Z390/CICS Application Programmers Guide

The EXEC CICS commands and parameters listed here are the only ones currently supported in the Z390/CICS environment.

Differences between mainframe operation and Z390/CICS are explained.

For the operation of each command and parameter please refer to the Manuals listed in the Reference section at the end of this document.

If you create your own Z390/CICS applications, it would be wise to create a .BAT file that re-assembles them all in one go. The internal interfaces are volatile at present and this will be a frequent instruction.

The current Z390/CICS environment and all test programs can be re-assembled using DFHALL.BAT. The test VSAM catalog and files can be rebuilt using DFHALLV.BAT.

Assembly notes

CICS must be added as an option to CALL MZ390.
PROLOG and EPILOG are defaults.

NOEPILOG is supported but not fully tested, testing and correct usage is scheduled for a future release of Z390/CICS.

PROLOG inserts the following:

```
  DFHEIGBL -- Defines the basic set of control block DSECTs.
  DFHEISTG -- Define the prefix areas of the Dynamic Storage Area (DSA).
  DFHEIEND -- Replaces the END statement and defines the end of the DSA.
  DFHEIENT -- Replaces the first CSECT statement
              Establish linkage and base registers
              GETMAIN the DSA
              Establish addressability to the EIB and TCTTE
              Some COMMAREA management
```

Other macros...

```
  DFHEIBLK -- EIB DSECT
  DFHEIRET -- Part of EXEC CICS RETURN
              Some clean-up operations
              FREEMAIN the DSA
              Manage link-level and return to last linker
  DFHPCT   -- Transaction definition
  DFHFCT   -- File definitions and options
  EXEC     -- Converts EXEC CICS statements into a unique macro call
              with a parameter list
```

Copy books...

```
   DFHAID     Standard CICS equates for AID keys
   DFHPCTUS   User transaction codes
   DFHFCTUS   User file definitions
```

Inclusion of the macro EQUREGS is mandatory.

Register Usage

```
R0   Reserved for internal use
R1   Reserved for internal use
R2   Reserved for internal use
R10  TCTTE address, must not be modified
```

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R11  EIB address, must not be modified
R12  Default base register
R13  DSA address, must not be modified
R14  Reserved for internal use
R15  Reserved for internal use

Multiple base registers
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The standard entry for a CICS program is as follows:

eg.
DFHEISTG DSECT
MYFIELD  DS    CL100              demo user field
...
MYPROG   CSECT

This standard method with the PROLOG option (default) will generate
a single code base of R12 and a single DSA base of R13.

If you want to extend the code base and/or the DSA base registers,
convert your code in line with the sample given, and include the
NOPROLOG option in CALL MZ390.

eg.
         DFHEIGBL
         DFHEISTG
MYFIELD  DS    CL100              demo user field
...
MYPROG   DFHEIENT CODEREG=(R8,R5),DATAREG=(R13,R6,R7)

Notes: You cannot override the first DATAREG value, it will always be R13
       ie. if you code DATAREG=(R6,R7) you will get DATAREG=(R13,R7).

       There is no cross-checking for register conflicts.

VSAM Notes
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See ZCICSVSM, Z390/CICS VSAM Guide for guidance in the setup of a
VSAM environment. This document also contains extensions to the VSAM
facilities currently available.

Supported EXEC CICS commands (summary by type)
----------------------------------------------
 1) General commands (02)
    a) HANDLE AID key() key
    b) HANDLE CONDITION condition() condition
    c) IGNORE CONDITION condition
    d) POP HANDLE
    e) PUSH HANDLE

 2) Terminal Control (04)
    a) RECEIVE INTO() LENGTH() NOHANDLE
    b) SEND FROM() LENGTH()

 3) File Control (06)
    a) READ FILE()/DATASET() INTO()/SET() LENGTH()/FLENGTH()
       RIDFLD() RBA/XRBA
    b) STARTBR FILE()/DATASET() RIDFLD() REQID() RBA/XRBA GTEQ/EQUAL
    c) READNEXT FILE()/DATASET() INTO()/SET() LENGTH()/FLENGTH()
       RIDFLD() REQID() RBA/XRBA
    d) READPREV FILE()/DATASET() INTO()/SET() LENGTH()/FLENGTH()
       RIDFLD() REQID() RBA/XRBA
    e) ENDBR FILE()/DATASET() REQID()
```

