDE.
     EXIT.
*****************************************************************
 VORWAERTS-BLAETTERN SECTION.
*
     EXEC CICS READNEXT
          DATASET("TERMPRT")
          RIDFLD(TERMPRT-TERM)
          INTO(TERMPRT-SATZ)
     END-EXEC.
     MOVE EIBRCODE TO CICS-CODE.
*
     MOVE TERMPRT-TERM  TO FIRSTKEY-C.
*
     PERFORM VB-NAECHSTER-SATZ
        VARYING ZEILEN-INDEX FROM 1 BY +1
```

```
        UNTIL (ZEILEN-INDEX > 13)  OR
              CICS-ENDFILE.
*
     IF (ZEILEN-INDEX > 13)
        MOVE "NORM" TO NEXTKEY-C
        MOVE "NORM" TO PREVKEY-C
     ELSE
        IF CICS-ENDFILE
           MOVE "ENDE"  TO NEXTKEY-C
           MOVE "End of data" TO MELDUNGO
        ELSE
           MOVE TERMPRT-TERM TO NEXTKEY-C.
*
     IF PREVKEY-C NOT = "ANFG"
        MOVE "NORM" TO PREVKEY-C.
*
     PERFORM LEERE-ZEILE
        VARYING ZEILEN-INDEX FROM ZEILEN-INDEX
                             BY +1
                             UNTIL (ZEILEN-INDEX > 13).
*
 VORWAERTS-BLAETTERN-ENDE.
     EXIT.
*****************************************************************
 VB-NAECHSTER-SATZ SECTION.
*
     MOVE TERMPRT-TERM TO LASTKEY-C.
     PERFORM MAP-ZEILE.
*
     EXEC CICS READNEXT
          DATASET("TERMPRT")
          RIDFLD(TERMPRT-TERM)
          INTO(TERMPRT-SATZ)
     END-EXEC.
     MOVE EIBRCODE TO CICS-CODE.
*
 VB-NAECHSTER-SATZ-ENDE.
     EXIT.
*****************************************************************
 RUECKWAERTS-BLAETTERN SECTION.
*
     EXEC CICS READPREV
          DATASET("TERMPRT")
          RIDFLD(TERMPRT-TERM)
          INTO(TERMPRT-SATZ)
     END-EXEC.
     MOVE EIBRCODE TO CICS-CODE.
*
     MOVE TERMPRT-TERM  TO LASTKEY-C.
*
```

```
     PERFORM RB-NAECHSTER-SATZ
        VARYING ZEILEN-INDEX FROM 13 BY -1
        UNTIL (ZEILEN-INDEX < 1)  OR
              CICS-ENDFILE.
*
     IF (ZEILEN-INDEX < 1)
        MOVE "NORM" TO PREVKEY-C
     ELSE
        IF CICS-ENDFILE
           MOVE "ANFG" TO PREVKEY-C
           MOVE "Start of data" TO MELDUNGO
        ELSE
           MOVE TERMPRT-TERM TO PREVKEY-C.
*
     MOVE "NORM" TO NEXTKEY-C.
     COMPUTE ZEILE = ZEILEN-INDEX + 1.
*
     PERFORM LEERE-ZEILE
        VARYING ZEILEN-INDEX FROM ZEILEN-INDEX
                             BY -1
                             UNTIL (ZEILEN-INDEX < 1).
*
 RUECKWAERTS-BLAETTERN-ENDE.
     EXIT.
*****************************************************************
 RB-NAECHSTER-SATZ SECTION.
*
     MOVE TERMPRT-TERM TO FIRSTKEY-C.
     PERFORM MAP-ZEILE.
*
     EXEC CICS READPREV
          DATASET("TERMPRT")
          RIDFLD(TERMPRT-TERM)
          INTO(TERMPRT-SATZ)
     END-EXEC.
     MOVE EIBRCODE TO CICS-CODE.
*
 RB-NAECHSTER-SATZ-ENDE.
     EXIT.
*****************************************************************
 MAP-ZEILE SECTION.
*
     MOVE SPACE TO CMD (ZEILEN-INDEX).
*
     IF EIBTRNID = "SY16"
        MOVE "_" TO CMD (ZEILEN-INDEX)
        MOVE DFHUNIMD TO CMDA (ZEILEN-INDEX)
     ELSE
        MOVE DFHBMASF TO CMDA (ZEILEN-INDEX).
*
```

```
     MOVE TERMPRT-TERM  TO PAR   (ZEILEN-INDEX)
                           PAR-C (ZEILEN-INDEX).
     MOVE TERMPRT-PRT   TO ARG   (ZEILEN-INDEX)
                           ARG-C (ZEILEN-INDEX).
*
 MAP-ZEILE-ENDE.
     EXIT.
****************************************************************
 LEERE-ZEILE SECTION.
*
     MOVE SPACE TO CMD (ZEILEN-INDEX).
     MOVE DFHBMASF TO CMDA (ZEILEN-INDEX).
*
     MOVE SPACES TO PAR (ZEILEN-INDEX)  PAR-C (ZEILEN-INDEX)
                    ARG (ZEILEN-INDEX)  ARG-C (ZEILEN-INDEX).
*
 LEERE-ZEILE-ENDE.
     EXIT.
****************************************************************
 SATZ-LOESCHEN SECTION.
*
     MOVE PAR-C (ZEILE) TO ERFPARO
     MOVE ARG-C (ZEILE) TO ERFARGO
     MOVE PAR-C (ZEILE) TO TERMPRT-TERM.
*
     EXEC CICS DELETE
          DATASET("TERMPRT")
          RIDFLD(TERMPRT-TERM)
     END-EXEC.
*
     IF FIRSTKEY-C = LASTKEY-C
        MOVE SPACES TO FIRSTKEY-C  LASTKEY-C.
     PERFORM SEITE-AUFFRISCHEN
     MOVE "SATZ-GELOESCHT" TO MELDUNGO.
*
 SATZ-LOESCHEN-ENDE.
     EXIT.
****************************************************************
 BLAETTERN-SPERREN SECTION.
*
     MOVE "ANFG"   TO PREVKEY-C.
     MOVE "ENDE"   TO NEXTKEY-C.
     MOVE SPACES   TO FIRSTKEY-C  LASTKEY-C.
*
 BLAETTERN-SPERREN-ENDE.
     EXIT.
****************************************************************
 CLEAR SECTION.
*
      EXEC CICS SEND CONTROL
           ERASE
```

