

ZCICSAPP.TXT

zCICS Application Programming Guide

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

Differences between mainframe operation and zCICS 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 zCICS 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 zCICS 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 zCICS.

PROLOG inserts the following:

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

DFHPCT -- Transaction definition

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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  
DFHBMSCA Mapping support equates  
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  
R10 TCTTE address, must not be modified  
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 (assembler only)

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

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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.

EXEC CICS command syntax (Assembler only)

-----

There is no formal definition of an EXEC CICS command in any IBM Manual.

These assembler syntaxes are currently supported...

a) In-line space separated

name EXEC CICS function subfunction parm parm()

b) In-line comma separated

name EXEC CICS function,subfunction,parm,parm(), parm ()

c) Split, space separated

Non-blank in col 72 is assumed for all lines except the last. Comments are only allowed following a dot or comma delimiter on the last line.

```
name EXEC CICS function
      subfunction
      parm
      parm() parm (). a nice comment
```

d) Split, comma separated

Non-blank in col 72 is assumed for all lines except the last. Comments are allowed on all lines that end with comma+space.

```
name EXEC CICS function,      some
      subfunction,      very
      parm,      nice
      parm(),parm (),      comments
```

name is supported and optional.

EXEC CICS is expected, EXECUTE CICS is not currently supported.

subfunction is optional and depends on the function but must follow function, eg. EXEC CICS WRITEQ TS

parm() without spacing and parm () with spacing are allowed.

VSAM Notes

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See the zCICS VSAM Guide for guidance in the setup of a VSAM environment.  
This document also contains extensions to the VSAM facilities currently available.

### Basic Mapping Support

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The commands RECEIVE MAP, SEND MAP and SEND CONTROL are documented here.

For general BMS documentation and the mapping macros DFHMSD, DFHMDI and DFHMDF see the zCICS BMS Guide.

### zCOBOL support

-----  
EXEC CICS command format follows the rules for COBOL.  
Each command must end END-EXEC (a following dot may affect the logic).

Parameters like SET() which address imported structures may use the ADDRESS OF special register.

LENGTH, FLENGTH and KEYLENGTH which would normally allow a numeric option may use the LENGTH OF special register.

### 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
    - f) ADDRESS
  
  - 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/RRN/GENERIC GTEQ/EQUAL KEYLENGTH()
    - b) STARTBR FILE()/DATASET() RIDFLD() REQID() RBA/XRBA/RRN/GENERIC GTEQ/EQUAL KEYLENGTH()

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- c) READNEXT FILE()/DATASET() INTO()/SET() LENGTH()/FLENGTH()  
RIDFLD() REQID() RBA/XRBA/RRN KEYLENGTH()
  - d) READPREV FILE()/DATASET() INTO()/SET() LENGTH()/FLENGTH()  
RIDFLD() REQID() RBA/XRBA/RRN KEYLENGTH()
  - e) ENDBR FILE()/DATASET() REQID()
  - f) RESETBR FILE()/DATASET() RIDFLD() REQID()  
RBA/XRBA/RRN/GENERIC GTEQ/EQUAL KEYLENGTH()
- 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() IMMEDIATE
  - g) XCTL PROGRAM() COMMAREA() LENGTH()
- 7) Interval Control (10 and 4A)
- a) ASKTIME ABSTIME()
  - b) DELAY INTERVAL()/TIME() FOR/UNTIL HOURS() MINUTES() SECONDS()
  - c) FORMATTIME all parameters
  - d) START TRANSID() INTERVAL()/TIME() TERMID()  
REQID() FROM() LENGTH() QUEUE() RTRANSID() RTERMID()  
AFTER/AT HOURS() MINUTES() SECONDS()
  - e) RETRIEVE INTO()/SET() LENGTH() RTRANSID() RTERMID() QUEUE()
  - f) CANCEL REQID()
- 8) Task Control (12)
- a) ENQ RESOURCE() LENGTH() NOSUSPEND
  - b) DEQ RESOURCE() LENGTH()
- 9) BMS (18)
- a) RECEIVE MAP(name) MAPSET(name) INTO()
  - b) SEND MAP(name) MAPSET(name)

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CURSOR/CURSOR() DATAONLY/MAPONLY ERASE/ERASEAUP  
FROM() LENGTH() ALARM FREEKB FRSET  
SET()

c) SEND CONTROL CURSOR/CURSOR() ERASE/ERASEAUP  
ALARM FREEKB FRSET

10) Dump Control (1C)

DUMP TRANSACTION DUMPCODE() COMPLETE  
FROM() LENGTH()/FLENGTH()  
SEGMENTLIST() LENGTHLIST() NUMSEGMENTS()

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)

Notes:

There is a current limit of 30 AIDs, please request more if needed.

