

## International 400的界面化

前些日子一真研究下IBM OS SYS的错误信息是怎么样提示在界面的最后一行,想想我们做的系统是否也能像OS SYS那样,设置一些东西就会自动返回错误信息,不用在界面上处理错误信息.现在终于研究出来了,把经验分享给大家.

想必大家都想知道IBM的OS SYSTEM 是一个国际化的,存有多国语言的界面(猜的,因为只看到过只有英文版的,但听说安装语言包就会有中文或其他语言界面),其实有做过BPCS ERP软件的维护和开发的朋友们都知道,在BPCS软件里的所有界面及ERROR MSG都是用IBM 400下所带的MSGF来操作的.也就是说如果想换多国语言的时候.就把所在的MSG FILE里的MSGID对应的MSGDATA修改一下即可.

首先:了解以下几个问题.

### (1)用户操作界面的类型

我们现在在400下所做的界面,无非就是基本类型的界面及含有SUBFILE的界面(WINDOWS也只有这两种),除此之外,我再也没有想到有其它用户操作界面的类型,如有,请其他朋友们补充.所以,以下所讲的利用MSGF来写操作界面的例子也是针对这两种.当然做REPORT也可以的.具体的实现方法自己慢慢研究.

### (2)建立MSGF

这个问题,相信有做过400PG的朋友们都知道是怎么样建的,在此不多说.如果不会找你们老大..呵呵..

### (3)MESSAGE SUBFILE

DISPLAYING MULTIPLE DETAIL MESSAGE,具体什么意思,可以参考下SUBFILE这本书.主要在DSPF文件里必须包含以下几个语句:

```
*=====
* Message subfile stuff.
*=====
A      R MSGSFL          SFL
A      SFLMSGRCD(24)
A      MSGKEY            SFLMSGKEY
A      PGMQ              SFLPGMQ(10)
*=====
* Message subfile stuff  Control Record
*=====
A      R MSGCTL           SFLCTL(MSGSFL)
A      SFLDSP
A      SFLDSPCTL
A      SFLINZ
A N03   SFLEND
A      SFLSIZ(0002)
A      SFLPAG(0001)
A      PGMQ              SFLPGMQ(10)
```

关键字的具体意思,自己可以参考DDS这本书.

其次:本文档主要的几个程式

### (1) CLMSG

用于控制是返回错误信息还是返回用户在界面是所想定义的文字内容(是用MSGID控制的).

### (2) SNDERR

用于返回错误信息的子程式,也就是我们所讲的ERROR MSG(是使用MESSAGE SUBFILE控制并显示在屏幕下SFLMSGRCD(24)定义所对应的行数)

CLMSG代码如下(CLP程式):

PGM PARM(&MSGID &MSGF &MSGTXT &MSGTYP &PGM)

```
DCL      VAR(&MSGID)  TYPE(*CHAR) LEN(7)
DCL      VAR(&MSGF)   TYPE(*CHAR) LEN(10)
DCL      VAR(&PGM)    TYPE(*CHAR) LEN(10)
```

```

DCL      VAR(&MSGTXT)  TYPE(*CHAR) LEN(78)
DCL      VAR(&MSGTYP)  TYPE(*CHAR) LEN(1)

IF      COND(&MSGTYP *EQ 'C') THEN(DO)
      RMVMSG   PGMQ(*PRV) CLEAR(*ALL)
      GOTO ENDPGM
ENDDO

IF      COND(&MSGTYP *EQ 'D') THEN(DO)
      RTVMSG   MSGID(&MSGID) MSGF(&MSGF) MSG(&MSGTXT)
      GOTO ENDPGM
ENDDO

IF      COND(&MSGTYP *EQ 'E') THEN(DO)
      CALL      PGM(SNDERR) PARM(&MSGF &MSGID &PGM)
      GOTO ENDPGM
ENDDO

ENDPGM:   ENDPGM

```

SNDERR代码如下(RPG程式):

```

F*****
I      IDS
I                      B  1  40@STK
I                      B  5  80@LEN
I                      B  9  120@ERR
*****
C*
C      *ENTRY    PLIST
C          PARM      @MSGF  20
C          PARM      @MSGID 7
C          PARM      @PGM   10
C*****
C          MOVEL'*DIAG'  @TYPE 10
C          MOVEL'*LIBL'  @LIB   10
C          MOVE @LIB    @MSGF
C          MOVEL*BLANK   @KEY   4
C          MOVEL*BLANK   @DTA   100
C*****
C          CALL 'QMHSNDPM'
C          PARM      @MSGID
C          PARM      @MSGF
C          PARM      @DTA
C          PARM      @LEN
C          PARM      @TYPE
C          PARM      @PGM
C          PARM      @STK
C          PARM      @KEY
C          PARM      @ERR
C*
C          MOVE *ON    *INLR
C          RETRN
C*