```
           FREEKB
       END-EXEC.
*
 CLEAR-ENDE.
     EXIT.
*****************************************************************
     EJECT
*****************************************************************
```

You will find 'INCLUDE CICSCODE' in the OSYS160 program. We do our programming on our VM system and include files from there. All you have to do is replace this include card with the dataset CICSCODE.INC. This contains certain CICS control characters and return codes.

The OSYS160 program also contains two copies. These are actually the standard IBM copybooks that are distributed with CICS 4.1 and are only modified because we use quotes instead of the apostrophe in our COBOL programs. In case you do not already have these copy books on your system I have included them also. Note that I have changed them so that the hexadecimal characters are not in character form (which causes problems when transferring between PCs and mainframes) but are entered in the hexadecimal format VALUE X"nn". The two copy books are

CICSCODE INC

```
*D-------------------------------------------------------------*
*D    Reference   : EIBRCODE  -  Returncode of the last        *
*D                               executed CICS/VS-Commands     *
*D    Function    : Pick up the "EIBRCODE" for explicit        *
*D                  Error processing in CICS programs          *
*D-------------------------------------------------------------*
 Ø1            CICS-CODE.
    Ø5         FILLER                PIC X.
       88      CICS-OK                         VALUE LOW-VALUE.
       88      CICS-NOTOPEN                    VALUE X"ØC".
       88      CICS-NOTFND                     VALUE X"81".
       88      CICS-ENDFILE                    VALUE X"ØF".
       88      CICS-ENDDATA                    VALUE X"Ø1".
       88      CICS-MAPFAIL                    VALUE X"Ø4".
       88      CICS-INVREQ                     VALUE X"EØ".
       88      CICS-QIDERR                     VALUE X"Ø2".
       88      CICS-DUPKEY                     VALUE X"84".
       88      CICS-DUPREC                     VALUE X"82".
    Ø5         FILLER                PIC X(5).
*-------------------------------------------------------------
```

DFHAID.COP

```
*
*  5685-Ø83                                                      *
*  COPYRIGHT = NONE                                              *
*
 Ø1    DFHAID.
   Ø2  DFHNULL   PIC  X  VALUE IS X"ØØ".
   Ø2  DFHENTER  PIC  X  VALUE IS X"7D".
   Ø2  DFHCLEAR  PIC  X  VALUE IS X"6D".
   Ø2  DFHCLRP   PIC  X  VALUE IS X"6A".
   Ø2  DFHPEN    PIC  X  VALUE IS "=".
   Ø2  DFHOPID   PIC  X  VALUE IS "W".
   Ø2  DFHMSRE   PIC  X  VALUE IS "X".
   Ø2  DFHSTRF   PIC  X  VALUE IS X"88".
   Ø2  DFHTRIG   PIC  X  VALUE IS QUOTE.
   Ø2  DFHPA1    PIC  X  VALUE IS "%".
   Ø2  DFHPA2    PIC  X  VALUE IS ">".
   Ø2  DFHPA3    PIC  X  VALUE IS ",".
   Ø2  DFHPF1    PIC  X  VALUE IS "1".
   Ø2  DFHPF2    PIC  X  VALUE IS "2".
   Ø2  DFHPF3    PIC  X  VALUE IS "3".
   Ø2  DFHPF4    PIC  X  VALUE IS "4".
   Ø2  DFHPF5    PIC  X  VALUE IS "5".
   Ø2  DFHPF6    PIC  X  VALUE IS "6".
   Ø2  DFHPF7    PIC  X  VALUE IS "7".
   Ø2  DFHPF8    PIC  X  VALUE IS "8".
   Ø2  DFHPF9    PIC  X  VALUE IS "9".
   Ø2  DFHPF1Ø   PIC  X  VALUE IS X"7A".
   Ø2  DFHPF11   PIC  X  VALUE IS X"7B".
   Ø2  DFHPF12   PIC  X  VALUE IS X"7C".
   Ø2  DFHPF13   PIC  X  VALUE IS "A".
   Ø2  DFHPF14   PIC  X  VALUE IS "B".
   Ø2  DFHPF15   PIC  X  VALUE IS "C".
   Ø2  DFHPF16   PIC  X  VALUE IS "D".
   Ø2  DFHPF17   PIC  X  VALUE IS "E".
   Ø2  DFHPF18   PIC  X  VALUE IS "F".
   Ø2  DFHPF19   PIC  X  VALUE IS "G".
   Ø2  DFHPF2Ø   PIC  X  VALUE IS "H".
   Ø2  DFHPF21   PIC  X  VALUE IS "I".
   Ø2  DFHPF22   PIC  X  VALUE IS X"4A".
   Ø2  DFHPF23   PIC  X  VALUE IS X"4B".
   Ø2  DFHPF24   PIC  X  VALUE IS "<".
```

DFHBMSCA.COP

