

zCICS

Application Programming Guide v11



Automated Software Tools Corporation.

zCICS Application Programming Guide

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Introduction

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
- DFHFCT – File definitions and options
- EXEC -- Converts EXEC CICS statements into a unique macro call with a parameter list
- DFHREGS – A synonym for EQUREGS

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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 DFHREGS/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:

```
e.g.  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.

```
e.g.          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
i.e. if you code DATAREG=(R6,R7) you will get DATAREG=(R13,R7).

There is no cross-checking for register conflicts.

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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 column 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 column 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,
e.g. EXEC CICS WRITEQ TS

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

VSAM Notes

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.

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Basic Mapping Support

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

For general BMS documentation and the mapping macros DFHMDS, DFHMDSI and DFHMDSF 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.

Extra Parameters

You can add NOEDF to any EXEC CICS command if you wish that command to be excluded from a CEDF session.

You can add NOEDF to the CALL MZ390 if you wish all CEDF intercepts in that program excluded.

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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
 - g) ASSIGN
- 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()
 - 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()/FLENGTH()
NUMITEMS() ITEM()/NEXT
 - c) WRITEQ TS QUEUE()/QNAME() FROM() LENGTH()/FLENGTH()
NUMITEMS() ITEM() REWRITE

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

- 7) Interval Control (10 and 4A)
 - a) ASKTIME ABSTIME()
 - b) DELAY REQID()/INTERVAL()/TIME() FOR/UNTIL HOURS() MINUTES() SECONDS()
 - c) FORMATTIME all parameters
 - d) START TRANSID() INTERVAL()/TIME() TERMID() CHANNEL() 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) 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)
 - a) DUMP TRANSACTION DUMPCODE() COMPLETE FROM() LENGTH()/FLENGTH() SEGMENTLIST() LENGTHLIST() NUMSEGMENTS()

- 11) Inquire (4C)
 - a) INQUIRE FILE
 - b) SET FILE

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- 12) Channels and Containers (34 and 96)
 - a) GET CONTAINER() CHANNEL() INTO()/SET()/NODATA FLENGTH()
 - b) PUT CONTAINER() CHANNEL() FROM() FLENGTH()
 - c) DELETE CONTAINER() CHANNEL()
 - d) MOVE CONTAINER() AS() CHANNEL() TOCHANNEL()
 - e) STARTBROWSE CONTAINER CHANNEL() BROWSETOKEN()
 - f) GETNEXT CONTAINER() BROWSETOKEN()
 - g) ENDBROWSE CONTAINER BROWSETOKEN()

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Supported EXEC CICS commands (detail by type)

1) General commands (02)

a) HANDLE AID

Name	Operation	Operands
name	EXEC CICS	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

e.g. 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
- NO PARAMETERS SPECIFIED
- NUMBER OF AIDs EXCEEDS 30
- BAD PARM
- HANDLE TYPE NOT RECOGNISED

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b) HANDLE CONDITION

Name	Operation	Operands
name	EXEC CICS	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:

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

DSIDERR is supported as a synonym to FILENOTFOUND.

Errors

- AN INTERNAL ERROR HAS OCCURRED
- NUMBER OF CONDITIONS EXCEEDS 30
- BAD PARM
- HANDLE TYPE NOT RECOGNISED

c) IGNORE CONDITION

Name	Operation	Operands
name	EXEC CICS	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 a synonym to FILENOTFOUND.

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Errors

BAD PARM
IGNORE TYPE NOT RECOGNISED
AN INTERNAL ERROR HAS OCCURRED
NO PARAMETERS SPECIFIED
NUMBER OF CONDITIONS EXCEEDS 30

d) POP HANDLE

Name	Operation	Operands
name	EXEC CICS	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

Name	Operation	Operands
name	EXEC CICS	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

Name	Operation	Operands
name	EXEC CICS	ADDRESS COMMAREA(label) CWA(label) EIB(label)

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

Errors

BAD PARM

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g) ASSIGN

Name	Operation	Operands
name	EXEC CICS	ASSIGN

The following parameters are not supported:

ACTIVITY,ACTIVITYID,ALTSCRNHT,ALTSCRNWD,APPLID,
ASRAINTRPT,ASRAKEY,ASRASPC,ASRASTG,BRIDGE,
DELIMITER,DESTCOUNT,DESTID,DESTIDLENG,GCHARS,GCODES,I
NITPARM,INITPARMLEN,INPARTN,
LDCMNEM,LDCNUM,NETNAME,NUMTAB,OPCLASS,OPERKEYS,
OPID,OPSECURITY,ORGABCODE,PAGENUM,
PARTNPAGE,PARTNPAGE,PRINSYSID,PROCESS,
PROCESSTYPE,QNAME,SIGDATA,STATIONID,SYSID,
TELLERID,USERID,USERNAME

Note: zCICS allows a CWA size greater than 32K. If the CWA
does exceed 32K, then ASSIGN CWALENG() will return an
incorrect value.

Conditions (RESP/RESP2)

INVREQ/2
INVREQ/5

Errors

BAD PARM

2) Terminal Control (04)

a) RECEIVE

Name	Operation	Operands
name	EXEC CICS	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.

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Errors

BAD PARM
BOTH INTO AND LENGTH ARE REQUIRED
LENGTH ERROR

Conditions (RESP/RESP2)

NOTALLOC/0
LENGERR/0

b) SEND

Name	Operation	Operands
name	EXEC CICS	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.

The parameters TERMINAL, WAIT, DEFAULT and TEXT are discarded.

Errors

BAD PARM
FROM IS MANDATORY
LENGTH IS MANDATORY

Conditions (RESP/RESP2)

INVREQ/0

Note: Attempt to execute this in a non-terminal attached task.
This is not documented in the Manual.

LENGERR/E1

c) SEND CONTROL

Name	Operation	Operands
name	EXEC CICS	SEND CONTROL CURSOR/CURSOR()

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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

Conditions (RESP/RESP2)

INVREQ/0

Note: Attempt to execute this in a non-terminal attached task.
This is not documented in the Manual.

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

Name	Operation	Operands
name	EXEC CICS	READ FILE()/DATASET() INTO()/SET() LENGTH()/FLENGTH() RIDFLD() RBA/XRBA/RRN/GENERIC

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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:

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

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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

Name	Operation	Operands
name	EXEC CICS	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

Conditions (RESP/RESP2)

DISABLED/50
FILENOTFOUND/1

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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

Name	Operation	Operands
name	EXEC CICS	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.

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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

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

THIS TYPE OF INTO REQUIRES LENGTH/FLENGTH

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

d) READPREV

Name	Operation	Operands
name	EXEC CICS	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.

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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 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
THIS TYPE OF INTO REQUIRES LENGTH/FLENGTH

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.

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e) ENDBR

Name	Operation	Operands
name	EXEC CICS	ENDBR FILE()/DATASET() REQID()

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 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

f) RESETBR

Name	Operation	Operands
name	EXEC CICS	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.

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

If omitted, zero is assumed.

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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.

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

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ILLOGIC/110
INVREQ/20
INVREQ/25
INVREQ/36
INVREQ/42
NOTFND/80
NOTOPEN/60

Note: NOTFND cannot occur for an ESDS or RRDS

4) Storage Control (08)

a) FREEMAIN

Name	Operation	Operands
name	EXEC CICS	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

Name	Operation	Operands
name	EXEC CICS	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.

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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

BAD PARM

BOTH LENGTH AND FLENGTH ARE SPECIFIED

LENGTH OR FLENGTH MUST BE SPECIFIED

SET IS MANDATORY

5) Temporary Storage Control (0A)

Note:

FLENGTH is an extension; do not use this parameter if the source code is likely to be ported back to a mainframe environment.

a) DELETEQ

Name	Operation	Operands
name	EXEC CICS	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.

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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

Name	Operation	Operands
name	EXEC CICS	READQ TS QUEUE()/QNAME() INTO()/SET() LENGTH()/FLENGTH() 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.

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.

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LENGTH/FLENGTH can be omitted. When they are, the implied length of INTO is used. LENGTH/FLENGTH 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 LENGTH AND FLENGTH 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

Name	Operation	Operands
name	EXEC CICS	WRITEQ TS QUEUE()/QNAME() FROM() LENGTH()/FLENGTH() 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.