```
    f) RESETBR FILE()/DATASET() RIDFLD() REQID() RBA/XRBA GTEQ/EQUAL

 4) Storage Control (08)
    a) FREEMAIN DATA()/DATAPOINTER()
    b) GETMAIN SET() LENGTH()/FLENGTH() INITIMG()

 5) Temporary Storage Control (0A)
    a) DELETEQ TS QUEUE()/QNAME()
    b) READQ TS QUEUE()/QNAME() INTO()/SET() LENGTH() NUMITEMS()
       ITEM()/NEXT
    c) WRITEQ TS QUEUE()/QNAME() FROM() LENGTH() NUMITEMS() ITEM()
       REWRITE

 6) Program Control (0E)
    a) ABEND ABCODE() CANCEL NODUMP
    b) HANDLE ABEND CANCEL/RESET/LABEL()/PROGRAM()
    c) LINK PROGRAM() COMMAREA() LENGTH()
    d) LOAD PROGRAM() ENTRY()/SET() LENGTH() FLENGTH()
    e) RELEASE PROGRAM()
    f) RETURN TRANSID() COMMAREA() LENGTH()
    g) XCTL PROGRAM() COMMAREA() LENGTH()

Supported EXEC CICS commands (detail by type)
---------------------------------------------
 1) General commands (02)

    a) HANDLE AID key(label) key etc.

       The following parameters are not supported...
          CLRPARTN, LIGHTPEN, OPERID, TRIGGER

       The manual is not clear about ANYKEY (no label). I have assumed
       that it clears all settings for CLEAR, PA and PF keys.

       label may take three forms:
          Direct reference
          Indirect reference
          Adcon literal

       eg. EXEC CICS HANDLE AID PA1(GOPA1) PA2(INDGOPA1) PA3(=A(GOPA1))
           ...
           GOPA1    DS 0H
           ...
           INDGOPA1 DC A(GOPA1)

       Errors
          BAD PARM
          HANDLE TYPE NOT RECOGNISED

    b) HANDLE CONDITION condition(label) condition etc.

       label may take three forms:
          Direct reference
          Indirect reference
          Adcon literal

          See HANDLE AID for examples of these forms.