```
*
*  5685-Ø83                                                      *
*  COPYRIGHT = NONE                                              *
*
```

```
 Ø1      DFHBMSCA.
   Ø2    DFHBMPEM  PICTURE X   VALUE  IS  X"19".
   Ø2    DFHBMPNL  PICTURE X   VALUE  IS  X"15".
   Ø2    DFHBMPFF  PICTURE X   VALUE  IS  X"ØC".
   Ø2    DFHBMPCR  PICTURE X   VALUE  IS  X"ØD".
   Ø2    DFHBMASK  PICTURE X   VALUE  IS  "Ø".
   Ø2    DFHBMUNP  PICTURE X   VALUE  IS  X"4Ø".
   Ø2    DFHBMUNN  PICTURE X   VALUE  IS  X"5Ø".
   Ø2    DFHBMPRO  PICTURE X   VALUE  IS  X"6Ø".
   Ø2    DFHBMBRY  PICTURE X   VALUE  IS  "H".
   Ø2    DFHBMDAR  PICTURE X   VALUE  IS  "<".
   Ø2    DFHBMFSE  PICTURE X   VALUE  IS  "A".
   Ø2    DFHBMPRF  PICTURE X   VALUE  IS  "/".
   Ø2    DFHBMASF  PICTURE X   VALUE  IS  "1".
   Ø2    DFHBMASB  PICTURE X   VALUE  IS  "8".
   Ø2    DFHBMEOF  PICTURE X   VALUE  IS  X"8Ø".
   Ø2    DFHBMCUR  PICTURE X   VALUE  IS  X"Ø2".
   Ø2    DFHBMEC   PICTURE X   VALUE  IS  X"82".
   Ø2    DFHBMFLG  PICTURE X.
       88    DFHERASE VALUES ARE X"8Ø", X"82".
       88    DFHCURSR VALUES ARE X"Ø2", X"82".
   Ø2    DFHBMDET  PICTURE X   VALUE  IS  X"FF".
   Ø2    DFHBMPSO-BIN PIC 9(4) COMP VALUE 3599.
* ABOVE VALUE 3599 = X"ØEØF" ADDED BY APAR PN24842
   Ø2    FILLER REDEFINES DFHBMPSO-BIN.
     Ø3  DFHBMPSO  PICTURE X.
     Ø3  DFHBMPSI  PICTURE X.
   Ø2    DFHSA     PICTURE X   VALUE  IS  X"28".
   Ø2    DFHCOLOR  PICTURE X   VALUE  IS  X"42".
   Ø2    DFHPS     PICTURE X   VALUE  IS  X"43".
   Ø2    DFHHLT    PICTURE X   VALUE  IS  X"41".
   Ø2    DFH327Ø   PICTURE X   VALUE  IS  X"CØ".
   Ø2    DFHVAL    PICTURE X   VALUE  IS  "A".
   Ø2    DFHOUTLN  PICTURE X   VALUE  IS  "B".
   Ø2    DFHBKTRN  PICTURE X   VALUE  IS  X"46".
   Ø2    DFHALL    PICTURE X   VALUE  IS  X"ØØ".
   Ø2    DFHERROR  PICTURE X   VALUE  IS  X"3F".
   Ø2    DFHDFT    PICTURE X   VALUE  IS  X"FF".
   Ø2    DFHDFCOL  PICTURE X   VALUE  IS  X"ØØ".
   Ø2    DFHBLUE   PICTURE X   VALUE  IS  "1".
   Ø2    DFHRED    PICTURE X   VALUE  IS  "2".
   Ø2    DFHPINK   PICTURE X   VALUE  IS  "3".
   Ø2    DFHGREEN  PICTURE X   VALUE  IS  "4".
   Ø2    DFHTURQ   PICTURE X   VALUE  IS  "5".
   Ø2    DFHYELLO  PICTURE X   VALUE  IS  "6".
   Ø2    DFHNEUTR  PICTURE X   VALUE  IS  "7".
   Ø2    DFHBASE   PICTURE X   VALUE  IS  X"ØØ".
   Ø2    DFHDFHI   PICTURE X   VALUE  IS  X"ØØ".
   Ø2    DFHBLINK  PICTURE X   VALUE  IS  "1".
   Ø2    DFHREVRS  PICTURE X   VALUE  IS  "2".
```