Errors

AN INTERNAL ERROR HAS OCCURRED  
NUMBER OF AIDs EXCEEDS 30

BAD PARM  
HANDLE TYPE NOT RECOGNISED

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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.

Notes:

more There is a current limit of 30 conditions, please request  
if needed.

DSIDERR is supported as equivalent to FILENOTFOUND.

Errors

AN INTERNAL ERROR HAS OCCURRED  
NUMBER OF CONDITIONS EXCEEDS 30

BAD PARM  
HANDLE TYPE NOT RECOGNISED

c) IGNORE CONDITION condition ...

Notes:

Ignoring an error may lead to unpredictable abends.  
There is a current limit of 30 conditions, please request  
more if needed.

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...  
NOHANDLE and any outstanding HANDLE AID will not invoke  
this condition.

DSIDERR is supported as equivalent to FILENOTFOUND.

Errors

BAD PARM

ZCICSAPP.TXT  
IGNORE TYPE NOT RECOGNISED

AN INTERNAL ERROR HAS OCCURRED  
NUMBER OF CONDITIONS EXCEEDS 30

d) POP HANDLE

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

Errors  
BAD PARM  
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  
BAD PARM  
PUSH TYPE NOT RECOGNISED

f) ADDRESS COMMAREA(label) CWA(label) EIB(label)

CWA has a different implementation in zCICS.  
See "CWA Management" in "zCICS Diagnosis Reference"

Errors  
BAD PARM

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.

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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)

Notes:

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

RBA access to a KSDS is not supported.

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

When conditions are raised as a result of a VSAM error, the RPL feedback codes (2nd and 4th bytes) are placed in EIBRCODE +1 and +2.

a) READ FILE()/DATASET() INTO()/SET() LENGTH()/FLENGTH()

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RIDFLD() RBA/XRBA/RRN/GENERIC GTEQ/EQUAL KEYLENGTH()

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 SET is specified, LENGTH/FLENGTH are ignored and LENGERR cannot occur.

If INTO is specified and LENGTH/FLENGTH are not, then the implied length of INTO is used. This may raise the LENGERR condition if the data length is larger.

If LENGTH/FLENGTH is numeric then it specifies the maximum data length that can be received. LENGERR can be raised if  
the  
data length is larger.

If LENGTH/FLENGTH is a label 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.

KEYLENGTH

Can be specified as a constant or label.

A constant must not exceed 32767.

A label must be 2 bytes and must not exceed 32767.

Keylengths greater than 128 are ignored.

The parameter is ignored for ESDS and RRDS.

KEYLENGTH and GENERIC must be paired.

If KEYLENGTH is zero by constant or label then parameters  
are  
changed internally:

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GENERIC/EQUAL or GENERIC/GTEQ  
Becomes KEYLENGTH(1) Key=X'00' GENERIC GTEQ

RBA RIDFLD has a 4-byte RBA  
XRBA RIDFLD has an 8-byte RBA  
RRN RIDFLD has a 4-byte relative record number

#### GTEQ/EQUAL

The parameter is ignored for ESDS and RRDS.

#### GENERIC

KEYLENGTH must be specified.

The parameter is ignored for ESDS and RRDS.