       Errors
          BAD PARM
          HANDLE TYPE NOT RECOGNISED

    c) IGNORE CONDITION condition ...
```

Notes:
Ignoring an error may lead to unpredictable abends.

INVREQ, PGMIDERR or ERROR by default...
The EXEC CICS command treated as never existed.

INVREQ on EXEC CICS RETURN will abend the task ASRA as I cannot ignore a RETURN.

LENGERR or ERROR by default...
Only on EXEC CICS RECEIVE.
NOHANDLE and any outstanding HANDLE AID will not invoke this condition.

Errors
BAD PARM
IGNORE TYPE NOT RECOGNISED

d) POP HANDLE

For the HANDLE ABEND, a POP is the equivalent of a HANDLE ABEND RESET.

Errors
POP TYPE NOT RECOGNISED

Conditions (RESP/RESP2)
INVREQ/0

e) PUSH HANDLE

For the HANDLE ABEND, a PUSH is the equivalent of a HANDLE ABEND CANCEL.

Errors
PUSH TYPE NOT RECOGNISED

2) Terminal Control (04)

a) RECEIVE INTO(label) LENGTH(label) NOHANDLE

INTO(label) and LENGTH(label) are mandatory.
LENGTH must point to a 2-byte field.

Although MAXLENGTH is not implemented yet, there is an internal maximum length set to the implied length of the INTO label.

NOHANDLE is optional.

Errors
BAD PARM
BOTH INTO AND LENGTH ARE REQUIRED
LENGTH ERROR

Conditions (RESP/RESP2)
LENGERR/0

b) SEND FROM(label) LENGTH()

FROM(label) is mandatory.
label may take three forms:
Direct reference

Indirect reference
Adcon literal

LENGTH
Can be specified as LENGTH(value) or LENGTH(label)
LENGTH(value) supports the use of the length attribute.
label must point to a 2-byte hex value.

Errors
BAD PARM
FROM IS MANDATORY
LENGTH IS MANDATORY

3) File Control (06)

a) READ FILE()/DATASET() INTO()/SET() LENGTH()/FLENGTH()
RIDFLD() RBA/XRBA

Note: FLENGTH and XRBA are extensions, do not use these
parameters if the source code is likely to be ported
back to a mainframe environment.

DATASET is supported for legacy applications. It is noted that
this parameter no longer appears in the Manuals.

LENGTH
Can be specified as a constant, literal or label.
A constant must not exceed 32767.
A literal or label must be 2 bytes and must not exceed 32767.

FLENGTH
Can be specified as a constant, literal or label.
A constant must not exceed 2G-1.
A literal or label must be 4 bytes and must not exceed 2G-1.

LENGTH/FLENGTH notes:
If not a label then ...
If INTO is specified, then the length received is the
implied length of INTO. This may raise the LENGERR
condition if the data length is larger.

If SET is specified, the complete record is returned and
LENGERR cannot occur.

If it is a label then ...
If INTO or SET is specified, then it specifies the maximum data
length that can be received. LENGERR can be raised if the
data length is larger. The true data length is returned in
label.

RBA RIDFLD has a 4-byte RBA
XRBA RIDFLD has an 8-byte RBA
Note: For an ESDS, if neither is specified, RBA is assumed.

Errors
BAD PARM
BOTH FILE AND DATASET ARE SPECIFIED
BOTH INTO AND SET ARE SPECIFIED
BOTH LENGTH AND FLENGTH ARE SPECIFIED
BOTH RBA AND XRBA ARE SPECIFIED
FILE OR DATASET MUST BE SPECIFIED
INTO OR SET MUST BE SPECIFIED
INVALID FILE OR DATASET

RIDFLD IS MANDATORY

Conditions (RESP/RESP2)
FILENOTFOUND/1
DISABLED/50
NOTOPEN/60
INVREQ/20

b) STARTBR FILE()/DATASET() RIDFLD() REQID() RBA/XRBA GTEQ/EQUAL

Note: XRBA is an extension, do not use this parameter if the source code is likely to be ported back to a mainframe environment.

DATASET is supported for legacy applications. It is noted that this parameter no longer appears in the Manuals.

REQID
Can be specified as a constant, literal or label.
A constant must not exceed 32767.
A literal or label must be 2 bytes and must not exceed 32767.
If omitted, zero is assumed.

RBA RIDFLD has a 4-byte RBA
XRBA RIDFLD has an 8-byte RBA
Note: For an ESDS, if neither is specified, RBA is assumed.

GTEQ/EQUAL currently not used

Errors
BAD PARM
BOTH FILE AND DATASET ARE SPECIFIED
BOTH GTEQ AND EQUAL ARE SPECIFIED
BOTH RBA AND XRBA ARE SPECIFIED
FILE OR DATASET MUST BE SPECIFIED
INVALID FILE OR DATASET
RIDFLD IS MANDATORY

Conditions (RESP/RESP2)
FILENOTFOUND/1
DISABLED/50
NOTFND/80
NOTOPEN/60
INVREQ/20
INVREQ/33

Note: NOTFND cannot occur for an ESDS

c) READNEXT FILE()/DATASET() INTO()/SET() LENGTH()/FLENGTH() RIDFLD() REQID() RBA/XRBA

Note: FLENGTH and XRBA are extensions, do not use these parameters if the source code is likely to be ported back to a mainframe environment.

DATASET is supported for legacy applications. It is noted that this parameter no longer appears in the Manuals.

LENGTH
Can be specified as a constant, literal or label.
A constant must not exceed 32767.
A literal or label must be 2 bytes and must not exceed 32767.

FLENGTH
   Can be specified as a constant, literal or label.
   A constant must not exceed 2G-1.
   A literal or label must be 4 bytes and must not exceed 2G-1.

LENGTH/FLENGTH notes:
   If either is not a label then ...
      If INTO is specified, then the length received is the
      implied length of INTO. This may raise the LENGERR
      condition if the data length is larger.

      If SET is specified, the complete record is returned and
      LENGERR cannot occur.

   If either is a label then ...
      If INTO or SET is specified, then it specifies the maximum data
      length that can be received. LENGERR can be raised if the
      data length is larger. The true data length is returned in
      label.

REQID
   Can be specified as a constant, literal or label.
   A constant must not exceed 32767.
   A literal or label must be 2 bytes and must not exceed 32767.
   If omitted, zero is assumed.

RBA   RIDFLD has a 4-byte RBA
XRBA RIDFLD has an 8-byte RBA
   Note: For an ESDS, if neither is specified, RBA is assumed.

Errors
   BAD PARM
   BOTH FILE AND DATASET ARE SPECIFIED
   BOTH INTO AND SET ARE SPECIFIED
   BOTH LENGTH AND FLENGTH ARE SPECIFIED
   BOTH RBA AND XRBA ARE SPECIFIED
   FILE OR DATASET MUST BE SPECIFIED
   INTO OR SET MUST BE SPECIFIED
   INVALID FILE OR DATASET
   RIDFLD IS MANDATORY

Conditions (RESP/RESP2)
   ENDFILE/90
   DISABLED/50
   FILENOTFOUND/1
   INVREQ/20
   INVREQ/33
   NOTOPEN/60

c) READPREV FILE()/DATASET() INTO()/SET() LENGTH()/FLENGTH()
RIDFLD() REQID() RBA/XRBA

Note: FLENGTH and XRBA are extensions, do not use these
      parameters if the source code is likely to be ported
      back to a mainframe environment.

DATASET is supported for legacy applications. It is noted that
this parameter no longer appears in the Manuals.

LENGTH
   Can be specified as a constant, literal or label.
   A constant must not exceed 32767.
   A literal or label must be 2 bytes and must not exceed 32767.

