

Interactive System Productivity Facility (ISPF)



Reference Summary

z/OS Version 1 Release 13.0

Note

Before using this document, read the general information under "Notices" on page 287.

Eleventh Edition (September 2011)

This edition applies to ISPF for Version 1 Release 13.0 of the licensed program z/OS (program number 5694-A01) and to all subsequent releases and modifications until otherwise indicated in new editions.

IBM welcomes your comments. For information on how to send comments, see "How to send your comments to IBM" on page xiii.

The ISPF development team maintains a site on the World Wide Web. The URL for the site is: <http://www.ibm.com/software/awdtools/ispf/>

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Preface

This document is a quick reference for application developers and library administrators who use various components of the ISPF product.

Chapter 1 contains general information about ISPF.

Chapter 2 contains information relevant to dialog developers, including panel definition statements and built-in functions, message definitions, and file-tailoring skeleton statements.

Chapter 3 through Chapter 5 contain the syntax and return codes for the following:

- ISPF services
- Edit macro commands
- SCLM services and macros

This document also contains tables of ISPF system variables (Chapter 6, "System variables," on page 239) and dialog variables (Chapter 7, "Dialog variables," on page 249) and a summary of the Dialog Tag Language (DTL) tags (Chapter 8, "Dialog Tag Language (DTL) tags," on page 257).

Information in this document was extracted from the following prerequisite books:

- *z/OS ISPF Dialog Developer's Guide and Reference*
- *z/OS ISPF User's Guide Vol I*
- *z/OS ISPF User's Guide Vol II*
- *z/OS ISPF Services Guide*
- *z/OS ISPF Edit and Edit Macros*
- *z/OS ISPF Software Configuration and Library Manager Guide and Reference*
- *z/OS ISPF Dialog Tag Language Guide and Reference*

Note

The "Readers' Comments - We'd Like to Hear from You" section at the back of this publication has been replaced with a new section "How to send your comments to IBM" on page xiii. The hardcopy mail-in form has been replaced with a page that provides information appropriate for submitting comments to IBM®.

Who should use this document

This document is for:

- Application programmers who write programs or command procedures that invoke ISPF services.
- Application programmers who use the ISPF editor and edit macros.
- Library administrators who use library management facilities.

The z/OS Basic Skills Information Center

The z/OS® Basic Skills Information Center is a Web-based information resource intended to help users learn the basic concepts of z/OS, the operating system that runs most of the IBM mainframe computers in use today. The Information Center is designed to introduce a new generation of Information Technology professionals to basic concepts and help them prepare for a career as a z/OS professional, such as a z/OS system programmer.

Specifically, the z/OS Basic Skills Information Center is intended to achieve the following objectives:

- Provide basic education and information about z/OS without charge
- Shorten the time it takes for people to become productive on the mainframe
- Make it easier for new people to learn z/OS.

To access the z/OS Basic Skills Information Center, open your Web browser to the following Web site, which is available to all users (no login required):
<http://publib.boulder.ibm.com/infocenter/zos/basics/index.jsp>

How to read the syntax diagrams

The syntactical structure of commands described in this document is shown by means of syntax diagrams.

Figure 1 on page ix shows a sample syntax diagram that includes the various notations used to indicate such things as whether:

- An item is a keyword or a variable.
- An item is required or optional.
- A choice is available.
- A default applies if you do not specify a value.
- You can repeat an item.

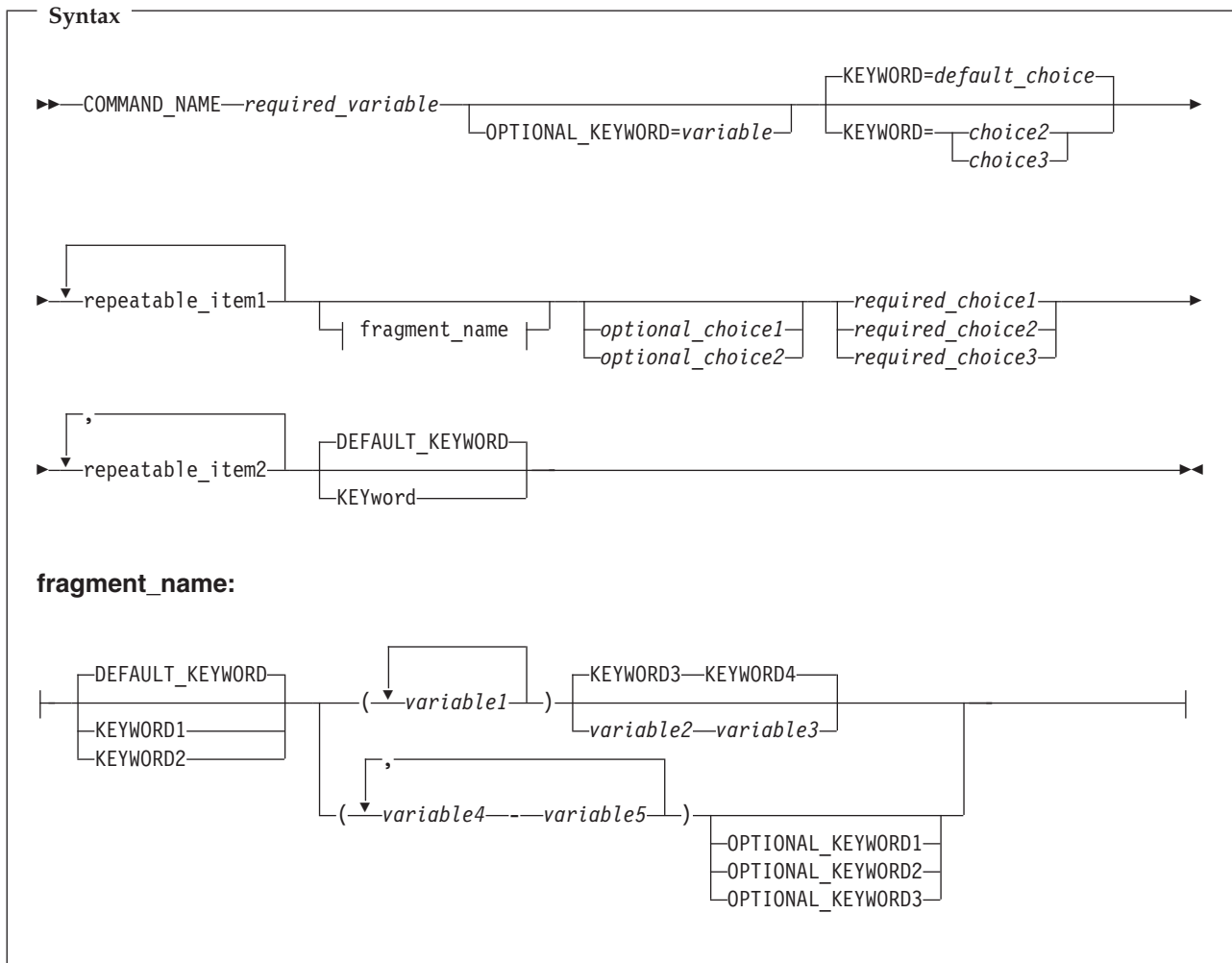


Figure 1. Sample syntax diagram

Here are some tips for reading and understanding syntax diagrams:

Order of reading

Read the syntax diagrams from left to right, from top to bottom, following the path of the line.

The ▶▶ symbol indicates the beginning of a statement.

The → symbol indicates that a statement is continued on the next line.

The ▶ symbol indicates that a statement is continued from the previous line.

The →▶ symbol indicates the end of a statement.

Keywords

Keywords appear in uppercase letters.



Sometimes you only need to type the first few letters of a keyword, The required part of the keyword appears in uppercase letters.



In this example, you could type "KEY", "KEYW", "KEYWO", "KEYWOR" or "KEYWORD".

The abbreviated or whole keyword you enter must be spelled exactly as shown.

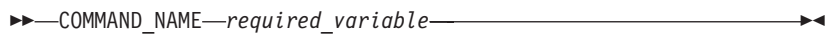
Variables

Variables appear in lowercase letters. They represent user-supplied names or values.



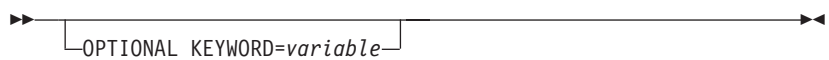
Required items

Required items appear on the horizontal line (the main path).



Optional items

Optional items appear below the main path.



Choice of items

If you can choose from two or more items, they appear vertically, in a stack.

If you *must* choose one of the items, one item of the stack appears on the main path.



If choosing one of the items is optional, the entire stack appears below the main path.



If a default value applies when you do not choose any of the items, the default value appears above the main path.



Repeatable items

An arrow returning to the left above the main line indicates an item that can be repeated.



If you need to specify a separator character (such as a comma) between repeatable items, the line with the arrow returning to the left shows the separator character you must specify.



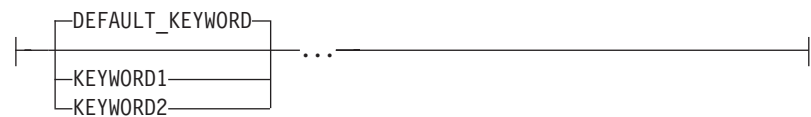
Fragments

Where it makes the syntax diagram easier to read, a section or *fragment* of the syntax is sometimes shown separately.



⋮

fragment_name:



How to send your comments to IBM

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- Your email address
- Your telephone or fax number
- The publication title and order number:
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SC34-4816-10
- The topic and page number related to your comment
- The text of your comment.

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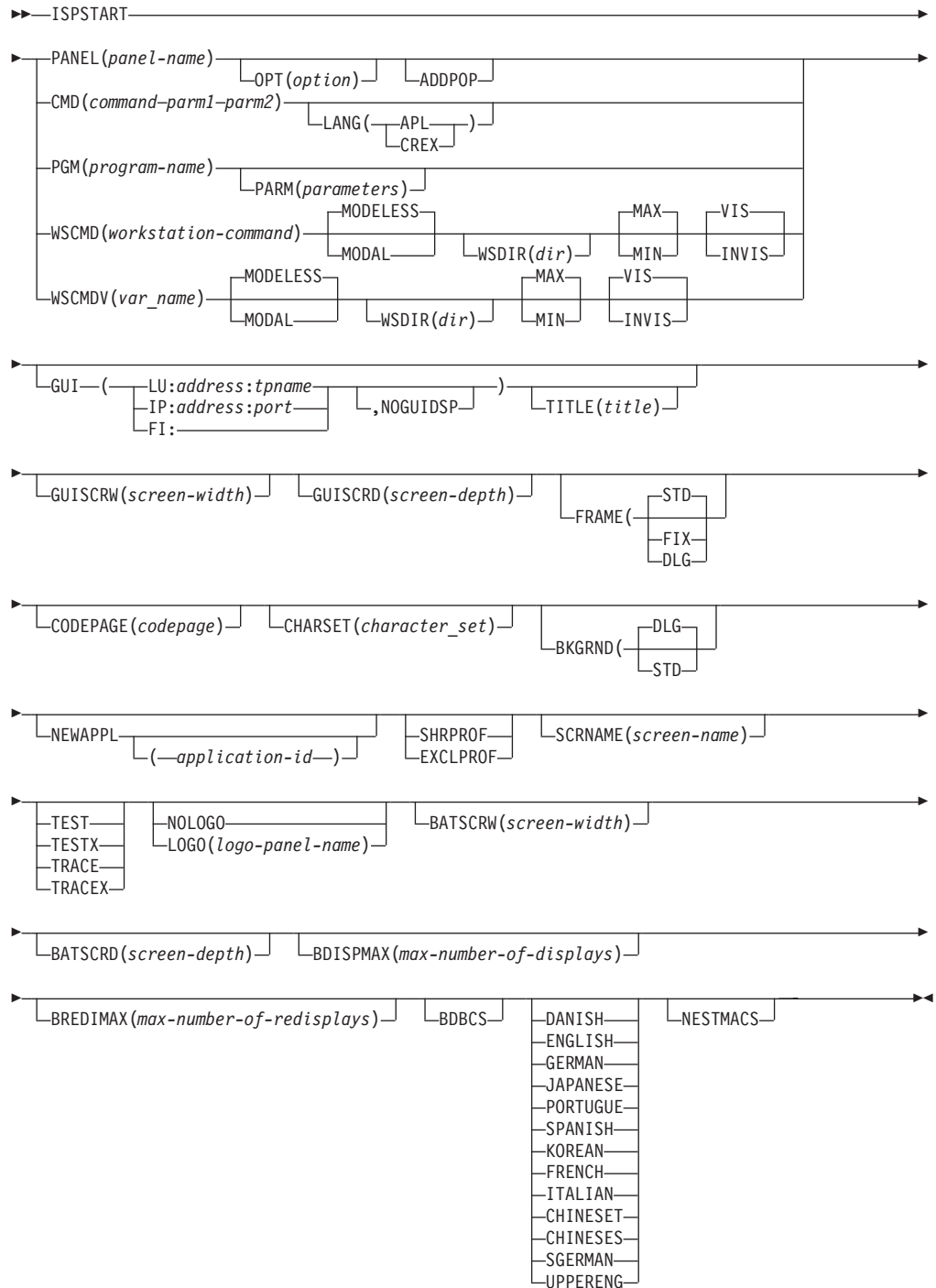
If you have a technical problem

Do not use the feedback methods listed above. Instead, do one of the following:

- Contact your IBM service representative
- Call IBM technical support
- Visit the IBM support portal at <http://www.ibm.com/systems/z/support/>

Chapter 1. ISPF general information

Invoking an ISPF application—the ISPSTART command



ISPF system information

Files used by ISPF

Note: Files used by a given invocation of ISPF must be allocated before ISPF is invoked.

DDNAME(lib-type)	Description
ISPFIL	File tailoring output
ISPILIB	Image library
ISPMLIB	Message
ISPPLIB	Panel
ISPPROF	User profile
ISPSLIB	Skeleton
ISPTABLE	Table output
ISPTLIB	Table input
SYSPROC	REXX/CLIST library
SYSEXEC	REXX library

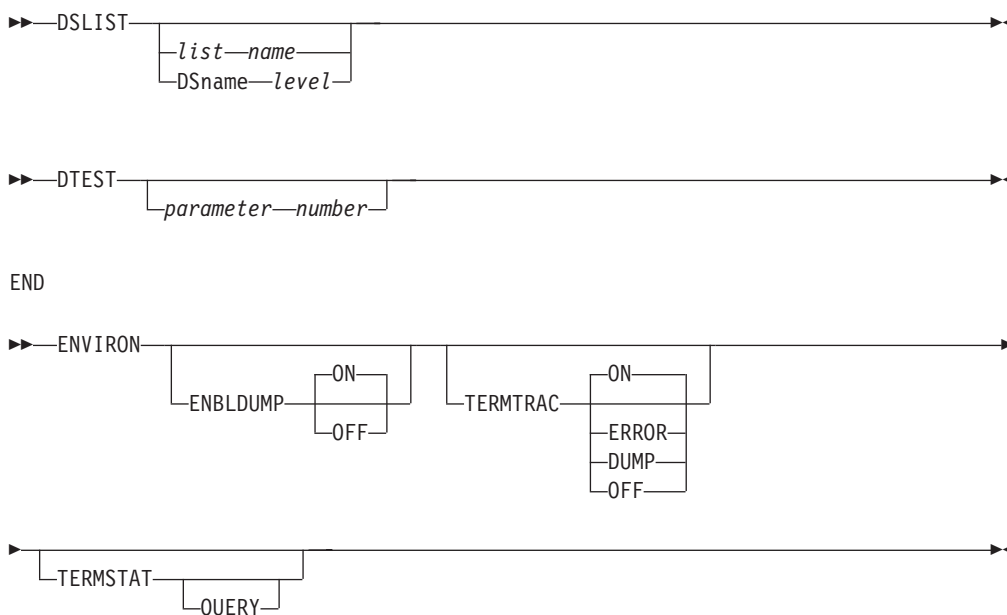
ISPF system commands

ACTIONS

BACKWARD
BOTTOM

CANCEL
CMDE
COLOR
CRETRIEV
CUAATTR
CURSOR

DOWN
DDLIST



ISPF general information

▶▶ EPDF—*datasetname* —┬─ Browse ─┬─ View ─┬─ Macro—*macroname* ─┬─

▶ ┬─ Profile—*profilename* ─┬─ Panel—*panelname* ─┬─ Format—*formatname* ─┬─

▶ ┬─ Recover ─┬─ Mixed ─┬─ YES ─┬─ NO ─┬─

EXHELP
EXIT

▶▶ FKA ┬─ ON ─┬─ SHORT ─┬─ OFF ─┬─ PREFIX ─┬─ NOPREFIX ─┬─

FORWARD

HELP

INT

▶▶ ISPDPTRC ┬─ END ─┬─ VIEW ─┬─ QUIET ─┬─ DSP ─┬─ DISPLAY ─┬─ (None) ─┬─ In ─┬─ Out ─┬─ Both ─┬─

▶ ┬─ LIST ─┬─ PNL ─┬─ (* ─┬─ *panel_name* ─┬─ *panel_mask* ─┬─) ─┬─ READ ─┬─ (None) ─┬─ Summary ─┬─ Detail ─┬─

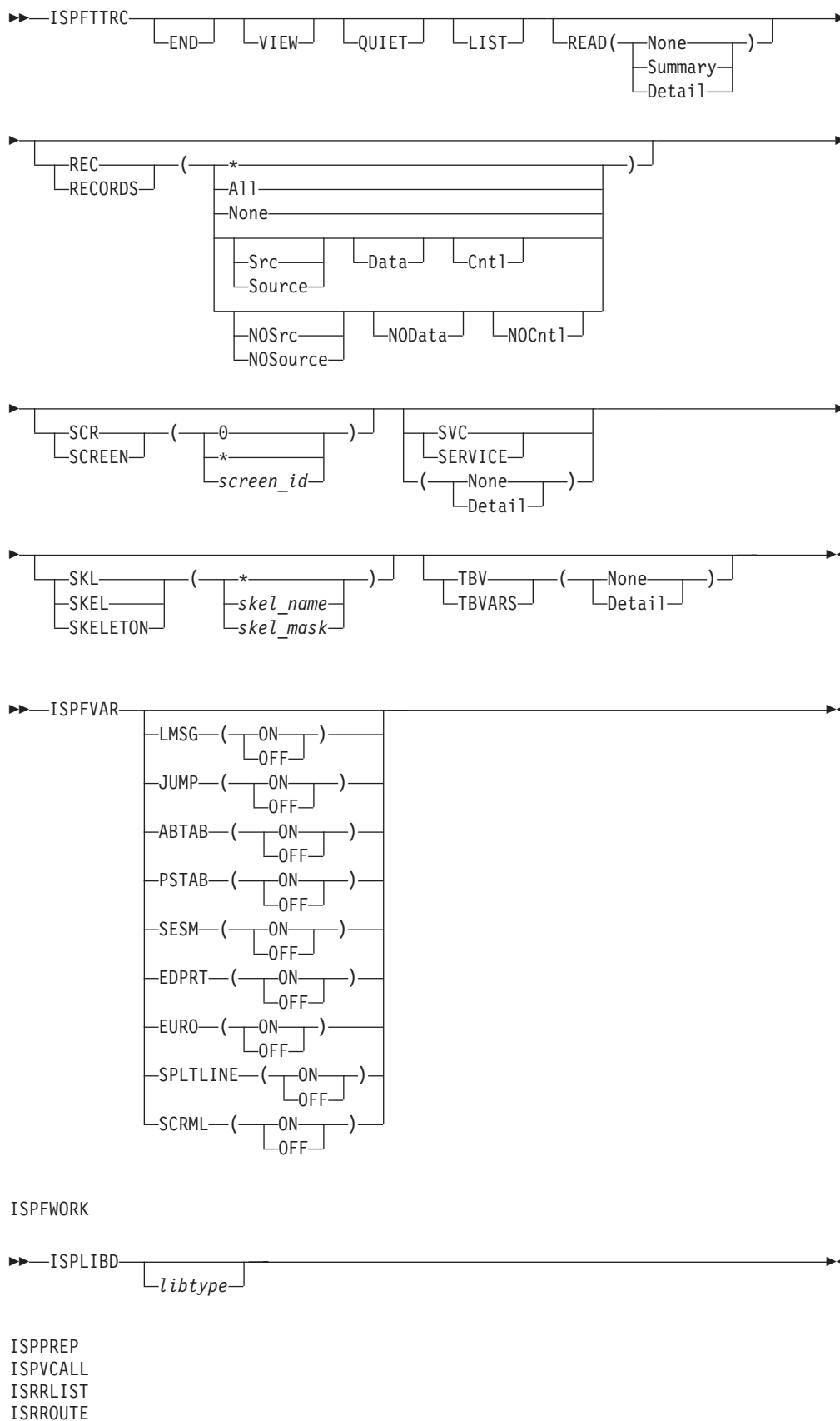
▶ ┬─ SCR ─┬─ SCREEN ─┬─ (0) ─┬─ (* ─┬─ *screen_id* ─┬─) ─┬─

▶ ┬─ SECT ─┬─ SECTION ─┬─ (* ─┬─ All ─┬─ None ─┬─ Init ─┬─ Reinit ─┬─ Proc ─┬─ NOInit ─┬─ NOReinit ─┬─ NOProc ─┬─) ─┬─

▶ ┬─ SVC ─┬─ SERVICE ─┬─ (None) ─┬─ Detail ─┬─

ISPD TLC

ISPF general information

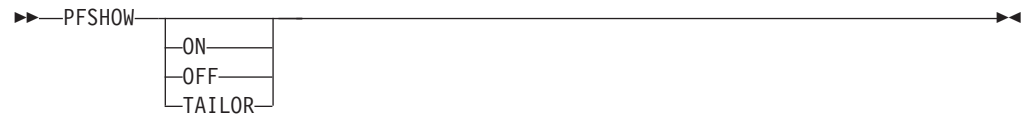




KEYS
KEYSHELP
LEFT

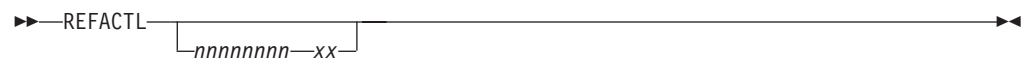
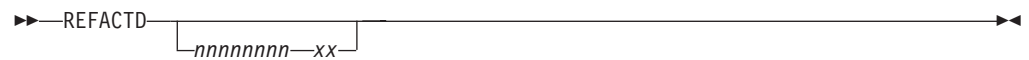


NOP
NRETRIEV

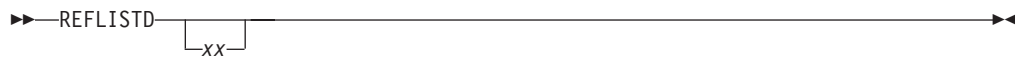
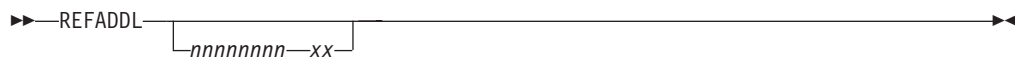
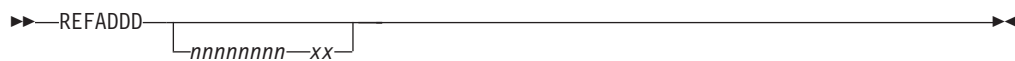


PRINT
PRINTG
PRINT-HI
PRINTL
PRINTLHI
PSCOLOR

RCHANGE

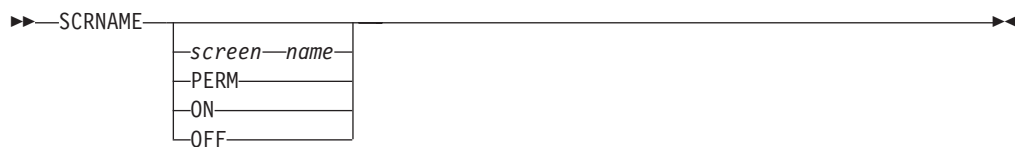


ISPF general information



REFOPEND
 REFOPENL
 RESIZE
 RETF
 RETP
 RETRIEVE
 RETURN
 RFIND
 RIGHT

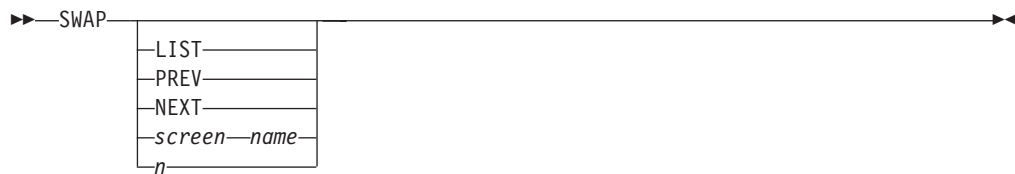
SAREA

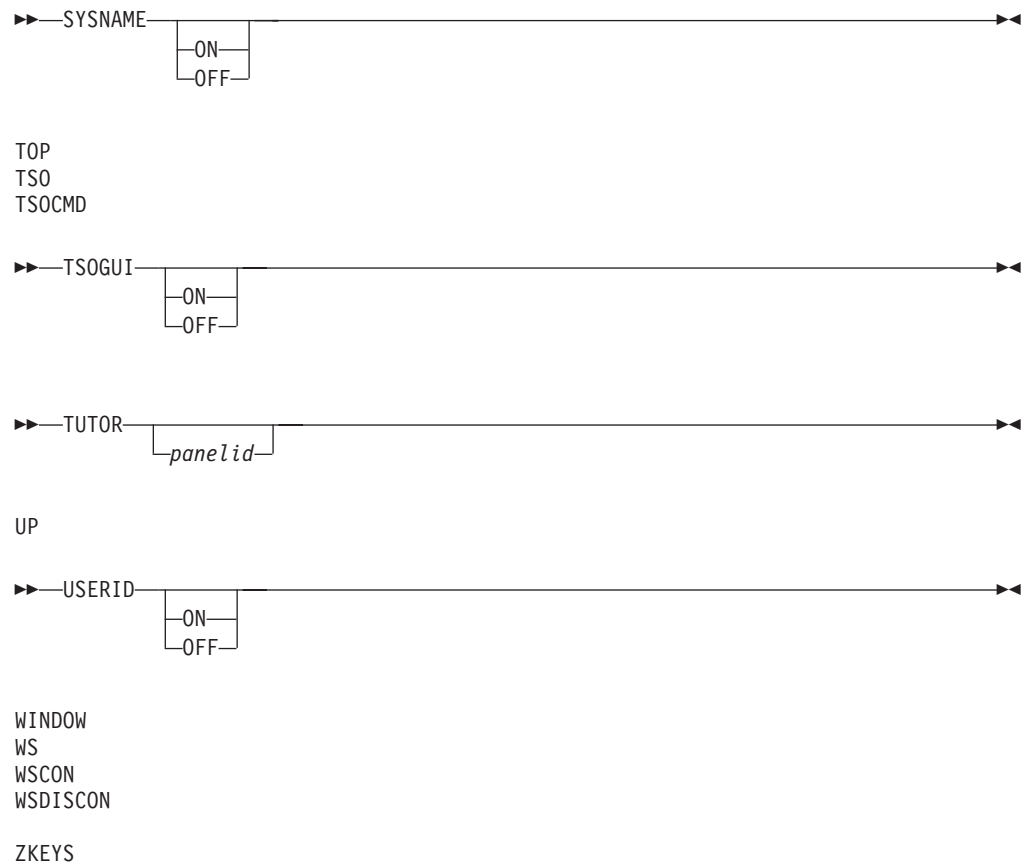


SETTINGS
 SHRPROF



SPLITV
 START





Command table actions

ALIAS	When followed by the name of another command and optional parameters, allows specification of command aliases.
NOP	Causes the command to be functionless. System displays an "inactive command" message in this case.
PASSTHRU	Causes the command to be passed to the dialog, as though it had not been found in the table.
SELECT	When followed by selection keywords, causes the selected dialog command, program or selection panel to be given control immediately.
SETVERB	Causes the command to be passed to the dialog with the command verb stored separately from the parameters.
<i>Blank (no action)</i>	Causes the table entry to be ignored, and scanning to continue (to search for additional entries having the same verb).
<i>Variable name</i>	Begins with an ampersand. Its content may be one of the listed actions. Allows dynamic specification of a command action.

Dialog test commands

Primary commands

You can enter these commands on the Command line while using Dialog Test (option 7).

ISPF general information

CANCEL

END

Syntax

▶▶—LOCATE—*string*—▶▶

LOC

L

QUAL

RESUME

RES

Line commands

These line commands have special meaning during testing operations:

▶▶—D——▶▶

Delete one or *n* lines starting with this line.

▶▶—I——▶▶

Insert one or *n* lines directly after this line, with underscores and quotes in the appropriate fields.

▶▶—R——▶▶

Repeat this line once or *n* times.

PDF Browse primary commands

You can enter these commands on the command line while using the Browse function.

Syntax

▶▶—BROWSE——▶▶

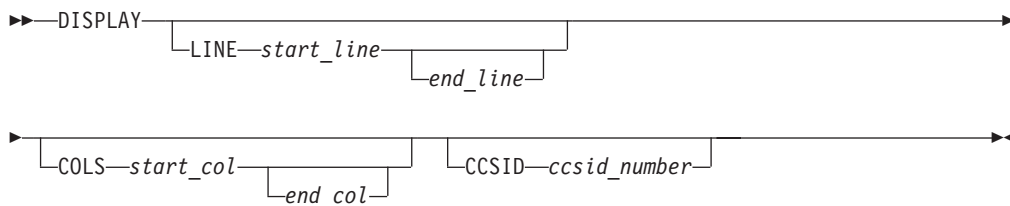
BRO

Syntax

▶▶—COLUMNS——▶▶

COLS
COL

Syntax

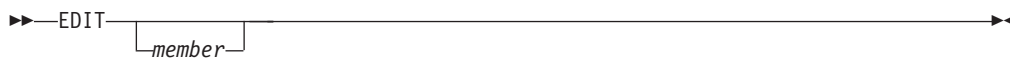


OR:

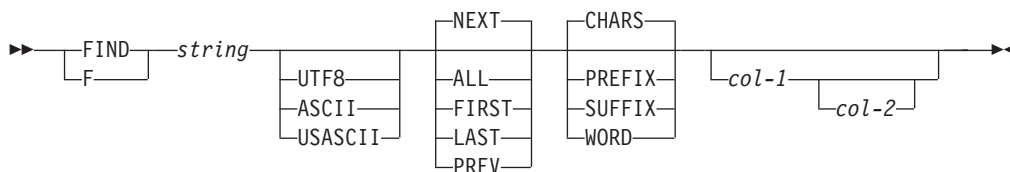
Syntax



Syntax



Syntax



Syntax



Syntax



RESET

SUBMIT

PDF Component General Information

Syntax

▶▶ VIEW *member*

You can use this format to enter label definitions on the command line:

.cccc Defines a label (PDF component internal symbol), which is equated to the top line on the screen. Can be used with LOCATE to scroll directly to that line.

PDF member list commands

Primary commands

You can enter these commands on the command line on member list displays.

CONFIRM

Syntax

▶▶ FILTER *field-operator-value*

Syntax

▶▶ FIND *string-field* NEXT PREFIX
F ALL SUFFIX
FIRST WORD
LAST
PREV

Syntax

▶▶ LOCATE *string*
LOC
L

MLC

MLS

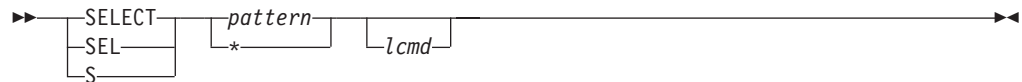
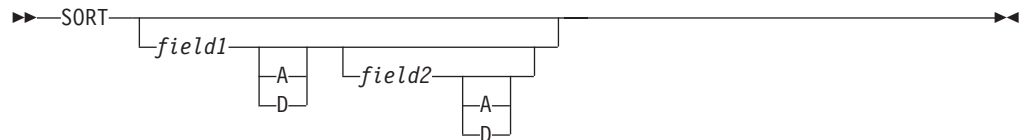
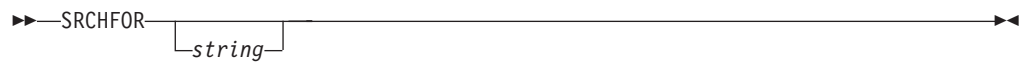
REFRESH

RESET

RFIND

Syntax

▶▶ SAVE *list-id*

Syntax**Syntax****Syntax****Line commands**

On all member list displays except those for option 3.1 and 3.4, you can enter this 1-character command at the beginning of a line.

S Selects the member.

On option 3.1 and 3.4 member list displays, you can enter these 1-character commands at the beginning of a line.

B Browses the member.

C Copies the member.

D Deletes the member.

E Edits the member.

G Resets the member.

J Submits the member.

M Moves the member.

P Prints the member.

R Renames the member. When using this command, you must also enter the new name to the right of the member name.

T TSO command.

V Views the member.

W WS command.

TSO commands, CLISTs, and REXX EXECs can be entered in member lists that have an expanded line command field. These are member lists displayed by using option M of the Data Set List utility. Here, any command other than B, D, E, P, R, or V is considered to be a TSO command, CLIST, or REXX exec.

PDF data set list commands

Primary commands

You can enter these commands on the command line on option 3.4 data set list displays.

APPEND

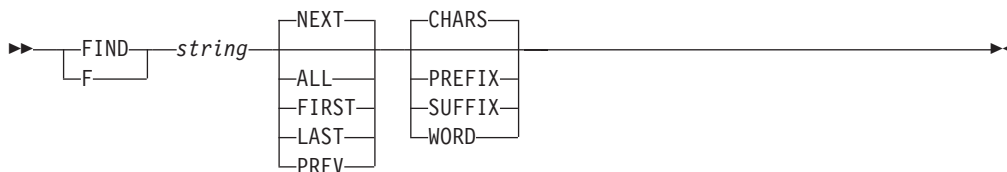
Syntax



DSLISL

EXCLUDE

Syntax



LC

Syntax



REFRESH

RESET

RFIND

Syntax



Syntax



SHOW

Syntax

VA

VS

VT

VW

Line commands

On option 3.4 data set list displays, you can enter the following 1-character commands at the beginning of a line. Any other command entered at the beginning of a line is considered to be a TSO command, CLIST, or REXX exec.

- B** For a library or partitioned data set, displays a member list. You can then use the S command to select a member to browse. For a sequential data set, displays the data set in browse mode.
- C** Catalogs the data set.
- CO** Copies a data set.
- D** Deletes an entire data set. Displays a Confirm Delete panel if you request confirmation.
- E** For a library or partitioned data set, displays a member list. You can then use the S command to select a member to edit. For a sequential data set, displays the data set in edit mode.
- F** Frees unused space in a data set.
- I** Displays library or data set information.
- M** For a library or partitioned data set, displays a member list.
- MO** Moves a data set.
- NX** Unexclude a line from display.
- NXF** Unexclude the first of a set of excluded data sets.
- NXL** Unexclude the last of a set of excluded data sets.
- P** Prints the library or data set.
- PX** Prints an index listing.
- R** Displays a panel, on which you can rename the library or data set.
- RA** Adds a data set to a reference list.
- RS** Resets statistical data.
- S** Displays library or data set information in short format.
- U** Uncatalogs the data set.
- V** For a library or partitioned data set, displays a member list. You can then use the S command to select a member to view. For a sequential data set, displays the data set in view mode.
- X** Excludes a data set from the list.

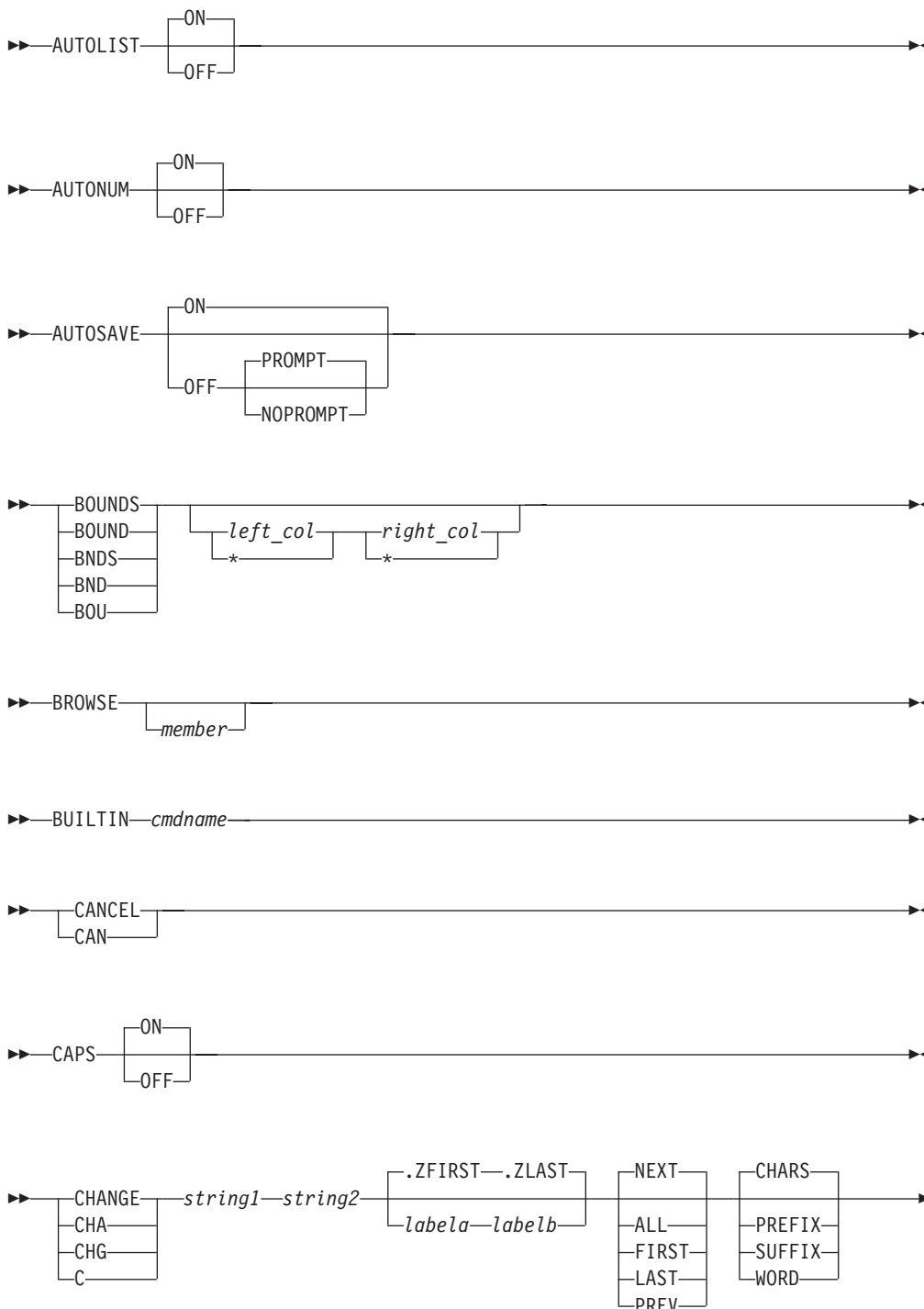
PDF Component General Information

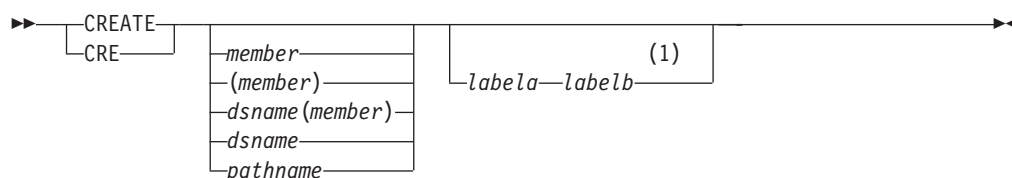
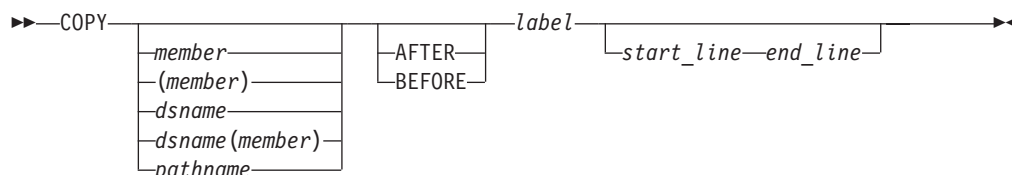
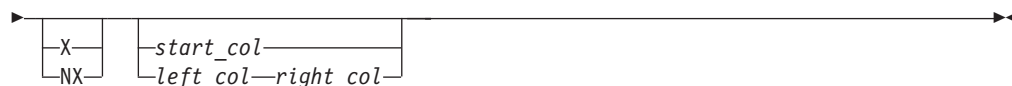
- Z Compresses a library or data set.
- = Repeats the last line command entered.

PDF Edit and View commands

Primary commands

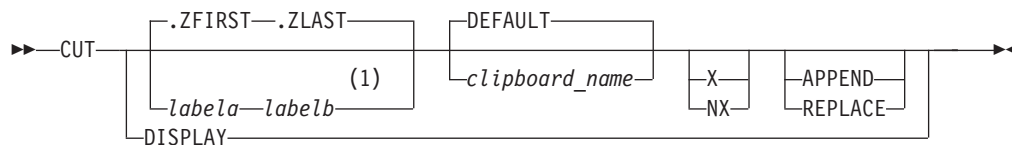
While you are using the PDF editor to edit or view data, these commands can be entered on the command line.





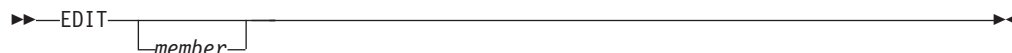
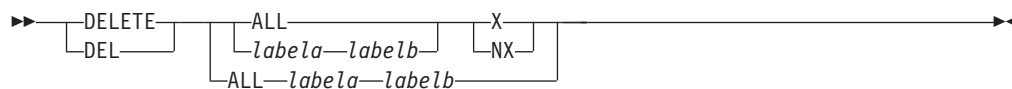
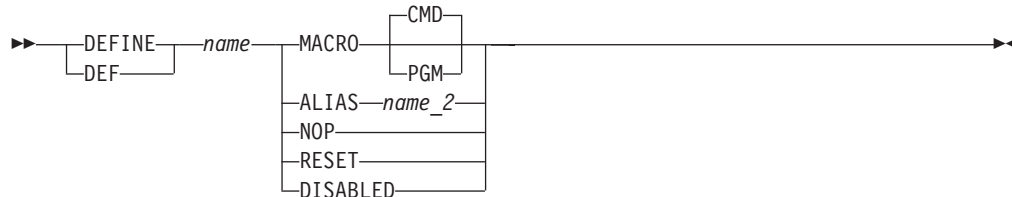
Notes:

- 1 If you don't specify the group of lines using labels, you must specify the group by using C or M line commands.

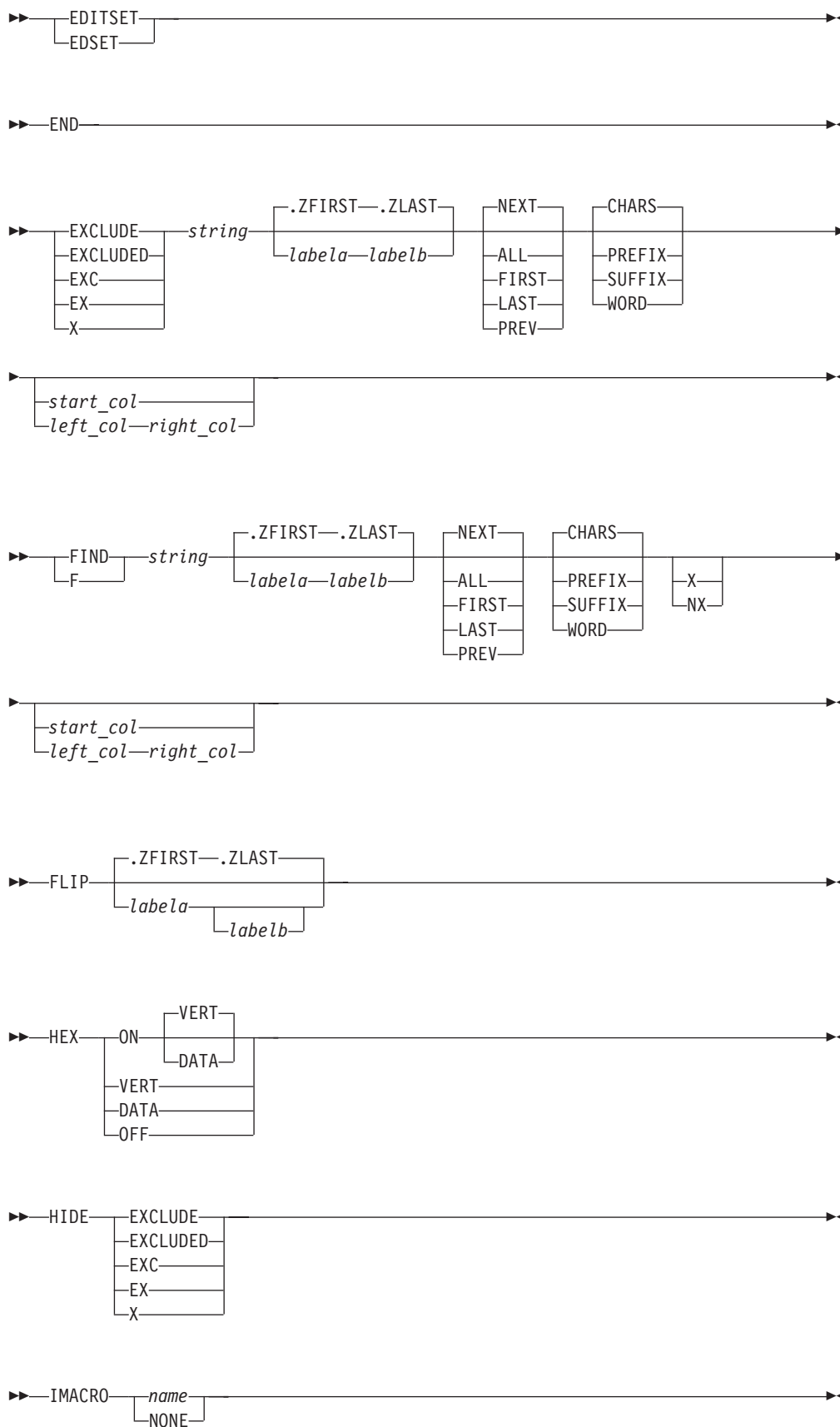


Notes:

- 1 You can also specify the group of lines using C or M line commands.



PDF Component General Information



▶▶—LEVEL—*num*—▶▶

▶▶—LF—▶▶

Specific LOCATE syntax

▶▶—LOCATE—*label*
 linenum—▶▶

Generic LOCATE syntax

▶▶—LOCATE—

NEXT
FIRST
LAST
PREV

—

CHANGE
COMMAND
ERROR
EXCLUDED
LABEL
SPECIAL
INFOLINE
MSGLINE
NOTELINE

—

.ZFIRST	.ZLAST
---------	--------

—*labela*—*labelb*—▶▶

Model name syntax

▶▶—MODEL—

<i>model_name</i>

—

AFTER
BEFORE

—*label*—▶▶

↓

<i>qualifier</i>

▶▶—

NOTES
NONOTES

—▶▶

Class name syntax

▶▶—MODEL—

CLASS

—

<i>class_name</i>

—▶▶

▶▶—MOVE—

<i>member</i>
(<i>member</i>)
<i>dsname</i>
<i>pathame</i>

—

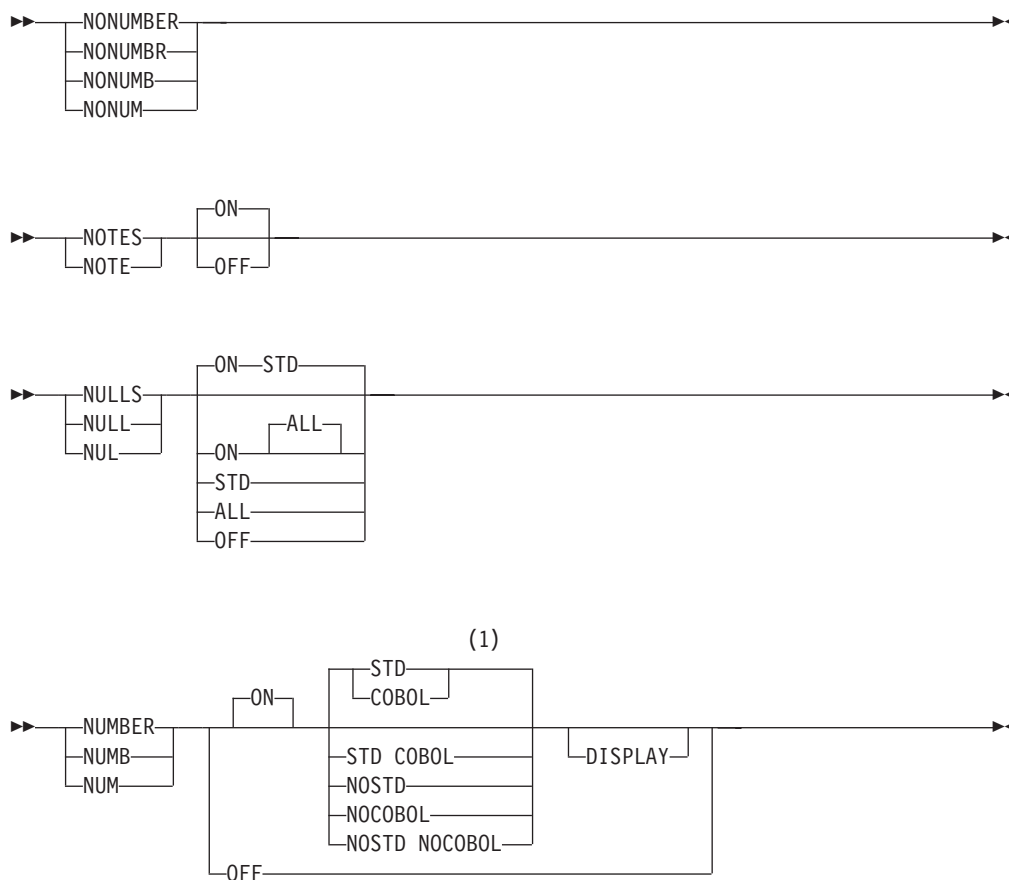
AFTER
BEFORE

—*label*—⁽¹⁾—▶▶

Notes:

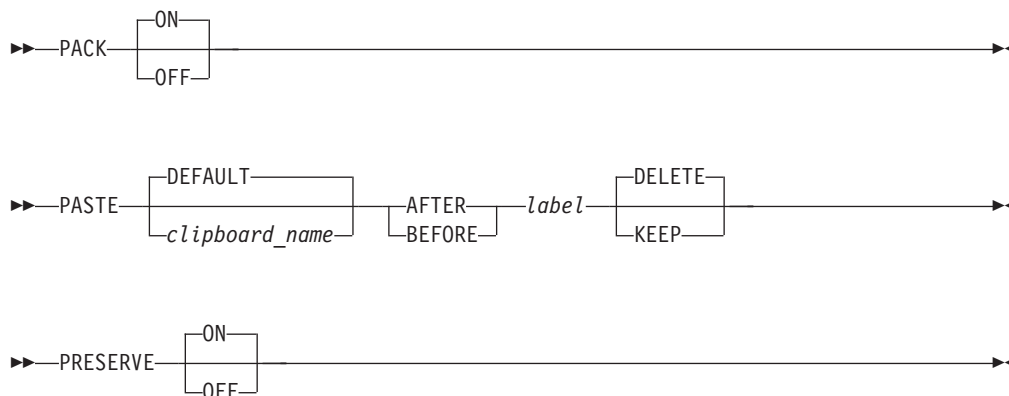
- 1 If you don't specify the position using a label, you must specify the position by using an A or B line command.

PDF Component General Information

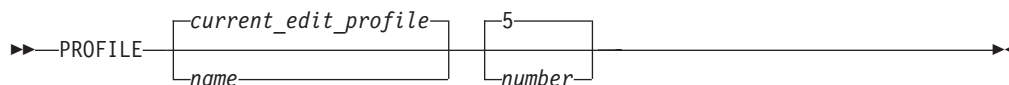


Notes:

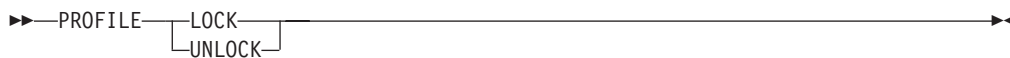
- 1 STD is the default for non-COBOL data set types. COBOL is the default for COBOL data set types.



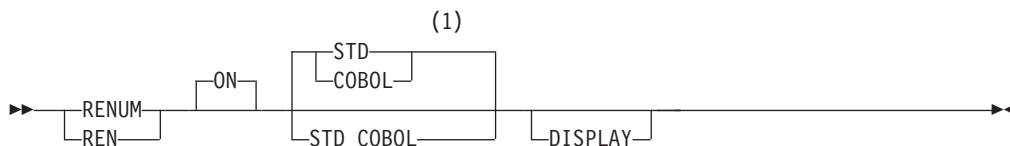
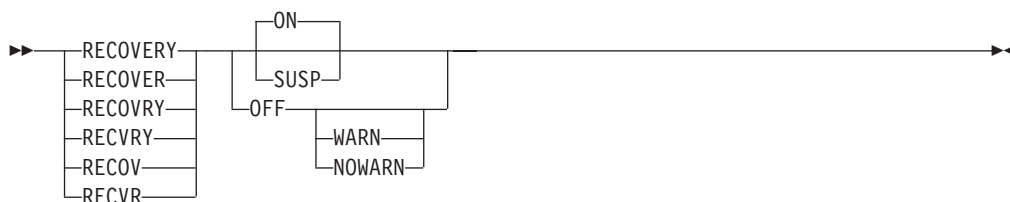
Profile control



Profile LOCK syntax

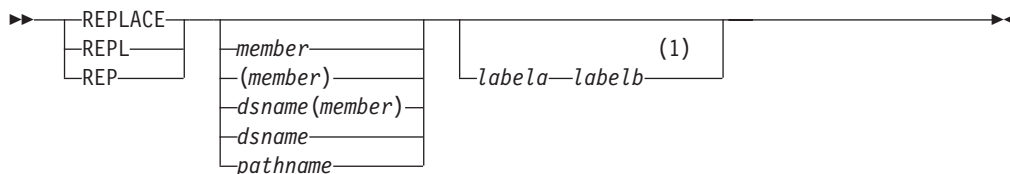


Profile RESET syntax



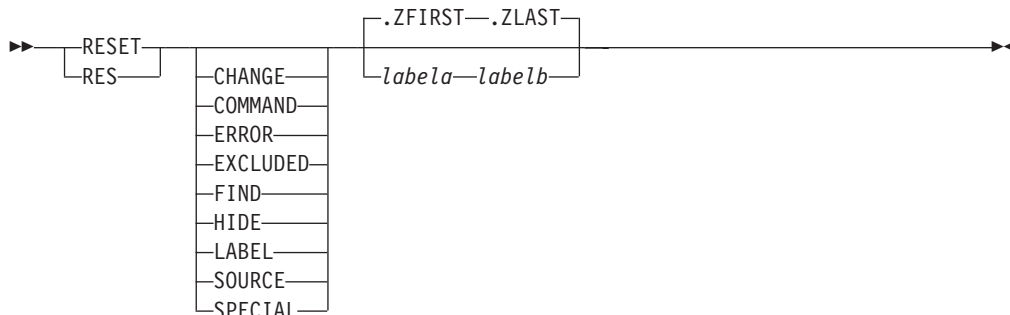
Notes:

- 1 STD is the default for non-COBOL data set types. COBOL is the default for COBOL data set types.

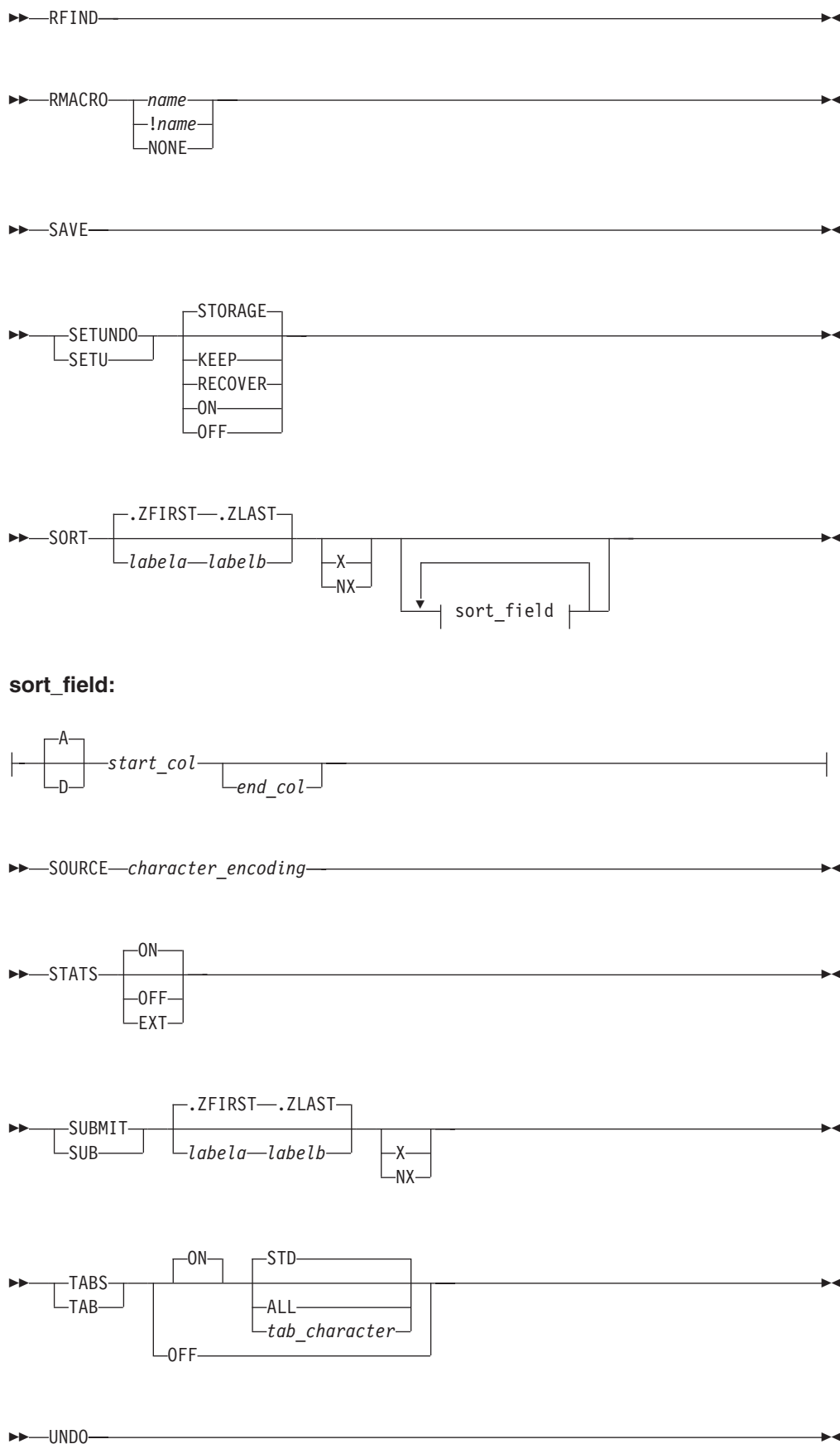


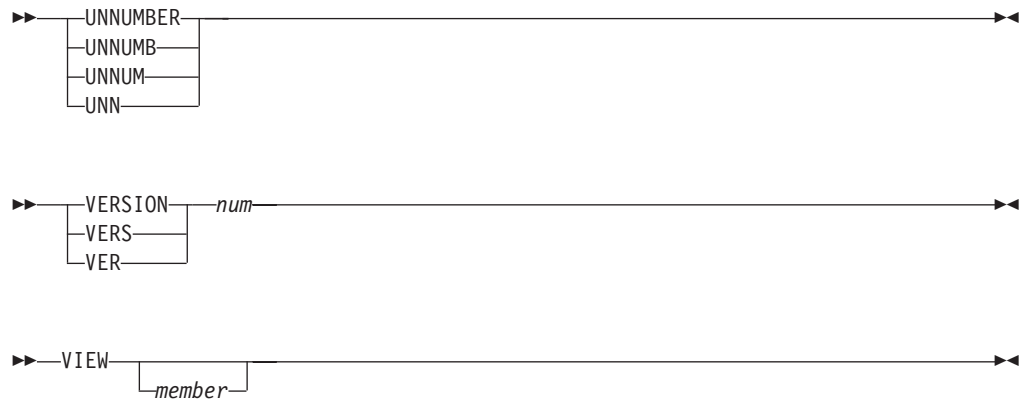
Notes:

- 1 If you don't specify the group of lines using labels, you must specify the group by using C or M line commands.



PDF Component General Information

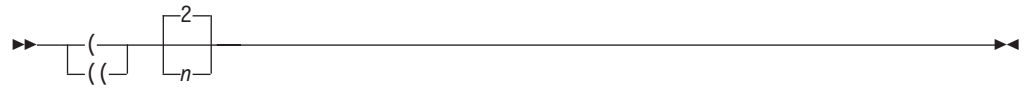




Line commands

Under Edit or View, you can enter these line commands at the beginning of a line by typing over the line number. If you do not enter a value of *n*, the default is 1 except for:

- The shift commands, which default to 2 column positions
- The TE command, which defaults to the number of lines remaining on the screen
- The TF command, which defaults to the current right boundary.



Shifts columns left the specified number of positions



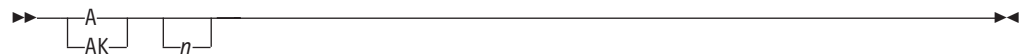
Shifts columns right the specified number of positions



Shifts data left the specified number of positions (default 2).



Shifts data right the specified number of positions (default 2).

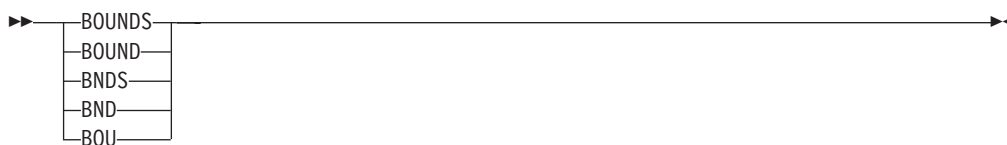


PDF Component General Information

Identifies the line after which copied, moved, or model lines are to be inserted.



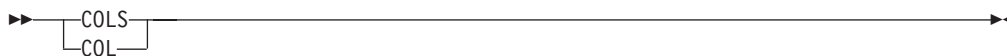
Identifies the line before which copied, moved, or model lines are to be inserted.



Displays the column boundary definition line.



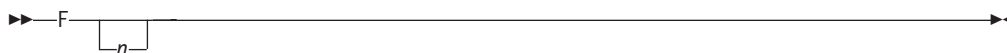
Copies one or more lines from one location to another.



Displays a position identification line.



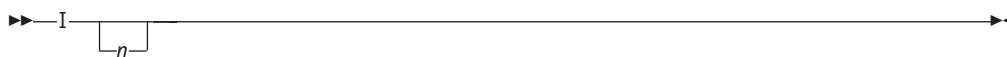
Deletes one or more lines.



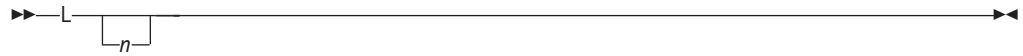
Redisplays one or more lines at the beginning of a block of excluded lines.



Displays characters in hexadecimal format.



Inserts a blank data entry line.



Redisplays one or more lines at the end of a block of excluded lines.



Converts all uppercase alphabetic characters in one or more lines to lowercase.



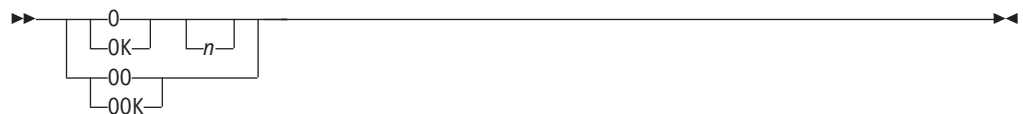
Moves one or more lines from one location to another.



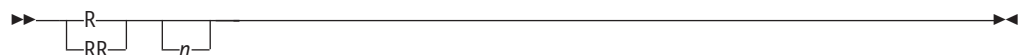
Displays the contents of the mask when used with the I (insert), TE (text entry), and TS (text split) line commands.



Makes NOTE, MSG, INFO, and COLS lines into data lines.



Rearranges a single column list of items into multiple column, or tabular, format.

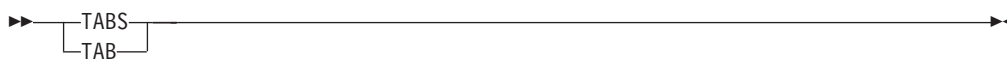


Repeats one or more lines.



Redisplays one or more lines with the leftmost indentation in a block of excluded lines.

PDF Component General Information



Displays the tab definition line.



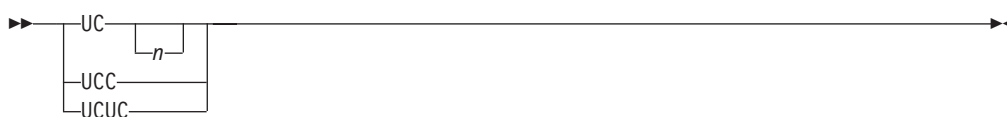
Inserts blank lines to allow power typing for text entry.



Restructures paragraphs following deletions, insertions, splitting, and so forth.



Divides a line so that data can be added.



Converts all lowercase alphabetic characters in one or more lines to uppercase.



Excludes one or more lines from a panel.

Picture search strings – special characters for string-1:

- P'=' Any character
- P'-' Any character that is not a blank
- P'.' Any character that cannot be displayed
- P'#' Any numeric character, 0-9
- P'-' Any nonnumeric character
- P'@' Any alphabetic character, uppercase or lowercase
- P'<' Any lowercase alphabetic character
- P'>' Any uppercase alphabetic character
- P'\$' Any special character, neither alphabetic nor numeric.

If you are using an APL or TEXT keyboard, you can use the following additional characters in a picture string:

P' \square ' Any APL-specific or TEXT-specific character

P' _ ' Any underscored nonblank character.

Picture search strings – special characters for string-2

P'=' Equal to the corresponding character in string-1

P'>' Converts the corresponding character in string-1 to uppercase

P'<' Converts corresponding character in string-1 to lowercase.

Character search string format

Simple string:	cccccc (no embedded blanks or commas)
Delimited string:	'cccc' or "cccc"
Hex string:	X'hhhh' or 'hhhh'X
Text string:	T'cccc' or 'cccc'T
Picture string:	P'ssss' or 'sss's'P
Character string:	C'cccc' or 'cccc'C
Previous string:	* (single asterisk)

Chapter 2. Dialog development information

This topic contains information relevant to dialog developers.