```
   02    DFHUNDLN  PICTURE X   VALUE  IS  "4".
   02    DFHMFIL   PICTURE X   VALUE  IS  X"04".
   02    DFHMENT   PICTURE X   VALUE  IS  X"02".
   02    DFHMFE    PICTURE X   VALUE  IS  X"06".
   02    DFHUNNOD  PICTURE X   VALUE  IS  X"4D".
   02    DFHUNIMD  PICTURE X   VALUE  IS  "I".
   02    DFHUNNUM  PICTURE X   VALUE  IS  "J".
   02    DFHUNINT  PICTURE X   VALUE  IS  "R".
   02    DFHUNNON  PICTURE X   VALUE  IS  ")".
   02    DFHPROTI  PICTURE X   VALUE  IS  "Y".
   02    DFHPROTN  PICTURE X   VALUE  IS  "%".
   02    DFHMT     PICTURE X   VALUE  IS  X"01".
   02    DFHMFT    PICTURE X   VALUE  IS  X"05".
   02    DFHMET    PICTURE X   VALUE  IS  X"03".
   02    DFHMFET   PICTURE X   VALUE  IS  X"07".
   02    DFHDFFR   PICTURE X   VALUE  IS  X"00".
   02    DFHLEFT   PICTURE X   VALUE  IS  X"08".
   02    DFHOVER   PICTURE X   VALUE  IS  X"04".
   02    DFHRIGHT  PICTURE X   VALUE  IS  X"02".
   02    DFHUNDER  PICTURE X   VALUE  IS  X"01".
   02    DFHBOX-BIN  PIC 9(4) COMP VALUE 15.
* ABOVE VALUE 15 = X"000F" ADDED BY APAR PN23267
   02    FILLER REDEFINES DFHBOX-BIN.
     03  FILLER    PICTURE X.
     03  DFHBOX    PICTURE X.
   02    DFHSOSI   PICTURE X   VALUE  IS  X"01".
   02    DFHTRANS  PICTURE X   VALUE  IS  "0".
   02    DFHOPAQ   PICTURE X   VALUE  IS  X"FF".
```

Kim Mongan
Systems Programmer (Germany)

Simple tool to manage the data extracted from CICS CSD in a DB2 environment

When a data EXTRACT function from a CSD CICS is executed with DFH0FORC utility program – EXTRACT GROUP(group name) OBJECTS USERPROGRAM(DFH0FORC) – we obtain a sequential file that can be loaded into DB2 tables.

When an extract is carried out for a CICS group (or groups), the output

file can contain the definitions of various types of RDO resource (programs, files, typeterminals, transactions, profiles, etc), and every resource has its own format. Therefore, in order to correctly manage the import into a database environment using a standard DB2 utility to create tables and to load the tables, it is a good idea to divide the files depending on their RDO resource type.

Every record written by the Extract function is organized into columns that correspond to the DB2 columns, but every CSD resource has a different format, therefore it must be processed according to its record type.

In order to simplify this operation I have developed a REXX EXEC (CICSDB2) that carries out the following functions:

- It reads the output of the extract function.
- It writes a sysin file (DB2/SQL statements) for every RDO resource type in order to execute the DB2 Create Table utility program.
- It writes a sysin file (DB2/SQL statements) for every RDO resource type in order to execute the DB2 Load Table utility program.
- It writes a sequential file (input file) for every RDO resource type in order to execute the DB2 Load Table utility program.
- It writes and submits a job for the execution of DB2 Create Tablespace, Create Table, and Load Table utilities.

This utility has been used in the following environment:

- OS/390 1.3 and OS/390 2.6.
- CICS/ESA 4.1.0.
- DB2 4.1.0 and DB2 5.1.0.

CICSDB2 REXX EXEC

```
/* REXX */
/* C-List CICSDB2.
   Called by job batch.
   Tool to manage the data extracted from CICS CSD in a
```

```
   DB2 environment.
   The functions are:
   - read the output of the CICS extract function;
   - write a sysin file (DB2/SQL statements) to execute the DB2 Create
     Tablespace utility program;
   - write a sysin file (DB2/SQL statements) for every RDO resource
     type in order to execute the DB2 Create Table utility program;
   - write  a sysin file (DB2/SQL statements) for every RDO resource
     type in order to execute the DB2 Load Table utility program;
   - write  a sequential file (input file) for every RDO resource
     type in order to execute the DB2 Load Table utility program;
   - write and submit a job for the execution of DB2 Create Tablespace,
     DB2 Create Table and DB2 Load Table utility;                    */
Trace ?o
PARSE ARG filein
tfile = userid()||'.CICSSVIL.DFHCSD.DB2.'
sfile = userid()||'.CICSSVIL.DFHCSD.DB2.SYSIN('
ADDRESS TSO
  dd=OUTTRAP(dd.)
  "ALLOC DA('"filein"') F(FILEIN) SHR REUSE"
  dd=OUTTRAP('OFF')
   if rc ¬= Ø then do
                    typfunc = 'Allocfilein'
                    Call CX_Error_func
                    say mess
                    Exit
                   End
dd=OUTTRAP(dd.)
"EXECIO * DISKR FILEIN (STEM recinp. FINIS"
dd=OUTTRAP('OFF')
if rc ¬= Ø then do
                  typfunc = 'Readfilein'
                  Call CX_Error_func
                  say mess
                  Exit
                 End
f1=Ø;f2=Ø;f3=Ø;f4=Ø;f5=Ø;f6=Ø;f7=Ø;f8=Ø;f9=Ø;f1Ø=Ø;f11=Ø;f12=Ø;f13=Ø
Do i=1 to recinp.Ø
  trec = substr(recinp.i,1,4)
  if trec = 'CONN' then do
                         f1 = f1 + 1
                         Call Prepare_Sysin_Conn
                         Iterate
                        End
  if trec = 'FILE' then do
                         f2 = f2 + 1
                         Call Prepare_Sysin_File
                         Iterate
                        End
  if trec = 'LSRP' then do
                         f3 = f3 + 1
```

```
                        Call Prepare_Sysin_Lsrp
                        Iterate
                       End
  if trec = 'MAPS' then do
                        f4 = f4 + 1
                        Call Prepare_Sysin_Maps
                        Iterate
                       End
  if trec = 'PART' then do
                        f5 = f5 + 1
                        Call Prepare_Sysin_Part
                        Iterate
                       End
  if trec = 'PROF' then do
                        f6 = f6 + 1
                        Call Prepare_Sysin_Prof
                        Iterate
                       End
  if trec = 'PROG' then do
                        f7 = f7 + 1
                        Call Prepare_Sysin_Prog
                        Iterate
                       End
  if trec = 'PTNR' then do
                        f8 = f8 + 1
                        Call Prepare_Sysin_Ptnr
                        Iterate
                       End
  if trec = 'SESS' then do
                        f9 = f9 + 1
                        Call Prepare_Sysin_Sess
                        Iterate
                       End
  if trec = 'TERM' then do
                        f1Ø = f1Ø + 1
                        Call Prepare_Sysin_Term
                        Iterate
                       End
  if trec = 'TRAN' then do
                        f11 = f11 + 1
                        Call Prepare_Sysin_Tran
                        Iterate
                       End
  if trec = 'TRCL' then do
                        f12 = f12 + 1
                        Call Prepare_Sysin_Trcl
                        Iterate
                       End
  if trec = 'TYPE' then do
                        f13 = f13 + 1
                        Call Prepare_Sysin_Type
```