```
   FLENGTH
      Can be specified as a constant, literal or label.
      A constant must not exceed 2G-1.
      A literal or label must be 4 bytes and must not exceed 2G-1.

   LENGTH/FLENGTH notes:
      If either is not a label then ...
         If INTO is specified, then the length received is the
         implied length of INTO. This may raise the LENGERR
         condition if the data length is larger.

         If SET is specified, the complete record is returned and
         LENGERR cannot occur.

      If either is a label then ...
         If INTO or SET is specified, then it specifies the maximum data
         length that can be received. LENGERR can be raised if the
         data length is larger. The true data length is returned in
         label.

   REQID
      Can be specified as a constant, literal or label.
      A constant must not exceed 32767.
      A literal or label must be 2 bytes and must not exceed 32767.
      If omitted, zero is assumed.

   RBA   RIDFLD has a 4-byte RBA
   XRBA  RIDFLD has an 8-byte RBA
      Note: For an ESDS, if neither is specified, RBA is assumed.

   Errors
      BAD PARM
      BOTH FILE AND DATASET ARE SPECIFIED
      BOTH INTO AND SET ARE SPECIFIED
      BOTH LENGTH AND FLENGTH ARE SPECIFIED
      BOTH RBA AND XRBA ARE SPECIFIED
      FILE OR DATASET MUST BE SPECIFIED
      INTO OR SET MUST BE SPECIFIED
      INVALID FILE OR DATASET
      RIDFLD IS MANDATORY

   Conditions (RESP/RESP2)
      DISABLED/50
      ENDFILE/90
      FILENOTFOUND/1
      INVREQ/20
      INVREQ/33
      NOTOPEN/60

      Note: ENDFILE occurs when a READPREV attempts to read past
            the beginning of the file.

d) ENDBR FILE()/DATASET() REQID()

   DATASET is supported for legacy applications. It is noted that
   this parameter no longer appears in the Manuals.