Invoking the ISPF DTL conversion utility

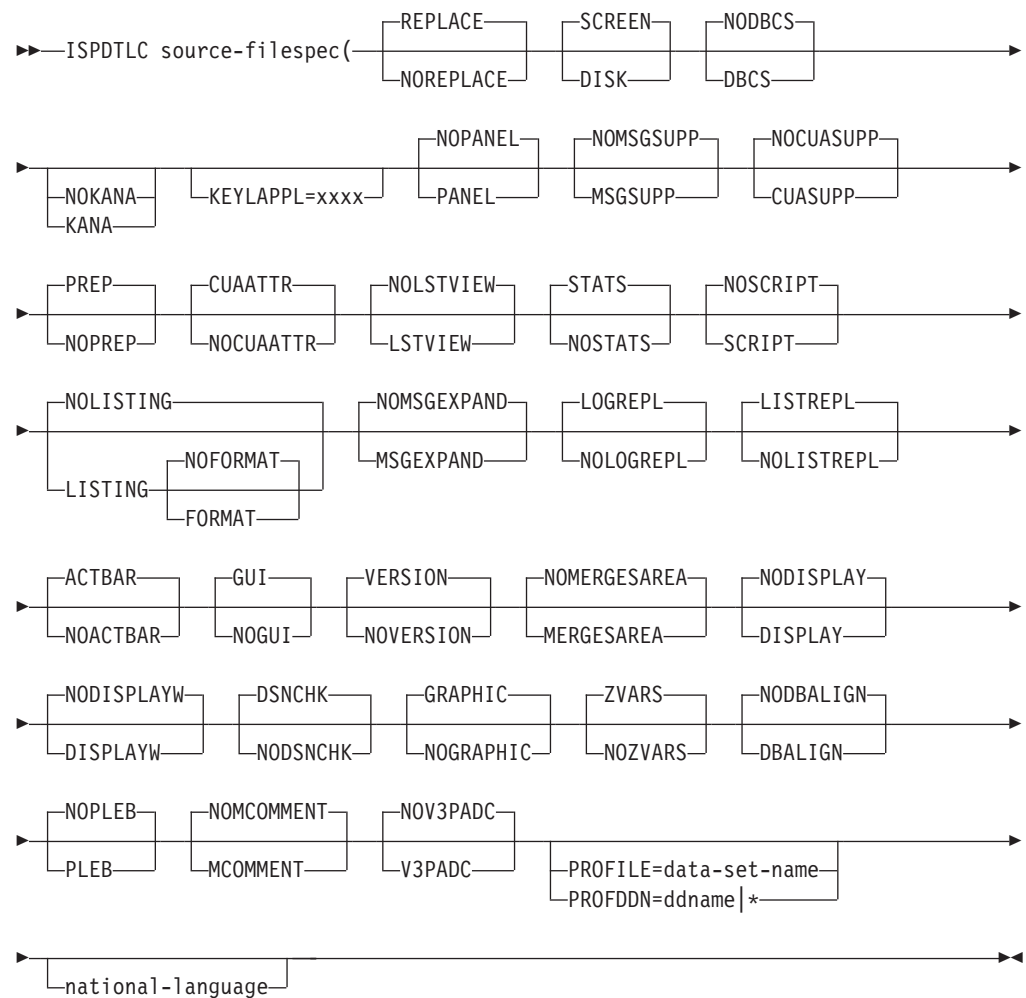
ISPD TLC (for interactive interface)

OR

ISPD TLC ? (for help information)

OR

(command syntax)



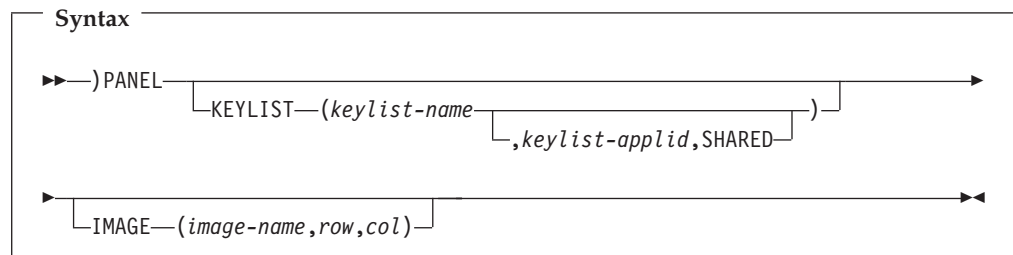
Panel definition sections

All parameters on header statements are optional. When preparing a panel header statement, use only one line.

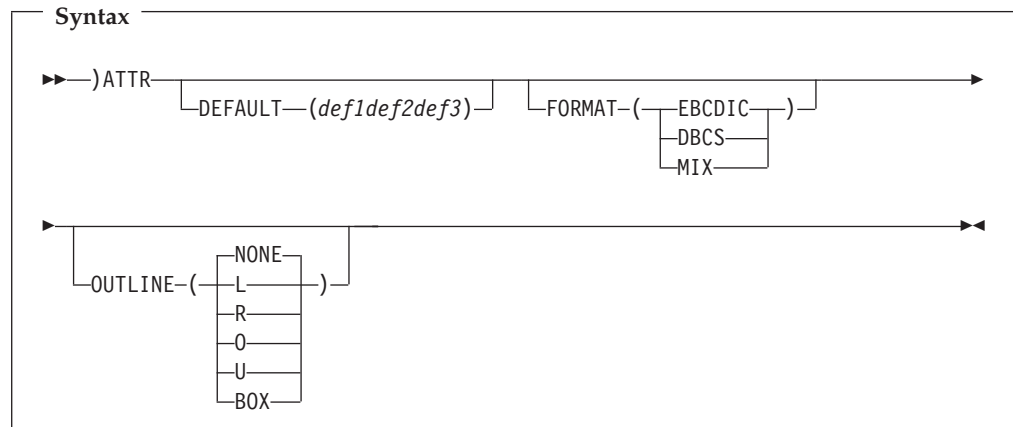
Coded Character Set Identifier Section

)CCSID NUMBER(xxxxx)

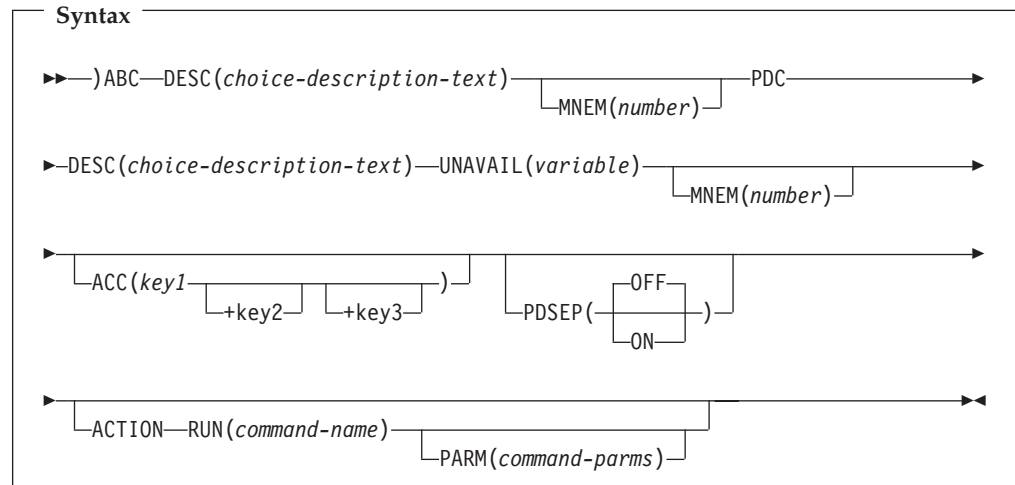
Panel Section



Attribute Section:



Action Bar Choice Section:



Note: The MNEM keyword is only valid when running in GUI mode.

Action Bar Choice Initialization Section:

)ABCINIT

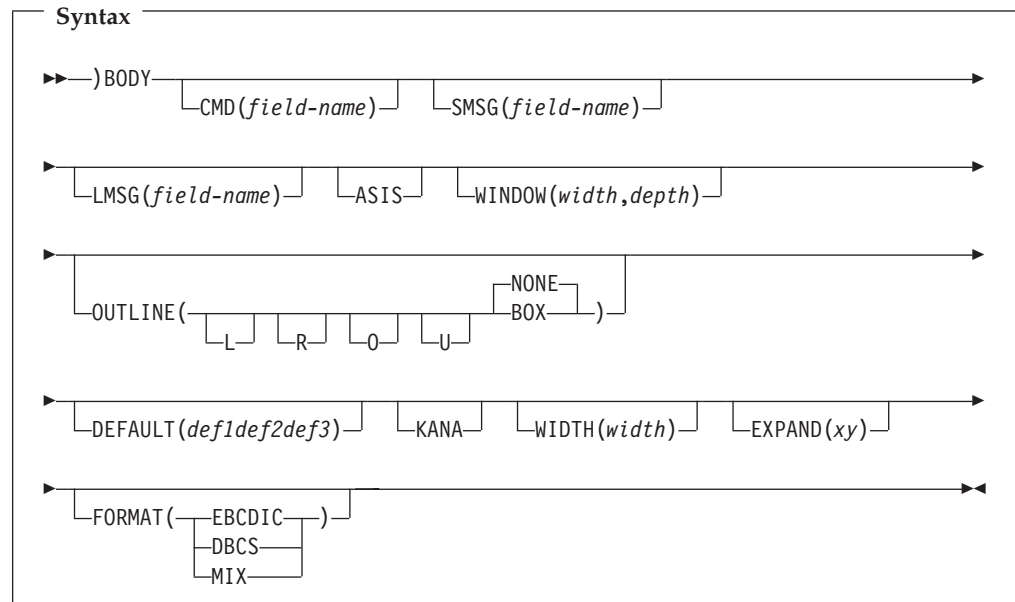
Note: Only valid when the Action Bar Choice section is specified.

Action Bar Choice Processing Section:

)ABCPROC

Note: Only valid when the Action Bar Choice section is specified.

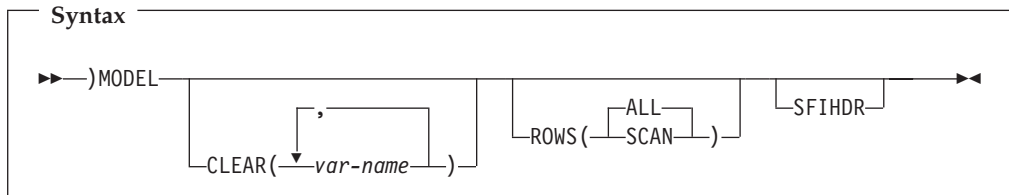
Body Section:



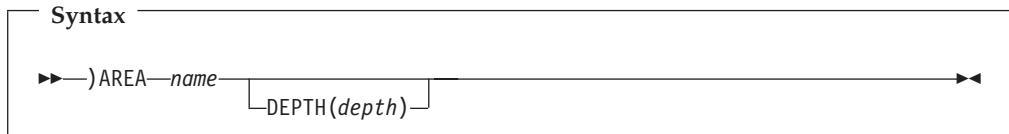
Note: All keywords must be specified on the same panel line.

Panel definition statements and functions

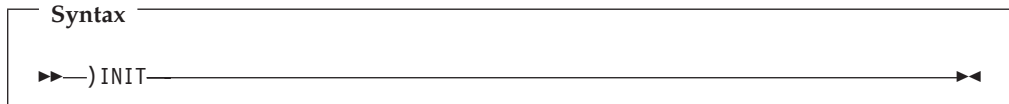
Model Section:



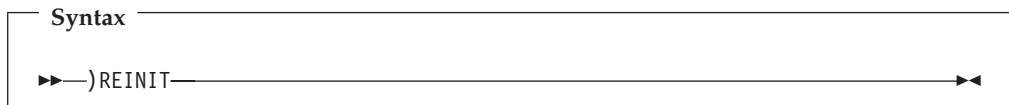
Area Section:



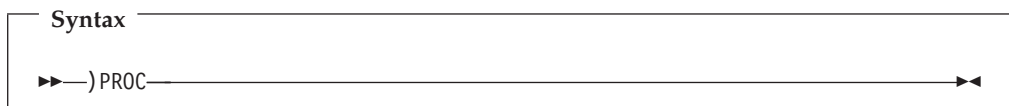
Initialization Section:



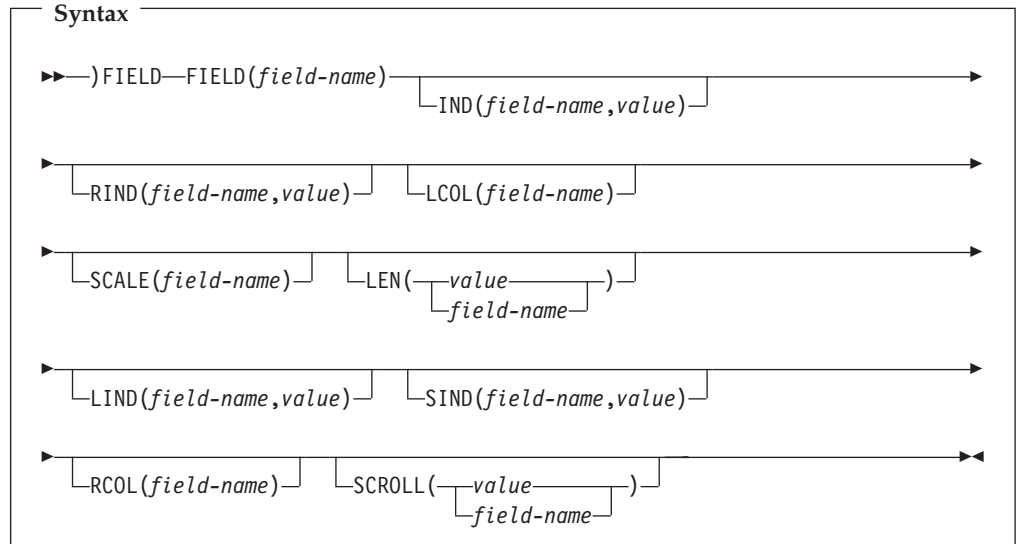
Reinitialization Section:



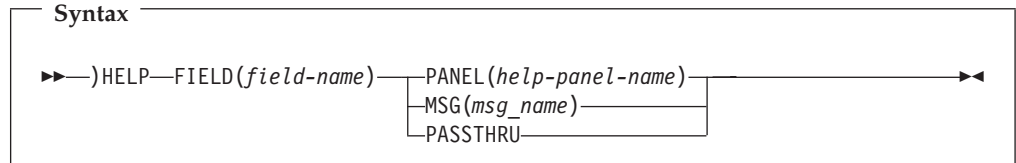
Processing Section:



Field Section:

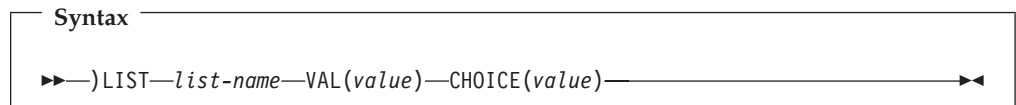


Help Section:



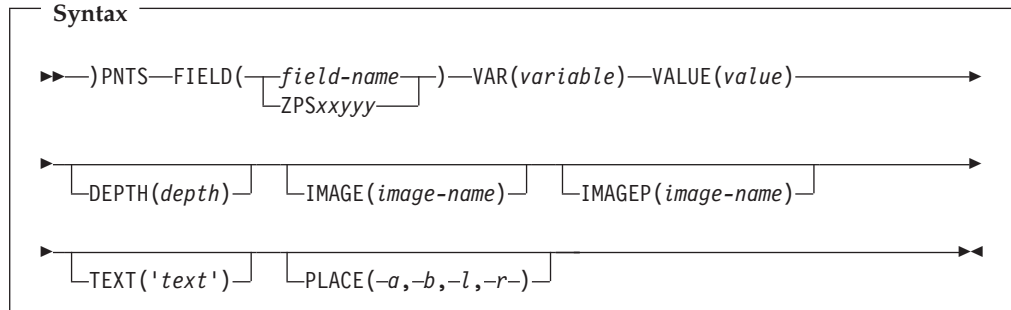
List Section

)LIST *list-name*
 VAL(*value*) CHOICE(*value*)

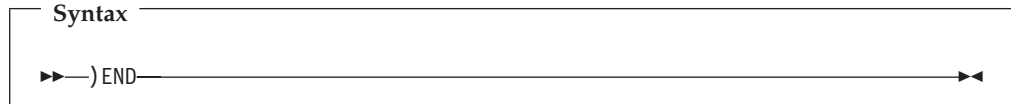


Panel definition statements and functions

Specifying point and shoot fields:

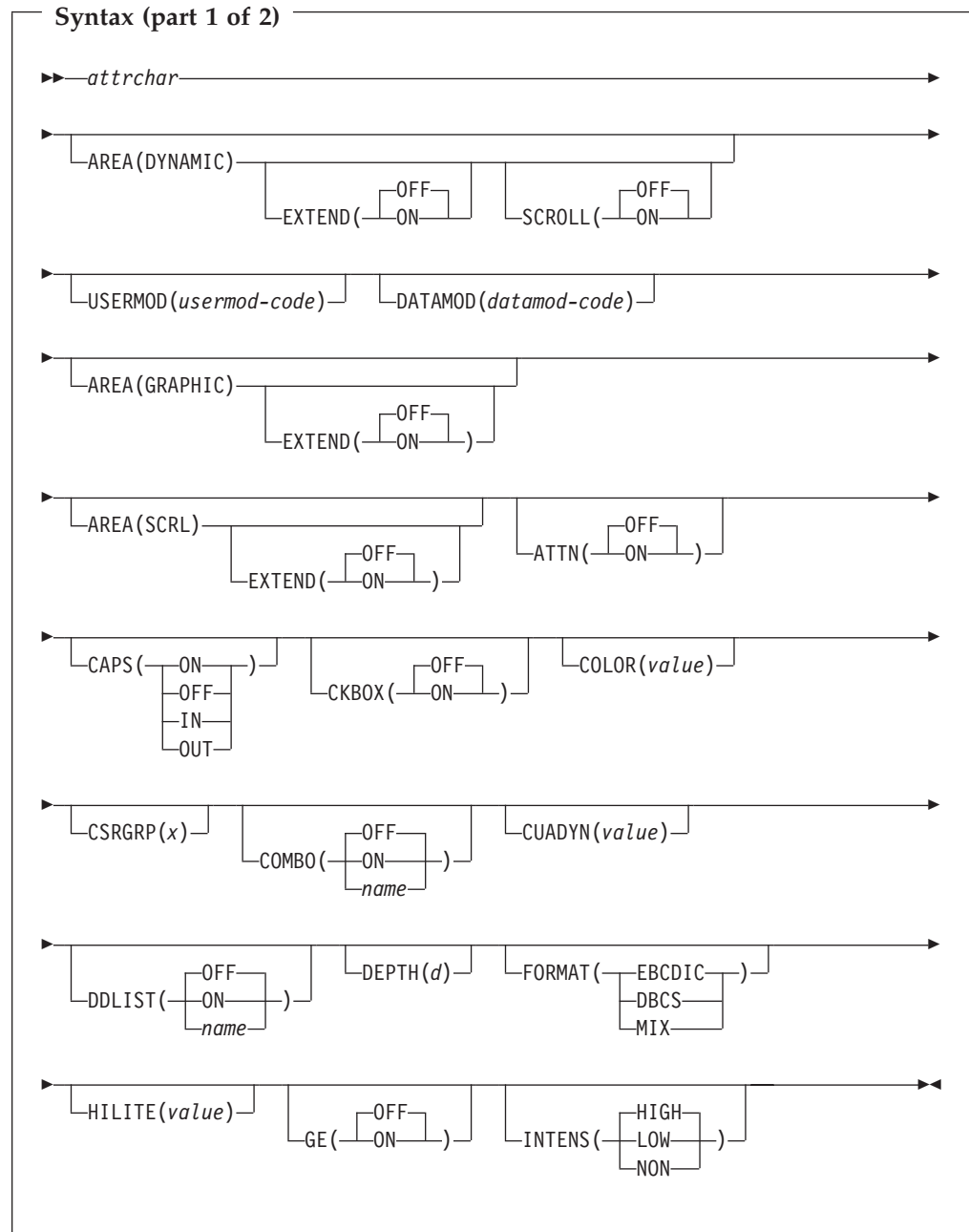


Specifying the End of a Panel Definition:

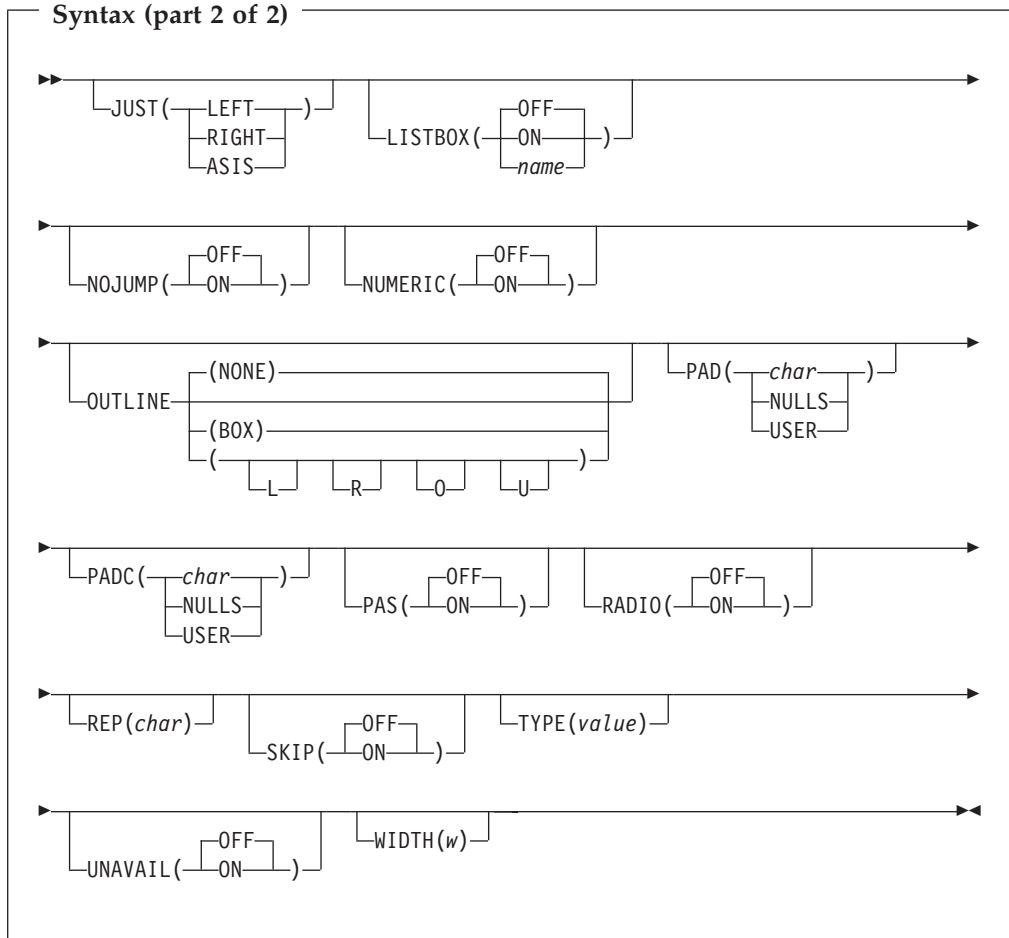


Panel statements and built-in functions

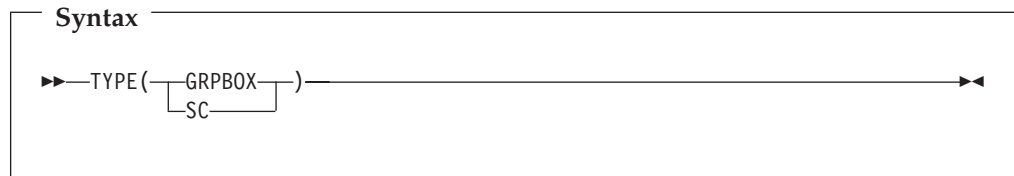
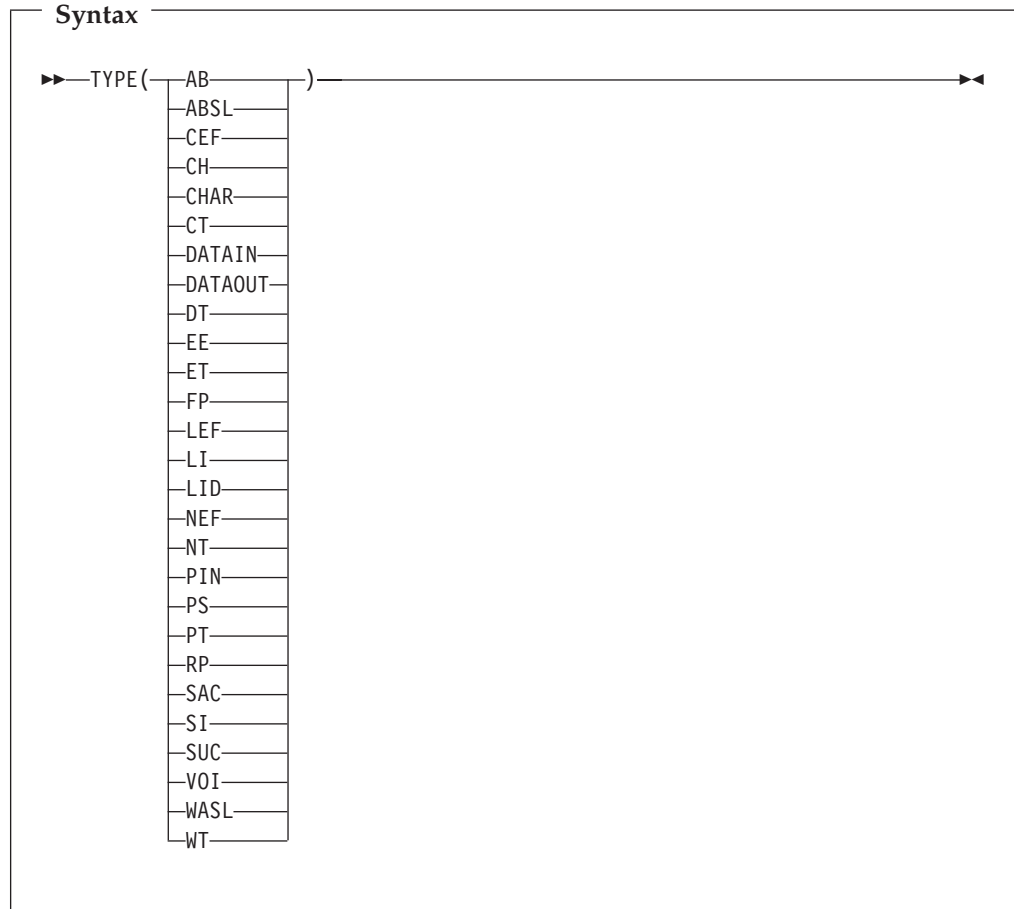
Attribute section



Panel definition statements and functions



Note: Common User Access (CUA) attribute TYPE values listed below are identified in the section that follows.



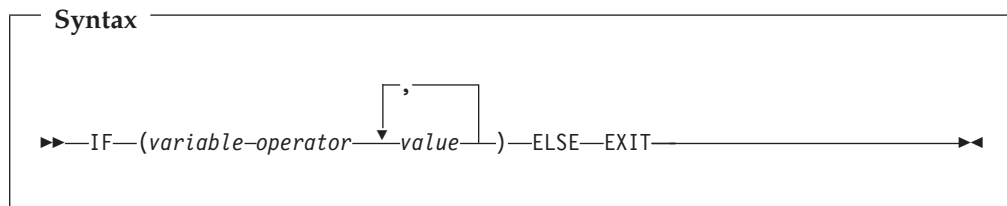
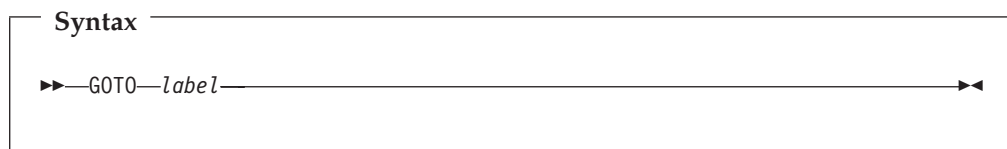
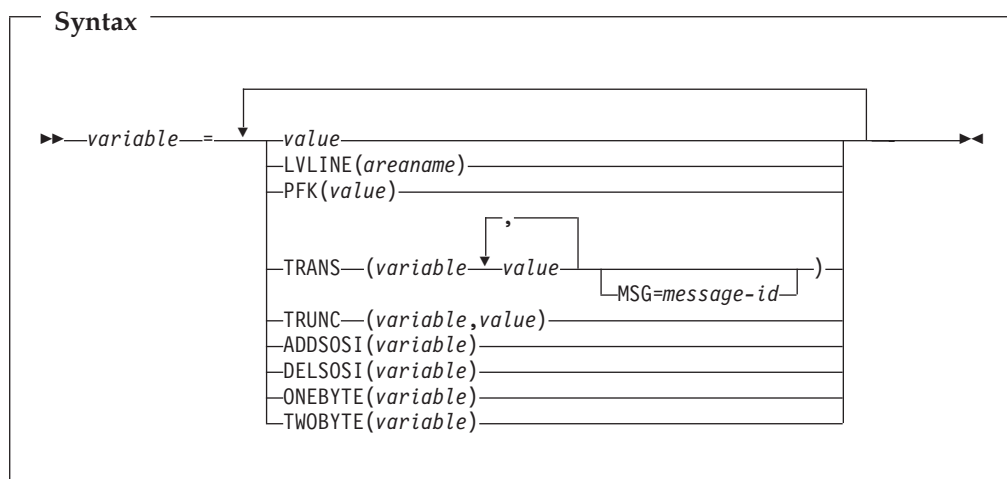
CUA attribute TYPE values

TYPE Value	Description
AB	Action Bar Unselected Choices
ABSL	Action Bar Separator Line
CEF	Choice Entry Field
CH	Column Heading
CHAR	Character attributes in a dynamic area
CT	Caution Text
DATAIN	Input (unprotected) field in a dynamic area
DATAOUT	Output (protected) field in a dynamic area
DT	Descriptive Text
EE	Error Emphasis
ET	Emphasized Text
FP	Field Prompt
GRPBOX	Group Box
INPUT	Input (unprotected) field

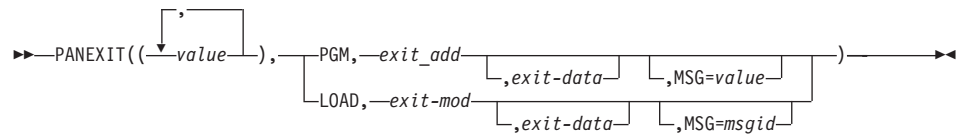
Panel definition statements and functions

LEF	List Entry Field
LI	List Items
LID	List Item Description
NEF	Normal Entry Field
NT	Normal Text
OUTPUT	Output (protected) field
PIN	Panel Instruction
PS	Point-and-Shoot
PT	Panel Title
RP	Reference Phrase
SAC	Select Available Choices
SC	Selected choice
SI	Scroll Information
SUC	Select Unavailable Choices
TEXT	Text (protected) field
VOI	Variable Output Information
WASL	Work Area Separator Line
WT	Warning Text

Initialization, Reinitialization, and Processing sections



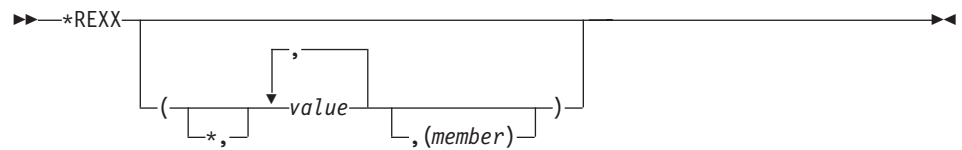
Syntax



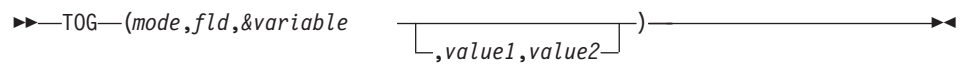
Syntax



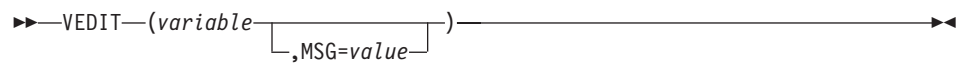
Syntax



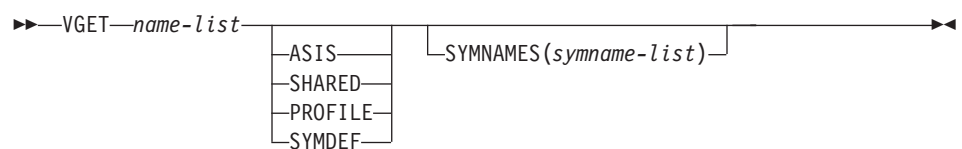
Syntax



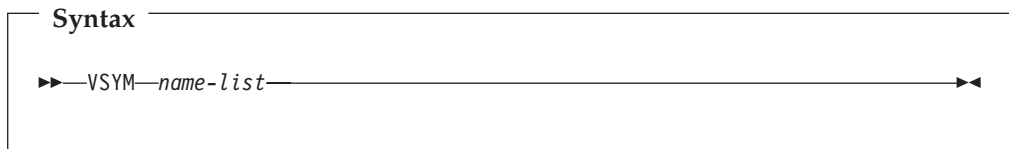
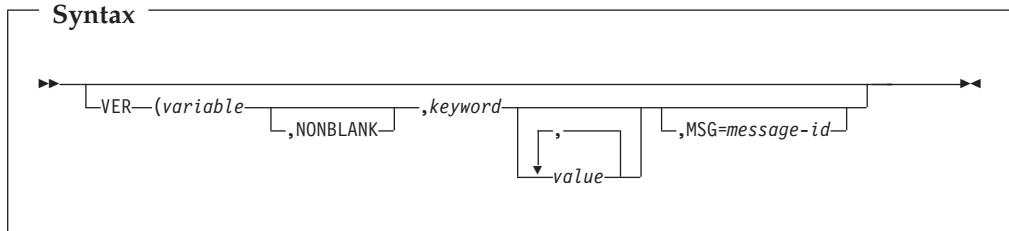
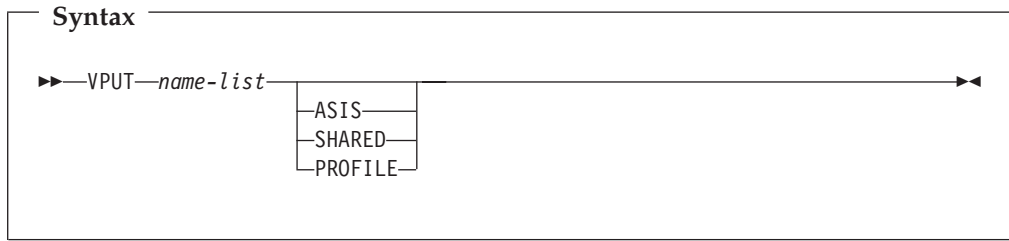
Syntax



Syntax



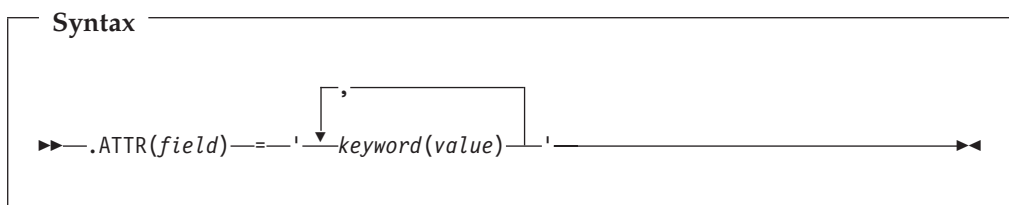
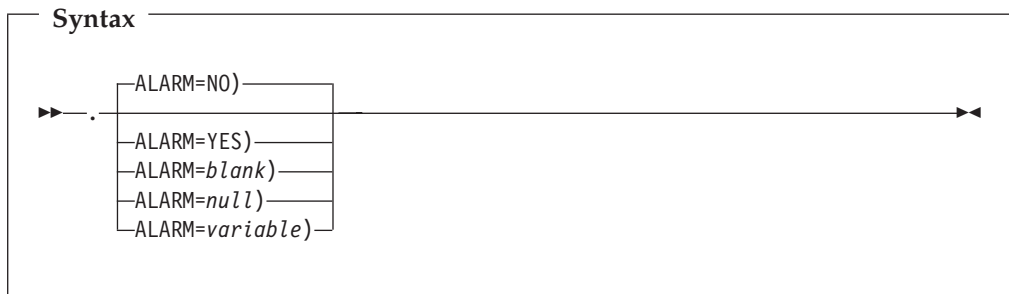
Panel definition statements and functions



VER keywords

ALPHA	ALPHAB	BIT	DBCS	DSNAME	DSNAMEF
DSNAMEFM	DSNAMEPQ	DSNAMEQ	EBCDIC	ENUM	FILEID
HEX	IDATE	INCLUDE	ITIME	JDATE	JSTD
LEN	LIST	LISTV	LISTVX	LISTX	MIX
NAME	NAMEF	NUM	PICT	PICTCN	RANGE
STDDATE	STDTIME	VSYM			

Panel control variables



Syntax

▶▶ .ATTRCHAR(*char*) == ' keyword(*value*) ' ▶▶

Syntax

▶▶ . [AUTOSEL=YES)
[AUTOSEL=NO) ▶▶

Syntax

▶▶ .CSRPOS == *cursor-position* ▶▶

Syntax

▶▶ .CSRROW == *table-row-number* ▶▶

Syntax

▶▶ .CURSOR == *field-name* ▶▶

Syntax

▶▶ .HELP == *panel-name* ▶▶

Syntax

▶▶ .MSG == *message-id* ▶▶

Panel definition statements and functions

Syntax

(1)
▶▶ .PFKEY==_____▶▶

Notes:

- 1 Contains function key pressed by user (PF01,PF02, ...,PF24).

Syntax

▶▶ .RESP==_____▶▶
 ┌ENTER┐
 └END ┘

Syntax

(1)
▶▶ .TRAIL==_____▶▶

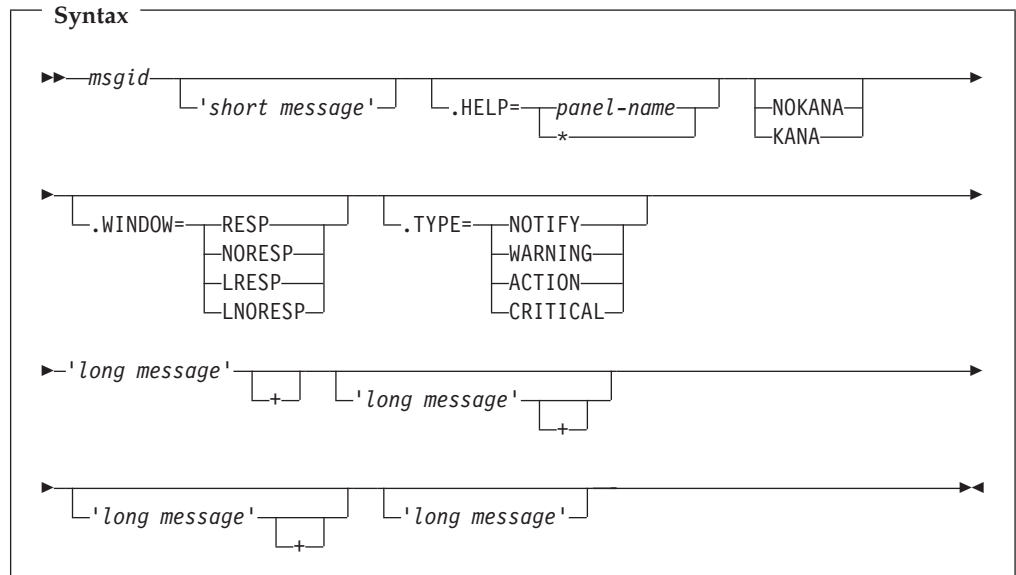
Notes:

- 1 Contains remainder from TRUNC operation.

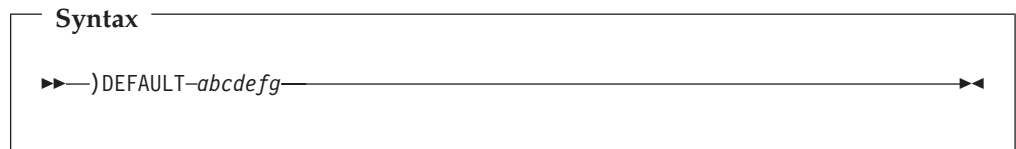
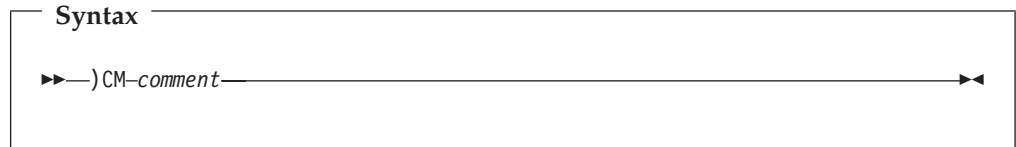
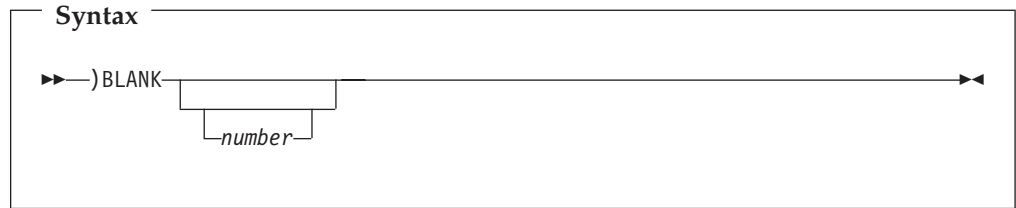
Syntax

▶▶ .ZVARS== '(name-list)' _____▶▶

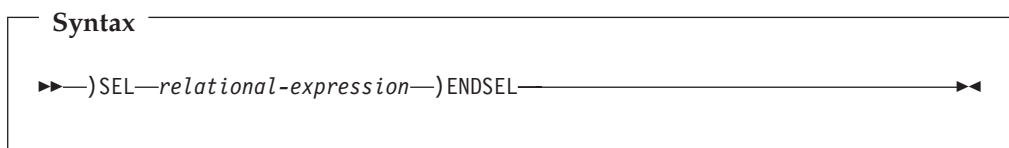
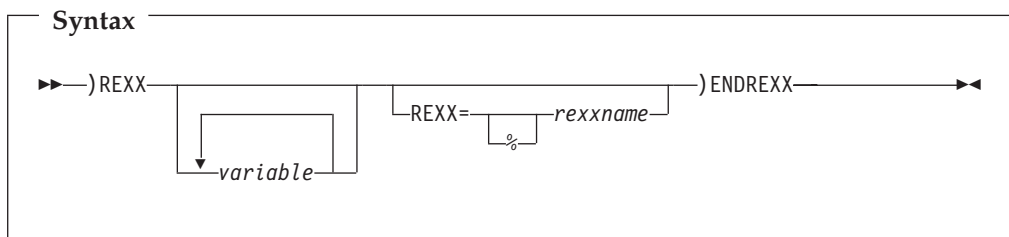
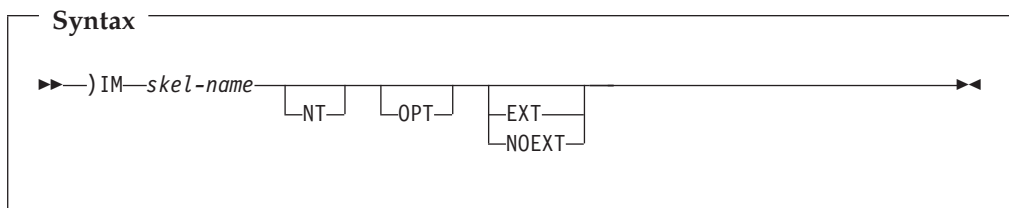
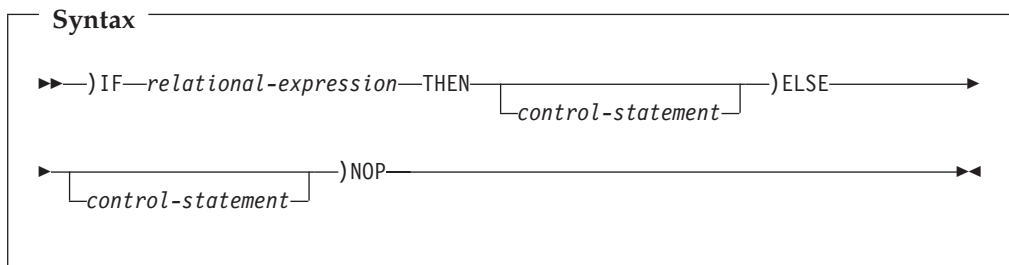
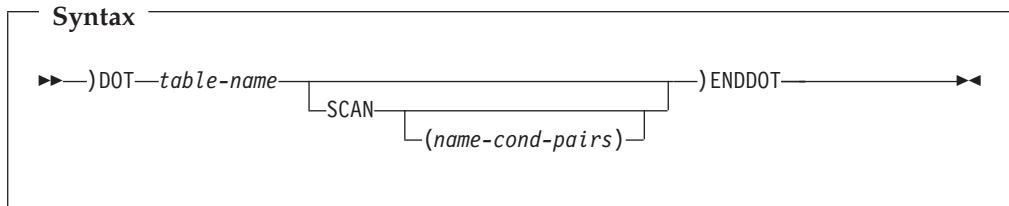
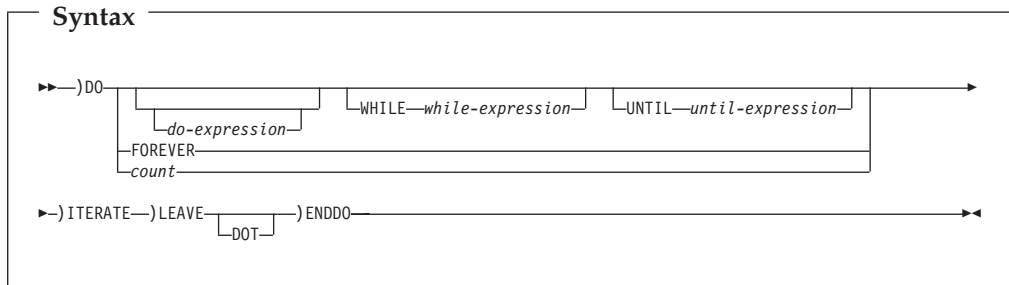
Message definitions

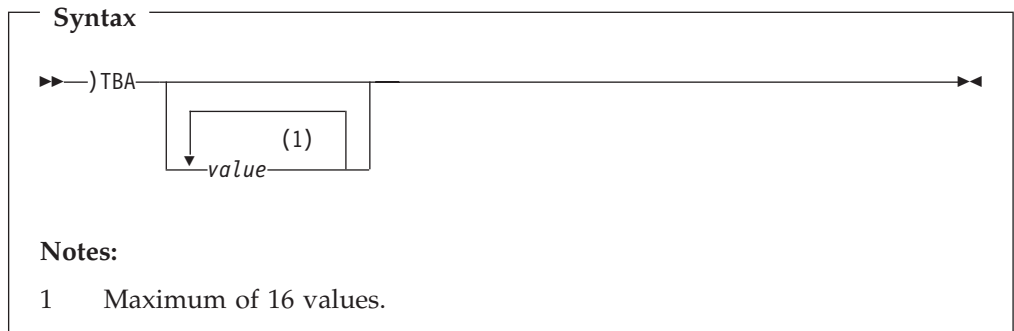
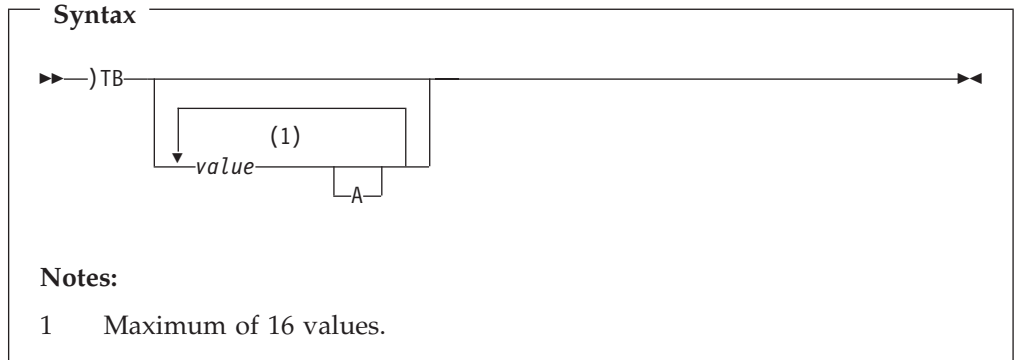
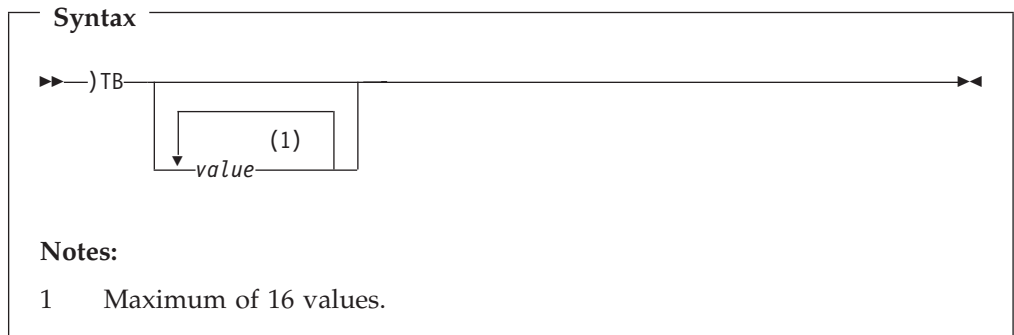
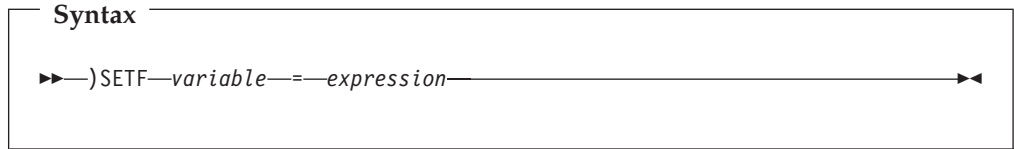
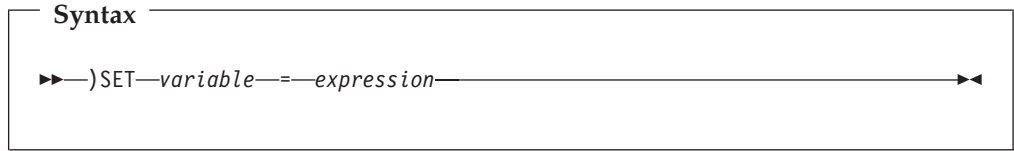


Skeleton control statements



Skeleton control statements





Skeleton control statements

Chapter 3. ISPF service syntax with return codes

Important note about syntax diagrams for ISPF services

For several of the ISPF services, the syntax for call invocation (shown under "Call invocation format") includes a number of optional parameters. These optional parameters are *positional*; that is:

- Each optional parameter you choose to specify must be specified in the sequence shown in the syntax diagram.
- Where you specify a parameter without specifying one or more previous optional parameters, the absence of each previous optional parameter must be indicated by a placeholder in the form of a blank enclosed in single quotes followed by a comma. (For the purpose of clarity, the syntax diagrams show only the comma.)

For example, in the call invocation for the ADDPOP service shown here, the first and third optional parameters have been specified (field-name and column respectively), whilst the second optional parameter (in this case, row) has been omitted:

```
CALL ISPLINK ('ADDPOP ', field-name, ' ', column);
```

When you do not specify an optional parameter, the default value (if any) for that parameter applies.

It is only necessary to include placeholders for unspecified *intermediate* parameters. That is, once you have specified the last optional parameter you want, there is no need to specify placeholders for subsequent optional parameters (if any); if there are default values for any subsequent optional parameters, then they will apply.

Further examples:

All optional parameters specified:

```
CALL ISPLINK ('DISPLAY ', panel-name, message-id,  
cursor-field-name, cursor-position, stack-buffer-name,  
ret-buffer-name, ret-length-name, message-field-name);
```

First five optional parameters specified:

```
CALL ISPLINK ('DISPLAY ', panel-name, message-id,  
cursor-field-name, cursor-position, stack-buffer-name);
```

First, third, and fourth optional parameters specified:

```
CALL ISPLINK ('DISPLAY ', panel-name, ' ', cursor-field-name,  
cursor-position);
```

Third, fourth, and seventh optional parameters specified:

```
CALL ISPLINK ('DISPLAY ', ' ', ' ', cursor-field-name,  
cursor-position, ' ', ' ', ret-length-name);
```

This chapter contains the ISPF services. The services are presented in alphabetical order. For each service, the command procedure format is shown, followed by the PL/I call formats. For more complete information, see the *z/OS ISPF Services Guide*.

Each service description consists of this information:

ISPF service syntax

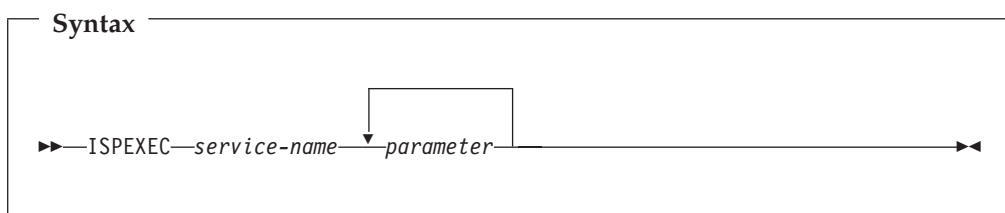
- Format** The syntax used to code the service, showing both command invocation and call invocation.
- Return codes** A description of the codes returned by the service. For all services, a return code of 12 or higher implies a severe error. This error is usually a syntax error, but can be any severe error detected when using the services.

Command format

This section describes the general format for ISPF services.

ISPEXEC command invocation

The general format for a command invocation is:



ISPEXEC parameter conventions

service-name

Alphabetic; up to 8 characters long.

parameter1

Positional parameter; required for some services.

parameter2 parameter3 ...

Keyword parameters. They can take either of two forms:

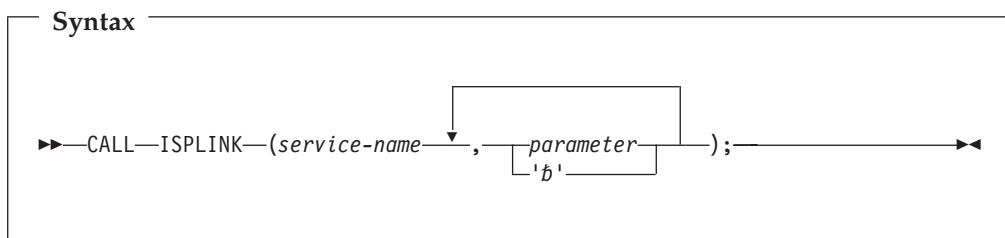
keyword

or

keyword(value)

The ISPLINK interface

For calls in PL/I or COBOL, the general call format for invoking ISPF services from functions by using ISPLINK is:



CALL ISPLINK parameters

These parameters are positional. They must appear in the order described for each service.

Parameters shown below the line are optional, but ISPF assumes default values for those parameters you do not choose.

If you want to omit a parameter, you must still account for it by inserting a blank enclosed in single quotes (' ') in its place. This is how you would omit **parm2** from this sample call:

```
CALL ISPLINK (service-name, parm1, ' ', parm3);
```

If you need only the first few of a list of parameters, you must omit all other parameters to the right of the last parameter you need. For example, if you are using a service that has five parameters, but you need to use only the first three, code it like this:

```
CALL ISPLINK (service-name, parm1, parm2, parm3);
```

You must show the last parameter in the calling sequence with a '1' as the high order bit in the last entry of the address list. PL/I, COBOL, Pascal, and FORTRAN call statements automatically generate this high-order bit. However, you must use the VL keyword in assembler call statements.

The ISPEXEC interface

You can use the command function form for service requests in a program function by using the call format of ISPEXEC. Excluding calls in FORTRAN, Pascal, and APL2[®], the general call format for invoking ISPF services from program functions by using ISPEXEC is:

```
CALL ISPEXEC (buf-len, buffer);
```

CALL ISPEXEC parameters

buf-len

Specifies a fullword fixed binary integer containing the length of the buffer.

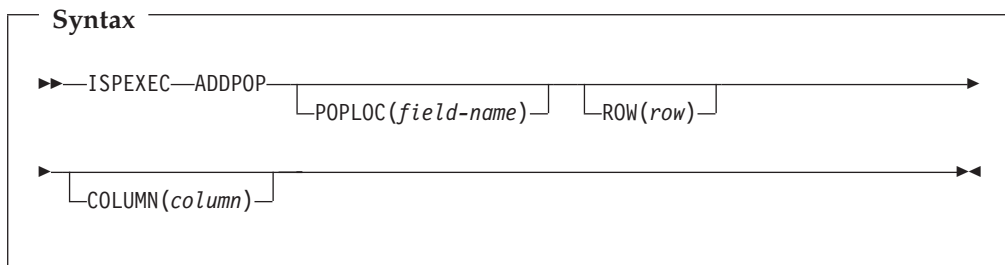
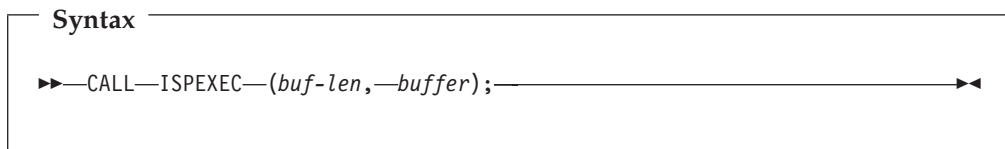
buffer

Specifies a buffer containing the name of the service and its parameters just as they would appear in an ISPEXEC invocation for a command invocation written in CLIST.

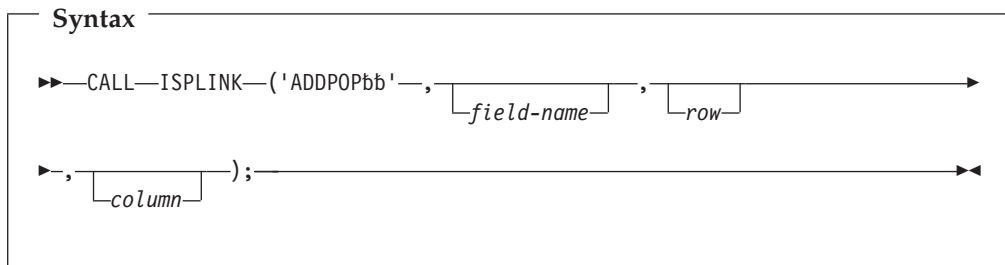
The maximum buffer size is 32767 bytes.

All services that are valid through ISPEXEC command invocation statements are valid through the CALL ISPEXEC interface.

ISPF services

ADDPOP—start pop-up window mode**Command invocation format****Call invocation format**

OR

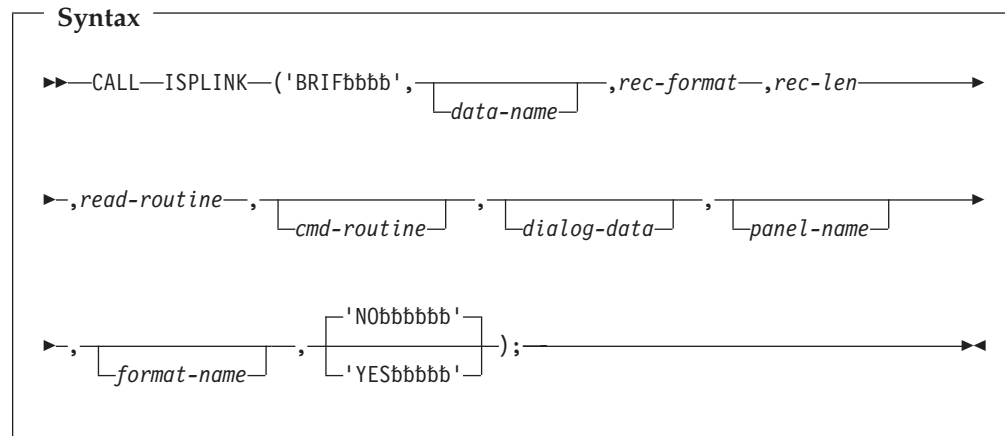
**Return codes**

- 0 Normal completion.
- 12 An ADDPOP service call was issued before the panel was displayed or another ADDPOP service call was issued before a panel was displayed for the previous ADDPOP call.
- 20 Severe error.

BRIF—Browse interface**Command invocation format**

Command procedures cannot be used to invoke this service.

Call invocation format



Return codes

Read routine:

- 0 Normal completion.
- 4 Temporary end of file.
- 8 Record requested beyond end of data. The relative record number of the last data record and a pointer to the last data record are returned.
- 16 Read error. Browse data obtained up to the read error is formatted and displayed with an indication that a read error was encountered.
- 20 Severe error. (The BRIF service terminates immediately with a return code of 20.)

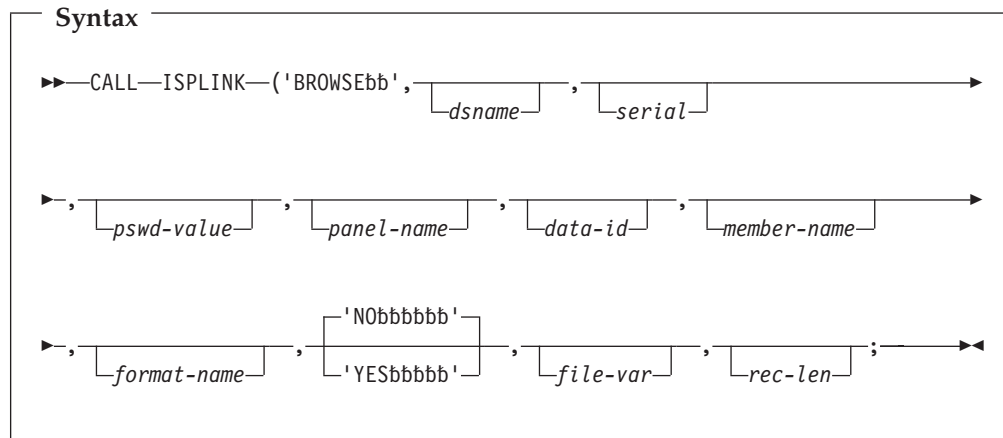
Command routine:

- 0 Normal completion.
- 4 The PDF component should process the requested function.
- 12 Command deferred; retain the command on the Command line. Browse data is redisplayed.
- 20 Severe error. (The BRIF service terminates immediately with a return code of 20.)

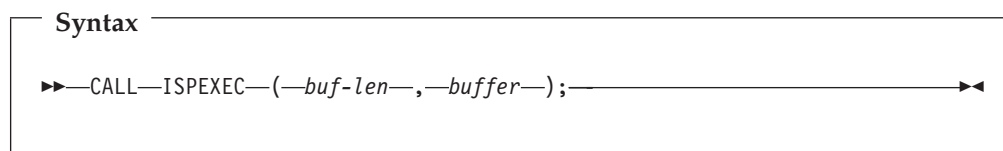
BRIF service:

- 0 Normal completion.
- 12 No data to browse.
- 16 Unexpected return code received from a dialog-supplied routine; unable to continue. When an unexpected return code is received, the BRIF service terminates immediately with a return code of 16.
- 20 Severe error; unable to continue.

Call invocation format



OR



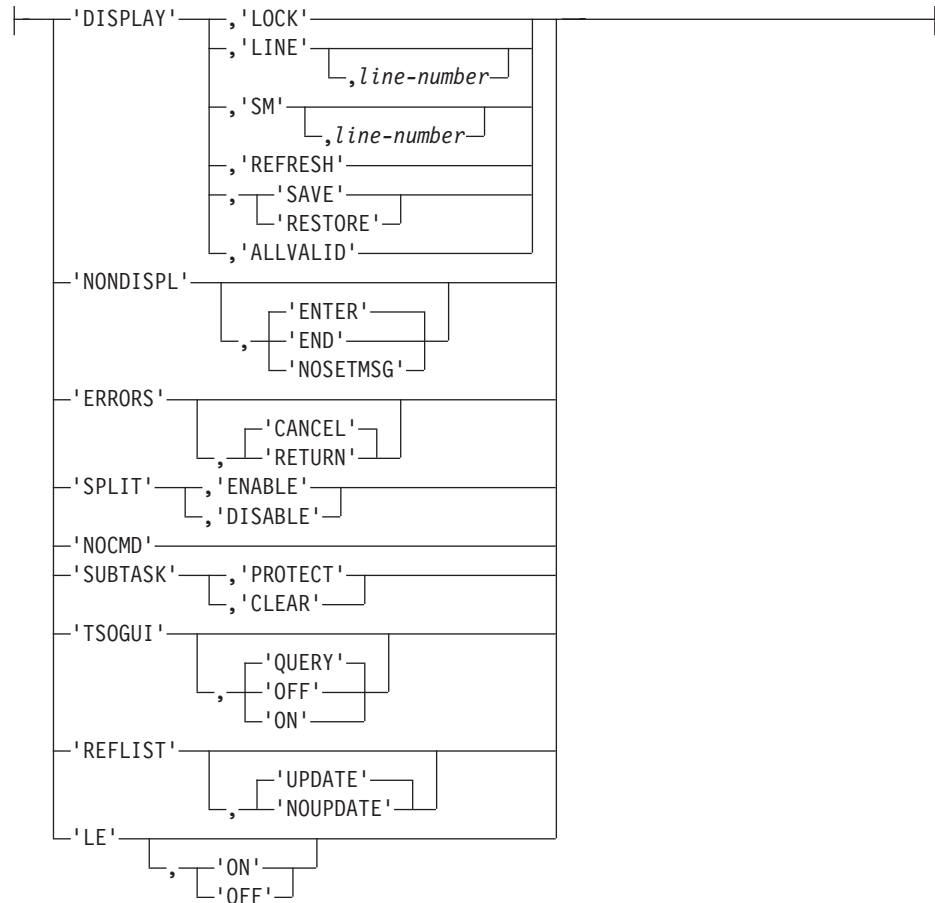
Return codes

- 0 Normal completion.
- 12 Zero-length data; empty sequential data set or z/OS UNIX file, or zero-length member of a partitioned data set.
- 14 Specified member not found.
- 16 One of these:
 - No members matched the specified pattern.
 - No members in the partitioned data set.
- 18 A VSAM data set was specified but the ISPF Configuration Table does not allow VSAM processing.
- 20 Severe error; unable to continue.

Syntax

```
►►CALL ISPLINK ('CONTROL ' , operand );
```

operand:

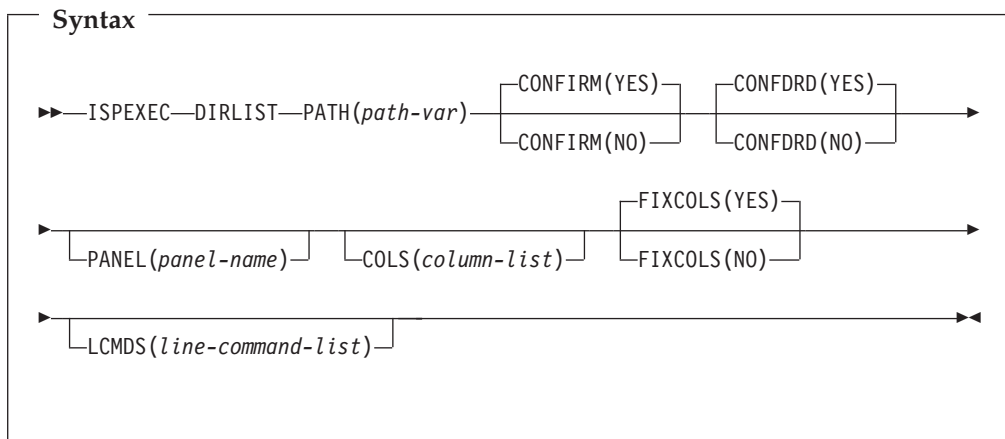


Return codes

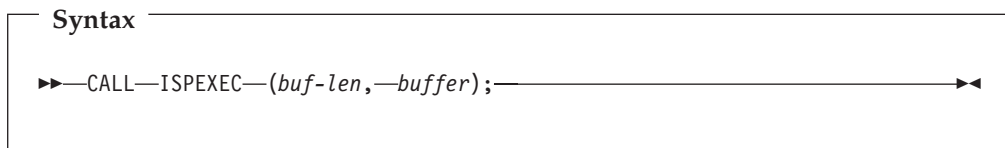
- 0 Normal completion.
- 8 Split-screen mode already in effect. Applies only to a SPLIT DISABLE request. Split-screen mode remains enabled.
- 20 Severe error.

DIRLIST—directory list service

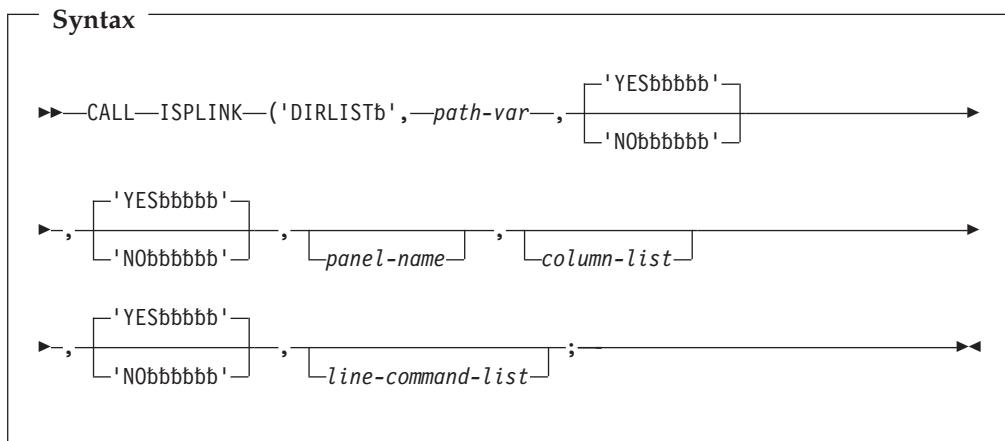
Command invocation format



Call invocation format



OR



Return codes

- 0 Normal completion.
- 8 Error building the directory list. The error condition is described in the ISPF system dialog variables.
- 12 A keyword value is incorrect.
- 20 A severe error occurred while processing the directory list.