```
                        Iterate
                       End
End
Call Prepare_Sysin_Tables
Do w=1 to 13
  sysin.w = ''
End
if f1 > Ø then do
                nrec = f1
                conn.Ø=f1; do x=1 to conn.Ø; rec.x = conn.x; end
                Wfile = tfile||'CONN'
                Call Write_type_file
                sysin.1 = sfile||'CONN)'
               end
if f2 > Ø then do
                nrec = f2
                file.Ø=f2; do x=1 to file.Ø; rec.x = file.x; end
                Wfile = tfile||'FILE'
                Call Write_type_file
                sysin.2 = sfile||'FILE)'
               end
if f3 > Ø then do
                nrec = f3
                lsrp.Ø=f3; do x=1 to lsrp.Ø; rec.x = lsrp.x; end
                Wfile = tfile||'LSRP'
                Call Write_type_file
                sysin.3 = sfile||'LSRP)'
               end
if f4 > Ø then do
                nrec = f4
                maps.Ø=f4; do x=1 to maps.Ø; rec.x = maps.x; end
                Wfile = tfile||'MAPS'
                Call Write_type_file
                sysin.4 = sfile||'MAPS)'
               end
if f5 > Ø then do
                nrec = f5
                part.Ø=f5; do x=1 to part.Ø; rec.x = part.x; end
                Wfile = tfile||'PART'
                Call Write_type_file
                sysin.5 = sfile||'PART)'
               end
if f6 > Ø then do
                nrec = f6
                prof.Ø=f6; do x=1 to prof.Ø; rec.x = prof.x; end
                Wfile = tfile||'PROF'
                Call Write_type_file
                sysin.6 = sfile||'PROF)'
               end
if f7 > Ø then do
```

```
                nrec = f7
                prog.0=f7; do x=1 to prog.0; rec.x = prog.x; end
                Wfile = tfile||'PROG'
                Call Write_type_file
                sysin.7 = sfile||'PROG)'
               end
if f8 > 0 then do
                nrec = f8
                ptnr.0=f8; do x=1 to ptnr.0; rec.x = ptnr.x; end
                Wfile = tfile||'PTNR'
                Call Write_type_file
                sysin.8 = sfile||'PTNR)'
               end
if f9 > 0 then do
                nrec = f9
                sess.0=f9; do x=1 to sess.0; rec.x = sess.x; end
                Wfile = tfile||'SESS'
                Call Write_type_file
                sysin.9 = sfile||'SESS)'
               end
if f10 > 0 then do
                nrec = f10
                term.0=f10; do x=1 to term.0; rec.x = term.x; end
                Wfile = tfile||'TERM'
                Call Write_type_file
                sysin.10 = sfile||'TERM)'
               end
if f11 > 0 then do
                nrec = f11
                tran.0=f11; do x=1 to tran.0; rec.x = tran.x; end
                Wfile = tfile||'TRAN'
                Call Write_type_file
                sysin.11 = sfile||'TRAN)'
               end
if f12 > 0 then do
                nrec = f12
                trcl.0=f12; do x=1 to trcl.0; rec.x = trcl.x; end
                Wfile = tfile||'TRCL'
                Call Write_type_file
                sysin.12 = sfile||'TRCL)'
               end
if f13 > 0 then do
                nrec = f13
                type.0=f13; do x=1 to type.0; rec.x = type.x; end
                Wfile = tfile||'TYPE'
                Call Write_type_file
                sysin.13 = sfile||'TYPE)'
               end
"Newstack"
Queue '//'userid()'C JOB (LTYZ1100),CLASS=S,MSGCLASS=X,MSGLEVEL=(1,1),'
```

```
Queue '//    REGION=8M,TYPRUN=HOLD,NOTIFY='userid()
Queue '//*'
Queue '//* Create DB2 Tablespace/tables and Load DB2 tables.'
Queue '//*'
Queue '//DB2PROC  JCLLIB ORDER=(DSNS.DB2.PROCLIB)'
Queue '//JOBLIB   DD  DSN=SYS1.DSNS.DB2.SDSNLOAD,DISP=SHR'
Queue '//TABCRE  EXEC PGM=IKJEFT01,DYNAMNBR=20'
Queue '//SYSTSPRT DD SYSOUT=*'
Queue '//SYSTSIN  DD *'
Queue ' DSN SYSTEM(DSNS)'
Queue ' RUN  PROGRAM(DSNTIAD) PLAN(DSNTIA41) -'
Queue "      LIB('DSNS.DB2.RUNLIB.LOAD')"
Queue '//SYSPRINT DD SYSOUT=*'
Queue '//SYSUDUMP DD SYSOUT=*'
Queue '//SYSIN  DD DSN='sfile'TABLES),DISP=SHR'
Do w=1 to 13
  if sysin.w = '' then nop
                  else Queue '//       DD DSN='sysin.w',DISP=SHR'
End
Queue '/*'
Queue '/*'
Do w=1 to 13
  if sysin.w = '' then nop
                  else do
            Queue '//*'
 Queue "//LOAD"w" EXEC
DSNUPROD,PARM='DSNS,EM.CICSRDO."w"',COND=(0,NE,TABCRE)"
            linput = length(sysin.w) - 1
            fsysin = substr(sysin.w,1,linput)||'#)'
            tf     = substr(fsysin,(linput-3),4)
            finput = tfile||tf
            Queue '//SYSREC00 DD DISP=SHR,DSN='finput
            Queue '//SYSIN    DD DISP=SHR,DSN='fsysin
            end
End
Queue "$$"
Address tso "submit * end($$)"
Delstack
say time() 'Utility CREATE Tablespace/Tables and LOAD Tables is
running.'
Exit
Prepare_Sysin_Conn:
if f1 = 1 then do
               tf = 'CONN'
               Wfile = sfile||tf||')'
               Call Alloc_sysinf
               "NEWSTACK"
               Queue 'CREATE TABLE PRA10S.TABCONN'
               Queue '              (TYPERES  CHAR(4)        NOT NULL,'
               Queue '               CONNAM   CHAR(8)        NOT NULL,'
```