   REQID
      Can be specified as a constant, literal or label.
      A constant must not exceed 32767.
      A literal or label must be 2 bytes and must not exceed 32767.
      If omitted, zero is assumed.
```

Note: In real CICS, ENDBR cannot cause a file to open, but it will in Z390/CICS. The ENDBR command will be invalid, and may result in a transaction abend.

Errors
BAD PARM
BOTH FILE AND DATASET ARE SPECIFIED
FILE OR DATASET MUST BE SPECIFIED
INVALID FILE OR DATASET

Conditions (RESP/RESP2)
DISABLED/50
FILENOTFOUND/1
INVREQ/20
INVREQ/35
NOTOPEN/60

e) RESETBR FILE()/DATASET() RIDFLD() REQID() RBA/XRBA GTEQ/EQUAL

Note: XRBA is an extension, do not use this parameter if the source code is likely to be ported back to a mainframe environment.

DATASET is supported for legacy applications. It is noted that this parameter no longer appears in the Manuals.

REQID
Can be specified as a constant, literal or label.
A constant must not exceed 32767.
A literal or label must be 2 bytes and must not exceed 32767.
If omitted, zero is assumed.

RBA RIDFLD has a 4-byte RBA
XRBA RIDFLD has an 8-byte RBA
Note: For an ESDS, if neither is specified, RBA is assumed.

GTEQ/EQUAL currently not used

Note: In real CICS, RESETBR cannot cause a file to open, but it will in Z390/CICS. The RESETBR command will be invalid, and may result in a transaction abend.

Errors
BAD PARM
BOTH FILE AND DATASET ARE SPECIFIED
BOTH GTEQ AND EQUAL ARE SPECIFIED
BOTH RBA AND XRBA ARE SPECIFIED
FILE OR DATASET MUST BE SPECIFIED
INVALID FILE OR DATASET
RIDFLD IS MANDATORY

Conditions (RESP/RESP2)
DISABLED/50
FILENOTFOUND/1
INVREQ/20
INVREQ/36
NOTOPEN/60

4) Storage Control (08)

a) FREEMAIN DATA()/DATAPOINTER()

DATA(label)
label may only be an indirect reference to the address.

DATAPOINTER
Must be specified as a permitted general register value.

Errors
BAD PARM
BOTH DATA AND DATAPOINTER ARE SPECIFIED
DATA OR DATAPOINTER MUST BE SPECIFIED

Conditions (RESP/RESP2)
INVREQ/1

b) GETMAIN SET() LENGTH()/FLENGTH() INITIMG()

SET is mandatory
Must be specified as a permitted general register value.

LENGTH
Can be specified as a constant, literal or label.
A constant must not exceed 32767.
A literal or label must be 2 bytes and must not exceed 32767.

FLENGTH
Can be specified as a constant, literal or label.
A constant must not exceed 2G-1.
A literal or label must be 4 bytes and must not exceed 2G-1.

INITIMG is optional
If omitted, the storage contents are not predictable.
Can be specified as a constant, literal or label.
Only the first byte generated by the parameter is used.

Errors
BAD PARM
BOTH LENGTH AND FLENGTH ARE SPECIFIED
LENGTH OR FLENGTH MUST BE SPECIFIED
SET IS MANDATORY

5) Temporary Storage Control (0A)

a) DELETEQ TS QUEUE()/QNAME()

The parameters MAIN and AUXILIARY are accepted and discarded.

QUEUE may be specified as:
A quoted string which must not exceed 8 bytes.
A label which points to an 8-byte field.
A literal not exceeding 8 bytes.
Only label or literal may be used to specify a QUEUE with
hex characters.

QNAME may be specified as:
A quoted string which must not exceed 16 bytes.
A label which points to a 16-byte field.
A literal not exceeding 16 bytes.
Only label or literal may be used to specify a QNAME with
hex characters.

Errors
BAD PARM
BOTH QUEUE AND QNAME ARE SPECIFIED

DELETEQ TYPE NOT RECOGNIZED
INVALID QUEUE OR QNAME
QUEUE OR QNAME MUST BE SPECIFIED

Conditions (RESP/RESP2)
INVREQ/0
QIDERR/0

b) READQ TS QUEUE()/QNAME() INTO()/SET() LENGTH() NUMITEMS() ITEM()/NEXT

The parameters MAIN and AUXILIARY are accepted and discarded.

QUEUE may be specified as:
A quoted string which must not exceed 8 bytes.
A label which points to an 8-byte field.
A literal not exceeding 8 bytes.
Only label or literal may be used to specify a QUEUE with hex characters.

QNAME may be specified as:
A quoted string which must not exceed 16 bytes.
A label which points to a 16-byte field.
A literal not exceeding 16 bytes.
Only label or literal may be used to specify a QNAME with hex characters.

LENGTH
May be specified as LENGTH(value) or LENGTH(label)
LENGTH(value) supports the use of the length attribute.
label must point to a 2-byte hex value.

LENGTH can be omitted. When it is, the implied length of INTO is used. LENGTH is mandatory when SET is used.

ITEM
May be specified as ITEM(value) or ITEM(label)
label must point to a 2-byte hex value.

Errors
BAD PARM
BOTH INTO AND SET ARE SPECIFIED
BOTH ITEM AND NEXT ARE SPECIFIED
BOTH QUEUE AND QNAME ARE SPECIFIED
INTO OR SET MUST BE SPECIFIED
INVALID QUEUE OR QNAME
ITEM OR NEXT MUST BE SPECIFIED
QUEUE OR QNAME MUST BE SPECIFIED
READQ TYPE NOT RECOGNIZED
SET REQUIRES LENGTH

Conditions (RESP/RESP2)
INVREQ/0
LENGERR/0
ITEMERR/0
QIDERR/0

c) WRITEQ TS QUEUE()/QNAME() FROM() LENGTH() NUMITEMS() ITEM() REWRITE

The parameters MAIN and AUXILIARY are accepted and discarded.

QUEUE may be specified as:

A quoted string which must not exceed 8 bytes.
A label which points to an 8-byte field.
A literal not exceeding 8 bytes.
Only label or literal may be used to specify a QUEUE with hex characters.

QNAME may be specified as:
A quoted string which must not exceed 16 bytes.
A label which points to a 16-byte field.
A literal not exceeding 16 bytes.
Only label or literal may be used to specify a QNAME with hex characters.

FROM(label) is mandatory.
label may take three forms:
Direct reference
Indirect reference
Adcon literal

LENGTH
May be specified as LENGTH(value) or LENGTH(label)
LENGTH(value) supports the use of the length attribute.
label must point to a 2-byte hex value.

LENGTH can be omitted. When it is, the implied length of FROM is used. LENGTH is mandatory when FROM is an indirect reference.

ITEM
May be specified as ITEM(value) or ITEM(label)
label must point to a 2-byte hex value.

Errors
BAD PARM
BOTH QUEUE AND QNAME ARE SPECIFIED
FROM IS MANDATORY
IF NUMITEMS IS SPECIFIED, ITEM AND REWRITE ARE INVALID
INVALID QUEUE OR QNAME
ITEM AND REWRITE MUST BOTH BE SPECIFIED
LENGTH IS MANDATORY FOR INDIRECT FROM
LENGTH WITHOUT FROM
QUEUE OR QNAME MUST BE SPECIFIED
WRITEQ TYPE NOT RECOGNIZED

Conditions (RESP/RESP2)
INVREQ/0
LENGERR/0
ITEMERR/0
QIDERR/0

6) Program Control (0E)

a) ABEND ABCODE() CANCEL NODUMP

ABCODE can be specified as ABCODE('xxxx') or ABCODE(label)
label must point to a 4-byte field.

Errors
ABCODE MUST NOT BEGIN WITH 'A'
ABCODE IS INVALID
BAD PARM

b) HANDLE ABEND CANCEL