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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.

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 can be omitted. When they are, the implied length of FROM is used.

LENGTH/FLENGTH 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 LENGTH AND FLENGTH ARE SPECIFIED

BOTH QUEUE AND QNAME ARE SPECIFIED

FROM IS MANDATORY

IF NUMITEMS IS SPECIFIED, ITEM AND REWRITE ARE INVALID

INVALID QUEUE OR QNAME

LENGTH/FLENGTH IS MANDATORY FOR INDIRECT FROM

LENGTH WITHOUT FROM

NUMITEMS MUST BE A LABEL (MAY HAVE ORIGINATED AS ITEM)

QUEUE OR QNAME MUST BE SPECIFIED

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REWRITE REQUIRES ITEM
WRITEQ TYPE NOT RECOGNIZED

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

6) Program Control (0E)

a) ABEND

Name	Operation	Operands
name	EXEC CICS	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

Name	Operation	Operands
name	EXEC CICS	HANDLE ABEND CANCEL

Name	Operation	Operands
name	EXEC CICS	HANDLE ABEND RESET

Name	Operation	Operands
name	EXEC CICS	HANDLE ABEND LABEL(label)

label may take three forms:

Direct reference
Indirect reference
Adcon literal

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Name	Operation	Operands
name	EXEC CICS	HANDLE ABEND PROGRAM()

Can be specified as PROGRAM('xxxxxxx') 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
HANDLE TYPE NOT RECOGNISED
INVALID PROGRAM
NO PARAMETERS SPECIFIED
PARMS MISSING OR TOO MANY PARMS

c) LINK

Name	Operation	Operands
name	EXEC CICS	LINK PROGRAM() COMMAREA(label) LENGTH() CHANNEL()

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

In zCICS both CHANNEL and COMMAREA may be specified.
A warning MNOTE is issued.

PROGRAM is mandatory

Can be specified as PROGRAM('xxxxxxx') 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

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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 CHANNEL
INVALID PROGRAM
PROGRAM IS MISSING
LENGTH IS MANDATORY FOR INDIRECT COMMAREA
LENGTH WITHOUT COMMAREA

Warning

CHANNEL and COMMAREA specified

Conditions (RESP/RESP2)

CHANNELERR/1
PGMIDERR/3

d) LOAD

Name	Operation	Operands
name	EXEC CICS	LOAD PROGRAM() ENTRY()/SET() LENGTH(label) FLENGTH(label)

Loads a module.

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

PROGRAM is mandatory

Can be specified as PROGRAM('xxxxxxx') 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.

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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

Name	Operation	Operands
name	EXEC CICS	RELEASE PROGRAM()

Releases a previously LOAded module.

PROGRAM is mandatory

Can be specified as PROGRAM('xxxxxxx') 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

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f) RETURN

Name	Operation	Operands
name	EXEC CICS	RETURN TRANSID() COMMAREA(label) LENGTH() CHANNEL() IMMEDIATE

Returns to the last caller.

In zCICS both CHANNEL and COMMAREA may be specified.
A warning MNOTE is issued.

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 CHANNEL
INVALID TRANSID
TRANSID IS MISSING
LENGTH IS MANDATORY FOR INDIRECT COMMAREA
LENGTH WITHOUT COMMAREA

Warning

CHANNEL and COMMAREA specified

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Conditions (RESP/RESP2)

See the section on IGNORE for these conditions. Go [here](#)

CHANNELERR/1

INVREQ/1

INVREQ/2

g) XCTL

Name	Operation	Operands
name	EXEC CICS	XCTL PROGRAM() COMMAREA(label) LENGTH() CHANNEL()

Executes another CICS program.

In zCICS both CHANNEL and COMMAREA may be specified.
A warning MNOTE is issued.

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.