```

例子：

(1) 基本界面的例子：

**DSFP代码：**

```
A*%TS SD 20080801 151134 EDPLJL REL-V5R4M0 5722-WDS
A*****
A* DISPLAY FILE ID - MSGTSTF2
A* DISPLAY FILE NAME -
A* DATE WRITTEN -
A* WRITED BY -
A*
A*****
A*%EC
A                               DSPSIZ(24 80 *DS3)
A                               PRINT
A*****
A          R DSPR1
A*%TS SD 20080801 151134 EDPLJL REL-V5R4M0 5722-WDS
A                               CA03
A                               OVERLAY
A                               PUTOVR
A                               BLINK
A                               TEXT('Single Screen')
A          @PGM      10A O 1 2
A          MSGM000007  40A O 1 18MSGID(M00 0007 LBIMSGF)
A          WSID      10A O 1 62
A          1 73DATE
A          EDTCDE(Y)
A          MSGM000008  10A O 2 2MSGID(M00 0008 LBIMSGF)
A          MSGM000009  30A O 2 23MSGID(M00 0009 LBIMSGF)
A          COLOR(BLU)
A          2 62USER
A          2 73TIME
A          MSGM000010  15A O 4 2MSGID(M00 0010 LBIMSGF)
A          COLOR(BLU)
A          STRAN     2A B 4 21
A          31        DSPATR(PC)
A          31        DSPATR(RI)
A          OVRDTA
A          MSGM000011  78A O 23 2MSGID(M00 0011 LBIMSGF)
A          COLOR(BLU)
*=====
* Message subfile stuff.
*=====
A          R MSGSFL          SFL
A                               SFLMSGRC(24)
A          @KEY             SFLMSGKEY
A          @PGM             SFLPGMQ(10)
*=====
* Message subfile stuff
*=====
A          R MSGCTL          SFLCTL(MSGSFL)
A                               SFLDSP
A                               SFLDSPCTL
A                               SFLINZ
A          N03              SFLEND
A                               SFLSIZ(0010)
A                               SFLPAG(0001)
A          @PGM             SFLPGMQ(10)
A*****
```

RPG代码:

```
F*
F* PROGRAM I.D.      :
F* PROGRAM DESCRIPTION :
F* WRITED BY        :
F* MOD#  Date      Description
FMSGTSTF2CF E          WORKSTN
F*
ISDS      SDS
|          1 10 @PGM
|          244 253 WSID
|          254 263 USER
C*****
C*  MAIN LOGIC
C*****
C          MOVEL*BLANKS  STRAN
C*
C*****
C* SCREEN 1
C*****
C*
C          1          DOWEQ1
C*
C          WRITEMSGCTL
C*
C          EXFMTDSPR1
C* CLEAR ERROR MSG
C          MOVEL*BLANK  MSGID  7
C          MOVEL*BLANK  MSGF   10
C          MOVEL*BLANK  MSGTXT 78
C          MOVEL'C'    MSGTYP  1
C          EXSR SMSG
C*
C          *INKC     IFEQ *ON
C          GOTO ENDSR1
C          ENDIF
C*
C          EXSR CHK1
C*
C          ENDDO
C*
C          ENDSR1   TAG
C          MOVEL*ON    *INLR
C*
C*****
C* CHECK
C*****
C          CHK1      BEGSR
C*
C*STAAN CANNOT BE BLANKS
C          STRAN     IFEQ *BLANKS
C          MOVEL'M000001' MSGID
C          MOVEL'LBIMSGF' MSGF
C          MOVEL*BLANKS  MSGTXT
C          MOVEL'E'    MSGTYP
C          EXSR SMSG
C          SETON
C          31
C*
C          ENDIF
C*
```

```

C          ENDSR
C*****
C*  SMSG - GET MSG DESC FROM MSG FILE FOR ERROR OR DISPLAY
C*****
C          SMSG      BEGSR
C*
C          CALL 'CLMSG'
C          PARM      MSGID
C          PARM      MSGF
C          PARM      MSGTXT
C          PARM      MSGTYP
C          PARM      @PGM
C*
C          ENDSR
C*****