```
       Queue '               GROUP    CHAR(8)        NOT NULL,'
Queue '               DESCR    CHAR(58) NOT NULL WITH DEFAULT ,'
Queue '               NETNAME  CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               INDSYS   CHAR(4)  NOT NULL WITH DEFAULT ,'
Queue '               REMSYS   CHAR(4)  NOT NULL WITH DEFAULT ,'
Queue '               REMNAM   CHAR(4)  NOT NULL WITH DEFAULT ,'
Queue '               REMSYNET CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               ACMETHOD CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               PROTOCOL CHAR(4)  NOT NULL WITH DEFAULT ,'
Queue '               CONNTYPE CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               SINGLESE CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               DATASTRE CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               RECFORM  CHAR(2)  NOT NULL WITH DEFAULT ,'
Queue '               QUEUELIM CHAR(4)  NOT NULL WITH DEFAULT ,'
Queue '               MAXQTIME CHAR(4)  NOT NULL WITH DEFAULT ,'
Queue '               AUTOCONN CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               INSERVIC CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               SECURNAM CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               ATTCHSEC CHAR(1Ø) NOT NULL WITH DEFAULT ,'
Queue '               BINDSEC  CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               USEDEFUS CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               PSRECOV  CHAR(1Ø) NOT NULL WITH DEFAULT) '
       Queue '       IN PRD1ØS.CICSRDO;'
       Queue 'CREATE  INDEX PRA1ØS.XTABCONN'
       Queue '                ON PRA1ØS.TABCONN'
       Queue '                    (CONNAM   ASC)'
       Queue '                USING STOGROUP PRG1ØS'
       Queue '                          PRIQTY 12'
       Queue '                          ERASE NO'
       Queue '                BUFFERPOOL BP1'
       Queue '                CLOSE NO  ;'
       Queue
       Call Write_sysinf
       "DELSTACK"
       Wfile = sfile||tf||'#)'
       Call Alloc_sysinf
       "NEWSTACK"
       Queue '  LOAD DATA RESUME YES LOG YES INDDN  '
       Queue '      SYSREC00 INTO TABLE PRA1ØS.TABCONN'
       Queue '   ('
       Queue '     TYPERES POSITION(1) CHAR(4),       '
       Queue '     CONNAM POSITION(5) CHAR(8),        '
       Queue '     GROUP POSITION(13) CHAR(8),        '
       Queue '     DESCR POSITION(21) CHAR(58),       '
       Queue '     NETNAME POSITION(79) CHAR(8),      '
       Queue '     INDSYS POSITION(87) CHAR(4),       '
       Queue '     REMSYS POSITION(91) CHAR(4),       '
       Queue '     REMNAM POSITION(95) CHAR(4),       '
       Queue '     REMSYNET POSITION(99) CHAR(8),     '
       Queue '     ACMETHOD POSITION(1Ø7) CHAR(8),    '
```