#### Errors

BAD PARM

BOTH FILE AND DATASET ARE SPECIFIED

BOTH GTEQ AND EQUAL ARE SPECIFIED

BOTH INTO AND SET ARE SPECIFIED

BOTH LENGTH AND FLENGTH ARE SPECIFIED

BOTH RBA AND XRBA ARE SPECIFIED

BOTH RRN AND (X)RBA ARE SPECIFIED

FILE OR DATASET MUST BE SPECIFIED

GENERIC CANNOT BE SPECIFIED WITH RRN OR (X)RBA

GENERIC REQUIRES KEYLENGTH

INTO OR SET MUST BE SPECIFIED

INVALID FILE OR DATASET

KEYLENGTH REQUIRES GENERIC

RIDFLD IS MANDATORY

#### Conditions (RESP/RESP2)

FILENOTFOUND/1

DISABLED/50

ILLOGIC/110

INVREQ/20

INVREQ/25

INVREQ/42

LENGERR/E1

NOTFND/80

NOTOPEN/60

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

REQID

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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

RRN RIDFLD has a 4-byte relative record number

KEYLENGTH

Can be specified as a constant or label.

A constant must not exceed 32767.

A label must be 2 bytes and must not exceed 32767.

Keylengths greater than 128 are ignored.

The parameter is ignored for ESDS and RRDS.

KEYLENGTH and GENERIC must be paired.

If KEYLENGTH is zero by constant or label then parameters are

changed internally:

GENERIC/EQUAL or GENERIC/GTEQ

Becomes KEYLENGTH(1) Key=X'00' GENERIC GTEQ

GTEQ/EQUAL

The parameter is ignored for ESDS and RRDS.

GENERIC

KEYLENGTH must be specified.

The parameter is ignored for ESDS and RRDS.

Errors

BAD PARM

BOTH FILE AND DATASET ARE SPECIFIED

BOTH GTEQ AND EQUAL ARE SPECIFIED

BOTH RBA AND XRBA ARE SPECIFIED

BOTH RRN AND (X)RBA ARE SPECIFIED

FILE OR DATASET MUST BE SPECIFIED

GENERIC CANNOT BE SPECIFIED WITH RRN OR (X)RBA

GENERIC REQUIRES KEYLENGTH

INVALID FILE OR DATASET

KEYLENGTH REQUIRES GENERIC

RIDFLD IS MANDATORY

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Conditions (RESP/RESP2)

DISABLED/50  
FILENOTFOUND/1  
ILLOGIC/110  
INVREQ/20  
INVREQ/25  
INVREQ/33  
INVREQ/42  
NOTFND/80  
NOTOPEN/60

Note: NOTFND cannot occur for an ESDS or RRDS

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

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

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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

RRN RIDFLD has a 4-byte relative record number

KEYLENGTH

Can be specified as a constant or label.

A constant must not exceed 32767.

A label must be 2 bytes and must not exceed 32767.

Keylengths greater than 128 are ignored.

The parameter is ignored for ESDS and RRDS.

If KEYLENGTH is zero by constant or label then parameters are

changed internally:

GENERIC/EQUAL or GENERIC/GTEQ

Becomes KEYLENGTH(1) Key=X'00' GENERIC GTEQ

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

BOTH RRN AND (X)RBA 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

ILLOGIC/110

INVREQ/20

INVREQ/25

INVREQ/26

INVREQ/34

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INVREQ/42  
LENGERR/E1  
NOTFND/80  
NOTOPEN/60

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

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

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RRN RIDFLD has a 4-byte relative record number

KEYLENGTH

Can be specified as a constant or label.

A constant must not exceed 32767.

A label must be 2 bytes and must not exceed 32767.

Keylengths greater than 128 are ignored.

The parameter is ignored for ESDS and RRDS.

If KEYLENGTH is specified, the value must be equal to the keylength defined for the file.

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

BOTH RRN AND (X)RBA 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

ILLOGIC/110

INVREQ/20

INVREQ/24

INVREQ/26

INVREQ/41

LENGERR/E1

NOTFND/80

NOTOPEN/60

Note: ENDFILE can occur 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.

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REQID

Can be specified as a constant, literal or label.

A constant must not exceed 32767.

32767. A literal or label must be 2 bytes and must not exceed

If omitted, zero is assumed.

Note: In real CICS, ENDBR cannot cause a file to open, but it will in zCICS. 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

ILLOGIC/110

INVREQ/20

INVREQ/35

NOTOPEN/60

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

REQID

Can be specified as a constant, literal or label.

A constant must not exceed 32767.