DISPLAY service

- 4 One or more commands in the stack could not be found in the active set of command tables.
- 8 User requested termination via the END or RETURN command. For panels generated with the tag conversion utility, CANCEL and EXIT commands also give a return code of 8.
- 12 The specified panel, message, cursor field, or message location field could not be found.
- 16 Truncation or translation error in storing defined variables.
- 20 Severe error.

DSINFO—data set information dialog

Command invocation format

Syntax

```
▶▶—ISPEXEC—DSINFO—DATASET(dsname)—VOLUME(serial)—▶▶
```

Call invocation format

Syntax

```
▶▶—CALL—ISPEXEC—(buf-len,buffer);—▶▶
```

OR

Syntax

```
▶▶—CALL—ISPLINK—('DSINFObb'—,dsname—,serial)—▶▶
```

Return codes

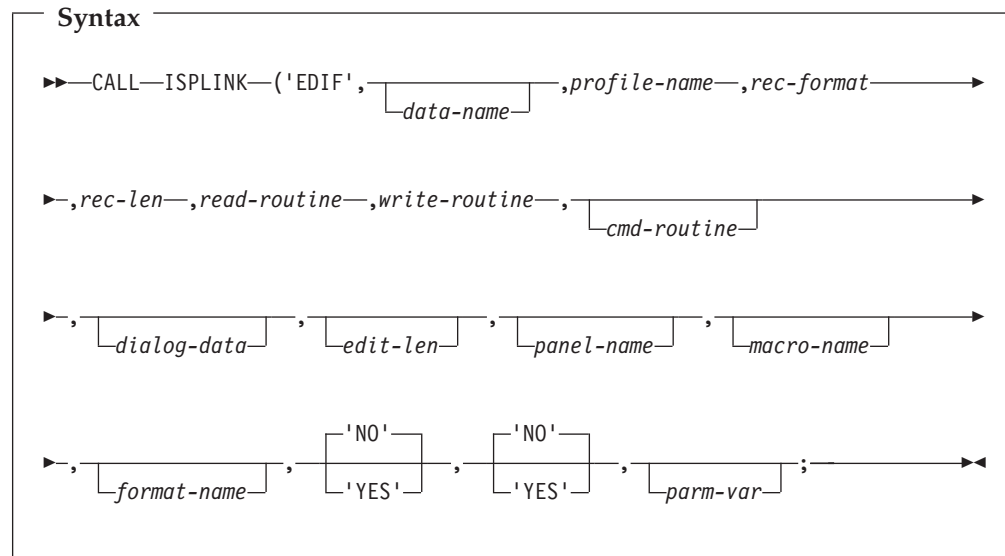
- 0 Normal completion.
- 8 User requested data set was not found.
- 12 One of these:
 - FAMS error.
 - Obtain error.
 - Error obtaining directory information.
- 20 Severe error; unable to continue.

EDIF—Edit interface

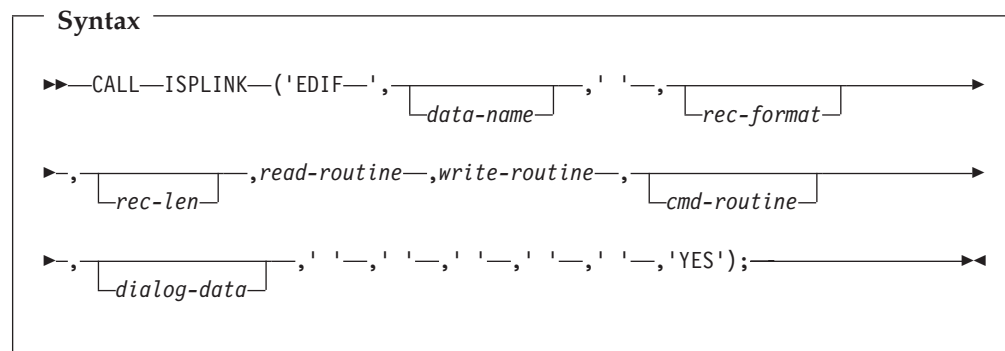
Command invocation format

Command procedures cannot be used to invoke this service.

Call invocation format



OR



Return codes

Read routine:

- 0 Normal completion.
- 8 End of data records (no data record returned).
- 16 Read error. If a read error is encountered when building the initial edit display, the EDIF service terminates with a return code of 20. Otherwise, the edit data is redisplayed.
- 20 Severe error. (EDIF service terminates immediately with a return code of 20.)

Write routine return codes:

- 0 Normal completion.
- 16 Output error, return to Edit mode.
- 20 Severe error. (EDIF service terminates immediately with a return code of 20).

Command routine return codes:

- 0 Normal completion.
- 4 The PDF component should process the requested function.

EDIF service

- 12 Command deferred; retain the command on the Command line. Edit data is redisplayed.
- 20 Severe error. (EDIF service terminates immediately with a return code of 20.)

EDIF return codes:

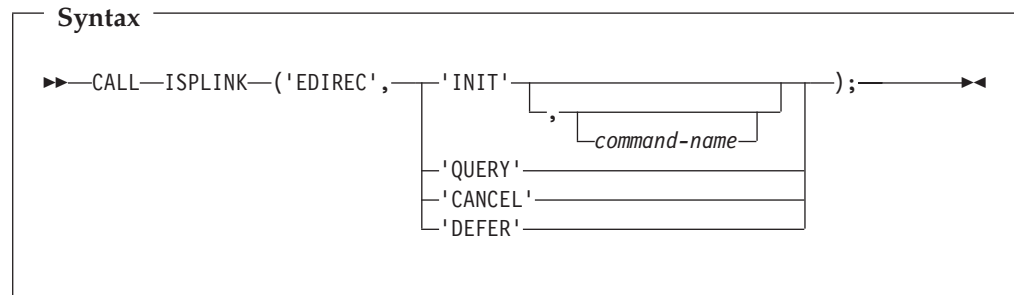
- 0 Normal completion, data saved.
- 4 Normal completion, data not saved.
- 16 Unexpected return code received from a dialog-supplied routine. When an unexpected return code is received, the EDIF service terminates immediately with a return code of 16.
- 20 Severe error; unable to continue.

EDIREC—initialize edit recovery

Command invocation format

Command procedures cannot be used to invoke this service.

Call invocation format

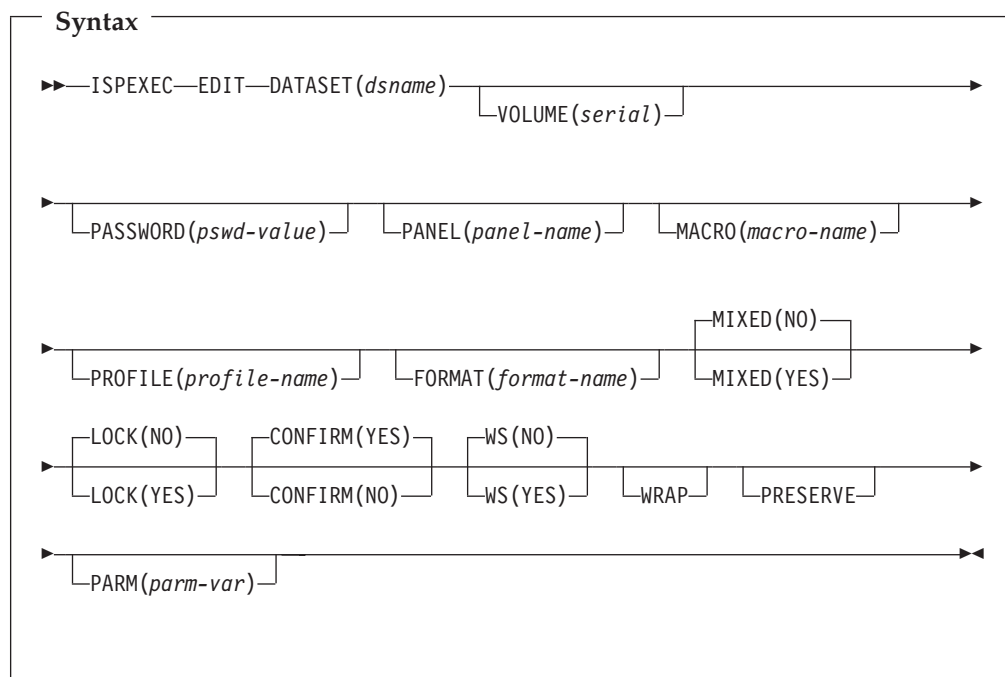


Return codes

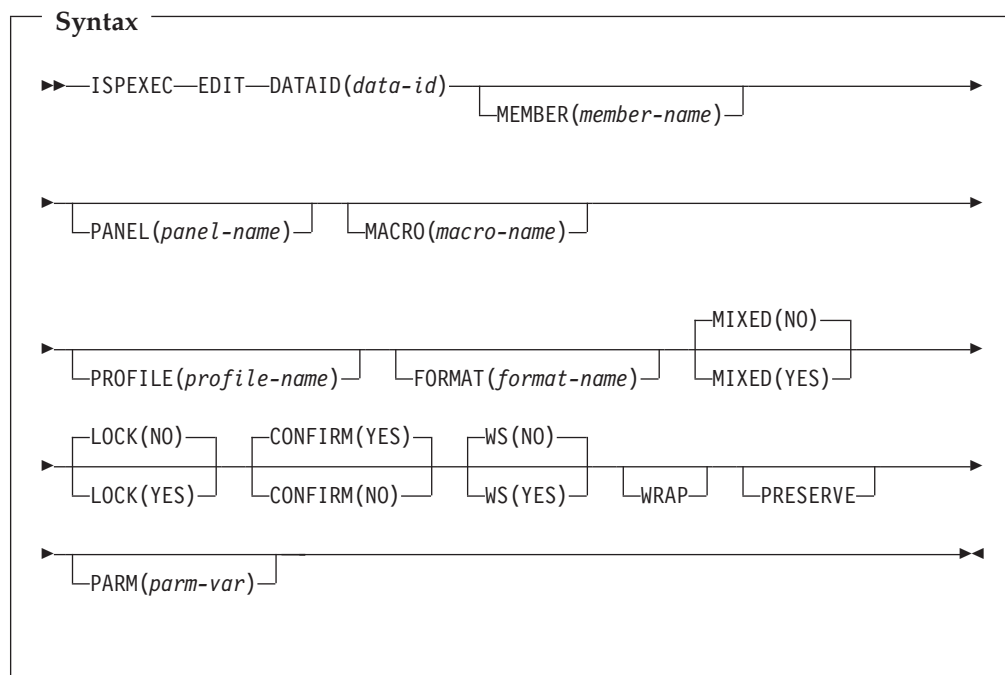
- 0 Normal completion.
 - INIT - EDIF recovery table was successfully created.
 - QUERY - Recovery is not pending.
- 4 Normal completion.
 - INIT - EDIF recovery table already exists for current application
 - QUERY - Entry found in EDIF recovery table (recovery is pending).
- 20 Severe error; unable to continue.

EDIT—edit a data set

Command invocation format

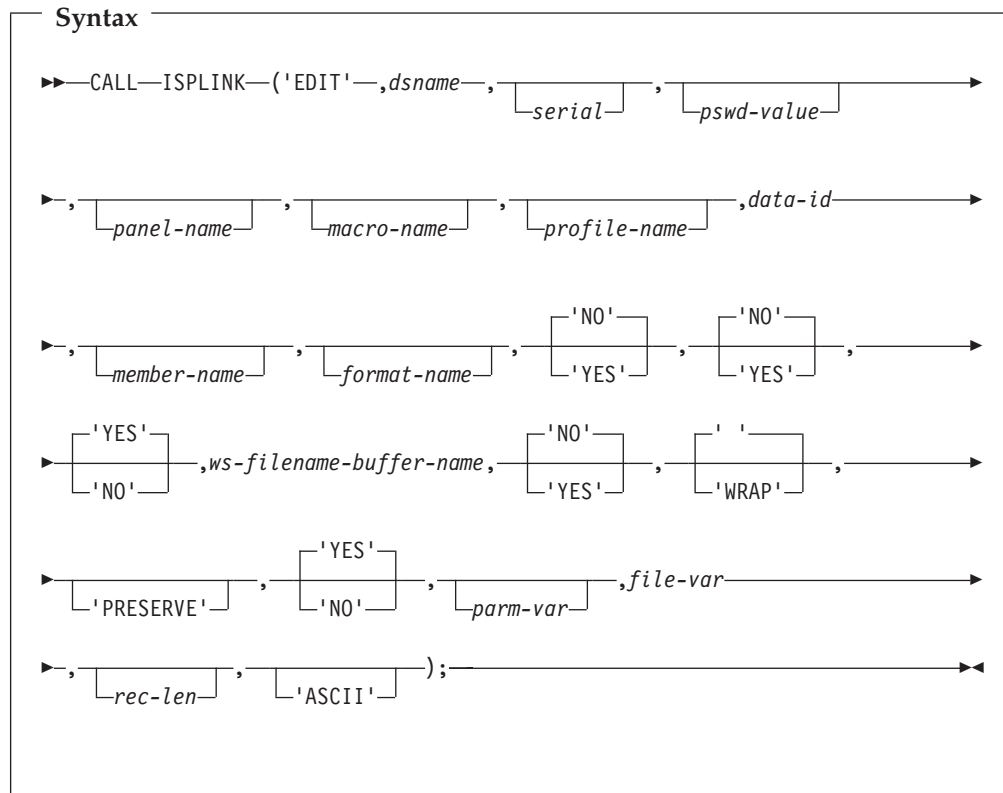


OR

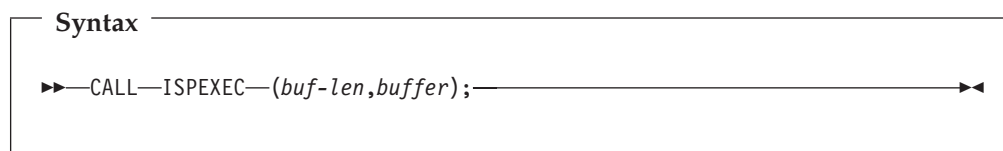


OR

Call invocation format



OR

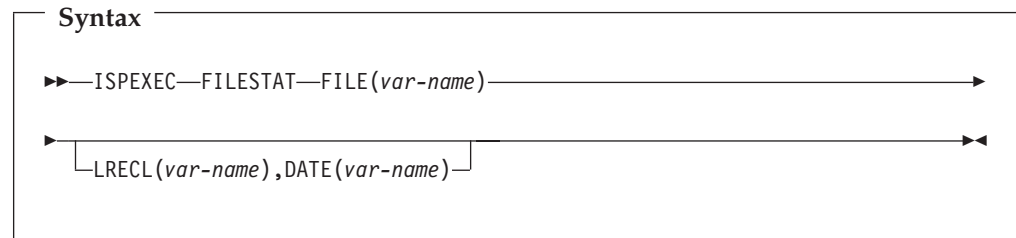


Return codes

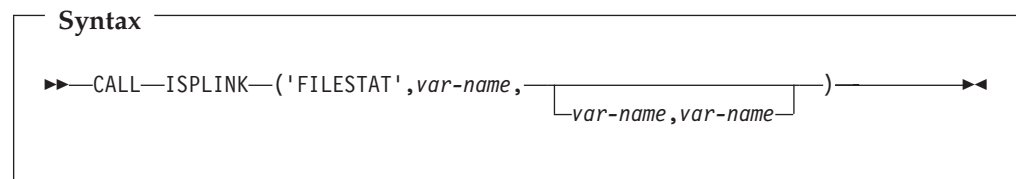
- 0 Normal completion; data was saved.
- 4 Normal completion; data was *not* saved.
- 12 YES was specified for the LOCK parameter.
- 14 Member, sequential data set, or z/OS UNIX file in use.
- 16 One of these:
 - No members matched the specified pattern.
 - No members in the partitioned data set.
- 18 A VSAM data set was specified but the ISPF Configuration Table does not allow VSAM processing.
- 20 Severe error; unable to continue.

FILESTAT—statistics for a file

Command invocation format



Call invocation format

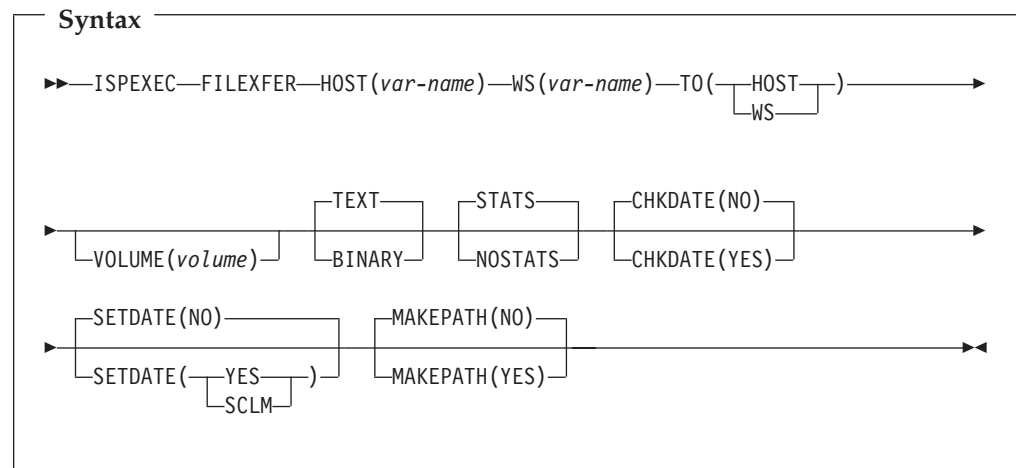


Return codes

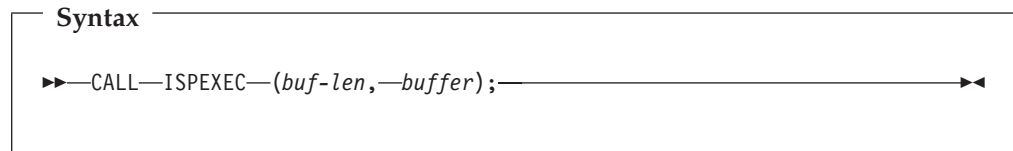
- 0 Workstation file exists.
- 4 Workstation file does not exist.
- 8 Error in variable specification.
- 10 No workstation connection exists.
- 12 Workstation device is not ready.
- 20 Severe error in FILESTAT service.

FILEXFER—upload or download file

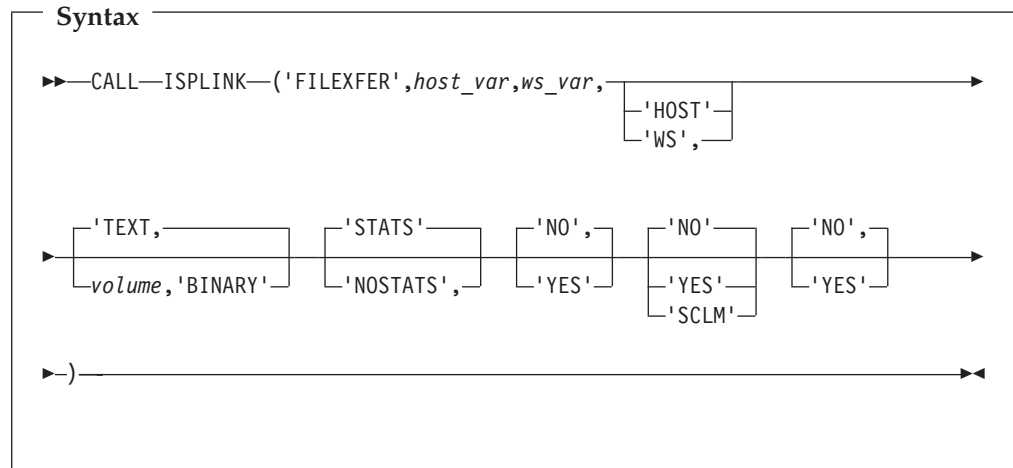
Command invocation format



Call invocation format



OR

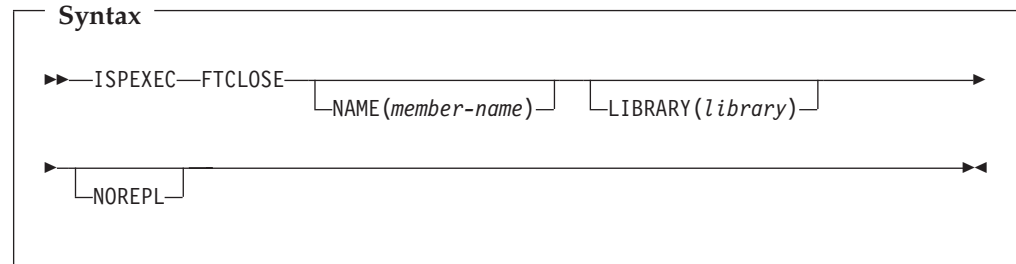


Return codes

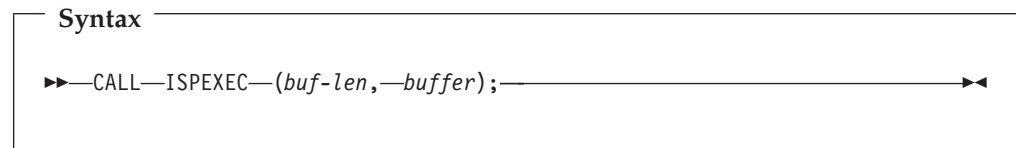
- 2 Source file and target file have the same date and time.
- 4 LMSTAT failed.
- 6 Data set not cataloged.
- 7 Error in variable specification.
- 8 "TO" direction not valid.
- 9 Host name is too long.
- 10 No workstation connection exists.
- 11 Return code 1 from DTTRANSFER. Host data set had null object handle.
- 12 Return code 2 from DTTRANSFER. Workstation file had null object handle.
- 13 Return code 3 from DTTRANSFER. Host data set could not be opened.
- 14 Return code 4 from DTTRANSFER. Workstation file could not be opened.
- 15 Return code 5 from DTTRANSFER. Error reading host data set.
- 16 Return code 6 from DTTRANSFER. Error reading workstation file.
- 17 Return code 7 from DTTRANSFER. Error writing host data set.
- 18 Return code 8 from DTTRANSFER. Error writing workstation file.
- 19 Return code 9 from DTTRANSFER. Error closing host data set.
- 20 Severe error in transfer service.
- 21 Return code 10 from DTTRANSFER. Error closing workstation file.
- 22 Return code 11 from DTTRANSFER. User refused file access.
- 23 Data set or member in use.

FTCLOSE—end file tailoring

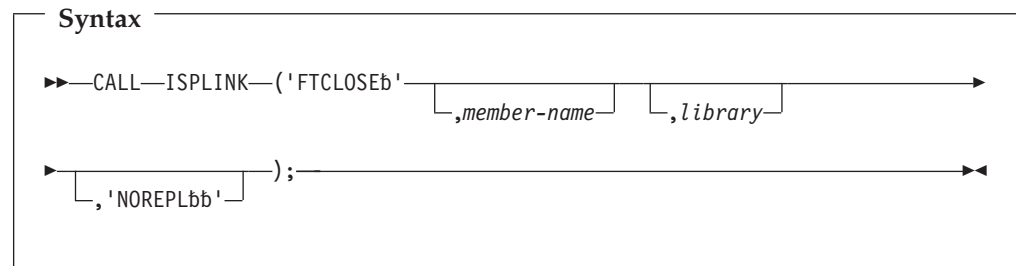
Command invocation format



Call invocation format



OR

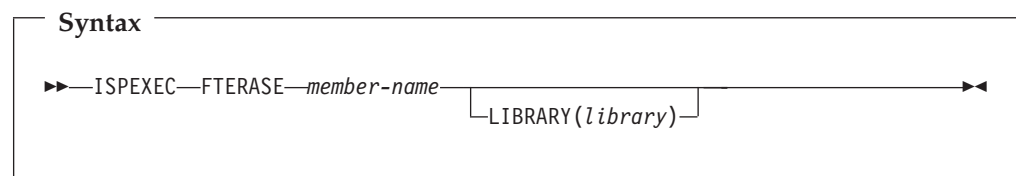


Return codes

- 0 Normal completion.
- 4 Member already exists in the output library and NOREPL was specified.
The original member is unchanged.
- 8 File not open. FTOPEN was not used before FTCLOSE.
- 12 Output file in use. ENQ failed.
- 16 Skeleton library or output file not allocated.
- 20 Severe error.

FTERASE—erase file tailoring output

Command invocation format



FTERASE service

Call invocation format

Syntax

```
▶▶CALL ISPEXEC (buf-len, -buffer);◀◀
```

OR

Syntax

```
▶▶CALL ISPLINK ('FTERASEb', -member-name [ ,library ] );◀◀
```

Return codes

- 0 Normal completion.
- 8 File does not exist.
- 12 Output file in use; ENQ failed.
- 16 Alternate output library not allocated.
- 20 Severe error.

FTINCL—include a skeleton

Command invocation format

Syntax

```
▶▶ISPEXEC FTINCL -skel-name [NOFT] [EXT]◀◀
```

Call invocation format

Syntax

```
▶▶CALL ISPEXEC (buf-len, -buffer);◀◀
```

OR

Syntax

```

▶▶ CALL ISPLINK ('FTINCLbb', skel-name, [NOFTbbbb]);
▶▶ [EXTbbbb];

```

Return codes

- 0 Normal completion.
- 8 Skeleton does not exist.
- 12 Skeleton in use; ENQ failed.
- 16 Data truncation occurred or skeleton library or output file not allocated.
- 20 Severe error.

FTOPEN—begin file tailoring

Command invocation format

Syntax

```

▶▶ ISPEXEC FTOPEN [TEMP];

```

Call invocation format

Syntax

```

▶▶ CALL ISPEXEC (buf-len, buffer);

```

OR

Syntax

```

▶▶ CALL ISPLINK ('FTOPENbb', [TEMPbbbb]);

```

Return codes

- 0 Normal completion.
- 8 File tailoring already in progress.
- 12 Output file in use; ENQ failed.
- 16 Skeleton library or output file not allocated.
- 20 Severe error.

Call invocation format

CALL ISPEXEC *This service cannot be used
with this interface*

Syntax

```
▶▶—CALL—ISPLINK—('GRERRORb',—error-record-pointer,—————▶▶
▶—call-format-descriptor-module-pointer);—————▶▶
```

Return codes

0 Normal completion.
8 ISPF/ GDDM[®] interface is not established.
20 Severe error.

GRINIT—graphics initialization**Command invocation format**

ISPEXEC *This service does not apply to
command or APL2 procedures*

Call invocation format

CALL ISPEXEC *This service cannot be used
with this interface*

Syntax

```
▶▶—CALL—ISPLINK—('GRINITbb'—, application-anchor-block—————▶▶
▶—panel-name);—————▶▶
```

Return codes

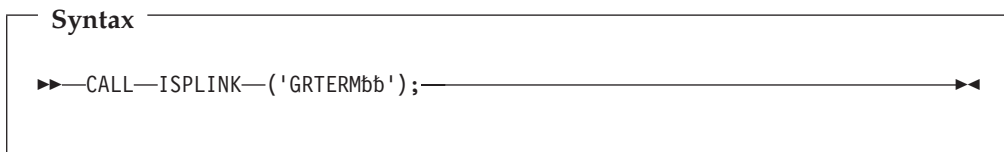
0 Normal completion.
8 The specified panel does not contain a GRAPHIC area.
12 The specified panel could not be found.
20 Severe error.

GRTERM—graphics termination service**Command invocation format**

ISPEXEC *This service does not apply to
command or APL2 procedures*

Call invocation format

CALL ISPEXEC *This service cannot be used
with this interface*



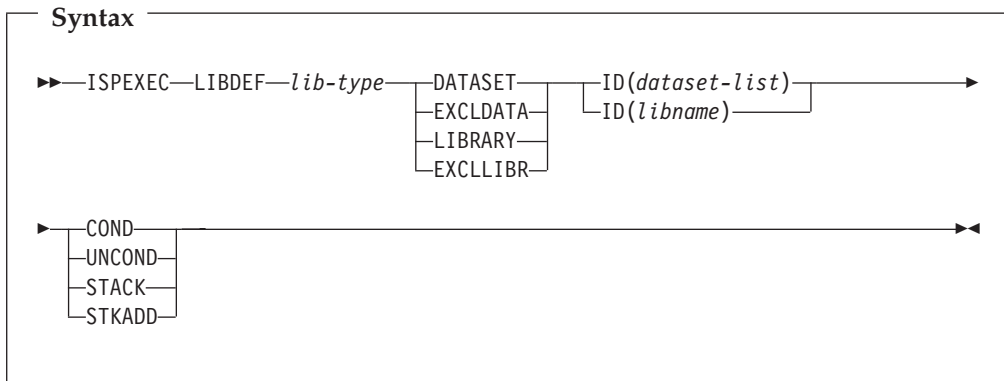
Return codes

- 0 Normal completion.
- 20 Severe error.

LIBDEF—allocate application libraries

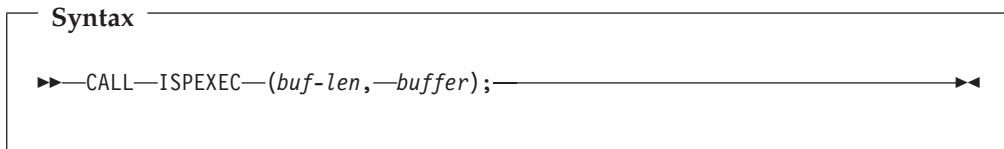
Command invocation format

Note: The default option is set in the ISPF configuration table keyword DEFAULT_LIBDEF_PROCESSING_OPTION. By default this keyword is set to UNCOND.

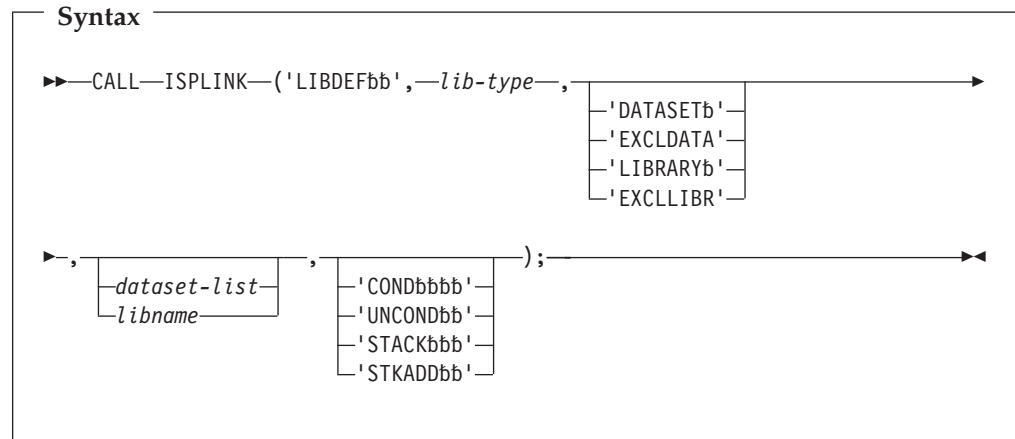


Call invocation format

Note: The default option is set in the ISPF configuration table keyword DEFAULT_LIBDEF_PROCESSING_OPTION. By default this keyword is set to UNCOND.



OR

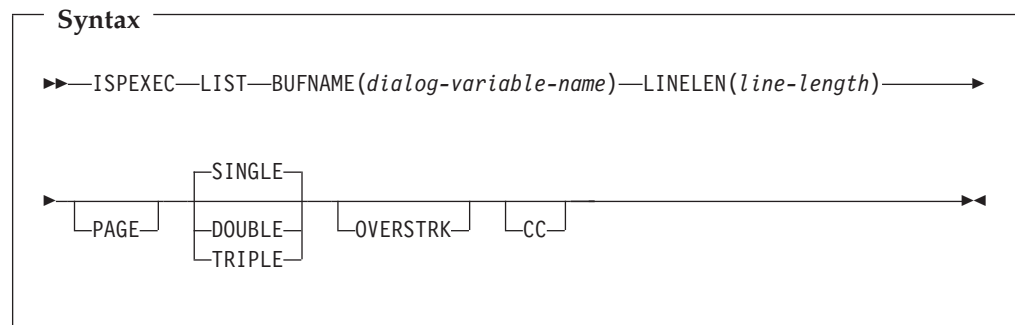


Return codes

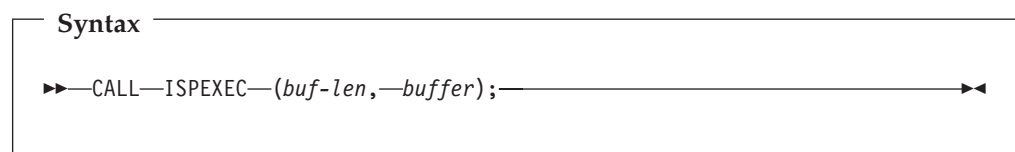
- 0 Normal completion.
- 4 When removing the application library: Application library does not exist for this type.
When STKADD is specified: There is no existing stack.
- 8 When COND is used: Application library already exists for this type.
- 12 ISPPROF was specified as the lib-type; invalid lib-type specified with EXCLDATA or EXCLLIBR.
- 16 A libname was not allocated, or the dataset-list contains an invalid MVS™ dsname.
- 20 Severe error.

LIST—write lines to the list data set

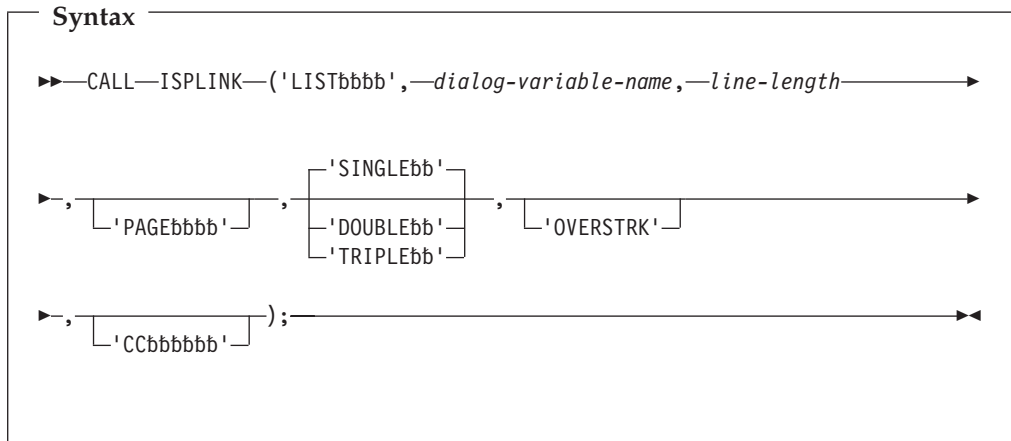
Command invocation format



Call invocation format



OR

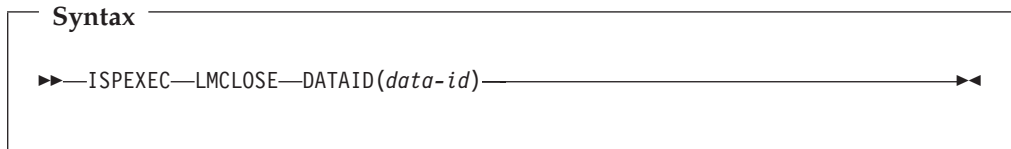


Return codes

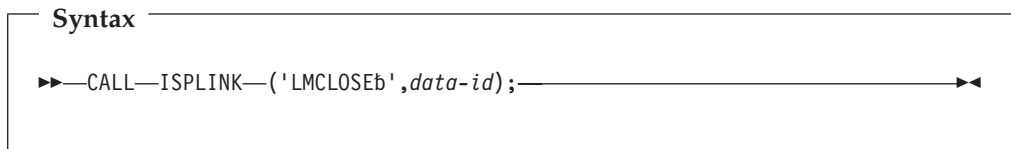
- 0 Normal completion.
- 8 Maximum line length or data set LRECL exceeded; data has been truncated.
- 12 Specified dialog variable not found.
- 20 Severe error.

LMCLOSE—close a data set

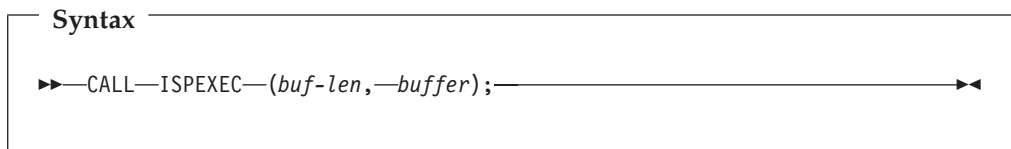
Command invocation format



Call invocation format



OR



Return codes

- 0 Normal completion.
- 8 Data set is not open.

- 10 No ISPF library or data set is associated with the given data ID; that is, LMINIT has not been completed.
- 20 Severe error; unable to continue.

LMCOMP—compresses a partitioned data set

Command invocation format

Syntax

```
▶▶—ISPEXEC—LMCOMP—DATAID(data-id)—————▶▶
```

Call invocation format

Syntax

```
▶▶—CALL—ISPLINK—('LMCOMPbb',data-id);—————▶▶
```

OR

Syntax

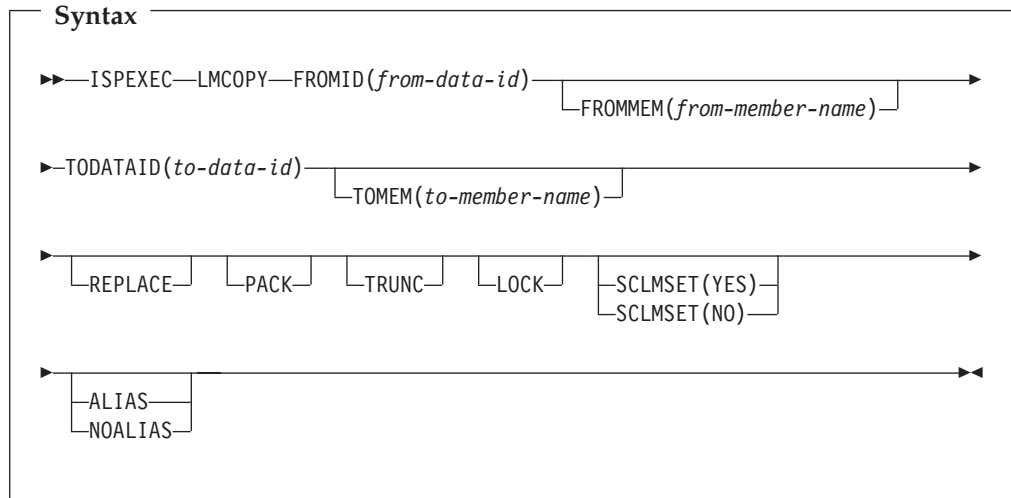
```
▶▶—CALL—ISPEXEC—(buf-len,buffer);—————▶▶
```

Return codes

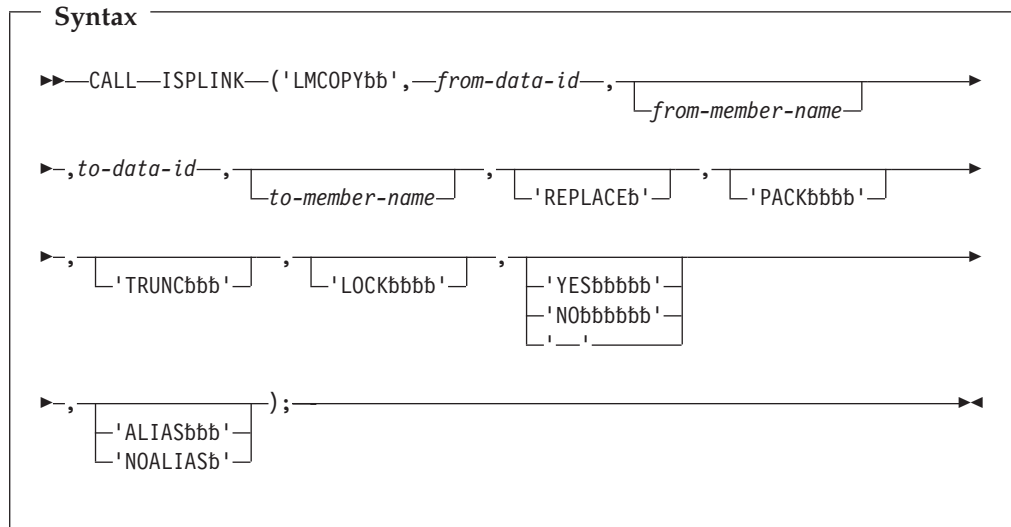
- 0 Successful completion.
- 10 No data set is associated with the given data ID.
- 12 One of these:
 - Data set not partitioned.
 - Data set specified not allocated.
 - Data set is open.
 - Data set is not movable.
 - Data set must be allocated exclusively. Use ENQ(EXCLU) in LMINIT service
 - Concatenated libraries are not allowed for LMCOMP
- 20 Severe error; unable to continue.

LMCOPY—copy members of a data set

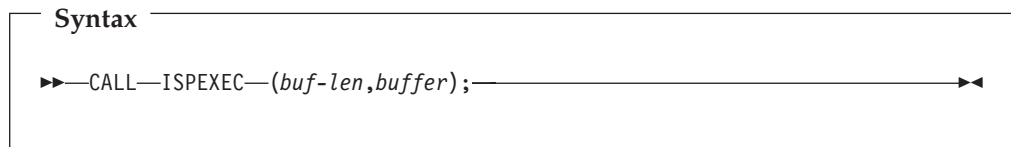
Command invocation format



Call invocation format



OR



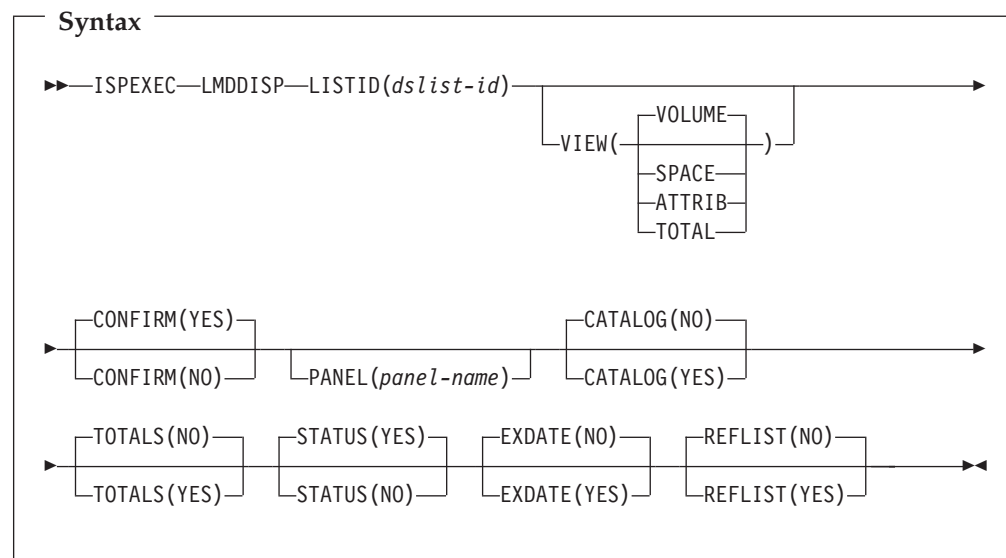
Return codes

- 0 Normal completion.
- 4 Member not available:
 - The member is in a controlled ISPF library and is currently owned by another user.

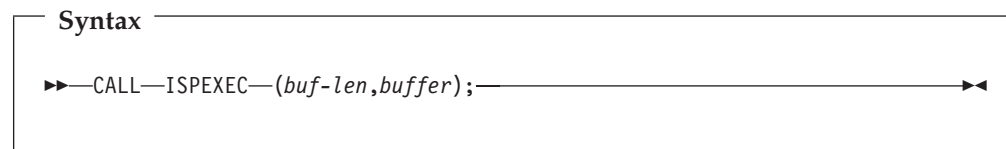
- The member is in a controlled ISPF library and the user is not a valid user as specified by member access ID.
 - Lock was requested but the project is SCLM-controlled.
 - “From” library not LMF-controlled.
 - “From” data set is empty.
 - No members matched the specified pattern in the “from” data set.
- 8 “From” member not found.
- 10 No data set is associated with the given data ID.
- 12 One of these:
- Invalid data set organization.
 - Data set attribute invalid for copying or copying packed data.
 - Open error.
 - A like named member already exists in the 'TO' data set, and the Replace option was not specified.
 - One or more members of the 'TO' data set are “in use” by you or another user and could not be copied.
- 16 Truncation error.
- 20 Severe error; unable to continue.

LMDDISP—data set display service

Command invocation format

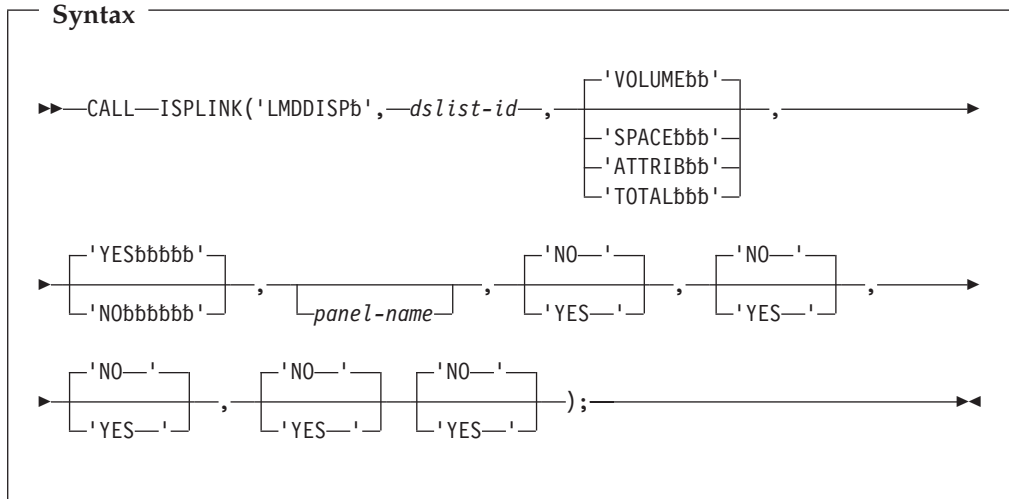


Call invocation format



OR

LMDDISP service

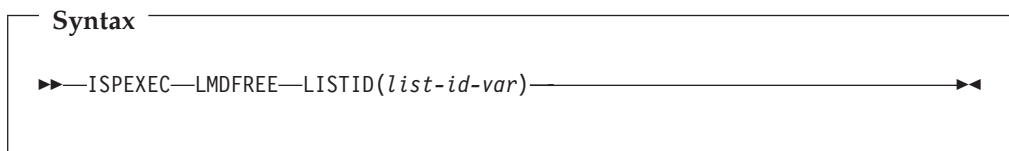


Return codes

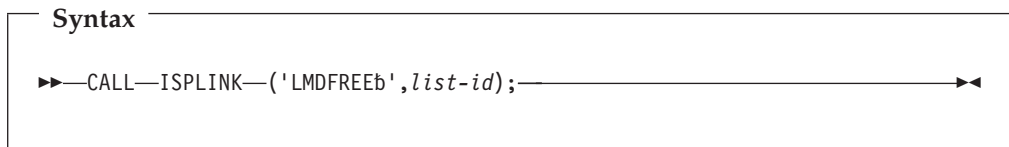
- 0 Normal completion.
- 10 A data set list does not exist for the list-id specified via keyword LISTID.
- 12 Invalid parameter value.
- 20 A severe error occurred while processing the data set list.

LMDFREE—free a data set list

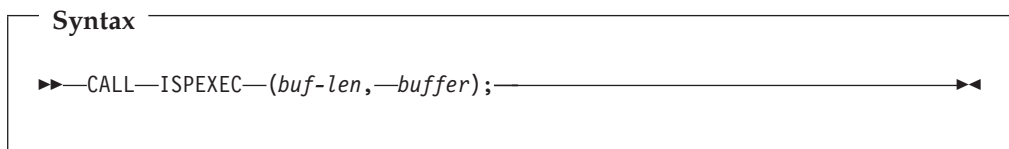
Command invocation format



Call invocation format



OR



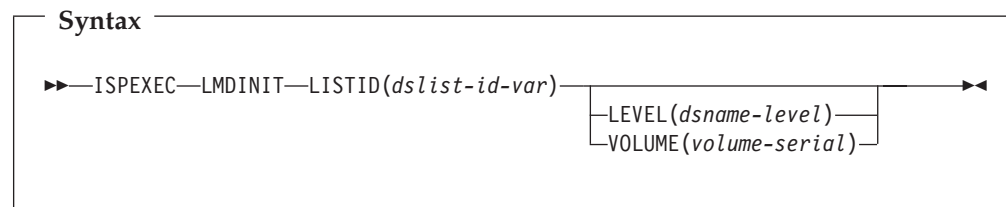
Return codes

- 0 Normal completion.

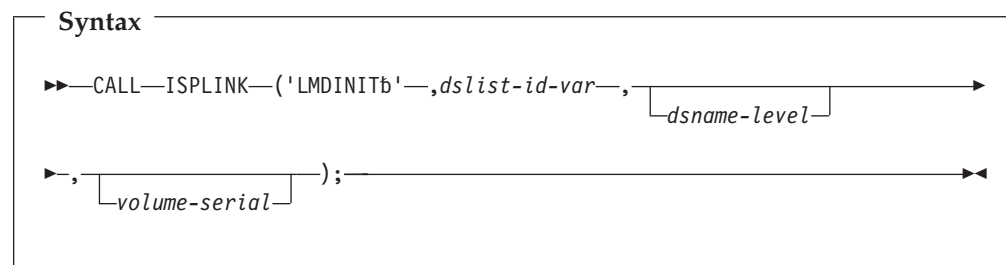
- 8 Free dslist-id failed. The error condition is described in "Dialog error" on page 247.
- 10 No data set level or volume is associated with the given dslist-id. LMDINIT has not been completed.
- 20 Severe error; unable to continue.

LMDINIT—initialize a data set list

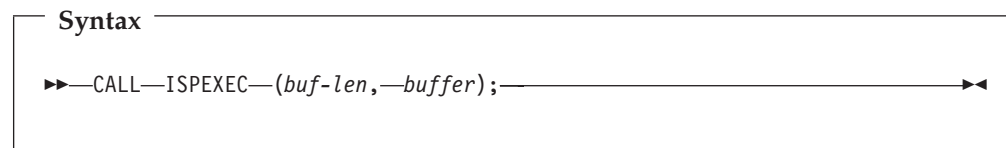
Command invocation format



Call invocation format



OR

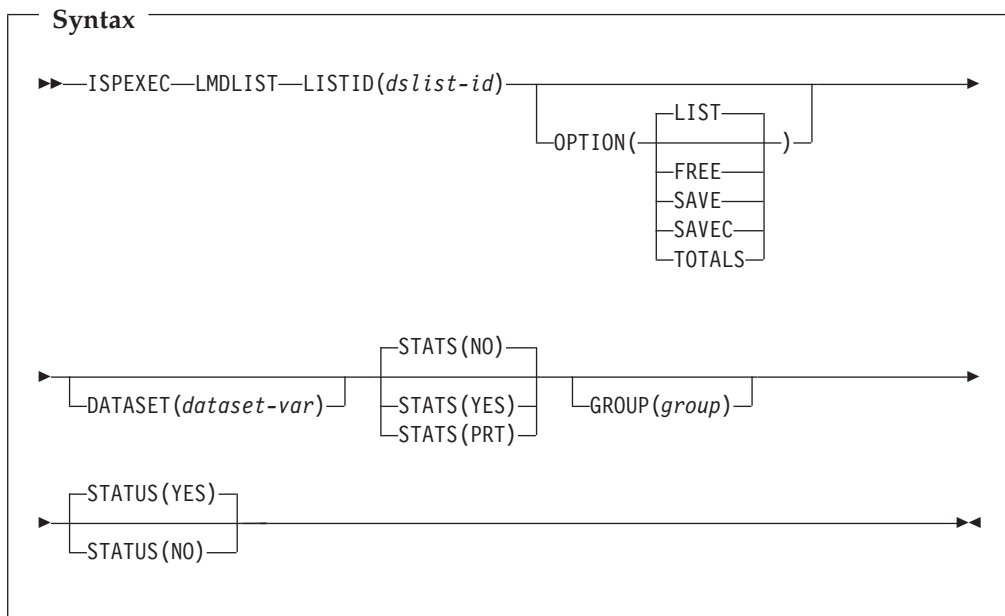


Return codes

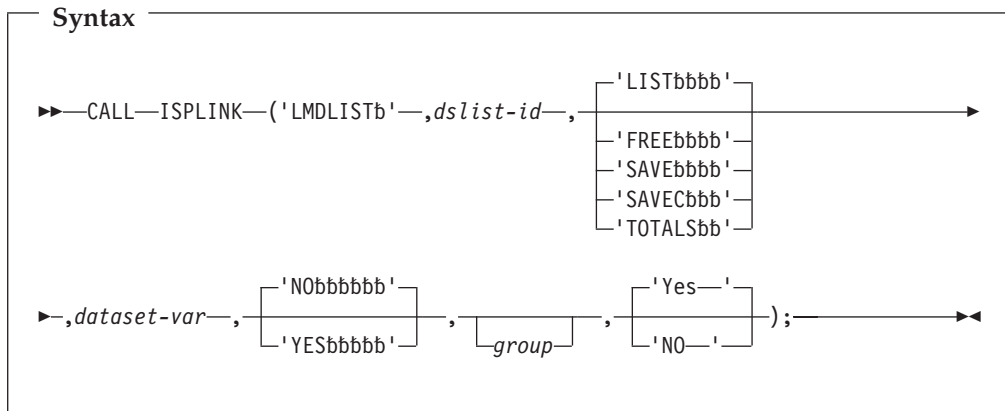
- 0 Normal completion. The unique dslist-id is returned in the variable specified in keyword LISTID.
- 8 Dslist-id not created; the error condition is described "Dialog error" on page 247.
- 12 A keyword value is incorrect.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMDLIST—list a data set

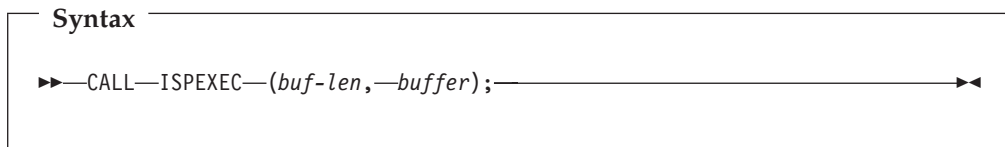
Command invocation format



Call invocation format



OR



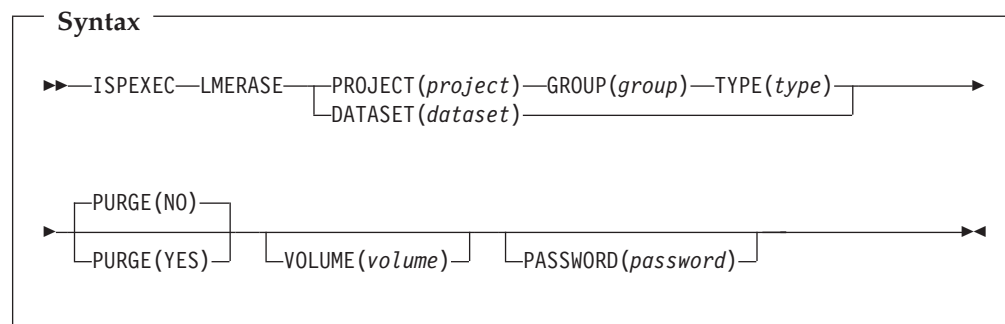
Return codes

- 0 One of these:
- LIST option - Normal completion. The name of the next data set in the list is returned in the variable specified in keyword DATASET. Data set statistics are returned, if requested.

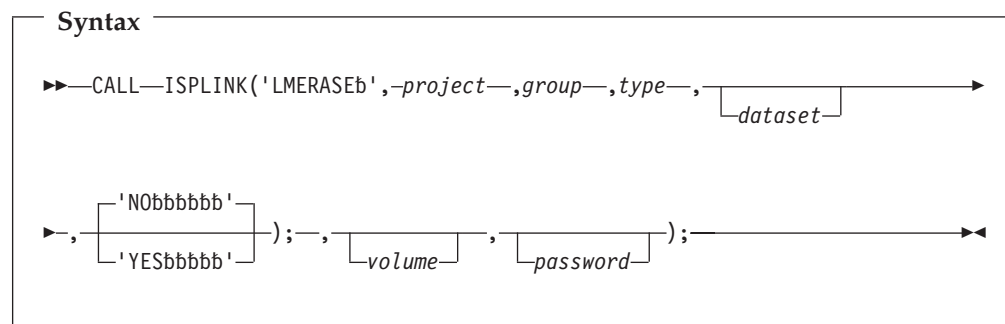
- FREE option - Normal completion. The internal storage associated with the data set is freed.
 - SAVE option - Normal completion. The data set list has been successfully written to a data set. The total number of tracks and data sets are returned to dialog variables in the function pool, if requested.
 - SAVEC option - Normal completion. The data set list has been successfully written to a data set. The total number of tracks and data sets are returned to dialog variables in the function pool, if requested.
 - TOTALS option - Normal completion. No list has been written to a data set. The total number of tracks and data sets are returned into dialog variables the function pool.
- 4 No data sets matched specified search criteria (the values for keywords LEVEL and VOLUME on the LMDINIT service).
- 8 End of data set list.
- 10 Data set list does not exist for list-id.
- 12 A keyword value is incorrect.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMERASE—erase a data set

Command invocation format



Call invocation format



OR

Syntax

```
▶▶CALL ISPEXEC (buf-len,buffer);▶▶
```

Return codes

- 0 Normal completion.
- 8 One of these:
 - Specified data set is not cataloged.
 - Erase data set failed.
 - Data set has not expired yet.
 - Data set name is an alias.
 - No data set specified as input
 - PROJECT specified, but GROUP or TYPE not specified.
- 12 Expiration data not expired and PURGE (NO) specified.
- 20 Severe error; unable to continue.

LMFREE—free data set from its association with data ID

Command invocation format

Syntax

```
▶▶CALL ISPLINK ('LMFREEbb',data-id);▶▶
```

Call invocation format

Syntax

```
▶▶CALL ISPLINK ('LMFREEbb',data-id);▶▶
```

OR

Syntax

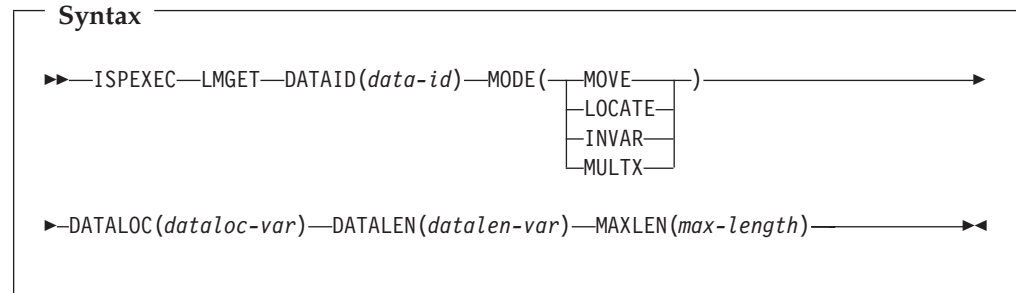
```
▶▶CALL ISPEXEC (buf-len,buffer);▶▶
```

Return codes

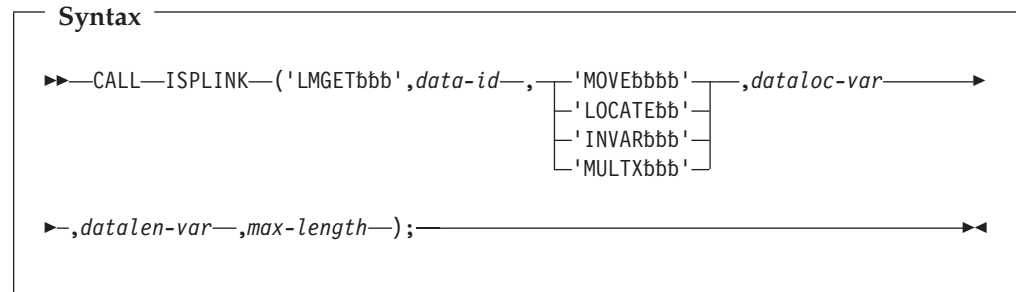
- 0 Normal completion.
- 8 Free data ID failed; the error condition is described “Dialog error” on page 247.
- 10 No ISPF library or data set is associated with the given data ID; that is, LMINIT has not been completed.
- 20 Severe error; unable to continue.

LMGET—read a logical record from a data set

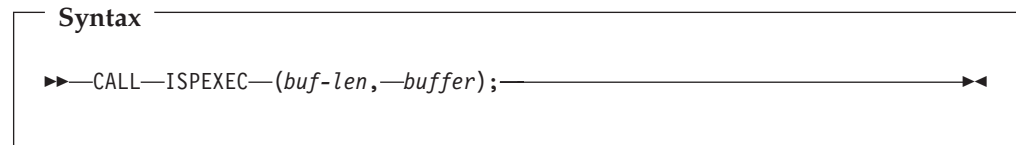
Command invocation format



Call invocation format



OR

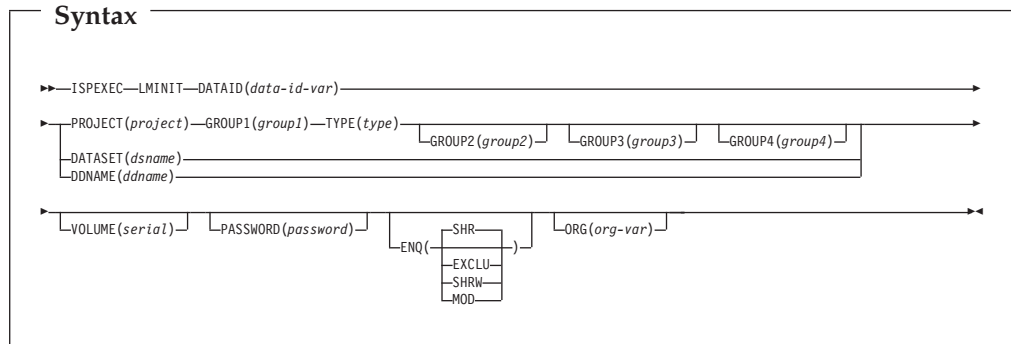


Return codes

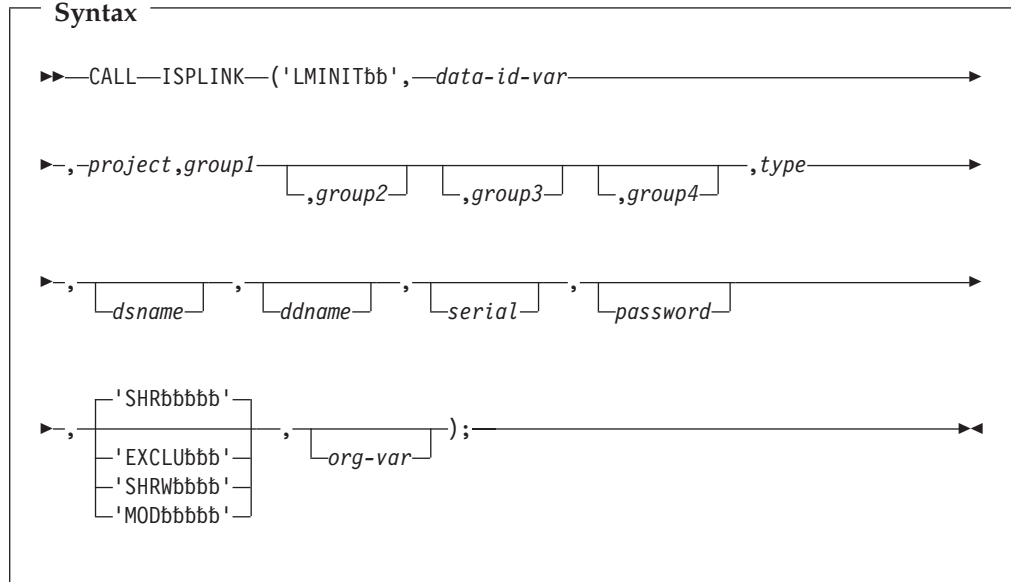
- 0 Normal completion.
- 8 End-of-data set condition; no message formatted.
- 10 No ISPF library or data set associated with the given data ID; that is, LMINIT has not been completed.
- 12 One of these:
 - The data set is not open or is not open for input.
 - An LMMFIND was not done for a partitioned data set.
 - The parameter value is invalid.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMINIT—generate a data ID for a data set

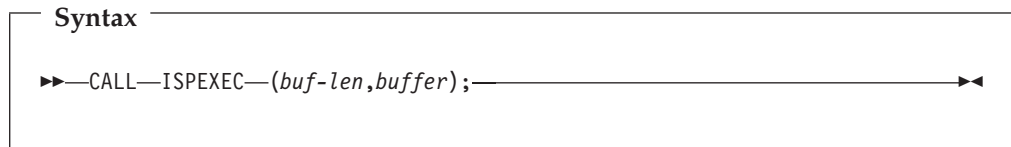
Command invocation format



Call invocation format



OR

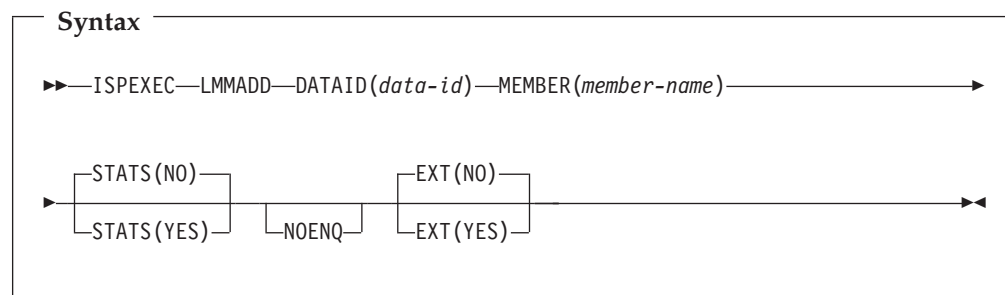


Return codes

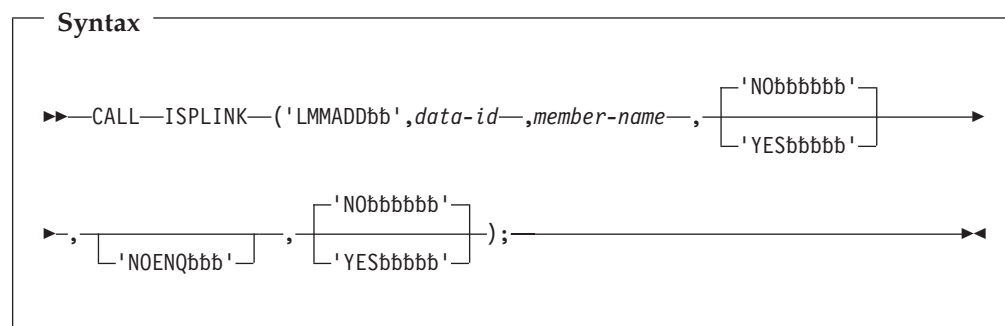
- 0 Normal completion.
- 8 Data ID not created.
- 12 The parameter value is invalid.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMMADD—add a member to a data set

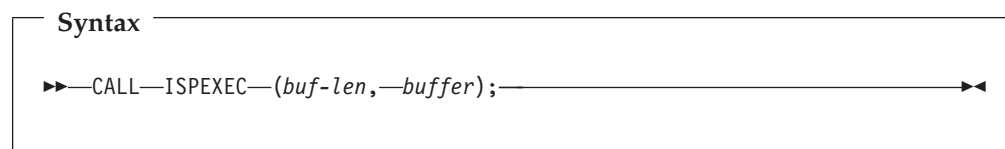
Command invocation format



Call invocation format



OR



Return codes

- 0 Normal completion.
- 4 Directory already contains the specified name.
- 10 No ISPF library or MVS data set is associated with the given data ID; that is, LMINIT has not been completed.
- 12 One of these:
 - The data set is not open or is not open for output.
 - The parameter value is invalid.
 - The data set organization is invalid.
 - The values for some member statistics are invalid.
- 14 No record has been written for the member to be added.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMMDEL—delete members from a data set

Command invocation format

Syntax

```

▶▶—ISPEXEC—LMMDEL—DATAID(data-id)—MEMBER(member-name)—NOENQ—▶▶
    
```

Call invocation format

Syntax

```

▶▶—CALL—ISPLINK('LMMDELbb',data-id—,member-name)—,'NOENQ'—);—▶▶
    
```

OR

Syntax

```

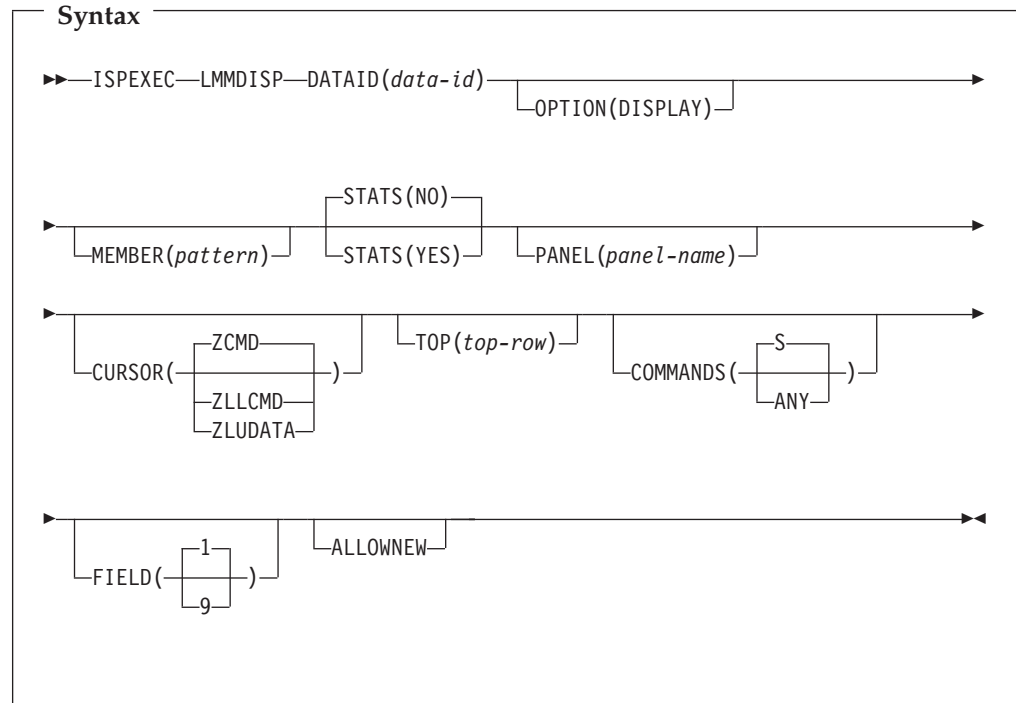
▶▶—CALL—ISPEXEC—(buf-len,—buffer);—▶▶
    
```

Return codes

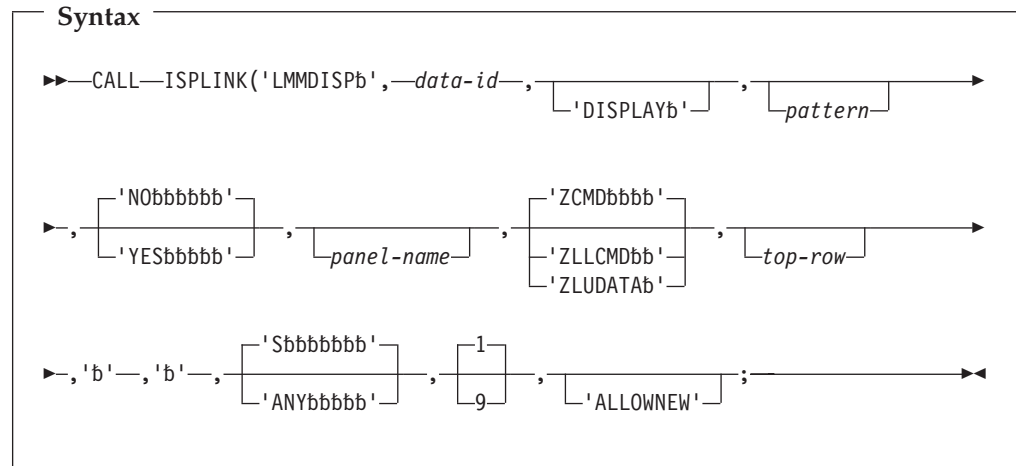
- 0 Normal completion.
- 8 Member not found.
- 10 No data set is associated with the given data ID; that is, LMINIT has not been completed.
- 12 One of these:
 - The data set is not open or is not open for output.
 - The parameter value is invalid.
 - The data set organization is invalid.
- 20 Severe error; unable to continue.