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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 CHANNEL
INVALID PROGRAM
PROGRAM IS MISSING
LENGTH IS MANDATORY FOR INDIRECT COMMAREA
LENGTH WITHOUT COMMAREA

Warning

CHANNEL and COMMAREA specified

Conditions (RESP/RESP2)

CHANNELERR/1
PGMIDERR/3

7) Interval Control (10 and 4A)

Note:

FLENGTH is an extension; do not use this parameter if the source code is likely to be ported back to a mainframe environment.

a) ASKTIME

Name	Operation	Operands
name	EXEC CICS	ASKTIME ABSTIME()

Errors

BAD PARM

b) DELAY

Name	Operation	Operands
name	EXEC CICS	DELAY REQID() INTERVAL()/TIME() FOR/UNTIL HOURS() MINUTES() SECONDS()

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INTERVAL

Can be specified as INTERVAL(s) through to INTERVAL(hhmmss).
i.e. 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.

e.g. INTERVAL(MYTIME)

```
...  
MYTIME DC C'000234'
```

TIME

Can be specified as TIME(s) through to TIME(hhmmss).
i.e. TIME(234) means resume the task at 2 minutes 34 seconds 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.

e.g. 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.

e.g. 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.

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

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INVALID REQID

Conditions (RESP/RESP2)

INVREQ/4

INVREQ/5

INVREQ/6

c) FORMATTIME

Name	Operation	Operands
name	EXEC CICS	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 time zone (e.g. GMT) is not returned.
e.g. "Mon, 17 Dec 2007 10:20:30"

Errors

ABSTIME IS MANDATORY

BAD PARM

Conditions (RESP/RESP2)

INVREQ/1

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d) START

Name	Operation	Operands
name	EXEC CICS	START TRANSID() INTERVAL()/TIME() TERMID() REQID() FROM() LENGTH()/FLENGTH() CHANNEL() QUEUE() RTRANSID() RTERMID() AFTER/AT HOURS() MINUTES() SECONDS()

USERID is not supported.

In zCICS both CHANNEL and other parms may be specified.

A warning MNOTE is issued.

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.

Errors

AFTER/AT SPECIFIED, BUT NO TIME PARAMETERS
BAD PARM
BOTH AFTER AND AT ARE SPECIFIED
BOTH INTERVAL AND TIME ARE SPECIFIED
BOTH LENGTH AND FLENGTH ARE SPECIFIED
FROM/(F)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 CHANNEL
INVALID QUEUE
INVALID REQID
INVALID RTERMID
INVALID RTRANSID
INVALID TERMID
INVALID TRANSID
TRANSID IS MANDATORY

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Warning

CHANNEL AND OTHER PARMS SPECIFIED BUT ALLOWED

Conditions (RESP/RESP2)

CHANNELERR/1
INVREQ/0
INVREQ/4
INVREQ/5
INVREQ/6
IOERR
LENGERR
TERMIDERR
TRANSIDERR

e) RETRIEVE

Name	Operation	Operands
name	EXEC CICS	RETRIEVE INTO()/SET() LENGTH()/FLENGTH() RTRANSID() RTERMID() QUEUE()

WAIT is not supported.

Errors

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

Conditions (RESP/RESP2)

INVREQ/0
ENDDATA
ENVDEFERR
LENGERR

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f) CANCEL

Name	Operation	Operands
name	EXEC CICS	CANCEL REQID()

TRANSID is not supported.

Errors

BAD PARM
INVALID REQID
REQID IS MANDATORY

Conditions (RESP/RESP2)

INVREQ
NOTFND

8) Task Control (12)

a) ENQ

Name	Operation	Operands
name	EXEC CICS	ENQ RESOURCE() LENGTH() NOSUSPEND

LENGTH

Can be specified as LENGTH(value) or LENGTH(label)
LENGTH(value) supports the use of the length attribute.

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

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b) DEQ

Name	Operation	Operands
name	EXEC CICS	DEQ RESOURCE() LENGTH()

LENGTH

Can be specified as LENGTH(value) or LENGTH(label)
LENGTH(value) supports the use of the length attribute.

Errors

BAD PARM
RESOURCE IS MANDATORY

Conditions (RESP/RESP2)

LENGERR/1

9) BMS (18)

a) RECEIVE MAP

Name	Operation	Operands
name	EXEC CICS	RECEIVE MAP() MAPSET() 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.l

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

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FROM NOT SUPPORTED
INTO IS REQUIRED WHEN MAP IS A LABEL
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.

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.