32767. A literal or label must be 2 bytes and must not exceed

If omitted, zero is assumed.

RBA RIDFLD has a 4-byte RBA

XRBA RIDFLD has an 8-byte RBA

RRN RIDFLD has a 4-byte relative record number

KEYLENGTH

Can be specified as a constant or label.

A constant must not exceed 32767.

A label must be 2 bytes and must not exceed 32767.

Keylengths greater than 128 are ignored.

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The parameter is ignored for ESDS and RRDS.  
KEYLENGTH and GENERIC must be paired.

are  
If KEYLENGTH is zero by constant or label then parameters  
changed internally:

    GENERIC/EQUAL or GENERIC/GTEQ  
    Becomes KEYLENGTH(1) Key=X'00' GENERIC GTEQ

GTEQ/EQUAL

The parameter is ignored for ESDS and RRDS.

GENERIC

KEYLENGTH must be specified.  
The parameter is ignored for ESDS and RRDS.

may  
Note: In real CICS, RESETBR cannot cause a file to open, but it  
will in zCICS. The RESETBR command will be invalid, and  
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  
BOTH RRN AND (X)RBA ARE SPECIFIED  
FILE OR DATASET MUST BE SPECIFIED  
GENERIC CANNOT BE SPECIFIED WITH RRN OR (X)RBA  
GENERIC REQUIRES KEYLENGTH  
INVALID FILE OR DATASET  
KEYLENGTH REQUIRES GENERIC  
RIDFLD IS MANDATORY

Conditions (RESP/RESP2)

DISABLED/50  
FILENOTFOUND/1  
ILLOGIC/110  
INVREQ/20  
INVREQ/25  
INVREQ/36  
INVREQ/42  
NOTFND/80  
NOTOPEN/60

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Note: NOTFND cannot occur for an ESDS or RRDS

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.

zCOBOL supports all 3 data types, but for mainframe COBOL programs only label is supported.

Only the first byte generated by the parameter is used.

Errors

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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.

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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.

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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.

Note: For compatibility with old releases of CICS, ITEM is accepted without REWRITE and becomes NUMITEMS. ITEM must be a label in this case.

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

LENGTH IS MANDATORY FOR INDIRECT FROM

LENGTH WITHOUT FROM

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NUMITEMS MUST BE A LABEL (MAY HAVE ORIGINATED AS ITEM)  
QUEUE OR QNAME MUST BE SPECIFIED  
REWRITE REQUIRES ITEM  
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.

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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 zCICS environment is to load a table or

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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 zCICS.

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

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Conditions (RESP/RESP2)

INVREQ/5

INVREQ/6

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

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

IMMEDIATE REQUIRES TRANSID

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.

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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.

is If the address or length differs, then a copy of the COMMAREA 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

7) Interval Control (10 and 4A)

a) ASKTIME ABSTIME()

Errors

BAD PARM

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b) DELAY INTERVAL()/TIME() FOR/UNTIL HOURS() MINUTES() SECONDS()

REQID is not supported.

INTERVAL

Can be specified as INTERVAL(s) through to INTERVAL(hhmmss).  
ie. INTERVAL(234) means wait for 2 minutes 34 seconds.

INTERVAL(label) is also permitted (extension).  
label must point to a 6-byte character field with leading  
character zeros as needed.

eg. INTERVAL(MYTIME)  
...  
MYTIME DC C'000234'

TIME

Can be specified as TIME(s) through to TIME(hhmmss).  
ie. TIME(234) means resume the task at 2 mins 34secs after  
midnight. Expiration time rules apply, see the IBM

Application

Programming Guide.

TIME(label) is also permitted (extension).  
label must point to a 6-byte character field with leading  
character zeros as needed.

eg. TIME(MYTIME)  
...  
MYTIME DC C'000234'

FOR HOURS() MINUTES() SECONDS()

FOR is an alternative to INTERVAL.  
HOURS/MINUTES/SECONDS must be numeric values.

UNTIL HOURS() MINUTES() SECONDS()

UNTIL is an alternative to TIME.  
HOURS/MINUTES/SECONDS must be numeric values.  
The result from the parameters is a time-of-day.  
eg. UNTIL SECONDS(10000) means resume the task at 02:46:40.  
Expiration time rules apply, see the IBM Application  
Programming Guide.