LMMDISP—member list service: Display option

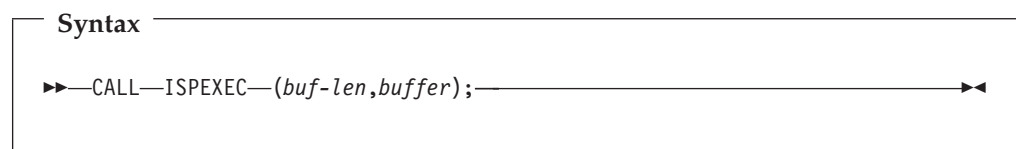
Command invocation format



Call invocation format



OR



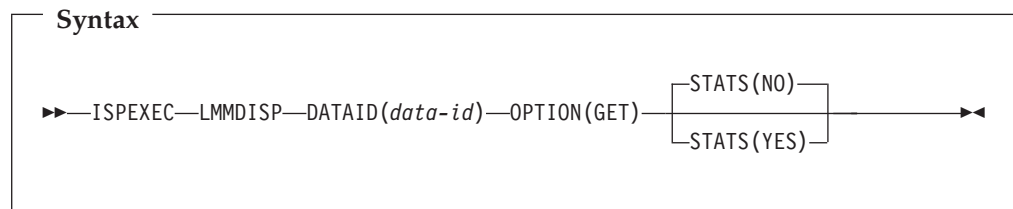
LMMDISP service

Return codes

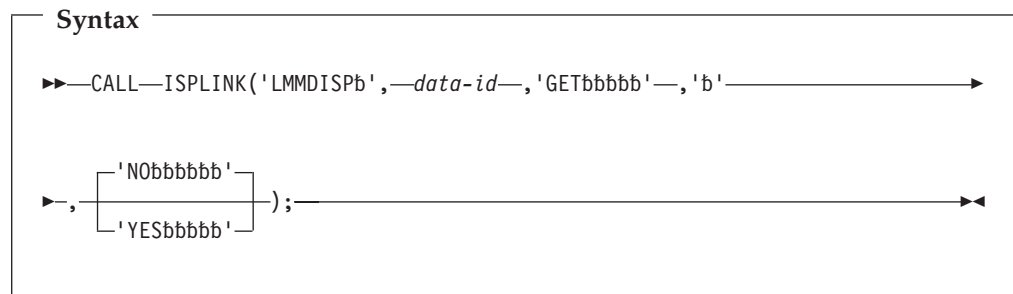
- 0 One or more members were selected or a primary command not recognized by LMMDISP was entered.
- 4 The requested data sets were empty, or no members matched the specified pattern.
- 8 END or RETURN was entered.
- 10 No data set is associated with the given data ID; LMINIT has not been completed.
- 12 Indicates one of these conditions:
 - Data sets not open.
 - Data sets not partitioned.
 - Invalid parameter value.
 - Invalid data set organization.
 - Invalid invocation syntax.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMMDISP—member list service: GET option

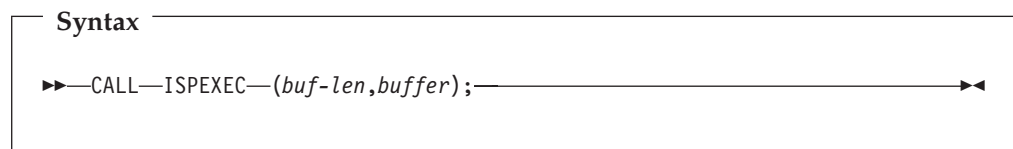
Command invocation format



Call invocation format



OR



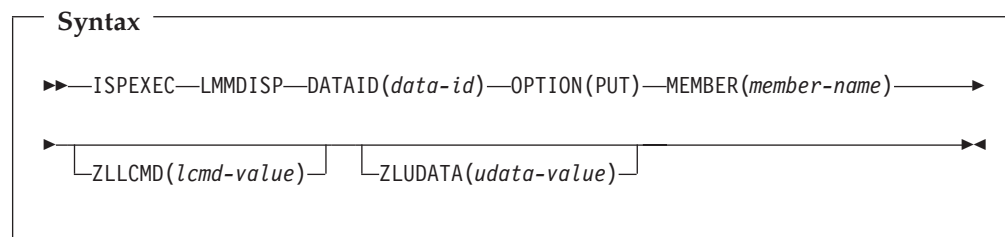
Return codes

- 0 Successful completion.
- 8 No more selected members.

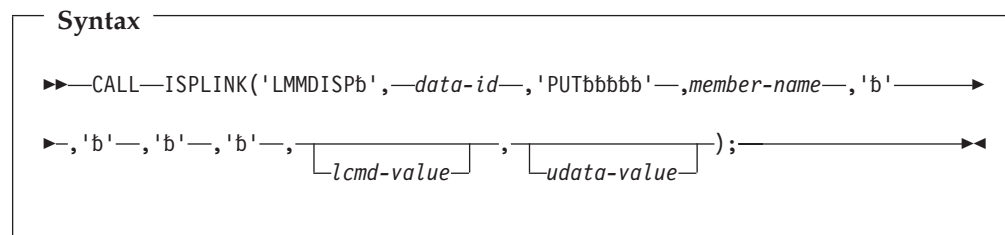
- 10 No data set is associated with the given data ID; LMINIT has not been completed.
- 12 Indicates one of these conditions:
 - Data sets not open.
 - Data sets not partitioned.
 - Invalid parameter value.
 - Invalid data set organization.
 - Invalid invocation syntax.
 - Member list has not been created.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMMDISP—member list service: PUT option

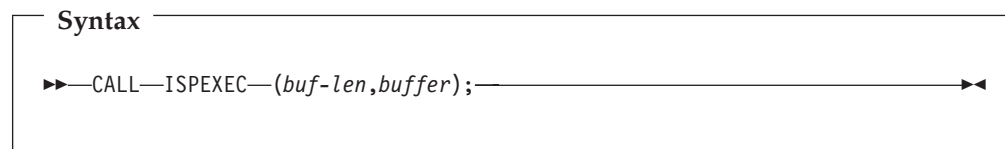
Command invocation format



Call invocation format



OR



Return codes

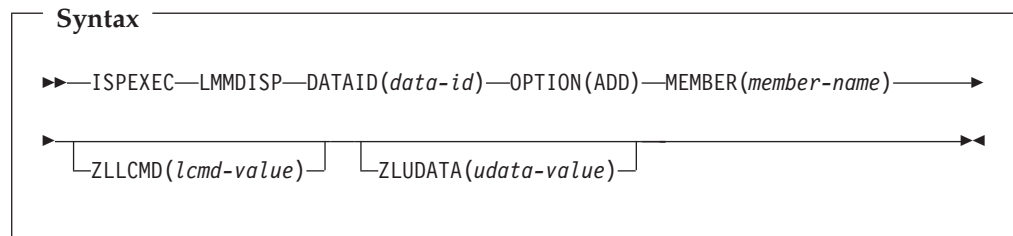
- 0 Successful completion.
- 8 Specified member does not exist.
- 10 No data set is associated with the given data ID; LMINIT has not been completed.
- 12 Indicates one of these conditions:
 - Data sets not open.
 - Data sets not partitioned.
 - Invalid parameter value.
 - Invalid data set organization.

LMMDISP service

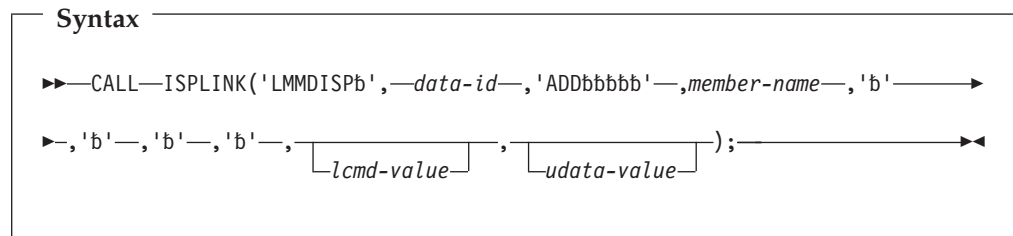
- Invalid invocation syntax.
 - Member list has not been created.
- 16 Truncation or translation error in accessing dialog variables.
20 Severe error; unable to continue.

LMMDISP—member list service: ADD option

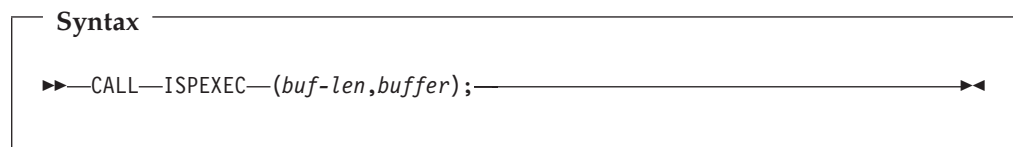
Command invocation format



Call invocation format



OR



Return codes

- 0 Successful completion.
- 8 Member already exists in member list.
- 10 No data set is associated with the given data ID; LMINIT has not been completed.
- 12 Indicates one of these conditions:
- Data sets not open.
 - Data sets not partitioned.
 - Invalid parameter value.
 - Invalid data set organization.
 - Invalid invocation syntax.
 - Member list has not been created.
- 16 Truncation or translation error in accessing dialog variables.
20 Severe error; unable to continue.

LMMDISP—member list service: DELETE option

Command invocation format

Syntax

```

▶▶—ISPEXEC—LMMDISP—DATAID(data-id)—OPTION(DELETE)—————▶▶
▶—MEMBER(member-name)—————▶▶

```

Call invocation format

Syntax

```

▶▶—CALL—ISPLINK('LMMDISPb',—data-id—,'DELETEbb'—,member-name);—————▶▶

```

OR

Syntax

```

▶▶—CALL—ISPEXEC—(buf-len,buffer);—————▶▶

```

Return codes

- 0 Successful completion.
- 8 A specified member does not exist in the member list.
- 10 No data set is associated with the given data ID; LMINIT has not been completed.
- 12 Indicates one of these conditions:
 - Data sets not open.
 - Data sets not partitioned.
 - Invalid parameter value.
 - Invalid data set organization.
 - Invalid invocation syntax.
 - Member list has not been created.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMMDISP—member list service: FREE option

Command invocation format

Syntax

```

▶▶—ISPEXEC—LMMDISP—DATAID(data-id)—OPTION(FREE)—————▶▶

```

Call invocation format

Syntax

```
▶▶—CALL—ISPLINK('LMMDISPb',—data-id—,'FREEbbbb');
```

OR

Syntax

```
▶▶—CALL—ISPEXEC—(buf-len,buffer);
```

Return codes

- 0 Successful completion.
- 8 No member list is associated with the given data ID.
- 10 No data set is associated with the given data ID; LMINIT has not been completed.
- 12 Indicates one of these conditions:
 - Data sets not open.
 - Data sets not partitioned.
 - Invalid parameter value.
 - Invalid data set organization.
 - Invalid invocation syntax.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMMFIND—find a library member

Command invocation format

Syntax

```
▶▶—ISPEXEC—LMMFIND—DATAID(data-id)—MEMBER(member-name)—┐
└─┬─LOCK─┘
┐
└─┬─LRECL(lrecl-var)─┘ ┬─RECFM(recfm-var)─┘ ┬─GROUP(group-var)─┘
┐
└─┬─STATS(NO)─┘ ┬─NOLLA─┘
```


Call invocation format

Syntax

```

▶▶ CALL ISPLINK ('LMMFINDb', data-id, member-name,
                [ 'LOCKbbbb' ]
▶▶ , [lrecl-var], [recfm-var], [group-var],
                [ 'NObbbbbb' ]
                [ 'YESbbbb' ]
▶▶ , [ 'NOLLABbb' ] );

```

OR

Syntax

```

▶▶ CALL ISPEXEC (buf-len, -buffer);

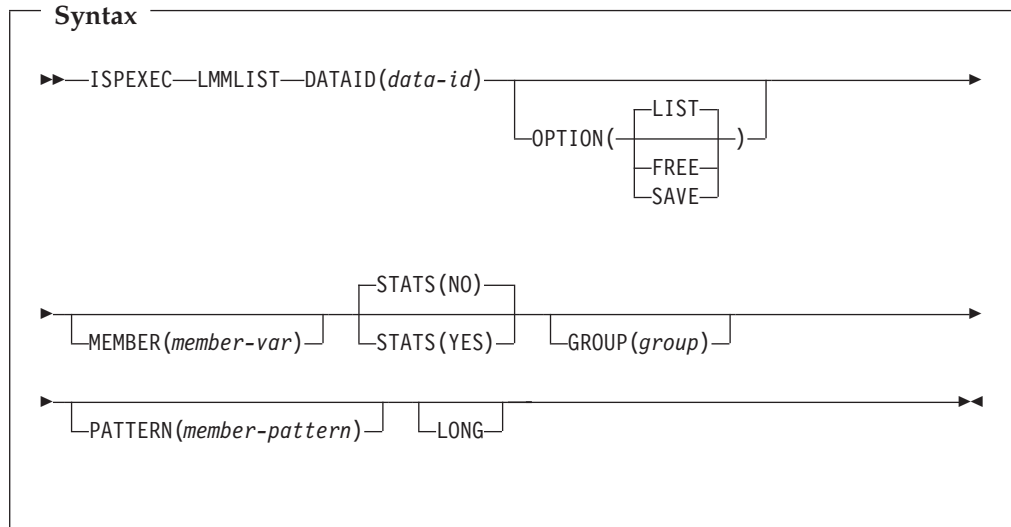
```

Return codes

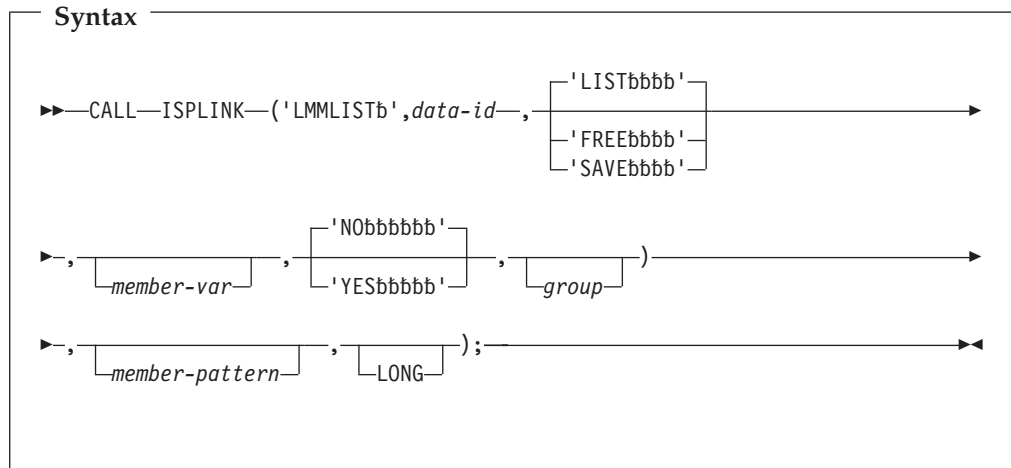
- 0** Normal completion. If you specify LOCK and the member is in a controlled ISPF library, a return code of zero shows that the user is a valid user as specified by the member access ID. The member is available and is now currently owned by the user. The member is not available for updating by any other user. For more information about the member access ID, see *ISPF Library Management Facility*.
- 4** One of these:
- Member not available; the member resides in a controlled ISPF library and is currently owned by another user.
 - Member not available; the member resides in a controlled ISPF library, and the user is not a valid user as specified by the member access ID.
 - Lock was requested but the project is SCLM-controlled.
- 8** Member not found.
- 10** No data set is associated with the given data ID; that is, LMINIT has not been completed.
- 12** One of these:
- Data set is not open or is not open for input.
 - The parameter value is invalid.
 - Data set is not partitioned.
- 16** Truncation or translation error in accessing dialog variables.
- 20** Severe error; unable to continue.

LMMLIST—list a library's members

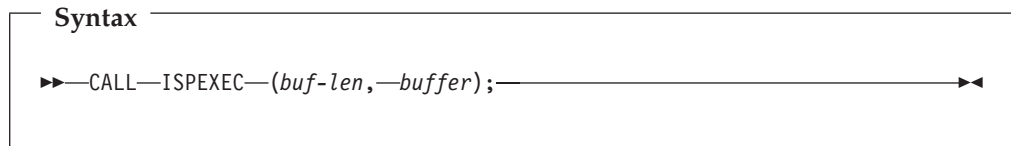
Command invocation format



Call invocation format



OR



Return codes

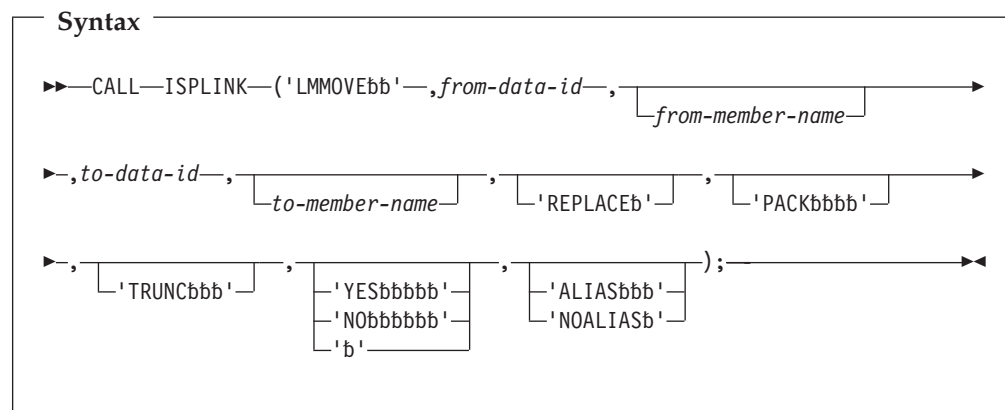
- 0 One of these:
- LIST option - Normal completion. The member list is available and the next member in the list is returned in the member-var parameter.
 - FREE option - Normal completion. The member list is freed successfully.

- SAVE option - Normal completion. The member list is successfully written to the data set.
- 4 Empty member list.
- 8 One of these:
 - LIST option - End of member list.
 - FREE option - Member list does not exist.
 - SAVE option - For a data ID, the LMMLIST service was invoked with the SAVE option after being invoked with the LIST option, but before being invoked with the FREE option.
- 10 No data set is associated with the given data ID; that is, LMINIT has not been completed.
- 12 One of these:
 - The data set is not open or is not partitioned.
 - The parameter value is invalid.
 - Member list was created using LMMDISP.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

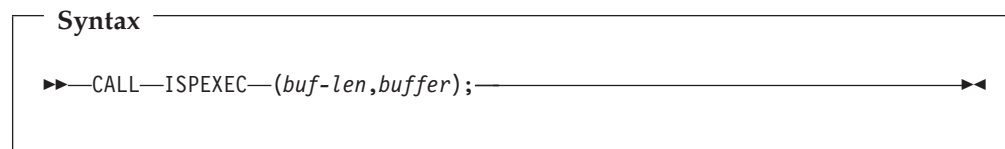
LMMOVE—move members of a data set

Command invocation format

Call invocation format



OR



Return codes

- 0 Successful completion.
- 4 One of these:
 - “From” data set is empty.
 - No member matched the pattern in the “from” data set.
- 8 “From” member not found.
- 10 No data set is associated with given data ID.
- 12 One of these:

LMMOVE service

- Invalid data set organization.
 - Data set attribute invalid for packed data.
 - Open error.
 - A like named member already exists in the 'TO' data set, and the Replace option was not specified.
 - One or more members of the 'TO' data set are "in use" by you or another user and could not be copied.
- 16 Truncation error.
- 20 Severe error; unable to continue.

LMMREN—rename a data set member

Command invocation format

Syntax

```
▶▶—ISPEXEC—LMMREN—DATAID(data-id)—MEMBER(old-member-name)—▶▶  
▶▶—NEWNAME(new-member-name)—▶▶  
                                  └─NOENQ—┘
```

Call invocation format

Syntax

```
▶▶—CALL—ISPLINK('LMMRENbb',data-id—,old-member-name—,new-member-name—▶▶  
▶▶,—,└─'NOENQbbb'—┘);▶▶
```

OR

Syntax

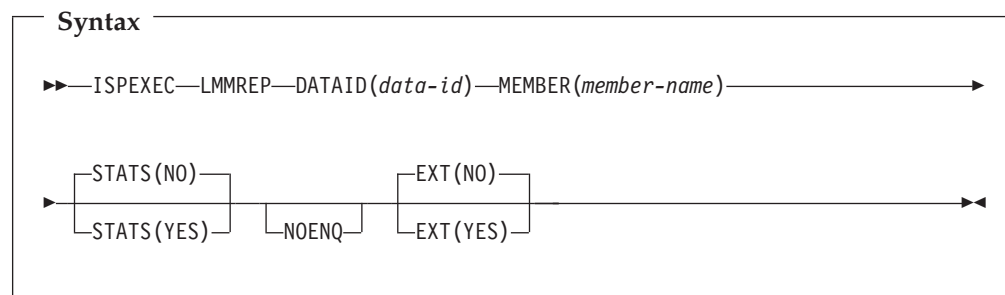
```
▶▶—CALL—ISPEXEC—(buf-len,—buffer);▶▶
```

Return codes

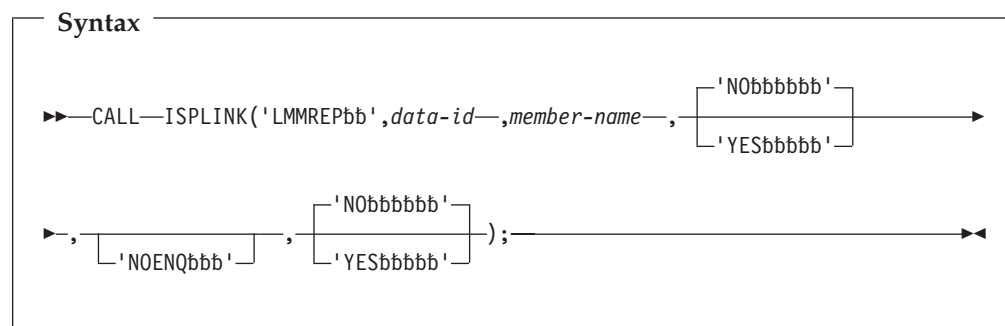
- 0 Normal completion.
- 4 Directory already contains the specified new name.
- 8 Member not found.
- 10 No data set is associated with the given data ID; that is, LMINIT has not been completed.
- 12 One of these:
- The data set is not open or is not open for output.
 - The parameter value is invalid.
 - The data set organization is invalid.
- 20 Severe error; unable to continue.

LMMREP—replace a member of a data set

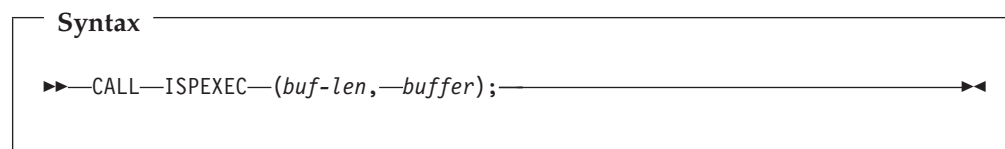
Command invocation format



Call invocation format



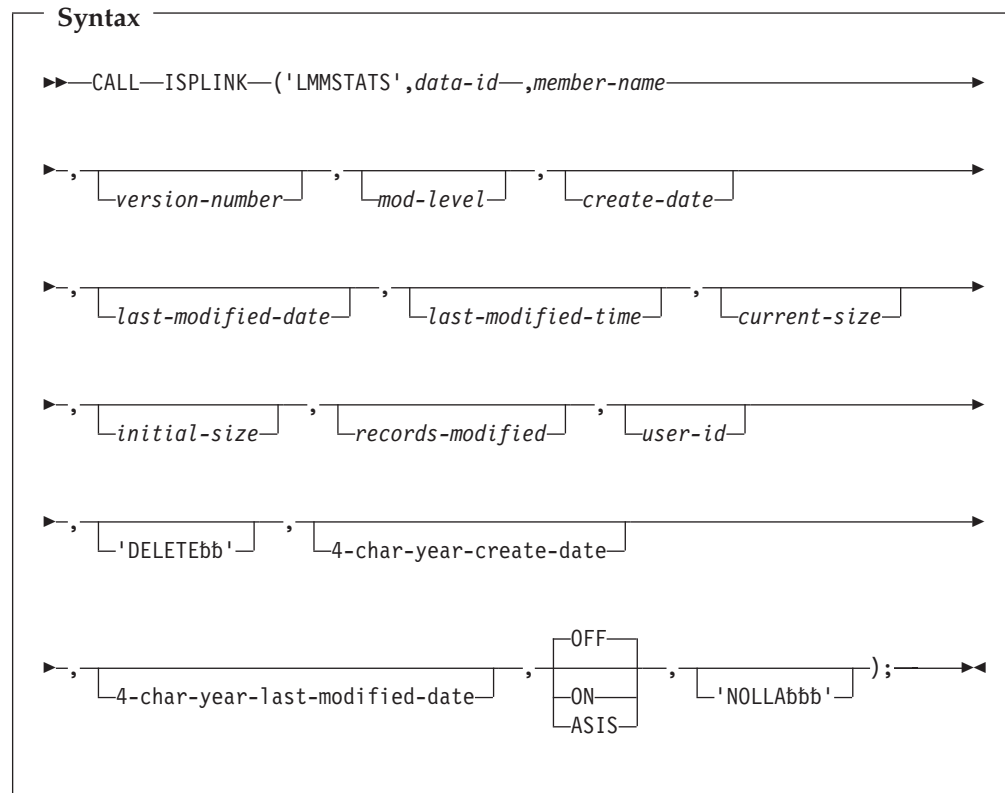
OR



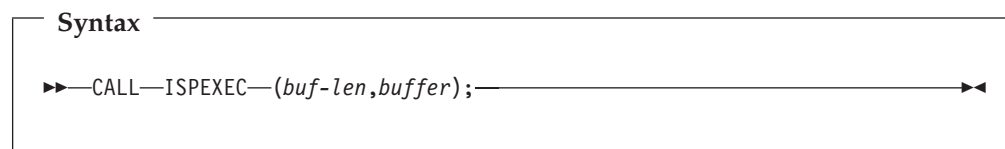
Return codes

- 0 Normal completion.
- 8 Member is added; it did not previously exist.
- 10 No data set is associated with the given data ID; that is, LMINIT has not been completed.
- 12 One of these:
 - The data set is not open or is not open for output.
 - The parameter value is invalid.
 - The data set organization is invalid.
 - Some member statistics have invalid values.
- 14 No record has been written for the member to be replaced.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

Call invocation format



OR

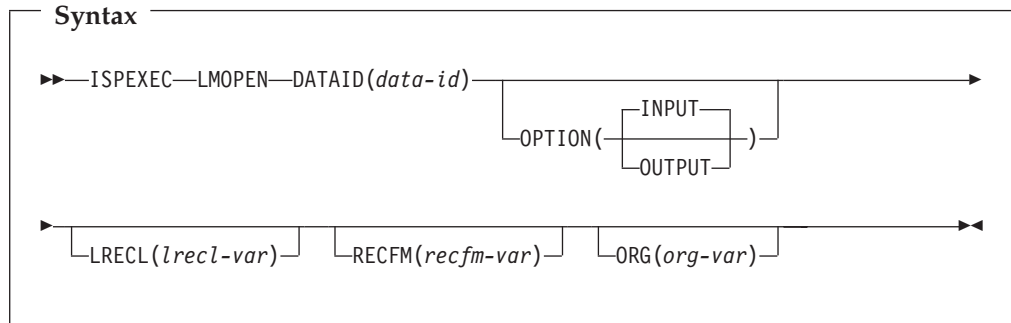


Return codes

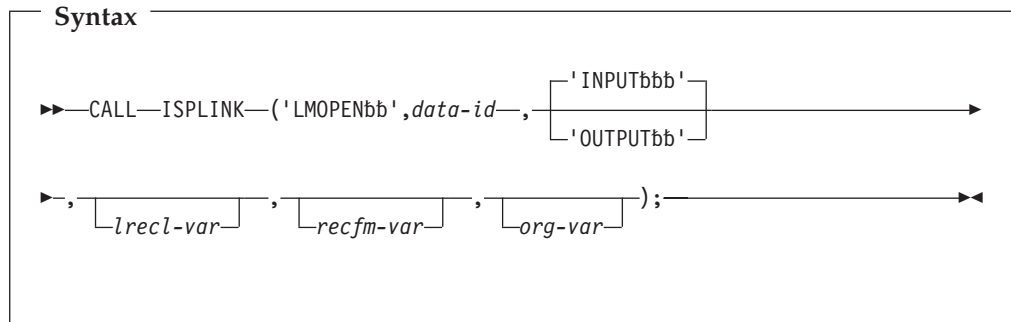
- 0 Normal completion.
- 4 One of these:
 - Data set is empty.
 - No members matched the pattern.
- 8 Member not found.
- 10 No data set is associated with the given data ID; that is, LMINIT has not been completed.
- 12 One of these:
 - Invalid parameter value.
 - Data set is not partitioned.
 - Data ID represents a concatenation of data sets.
 - Data set is open for output.
- 20 Severe error; unable to continue.

LMOPEN—open a data set

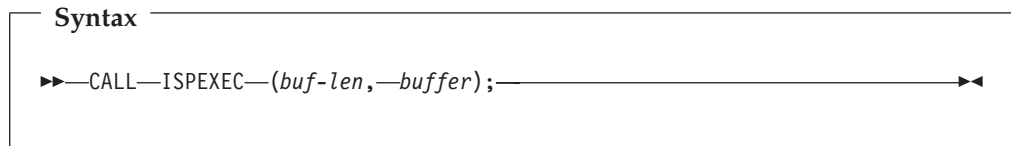
Command invocation format



Call invocation format



OR

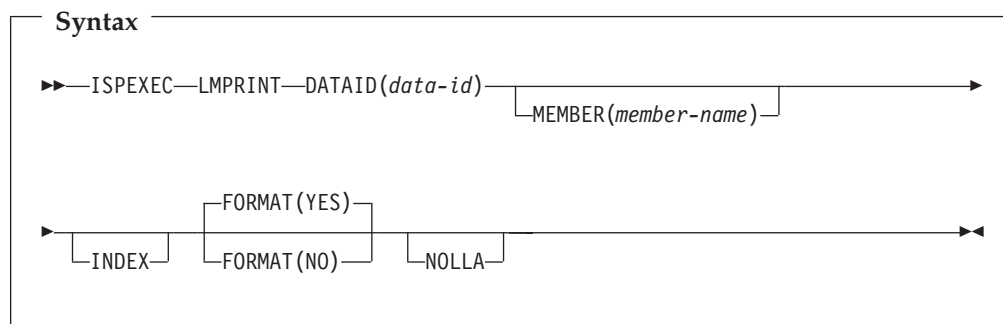


Return codes

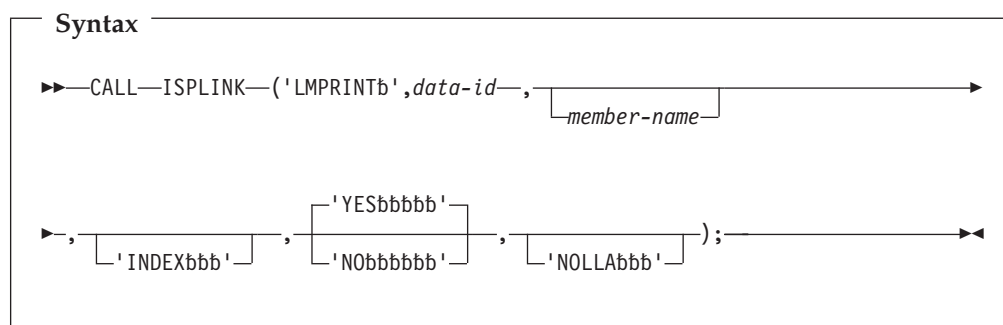
- 0 Normal completion.
- 8 Data set could not be opened.
- 10 No data set is associated with the given data ID; that is, LMINIT has not been completed.
- 12 One of these:
 - The parameter value is invalid.
 - Data set is already open.
 - Cannot open concatenated data sets for output.
 - Cannot open a data set allocated SHR for output.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMPRINT—print a partitioned or sequential data set

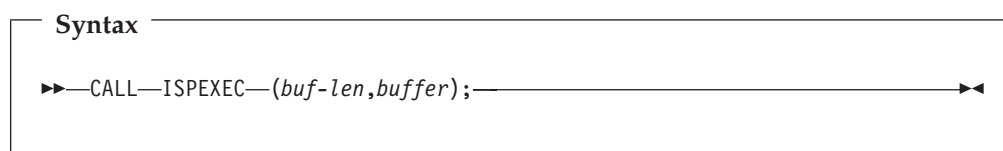
Command invocation format



Call invocation format



OR

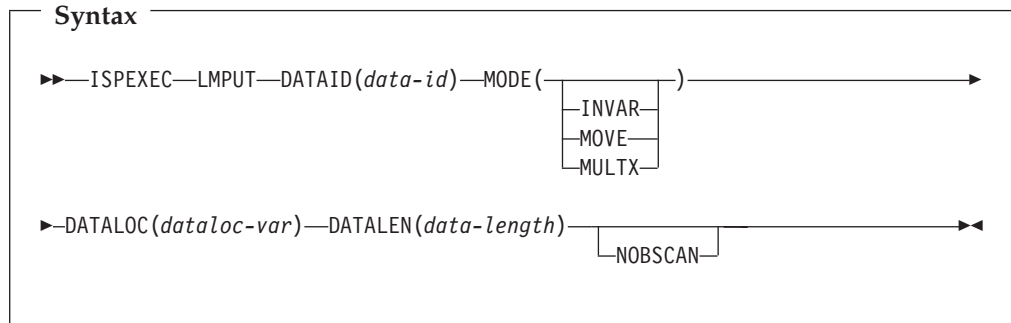


Return codes

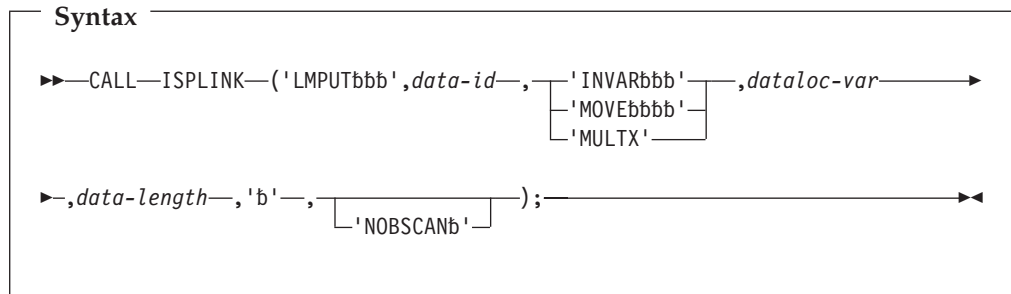
- 0 Normal completion.
- 4 One of these:
 - Data set is empty.
 - No members matched the pattern.
- 8 Member not found.
- 10 No data set associated with given data ID.
- 12 One of these:
 - Invalid data set organization; must be partitioned or sequential.
 - Invalid parameter.
- 20 Severe error; unable to continue.

LMPUT—write a logical record to a data set

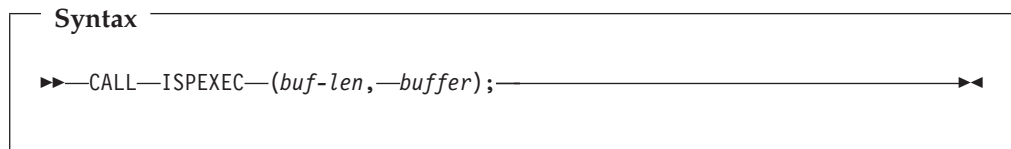
Command invocation format



Call invocation format



OR

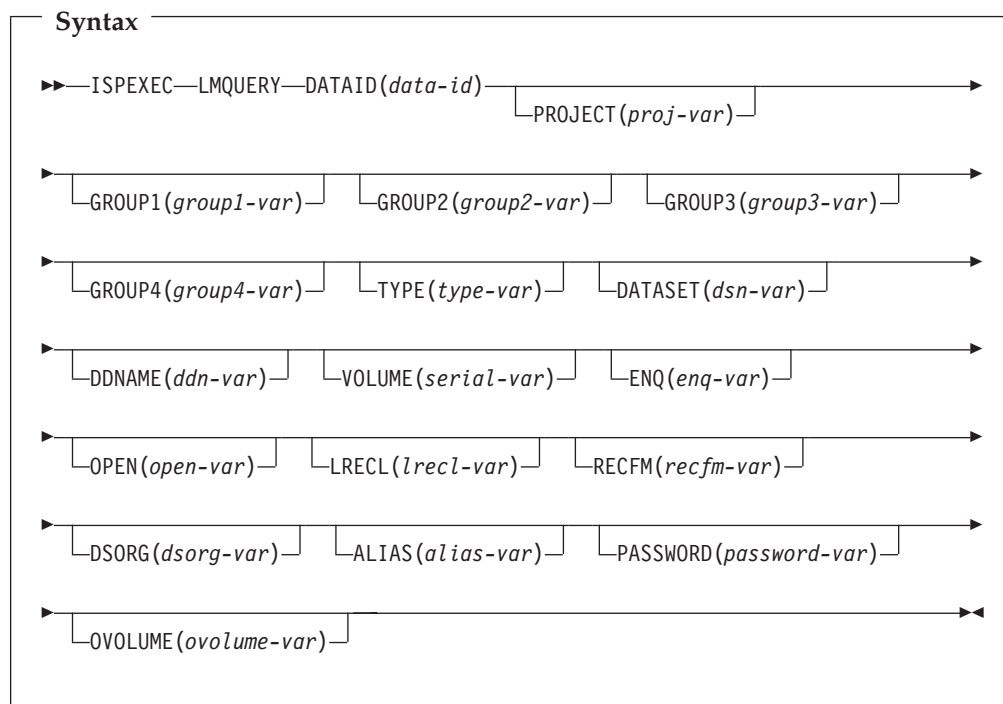


Return codes

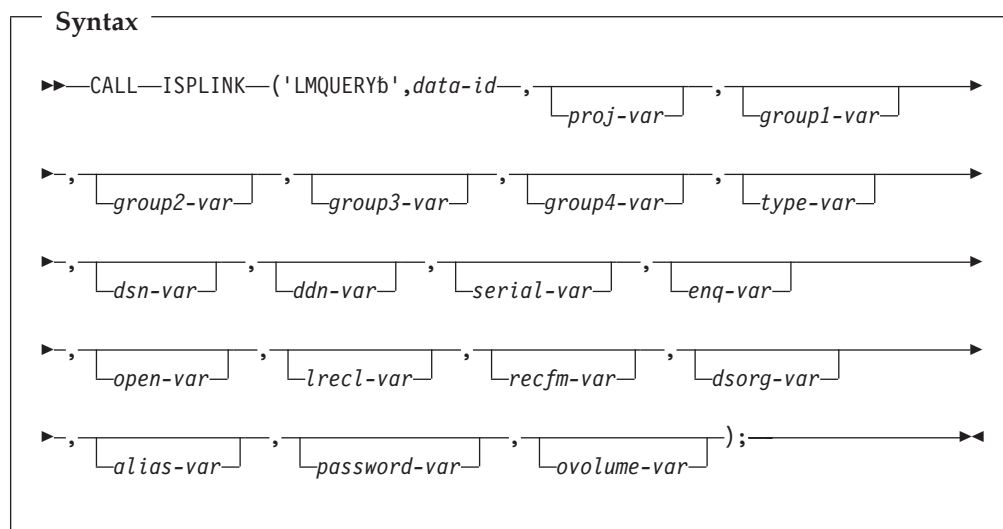
- 0 Normal completion.
- 10 No data set is associated with the given data ID; that is, LMINIT has not been completed.
- 12 One of these:
 - The data set is not open or is not open for output.
 - The parameter value is invalid.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMQUERY—give a dialog information about a data set

Command invocation format



Call invocation format



OR

Syntax

```
▶▶CALL ISPEXEC (buf-len,—buffer);◀◀
```

Return codes

- 0 Normal completion.
- 4 No applicable information available for a specified keyword; blanks are returned.
- 10 No data set is associated with the given data ID; that is, LMINIT has not been completed.
- 16 Truncation or translation error in accessing dialog variables.
- 20 Severe error; unable to continue.

LMRENAME—rename an ISPF library

Command invocation format

Syntax

```
▶▶ISPEXEC LMRENAME PROJECT (project)—GROUP (group)—TYPE (type)
▶▶NEWPROJ (new-project) NEWGROUP (new-group) NEWTYPE (new-type)◀◀
```

Call invocation format

Syntax

```
▶▶CALL ISPLINK ('LMRENAME', project,—,group,—,type
▶▶, [new-project], [new-group], [new-type]);◀◀
```

OR

Syntax

```
▶▶CALL ISPEXEC (buf-len,—buffer);◀◀
```

Return codes

- 0 Normal completion.
- 4 New name already exists.
- 8 One of these:
 - Specified data set does not exist.
 - Rename or catalog failed.
 - Data set name is an alias.

- 12 The parameter value is invalid.
 20 Severe error; unable to continue.

LOG—write a message to the log data set

Command invocation format

Syntax

```
▶▶ ISPEXEC LOG MSG(message-id)
```

Call invocation format

Syntax

```
▶▶ CALL ISPEXEC (buf-len, buffer);
```

OR

Syntax

```
▶▶ CALL ISPLINK ('LOGbbbb', message-id);
```

Return codes

- 0 Normal completion.
 12 The message ID contains invalid syntax or was not found.
 20 Severe error.

MEMLIST—member list dialog

Command invocation format

Syntax

```
▶▶ ISPEXEC MEMLIST DATAID(data-id)
    MEMBER(pattern)
CONFIRM(YES)
CONFIRM(NO) PANEL(panel-name)
    FIELD(
      9
      1
    )
```


Call invocation format**Syntax**

```
▶▶—CALL—ISPEXEC—(buf-len,—buffer);—▶▶
```

OR

Syntax

```
▶▶—CALL—ISPLINK—('PQUERYbb',—panel-name,—area-name—▶▶
▶▶,—▶▶area-type-name▶▶,—▶▶area-width-name▶▶,—▶▶area-depth-name▶▶
▶▶,—▶▶row-number-name▶▶,—▶▶column-number-name▶▶);—▶▶
```

Return codes

- 0 Normal completion.
- 8 The panel does not contain the specified area.
- 12 The specified panel cannot be found.
- 16 Not all values are returned because insufficient space was provided.
- 20 Severe error.

QBASELIB—query base library information**Command invocation format****Syntax**

```
▶▶—ISPEXEC—QBASELIB—dd-name—▶▶
▶▶—ID(id-var)—▶▶
```

Call invocation format**Syntax**

```
▶▶—CALL—ISPEXEC—(buf-len,—buffer);—▶▶
```

OR

Syntax

```
▶▶ CALL ISPLINK ('QBASELIB', dd-name, [id-var]); ◀◀
```

Return codes

- 0 A DDNAME for the specified ddname exists and the requested information, if any, has been successfully returned.
- 4 The specified dd-name is not valid.
- 16 A dialog variable translation or truncation error has occurred.
- 20 A severe error has occurred.

QLIBDEF—query LIBDEF definition information

Command invocation format

Syntax

```
▶▶ ISPEXEC QLIBDEF lib-type [TYPE(type-var)] [ID(id-var)] ◀◀
```

Call invocation format

Syntax

```
▶▶ CALL ISPEXEC (buf-len, buffer); ◀◀
```

OR

Syntax

```
▶▶ CALL ISPLINK ('QLIBDEFb', lib-type, [type-var], [id-var]); ◀◀
```

Return codes

- 0 A LIBDEF definition for the specified lib-type exists and the requested information, if any, has been successfully returned.
- 4 The specified lib-type does not have an active LIBDEF definition.
- 12 An invalid lib-type value of ISPPROF has been specified.
- 16 A dialog variable translation or truncation error has occurred.
- 20 A severe error has occurred.

QTABOPEN—query open ISPF tables

Command invocation format

Syntax

```
▶▶—ISPEXEC—QTABOPEN—LIST(list-var)—————▶▶
```

Call invocation format

Syntax

```
▶▶—CALL—ISPLINK—('QTABOPEN—',list-var);—————▶▶
```

Return codes

These return codes are possible:

- 0 Normal completion.
- 4 List incomplete. There was insufficient space to construct a valid variable name.
- 12 Prefix too long. List-var must be 7 characters or less.
- 20 Severe error.

QUERYENQ—query system ENQ data

Command invocation format

Syntax

```
▶▶—ISPEXEC—QUERYENQ—TABLE(table-name)—QNAME(qname)—RNAME(rname)—————▶▶
▶▶—REQ(pattern)—WAIT—LIMIT(limit)—SAVE(list-id)—XSYS—————▶▶
```

Call invocation format

Syntax

```
▶▶—CALL—ISPLINK—('QUERYENQ'—,table-name—,qname—,rname—,pattern—————▶▶
▶▶,—, [ 'WAIT—', ] ,limit—,list-id—,—, [ 'XSYS—', ] );—————▶▶
```

OR

Syntax

```
▶▶—CALL—ISPEXEC—(buf-len,—buffer);—◀◀
```

Variables returned in each row of the table

Name	Size	Description
ZENJOB	8	Job or address space name holding or requesting the ENQ
ZENQNAME	8	Qname portion of the ENQ
ZENRNAME	255	Rname portion of the ENQ
ZENDISP	5	SHARE or EXCLU
ZENHOLD	4	OWN or WAIT
ZENSCOPE	7	SYSTEM or SYSTEMS
ZENSTEP	7	STEP or blank
ZENGLOBL	6	GLOBAL or blank
ZENSYST	8	System name

Return codes

- 0 Table returned or data set written, but XSYS parameter was not specified and the system is running in STAR mode. The data returned may not reflect all ENQs on all systems.
- 2 Table returned or data set written.
- 4 Table returned but truncated due to limit.
- 8 No ENQs satisfy the request.
- 10 No ENQs satisfy the request, but XSYS parameter was not specified and the system is running in STAR mode. The data returned may not reflect all ENQs on all systems.
- 12 Table creation error, parameter or other termination error. See messages for more detail. This includes services not available due to configuration table restrictions.
- 14 The SAVE data set is in use by another user.
- 20 Severe error, including TBADD error or data set creation errors.

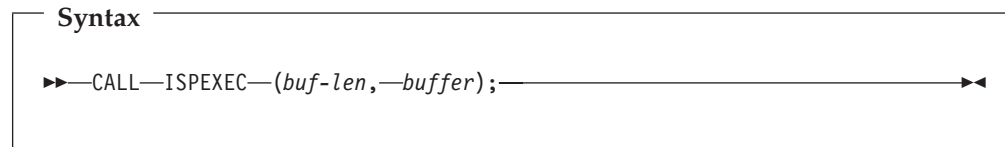
REMPPOP—remove a pop-up window

Command invocation format

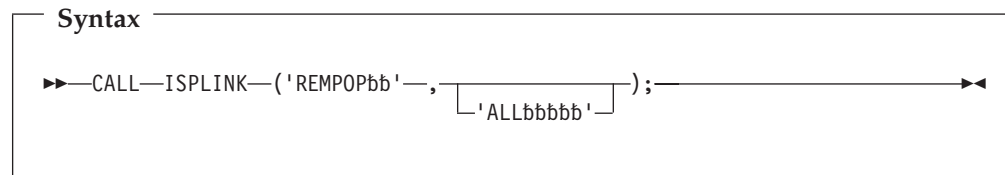
Syntax

```
▶▶—ISPEXEC—REMPOP—ALL—◀◀
```

Call invocation format



OR

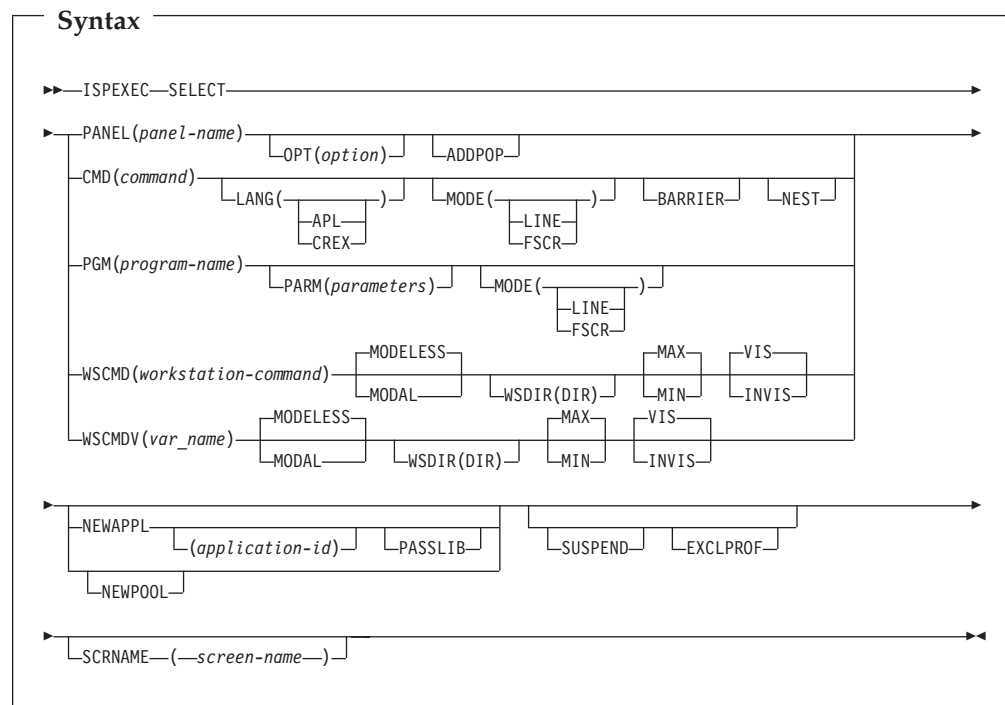


Return codes

- 0 Normal completion.
- 16 A pop-up window does not exist at this select level.
- 20 Severe error.

SELECT—select a panel or function

Command invocation format



Call invocation format

Syntax

```
CALL ISPEXEC (buf-len, -buffer);
```

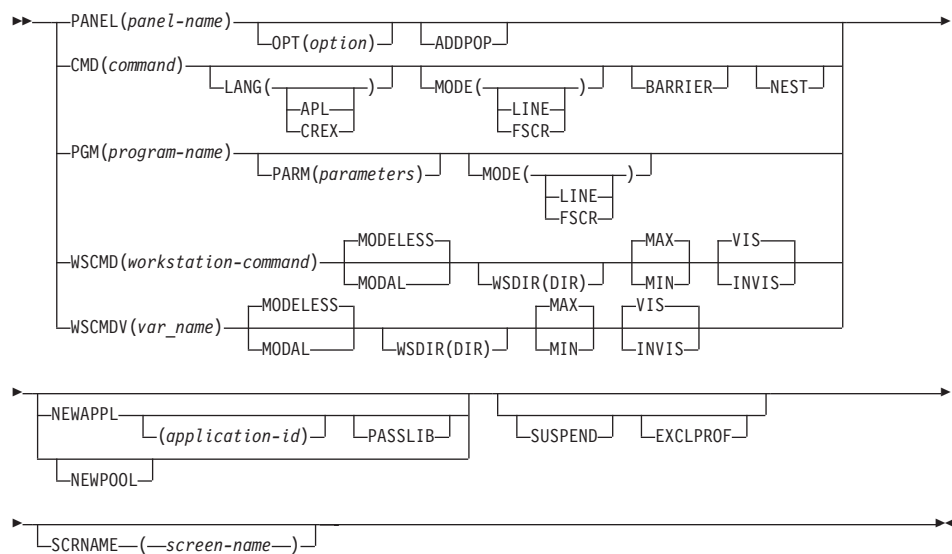
OR

Syntax

```
CALL ISPLINK ('SELECTbb', -length, -keywords);
```

Note: These parameters can appear in “keywords”:

Syntax



Return codes

These return codes are possible if a panel is specified:

- 0 Normal completion. The END command was entered from the selected menu.
- 4 Normal completion. The RETURN command was entered or the EXIT option was specified from the selected menu or from some lower-level menu.
- 12 The specified panel could not be found.
- 16 Truncation error in storing the ZCMD or ZSEL variable.
- 20 Severe error.

Notes:

1. A return code of 0 is returned when the SELECT service has been coded with no other parameters.

2. If a command or program is invoked by using SELECT, the return code from the command or program is passed to the function that invoked SELECT.

These return codes are possible from a MODAL workstation command:

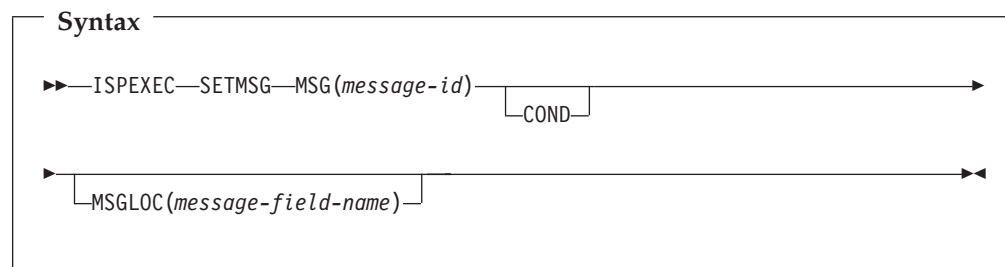
- 20 Parameter or syntax on SELECT service (all SELECTs) is not valid.
- 41 A null command was passed to the workstation.
- 42 ISPF was not able to start the command at the workstation.
- 43 Remote execution of commands was not allowed by the user.

OTHER

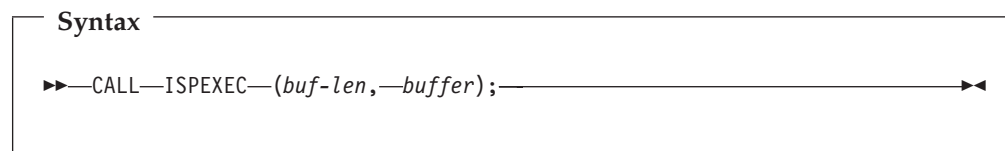
The return code from the workstation command + 100 if the return code from the workstation command was > 0.

SETMSG—set next message

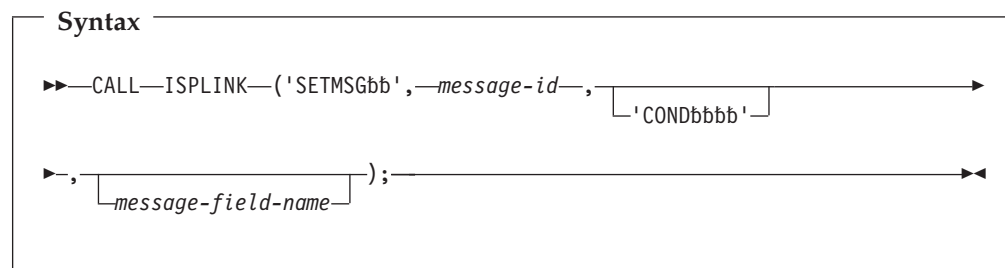
Command invocation format



Call invocation format



OR

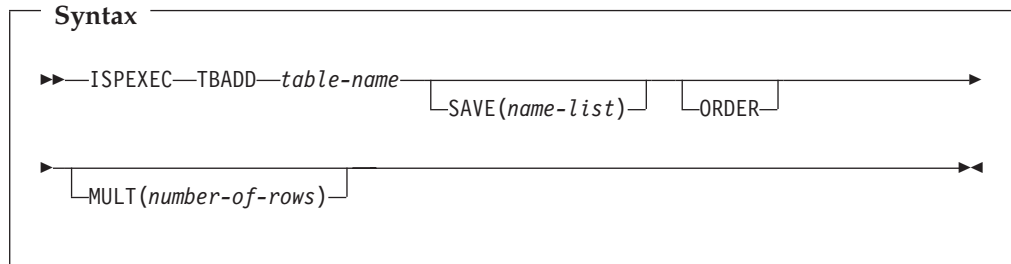


Return codes

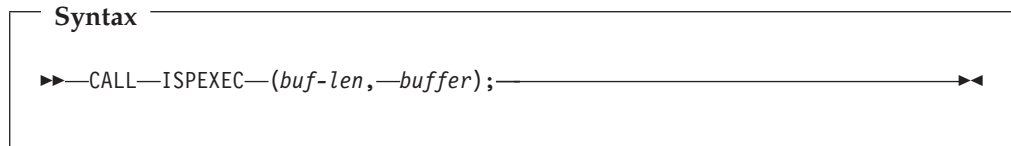
- 0 Normal completion.
- 4 SETMSG with COND parameter issued and a SETMSG request was pending.
- 12 The specified message field name or message could not be found.
- 20 Severe error.

TBADD—add a row to a table

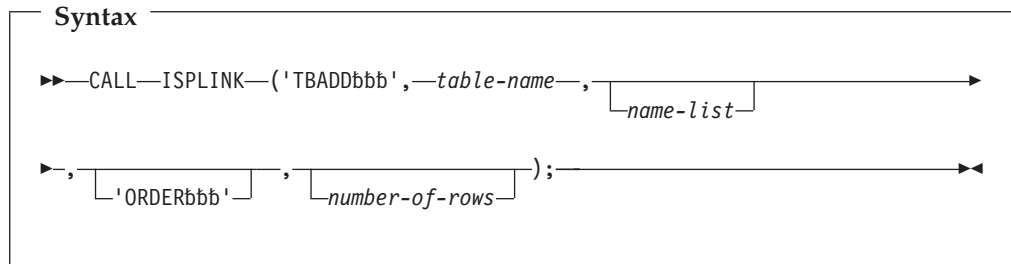
Command invocation format



Call invocation format



OR

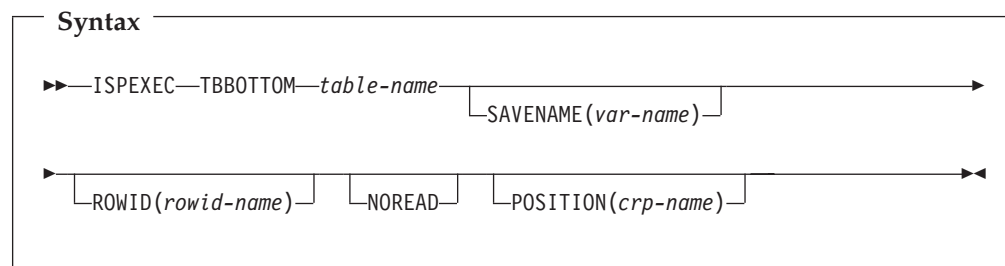


Return codes

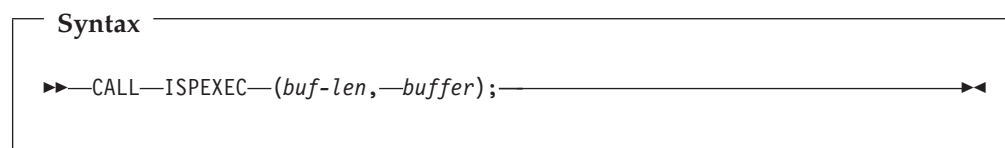
- 0 Normal completion.
- 4 The number-of-rows parameter was specified but storage was obtained for only a single row.
- 8 A row with the same key already exists; CRP set to TOP (zero). Returned only for tables with keys.
- 12 Table is not open.
- 16 Numeric convert error; see numeric restrictions for TBSORT. Returned only for sorted tables.
- 20 Severe error.

TBBOTTOM—set the row pointer to bottom

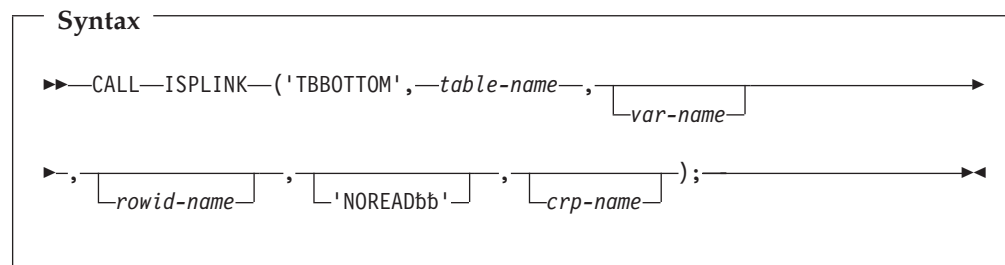
Command invocation format



Call invocation format



OR

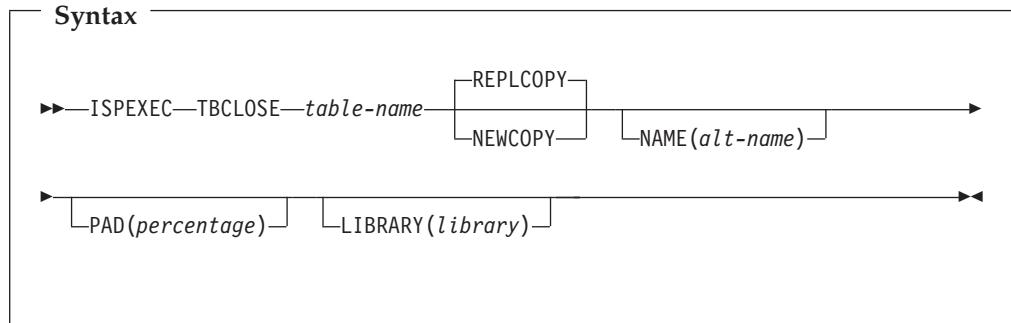


Return codes

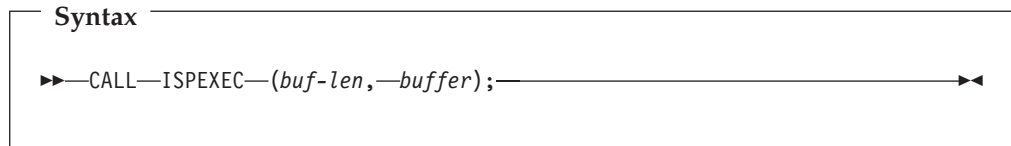
- 0 Normal completion.
- 8 Table is empty; CRP set to TOP (zero).
- 12 Table is not open.
- 16 Variable value has been truncated, or insufficient space was provided to return all extension variable names.
- 20 Severe error.

TBCLOSE—close and save a table

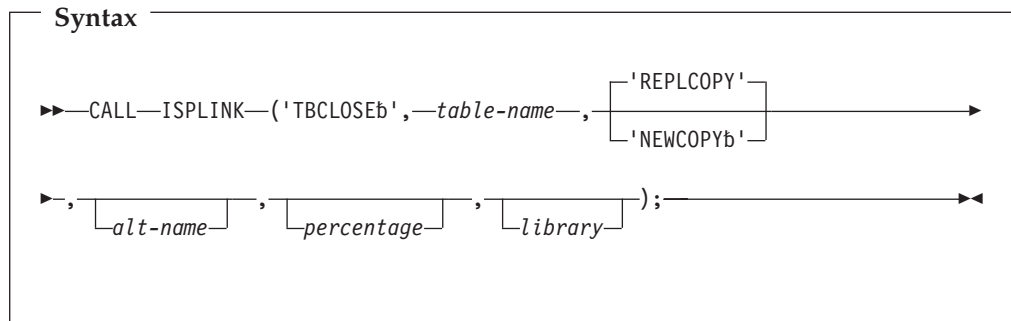
Command invocation format



Call invocation format



OR

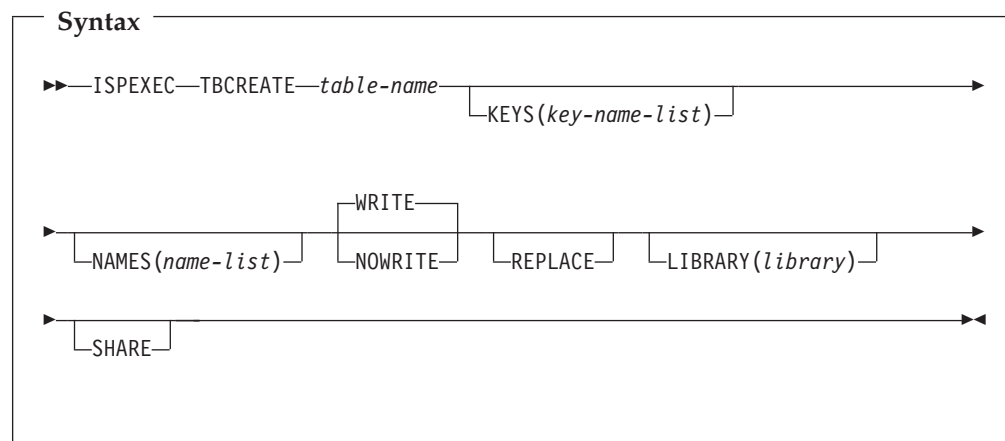


Return codes

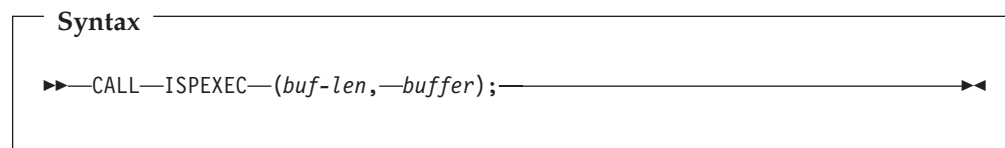
- 0 Normal completion.
- 12 Table is not open.
- 16 Alternate table output library was not allocated.
- 20 Severe error.