```
   HANDLE ABEND RESET

   HANDLE ABEND LABEL(label)
      label may take three forms:
         Direct reference
         Indirect reference
         Adcon literal

   HANDLE ABEND PROGRAM()
      Can be specified as PROGRAM('xxxxxxxx') or PROGRAM(label)
      label must point to an 8-byte field.

      Any received COMMAREA when the EXEC CICS HANDLE ABEND is
      issued is passed to the handling program when an abend occurs.

   Notes: When an XCTL is executed, any HANDLE ABEND LABEL at the
          current logical level is cleared as the current program
          is no longer in use. HANDLE ABEND PROGRAMs are not cleared.

   Errors
      BAD PARM
      INVALID PROGRAM
      HANDLE TYPE NOT RECOGNISED
      PARMS MISSING OR TOO MANY PARMS

c) LINK PROGRAM() COMMAREA(label) LENGTH()

   Executes another CICS program.
   If COMMAREA is present, the address/length are passed.
   Return is to the linker.

   PROGRAM is mandatory
      Can be specified as PROGRAM('xxxxxxxx') or PROGRAM(label)
      label must point to an 8-byte field.

   COMMAREA(label) is optional
      label may take three forms:
         Direct reference
         Indirect reference
         Adcon literal

   LENGTH
      Can be specified as LENGTH(value) or LENGTH(label)
      LENGTH(value) supports the use of the length attribute.
      label must point to a 2-byte hex value.

      LENGTH can be omitted. When it is, the implied length of the
      COMMAREA is used. LENGTH is mandatory when COMMAREA is an
      indirect reference.