If no parameters are specified, then DELAY INTERVAL(0) is  
assumed.

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Errors

BAD PARM  
BOTH FOR AND UNTIL ARE SPECIFIED  
BOTH INTERVAL AND TIME ARE SPECIFIED  
FOR/UNTIL SPECIFIED, BUT NO TIME PARMS  
HOURS/MINUTES/SECONDS ARE INVALID WITH INTERVAL OR TIME  
HOURS/MINUTES/SECONDS ARE SPECIFIED WITHOUT FOR/UNTIL  
INTERVAL/TIME CANNOT BE SPECIFIED WITH FOR/UNTIL  
INTERVAL/TIME MUST BE 1 TO 6 BYTES  
REQID NOT SUPPORTED

Conditions (RESP/RESP2)

INVREQ/4  
INVREQ/5  
INVREQ/6

c) FORMATTIME all parameters

Notes:

STRINGFORMAT is discarded as there is only one option.

DATESEP(label) and TIMESEP(label) are added as extensions.  
Only the first byte is used.

DATESTRING returns the following 25-byte string.  
The timezone (eg. GMT) is not returned.  
eg. "Mon, 17 Dec 2007 10:20:30"

Errors

ABSTIME IS MANDATORY  
BAD PARM

Conditions (RESP/RESP2)

INVREQ/1

d) START TRANSID() INTERVAL()/TIME() TERMID()  
REQID() FROM() LENGTH() QUEUE() RTRANSID() RTERMID()  
AFTER/AT HOURS() MINUTES() SECONDS()

USERID is not supported.

INTERVAL and TIME follow the same syntax and rules as for  
DELAY.

AFTER and AT follow the same syntax and rules as FOR and UNTIL  
in DELAY above.

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Errors

AFTER/AT SPECIFIED, BUT NO TIME PARAMETERS  
BAD PARM  
BOTH AFTER AND AT ARE SPECIFIED  
BOTH INTERVAL AND TIME ARE SPECIFIED  
FROM/LENGTH MUST BOTH BE MISSING OR BOTH SPECIFIED  
HOURS/MINUTES/SECONDS ARE INVALID WITH INTERVAL OR TIME  
HOURS/MINUTES/SECONDS ARE SPECIFIED WITHOUT AFTER/AT  
INTERVAL/TIME CANNOT BE SPECIFIED WITH AFTER/AT  
INTERVAL/TIME MUST BE 1 TO 6 BYTES  
INVALID QUEUE  
INVALID REQID  
INVALID RTERMID  
INVALID RTRANSID  
INVALID TERMID  
INVALID TRANSID  
TRANSID IS MANDATORY

Conditions (RESP/RESP2)

INVREQ/0  
INVREQ/4  
INVREQ/5  
INVREQ/6  
LENGERR  
IOERR  
TERMIDERR  
TRANSIDERR

e) RETRIEVE INTO()/SET() LENGTH() RTRANSID() RTERMID() QUEUE()

WAIT is not supported.

Errors

BAD PARM  
BOTH INTO AND SET ARE SPECIFIED  
INTO OR SET MUST BE SPECIFIED  
INVALID QUEUE  
INVALID RTERMID  
INVALID RTRANSID  
LENGTH MUST BE A LABEL  
SET REQUIRES LENGTH

Conditions (RESP/RESP2)

INVREQ/0

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ENDDATA  
ENVDEFERR  
LENGERR

f) CANCEL REQID()

Note: CANCEL cannot currently be used to terminate a DELAY as  
EXEC CICS DELAY does not support the REQID parameter.

TRANSID is not supported.

Errors

BAD PARM  
INVALID REQID  
REQID IS MANDATORY

Conditions (RESP/RESP2)

INVREQ  
NOTFND

8) Task Control (12)

a) ENQ RESOURCE() LENGTH() NOSUSPEND

Errors

BAD PARM  
RESOURCE IS MANDATORY

\*\*\* ENQ ON ADDRESS MAY NOT WORK IN zCICS  
\*\*\* BUT THE COMMAND WILL BE PROCESSED  
\*\*\* PLEASE CONTACT THE AUTHOR FOR ADVICE

Conditions (RESP/RESP2)

ENQBUSY  
LENGERR/1

b) DEQ RESOURCE() LENGTH()

Errors

BAD PARM  
RESOURCE IS MANDATORY

Conditions (RESP/RESP2)

LENGERR/1

9) BMS (18)

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a) RECEIVE MAP(name) MAPSET(name) INTO()

TERMINAL and ASIS are accepted and discarded.  
SET, FROM and LENGTH are not supported.