```
                Queue '     PROTOCOL POSITION(115) CHAR(4),    '
                Queue '     CONNTYPE POSITION(119) CHAR(8),    '
                Queue '     SINGLESE POSITION(127) CHAR(3),    '
                Queue '     DATASTRE POSITION(130) CHAR(8),    '
                Queue '     RECFORM POSITION(138) CHAR(2),     '
                Queue '     QUEUELIM POSITION(140) CHAR(4),    '
                Queue '     MAXQTIME POSITION(144) CHAR(4),    '
                Queue '     AUTOCONN POSITION(148) CHAR(3),    '
                Queue '     INSERVIC POSITION(151) CHAR(3),    '
                Queue '     SECURNAM POSITION(154) CHAR(8),    '
                Queue '     ATTCHSEC POSITION(162) CHAR(10),   '
                Queue '     BINDSEC POSITION(172) CHAR(3),     '
                Queue '     USEDEFUS POSITION(175) CHAR(3),    '
                Queue '     PSRECOV POSITION(178) CHAR(10)     '
                Queue '   )'
                Queue
                Call Write_sysinf
                "DELSTACK"
               End
conn.f1 = recinp.i
Return
Prepare_Sysin_File:
if f2 = 1 then do
                tf = 'FILE'
                Wfile = sfile||tf||')'
                Call Alloc_sysinf
                "NEWSTACK"
                Queue 'CREATE TABLE PRA10S.TABFILE'
                Queue '              (TYPERES  CHAR(4)        NOT NULL,'
                Queue '               FILENAM  CHAR(8)        NOT NULL,'
                Queue '               GROUP    CHAR(8)        NOT NULL,'
        Queue '               DESCR    CHAR(58) NOT NULL WITH DEFAULT ,'
        Queue '               DSNAME   CHAR(44) NOT NULL WITH DEFAULT ,'
        Queue '               PASSWORD CHAR(8)  NOT NULL WITH DEFAULT ,'
        Queue '               LSRPID   CHAR(1)  NOT NULL WITH DEFAULT ,'
        Queue '               DSNSHR   CHAR(10) NOT NULL WITH DEFAULT ,'
        Queue '               STRINGS  CHAR(3)  NOT NULL WITH DEFAULT ,'
        Queue '               NSRGROUP CHAR(8)  NOT NULL WITH DEFAULT ,'
        Queue '               REMSYS   CHAR(4)  NOT NULL WITH DEFAULT ,'
        Queue '               REMNAM   CHAR(8)  NOT NULL WITH DEFAULT ,'
        Queue '               RECSIZE  CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               KEYLEN   CHAR(3)  NOT NULL WITH DEFAULT ,'
        Queue '               STATUS   CHAR(9)  NOT NULL WITH DEFAULT ,'
        Queue '               OPENTIME CHAR(8)  NOT NULL WITH DEFAULT ,'
        Queue '               DISP     CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               DATABUF  CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               INDEXBUF CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               TABLE    CHAR(4)  NOT NULL WITH DEFAULT ,'
        Queue '               MAXNUMR  CHAR(8)  NOT NULL WITH DEFAULT ,'
        Queue '               RECFORM  CHAR(1)  NOT NULL WITH DEFAULT ,'
```

```
Queue '               ADD      CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               BROWSE   CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               DELETE   CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               READ     CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               UPDATE   CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               JOURNAL  CHAR(2)  NOT NULL WITH DEFAULT ,'
Queue '               JNLR     CHAR(10) NOT NULL WITH DEFAULT ,'
Queue '               JNLSYNCR CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               JNLU     CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               JNLA     CHAR(6)  NOT NULL WITH DEFAULT ,'
Queue '               JNLSYNCW CHAR(3)  NOT NULL WITH DEFAULT ,'
Queue '               RECOVERY CHAR(11) NOT NULL WITH DEFAULT ,'
Queue '               FWDRECOV CHAR(2)  NOT NULL WITH DEFAULT ,'
Queue '               BKTYPE   CHAR(7)  NOT NULL WITH DEFAULT ,'
Queue '               RESSECN  CHAR(6) NOT NULL WITH DEFAULT)'
       Queue '       IN PRD10S.CICSRDO;'
       Queue 'CREATE  INDEX PRA10S.XTABFILE'
       Queue '                 ON PRA10S.TABFILE'
       Queue '                     (FILENAM  ASC)'
       Queue '                 USING STOGROUP PRG10S'
       Queue '                           PRIQTY 12'
       Queue '                           ERASE NO'
       Queue '                 BUFFERPOOL BP1'
       Queue '                 CLOSE NO  ;'
       Queue
       Call Write_sysinf
       "DELSTACK"
       Wfile = sfile||tf||'#)'
       Call Alloc_sysinf
       "NEWSTACK"
       Queue '  LOAD DATA RESUME YES LOG YES INDDN  '
       Queue '      SYSREC00 INTO TABLE PRA10S.TABFILE'
       Queue '   ('
       Queue '     TYPERES POSITION(1) CHAR(4),           '
       Queue '     FILENAM POSITION(5) CHAR(8),           '
       Queue '     GROUP POSITION(13) CHAR(8),            '
       Queue '     DESCR POSITION(21) CHAR(58),           '
       Queue '     DSNAME POSITION(79) CHAR(44),          '
       Queue '     PASSWORD POSITION(123) CHAR(8),        '
       Queue '     LSRPID POSITION(131) CHAR(1),          '
       Queue '     DSNSHR POSITION(132) CHAR(10),         '
       Queue '     STRINGS POSITION(142) CHAR(3),         '
       Queue '     NSRGROUP POSITION(145) CHAR(8),        '
       Queue '     REMSYS POSITION(153) CHAR(4),          '
       Queue '     REMNAM POSITION(157) CHAR(8),          '
       Queue '     RECSIZE POSITION(165) CHAR(5),         '
       Queue '     KEYLEN POSITION(170) CHAR(3),          '
       Queue '     STATUS POSITION(173) CHAR(9),          '
       Queue '     OPENTIME POSITION(182) CHAR(8),        '
       Queue '     DISP POSITION(190) CHAR(5),            '
```