TBCREATE—create a new table

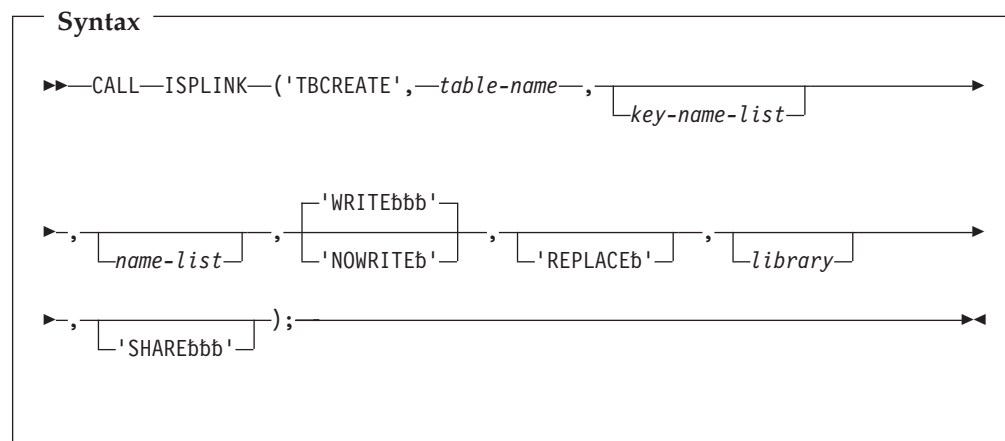
Command invocation format



Call invocation format



OR



Return codes

- 0 Normal completion.
- 4 Normal completion—a duplicate table exists but REPLACE was specified.
- 8 Either the table already exists and REPLACE was not specified, or REPLACE was specified and the table is in SHARE mode.
- 12 Table in use; ENQ failed.
- 16 WRITE mode specified and alternate table input library not allocated. TBCREATE checks the input library to determine if a duplicate table exists. See return code 8.
- 20 Severe error.

TBDELETE—delete a row from a table

Command invocation format

Syntax

```
▶▶—ISPEXEC—TBDELETE—table-name—▶▶
```

Call invocation format

Syntax

```
▶▶—CALL—ISPEXEC—(buf-len,—buffer);—▶▶
```

OR

Syntax

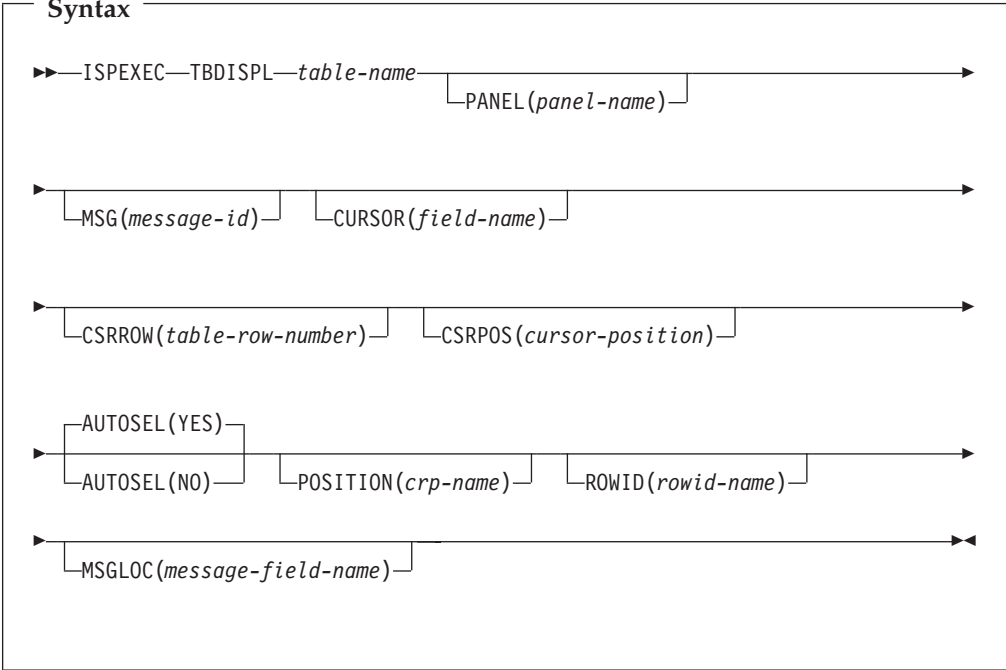
```
▶▶—CALL—ISPLINK—('TBDELETE',—table-name);—▶▶
```

Return codes

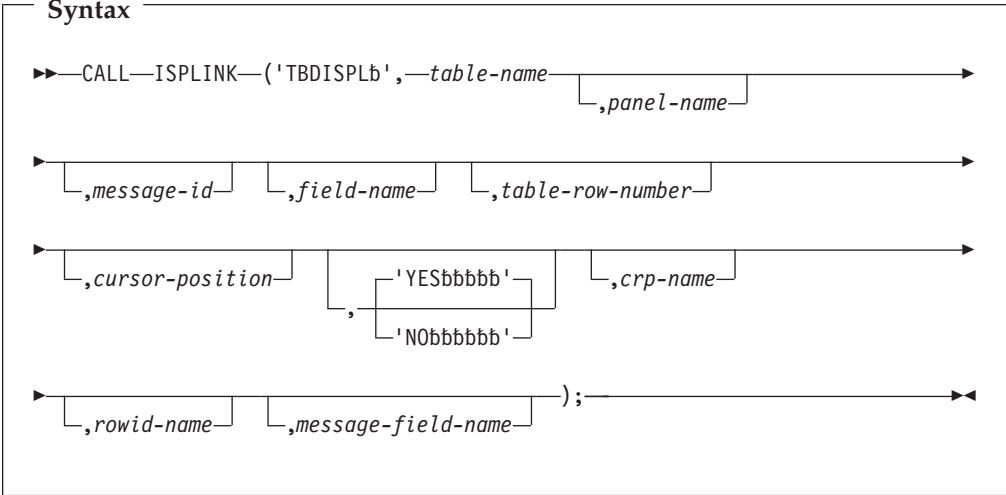
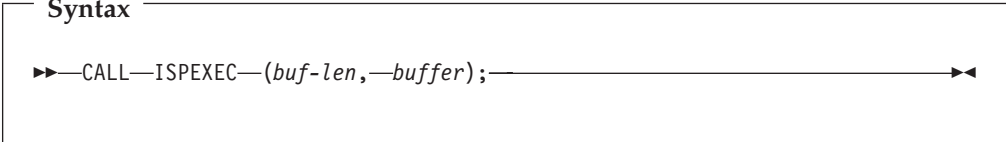
- 0 Normal completion.
- 8 Keyed tables: the row specified by the value in key variables does not exist; CRP set to TOP (zero). Non-keyed tables: CRP was at TOP (zero) and remains at TOP.
- 12 Table is not open.
- 20 Severe error.

TBDISPL—display table information

Command invocation format



Call invocation format



Return codes

- 0** If the panel definition contains neither a)REINIT nor a)PROC section, the Enter key was pressed, or a scroll command was entered. Any of these occurred:
- One row was selected in the scrollable part of the display. The CRP is set to point to that table row and the row is retrieved. The input fields from the selected model set on the display are then stored in the function pool.
 - The user entered information into the fixed portion of the display.
 - All of these:
 - A scroll return to function has been specified (ZTDRET defined to UP, DOWN, or VERTICAL).
 - More rows are needed to fill a scroll request.
 - No selected rows remain to be processed.

If the panel definition contains a)REINIT or)PROC section, there is the additional possibility that the user entered no information and just pressed Enter.

- 4** The Enter key was pressed or a scroll command was entered. The first or both of these occurred:
- Two or more rows in the scrollable part of the display were selected. The CRP is set to the first selected row and the row is retrieved. The input fields from the selected model set on the display are then stored in the function pool.
 - The user entered information into the fixed portion of the display.
 - If scroll return to function has been specified, and two or more rows are selected for processing, TBDISPL returns a return code 4 until all selected rows are processed. You process the request for more rows to be added to the table only after all selected rows have been processed; that is, only when ZTDSELS has a value of 0.

For subsequent TBDISPL requests with no panel name and no message ID, return code 4 is issued for each request until one selected row remains to be accessed. For this last row, a return code of zero is issued by TBDISPL, still specified with no panel name and no message ID. The variable ZTDSELS will have a value of one.

- 8** The END or RETURN command was entered. For panels created by the tag conversion utility, CANCEL and EXIT commands also give a return code of 8. If CANCEL and EXIT are requested from a panel displayed using TBDISPL service calls and the panel was defined with dialog tag language (DTL), the dialog manager returns the command in ZVERB and sets a return code of 8 from the display screen. The CRP is set to the first of any selected rows in the scrollable part of the display. The input fields from the selected model set on the display are then stored in the function pool. If no rows were selected, the CRP is at the top (zero). To process all selected rows when END or RETURN was entered, continue to issue TBDISPL requests with no panel name or message ID specified until ZTDSELS is one.

If the user enters the END command on a table display panel, a subsequent redisplay will result in a return code of 8.

The user may have entered information into the fixed portion of the display.

- 12** The specified panel, message, cursor field, or message location field could not be found.

- 16 Truncation or translation error in storing defined variables.
 20 Severe error.

TBEND—close a table without saving

Command invocation format

Syntax

```
▶▶ ISPEXEC—TBEND—table-name◀◀
```

Call invocation format

Syntax

```
▶▶ CALL—ISPEXEC—(buf-len,—buffer);◀◀
```

OR

Syntax

```
▶▶ CALL—ISPLINK—('TBENDbbb',—table-name);◀◀
```

Return codes

- 0 Normal completion.
 12 Table is not open.
 20 Severe error.

TBERASE—erase a table

Command invocation format

Syntax

```
▶▶ ISPEXEC—TBERASE—table-name
    └──LIBRARY(library)──◀◀
```

Call invocation format

Syntax

```
▶▶ CALL—ISPEXEC—(buf-len,—buffer);◀◀
```

TBERASE service

OR

Syntax

```
▶▶CALL ISPLINK('TBERASEb',—table-name—, [library]);▶▶
```

Return codes

- 0 Normal completion.
- 8 Table does not exist in the output library.
- 12 Table in use; ENQ failed.
- 16 Table output library not allocated.
- 20 Severe error.

TBEXIST—determine whether a row exists in a table

Command invocation format

Syntax

```
▶▶ISPEXEC TBEXIST—table-name▶▶
```

Call invocation format

Syntax

```
▶▶CALL ISPEXEC(buf-len,—buffer);▶▶
```

OR

Syntax

```
▶▶CALL ISPLINK('TBEXISTb',—table-name);▶▶
```

Return codes

- 0 Normal completion; the CRP is positioned to the specified row.
- 8 Keyed tables: the specified row does not exist; the CRP is set to TOP (zero).
Non-keyed tables: service not possible; the CRP is set to TOP.
- 12 Table is not open.
- 20 Severe error.

Call invocation format

Syntax

```

▶▶ CALL ISPEXEC (buf-len, buffer);

```

OR

Syntax

```

▶▶ CALL ISPLINK ('TBMODbbb', table-name, name-list
) ;
'ORDERbbb'

```

Return codes

- 0 Normal completion. Keyed tables: Existing row was updated. Non-keyed tables: New row was added to table.
- 8 Keys did not match; new row was added to the table. Returned only for tables with keys.
- 12 Table is not open.
- 16 Numeric conversion error; see numeric restrictions for TBSORT. Returned only for sorted tables.
- 20 Severe error.

TBOPEN—open a table

Command invocation format

Syntax

```

▶▶ ISPEXEC TBOPEN table-name [WRITE] [NOWRITE] [LIBRARY(library)]
[SHARE]

```

Call invocation format

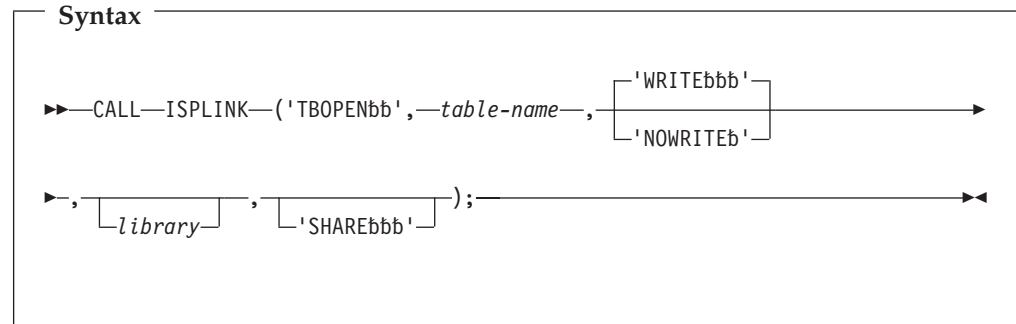
Syntax

```

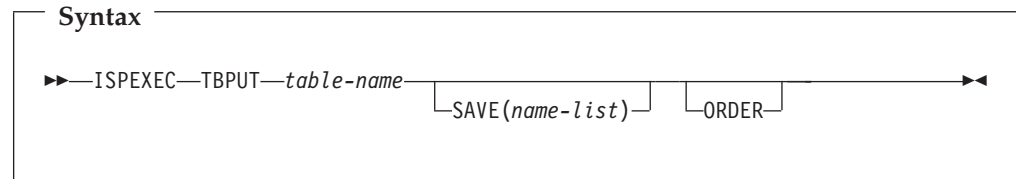
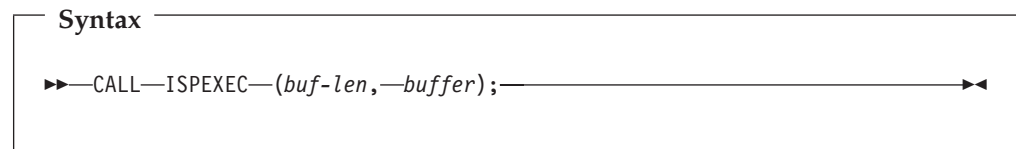
▶▶ CALL ISPEXEC (buf-len, buffer);

```

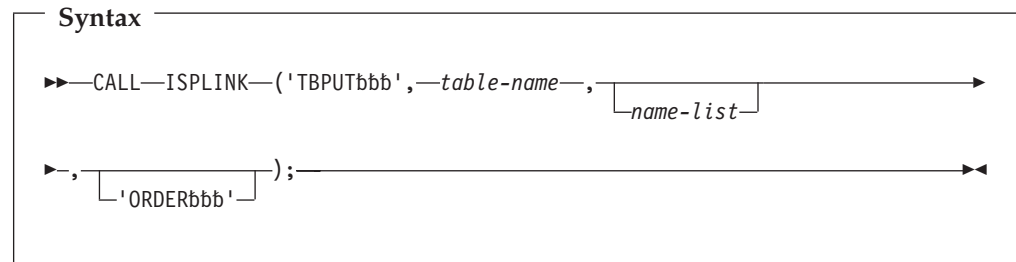

OR

**Return codes**

- 0 Normal completion.
- 8 Table does not exist.
- 12 ENQ failed; table was in use by another user or the current user.
- 16 Table input library was not allocated.
- 20 Severe error.

TBPUT—update a row in a table**Command invocation format****Call invocation format**

OR

**Return codes**

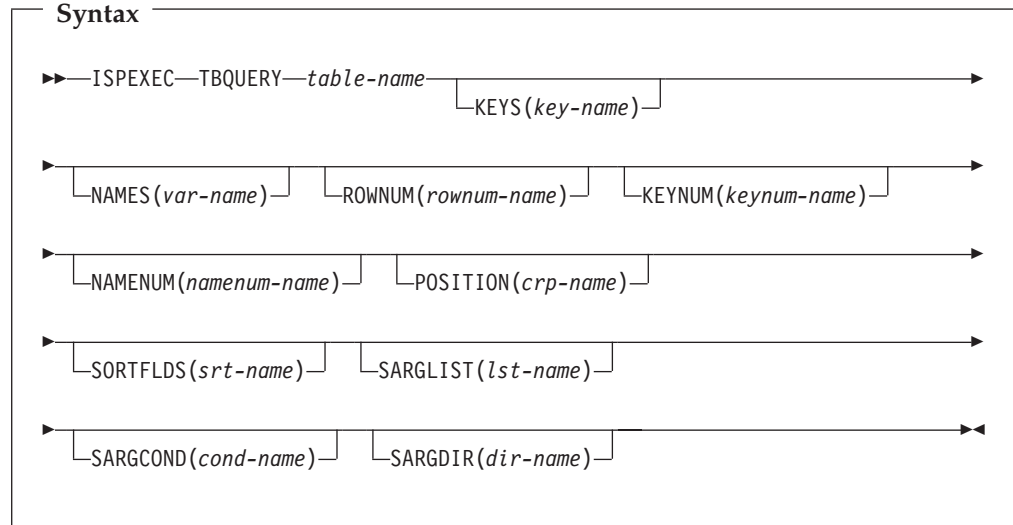
- 0 Normal completion.

TBPUT service

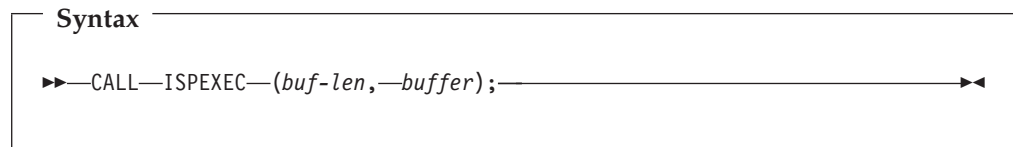
- 8 Keyed tables: the key does not match that of the current row; CRP set to TOP (zero). Non-keyed tables: CRP was at TOP and remains at TOP.
- 12 Table is not open.
- 16 For sorted tables: numeric conversion error; see numeric restrictions for TBSORT.
- 20 Severe error.

TBQUERY—obtain table information

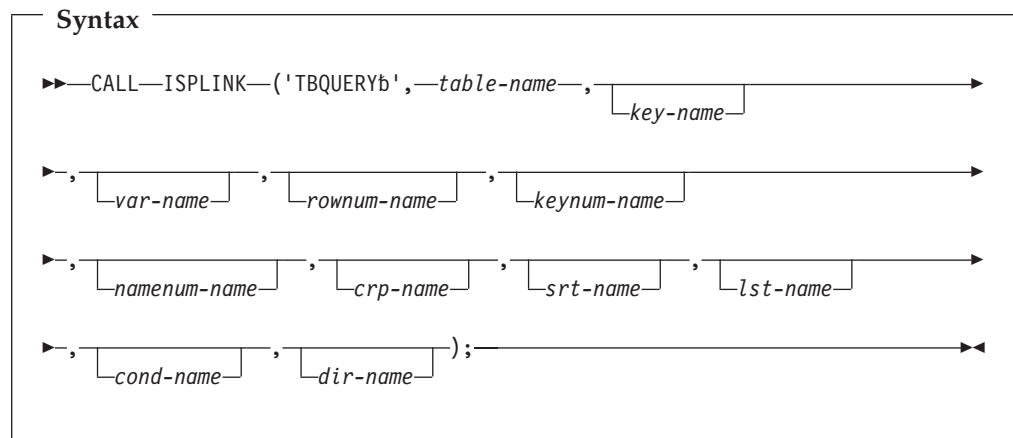
Command invocation format



Call invocation format

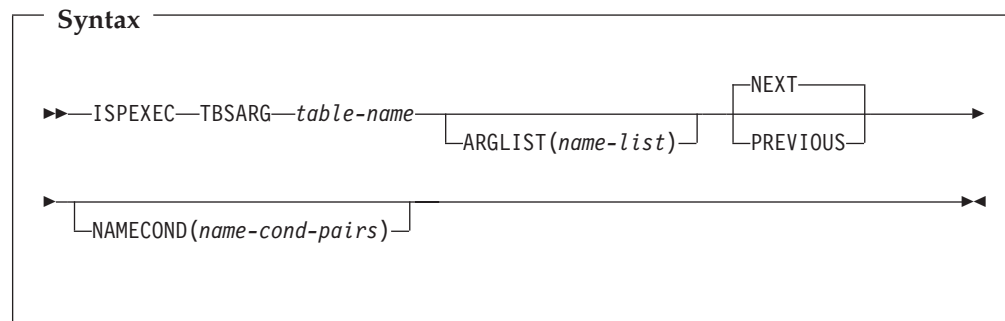
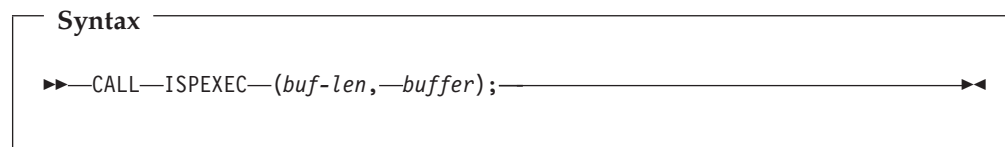


OR

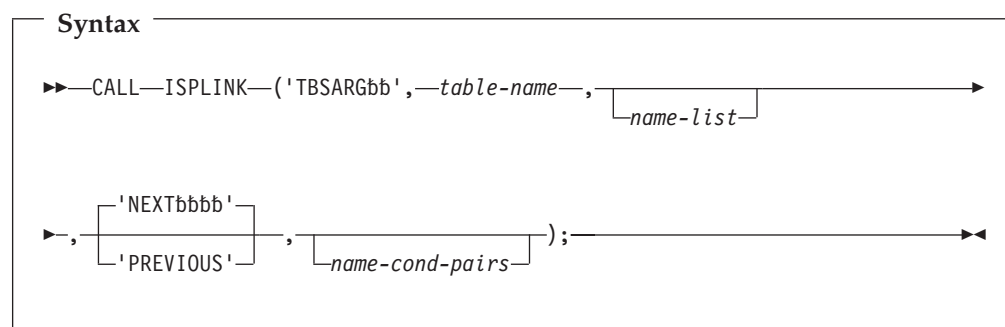


Return codes

- 0 Normal completion.
- 12 Table is not open.
- 16 Not all keys or names were returned because insufficient space was provided.
- 20 Severe error.

TBSARG—define a search argument**Command invocation format****Call invocation format**

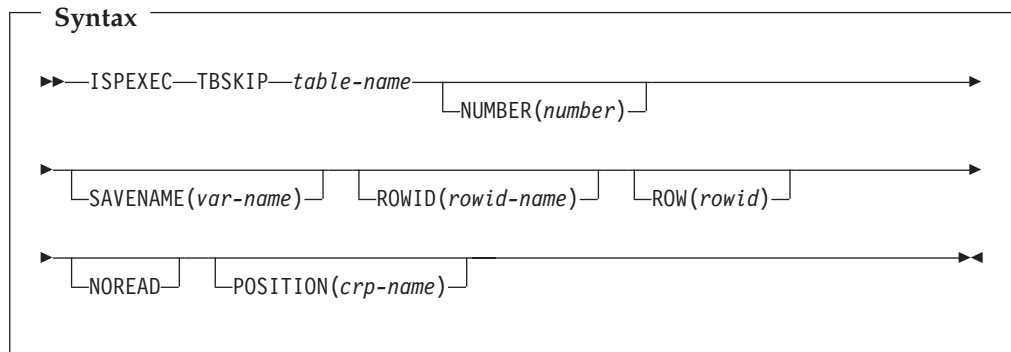
OR

**Return codes**

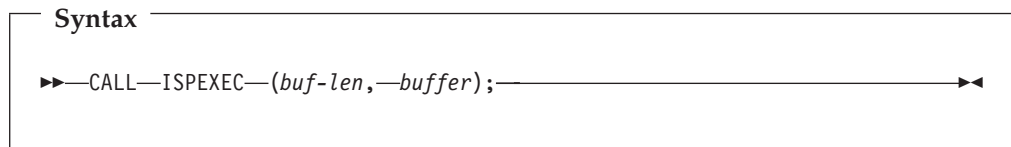
- 0 Normal completion.
- 8 All column variables are null and the name-list parameter was not specified; no argument is established.
- 12 Table is not open.
- 20 Severe error.

TBSKIP—move the row pointer

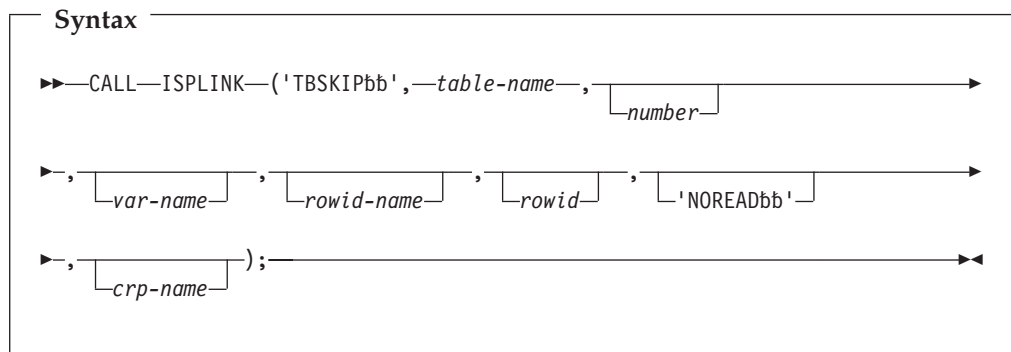
Command invocation format



Call invocation format



OR



- 0 Normal completion.
- 8 CRP would have gone beyond the number of rows in the table. This includes a table empty condition, with CRP set to TOP (zero). The row ID remains unchanged.
- 12 Table is not open.
- 16 Variable value has been truncated, or insufficient space is provided to return all extension variable names.
- 20 Severe error.

TBSORT—sort a table

Command invocation format

Syntax

```
▶▶—ISPEXEC—TBSORT—table-name—FIELDS(sort-list)—▶▶
```

Call invocation format

Syntax

```
▶▶—CALL—ISPEXEC—(buf-len,—buffer)—▶▶
```

OR

Syntax

```
▶▶—CALL—ISPLINK—('TBSORTbb',—table-name,—sort-list)—▶▶
```

Return codes

- 0 Normal completion.
- 12 Table is not open.
- 16 Numeric convert error.
- 20 Severe error.

Syntax

```

▶▶ CALL ISPLINK ('TBSTATSb', table-name, date-created-name
▶▶ , time-created-name, date-updated-name
▶▶ , time-updated-name, user-name, row-created-name
▶▶ , rownum-name, row-updated-name, table-updated-name
▶▶ , service-name, return-code-name, status1-name
▶▶ , status2-name, status3-name, library
▶▶ , virtual-storage-size-name, date-created-name-4-digit
▶▶ , date-updated-name-4-digit);

```

Return codes

- 0 Normal completion (returned even if the table does not exist).
- 16 Variable value has been truncated.
- 20 Severe error.

TBTOP—set the row pointer to the top

Command invocation format

Syntax

```

▶▶ ISPEXEC TBTOP table-name

```

Call invocation format

Syntax

```

▶▶ CALL ISPEXEC (buf-len, buffer);

```

OR

Syntax

```
▶▶—CALL—ISPLINK—('TBTOPbbb',—table-name);—▶▶
```

Return codes

- 0 Normal completion.
- 12 Table is not open.
- 20 Severe error.

TBVCLER—clear table variables

Command invocation format

Syntax

```
▶▶—ISPEXEC—TBVCLER—table-name—▶▶
```

Call invocation format

Syntax

```
▶▶—CALL—ISPEXEC—(buf-len,—buffer);—▶▶
```

OR

Syntax

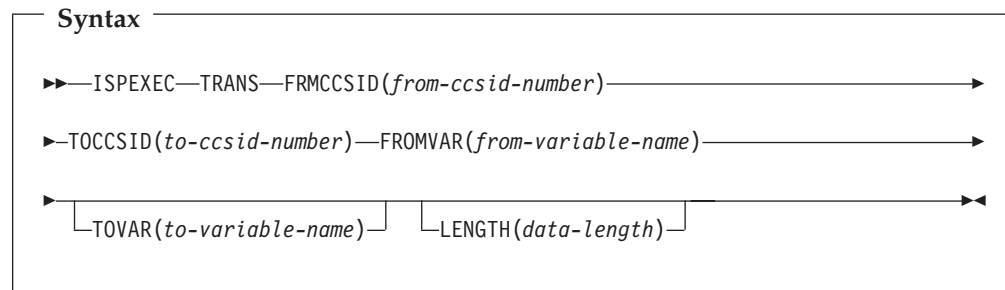
```
▶▶—CALL—ISPLINK—('TBVCLER',—table-name);—▶▶
```

Return codes

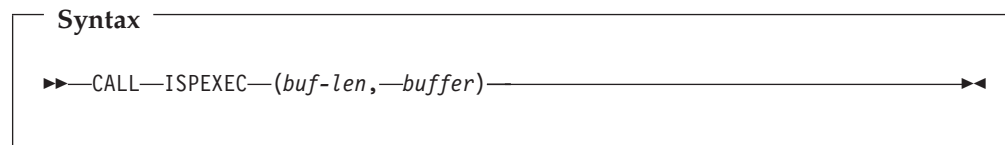
- 0 Normal completion.
- 12 Table is not open.
- 20 Severe error.

TRANS—translate data from one Coded Character Set Identifier (CCSID) to another

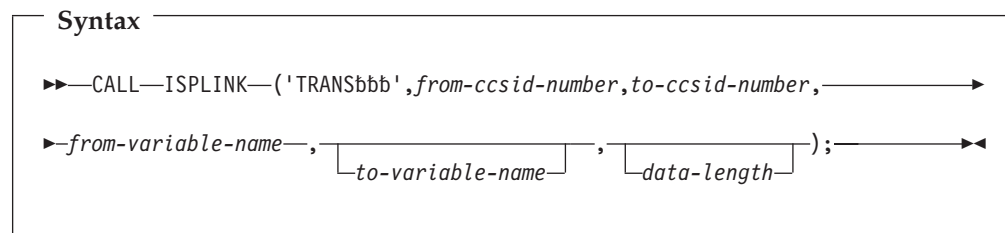
Command invocation format



Call invocation format



OR



Return codes

- 0 Normal completion.
- 4 Translation tables do not support the requested 'to/from' combination.
- 8 From variable not found.
- 16 Variable services indicated a translation error or truncation occurred storing the translated data.
- 20 Severe error.

VCOPY—create a copy of a variable

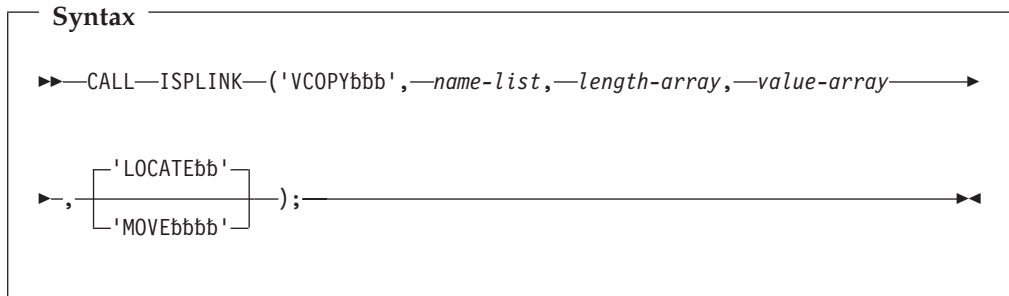
Command invocation format

ISPEXEC *This service does not apply to APL2 or command procedures*

Call invocation format

CALL ISPEXEC *This service cannot be used with this interface*

OR



Return codes

- 0 Normal completion.
- 8 One or more variables do not exist.
- 12 Validation failed.
- 16 Truncation has occurred during data movement (move mode only).
- 20 Severe error.

VDEFINE—define function variables

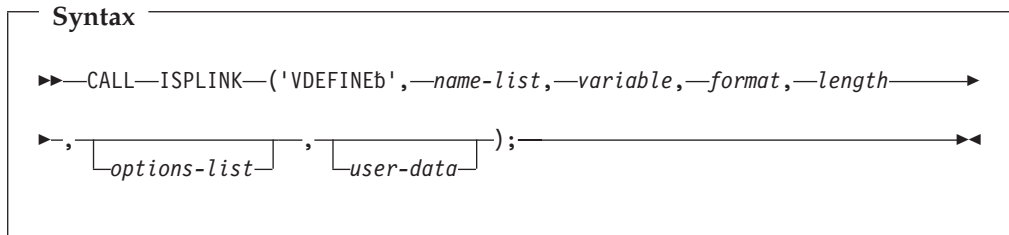
Command invocation format

ISPEXEC *This service does not apply to APL2 or command procedures*

Call invocation format

CALL ISPEXEC *This service cannot be used with this interface*

OR



Return codes

- 0 Normal completion.
- 8 Variable not found.
- 16 Data truncation occurred.
- 20 Severe error.

VDELETE—remove a definition of function variables

Command invocation format

ISPEXEC *This service does not apply to APL2 or command procedures*

Call invocation format

CALL ISPEXEC *This service cannot be used with this interface*

OR

Syntax

```

▶▶ CALL ISPLINK ('VDELETEb', name-list);
                                [ '*bbbbbb' ]
    
```

Return codes

- 0 Normal completion.
- 8 At least one variable not found.
- 20 Severe error.

VERASE—remove variables from shared and/or profile pool

Command invocation format

Syntax

```

▶▶ ISPEXEC VERASE name-list
                                ASIS
                                SHARED
                                PROFILE
                                BOTH
    
```

Call invocation format

Syntax

```

▶▶ CALL ISPEXEC (buf-len, buffer);
    
```

OR

Syntax

```

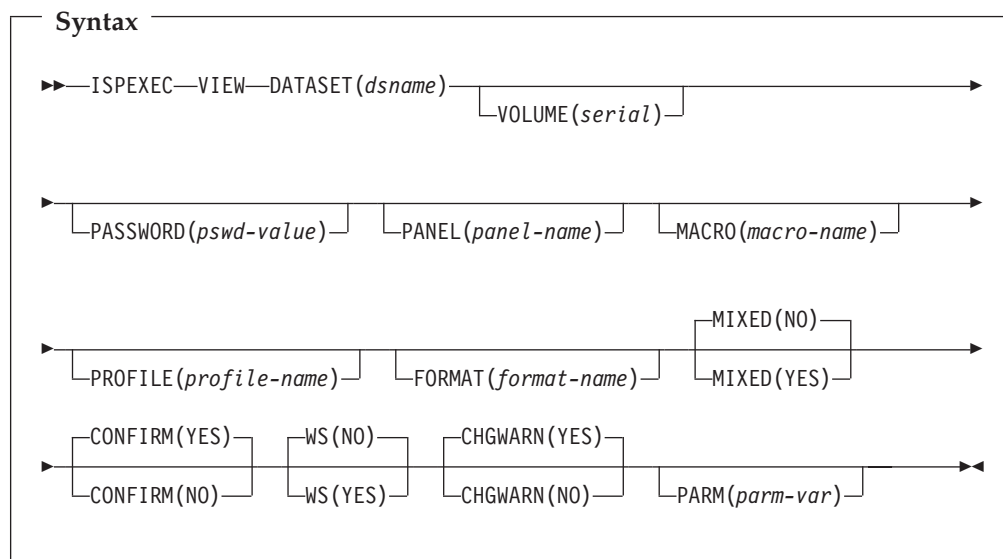
▶▶ CALL ISPLINK ('VERASEbb', name-list,
                                [ 'ASISbbb' ]
                                SHARED
                                [ 'PROFILEb' ]
                                [ 'BOTHbbb' ]
                                );
    
```

Return codes

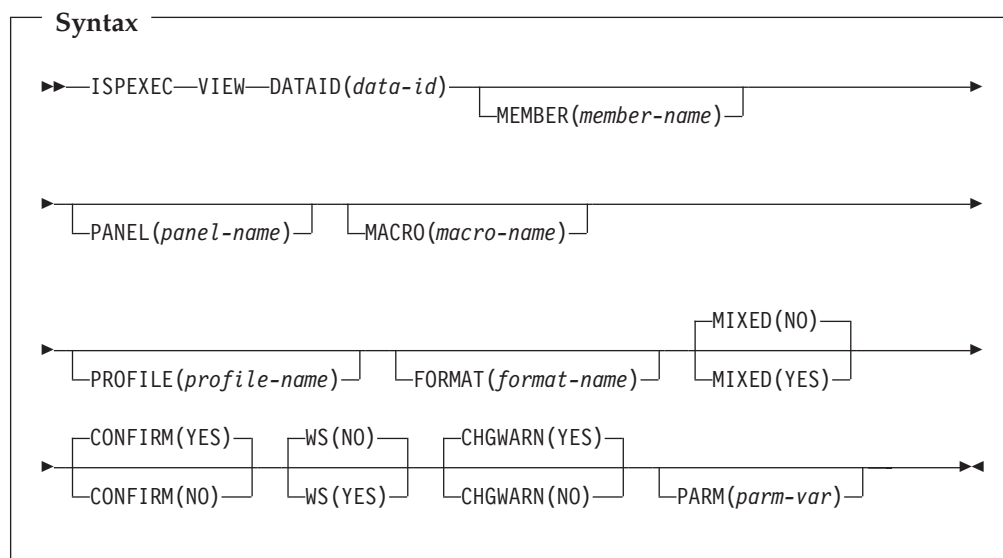
- 0 Normal completion.
- 8 At least one variable not found.
- 20 Severe error.

VIEW—view a data set

Command invocation format



OR



OR

VIEW service

Syntax

```
▶▶ ISPEXEC VIEW WSFN(ws-filename) [PANEL(panel-name)]  
  
[MACRO(macro-name)] [PROFILE(profile-name)]  
  
[FORMAT(format-name)] [MIXED(NO)] [CONFIRM(YES)] [WS(NO)]  
[MIXED(YES)] [CONFIRM(NO)] [WS(YES)]  
  
[CHGWARN(YES)]  
[CHGWARN(NO)] [PARM(parm-var)] [ASCII]
```

Call invocation format

Syntax

```
▶▶ CALL ISPLINK ('VIEWbbbb', [dsname], [serial]  
  
, [pswd-value], [panel-name], [macro-name]  
  
, [profile-name], [data-id], [member-name]  
  
, [format-name], ['NObbbbbb'], ['YESbbbbbb']  
['YESbbbbbb'], ['NObbbbbb'])  
  
, [ws-filename-buffer-name], ['YES'], ['YES']  
['NO'], ['NO']  
  
, [parm-var], [file-var], ['ASCII-']);
```

OR

Syntax

```
▶▶CALL ISPEXEC (buf-len,buffer);◀◀
```

Return codes

0 Normal completion

Note: Data can only be saved using the CREATE or REPLACE primary commands.

- 12 VIEW has been disabled through the ISPF configuration table.
- 14 Member, sequential data set, or z/OS UNIX file in use.
- 16 One of these:
- No members matched the specified pattern.
 - No members in the partitioned data set.
- 18 A VSAM data set was specified but the ISPF Configuration Table does not allow VSAM processing.
- 20 Severe error; unable to continue.

VIIF—view interface

Command invocation format

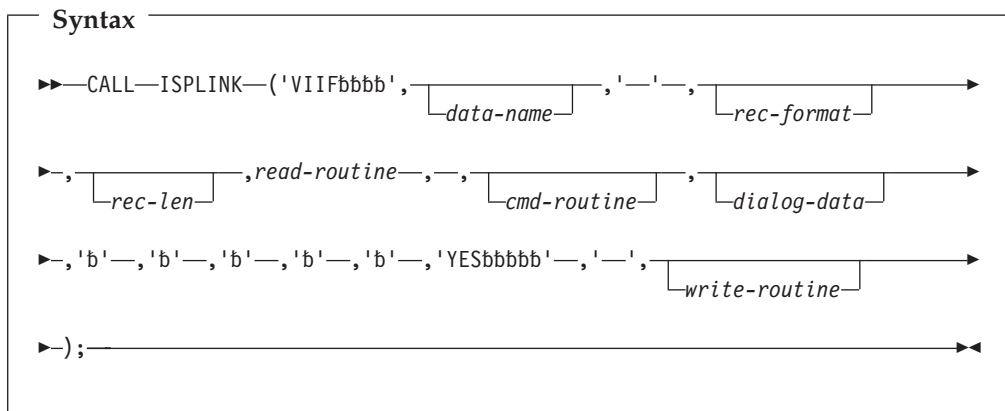
Command procedures cannot be used to invoke this service.

Call invocation format

Syntax

```
▶▶CALL ISPLINK ('VIIFbbbb', [data-name], profile-name
▶▶, [rec-format], [rec-len], [read-routine], [cmd-routine]
▶▶, [dialog-data], [edit-len], [panel-name], [macro-name]
▶▶, [format-name], ['NObbbbbb'], ['NObbbbbb'], [parm-var]
▶▶, [write-routine], ['YESbbbbbb'], ['NObbbbbb']);◀◀
```

OR



Return codes

Read routine return codes:

- 0 Normal completion.
- 8 End of data records (no data record returned).
- 16 Read error. If a read error is encountered when building the initial view display, the VIIF service terminates with a return code of 20. Otherwise, the edit data is redisplayed.
- 20 Severe error. (VIIF service terminates immediately with a return code of 20.)

Command routine return codes:

- 0 Normal completion.
- 4 The PDF component should process the requested function.
- 12 Command deferred; retain the command on the Command line. View data is redisplayed.
- 20 Severe error. (VIIF service terminates immediately with a return code of 20.)

VIIF return codes:

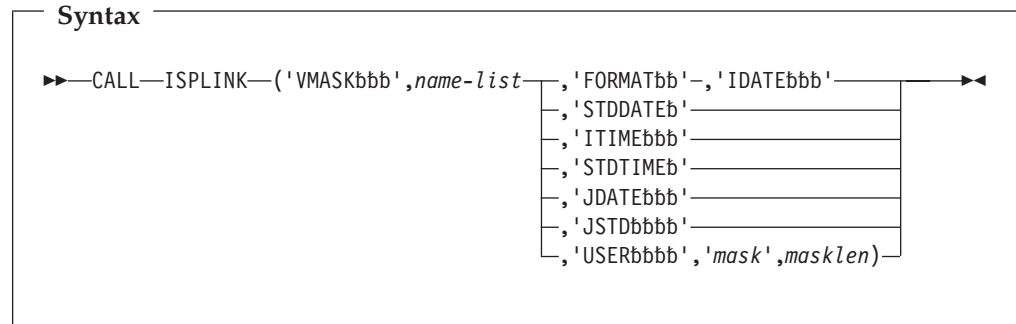
- 0 Normal completion, data saved.
- 4 Normal completion, data not saved.
- 12 View has been disabled through the ISPF Configuration table.
- 16 Unexpected return code received from a dialog-supplied routine. When an unexpected return code is received, the EDIF service terminates immediately with a return code of 16.
- 20 Severe error; unable to continue.

VMASK—associate an edit mask with a dialog variable

Command invocation format

ISPEXEC *This service does not apply to APL2 or command procedures*

Call invocation format

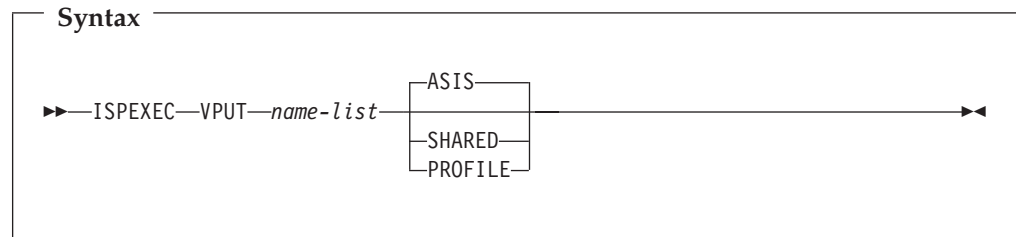


Return codes

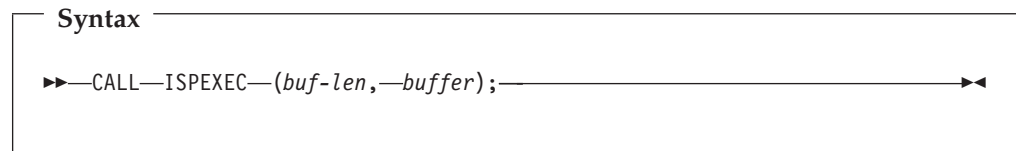
- 0 Normal completion.
- 8 Variable not found.
- 20 Severe error.

VPUT—update variables in the shared or profile pool

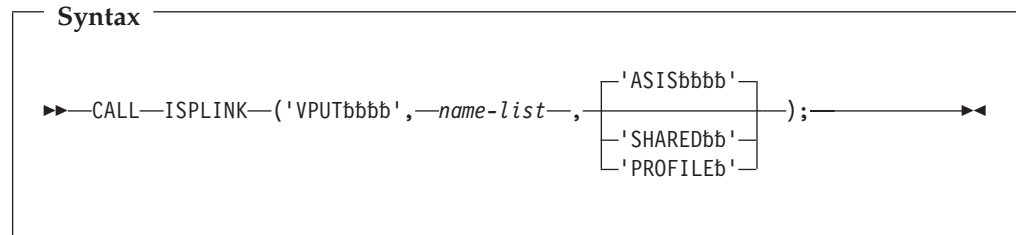
Command invocation format



Call invocation format



OR



Return codes

- 0 Normal completion.
- 8 Variable not found.

VPUT service

- 16 Truncation occurred while copying variables to the application profile pool.
- 20 Severe error.

VREPLACE—replace a variable

Command invocation format

ISPEXEC *This service does not apply to
APL2 or command procedures*

Call invocation format

CALL ISPEXEC *This service cannot be used with this interface*

OR

Syntax

```
▶▶CALL—ISPLINK—('VREPLACE',—name-list,—lengths,—values);◀◀
```

Return codes

- 0 Normal completion.
- 16 Truncation has occurred during data movement.
- 20 Severe error.

VRESET—reset function variables

Command invocation format

ISPEXEC *This service does not apply to
APL or command procedures*

Call invocation format

CALL ISPEXEC *This service cannot be used with this interface*

OR

Syntax

```
▶▶CALL—ISPLINK—('VRESETbb');◀◀
```

Return codes

- 0 Normal completion.
- 20 Severe error.

VSYM service—resolve system symbols

Command invocation format

Syntax

```
▶▶—ISPEXEC—VSYM—name-list—————▶▶
```

Call invocation format

Syntax

```
▶▶—CALL—ISPEXEC—(buf-len,—buffer);—————▶▶
```

OR

Syntax

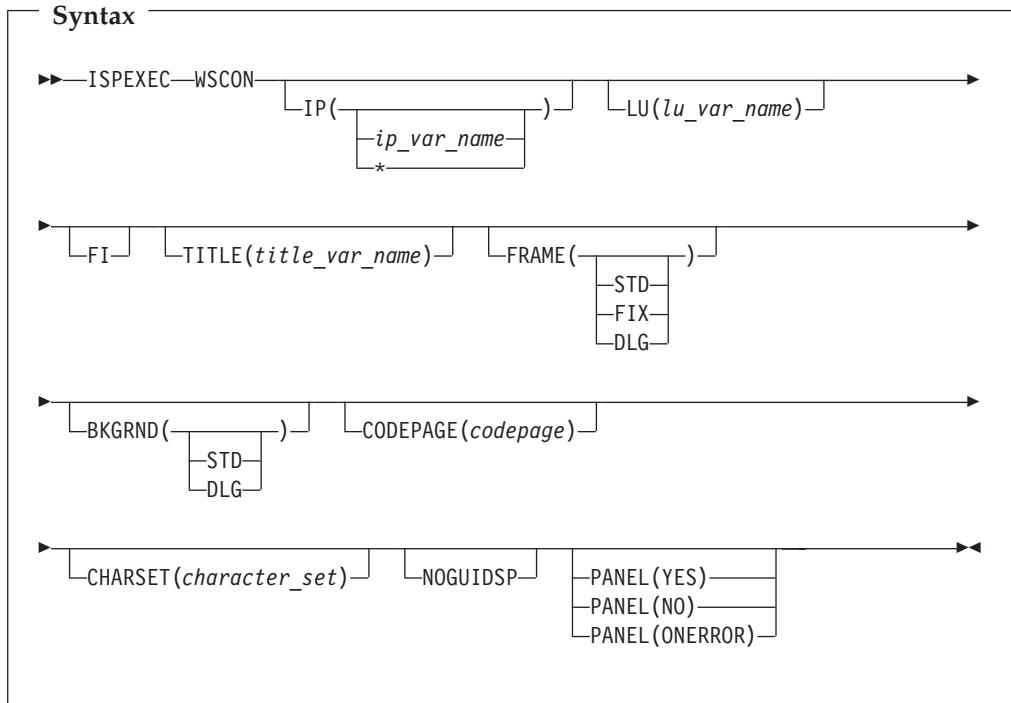
```
▶▶—CALL—ISPLINK—('VSYMbbbb',—name-list);—————▶▶
```

Return codes

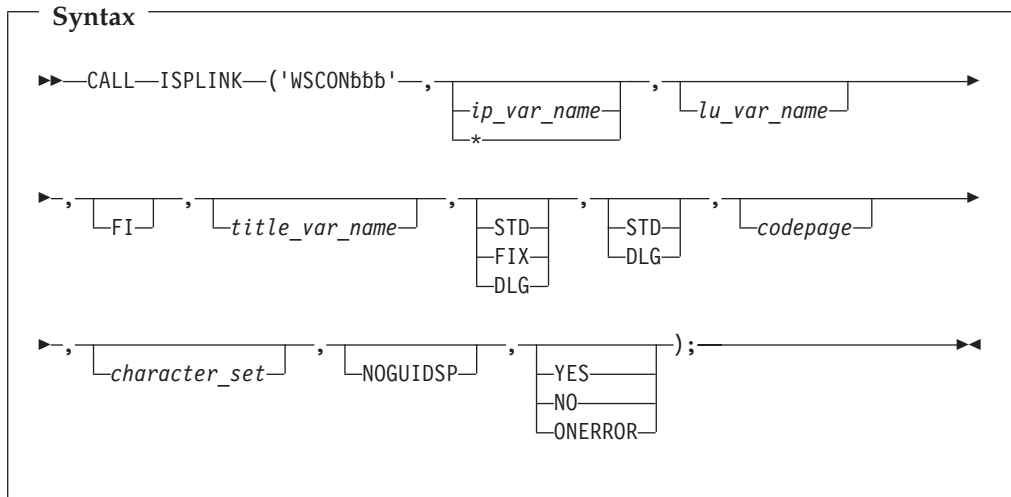
- 0 Normal completion.
- 4 One or more symbol names not substituted (no corresponding system symbol was found).
- 8 Variable not found in function pool.
- 12 Validation failed.
- 16 Truncation occurred resolving system symbols.
- 20 Severe error.

WSCON — Connect to a Workstation

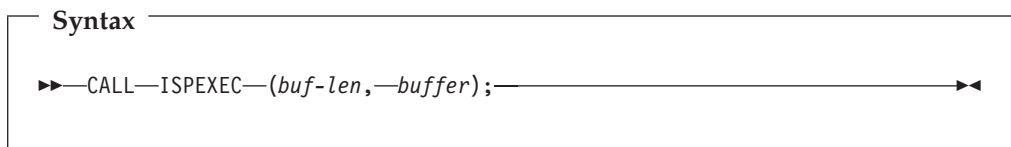
Command invocation format



Call invocation format



OR



Return codes

- 0 Normal completion. Connection established.
- 8 The user pressed End, Exit, or Cancel from the Initiate Workstation Connection panel without making a connection.
- 12 Already in GUI mode. Recursive error.
- 14 Connecting in GUI mode is not supported when in partition mode or split screen.
- 16 Cannot connect to workstation.
- 20 Parameters not valid or syntax conflict. For example, both IP and LU were specified.

WSDISCON—disconnect from a workstation**Command invocation format**

Syntax

```
▶▶ ISPEXEC WSDISCON ▶▶
```

Call invocation format

Syntax

```
▶▶ CALL ISPLINK ('WSDISCON'); ▶▶
```

OR

Syntax

```
▶▶ CALL ISPEXEC (buf-len, -buffer); ▶▶
```

Return codes

- 0 Normal completion. User disconnected from workstation.
- 8 User trying to disconnect from workstation, but there is no current connection.
- 10 User trying to disconnect from GUI mode, but is connected with GUISCRD or GUISCRW values that are different than the host emulator session. User is not disconnected.
- 12 User trying to disconnect from a GUI display when running BATCH GUI mode. User is not disconnected.
- 14 User trying to disconnect from workstation while running the Workstation Tool Integration Configuration program. User is not disconnected.

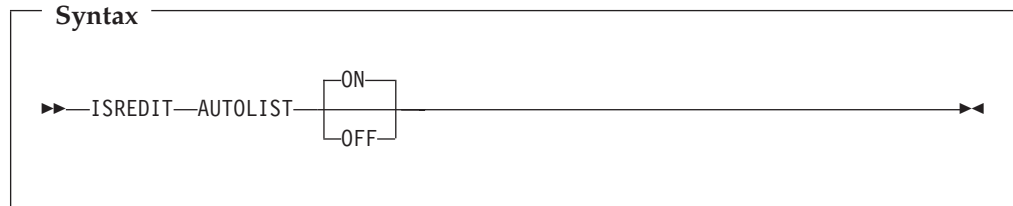
WSDISCON service

Chapter 4. Edit macro commands

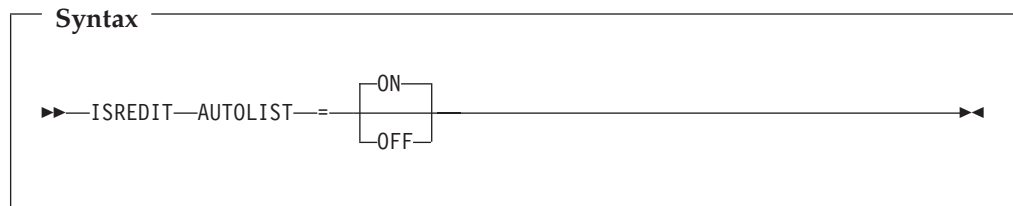
This chapter contains the syntax and return codes for the ISPF Edit macros. For a complete description of the Edit macros see *z/OS ISPF Edit and Edit Macros*.

AUTOLIST - set or query Autolist mode

Macro command syntax



Assignment statement syntax

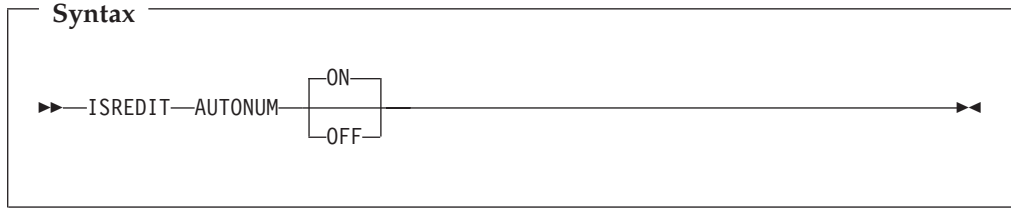


Return codes

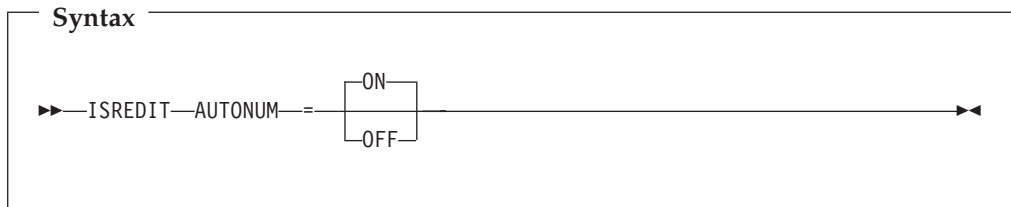
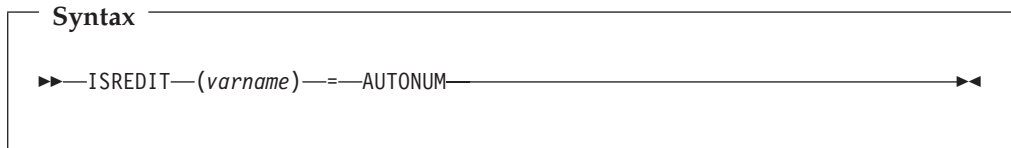
- 0 Normal completion.
- 20 Severe error.

AUTONUM—set or query Autonum mode

Macro command syntax



Assignment statement syntax

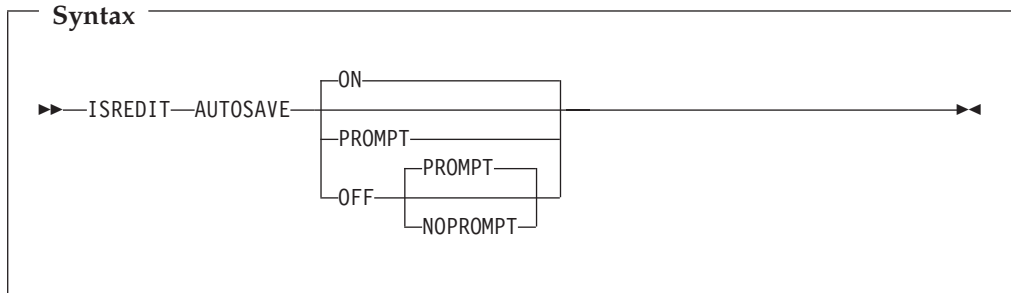


Return codes

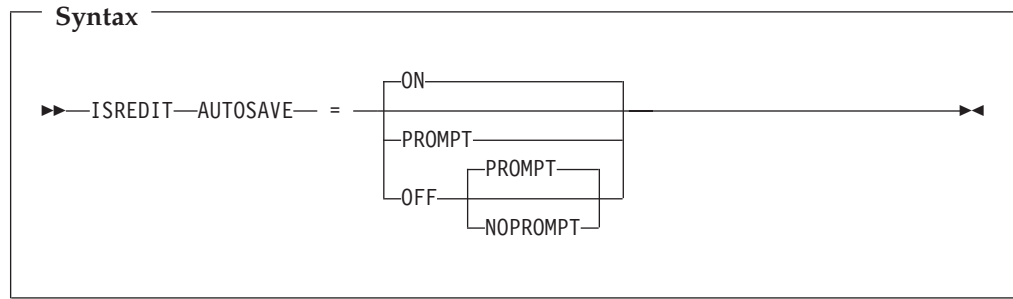
- 0 Normal completion.
- 20 Severe error.

AUTOSAVE—set or query Autosave mode

Macro command syntax



Assignment statement syntax

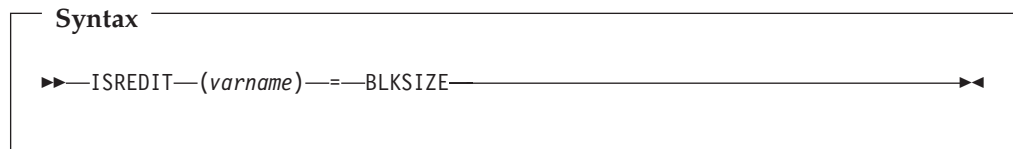


Return codes

- 0 Normal completion.
- 4 OFF NOPROMPT specified.
- 20 Severe error.

BLKSIZE—query the block size

Assignment statement syntax

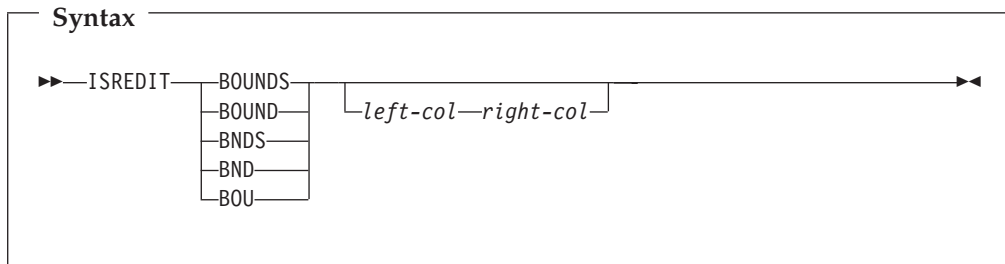


Return codes

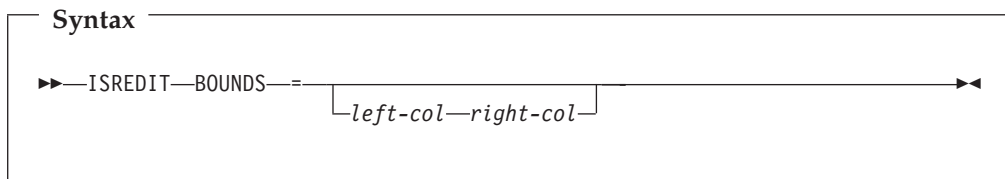
- 0 Normal completion.
- Note:** For a z/OS UNIX file, the BLKSIZE assignment statement returns a value of 0.
- 12 Syntax error.
 - 20 Severe error.

BOUNDS—set or query the edit boundaries

Macro command syntax



Assignment statement syntax

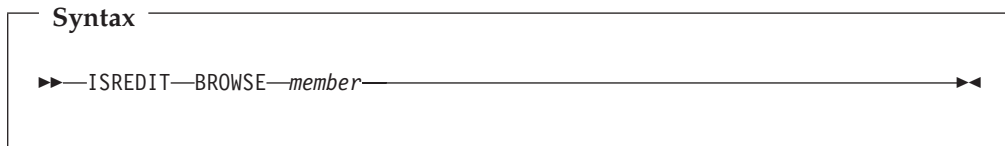


Return codes

- 0 Normal completion.
- 4 Right boundary greater than default; default right boundary used.
- 12 Invalid boundaries specified.
- 20 Severe error.

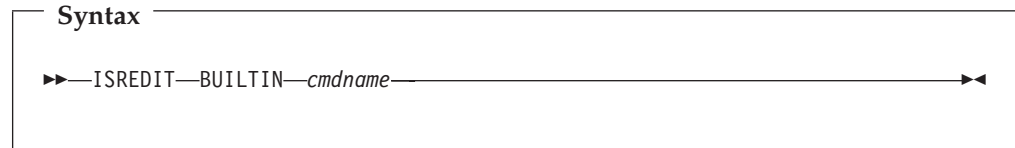
BROWSE—browse from within an edit session

Macro command syntax

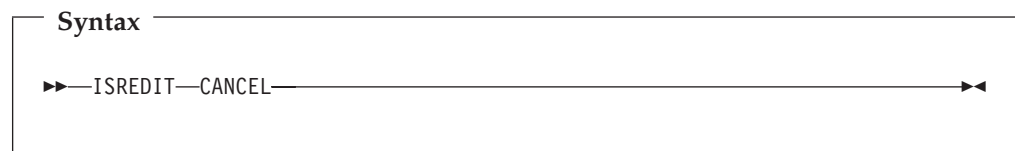


Return codes

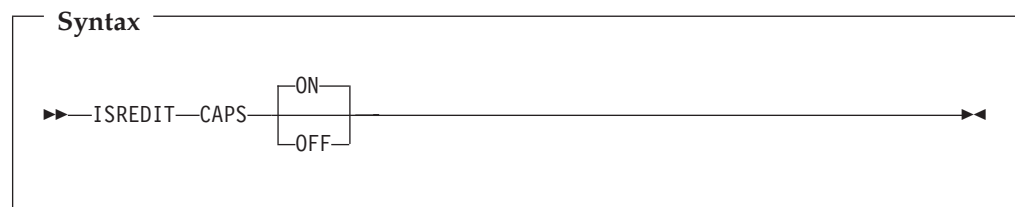
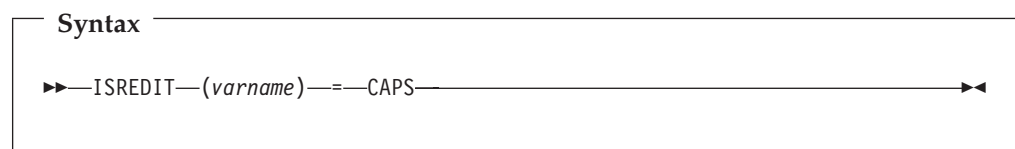
- 0 Normal completion
- 12 Your error (invalid member name, recovery pending)
- 20 Severe error.

BUILTIN—process a built-in command**Macro command syntax****Return codes**

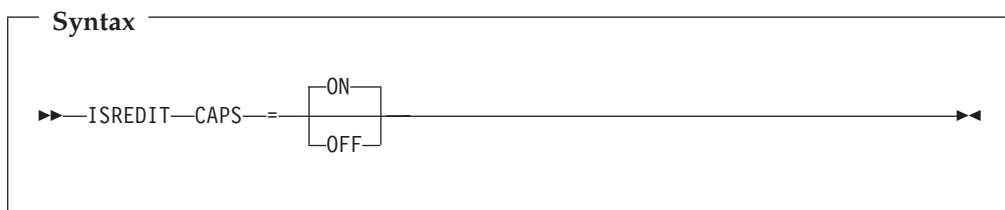
n Return code from the built-in command.
20 Severe error.

CANCEL—cancel edit changes**Macro command syntax****Return codes**

0 Normal completion.
20 Severe error.

CAPS—set or query Caps mode**Macro command syntax****Assignment statement syntax**

CAPS edit macro

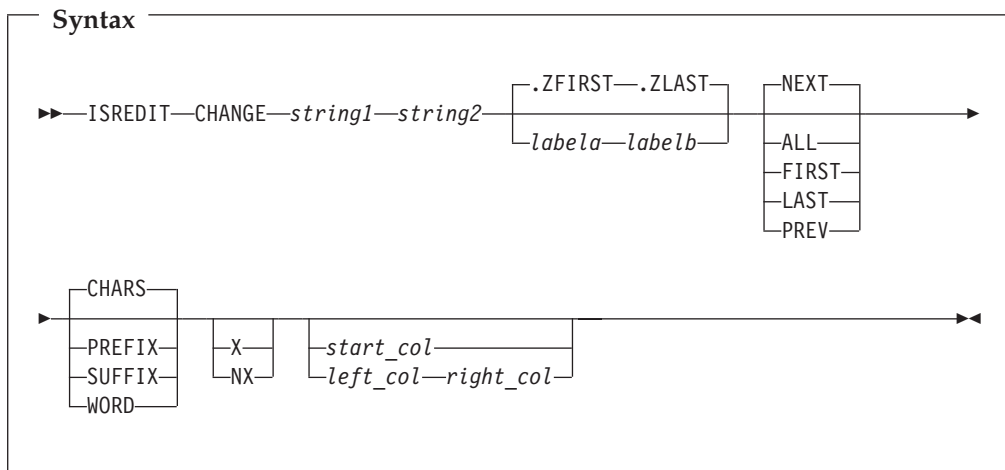


Return codes

- 0 Normal completion.
- 20 Severe error.

CHANGE—change a search string

Macro command syntax

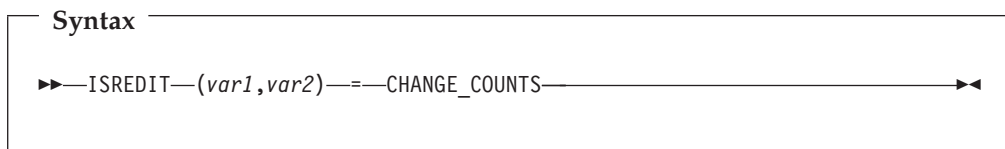


Return codes

- 0 Normal completion.
- 4 String not found.
- 8 Change error. String-2 is longer than string-1 and substitution was not performed on at least one change.
- 12 Inconsistent parameters. The string to be found will not fit between the specified columns.
- 20 Severe error.