INVREQ/0

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b) SEND MAP

Name	Operation	Operands
name	EXEC CICS	SEND MAP() MAPSET() CURSOR/CURSORS() 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 is 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

LENGTH is supported but the value used is always that of the structure 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.

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.

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

Errors

BAD PARM

CONTROL IS NOT COMPATIBLE WITH SEND MAP

CURSOR POSITION AND SYMBOLIC CURSOR SPECIFIED

DATAONLY AND MAPONLY SPECIFIED

ERASE AND ERASEAUP SPECIFIED

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FROM IS REQUIRED WHEN MAP IS A LABEL
INVALID MAP NAME
INVALID MAPSET NAME
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.

MAPFAIL/9 Override field or colour attribute is invalid

INVREQ/0

Note: Attempt to execute this in a non-terminal attached task.
This is not documented in the Manual.

10) Dump Control (1C)

a) DUMP

Name	Operation	Operands
name	EXEC CICS	DUMP TRANSACTION DUMPCODE() COMPLETE FROM() LENGTH()/FLENGTH() 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'

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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 OR ALL ABSENT

TRANSACTION MUST BE SPECIFIED

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11) System (4C)

a) INQUIRE FILE

The following formats are supported:

Name	Operation	Operands
name	EXEC CICS	INQUIRE FILE START
name	EXEC CICS	INQUIRE FILE START AT()
name	EXEC CICS	INQUIRE FILE END
name	EXEC CICS	INQUIRE FILE() NEXT ... See parameter list below
name	EXEC CICS	INQUIRE FILE() ... See parameter list below

The following parameters are supported:

ACCESSMETHOD, ADD, BASEDSNAME, BROWSE, DELETE, DSNAME, ENABLESTATUS, KEYLENGTH, KEYPOSITION, OBJECT, OPENSTATUS, READ, RECORDFORMAT, RECORDSIZE, TYPE, UPDATE

BASEDSNAME() and DSNAME() parameters:

The length of data returned is the implied length of the data area to a maximum of 128 bytes. This can be extended on request.

Errors

AT() IS SPECIFIED WITHOUT START
BAD PARM
FILE DOES NOT PRECEDE END
FILE DOES NOT PRECEDE START
FILE() CANNOT BE A STRING WHEN NEXT IS SPECIFIED
FILE() IS MISSING
INQUIRE TYPE NOT RECOGNIZED
INVALID AT()
INVALID FILE()
NEXT AND END ARE SPECIFIED
START AND END ARE SPECIFIED

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b) SET FILE

The following formats are supported:

Name	Operation	Operands
name	EXEC CICS	SET FILE()/DATASET() ... See parameter list below

The following parameters are supported:

ADD(), ADDABLE, NOTADDABLE, BROWSE(), BROWSABLE, NOTBROWSABLE, DELETE(), DELETABLE, NOTDELETABLE, ENABLESTATUS(), ENABLED, DISABLED, OPENSTATUS(), OPEN, CLOSED, READ(), READABLE, NOTREADABLE, UPDATE(), UPDATABLE, NOTUPDATABLE

Errors

BAD PARM
BOTH FILE AND DATASET SPECIFIED
FILE OR DATASET MUST BE SPECIFIED
INVALID FILE OR DATASET
MORE THAN ONE ADD PARAMETER
MORE THAN ONE BROWSE PARAMETER
MORE THAN ONE DELETE PARAMETER
MORE THAN ONE ENABLESTATUS PARAMETER
MORE THAN ONE OPEN STATUS PARAMETER
MORE THAN ONE READ PARAMETER
MORE THAN ONE UPDATE PARAMETER

Conditions (RESP/RESP2)

FILENOTFOUND
INVREQ/2
INVREQ/3
INVREQ/4
INVREQ/5
INVREQ/7
INVREQ/12
INVREQ/14
INVREQ/16
INVREQ/17
IOERR

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12) Channels and Containers (34 and 96)

a) GET

Name	Operation	Operands
name	EXEC CICS	GET CONTAINER() CHANNEL() INTO()/FLENGTH() SET()/FLENGTH() NODATA/FLENGTH()