```

(2) 包含SUBFILE的例子:

DSPF代码:

```

A%%TS SD 20080717 164255 EDPLJL      REL-V5R4M0 5722-WDS
A*****
A*  DISPLAY FILE ID  -
A*  DISPLAY FILE NAME -
A*  DATE WRITTEN   -
A*  WRITED BY      -
A*  BMR#          DATE      DESCRIPTION
A*****
A*%EC
A          DSPSIZ(24 80 *DS3)
A          PRINT
A          ALTPAGEUP(CF07)
A          ALTPAGEDWN(CF08)
A*****
A          R DSPS1          SFL
A%%TS SD 20080717 163944 EDPLJL      REL-V5R4M0 5722-WDS
A          S1TYPE      2A O 7 4COLOR(WHT)
A          S1DESC      30A O 7 8
A          XTTID       10A O 8 3
A          XTTID1      30A O 8 15
A          COLOR(WHT)
A          COLOR(BLU)
A*****
A*
A          R DSPC1          SFLCTL(DSPS1)
A%%TS SD 20080717 164255 EDPLJL      REL-V5R4M0 5722-WDS
A          SFLSIZ(0200)
A          SFLPAG(0007)
A          CA03
A          OVERLAY
A          PUTOVR
A          BLINK
A 62          SFLDSP
A 63          SFLDSPCTL
A 64          SFLCLR
A 69          SFLEND
A          RRNF1          4S 0H      SFLRCDNBR
A          TEXT('Single Screen')

```

```

A      @PGM      10A  O  1  2
A      MSGM000007  40A  O  1 18MSGID(M00 0007 LBIMSGF)
A      WSID      10A  O  1 62
A          1 73DATE
A          EDTCDE(Y)
A      MSGM000008  10A  O  2 2MSGID(M00 0008 LBIMSGF)
A      MSGM000009  30A  O  2 23MSGID(M00 0009 LBIMSGF)
A          COLOR(BLU)
A          2 62USER
A          2 73TIME
A      MSGM000010  15A  O  4 2MSGID(M00 0010 LBIMSGF)
A      STRAN     2A  B  4 21
A 31          DSPATR(PC)
A 31          DSPATR(RI)
A          OVRDTA
A*
A*****=====
A      R DSPK1
A%%TS SD 20070918 144740 EDPLJL REL-V5R3M0 5722-WDS
A          OVERLAY
A          PUTOVR
A      MSGM000012  78A  O 23 2MSGID(M00 0012 LBIMSGF)
A          COLOR(BLU)
*=====
* * Message subfile stuff.
*=====
A      R MSGSFL          SFL
A          SFMSGRC(24)
A      @KEY          SFMSGKEY
A      @PGM          SFLPGMQ(10)
*=====
* * Message subfile stuff
*=====
A      R MSGCTL          SFLCTL(MSGSFL)
A          SFLDSP
A          SFLDSPCTL
A          SFLINZ
A N03          SFLEND
A          SFLSIZ(0010)
A          SFLPAG(0001)
A      @PGM          SFLPGMQ(10)
A*****=====

```

### RPG代码:

```

F*-----
F* PROGRAM I.D.      :
F* PROGRAM DESCRIPTION :
F* WRITED BY        :
F* MOD#   Date     Description
F*-----
FMSGTSTF1CF E          WORKSTN
F          RRFN1 KSF1FILE DSPS1
FITELO1 IF E          K     DISK
F*-----
ISDS      SDS
|          1 10 @PGM
|          244 253 WSID
|          254 263 USER

```

```

C*****
C*  MAIN LOGIC
C*****
C          EXSR S000
C*****
C* SCREEN 1
C*****
C*
C          EXSR S1LDSF           Load subfile
C*
C          1          DOWEQ1
C*
C          EXSR S1DPSF           Display Subfile
C* CLEAR ERROR MSG
C          MOVEL*BLANK    MSGID
C          MOVEL*BLANK    MSGF
C          MOVEL*BLANK    MSGTXT
C          MOVEL'C'      MSGTYP
C          EXSR SMSG
C*
C          *INKC      IFEQ *ON
C          GOTO ENDSR1
C          ENDIF
C*
C          EXSR CHK1
C*
C          ENDDO
C*
C          ENDSR1    TAG
C          MOVEL*ON      *INLR
C*
C* S000 - Initial Subroutine
C*****
C          S000      BEGSR
C*
C          MOVEL*BLANKS  STRAN
C*
C          ENDSR
C*****
C* SMSG - GET MSG DESC FROM MSG FILE FOR ERROR OR DISPLAY
C*****
C          SMSG      BEGSR
C*
C          CALL 'CLMSG'
C          PARM      MSGID
C          PARM      MSGF
C          PARM      MSGTXT
C          PARM      MSGTYP
C          PARM      @PGM
C*
C          ENDSR
C*****
C* S1CLSF - Clear Sub-File in Screen 1
C*****
C          S1LDSF    BEGSR
C          MOVE '0'     *IN62      SFLDSP
C          MOVE '0'     *IN63      SFLDSPCTL
C          MOVE '1'     *IN64      SFLCLR