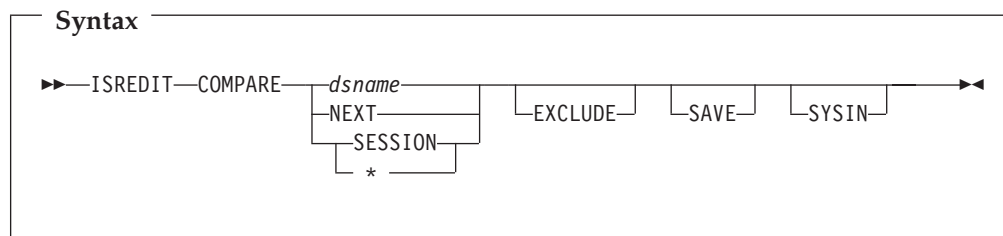
CHANGE_COUNTS—query change counts

Assignment statement syntax

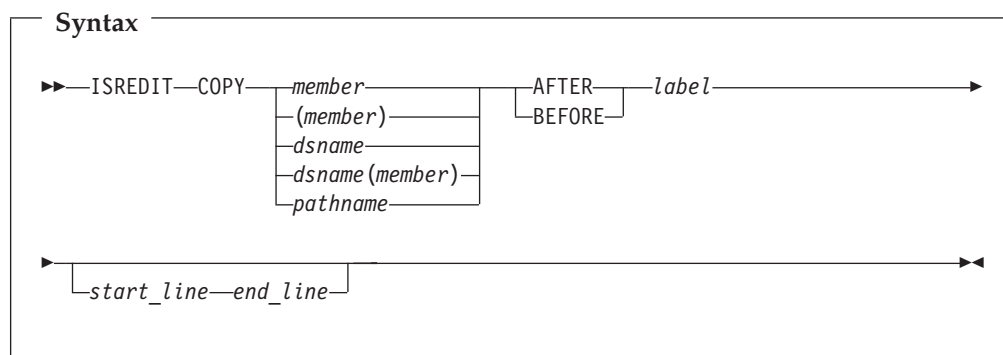


Return codes

0	Normal completion.
20	Severe error.

COMPARE—compare data set**Macro command syntax****Return codes**

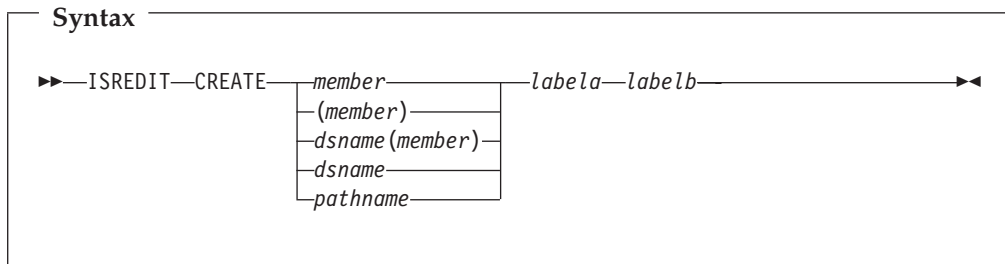
0	Normal completion
8	Member or data set not found, or an error opening the member or data set occurred.
12	No parameters specified, or another parameter error such as not valid NEXT or member specification.
20	Severe error. SuperC, allocation, or delta file error occurred.

COPY—copy data**Macro command syntax****Return codes**

0	Normal completion.
8	End of data reached before last record read.
12	Invalid line pointer (lptr); member not found or BLDL error.
16	End of data reached before first record of specified range was reached.
20	Syntax error (invalid name, incomplete range,), or I/O error.

CREATE—create a data set member

Macro command syntax

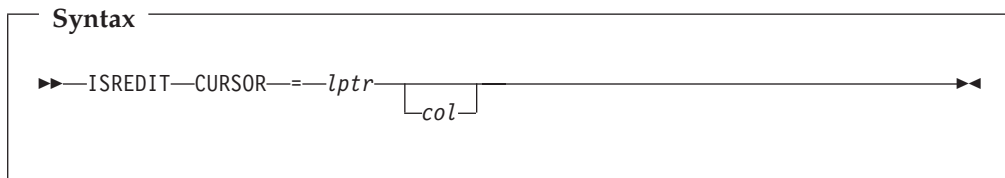


Return codes

- 0 Normal completion.
- 8 Member already exists, member not created.
- 12 Invalid line pointer (lptr). The referenced line does not exist in the file.
- 20 Syntax error (invalid name or incomplete lptr range), or I/O error.

CURSOR—set or query the cursor position

Assignment statement syntax



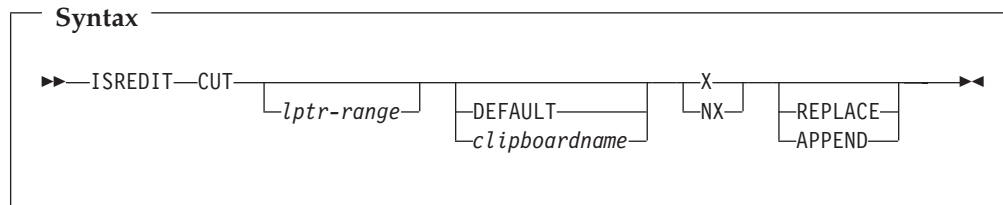
Return codes

- 0 Normal completion.
- 4 Column number beyond data, line number incremented.
- 12 Invalid line number.
- 20 Severe error.

Note: To set the cursor to the command line, exit your macro with a return code of 1.

CUT—cut and save lines

Assignment statement syntax



Return codes

- 0 Normal completion.
- 12 Parameter error. Insufficient storage, or no more clipboards available.
- 20 Severe error.

DATA_CHANGED—query the data changed status

Assignment statement syntax

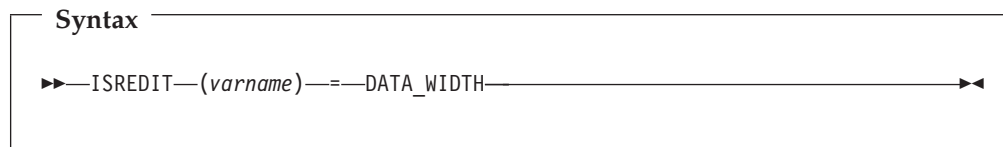


Return codes

- 0 Normal completion.
- 20 Severe error.

DATA_WIDTH—query data width

Assignment statement syntax



Return codes

- 0 Normal completion.
- 12 Invalid command format.
- 20 Severe error.

DATAID—query data ID

Assignment statement syntax

Syntax

```

▶▶ ISREDIT (varname) == DATAID
    
```

Return codes

- 0 The data ID returned was passed to the editor.
- 4 Data ID was generated by and will be freed by the editor.
- 8 A previously generated data ID was returned.
- 20 Severe error.

DATASET—query the current data set name

Assignment statement syntax

Syntax

```

▶▶ ISREDIT (var1, var2, var3) == DATASET
    
```

Return codes

- 0 Normal completion.
- 20 Severe error.

DEFINE—define a name

Macro command syntax

Syntax

```

▶▶ ISREDIT DEFINE name
    MACRO CMD
    MACRO PGM
    ALIAS name-2
    NOP
    RESET
    DISABLED
    
```

Return codes

- 0 Normal completion.
- 8 RESET was attempted for a name not currently defined, or DEFINE name ALIAS name-2 requested and name-2 is a NOP.
- 12 DEFINE was attempted for a name not currently defined.

DISPLAY_LINES edit macro

Return codes

0	Normal completion.
4	No visible data lines.
8	No existing data lines.
12	Invalid command format.
20	Severe error.

DOWN—scroll down

Macro command syntax

Syntax

```
▶▶—ISREDIT—DOWN—amt—▶▶
```

Return codes

0	Normal completion.
2	No more data DOWN.
4	No visible lines.
8	No data to display.
12	Amount not specified.
20	Severe error.

EDIT—edit from within an edit session

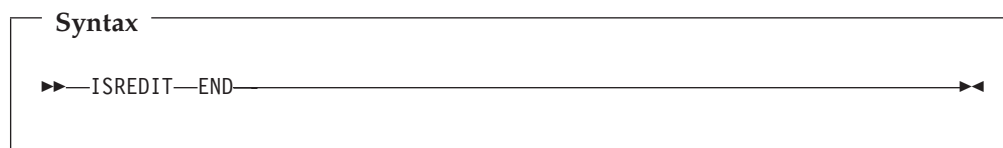
Macro command syntax

Syntax

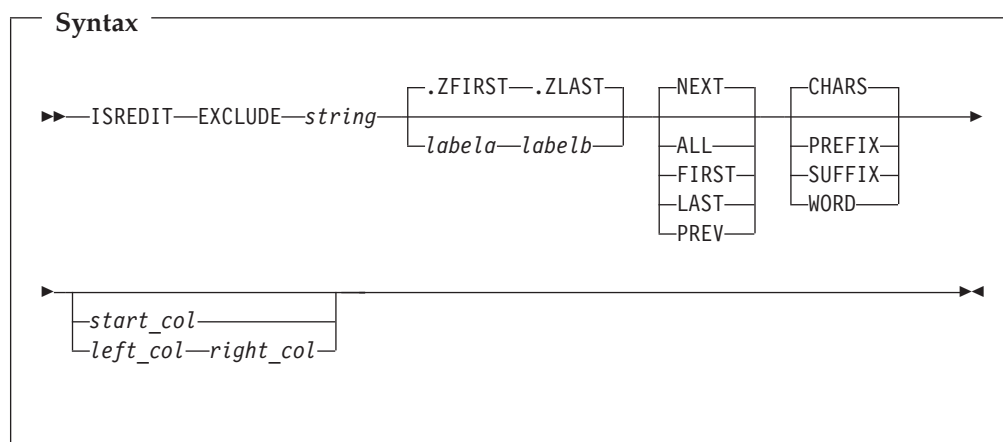
```
▶▶—ISREDIT—EDIT—member—▶▶
```

Return codes

0	Normal completion. Data was saved.
4	Normal completion. Data was not saved.
12	Your error (invalid member name, recovery pending).
14	Member in use.
20	Severe error.
28	No ISREDIT MACRO statement preceded this call, or BROWSE was substituted because of the size of the member being edited.

END—end the edit session**Macro command syntax****Return codes**

- 0 Normal completion.
- 4 New member saved.
- 12 END not done, AUTOSAVE OFF PROMPT set, or Data not saved (insufficient space).
- 20 Severe error.

EXCLUDE—exclude lines from the panel**Macro command syntax****Return codes**

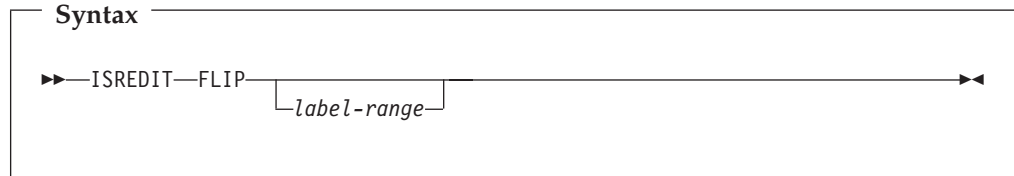
- 0 Normal completion.
- 4 String not found.
- 8 Line(s) not excluded.
- 12 Inconsistent parameters
- 20 Severe error.

Return codes

- 0 Normal completion.
- 12 Invalid command format.
- 20 Severe error.

FLIP—reverse excluded status of lines

Macro command syntax

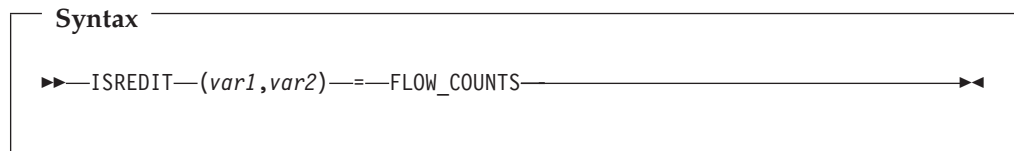


Return codes

- 0 Successful completion. The excluded status of the requested lines was reversed.
- 20 Severe error.

FLOW_COUNTS—query flow counts

Assignment statement syntax

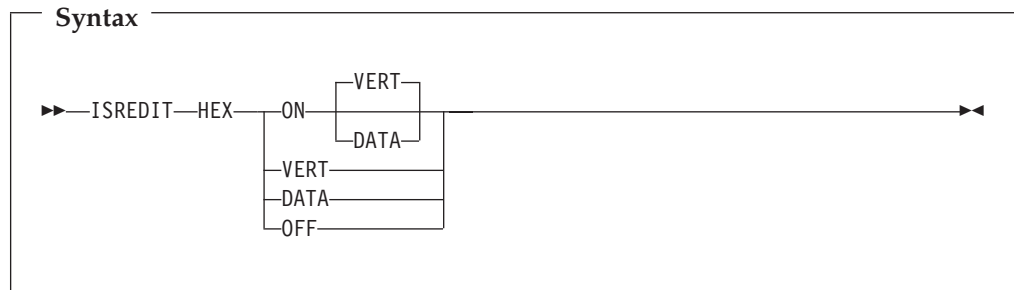


Return codes

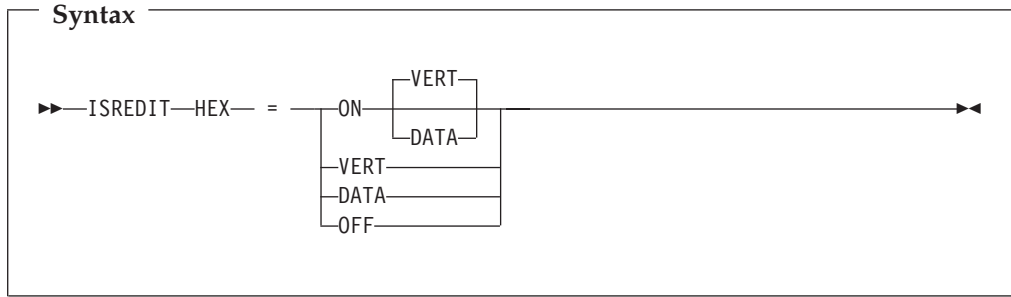
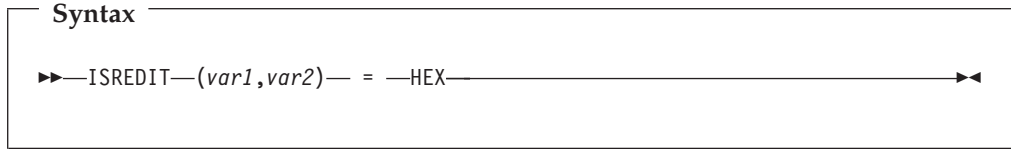
- 0 Normal completion.
- 20 Severe error.

HEX—set or query Hexadecimal mode

Macro command syntax



Assignment statement syntax

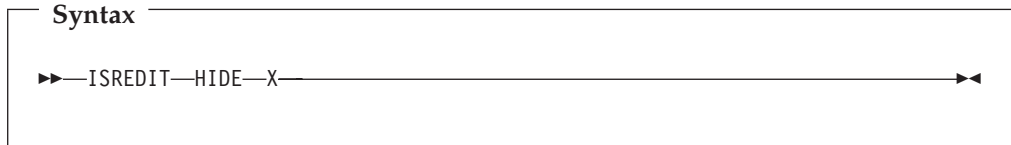


Return codes

- 0 Normal completion.
- 20 Severe error.

HIDE—hide excluded lines message

Macro command syntax

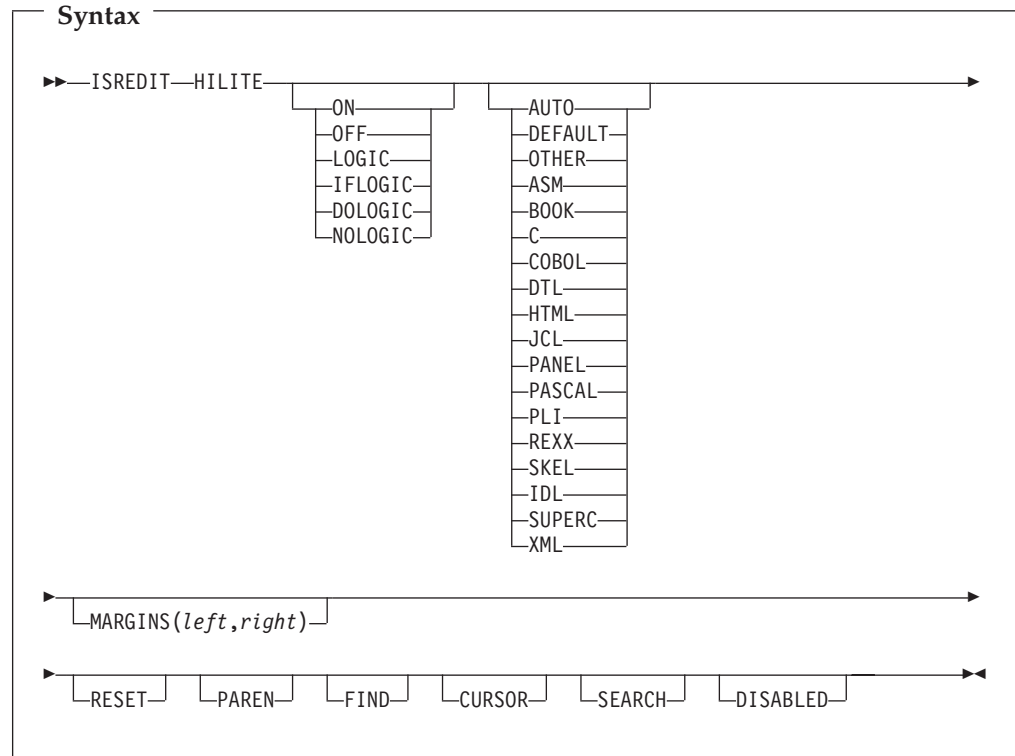


Return codes

- 0 Normal completion.
- 20 Severe error.

HILITE—enhanced edit coloring

Macro command syntax

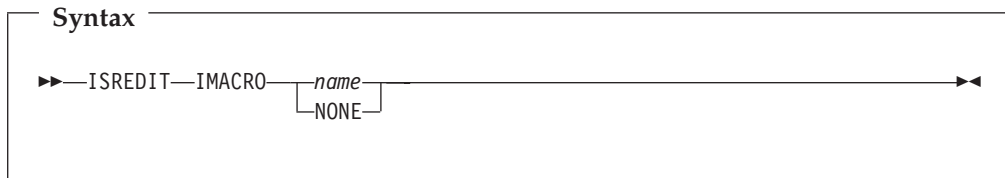


Return codes

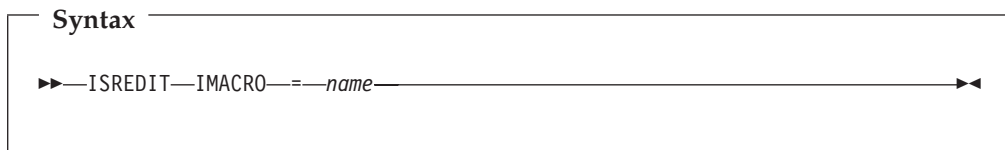
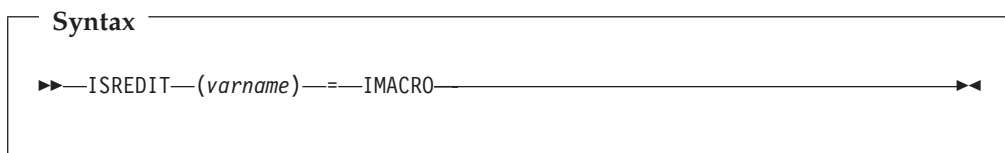
- 0 Normal completion.
- 8 One of the following conditions:
 - LOGIC or SEARCH not supported in the current environment
 - Invalid language
 - HILITE unavailable.
- 12 One of the following conditions:
 - HILITE dialog is invalid from an edit macro
 - HILITE not available because of the installation defaults
 - HILITE not available because the edit panel in use is not enabled for enhanced color
 - Other error encountered.
- 20 Severe error. Possibly extra parameters.

IMACRO—set or query an initial macro

Macro command syntax



Assignment statement syntax

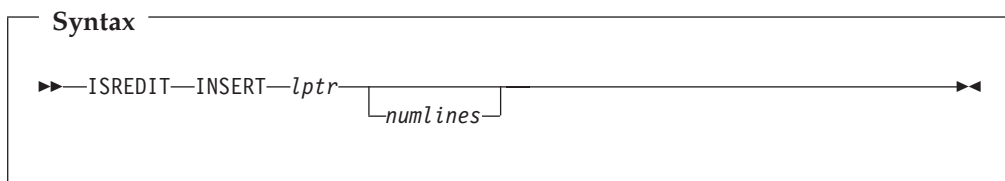


Return codes

- 0 Normal completion.
- 4 IMACRO set not accepted; profile is locked.
- 12 Invalid name specified.
- 20 Severe error.

INSERT—prepare display for data insertion

Macro command syntax



Return codes

- 0 Normal completion.
- 12 Invalid line number.
- 20 Severe error.

LABEL—set or query a line label

Assignment statement syntax

Syntax

```
▶▶—ISREDIT—(var1,var2)—==—LABEL—lptr—▶▶
```

Syntax

```
▶▶—ISREDIT—LABEL—lptr—==—labelname—level—▶▶
```

Return codes

- 0 Normal completion.
- 4 Label name not returned, specified line has no label.
- 8 Label set, but an existing label at the same level was deleted.
- 12 Line number specified is beyond the end of data.
- 20 Severe error.

LEFT—scroll left

Macro command syntax

Syntax

```
▶▶—ISREDIT—LEFT—amt—▶▶
```

Return codes

- 0 Normal completion.
- 4 No visible lines.
- 8 No data to display.
- 12 Amount not specified.
- 20 Severe error.

LEVEL—set or query the mod level number

Macro command syntax

Syntax

```
▶▶—ISREDIT—LEVEL—num—————▶▶
```

Assignment statement syntax

Syntax

```
▶▶—ISREDIT—(varname)—==—LEVEL—————▶▶
```

Syntax

```
▶▶—ISREDIT—LEVEL—==—num—————▶▶
```

Return codes

- 0 Normal completion.
- 4 Statistics mode is off; the command is ignored.
- 12 Invalid value specified.
- 20 Severe error.

LF—realign data on the ASCII linefeed character

Macro command syntax

Syntax

```
▶▶—ISREDIT—LF—————▶▶
```

Return codes

- 0 Normal completion.

LINE—set or query a line from the data set

Assignment statement syntax

Syntax

```
▶▶—ISREDIT—(varname)—==—LINE—lptr————▶▶
```

Syntax

```
▶▶—ISREDIT—LINE—lptr—==—data————▶▶
```

Return codes

0	Normal completion.
4	Data truncated (line shorter than data supplied).
8	Variable not found.
12	Invalid line number.
16	Variable data truncated.
20	Severe error.

LINE_AFTER—add a line to the current data set

Assignment statement syntax

Syntax

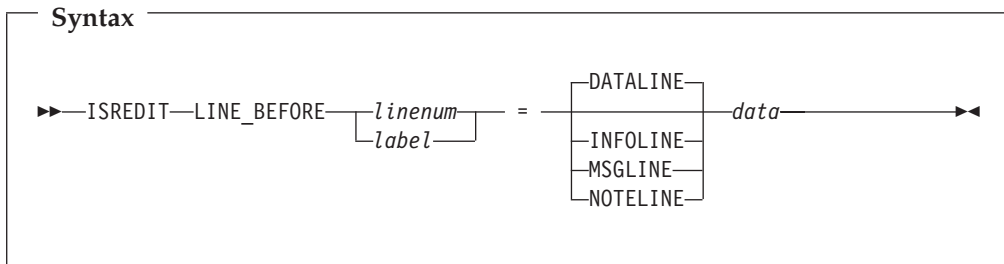
```
▶▶—ISREDIT—LINE_AFTER— $\left. \begin{array}{l} \text{linenum} \\ \text{label} \end{array} \right\}$  =  $\left. \begin{array}{l} \text{DATA LINE} \\ \text{INFO LINE} \\ \text{MSG LINE} \\ \text{NOTE LINE} \end{array} \right\}$ —data————▶▶
```

Return codes

0	Normal completion.
4	Data truncated.
12	Invalid line number.
20	Severe error.

LINE_BEFORE—add a line to the current data set

Assignment statement syntax

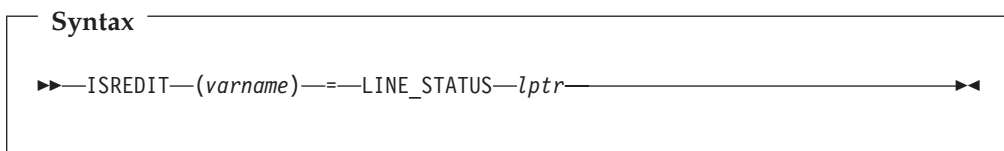


Return codes

- 0 Normal completion.
- 4 Data truncated.
- 12 Invalid line number.
- 20 Severe error.

LINE_STATUS—query source and change information for a line in a data set

Assignment statement syntax

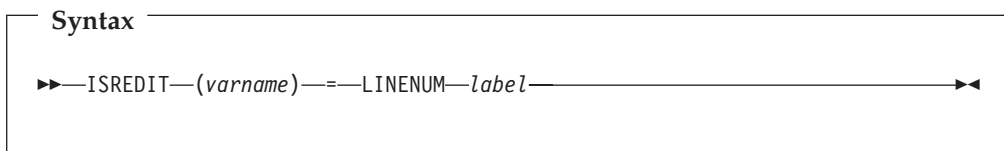


Return codes

- 0 Normal completion.
- 12 Line number not valid.
- 20 Severe error.

LINENUM—query the line number of a labeled line

Assignment statement syntax



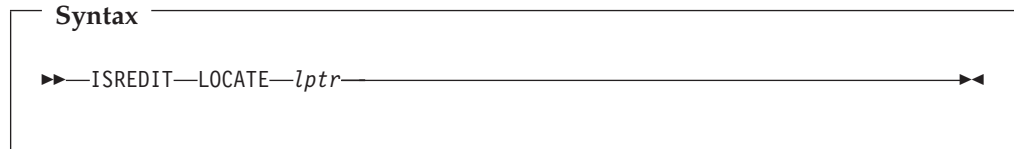
Return codes

- 0 Normal completion.
- 4 Line 0 specified.

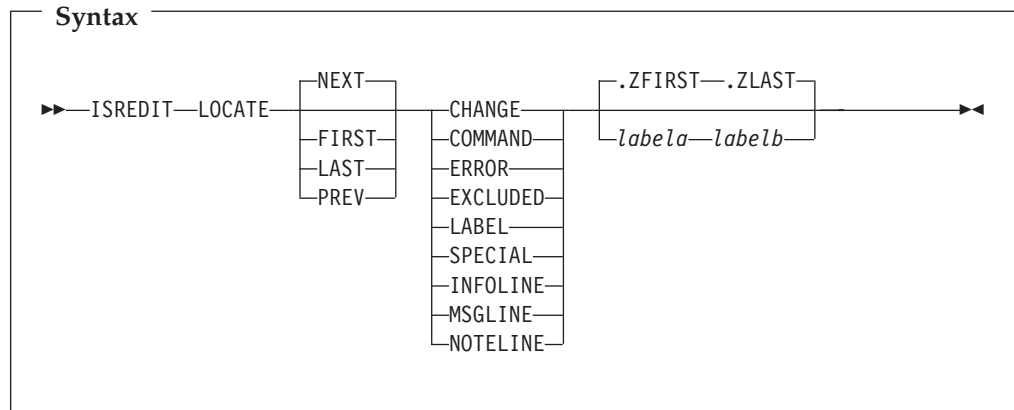
- 8 Label specified, but not found (variable set to 0).
- 12 Invalid line number.
- 20 Severe error.

LOCATE—locate a line

Specific locate syntax



Generic locate syntax

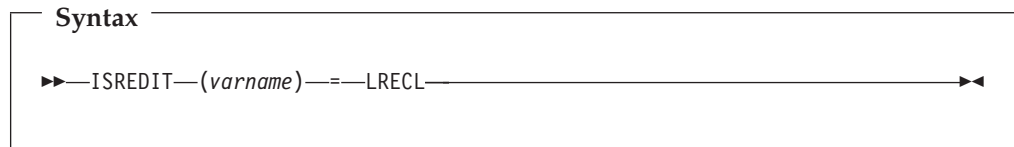


Return codes

- 0 Normal completion.
- 4 Line not located.
- 8 Empty member or data set.
- 20 Severe error.

LRECL—query the logical record length

Assignment statement syntax

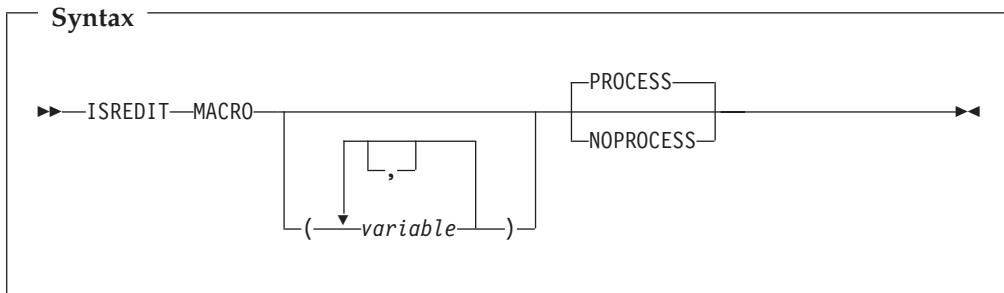


Return codes

- 0 Normal completion.
- 12 Invalid command format.
- 20 Severe error.

MACRO—identify an edit macro

Macro command syntax



Return codes

- 0 Normal completion.
- 8 No parameters are permitted for this processing.
- 12 Syntax error.
- 20 Severe error.

MACRO_LEVEL—query the macro nesting level

Assignment statement syntax

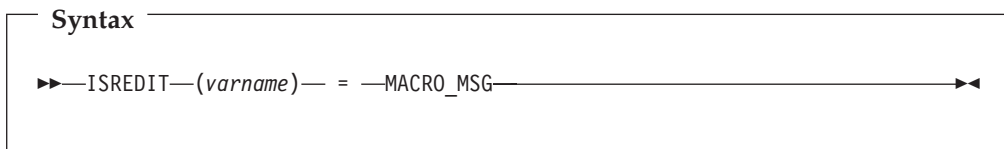


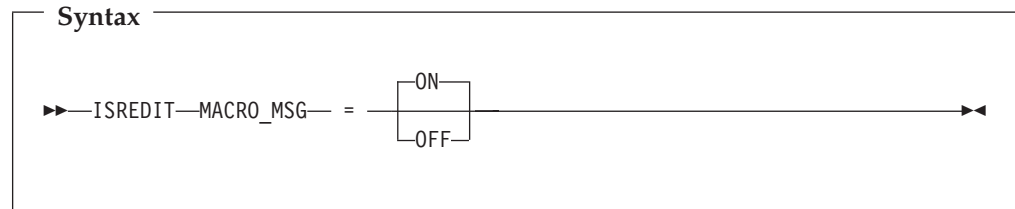
Return codes

- 0 Normal completion.
- 12 Invalid command format.
- 20 Severe error.

MACRO_MSG—set or query the macro message switch

Assignment statement syntax



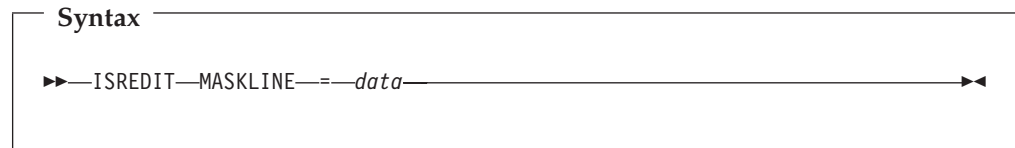
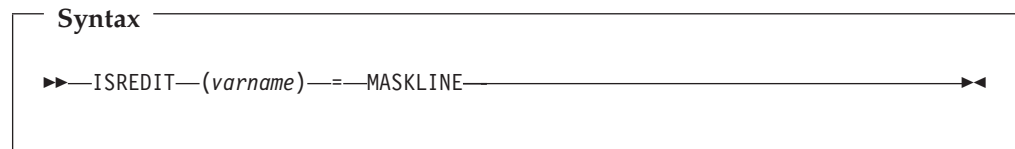


Return codes

- 0 Normal completion.
- 12 Invalid command format.
- 20 Severe error.

MASKLINE—set or query the mask line

Assignment statement syntax

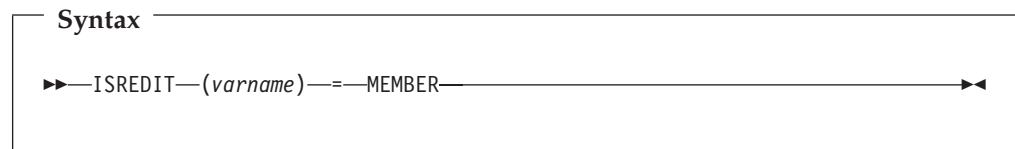


Return codes

- 0 Normal completion.
- 4 Data truncated.
- 16 Variable data truncated.
- 20 Severe error.

MEMBER—query the current member name

Assignment statement syntax

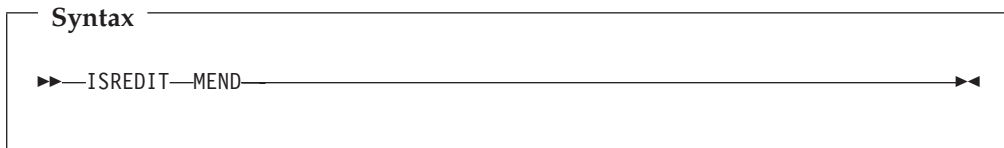


Return codes

- 0 Normal completion.
- 12 Invalid command format.
- 20 Severe error.

MEND—end a macro in the batch environment

Macro command syntax



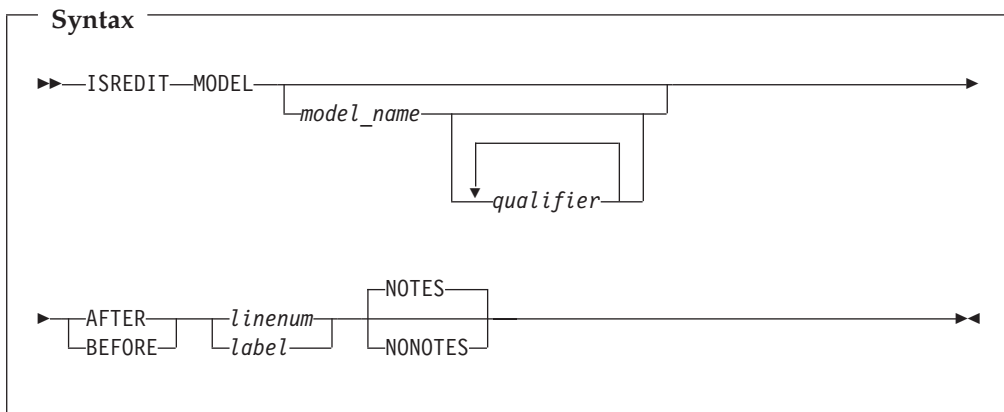
Return codes

- 0 Normal completion.
- 20 Severe error.

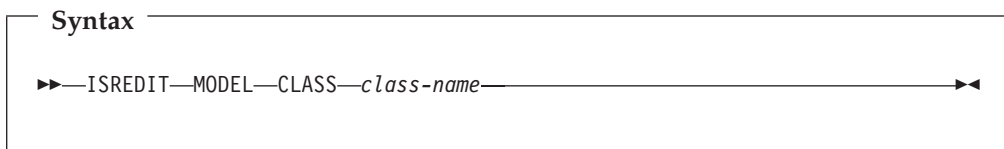
Note: Only required in the MVS/370 environment.

MODEL—copy a model into the current data set

Macro command model name syntax



Macro command class name syntax

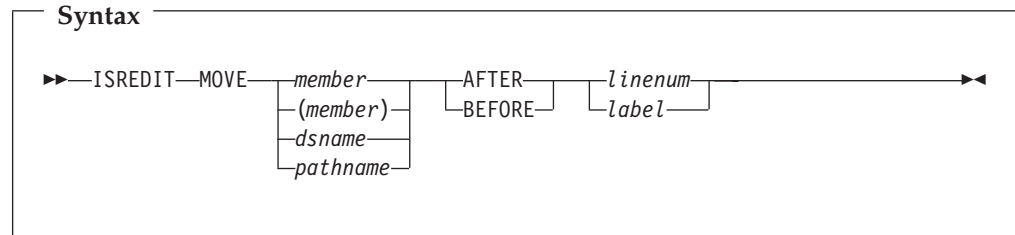


Return codes

- 0 Normal completion.
- 4 Data truncated (the model exceeded the right-hand margin of the data being edited).
- 12 Invalid line pointer.
- 20 Severe error.

MOVE—move a data set member

Macro command syntax

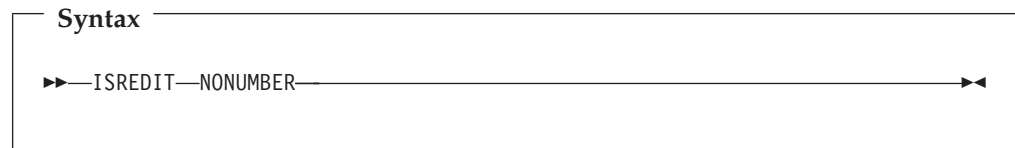


Return codes

- 0 Normal completion.
- 8 End of data before last record read, or the specified data set is in use.
- 12 Invalid line pointer (lptr); member not found or BLDL error.
- 16 End of data before first record read.
- 20 Syntax error (invalid name, incomplete range), or I/O error.

NONUMBER—turn off Number mode

Syntax

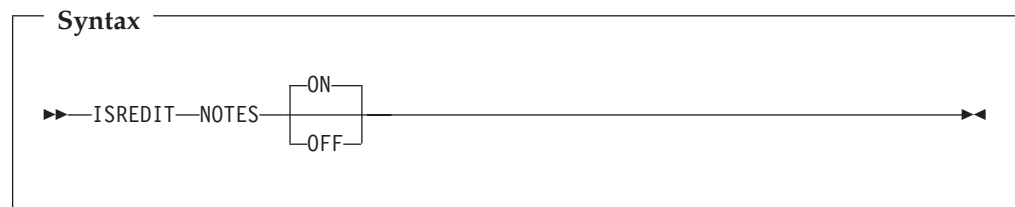


Return codes

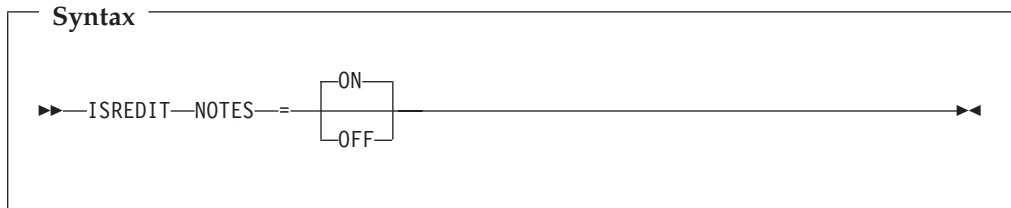
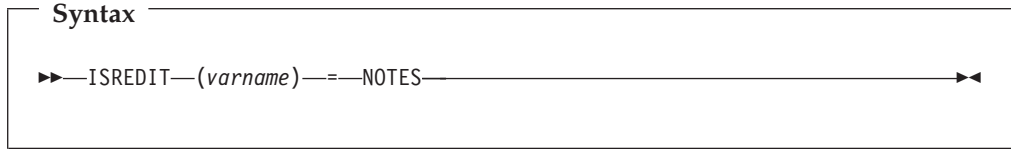
- 0 Normal completion.
- 20 Severe error.

NOTES—set or query Note mode

Macro command syntax



Assignment statement syntax

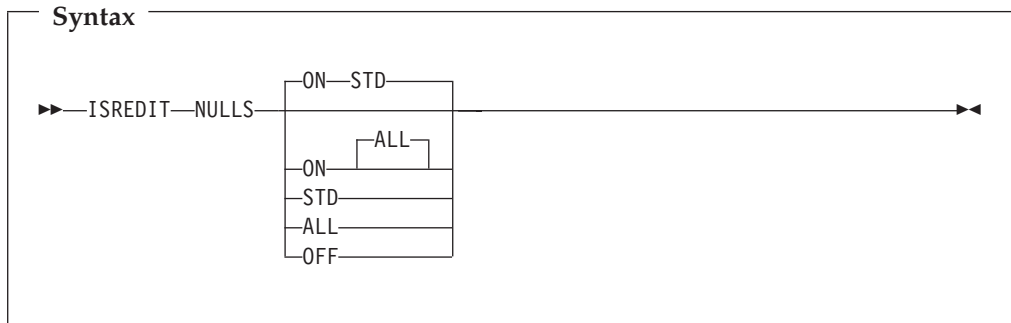


Return codes

- 0 Normal completion.
- 20 Severe error.

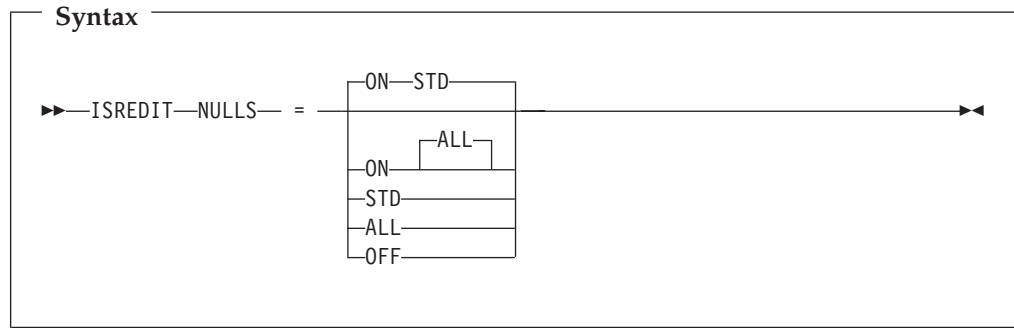
NULLS—set or query Nulls mode

Macro command syntax



Assignment statement syntax



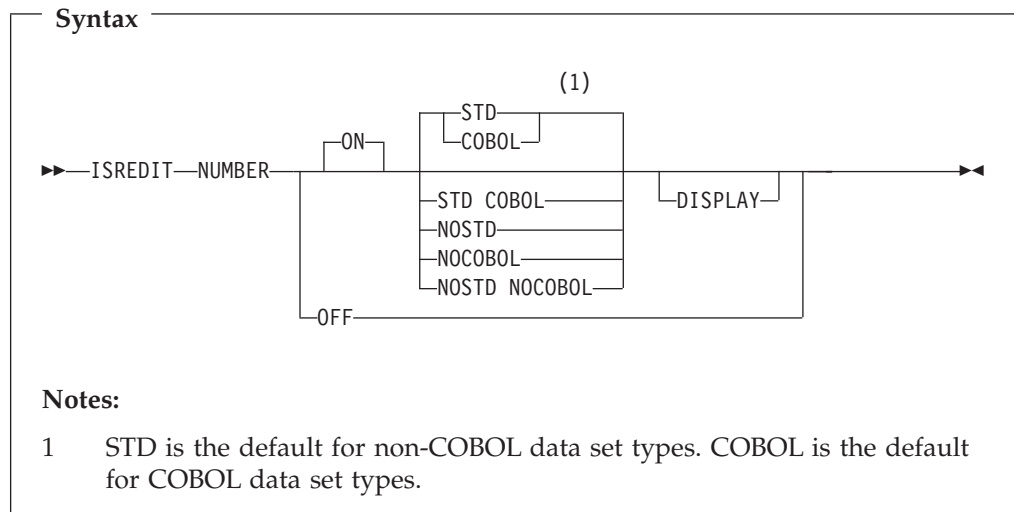


Return codes

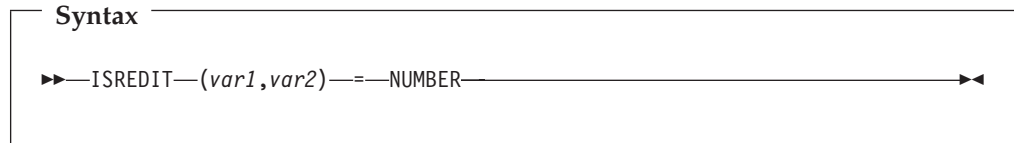
- 0 Normal completion.
- 20 Severe error.

NUMBER—set or query Number mode

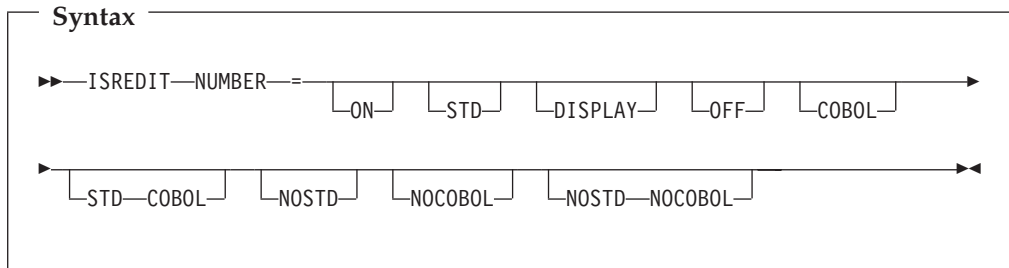
Macro command syntax



Assignment statement syntax



NUMBER edit macro

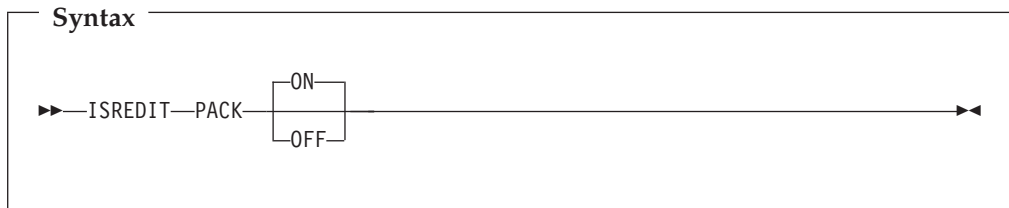


Return codes

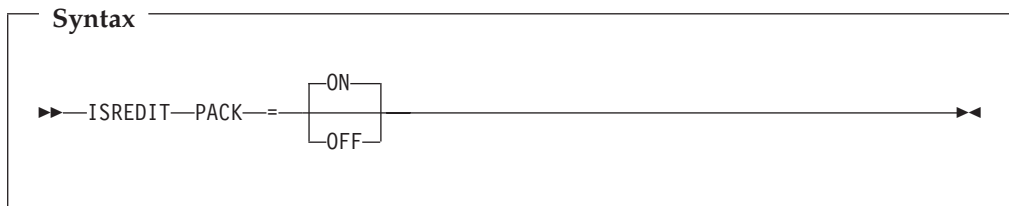
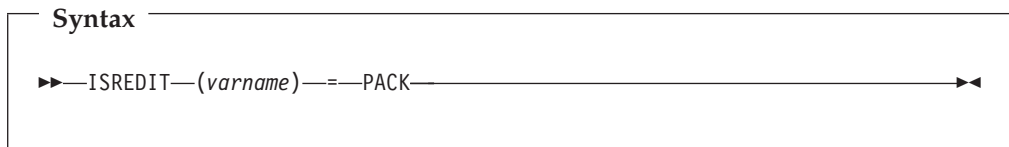
0 Normal completion.
20 Severe error.

PACK—set or query Pack mode

Macro command syntax



Assignment statement syntax

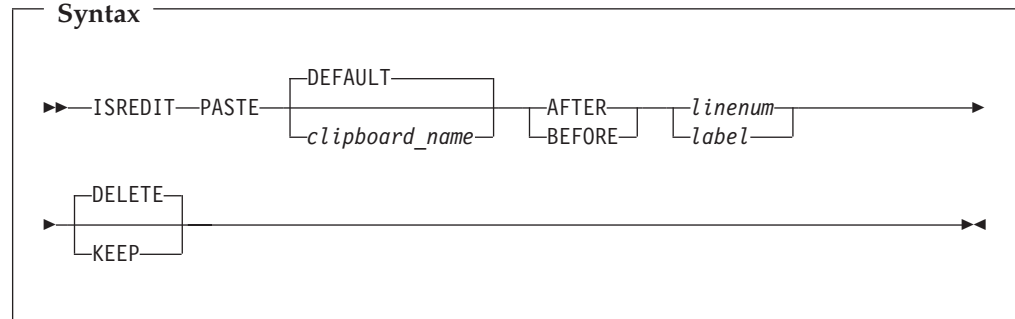


Return codes

0 Normal completion.
20 Severe error.

PASTE—move or copy lines from clipboard

Macro command syntax

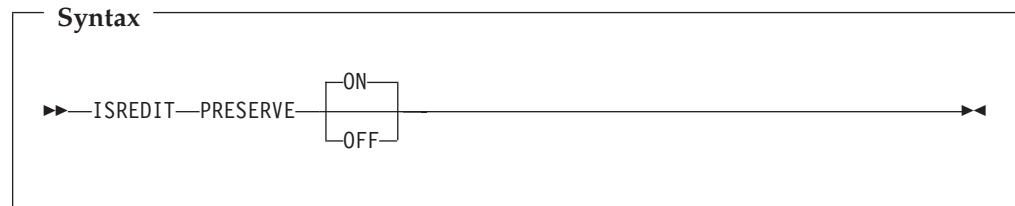


Return codes

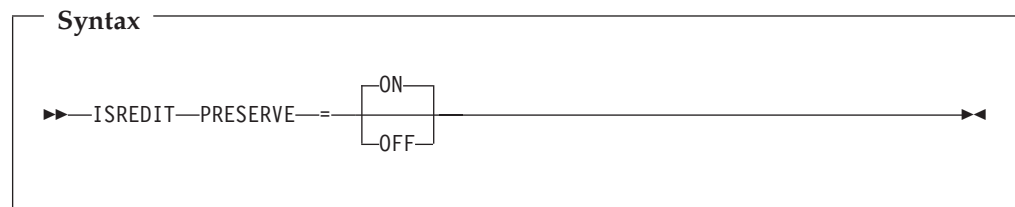
- 0 Normal completion.
- 12 Parameter error. Clipboard empty or does not exist.
- 20 Severe error.

PRESERVE—enable saving of trailing blanks

Macro command syntax



Assignment statement syntax



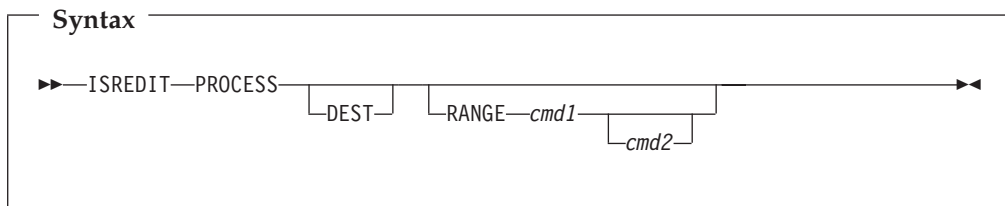
PRESERVE edit macro

Return codes

- 0 Normal completion.
- 6 Record format is not variable.
- 16 Error setting variable.
- 20 Severe error.

PROCESS—process the panel

Macro command syntax



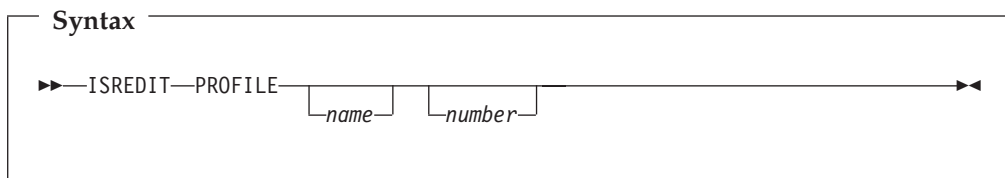
Return codes

- 0 Normal completion.
- 4 A RANGE was expected by the macro, but one was not specified; default values set.
- 8 A DEST (destination) was expected by the macro, but one was not specified; default values set.
- 12 Both a RANGE and a DEST (destination) were expected by the macro, but were not specified; default values set.
- 16 You entered incomplete or conflicting line commands.
- 20 Severe error.

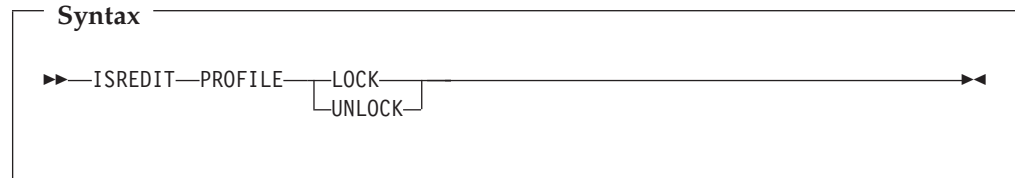
Note: ISPF does not consider a return code of 12 from the PROCESS edit macro command an error. A macro that receives a return code of 12 from the PROCESS edit macro does not terminate.

PROFILE—set or query the current profile

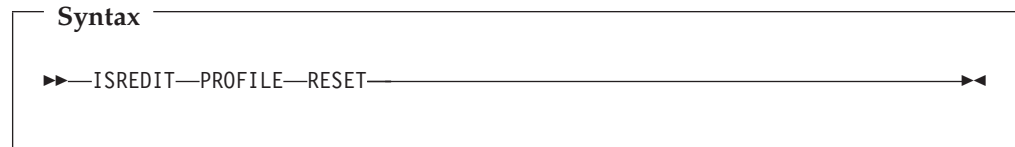
Macro command profile control syntax



Macro command profile lock syntax



Macro command profile reset syntax



Assignment statement syntax

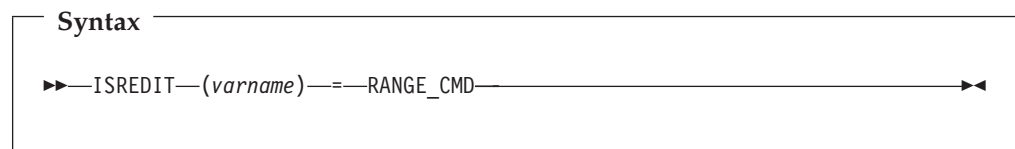


Return codes

- 0 Normal completion.
- 20 Severe error.

RANGE_CMD—query a command that you entered

Assignment statement syntax

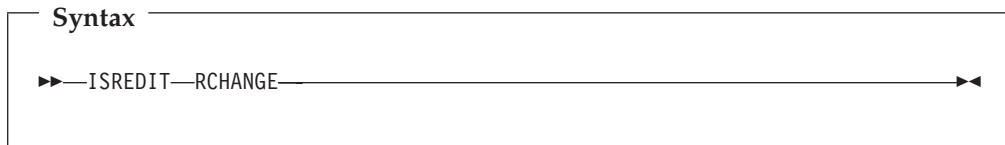


Return codes

- 0 Normal completion.
- 4 Line command not set.
- 8 Line command setting not acceptable.
- 20 Severe error.

RCHANGE—repeat a change

Macro command syntax

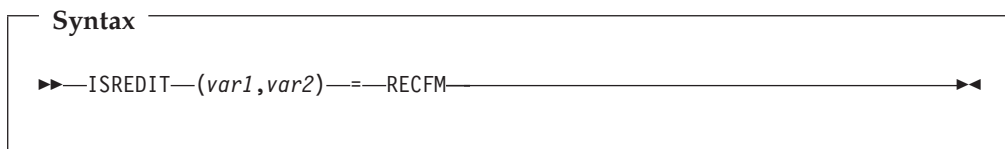


Return codes

- 0 Normal completion.
- 4 String not found.
- 8 Change error (string-2 longer than string-1 and substitution was not performed on at least one change).
- 12 Syntax error.
- 20 Severe error.

RECFM—query the record format

Assignment statement syntax

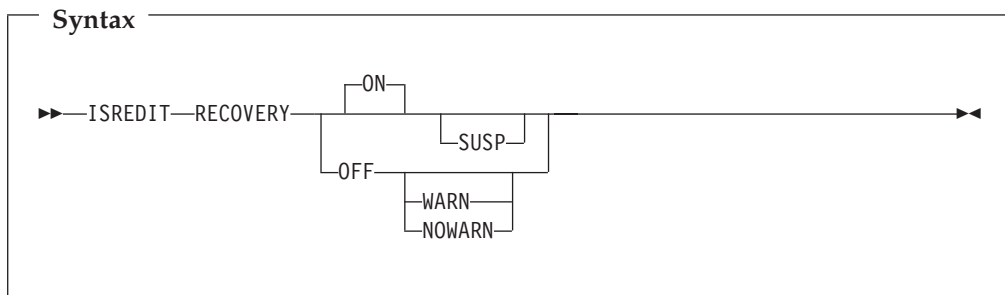


Return codes

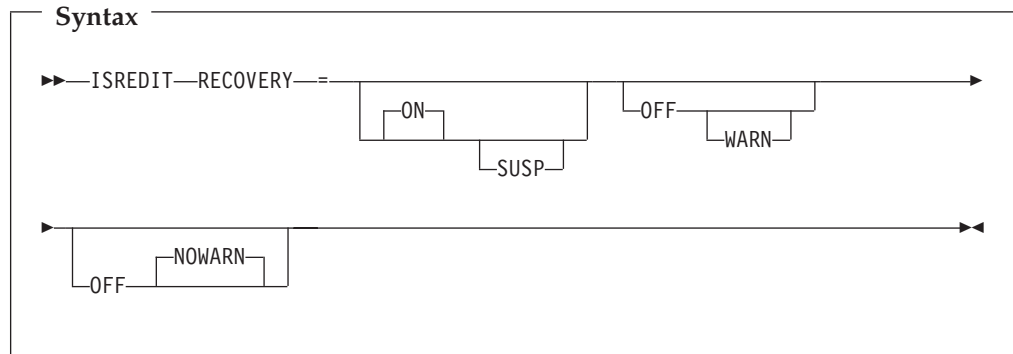
- 0 Normal completion.
- 20 Severe error.

RECOVERY—set or query Recovery mode

Macro command syntax



Assignment statement syntax

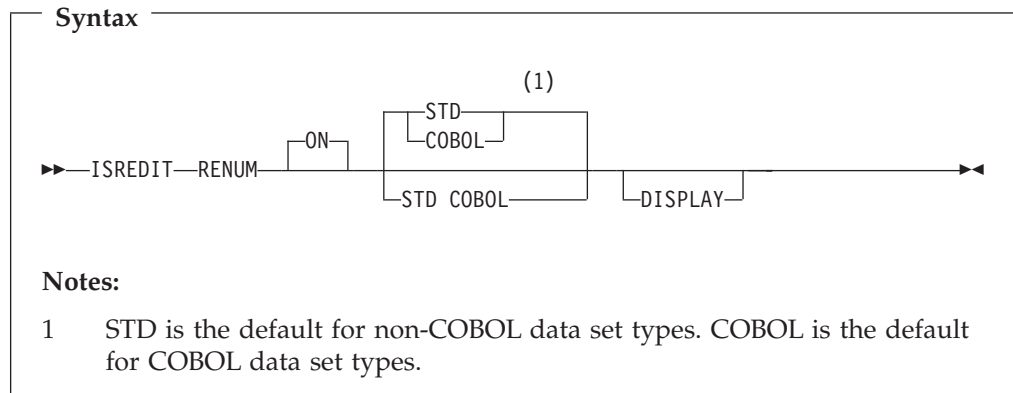


Return codes

0	Normal completion.
20	Severe error.

RENUM—renumber data set lines

Macro command syntax

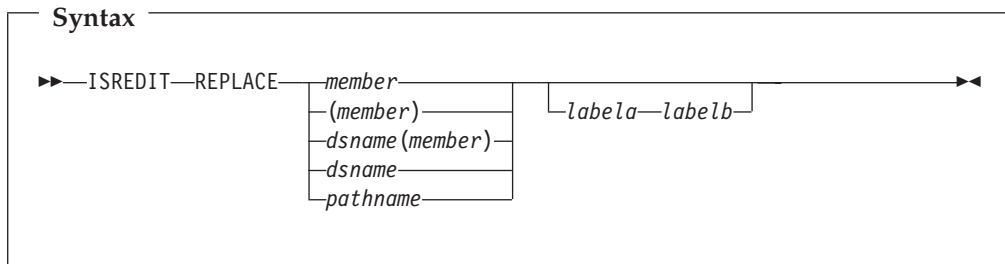


Return codes

0	Normal completion.
20	Severe error.

REPLACE—replace a data set or data set member

Macro command syntax

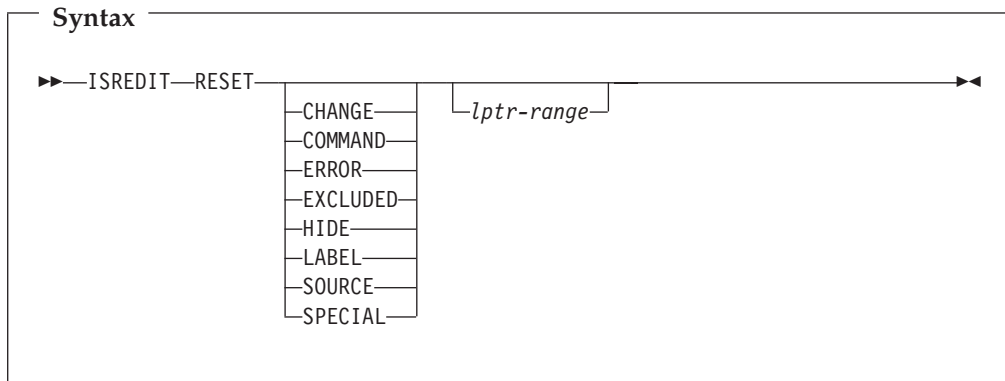


Return codes

- 0 Normal completion.
- 8 Member in use.
- 12 Invalid line pointer; member not found or BLDL error.
- 20 Syntax error (invalid name, incomplete line pointer value), or I/O error.

RESET—reset the data display

Macro command syntax

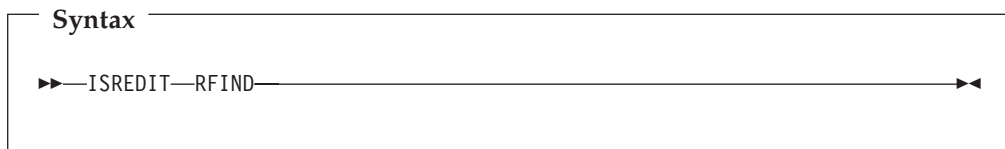


Return codes

- 0 Normal completion.
- 20 Severe error.

RFIND—Repeat Find

Macro command syntax



Return codes

0	Normal completion.
4	String not found.
12	Syntax error.
20	Severe error (string not defined).

RIGHT—scroll right**Macro command syntax**

Syntax

```
▶▶ ISREDIT—RIGHT—amt ▶▶
```

Return codes

0	Normal completion.
4	No visible lines.
8	No data to display.
12	Amount not specified.
20	Severe error.

RMACRO—set or query the recovery macro**Macro command syntax**

Syntax

```
▶▶ ISREDIT—RMACRO—name
                             └─NONE─┘ ▶▶
```

Assignment statement syntax

Syntax

```
▶▶ ISREDIT—(varname)—=—RMACRO—▶▶
```

Syntax

```
▶▶ ISREDIT—RMACRO—=—name
                             └─NONE─┘ ▶▶
```

Return codes

- 0 Normal completion.
- 12 Invalid name specified.
- 20 Severe error.

SAVE—save the current data

Macro command syntax

Syntax

```
▶▶—ISREDIT—SAVE—————▶▶
```

Return codes

- 0 Normal completion.
- 4 New member saved.
- 12 Data not saved; not enough PDS space or directory space.
- 20 Severe error.

SAVE_LENGTH—set or query length for variable-length data

Macro command syntax

Syntax

```
▶▶—ISREDIT—(variable)—==SAVE_LENGTH—.lptr—————▶▶
```

Syntax

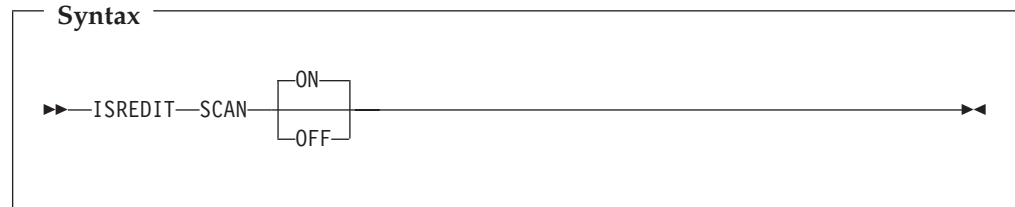
```
▶▶—ISREDIT—SAVE_LENGTH—.lptr—==value—————▶▶
```

Return codes

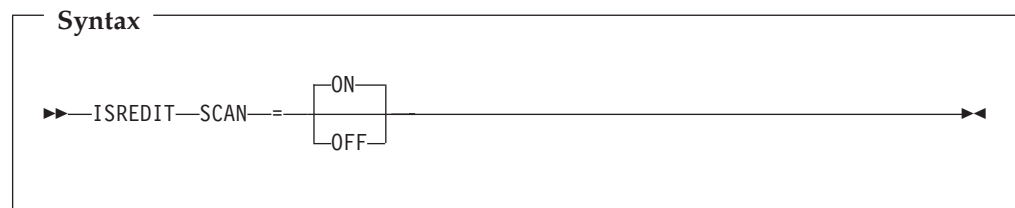
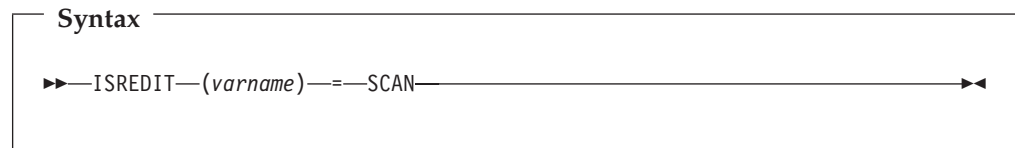
- 0 Normal completion.
- 4 Value supplied on set call was out of range. If the supplied length was too great, it is adjusted to equal the maximum record length. Otherwise, the length is adjusted to the length of the nonblank data portion of the record.
- 6 Record format is not variable. Any value of an assigned request is ignored.
- 16 Error setting variable.
- 20 Severe error.

SCAN—set command scan mode

Macro command syntax



Assignment statement syntax

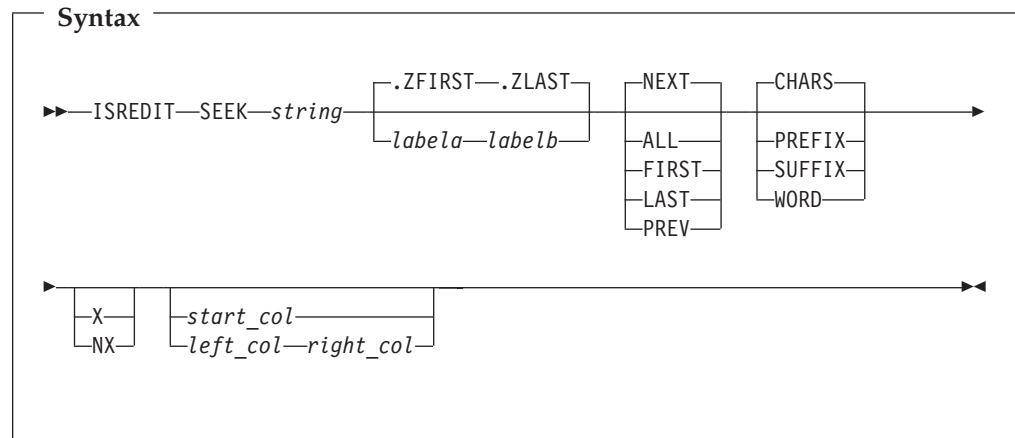


Return codes

- 0 Normal completion.
- 20 Severe error.

SEEK—seek a data string, positioning the cursor

Macro command syntax



SEEK edit macro

Return codes

0	Normal completion.
4	String not found.
12	Syntax error.
20	Severe error.

SEEK_COUNTS—query seek counts

Assignment statement syntax

Syntax

```
►►—ISREDIT—(var1,var2)—==—SEEK_COUNTS—◄◄
```

Return codes

0	Normal completion.
20	Severe error.

SESSION—identify type of session

Assignment statement syntax

Syntax

```
►►—ISREDIT—(var1,var2)—==—SESSION—◄◄
```

Return codes

0	Normal completion.
20	Severe error.

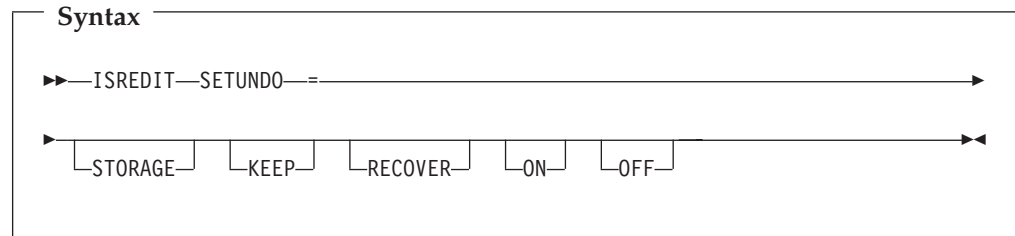
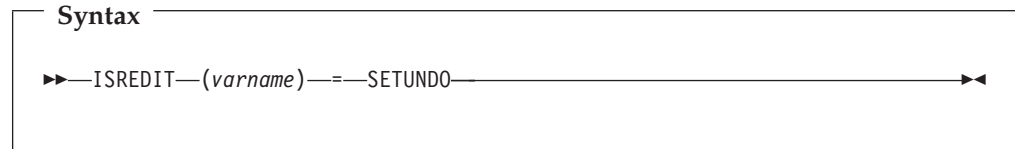
SETUNDO—set UNDO mode

Macro command syntax

Syntax

```
►►—ISREDIT—SETUNDO—  
                  ┌STORAGE┐ ┌KEEP┐ ┌RECOVER┐ ┌ON┐ ┌OFF┐—◄◄
```


Assignment statement syntax

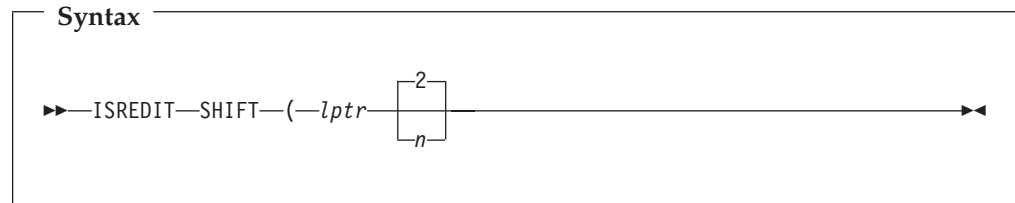


Return codes

- 0 Successful completion. SETUNDO was turned on or off, or status remains unchanged because UNDO was already on or off.
- 20 Severe error. Probably a parameter error (something other than STG, REC, or OFF was specified).