Errors

BAD PARM
BOTH INTO AND SET SPECIFIED
CONTAINER IS MANDATORY
INTO AND NODATA SPECIFIED
INTO OR SET OR NODATA IS REQUIRED
INVALID CHANNEL
INVALID CONTAINER
NODATA REQUIRES FLENGTH
SET AND NODATA SPECIFIED
SET OR NODATA REQUIRES FLENGTH AS LABEL
SET REQUIRES FLENGTH

Conditions (RESP/RESP2)

CHANNELERR/2
INVREQ/4
LENGERR/11

b) PUT

Name	Operation	Operands
name	EXEC CICS	PUT CONTAINER() CHANNEL() FROM()/FLENGTH()

Errors

BAD PARM
CONTAINER IS MANDATORY
FLENGTH IS MANDATORY FOR INDIRECT FROM
FLENGTH WITHOUT FROM
FROM IS MANDATORY
INVALID CHANNEL
INVALID CONTAINER

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Conditions (RESP/RESP2)
CHANNELERR/1
CONTAINERERR/18
INVREQ/4
LENGERR/1

c) DELETE

Name	Operation	Operands
name	EXEC CICS	DELETE CONTAINER() CHANNEL()

Errors
BAD PARM
CONTAINER IS MANDATORY
INVALID CHANNEL
INVALID CONTAINER

Conditions (RESP/RESP2)
CHANNELERR/2
CONTAINERERR/10

d) MOVE

Name	Operation	Operands
name	EXEC CICS	MOVE CONTAINER() AS() CHANNEL() TOCHANNEL()

Errors
BAD PARM
CONTAINER AND/OR AS ARE MISSING
INVALID AS
INVALID CHANNEL
INVALID CONTAINER
INVALID TOCHANNEL

Conditions (RESP/RESP2)
CHANNELERR/1
CHANNELERR/2
CONTAINERERR/10
CONTAINERERR/18
INVREQ/4

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e) STARTBROWSE

Name	Operation	Operands
name	EXEC CICS	STARTBROWSE CONTAINER CHANNEL() BROWSETOKEN()

Errors

BAD PARM
INVALID CHANNEL
BROWSETOKEN IS MANDATORY
STARTBROWSE TYPE NOT RECOGNISED

Conditions (RESP/RESP2)

ACTIVITYERR/2
CHANNELERR/2

f) GETNEXT

Name	Operation	Operands
name	EXEC CICS	GETNEXT CONTAINER() BROWSETOKEN()

Errors

BAD PARM
BROWSETOKEN IS MANDATORY
CONTAINER IS MANDATORY

Conditions (RESP/RESP2)

END/2
TOKENERR/3

g) ENDBROWSE

Name	Operation	Operands
name	EXEC CICS	ENDBROWSE CONTAINER BROWSETOKEN()

Errors

BAD PARM
BROWSETOKEN IS MANDATORY
ENDBROWSE TYPE NOT RECOGNISED

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Condition (RESP/RESP2)
TOKENERR/3

Appendicies

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
ERASE EOF	CTRL+F6
ERASE INPUT	CTRL+F7

Change Summary

February 1, 2012

Amended SEND MAP LENGTH parameter description and removed error message

Added support for FLENGTH on REAQ/WRITEQ TS, START and RETRIEVE

ASSIGN CHANNEL now supported

CHANNEL added to LINK, XCTL, RETURN, START

New Commands: GET, PUT, MOVE, DELETE, STARTBROWSE, GETNEXT, ENDBROWSE

June 10, 2011

Added DFHREGS

Added Extra Parameters about NOEDF

November 1, 2010

Added INVREQ/1 to RETURN

Added NOTALLOC to RECEIVE

Added INVREQ and extra MNOTE to RECEIVE MAP

Added INVREQ to SEND CONTROL

Added INVREQ to SEND

Added INVREQ and MAPFAIL/9 to SEND MAP

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- Added INVREQ/5 to ASSIGN
- New MNOTE for READNEXT and READPREV
- Added SET FILE
- Added REQID to CANCEL
- Added test to HANDLE and IGNORE to detect no parameters
- Extended support for the ENQ/DEQ LENGTH parameter
- SEND CONTROL moved from BMS to Terminal Control
- SEND documents discarded parameters.

August 1, 2009

- Added INQUIRE FILE
- Added ASSIGN

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.

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

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References

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

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