MAP can be a quoted string, maximum 7 characters. or a label pointing to a 7-byte field.

If MAP is a label, then INTO is mandatory.

Note: The map structure will not be cleared before the mapping takes place.

If MAP is a string, then INTO is optional...

If INTO is omitted, the default is map.I

Note: The map structure will be cleared before the mapping takes place.

MAPSET can be a quoted string, maximum 7 characters. or an address pointing to an 8-byte field containing no more than 7 characters.

If MAPSET is omitted, then the MAPname is used.

Errors

BAD PARM  
FROM NOT SUPPORTED  
INVALID MAP NAME  
INVALID MAPSET NAME  
LENGTH NOT SUPPORTED  
MAP IS MANDATORY

Conditions (RESP/RESP2)

Note: EIBRESP2 is an extension for MAPFAIL, please see the zCICS BMS Guide for more information.

Many of the conditions can arise through a mismatch of map and structure. Typically a map is re-assembled but the programs using it are not.

INVMPsz/0

MAPFAIL/1 The map cannot be found in the mapset.  
MAPFAIL/2 A short read key (CLEAR or PA) has been pressed or there are no modified fields.  
MAPFAIL/3 Data has been received, but there are no named fields in the map.

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MAPFAIL/4 An SBA has been located, but there is no field  
in the map that matches.  
MAPFAIL/5 An SBA has been located, but it matches an  
unnamed field.  
MAPFAIL/6 The data received for this field is longer than  
the DFHMDF LENGTH= parameter.  
MAPFAIL/7 There has been a mismatch between the physical  
map and the DSECT.  
MAPFAIL/8 Data to be processed by PICIN is over 31 digits.  
Data is not numeric after being PACKed.  
Data length is greater than the edit pattern

allows.

b) SEND MAP() MAPSET()  
CURSOR/CURSOR() DATAONLY/MAPONLY ERASE/ERASEAUP  
FROM() LENGTH()  
ALARM FREEKB FRSET  
SET()

TERMINAL and WAIT are accepted and discarded.  
ACCUM is not supported.

MAP can be a quoted string, maximum 7 characters. or a label  
pointing to a 7-byte field.

If MAP is a label, then FROM and LENGTH are mandatory.

If MAP is a string, then FROM and/or LENGTH are optional...  
If FROM is omitted, the default is map.O  
If LENGTH is omitted, the default is map.L

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.  
If LENGTH is shorter than the map structure length,  
unpredictable results may occur.

MAPSET can be a quoted string, maximum 7 characters. or a  
label pointing to an 8-byte field containing no more than  
7 characters.

If MAPSET is omitted, then MAP is used.

SET() is currently intended to be an internal parameter.

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It does not conform to the standard used for BMS PAGING.

Errors

BAD PARM  
CONTROL IS NOT COMPATABLE WITH SEND MAP  
CURSOR POSITION AND SYMBOLIC CURSOR SPECIFIED  
DATAONLY AND MAPONLY SPECIFIED  
ERASE AND ERASEAUP SPECIFIED  
FROM IS REQUIRED WHEN MAP IS A LABEL  
INVALID MAP NAME  
INVALID MAPSET NAME  
LENGTH IS REQUIRED WHEN MAP IS A LABEL  
MAP IS MANDATORY

Conditions (RESP/RESP2)

Note: EIBRESP2 is an extension for MAPFAIL, please see the  
zCICS BMS Guide for more information.

INVMPSZ/0

MAPFAIL/1 The map cannot be found in the mapset.  
MAPFAIL/8 Data to be processed by PICOUT is over 31 digits.  
Data is not numeric after being PACKed.  
Data length is greater than the edit pattern

allows.