SHIFT (—shift columns left

Macro command syntax

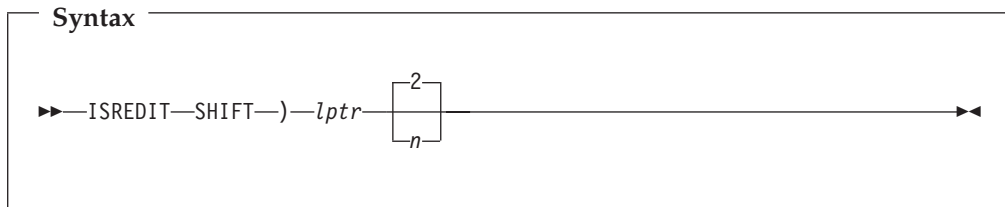


Return codes

- 0 Normal completion.
- 12 Invalid line number.
- 20 Severe error.

SHIFT) —shift columns right

Macro command syntax

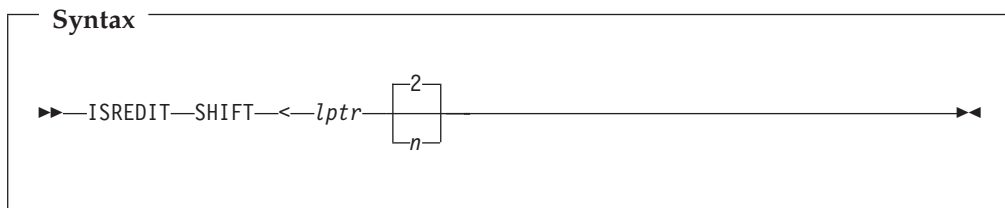


Return codes

- 0 Normal completion.
- 12 Invalid line number.
- 20 Severe error.

SHIFT <—shift data left

Macro command syntax

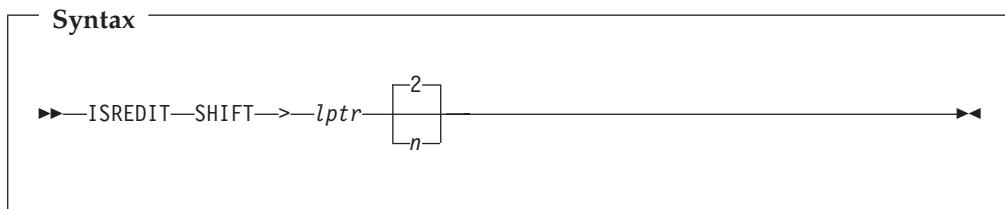


Return codes

- 0 Normal completion.
- 12 Invalid line number.
- 20 Severe error.

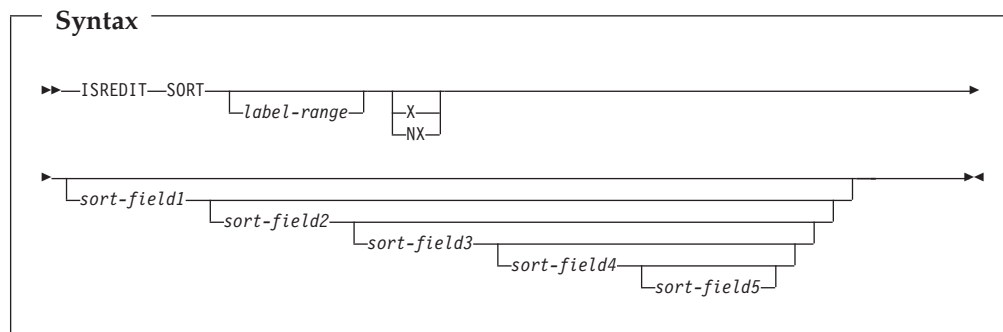
SHIFT > —shift data right

Macro command syntax

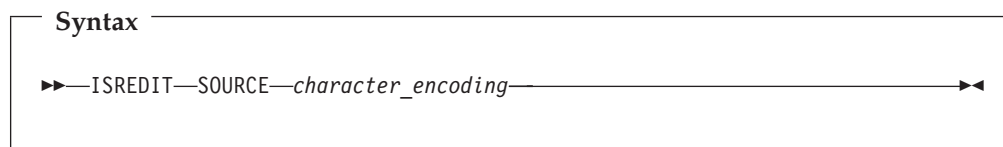


Return codes

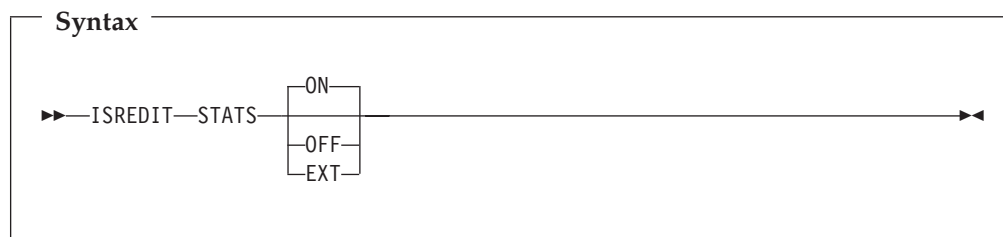
- 0 Normal completion.
- 12 Invalid line number.
- 20 Severe error.

SORT—sort data**Macro command syntax****Return codes**

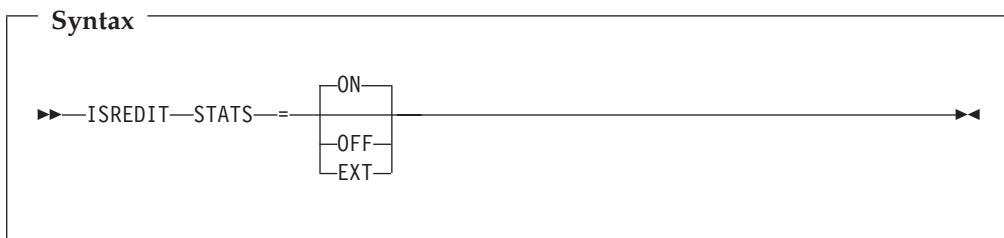
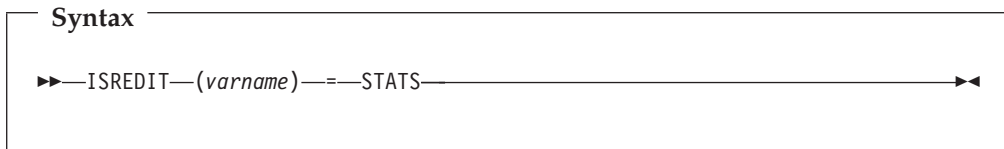
0	Normal completion.
4	Lines were already in sort order.
8	No records to sort.
16	Not enough storage to perform sort.
20	Severe error.

SOURCE—describe format of data**Macro command syntax****Return codes**

0	Normal completion.
---	--------------------

STATS—set or query Stats mode**Macro command syntax**

Assignment statement syntax

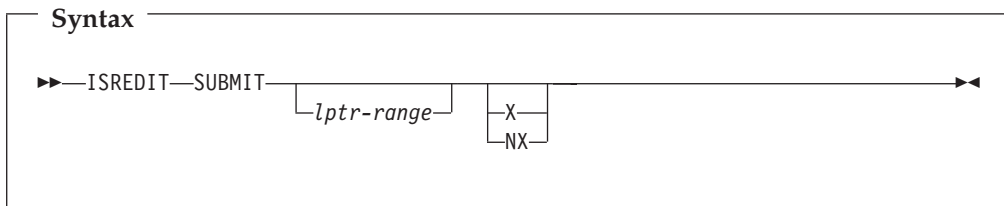


Return codes

- 0 Normal completion.
- 20 Severe error.

SUBMIT—submit data for batch processing

Macro command syntax

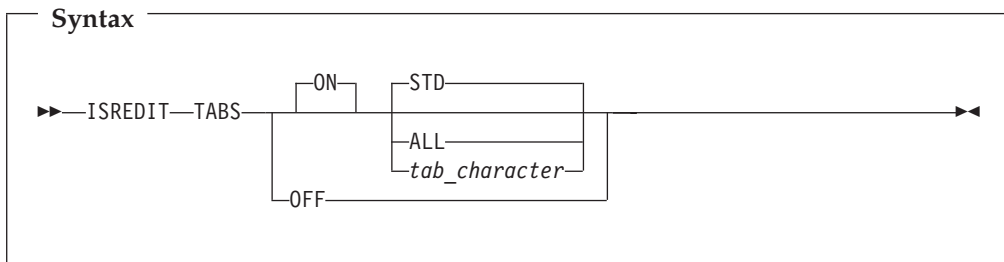


Return codes

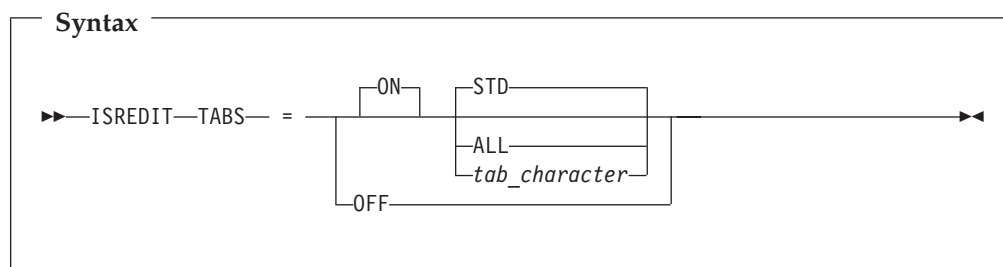
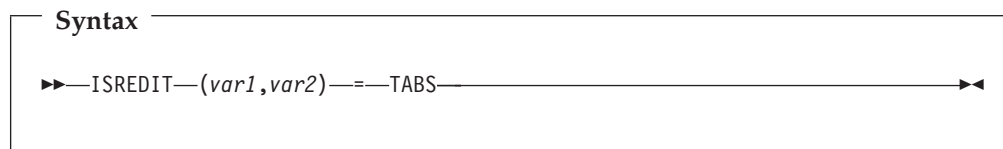
- 0 Normal completion.
- 20 Severe error (submit failed).

TABS—set or query Tabs mode

Macro command syntax



Assignment statement syntax

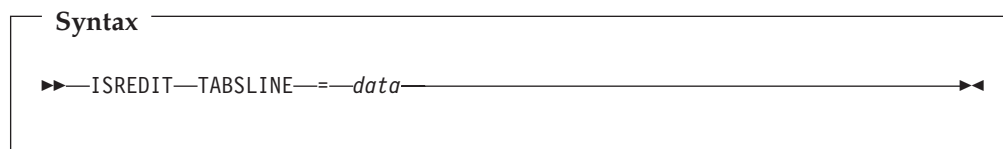
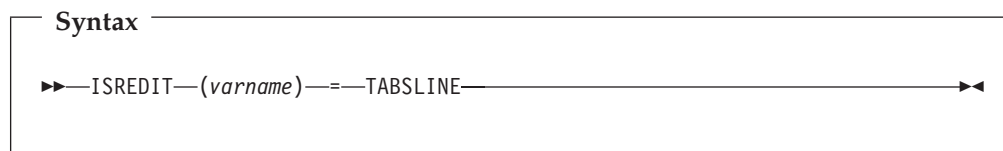


Return codes

- 0 Normal completion.
- 20 Severe error.

TABSLINE—set or query tabs line

Assignment statement syntax

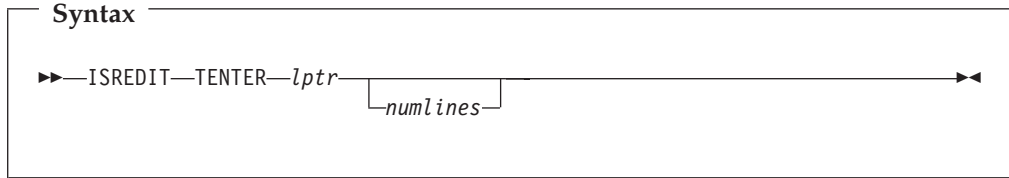


Return codes

- 0 Normal completion.
- 4 Data truncated.
- 8 Invalid data detected and ignored.
- 20 Severe error (invalid input).

TENTER—set up panel for text entry

Macro command syntax

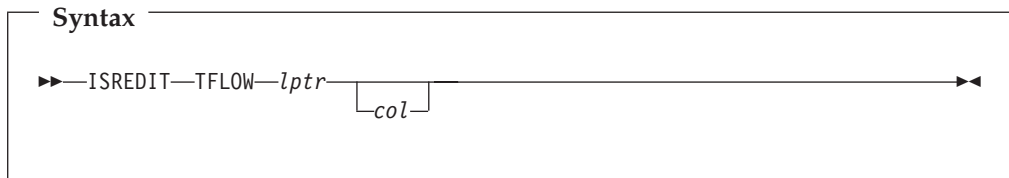


Return codes

- 0 Normal completion.
- 12 Invalid line number.
- 20 Severe error.

TFLOW—text flow a paragraph

Macro command syntax

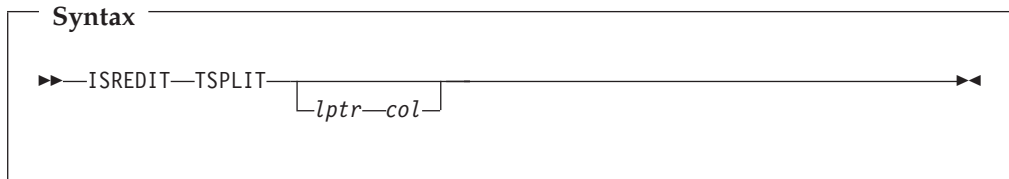


Return codes

- 0 Normal completion.
- 12 Invalid line number.
- 20 Severe error.

TSPLIT—text split a line

Macro command syntax



Return codes

- 0 Normal completion.
- 12 Invalid line number.
- 20 Severe error.

UNNUMBER—remove sequence numbers

Macro command syntax

Syntax

```
▶▶—ISREDIT—UNNUMBER—▶▶
```

Return codes

0	Normal completion.
12	Number mode not on.
20	Severe error.

UP—scroll up

Macro command syntax

Syntax

```
▶▶—ISREDIT—UP—amt—▶▶
```

Return codes

0	Normal completion.
2	No more data UP.
4	No visible lines.
8	No data to display.
12	Amount not specified.
20	Severe error.

USER_STATE—save or restore user state

Assignment statement syntax

Syntax

```
▶▶—ISREDIT—(varname)—==—USER_STATE—▶▶
```

Syntax

```
▶▶—ISREDIT—USER_STATE—==—(varname)—▶▶
```

Return codes

- 0 Normal completion.
- 20 Severe error.

VERSION—set or query version number

Macro command syntax

Syntax

```
▶▶ ISREDIT VERSION num ◀◀
```

Assignment statement syntax

Syntax

```
▶▶ ISREDIT (varname) = VERSION ◀◀
```

Syntax

```
▶▶ ISREDIT VERSION = num ◀◀
```

Return codes

- 0 Normal completion.
- 4 Stats mode is off, the command is ignored.
- 12 Invalid value specified (the version must be 1 to 99).
- 20 Severe error.

VIEW—view from within an edit session

Macro command syntax

Syntax

```
▶▶ ISREDIT VIEW member ◀◀
```

Return codes

- 0 Normal completion
- 12 Your error (invalid member name, recovery pending)
- 20 Severe error.

VOLUME—query volume information

Assignment statement syntax

Syntax

```
▶▶—ISREDIT—(var1,var2,var3)—==—VOLUME—————▶▶
```

Return codes

- 0 Normal completion.
- 4 The data set is a multivolume data set and the shared pool variable ZEDMVOL is set to contain all the volume serial numbers of the data set. ZEDMVOL has the length of the number of volumes times six.
- 20 Severe error.

XSTATUS—set or query exclude status of a line

Assignment statement syntax

Syntax

```
▶▶—ISREDIT—(varname)—==—XSTATUS—lptr—————▶▶
```

Syntax

```
▶▶—ISREDIT—XSTATUS—lptr—==—

|    |
|----|
| X  |
| NX |

—————▶▶
```

Return codes

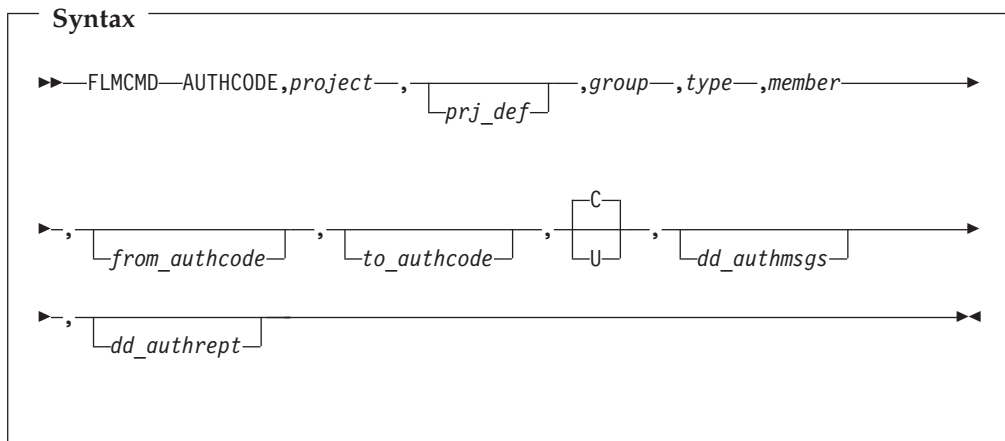
- 0 Normal completion.
- 8 An attempt to set a line status to NX could not be performed. The line has a pending line command on it. For example, if an excluded line contains an M line command in the line command field, then the MOVE/COPY IS PENDING message is displayed and the lines cannot be shown. The reset command can be used to remove your line commands from the line command field.
- 12 Line number is not an existing line.
- 20 Severe error.

XSTATUS edit macro

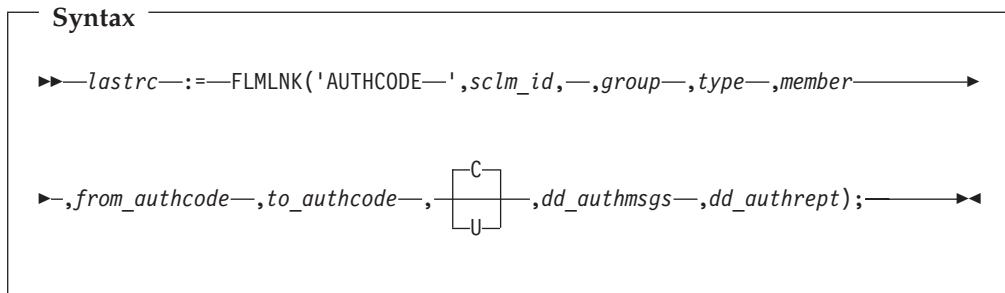
- If MATCH was specified then there is not an account record with the specified group, type and member name.
 - If SEARCH was specified then there are no matching account records found when searching up the hierarchy starting from the specified group.
- 12 Error completion. Refer to the messages for more information.
- 20 Severe error condition. SCLM does not produce messages because the SCLM ID is invalid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services have not been initialized.
- 32 Severe error condition. An invalid parameter list was passed to the requested service.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

AUTHCODE—set or retrieve an AUTHCODE

Command invocation format



Call invocation format



Return codes

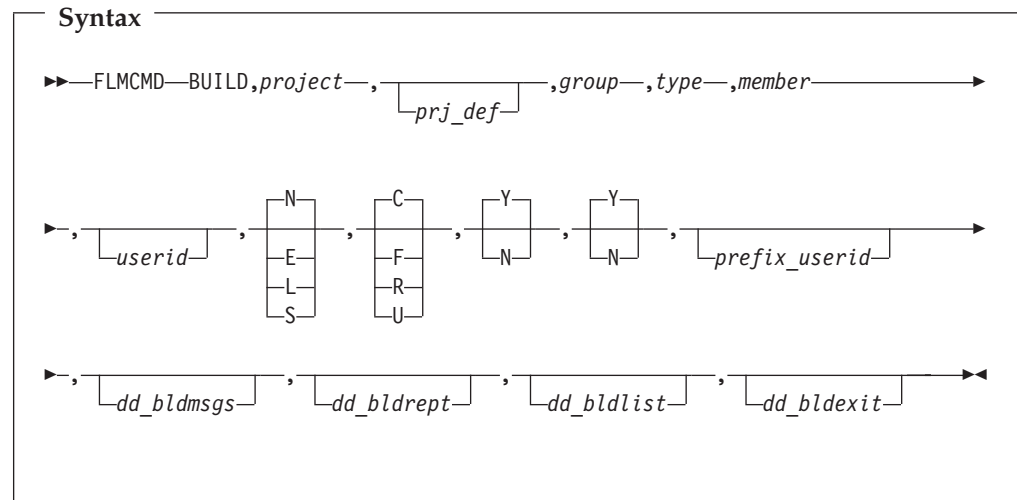
- 0 Normal completion. Authcode changed or reported successfully.
- 2 Normal completion. Authcode not changed. One of these occurred:
- To_authcode = existing authcode (no change needed)
 - From_authcode requested does not equal existing authcode (no change wanted)
 - Member is not editable.

- 4 Warning condition. Segment exists at a lower level with an authcode not equal to the "to_authcode" which could overlay the current segment.
- 8 Error condition. Invalid type, member, or mode parameter. See the dd_authmsgs for details.
- 12 Severe error condition. Accounting record not found or severe error.
- 16 Severe error condition. One of these occurred:
 - Not authorized to update "to_authcode", access_key mismatch, or not authorized to update data set.
 - Verification failed.
 - Error updating accounting record.
 - Invalid group.

SCLM might not produce messages because there was an error invoking the AUTHCODE module.
- 20 Severe error condition. SCLM does not produce messages because the SCLM ID is not valid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services have not been initialized.
- 32 Severe error condition. SCLM does not produce messages for one of these reasons:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.

BUILD—build a member

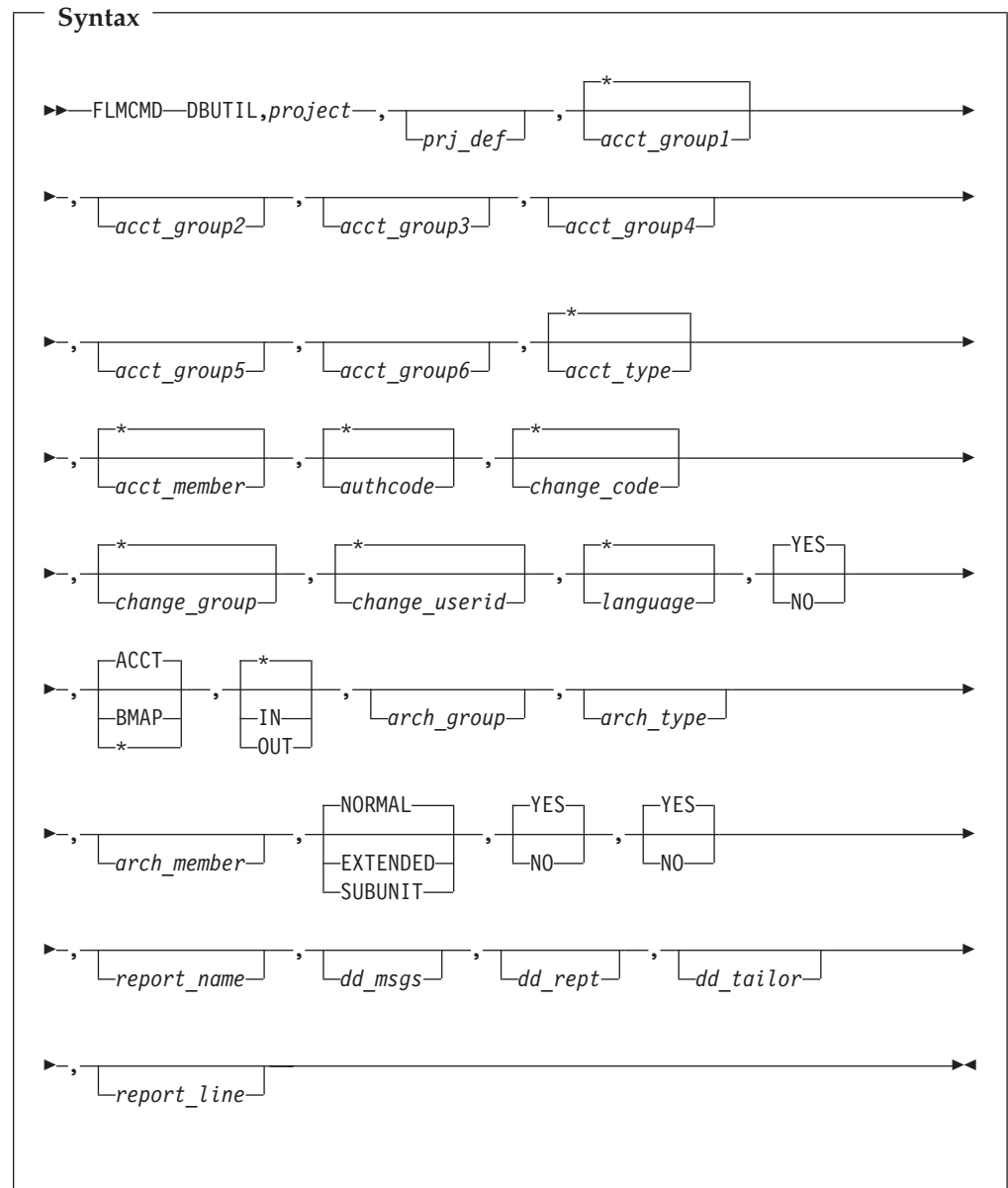
Command invocation format



- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced for one of these reasons:
 - Invalid service requested
 - Invalid parameter list for the requested service
 - The version of the FLMLNK subroutines does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

DBUTIL—generate a tailored data set and report

Command invocation format



Call invocation format

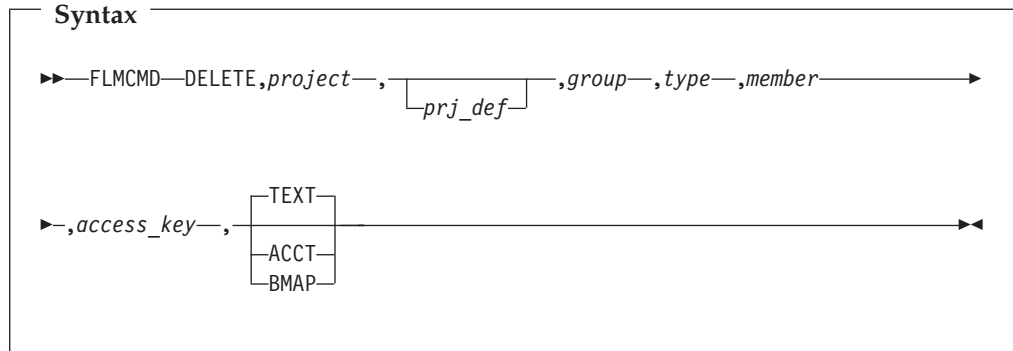
You cannot use call procedures to start this service.

Return codes

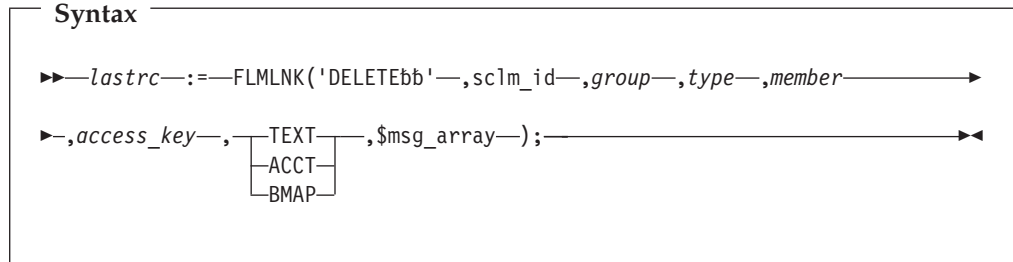
- 0 Normal completion.
- 4 Warning condition.
- 8 Error condition.
- >8 Severe error condition. Messages are not produced.

DELETE—delete database components

Command invocation format



Call invocation format

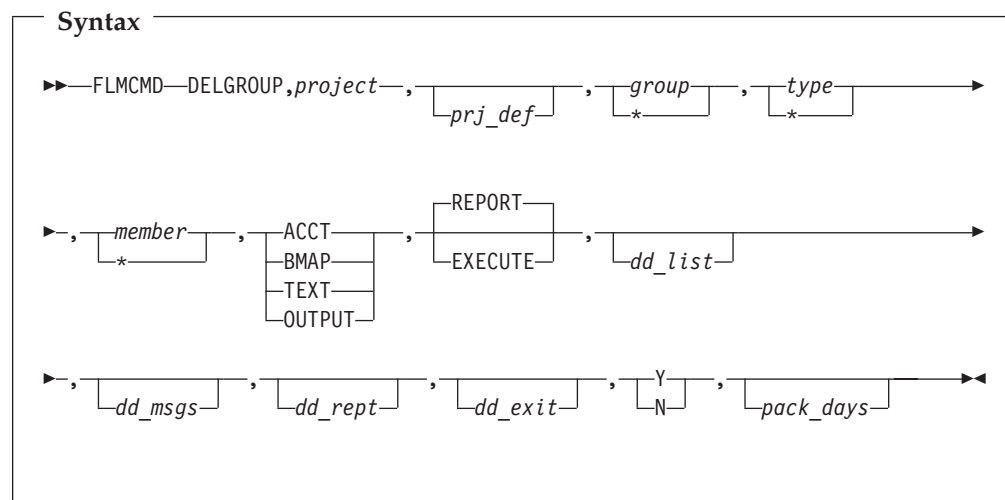


Return codes

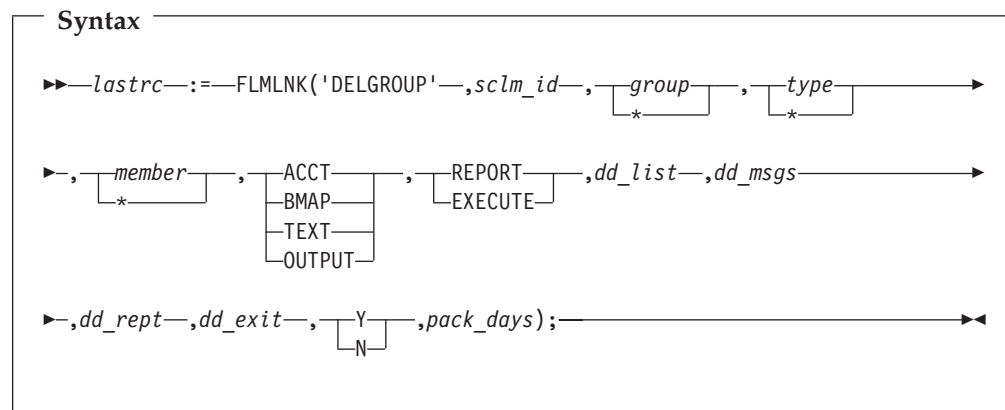
- 0 Normal completion.
- 4 Warning condition. The member, accounting record, or build map were not found.
- 8 Error condition.
- 20 Severe error condition. Messages are not produced. Invalid SCLM ID.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced for one of these reasons:
 - Invalid service requested
 - Invalid parameter list for the requested service
 - The version of the FLMLNK subroutines does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

DELGROUP—delete database components from group

Command invocation format



Call invocation format



Return codes

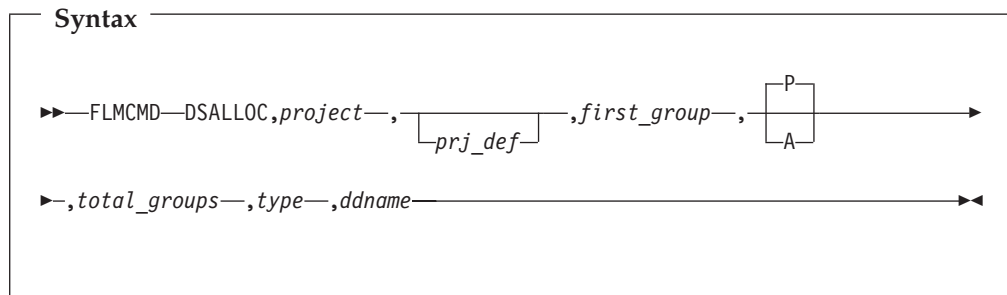
- 0 Normal completion.
- 4 Warning condition.
- 8 Error condition.
- 12 Severe error condition. SCLM does not produce messages because there was an error invoking the DELGROUP module.
- 16 Severe error condition. SCLM does not produce messages because it was unable to retrieve SCLM ID information.
- 20 Severe error condition. SCLM does not produce messages because the SCLM ID is invalid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services have not been initialized.
- 32 Severe error condition. SCLM does not produce messages for one of these reasons:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.

DELGROUP service

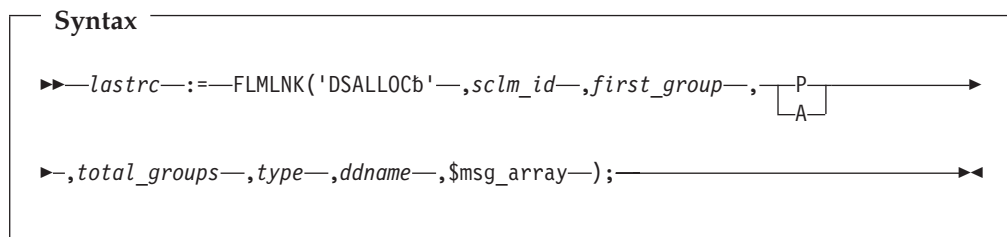
- The version of the FLMLNK subroutine does not match the version of the SCLM services module (for future use).
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

DSALLOC—allocate data sets for group/type

Command invocation format



Call invocation format

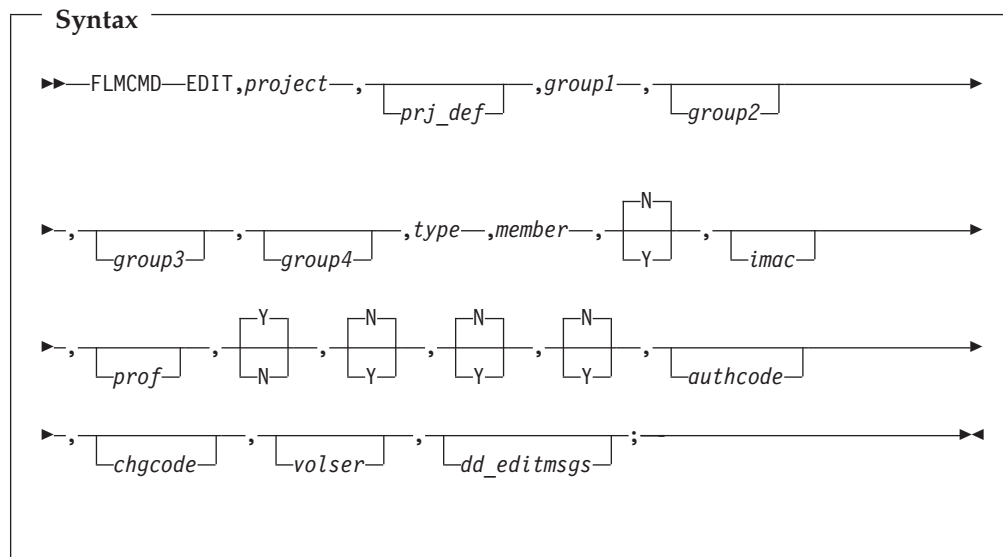


Return codes

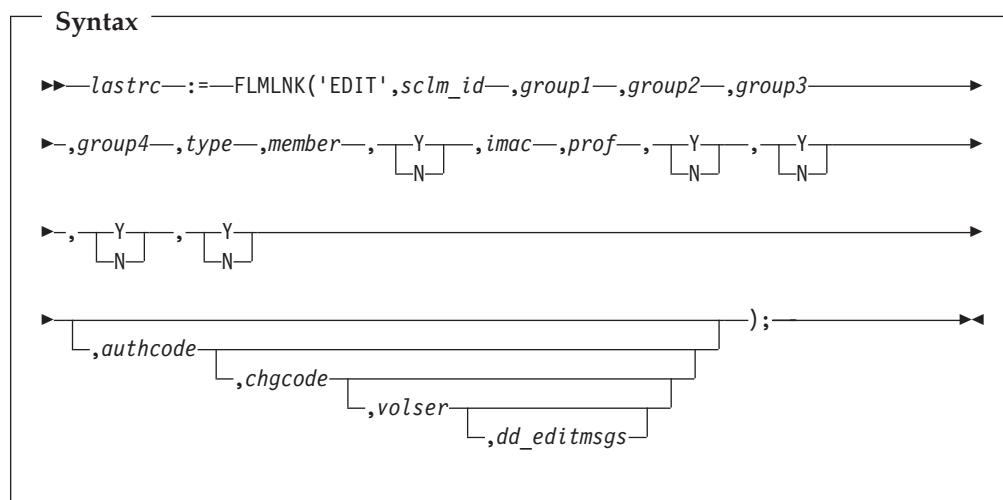
- 0 Normal completion.
- 4 Warning condition. The \$msg_array parameter contains the warning message associated with this condition. A warning occurs if the number of data sets allocated to ddname is less than the number requested in the total_groups parameter.
- 8 Error condition. The \$msg_array parameter contains the error message associated with this condition.
- 20 Severe error condition. SCLM does not produce messages because the SCLM ID (sclm_id parameter) is invalid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services were not initialized.
- 32 Severe error condition. SCLM does not produce messages for one of these reasons:
- Invalid service requested
 - Invalid parameter list for the requested service
 - The version of the FLMLNK subroutines does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

EDIT— edit a member of a controlled library

Command invocation format



Call invocation format



Return codes

Possible return codes are:

- 0 Normal completion.
- 8 Error condition. See the dd_editmsgs for details.
- 12 Severe error condition. SCLM does not produce messages because there was an error invoking the edit module.
- 16 Verification error from a user exit routine.
- 20 Severe error condition. SCLM does not produce messages because the SCLM ID is invalid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services have not been initialized. See the SCLM Reference section in the *z/OS ISPF Software Configuration and Library Manager Guide and Reference* for information on initializing an SCLM services session.

- 32 Severe error condition. SCLM does not produce messages for one of these reasons:
- You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of FLMLNK subroutine does not match the version of the SCLM services module.

END—end an SCLM services session

Command invocation format

You cannot use command procedures to call this service.

Call invocation format

Syntax

```
▶▶—lastrc—:=—FLMLNK('ENDbbbb',appl_id—,msg_line);▶▶
```

Return codes

- 0 Normal completion.
- 4 Warning condition. Unable to free an SCLM ID associated with the application ID.
- 8 Error condition.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. SCLM does not produce messages for one of these reasons:
 - Invalid service requested
 - Invalid parameter list for the requested service
 - The version of the FLMLNK subroutines does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

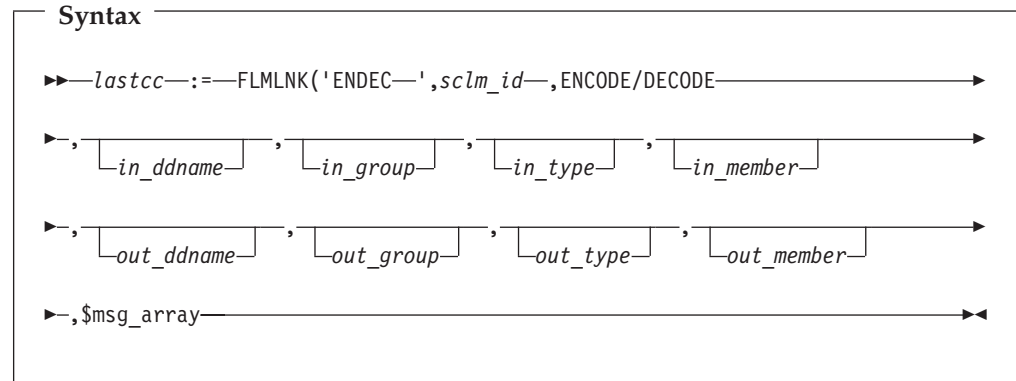
ENDEC— encode and decode members

Command invocation format

Syntax

```
▶▶—FLMCMD—ENDEC,project—, prj_def, endec_parm
▶▶, in_ddname, in_group, in_type, in_member
▶▶, out_ddname, out_group, out_type, out_member
▶▶, msgdd▶▶
```

Call invocation format

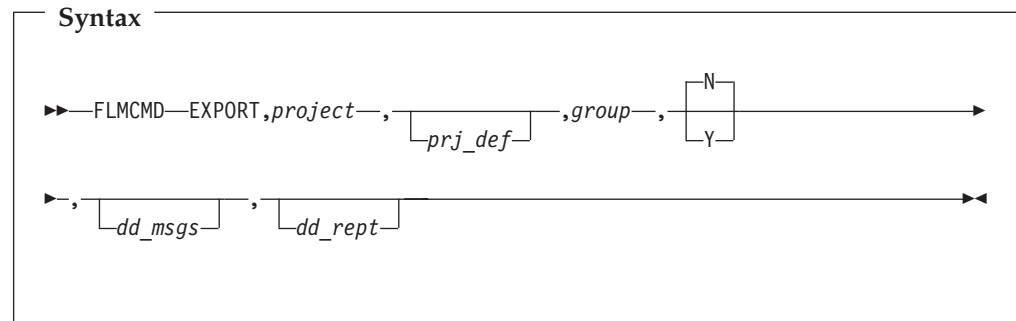


Return codes

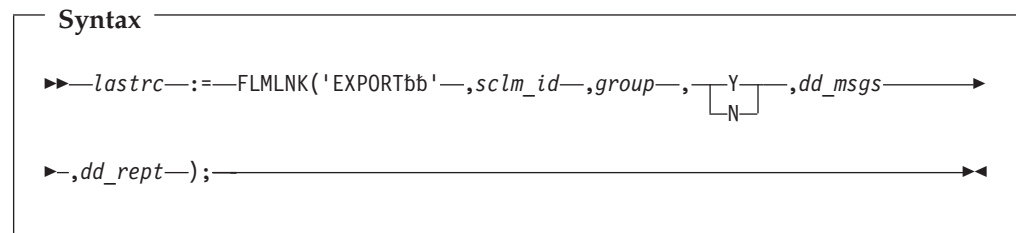
- 0 Normal completion. The encoding and decoding was performed.
- 4 Warning if ENCODE was specified, the input data set and member is already encoded. If DECODE was specified, the input data set and member is already decoded.
- 12 Error completion. Refer to the messages for more information.

EXPORT—extract SCLM accounting information for a group

Command invocation format



Call invocation format



Return codes

- 0 Normal completion.
- 4 Warning condition.
- 8 Error condition.
- 12 Severe error condition. SCLM does not produce messages because there was an error invoking the IMPORT module.

EXPORT service

- 16 Severe error condition. SCLM does not produce messages because it was unable to retrieve SCLM ID information.
- 20 Severe error condition. SCLM does not produced messages because the SCLM ID is invalid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services have not been initialized.
- 32 Severe error condition. SCLM does not produce messages for one of these reasons:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module (for future use).
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

FREE—free database from its association with SCLM ID

Command invocation format

You cannot use command procedures to call this service.

Call invocation format

Syntax

```
▶▶—lastrc—:=—FLMLNK('FREEbbbb',sclm_id—,msg_line);————▶▶
```

Return codes

- 0 Normal completion.
- 8 Error condition.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced. One of these is true:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

GETBLDMP—retrieve build map information

Command invocation format

Syntax

```
▶—FLMCMD—GETBLDMP,project—, prj_def,group—,type—,member—▶
▶—,bmap_table—, dd_msgs▶▶
```

Call invocation format

Syntax

```
▶—lastrc—:=—FLMLNK('GETBLDMP',sclm_id—,group—,type—,member—▶
▶—,bmap_table—,$msg_array);▶▶
```

Return codes

- 0 Normal completion. A build map record was found that exactly matched the specified criteria and the information was stored successfully.
- 4 Normal completion. A build map record was found at a higher level. The information was stored successfully.
- 8 Error completion. No account record was found for the specified member.
- 12 Error completion. Refer to the messages for more information.

GETXDEP—return cross-dependency information

Command invocation format

Syntax

```
▶—FLMCMD—GETXDEP,project—, prj_def—, group—, type—, member—, ▶
▶—xdep_table—, scope—, dd_msgs▶▶
```

Call invocation format

```

Syntax
  ►►—lastrc—:=—FLMLNK('GETXDEP',sclm_id,—group—,—type—,—member—,—
  ►—xdep_table—,—scope—,—$msg_array);—►►
  
```

Return codes

- 4 The parent chain was truncated when the maximum nesting level was exceeded, or a circular reference was detected. ZSFLIMIT is non-blank on truncated rows.
- 8 No parent data was found.
- 12 Cross-dependency database is not active.
- 16 Error updating ISPF table.
- 20 Error reading the Cross-dependency database.

IMPORT—import SCLM accounting information to current project

Command invocation format

```

Syntax
  ►►—FLMCMD—IMPORT,—project—,—
  ►—prj_def—,—group—,—
  ►—' '—authcode—►►
  ►—' '—change_code—,—
  ►—' '—userid—,—
  ►—C—U—R—,—dd_msgs—,—dd_rept—►►
  
```

Call invocation format

```

Syntax
  ►►—lastrc—:=—FLMLNK('IMPORTbb'—,—sclm_id—,—group—,—
  ►—' '—authcode—►►
  ►—,—change_code—,—userid—,—
  ►—C—U—R—,—dd_msgs—,—dd_rept);—►►
  
```

Return codes

- 0 Normal completion.
- 4 Warning condition.
- 8 Error condition.

- 12 Severe error condition. SCLM does not produce messages because there was an error invoking the IMPORT module.
- 16 Severe error condition. SCLM does not produce messages because it was unable to retrieve SCLM ID information.
- 20 Severe error condition. SCLM does not produced messages because the SCLM ID is invalid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services have not been initialized.
- 32 Severe error condition. SCLM does not produce messages for one of these reasons:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module (for future use).
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

INIT—generate an SCLM ID for a database

Command invocation format

You cannot use command procedures to call this service.

Call invocation format

Syntax

```

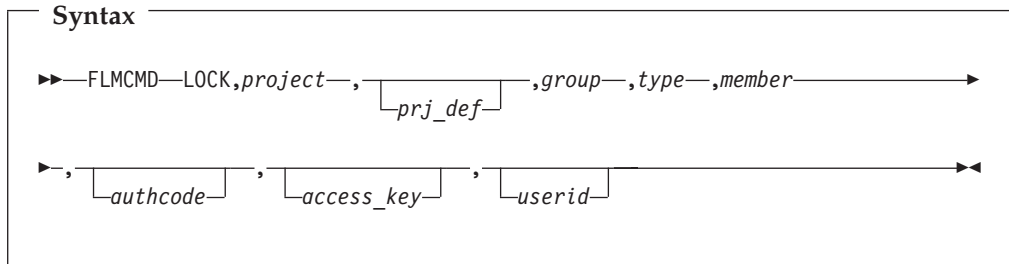
▶▶—lastrc—:=—FLMLNK('INITbbbb',appl_id—,project—,prj_def—,sclm_id—▶▶
▶—,msg_line);—————▶▶
    
```

Return codes

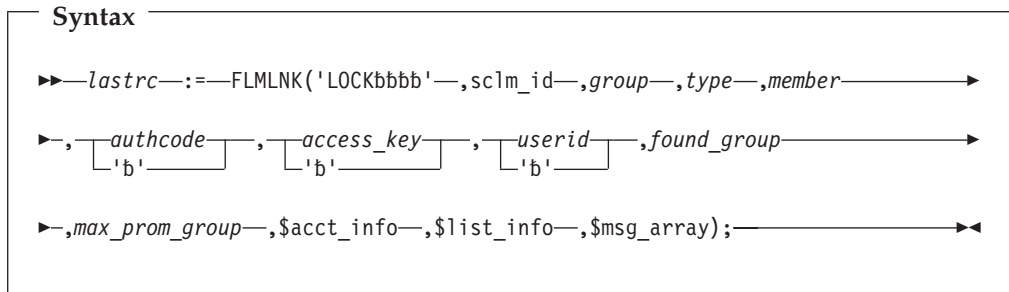
- 0 Normal completion.
- 8 Error condition.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced. One of these is true:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

LOCK—lock a member or assign an access key

Command invocation format



Call invocation format

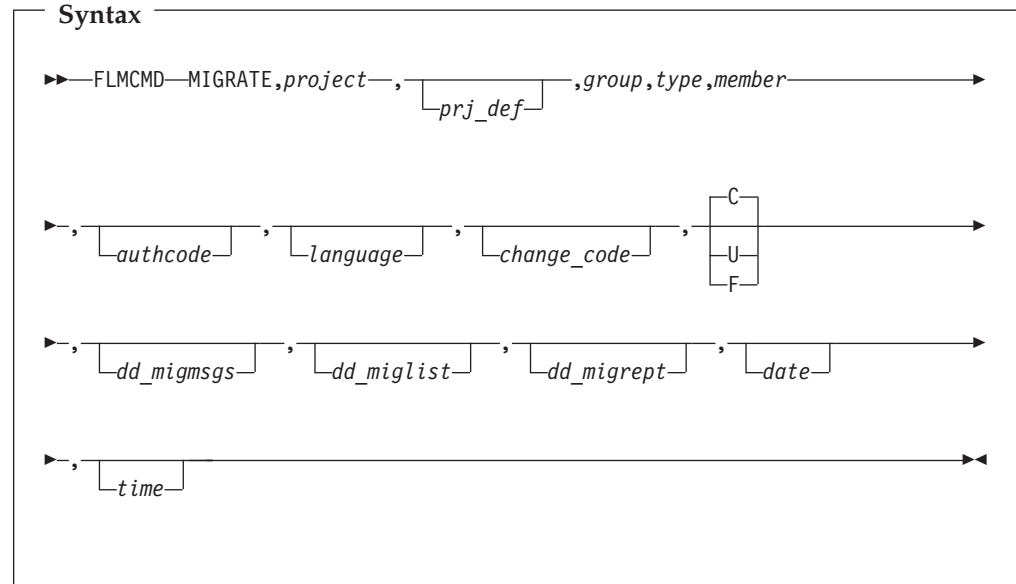


Return codes

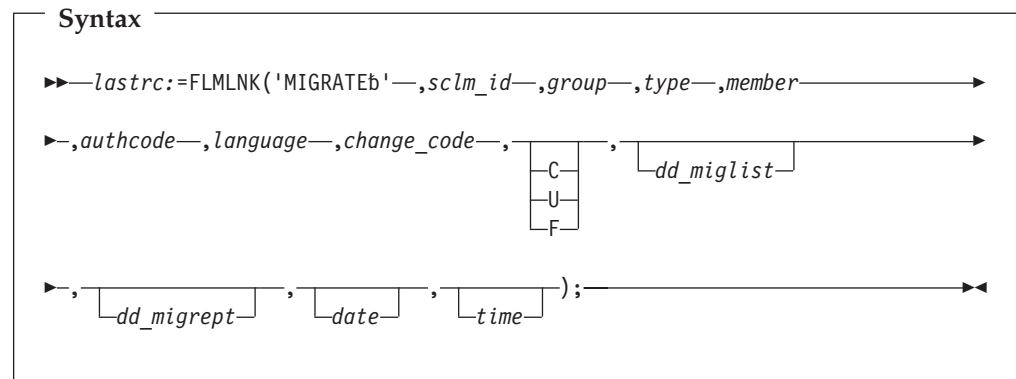
- 0 Normal completion.
- 8 Error condition.
- 20 Severe error condition. Messages are not produced. Invalid SCLM ID.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced. One of these is true:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

MIGRATE—create accounting information for selected members

Command invocation format



Call invocation format



Return codes

- 0 Normal completion.
- 4 Warning condition. See the SCLM messages for more information.
- 8 Error condition. See the SCLM messages for more information.
- 20 Severe error condition. SCLM does not produce messages because the SCLM ID is invalid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services have not been initialized.
- 32 Severe error condition. SCLM does not produce messages for one of these reasons:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.

NEXTGRP—find the next group in a hierarchy

Command invocation format

Syntax

```

    ►►FLMCMDBNEXTGRP,project—,prj_def—,group—,dd_msgs—►►
  
```

Call invocation format

Syntax

```

    ►►lastrc—:=—FLMLNK('NEXTGRpb',sclm_id—,group—,dd_msgs);►►
  
```

Return codes

- 0 Normal completion. NEXTGRP completed successfully. Variables are set.
- 4 Warning condition. The group is already the top group. No variables are set.
- 8 Error condition. Invalid project, prj_def, or group name.
- 12 Severe error condition. SCLM might not produce messages because there was an error invoking the NEXTGRP module. For certain conditions messages are available.
- 20 Severe error condition. Messages are not produced. Invalid SCLM ID.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced. One of these is true:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.

PARSE—parse a member for statistical and dependency information

Command invocation format

You cannot use command procedures to call this service.

Call invocation format

Syntax

```

    ►►lastrc—:=—FLMLNK('PARSEbbb'—sclm_id—,group—,type—,member—►►
    ►►,language—,Y—,ddname—,$stats_info—,$list_info—,$msg_array);►►
    N
  
```

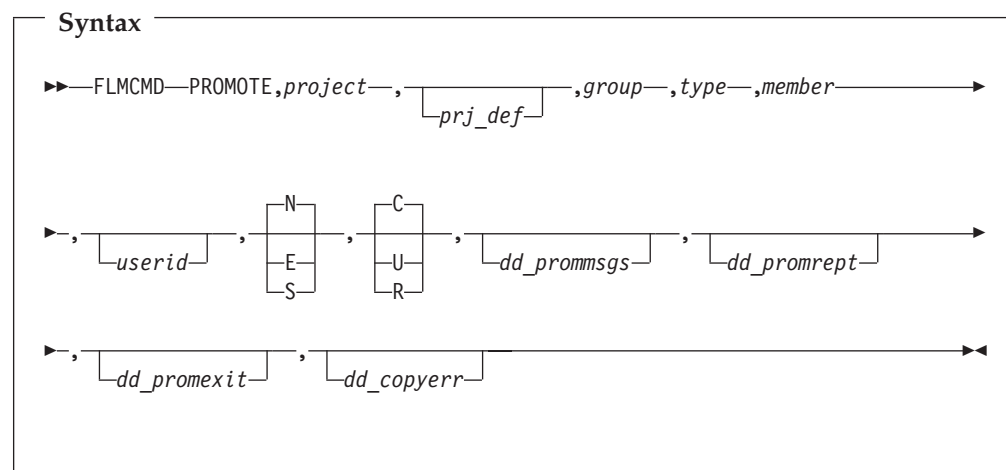
Return codes

- 0 Normal completion.

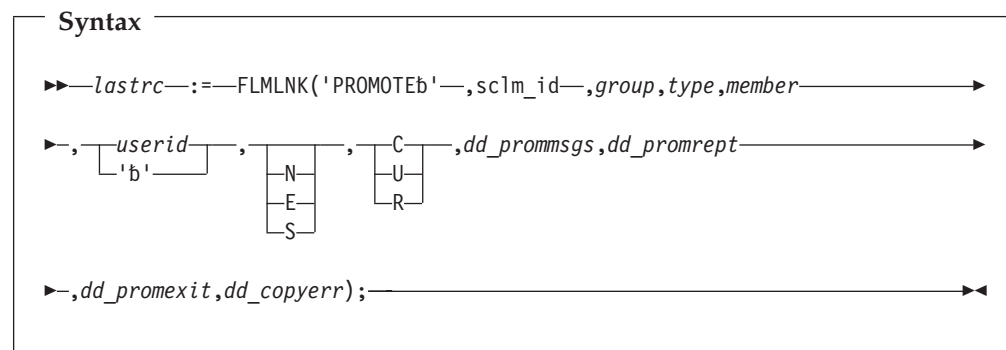
- 4 Warning condition. A parser error occurred.
- 8 Error condition.
- 20 Severe error condition. Messages are not produced. Invalid SCLM ID.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced. One of these is true:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

PROMOTE—promote a member from one library to another

Command invocation format



Call invocation format



Return codes

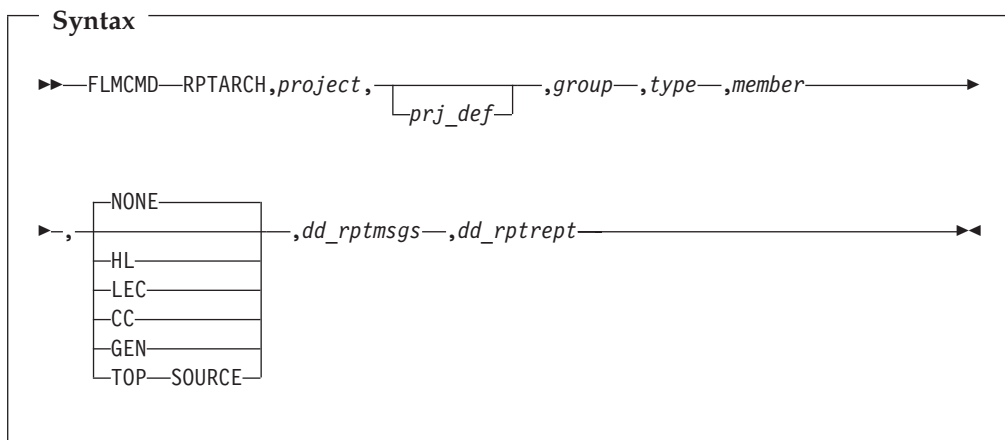
- 0 Normal completion.
- 4 Warning condition.
- 8 Error condition.
- 12 Severe error condition. Messages are not produced. Error invoking the Promote module.

PROMOTE service

- 16 Severe error condition. Messages are not produced. Unable to retrieve SCLM ID information.
- 20 Severe error condition. Messages are not produced. Invalid SCLM ID.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced. One of these is true:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

RPTARCH—generate an SCLM architecture report

Command invocation format



Call invocation format

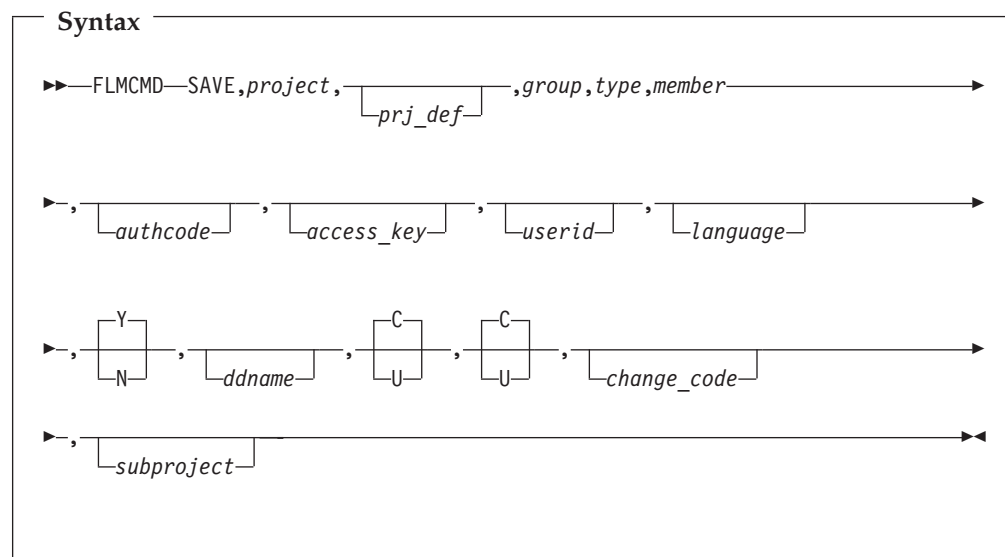
You cannot use call procedures to start this service.

Return codes

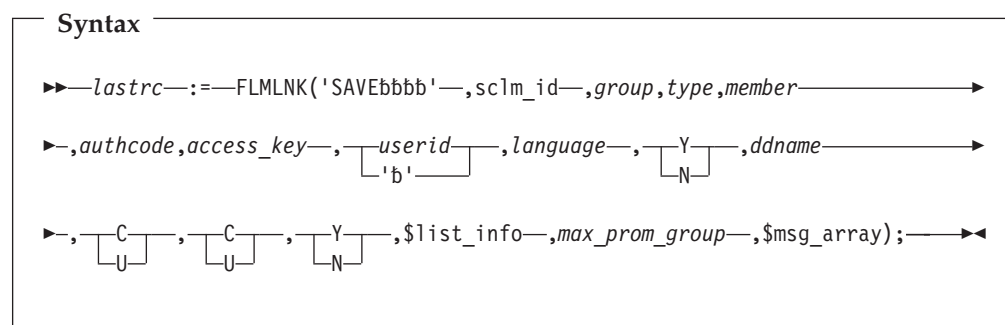
- 0 Normal completion.
- 4 Warning condition.
- 8 Error condition.
- 16 Error condition. Unable to retrieve the SCLM table.

SAVE—lock, parse, and store a member

Command invocation format



Call invocation format



Return codes

- 0 Normal completion.
- 4 Warning condition.
- 8 Error condition.
- 20 Severe error condition. Messages are not produced. Invalid SCLM ID.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced. One of these is true:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

SCLMINFO—return project information

Command invocation format

Syntax

```

  ►►—FLMCMDSCLMINFO,project—,prj_def—►►

```

Call invocation format

Syntax

```

  ►►—lastrc—:=—FLMLNK('SCLMINFO',sclm_id);—►►

```

Return codes

- 0 Normal completion.
- 12 Error condition.

START—generate an application ID for a service session

Command invocation format

You cannot use command procedures to call this service.

Call invocation format

Syntax

```

  ►►—lastrc—:=—FLMLNK('STARTbbb',appl_id);—►►

```

Return codes

- 0 Normal completion.
- 12 Severe error condition. The maximum application ID limit was exceeded.
- 16 Severe error condition. An invalid version of the SCLM table was loaded.
- 20 Severe error condition. An invalid version of the multicultural support table was loaded.
- 24 Severe error condition. Unable to load the SCLM table.
- 28 Severe error condition. Unable to load the multicultural support table or the SCLM I/O load module.
- 32 Severe error condition. Messages are not produced. One of these is true:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

STORE—store member information in an accounting record

Command invocation format

You cannot use command procedures to call this service.

Call invocation format

Syntax

```

▶▶—lastrc—:=—FLMLNK('STOREbbb'—sclm_id—,group,type,member—————▶
▶—,access_key—,language—,userid—, C—, Y—————▶
   |'b'|         |U|         |N|
▶—,$stats_info,$list_info—,$msg_array);—————▶▶

```

Return codes

- 0 Normal completion.
- 4 Warning condition.
- 8 Error condition.
- 20 Severe error condition. Messages are not produced. Invalid SCLM ID.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced. One of these is true:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

UNLOCK—unlock a member in a development library

Command invocation format

Syntax

```

▶▶—FLMCMD—UNLOCK,project—, prj_def—,group—,type—,member—————▶
▶—, access_key—————▶▶

```

Call invocation format

Syntax

```

▶▶ lastrc := FLMLNK('UNLOCKbb', sclm_id, group, type, member
▶, access_key, msg_array);
   └─'b'─┘

```

Return codes

- 0 Normal completion.
- 4 Warning condition.
- 8 Error condition.
- 20 Severe error condition. Messages are not produced. Invalid SCLM ID.
- 24 Severe error condition. Messages are not produced. SCLM services have not been initialized.
- 32 Severe error condition. Messages are not produced. One of these is true:
 - You requested an invalid service.
 - You supplied an invalid parameter list for the requested service.
 - The version of the FLMLNK subroutine does not match the version of the SCLM services module.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

VERDEL—delete version information

Command invocation format

Syntax

```

▶▶ FLMLCMD-VERDEL, project, prj_def, group, type, member, date
▶, time, dd_msgs, longdate

```

Call invocation format

Syntax

```

▶▶ lastrc := FLMLNK('VERDEL-', sclm_id, group, type, member
▶, date, time, msg_array, longdate);

```

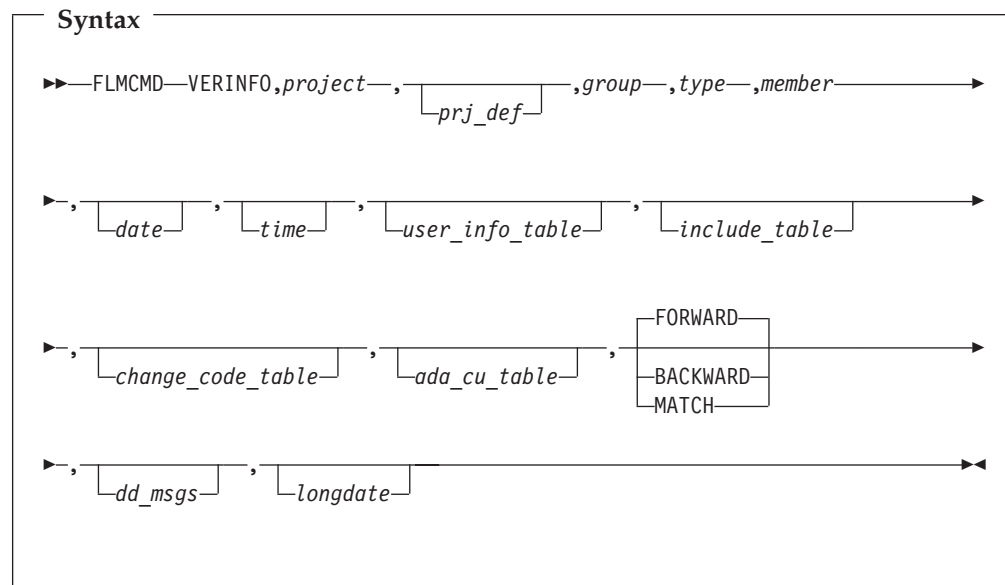
Return codes

- 0 Normal completion. The audit and version information were deleted.

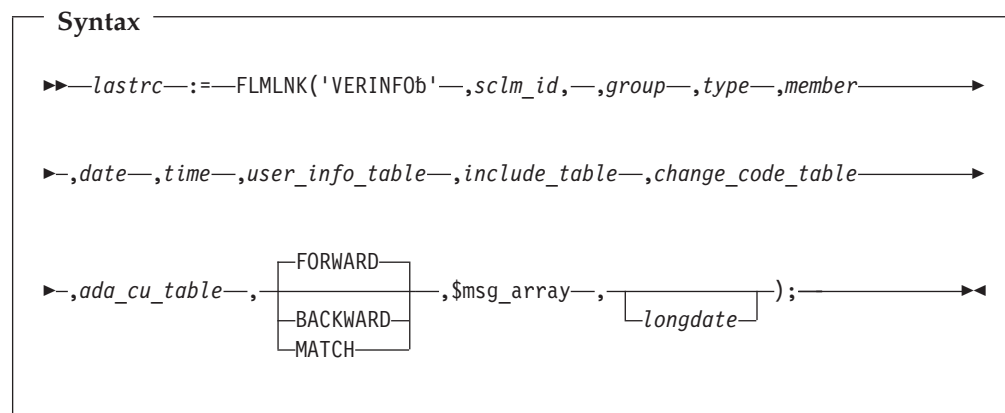
- 8 Error completion. No audit and version information was deleted. No audit record was found that matches the specified criteria.
- 12 Error completion. Refer to the messages for more information.
- 20 Severe error condition. SCLM does not produce messages because the SCLM ID is invalid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services have not been initialized.
- 32 Severe error condition. An invalid parameter list was passed to the requested service.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

VERINFO—retrieve version information

Command invocation format



Call invocation format

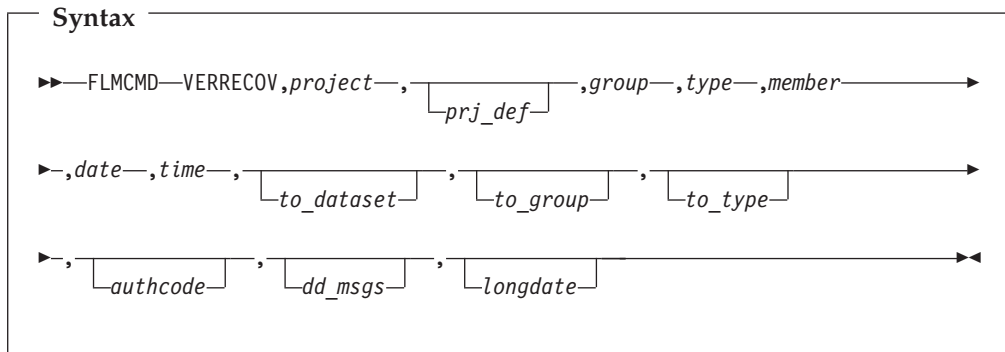


Return codes

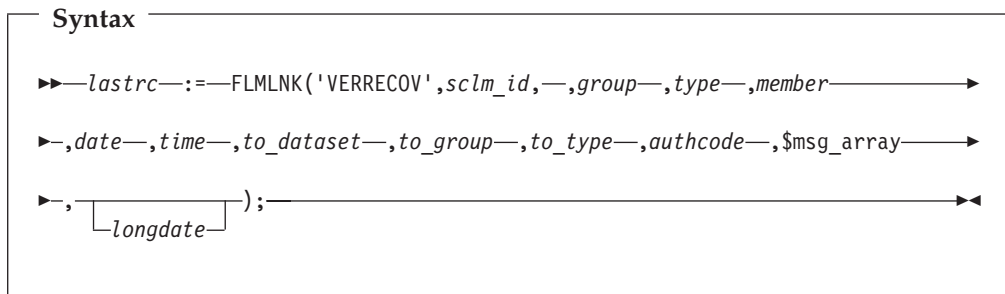
- 0 Normal completion. An audit record exactly matching the specified criteria was found and the information was stored successfully.
- 8 Error completion. No audit record was found for the specified member.
 - If FORWARD was specified then there are no audit records for the group which match or follow the specified type, member, date and time.
 - If BACKWARD was specified then there are no audit records for the group which match or precede the specified type, member, date and time.
 - If MATCH was specified then there is not an audit record with the specified group, type and member name.
- 12 Error completion. Refer to the messages for more information.
- 20 Severe error condition. SCLM does not produce messages because the SCLM ID is invalid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services have not been initialized.
- 32 Severe error condition. An invalid parameter list was passed to the requested service.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

VERRECOV—recover a version

Command invocation format



Call invocation format



Return codes

- 0 Normal completion. The audit and version information were recovered.
- 8 Error completion. No audit and version information was recovered. No audit record was found that matches the specified criteria.