```

```

C          WRITEDSPC1
C          MOVE '1'      *IN62          SFLDSP
C          MOVE '1'      *IN63          SFLDSPCTL
C          MOVE '0'      *IN64          SFLCLR
C          Z-ADD*ZEROS   RRNF1
C*
C          READ ITEL01          65
C          *IN65
C          DOWEQ*OFF
C          MOVELTTYPE    S1TYPE
C          MOVELTDESC    S1DESC
C*
C          MOVE'L'M000004' MSGID  7
C          MOVE'L'BIMSGF' MSGF   10
C          MOVEL*BLANKS   MSGTXT 78
C          MOVE'L'D'      MSGTYP  1
C          EXSR SMSG
C          MOVELMSGTXT  XTTID
C*
C          MOVE'L'M000005' MSGID  7
C          MOVE'L'BIMSGF' MSGF   10
C          MOVEL*BLANKS   MSGTXT 78
C          MOVE'L'D'      MSGTYP  1
C          EXSR SMSG
C          MOVELMSGTXT  XTTID1
C*
C          ADD 1        RRNF1  40
C          WRITEDSPS1
C*
C          READ ITEL01          65
C          ENDDO
C*
C          RRNF1    IFEQ 0
C          MOVE '0'      *IN62          SFLDSP
C          MOVE '1'      *IN63          SFLDSPCTL
C          MOVE '1'      *IN69          SFLEND
C          ELSE
C          MOVE '1'      *IN62          SFLDSP
C          MOVE '1'      *IN63          SFLDSPCTL
C          MOVE '1'      *IN69          SFLEND
C          ENDIF
C*
C          ENDSR
C*****
C*  S1DPSF - Display Sub-File in Screen 1
C*****
C          S1DPSF    BEGSR
C*
C          RRNF1    IFNE 0
C          Z-ADD1      RRNF1
C          ENDIF
C*
C          WRITEMSGCTL
C*
C          WRITEDSPK1
C          EXFMTDSPC1
C*
C          ENDSR
C*****
C* CHECK
C*****

```

```

C          CHK1      BEGSR
C*
C*STAAN CANNOT BE BLANKS
C          STRAN      IFEQ *BLANKS
C          MOVEL'M000001' MSGID    7
C          MOVEL'LBIMSGF' MSGF    10
C          MOVEL*BLANKS   MSGTXT 78
C          MOVEL'E'      MSGTYP
C          EXSR SMSG
C          GOTO ENDCK1
C          ENDIF
C*
C*STAAN CANNOT BE BLANKS
C          STRAN      CHAINTEL01          66
C          *IN66      IFEQ *ON
C          MOVEL'M000002' MSGID    7
C          MOVEL'LBIMSGF' MSGF    10
C          MOVEL*BLANKS   MSGTXT 78
C          MOVEL'E'      MSGTYP
C          EXSR SMSG
C          GOTO ENDCK1
C          ENDIF
C*
C          ENDCK1      TAG
C          ENDSR
C*****

```

MSDID	MSG DESC (MSGF:LBIMSGF)
M000001	异动类型不能为空!
M000002	不存在此异动类型!
M000003	
M000004	异动编号
M000005	异动说明
M000006	
M000007	深圳世强软(AS400)件开发有限公司
M000008	SCRN-1
M000009	库存异动维护程式
M000010	异动类型
M000011	F3=退出
M000012	F3=退出 F7=上翻8F8=下翻

总结:在以上的两个例子中,我想应该都可以满足大家做界面的要求了,更复杂一点的界面也就是这两种而已(虽然我没有把做WINDOW的DSPF代码贴出来),如果自需需要可以去找资料或请教高人.

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goodbilly

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