   Errors
      BAD PARM
      INVALID PROGRAM
      PROGRAM IS MISSING
      LENGTH IS MANDATORY FOR INDIRECT COMMAREA
      LENGTH WITHOUT COMMAREA

   Conditions (RESP/RESP2)
      PGMIDERR/3

d) LOAD PROGRAM() ENTRY()/SET() LENGTH(label) FLENGTH(label)

   Loads a module.
```

The intention in the Z390/CICS environment is to load a table
or some other data, not an executable program.

PROGRAM is mandatory
   Can be specified as PROGRAM('xxxxxxxx') or PROGRAM(label)
   label must point to an 8-byte field.

   At present, only modules with a suffix of .390 may be
   LOADed.

ENTRY and SET are optional
   Must be specified as a permitted general register value.
   Both are equivalent in Z390/CICS.

LENGTH is optional
   LENGTH(label) is the only format.
   label must point to a 2-byte field.

FLENGTH is optional
   FLENGTH(label) is the only format.
   label must point to a 4-byte field.

Note: At task end the LOADed module is not RELEASEd.

Errors
   BAD PARM
   INVALID PROGRAM
   LENGTH AND FLENGTH SPECIFIED
   PROGRAM IS MISSING

Conditions (RESP/RESP2)
   PGMIDERR/3

e) RELEASE PROGRAM()

Releases a previously LOADed module.

PROGRAM is mandatory
   Can be specified as PROGRAM('xxxxxxxx') or PROGRAM(label)
   label must point to an 8-byte field.

Errors
   BAD PARM
   INVALID PROGRAM
   PROGRAM IS MISSING

Conditions (RESP/RESP2)
   INVREQ/5
   INVREQ/6

f) RETURN TRANSID() COMMAREA(label) LENGTH()

Returns to the last caller.

TRANSID
   Optional, but when COMMAREA is specified, TRANSID is mandatory.
   Can be specified as TRANSID('xxxx') or TRANSID(label)
   label must point to a 4-byte field.

COMMAREA(label) is optional
   label may take three forms:
      Direct reference
      Indirect reference

Adcon literal

LENGTH
Can be specified as LENGTH(value) or LENGTH(label)
LENGTH(value) supports the use of the length attribute.
label must point to a 2-byte hex value.

LENGTH can be omitted. When it is, the implied length of the COMMAREA is used. LENGTH is mandatory when COMMAREA is an indirect reference.

Errors
BAD PARM
INVALID TRANSID
TRANSID IS MISSING
LENGTH IS MANDATORY FOR INDIRECT COMMAREA
LENGTH WITHOUT COMMAREA

Conditions (RESP/RESP2)
INVREQ/2 See the section on IGNORE for this condition

g) XCTL PROGRAM() COMMAREA(label) LENGTH()

Executes another CICS program.

If COMMAREA is present and both the address and length are the same as passed to the current program, then address/length are passed to the new program.

If the address or length differs, then a copy of the COMMAREA is taken and the new address/length are passed to the new program.

Return is to the last linker.

PROGRAM is mandatory
Can be specified as PROGRAM('xxxxxxxx') or PROGRAM(label)
label must point to an 8-byte field.

COMMAREA(label) is optional
label may take three forms:
Direct reference
Indirect reference
Adcon literal

LENGTH
Can be specified as LENGTH(value) or LENGTH(label)
LENGTH(value) supports the use of the length attribute.
label must point to a 2-byte hex value.

LENGTH can be omitted. When it is, the implied length of the COMMAREA is used. LENGTH is mandatory when COMMAREA is an indirect reference.

Errors
BAD PARM
INVALID PROGRAM
PROGRAM IS MISSING
LENGTH IS MANDATORY FOR INDIRECT COMMAREA
LENGTH WITHOUT COMMAREA

Conditions (RESP/RESP2)
PGMIDERR/3

Appendicies

Keypress information

Aid	Press
ENTER	Enter or Return
CLEAR	CTRL+C
PA1-PA3	CTRL+F1 to CTRL+F3
PF1-PF12	F1 to F12
PF13-PF24	CTRL+ALT+F1 to CTRL+ALT+F12

References

SC34-6433 CICS Application Programmers Guide
SC34-6434 CICS Application Programmers Reference

Trademarks

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