- c) SEND CONTROL CURSOR/CURSOR() ERASE/ERASEAUP  
ALARM FREEKB FRSET

TERMINAL and WAIT are accepted and discarded.  
ACCUM and SET are not supported.

CURSOR() refers to the 24x80 screen.

CURSOR is not documented.

SEND CONTROL CURSOR ERASEAUP means erase all input fields  
and don't move the cursor.

Errors

BAD PARM  
CURSOR POSITION AND SYMBOLIC CURSOR SPECIFIED  
ERASE AND ERASEAUP SPECIFIED

- 10) Dump Control (1C)  
DUMP TRANSACTION DUMPCODE() COMPLETE  
FROM() LENGTH()/FLENGTH()

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SEGMENTLIST() LENGTHLIST() NUMSEGMENTS()

TRANSACTION is mandatory.

DUMPCODE is mandatory and can be a constant or label.

label must point to a 4-byte field.

No syntax checking is done.

COMPLETE

If there are no storage area parameters then COMPLETE is the default. Produces a SNAP dump ID=997,TEXT='DUMP dddd COMPLETE'

If there are storage area parameters and COMPLETE is not specified, only the storage areas are dumped.

FROM() LENGTH()/FLENGTH()

Produces a SNAP dump ID=997,TEXT='DUMP dddd AREA'

LENGTH

Can be specified as a constant or label.

A constant must not exceed 32767.

A label must be 2 bytes and must not exceed 32767.

FLENGTH

Can be specified as a constant or label.

A constant must not exceed 2G-1.

A label must be 4 bytes and must not exceed 2G-1.

SEGMENTLIST/LENGTHLIST/NUMSEGMENTS

Produces multiple SNAP dumps ID=997,TEXT='DUMP dddd SEGMENT  
nnn'

NUMSEGMENTS

Can be specified as a constant or label.

A constant must not exceed 2G-1.

A label must be 4 bytes and must not exceed 2G-1.

Errors

BAD PARM

BOTH LENGTH AND FLENGTH ARE SPECIFIED

DUMPCODE IS GREATER THAN 4 BYTES

DUMPCODE MUST BE SPECIFIED

LENGTH OR FLENGTH REQUIRES FROM

LENGTH OR FLENGTH MUST BE SPECIFIED

SEGMENTLIST, LENGTHLIST AND NUMSEGMENTS MUST ALL BE SPECIFIED

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OR ALL ABSENT  
TRANSACTION MUST BE SPECIFIED

Appendices

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Keypress information

| Aid/Function | 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 |
| <br>         |                             |
| ERASE EOF    | CTRL+F6                     |
| ERASE INPUT  | CTRL+F7                     |

Change Summary

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February 21, 2009

DFHEIGBL has been removed.  
zCOBOL support for GETMAIN INITIMG added.  
zCOBOL section added for EXEC CICS commands.  
EXEC CICS SEND MAP supports SET(), but incompatibly.

November 24, 2008

Logic of READ with SET has changed slightly.  
Extra reason for MAPFAIL/8.

GR2 has been eliminated from internal code and is available as a base register (it isn't advised owing to instructions that may modify it).

DFHEIRET macro has been withdrawn, it is now incorporated into EXEC CICS RETURN.

Added a section on EXEC CICS command syntax.  
SEND MAP has FROM, LENGTH and MAP(label) support.  
RECEIVE MAP has INTO() support.  
DSIDERR is supported for HANDLE/IGNORE CONDITION.  
WRITEQ TS supports ITEM without REWRITE, messages changed.  
Added START, RETRIEVE and CANCEL commands.  
Added IMMEDIATE to EXEC CICS RETURN.  
Added ENQ and DEQ commands.

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June 27, 2008

Added ERASE EOF and ERASE INPUT to the keypress table  
Added commands RECEIVE MAP, SEND MAP, SEND CONTROL and references  
to the new BMS document.

January 18, 2008

Added READ/STARTBR/RESETBR parameters:  
RRN, GTEQ, EQUAL, GENERIC, KEYLENGTH  
Added READNEXT/READPREV parameters RRN, KEYLENGTH  
Added ASKTIME, DELAY, FORMATTIME  
Added DUMP TRANSACTION

References

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

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