```
                Queue '     DATABUF POSITION(195) CHAR(5),          '
                Queue '     INDEXBUF POSITION(200) CHAR(5),         '
                Queue '     TABLE POSITION(205) CHAR(4),            '
                Queue '     MAXNUMR POSITION(209) CHAR(8),          '
                Queue '     RECFORM POSITION(217) CHAR(1),          '
                Queue '     ADD POSITION(218) CHAR(3),              '
                Queue '     BROWSE POSITION(221) CHAR(3),           '
                Queue '     DELETE POSITION(224) CHAR(3),           '
                Queue '     READ POSITION(227) CHAR(3),             '
                Queue '     UPDATE POSITION(230) CHAR(3),           '
                Queue '     JOURNAL POSITION(233) CHAR(2),          '
                Queue '     JNLR POSITION(235) CHAR(10),            '
                Queue '     JNLSYNCR POSITION(245) CHAR(3),         '
                Queue '     JNLU POSITION(248) CHAR(3),             '
                Queue '     JNLA POSITION(251) CHAR(6),             '
                Queue '     JNLSYNCW POSITION(257) CHAR(3),         '
                Queue '     RECOVERY POSITION(260) CHAR(11),        '
                Queue '     FWDRECOV POSITION(271) CHAR(2),         '
                Queue '     BKTYPE POSITION(273) CHAR(7),           '
                Queue '     RESSECN POSITION(280) CHAR(6)           '
                Queue '   )'
                Queue
                Call Write_sysinf
                "DELSTACK"
               End
file.f2 = recinp.i
Return
Prepare_Sysin_Lsrp:
if f3 = 1 then do
                tf = 'LSRP'
                Wfile = sfile||tf||')'
                Call Alloc_sysinf
                "NEWSTACK"
                Queue 'CREATE TABLE PRA10S.TABLSRP'
                Queue '              (TYPERES  CHAR(4)        NOT NULL,'
                Queue '               LSRPNAM  CHAR(8)        NOT NULL,'
                Queue '               GROUP    CHAR(8)        NOT NULL,'
        Queue '               DESCR    CHAR(58) NOT NULL WITH DEFAULT ,'
        Queue '               POOLID   CHAR(1)  NOT NULL WITH DEFAULT ,'
        Queue '               MAXKEYL  CHAR(3)  NOT NULL WITH DEFAULT ,'
        Queue '               SHRLIM   CHAR(3)  NOT NULL WITH DEFAULT ,'
        Queue '               STRINGS  CHAR(3)  NOT NULL WITH DEFAULT ,'
        Queue '               D512     CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               D1K      CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               D2K      CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               D4K      CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               D8K      CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               D12K     CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               D16K     CHAR(5)  NOT NULL WITH DEFAULT ,'
        Queue '               D20K     CHAR(5)  NOT NULL WITH DEFAULT ,'
```

```
Queue '               D24K     CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               D28K     CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               D32K     CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I512     CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I1K      CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I2K      CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I4K      CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I8K      CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I12K     CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I16K     CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I20K     CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I24K     CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I28K     CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               I32K     CHAR(5)  NOT NULL WITH DEFAULT ,'
Queue '               HSD4K    CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSD8K    CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSD12K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSD16K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSD20K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSD24K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSD28K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSD32K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSI4K    CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSI8K    CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSI12K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSI16K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSI20K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSI24K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSI28K   CHAR(8)  NOT NULL WITH DEFAULT ,'
Queue '               HSI32K   CHAR(8) NOT NULL WITH DEFAULT)'
       Queue '       IN PRD10S.CICSRDO;'
       Queue 'CREATE  INDEX PRA10S.XTABLSRP'
       Queue '                 ON PRA10S.TABLSRP'
       Queue '                     (LSRPNAM  ASC)'
       Queue '                 USING STOGROUP PRG10S'
       Queue '                           PRIQTY 12'
       Queue '                           ERASE NO'
       Queue '                 BUFFERPOOL BP1'
       Queue '                 CLOSE NO  ;'
       Queue
       Call Write_sysinf
       "DELSTACK"
       Wfile = sfile||tf||'#)'
       Call Alloc_sysinf
       "NEWSTACK"
```

Editor's note: this article will be concluded in next month's issue.

Espedito Morvillo
Systems Programmer (Italy)

Compuware has started shipping the E-Business Edition of its Abend-AID fault management tool, designed to help save time in test and production environments and speed the integration of legacy systems and e-business applications.

It provides developers with diagnostic information that helps pinpoint problems and suggests corrective actions to resolve those problems. It's said to function as "built-in expertise" for programmers for MQSeries in batch, IMS, and CICS environments. It enables programmers and developers to detect, analyse, and diagnose problems in applications that use MQSeries CICS Web Interface.

It maps out MQSeries so developers can identify any errors that might occur on those applications being integrated with MQSeries.

For further information contact:
Compuware, 31440 Northwestern Highway, Farmington Hills, MI 48334-2564, USA.
Tel: (248) 737 7300.
URL: http://www.compuware.com/products/abendaid/.

* * *

Tivoli has announced its Tivoli Business Systems Manager (TBSM), replacing Tivoli Manager for OS/390, while the Distributed Edition component replaces Tivoli Global Enterprise Manager (GEM). The combination of both in one product, we're told, provides an end-to-end enterprise management system.

It adds CICSPlex/SM as a source of discovery of CICS regions, running under OS/390, VSE, or OS/2, as well as discovering CICS files and transactions. Exception monitoring will be provided though the usage of system availability monitoring and realtime analysis.

As for the Distributed Edition, it supports existing GEM instrumentation architecture including heartbeat events via Application Policy Management (APM) events. It also supports threshholding via APM threshold events, automatic LOB creation via Application Management Specification (AMS) definition, and the ability to create customer instrumentation via Tivoli Module Builder, Tivoli Module Designer, and Tivoli Quickstart Wizard.

Also, it provides the ability to manage business system components on Windows NT, AIX, HP-UX, and Solaris via Tivoli Instrumentation Services and can invoke Tivoli tasks by mapping task libraries to APM-created software components.

It can exploit Tivoli Distributed Monitors, including the ability to map generic distributed monitors to a software component, and supports CICS and DB2 instrumentation to monitor and control Distributed Edition applications on OS/390. Functions common to both include the use of all usability function previously available in Tivoli Manager for OS/390, creation of lines of business via drag-and-drop, the ability to create LOB views containing both distributed and OS/390 resources, and a pre-packaged NetView application monitoring interface supported with DB2/CICS instrumentation.

For further information contact your local IBM representative.
URL: http://www.tivoli.com/products/index/business_systems/.