- 10 Error completion. No audit and version information was recovered. The member could not be locked with the specified authorization code.
- 12 Error completion. Refer to the messages for more information.
- 20 Severe error condition. SCLM does not produce messages because the SCLM ID is invalid.
- 24 Severe error condition. SCLM does not produce messages because SCLM services have not been initialized.
- 32 Severe error condition. An invalid parameter list was passed to the requested service.
- 34 Severe error condition. An invalid service was requested.
- 36 Severe error condition. The version of the FLMLNK subroutine does not match the version of the SCLM services module.

SCLM macros

FLMABEG—define the project name of the project definition

Macro format

Syntax

```
▶▶ name—FLMABEG—————▶▶
```

FLMAEND—last macro in the project definition

Macro format

Syntax

```
▶▶ FLMAEND—————▶▶
```

FLMAGRP—define a group of authorization codes

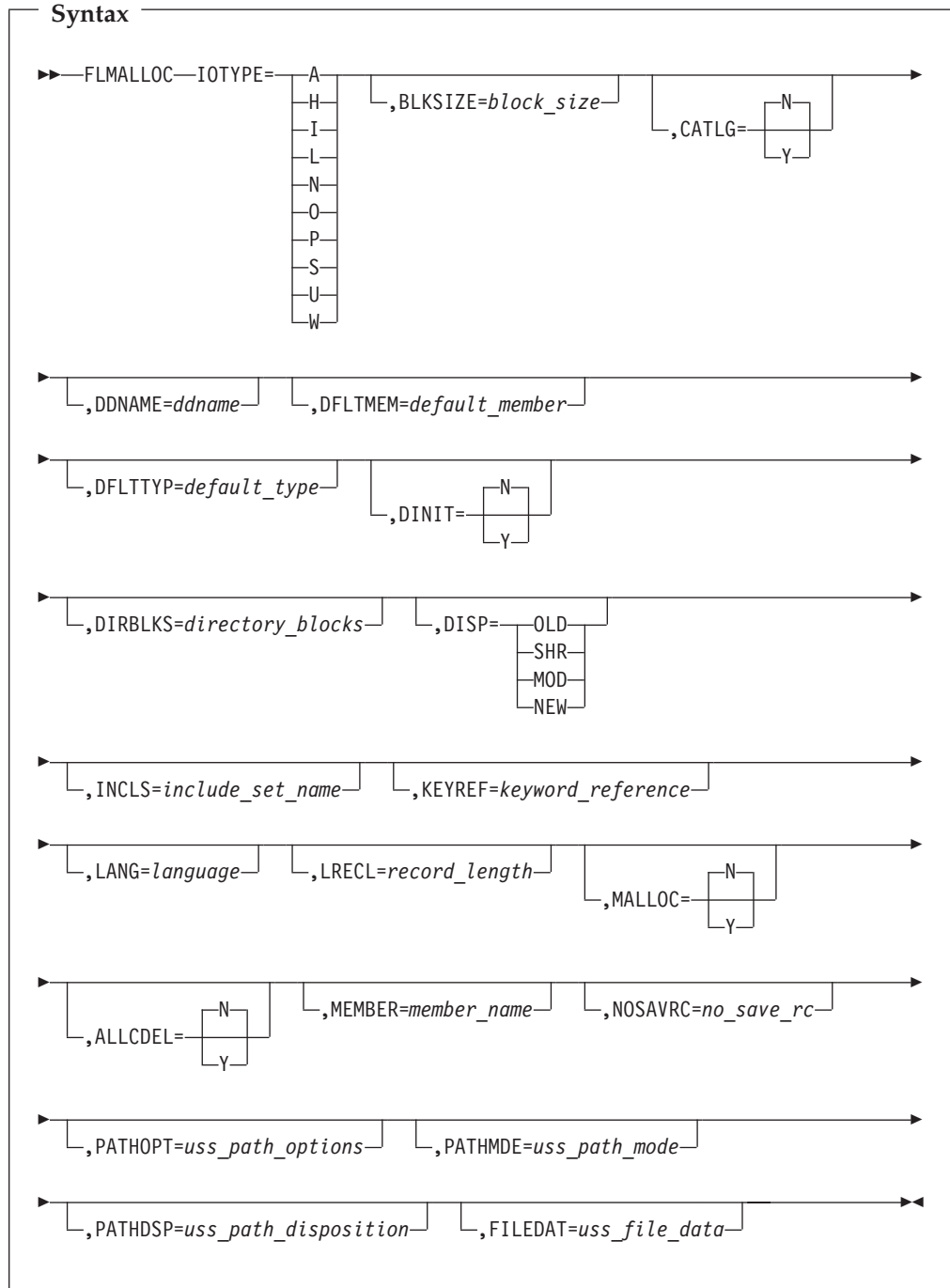
Macro format

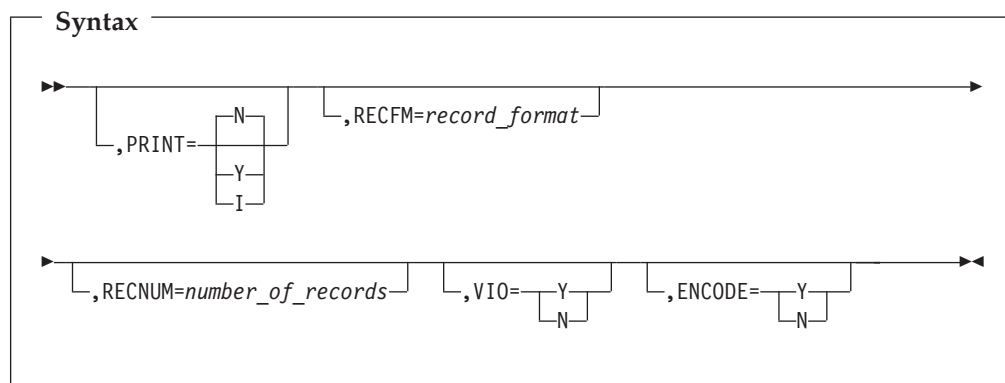
Syntax

```
▶▶ name—FLMAGRP—AC=(code)—————▶▶
```

FLMALLOC—define each DDname in the DDname substitution list for a translator

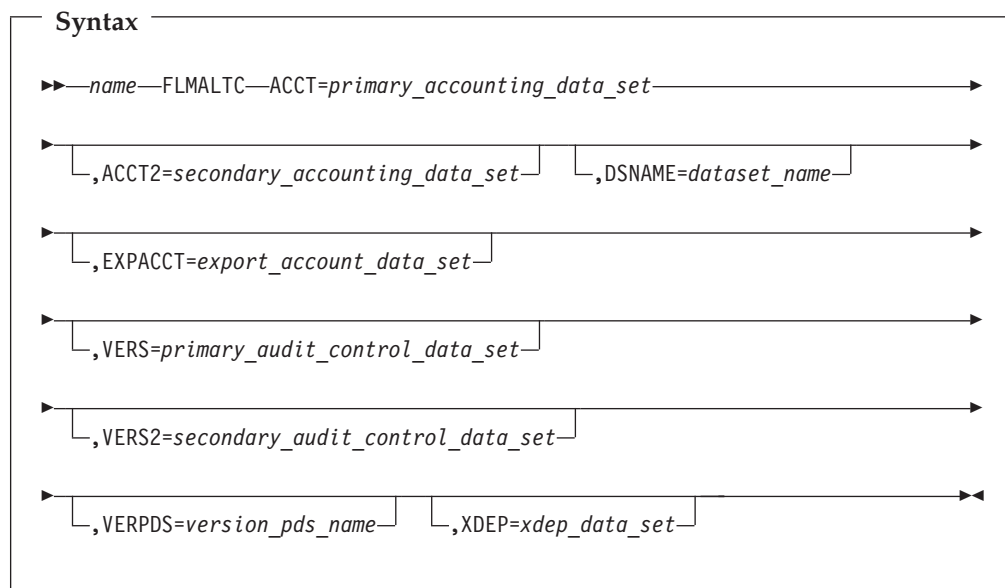
Macro format





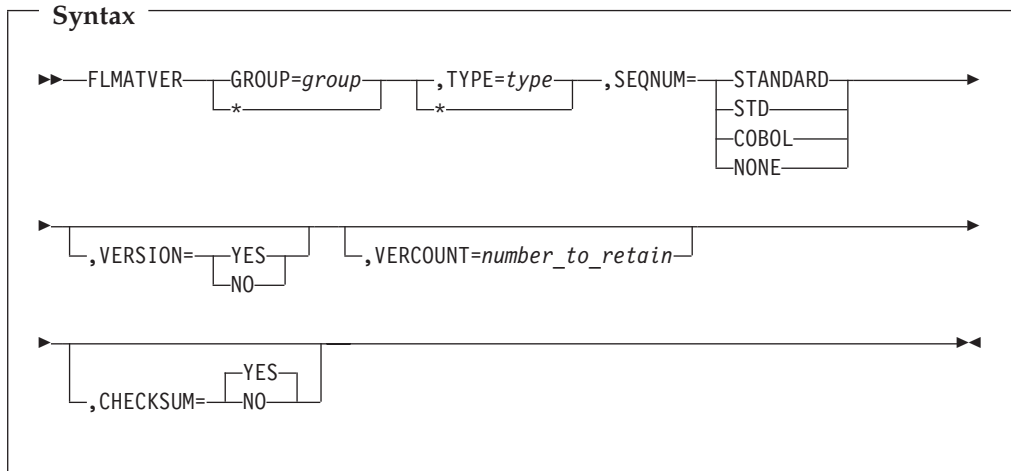
FLMALTC—specify alternate control information

Macro format



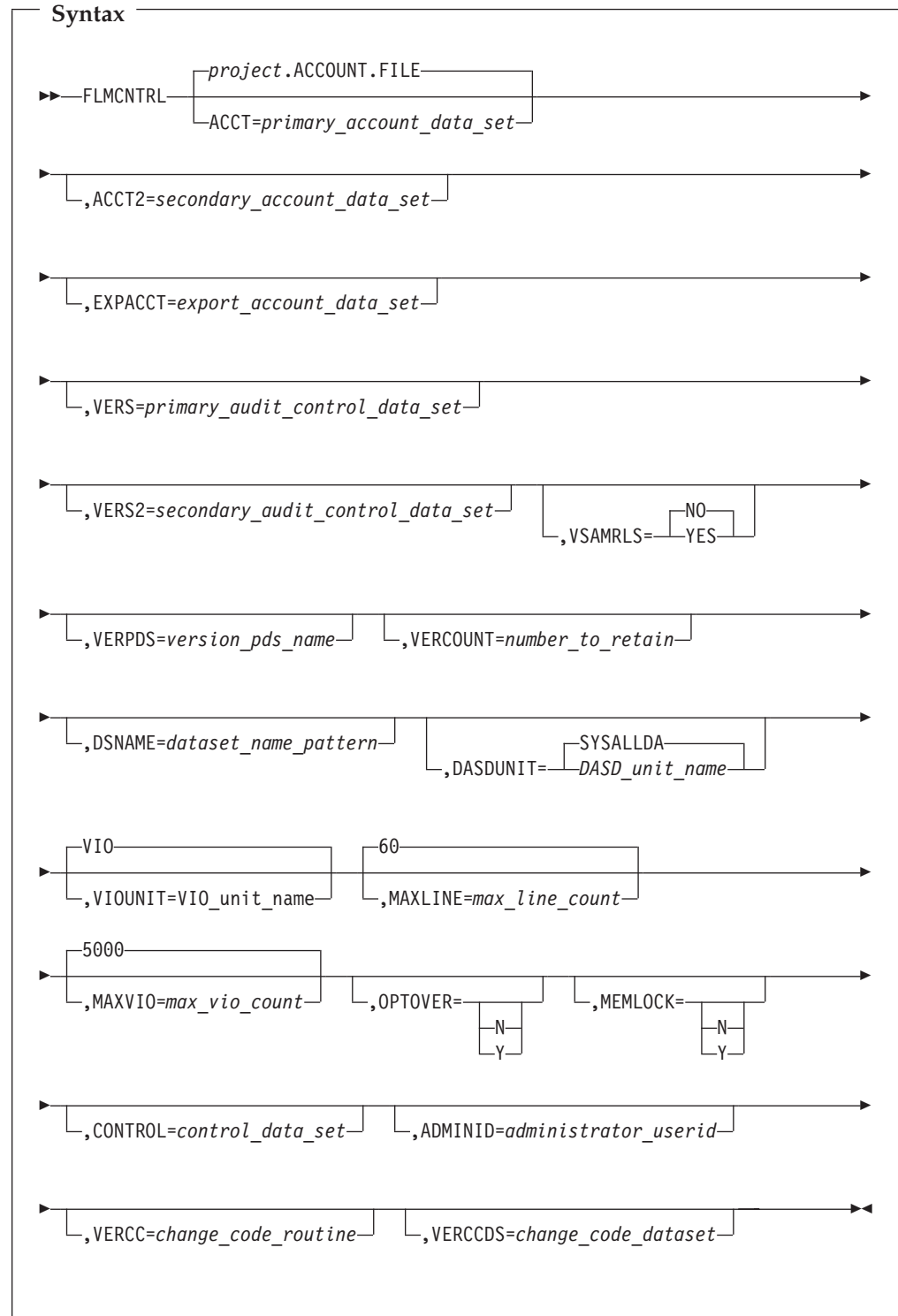
FLMATVER—enable the audit and version utility

Macro format



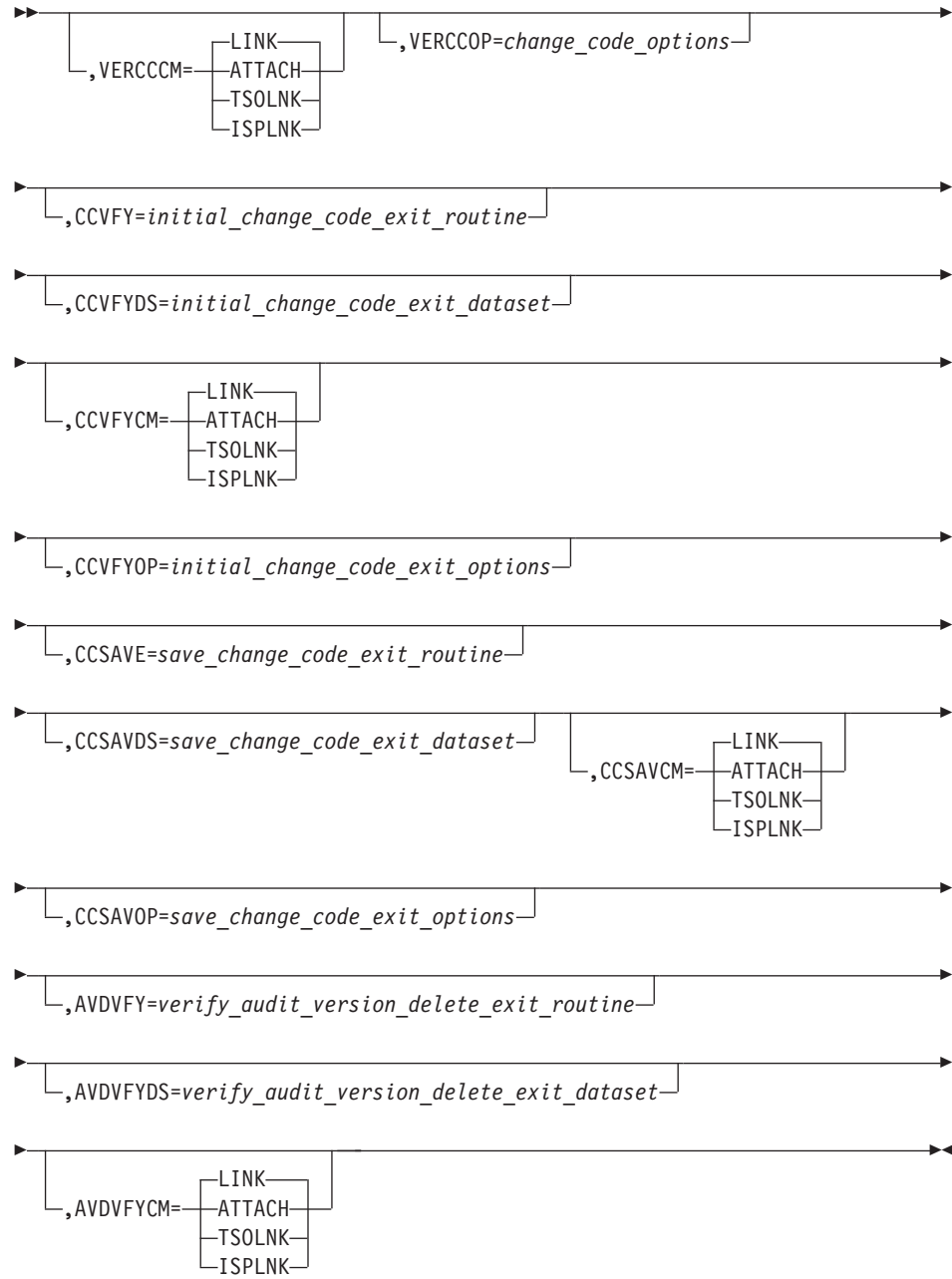
FLMCNTRL—specify project-specific control options

Macro format

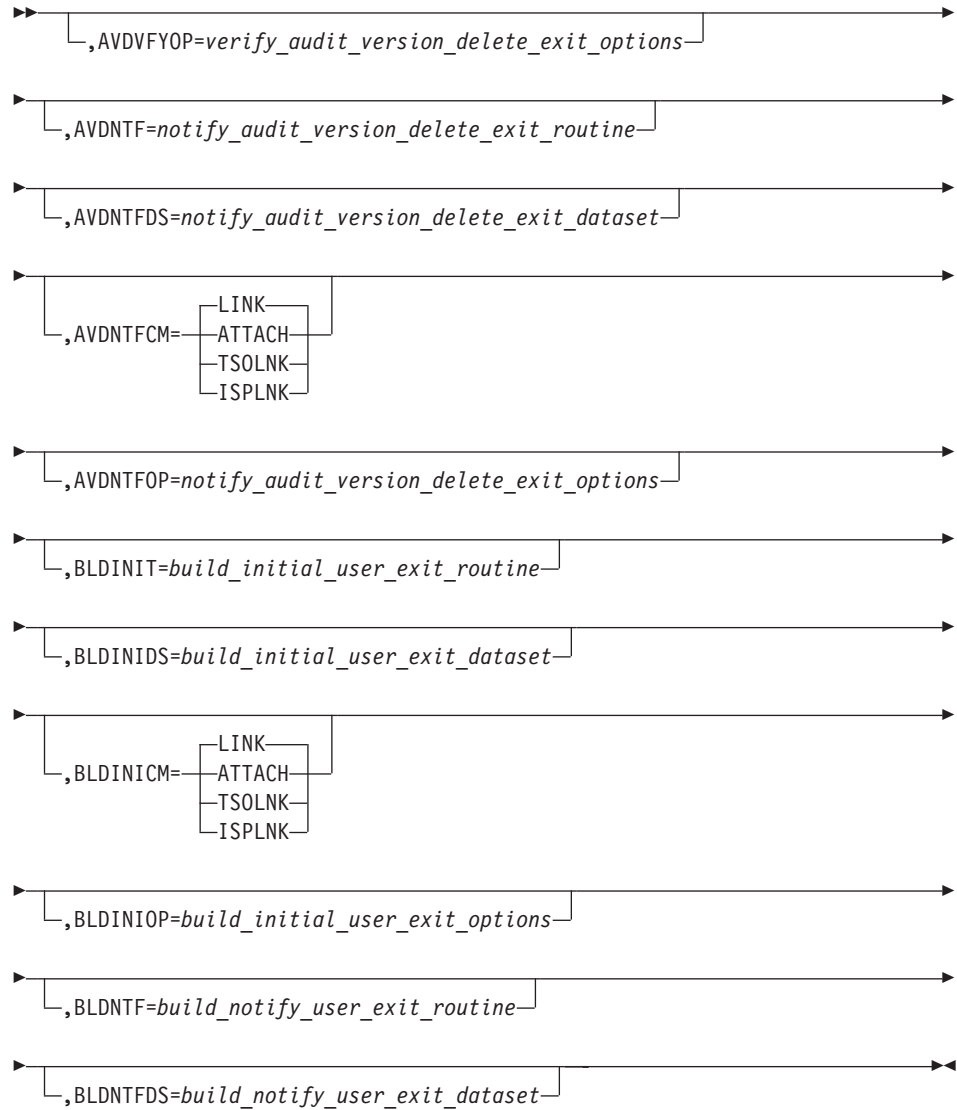


FLMCNTRL macro

Syntax

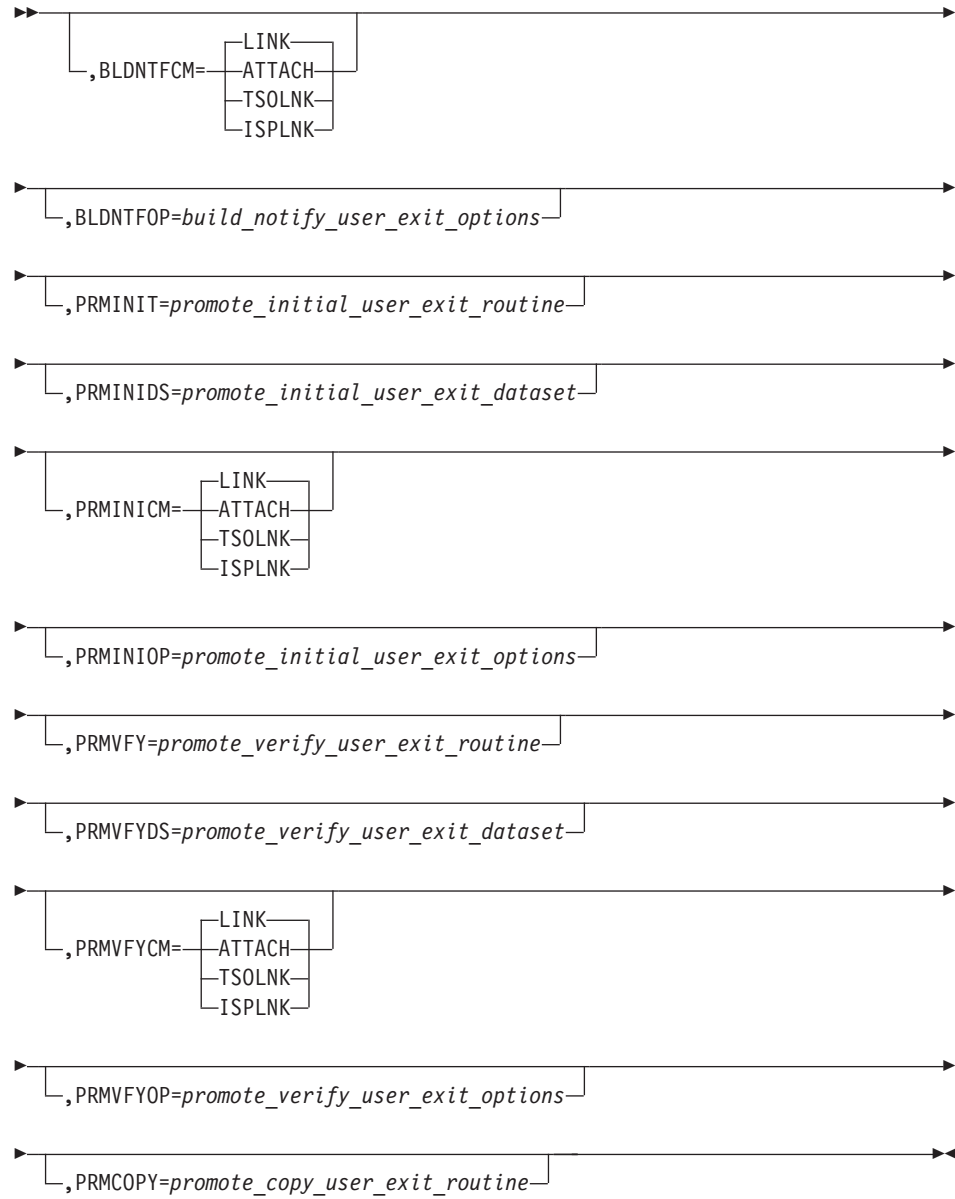


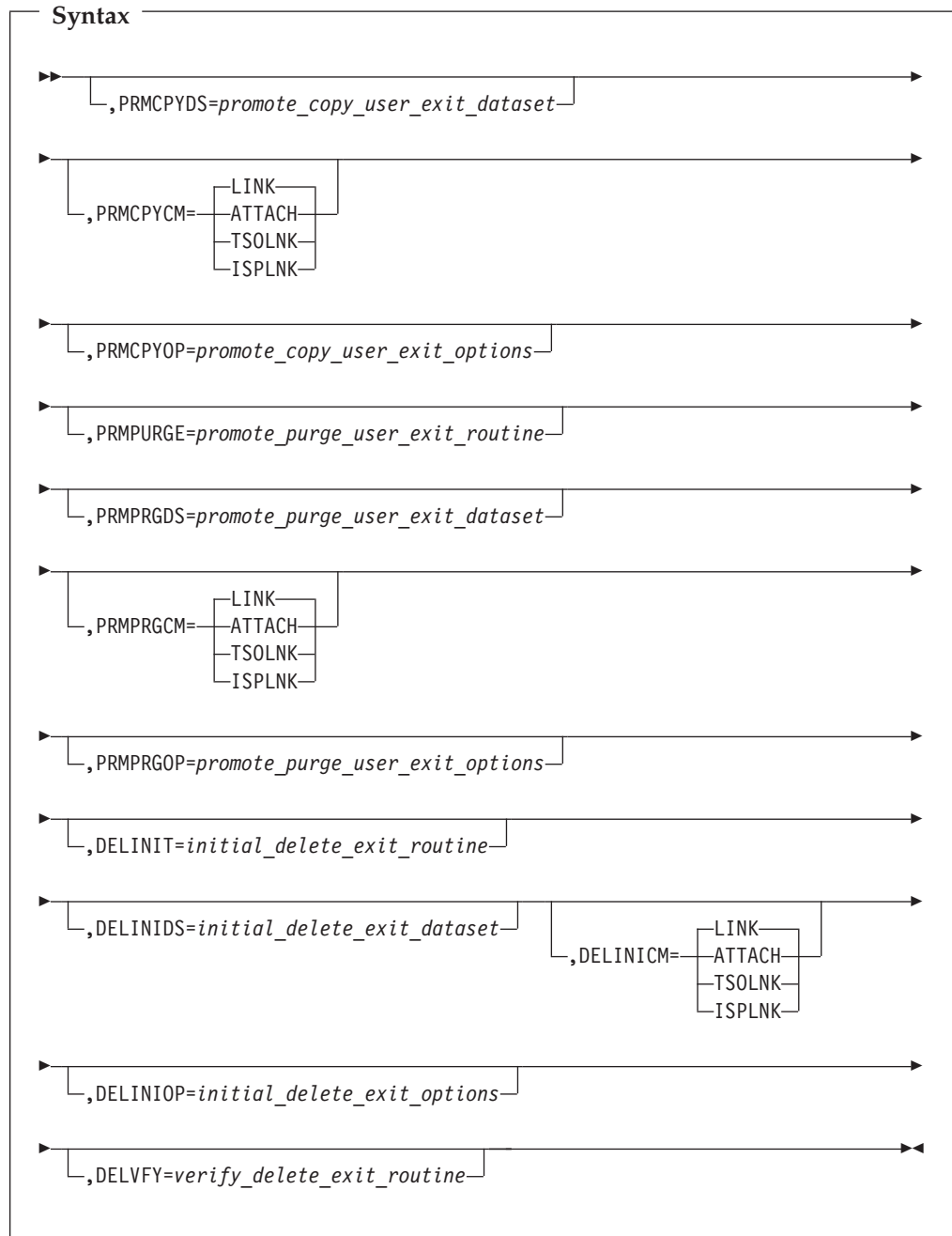
Syntax



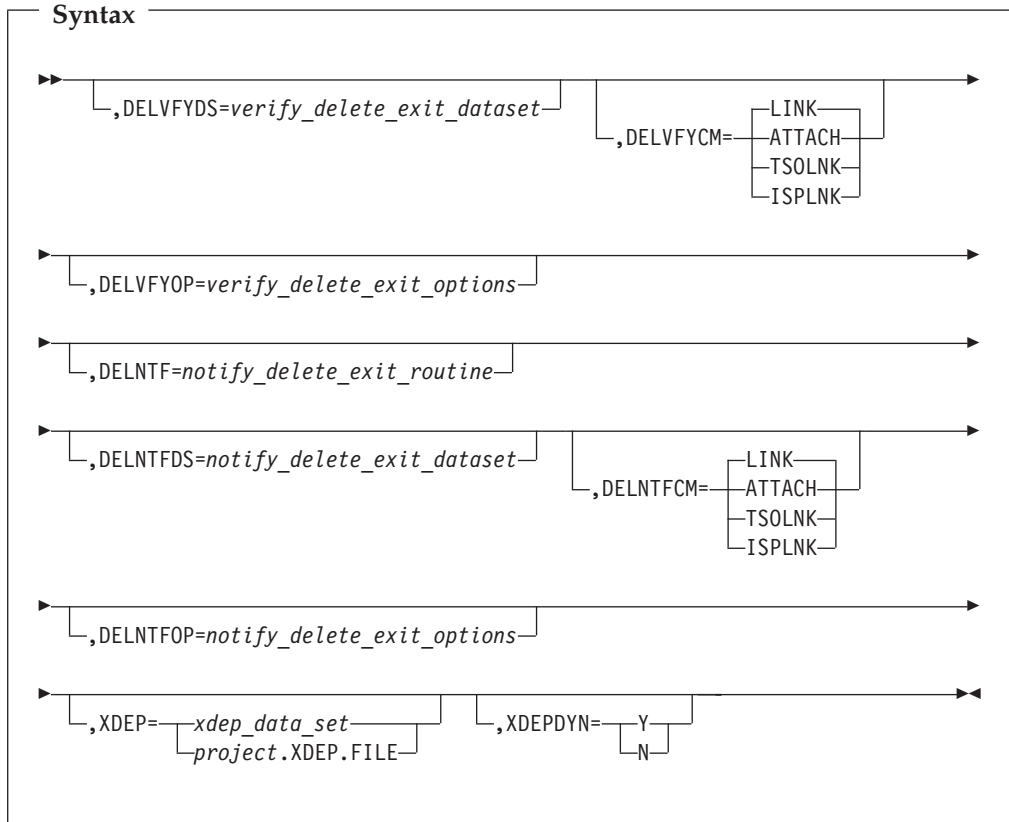
FLMCNTRL macro

Syntax



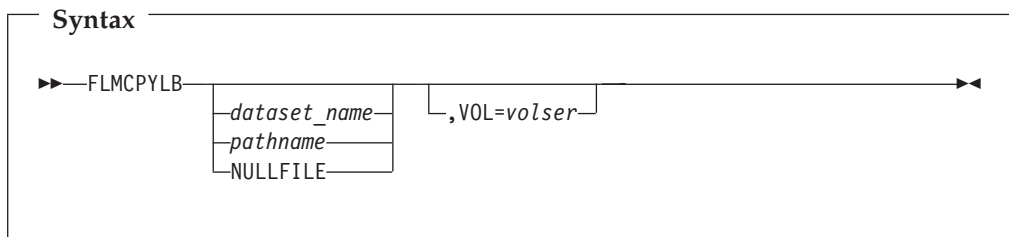


FLMCNTRL macro



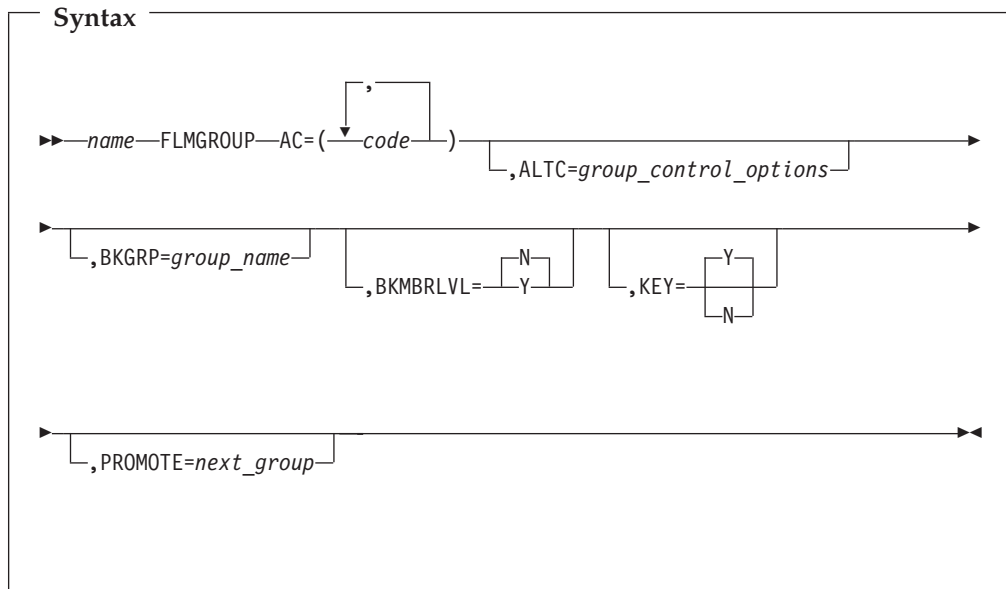
FLMCPYLB—identify additional data sets to be concatenated to a DDname

Macro format



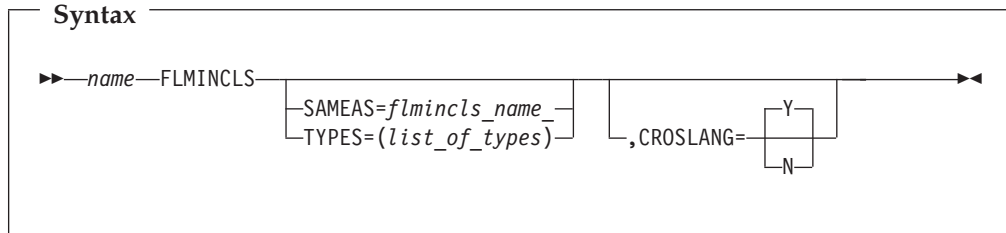
FLMGROUP—define one group in the project definition

Macro format



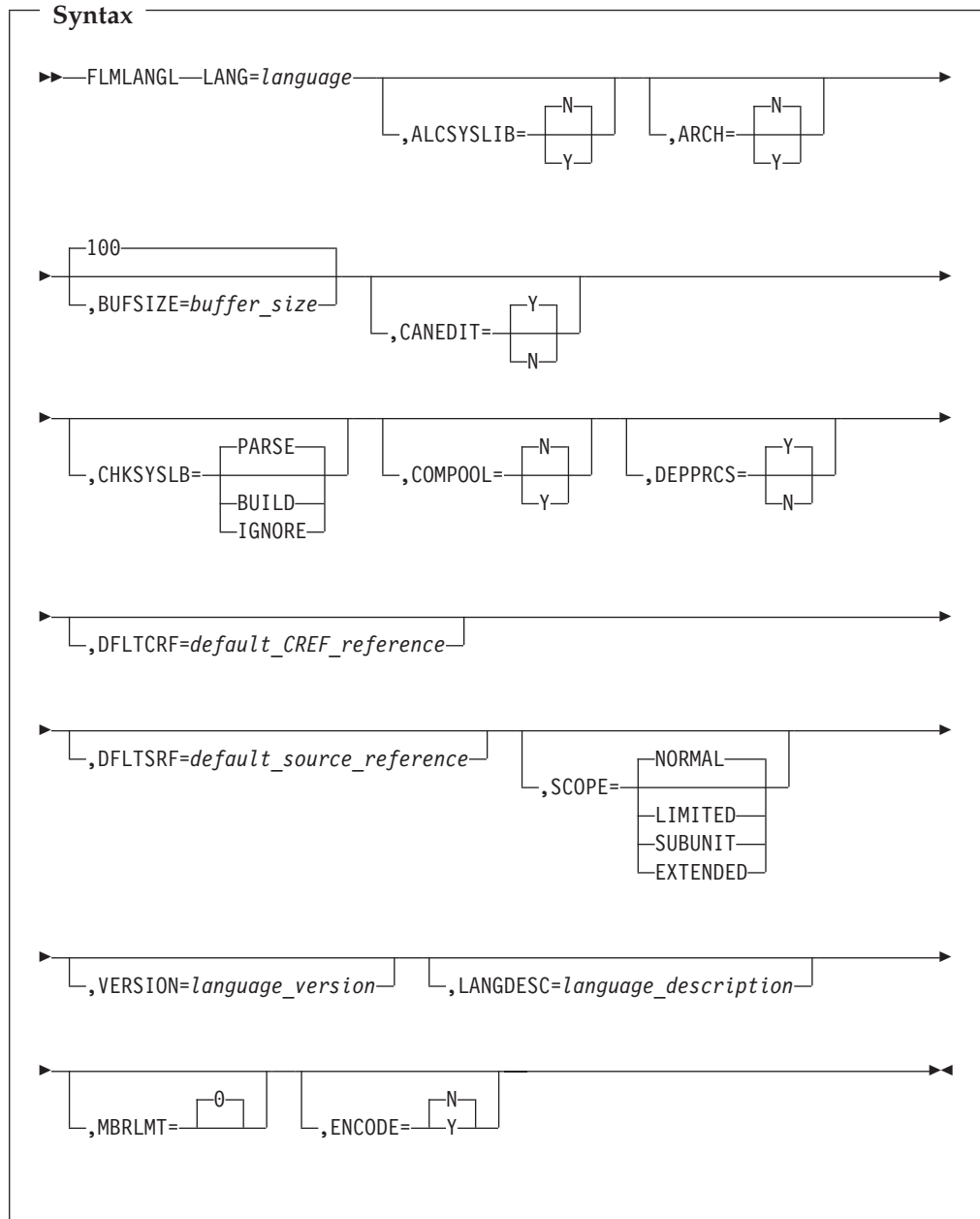
FLMINCLS—associate include-sets with types in the project hierarchy

Macro format



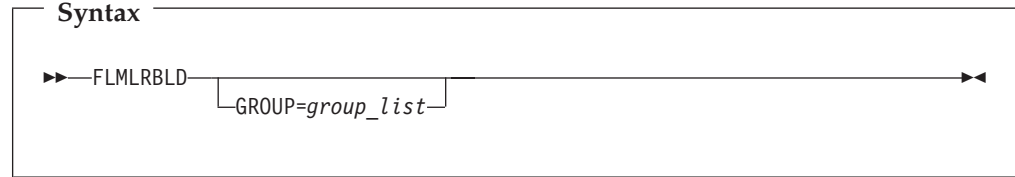
FLMLANGL—define a language to SCLM

Macro format



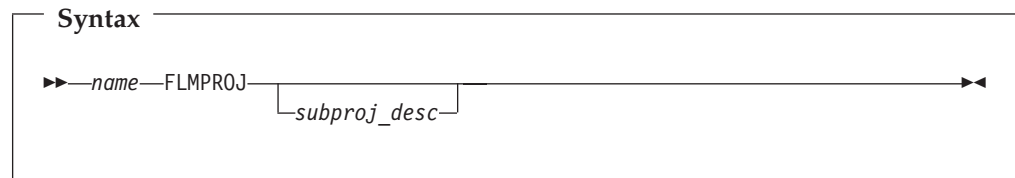
FLMLRBLD—rebuild members with a particular language after promotion

Macro format



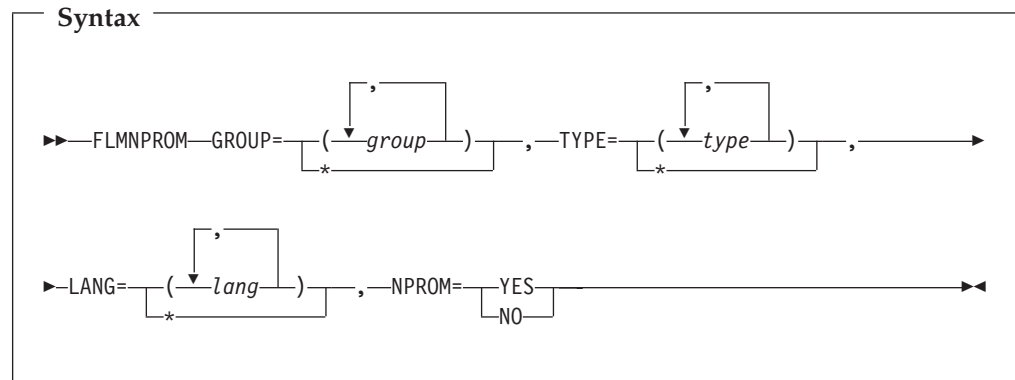
FLMPROJ—define a subproject to an SCLM project/alternate

Macro format



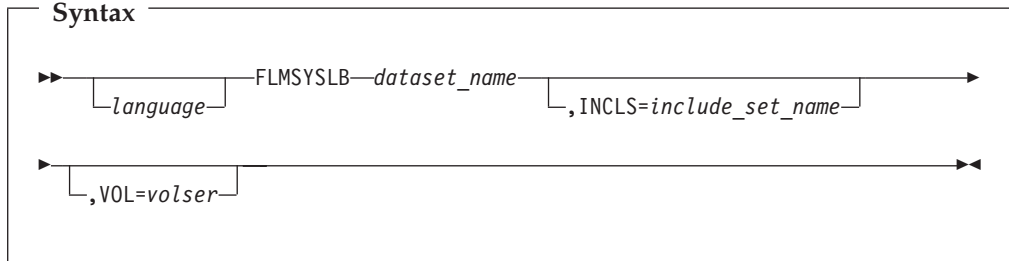
FLMNPROM—specify which SCLM editable elements may or may not be marked as non-promotable

Macro format



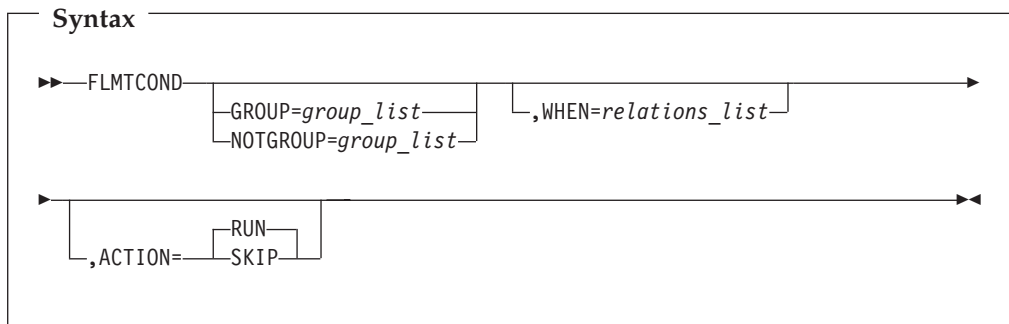
FLMSYSLB—define a set of data sets for a language containing project macros or included members

Macro format



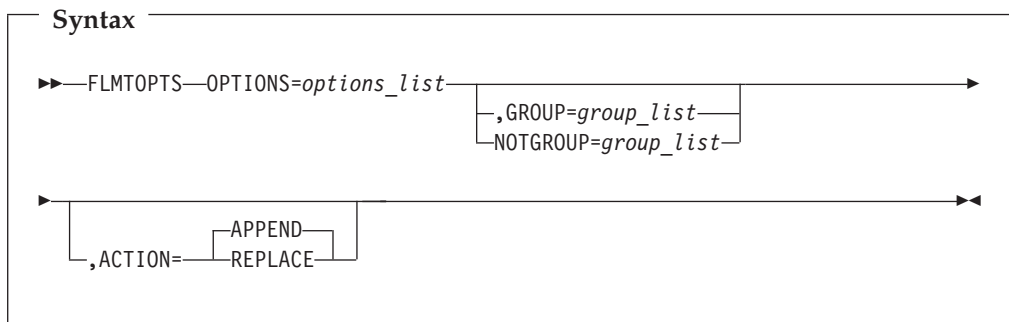
FLMTCOND—select build translators based on group and return codes

Macro format



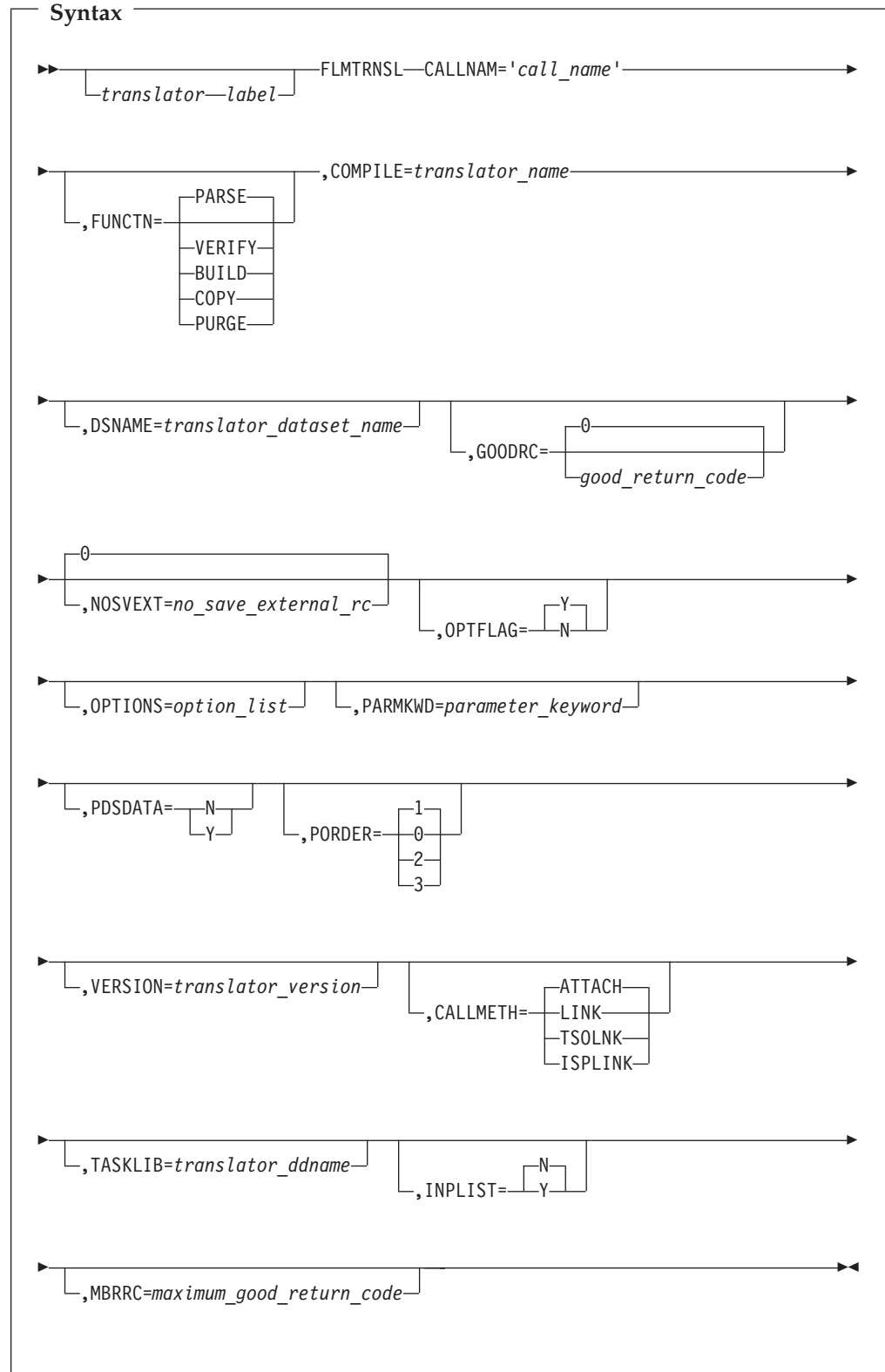
FLMTOPTS—select the options based on group

Macro format



FLMTRNSL—define once for each translator to be invoked for a language

Macro format

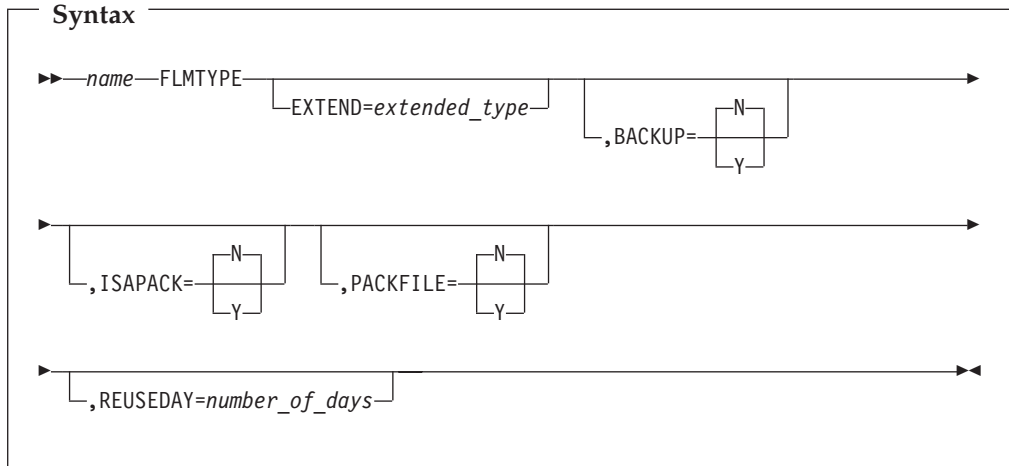


FLMTRNSL macro

Note: See the "SCLM Reference" section in the *z/OS ISPF Software Configuration and Library Manager Guide and Reference* for information about the two translators FLMTPRE and FLMTPST.

FLMTYPE—define one FLMTYPE in the project definition

Macro format



Chapter 6. System variables

The system variables are described with type and pool information in the following tables. The variables are also discussed with the ISPF service to which they apply.

Commonly used system variables that a dialog can access are listed below. They are grouped by topic.

The first column gives the name of the variable. The second column indicates in which pool the variable resides. The following abbreviations are used:

func Function pool
shr Shared pool
prof Profile pool
any Any pool.

The third column indicates the variable's type. The following abbreviations are used:

in Input variable, set by a dialog to provide information to ISPF
out Output variable, set by ISPF to provide information to dialogs
non Non-modifiable output variable
i/o Both an input and an output variable.

The fourth column gives the length of the variable.

The fifth column gives a brief description of the variable.

Numeric system variables set by ISPF are right-justified and padded with zeros on the left, if necessary. If a program function uses the VCOPY service to access the variable, the value will be in character string format rather than in fixed binary format.

Configuration utility

Name	Pool	Type	Len	Description
ZCFGCMPPD	shr	non	10	Current Configuration module compilation date. ZCFGCMPPD contains the national language delimiter and contains the date in the format YYYY/MM/DD. For countries that use a delimiter other than a slash (/), that delimiter replaces the slash in the date representation.
ZCFGCMPT	shr	non	5	Current Configuration module compilation time. ZCFGCMPT contains the national language delimiter and contains the time in the format HH:MM. For countries that use a delimiter other than a colon (:), that delimiter replaces the colon in the time representation. Note: This field will be blank for a configuration module compiled with a previous version of ISPF.
ZCFGKSRD	shr	non	54	Keyword source data set and member for the current configuration module. Note: This field will be blank for a configuration module compiled with a previous version of ISPF.
ZCFGGLVL	shr	non	8	Current Configuration module level.
ZCFGMOD	shr	non	8	Current Configuration module name.

Time and date

Name	Pool	Type	Len	Description
ZDATE	shr	non	8	Current date. The format of ZDATE depends on the current national language (see ZDATEF and ZDATEFD).
ZDATEF	shr	non	8	Current national language date format using the characters DD for day, MM for month, and YY for year. ZDATEF contains the national language delimiter. For example, DD/MM/YY, YY/MM/DD, MM.DD.YY. For countries that use a delimiter other than a slash (/), that delimiter replaces the slash in the date representation.
ZDATEFD	shr	non	8	The date format as described under ZDATEF but with the national language convention instead of DD, MM, and YY.
ZDATESTD	shr	non	8	Current date with a 4-digit year (YYYY/MM/DD). The format of ZDATESTD depends on the current national language (see ZDATEF and ZDATEFD).
ZDAYOFWK	shr	non	8	The name of the day of the week.
ZDAY	shr	non	2	Day of month (2 characters)
ZJDATE	shr	non	6	Day-of-year date (format yy.ddd)
ZJ4DATE	shr	non	8	Day-of-year date (format yyyy.ddd)
ZMONTH	shr	non	2	Month of year (2 characters)
ZSTDYEAR	shr	non	4	All 4 digits of the current year (4 characters).
ZTIME	shr	non	5	Time of day (format hh:mm)
ZTIMEL	shr	non		Time of day (format hh:mm:ss:TQ —where T is tenths of a second, and Q is hundredths)
ZYEAR	shr	non	2	Year (2 characters)

The current date is displayed in the appropriate format for the session language, where DD=DAY, MM=MONTH, and YY=YEAR. For countries that use a delimiter other than a slash (/), that delimiter replaces the slash in the date representation.

General

Name	Pool	Type	Len	Description
Z	shr	non	0	Null Variable
ZACCTNUM	shr	non	40	The MVS account number specified at logon time.
ZAPLCNT	shr	non	4	Number of times APL invoked for a logical screen
ZAPPLID	shr	non	8	Application identifier
ZAPPTTL	any	in	N/A	When running in GUI mode, the title to be displayed in the window frame. Note: If the panel is to be displayed in a pop-up window, the value specified in ZWINTTL will be used instead of ZAPPTTL.
ZBDMAX	shr	i/o	9	Maximum number of displays that can occur within a batch mode session. This value is obtained from the BDISPMAX keyword on the ISPSTART command.
ZBDMXCNT	shr	non	9	Count of current number of displays in a batch mode session
ZCS	shr	non	5	Multicultural support currency symbol
ZCSDLL	shr	non	8	File name of the DLL required for this level of code for the Client/Server
ZDECS	shr	non	1	Multicultural support decimal separator character
ZDEL	prof	non	1	The delimiter is used to separate stacked commands. The default delimiter is a semicolon (;).
ZEDLMSG	shr	in	79	Available for an edit macro to set the long message for the next display.
ZEDSMMSG	shr	in	24	Available for an edit macro to set the short message for the next display.
ZENTKTXT	any	in	12	When you are running in GUI mode, the name that appears on the Enter key push button. If this variable is not found, "Enter" appears on the push button.
ZENVIR	shr	non	32	Environment description: <ul style="list-style-type: none"> • Characters 1 to 8 contain the product name and sequence number, in the form ISPF <i>x.y</i>. The sequence number <i>x.y</i> indicates the following: <ul style="list-style-type: none"> 5.9 means ISPF for z/OS Version 1 Release 9.0 5.8 means ISPF for z/OS Version 1 Release 8.0 5.7 means ISPF for z/OS Version 1 Release 7.0 5.6 means ISPF for z/OS Version 1 Release 6.0 5.5 means ISPF for z/OS Version 1 Release 5.0 5.2 means ISPF for z/OS Version 1 Release 2.0 5.0 means ISPF for z/OS Version 1 Release 1.0 OR 5.0 means ISPF for OS/390® Version 2 Release 10.0 4.8 means ISPF for OS/390 Version 2 Release 8.0 Note: See also the system variables ZISPFOS and ZOS390RL. <ul style="list-style-type: none"> • Characters 9 to 16 contain the generic operating system name (MVS). • Characters 17 to 24 contain the operating system environment (TSO or BATCH). • Characters 25 to 32 contain blanks and are reserved.
ZEURO	shr	non	1	The EURO currency symbol.
ZGUI	shr	non	68	Workstation address or name (in character format) if ISPSTART is issued with the GUI parameter or if specified on the Settings GUI invocation panel. ZGUI will be set to blank if ISPSTART is issued without the GUI parameter or if GUI is not invoked from the Settings panel.
ZISPFOS	shr	non	30	The level of ISPF code that is running as part of z/OS on your system. This level might or might not match the z/OS level found in ZOS390RL.

System variables

Name	Pool	Type	Len	Description
ZISPFRC	shr	in	8	Return code from ISPSTART-selected dialog to invoking application.
ZKEYHELP	any	in	8	Keys help panel identifier. If a keys help panel is not specified on the referenced keylist, the application can provide the keys help panel name in this variable. If the help panel name is present as part of the referenced keylist definition, it takes precedence over the ZKEYHELP value. This system variable must be redefined each time the keys help panel is to change.
ZLANG	prof	non	8	Session language
ZLOGO	shr	non	3	Indicates whether the user has requested bypass of LOGO panel. NO indicates that the user has specified the NOLOGO keyword at the time ISPF was called, thus, requesting that the LOGO panel be bypassed. Otherwise, the value of the variable will be YES.
ZLOGON	shr	non	8	Stepname of TSO logon procedure
ZNESTMAC	any	in	2	When set to a value of NO, REXX and CLIST edit macros are not invoked as nested commands, even when the NESTMACS parameter is specified on the ISPSTART command.
ZMLPS	shr	non	3	Indicates whether the ISPF Profile Sharing feature is active. ZMLPS has a value of either YES or NO.
ZOS390RL	shr	non	16	Indicates the z/OS release running on your system.
ZPANELID	shr	non	8	The name of the currently displayed panel.
ZPFKEY	shr	non	4	The name of the PF key (PFxx) in effect when the user exits the panel. If ZPFKEY = PF00 then no PF key is in effect.
ZPLACE	prof	i/o	7	Command line placement (ASIS or BOTTOM)
ZPREFIX	shr	non	8	TSO user prefix
ZPROFAPP	prof	in	8	Name of application profile pool extension table
ZSCRCUR	shr	non	4	Displays the number of logical screens currently in use.
ZSCREENC	shr	non	5	Cursor position within the logical screen data.
ZSCREENI	shr	non	?	Logical screen data. Size depends upon your screen size.
ZSCRNAME	shr	in	8	Screen name set by dialog. The screen name is in effect only for the select level in which it was defined. Option 7.3 can alter ZSCRNAME, but this will have no impact.
ZSCRMAX	shr	non	4	Displays the number of logical screens allowed by the installation.
ZSCTPREF	shr	non	4	First site command table prefix
ZSCTPRE2	shr	non	4	Second site command table prefix
ZSCTPRE3	shr	non	4	Third site command table prefix
ZSCTSRCH	shr	non	1	Search order for site command tables relative to system command table. Set to either B (Before ISP) or A (After ISP).
ZSEQ	shr	non	5	Unique number within the sysplex.
ZSM	shr	i/o	3	Indicates whether session manager panels will be used for ISPF options 4 and 6. This variable is initialized from the ISPF configuration table keyword USE_SESSION_MANAGER at startup and stored in the shared variable pool. Once initialized it can only be changed with Option 0 - Settings or by use of the RESET_USE_SESSION_MANAGER configuration option.
ZSYSICON	shr	non	8	The 8-character variable that contains the command to be executed when the system icon is double-clicked or close is selected.

Name	Pool	Type	Len	Description
ZSYSID	shr	non	8	The 8-character SYSNAME obtained from the SYS1.PARMLIB member IEASYSxx which is read at IPL time. NONAME is the default value of SYSNAME. The operator can change this value at IPL time. See the <i>z/OS MVS Initialization and Tuning Reference</i> for more information.
ZSYSNODE	shr	non	12	The network node name of your installation's JES. This name identifies the local JES in a network of systems or system complexes being used for network job entry (NJE) tasks. The node name returned in ZSYSNODE derives from the NODE initialization statement of JES. If the system finds that the subsystem is not active, the ZSYSNODE variable contains the string --INACTIVE-- (note the string delimiters). If the system finds that the subsystem is neither JES2 4.3 or later, nor JES3 5.1.1 or later, the ZSYSNODE variable contains the string --DOWNLEVEL-- (note the string delimiters). The value in ZSYSNODE remains the same throughout the ISPF session. Note: If, for instance, the JES subsystem is taken down during an ISPF session and the node name is changed, the value in ZSYSNODE will still contain the value as determined at ISPF initialization.
ZSYSPLEX	shr	non	8	The MVS sysplex name as found in the COUPLExx or LOADxx member of SYS1.PARMLIB. If no sysplex name is specified in SYS1.PARMLIB, ZSYSPLEX contains blanks.
ZSYSPROC	shr	non	8	TSO Logon Procedure name. In foreground, will have the name of the current logon procedure; in batch, will have the value 'INIT'; a Started Task will have the Started Task procedure name.
ZTEMPF	shr	non	44	Name of temporary data set for file tailoring output
ZTEMPN	shr	non	8	DDNAME of temporary data set for file tailoring output
ZTERMCID	shr	non	5	CCSID coded character set identifier of the terminal. Set by ISPF based on the code page and character set of the terminal. If the terminal code page and character set cannot be queried or if they are not supported by ISPF, this variable will be blank.
ZTERMCP	shr	non	4	CECP support 4-digit code page. Note: ZTERMCS is defined as character length 4. It cannot handle 5-character character sets. For example, the character set 65535 is displayed in ZTERMCS as "5535". This does not mean that ISPF has defined character set 5535 (X'159F'). Two other Z variables, ZTERMCS5 and ZTERMCP5, for character set and code page respectively, were created to handle 5-character character sets and code pages. For example, the character set 65535 is displayed in ZTERMCP5 as 65535.
ZTERMCP5	shr	non	5	CECP support 5-digit code page
ZTERMCS5	shr	non	5	CECP support 5-character set
ZTERMCS	shr	non	4	CECP support 4-digit character set
ZTHS	shr	non	1	Multicultural support thousands separator character
ZTS	shr	non	1	Multicultural support time separator character
ZTSICMD	shr	non	32767	The entire initial invocation command string which invoked the ISPF environment. If storage cannot be obtained at startup, only the first 50 characters will be saved. The maximum length is 32767.
ZTSSCMD	shr	non	32767	SELECT portion of the initial invocation command. The maximum length is 32767.
ZUCTPREF	shr	non	4	First user command table name
ZUCTPRE2	shr	non	4	Second user command table name

System variables

Name	Pool	Type	Len	Description
ZUCTPRE3	shr	non	4	Third user command table name
ZUSER	shr	non	8	User ID
ZVERB	shr	out	8	Command verb after a SETVERB command table action
ZWINTTL	any	in	N/A	Title to be displayed in pop-up window frame
ZWSCDPG	shr	non	4	When running in GUI mode, the code page of the workstation. When not running in GUI mode, value will be blank.
ZWSCON	shr	non	68	TCP/IP or APPC address when ISPF session is connected to a workstation.
ZWSOPSYS	shr	non	16	Operating system of workstation to which the session is connected. The first 10 characters are the operating system name, followed by a blank, followed by two 2-digit numbers separated by a blank. These numbers are returned to ISPF from the operating system and change by version and release.

Terminal and function keys

Name	Pool	Type	Len	Description
ZCOLORS	shr	non	4	Number of colors supported by the terminal type (either 1 or 7)
ZDBCS	shr	non	3	DBCS terminal capability (YES or NO)
ZFKA	prof	non	8	Current state of the function key area form (LONG, SHORT, OFF (no display))
ZGE	shr	non	3	Terminal support for graphic escape order: YES graphic escape is supported NO graphic escape is not supported Note: If you are running in GUI mode, ZGE will be set to NO.
ZHILITE	shr	non	3	Extended highlighting availability (YES or NO)
ZIPADDR	shr	non	15	TCP/IP address of the currently connected TN3270 workstation. Entering the TERMSTAT QUERY option of the ENVIRON command will refresh the value. (Contains FFF.FFF.FFF.FFF on IPV6 systems.)
ZIPADD6	shr	non	39	IPV6 address of the currently connected TN3270 workstation. Contains blanks on IPV4 systems. Entering the TERMSTAT QUERY option of the ENVIRON command will refresh the value.
ZIPPORT	shr	non	4	TCP/IP port number of the currently connected TN3270 workstation. Entering the TERMSTAT QUERY option of the ENVIRON command will refresh the value.
ZLUNAME	shr	non	8	VTAM® LU name of the current TSO session. Entering a TERMSTAT QUERY command will refresh the value.
ZKEYS	prof	out	4	Number of Function keys
ZKLAPPL	shr	non	4	If KEYLIST is ON and it is a panel with the)PANEL statement, this contains the application id where the current keylist came from.
ZKLNAME	shr	non	8	If KEYLIST is ON and it is a panel with the)PANEL statement, this contains the name of the current keylist.
ZKLTYPE	shr	non	1	If KEYLIST is ON and it is a panel with the)PANEL statement, this contains either P (for Private) or S (for Shared) for the current keylist.
ZKLUSE	prof	i/o	1	If KEYLIST is ON this contains Y, if it is OFF, it contains an N.

Name	Pool	Type	Len	Description
ZPFCTL	prof	i/o	5	User authorization to use PFSHOW command <ul style="list-style-type: none"> • USER—User controls function key display with PFSHOW command • ON—Display function key definitions on all panels • OFF—Do not display function key definitions
ZPFFMT	prof	i/o	4	Number of Function key definitions displayed per line <ul style="list-style-type: none"> • SIX—Always display six keys per line • MAX—Display as many keys as will fit on each line
ZPFSET	prof	i/o	4	Function key definition set displayed <ul style="list-style-type: none"> • PRI—Primary set (1-12) • ALT—Alternate set (13-24) • ALL—All keys (1-24)
ZPFSHOW	prof	out	4	PFSHOW command status
ZPFxx	prof	i/o	255	Setting for Function keys: ZPF13-ZPF24 contain settings for the primary keys (for 12-key terminals: physical keys 1-12; for 24-key terminals: physical keys 13-24) ZPF01-ZPF12 contain settings for the alternate keys (for 24-key terminals only: physical keys 1-12) The maximum length is 255.
ZPFLxx	prof	i/o	8	Setting for Function key labels: ZPFL13-ZPFL24 contain labels for the primary keys ZPFL01-ZPFL12 contain labels for the alternate keys
ZPRIKEYS	prof	i/o	4	Indicates the set of Function keys that will be the primary keys <ul style="list-style-type: none"> • LOW—1 to 12 are primary keys • UPP—13 to 24 are primary keys
ZSCREEN	shr	non	1	Logical screen number up to 32 screens (1-9, A-W)
ZSCREEND	shr	non	4	Screen depth available for dialog use. In batch mode, this variable is set by the value specified for BATSCRD on the ISPSTART call.
ZSCREENW	shr	non	4	Screen width available for dialog use. In batch mode this variable is set by the value specified for BATSCRW on the ISPSTART call. ZSCREEND and ZSCREENW are generally the dimensions of the physical display screen. There are two exceptions: <ol style="list-style-type: none"> 1. On a 3290, if a dialog is executing on a display with a width of 160 characters and the user does a vertical split, then ZSCREENW is 80. 2. On a 3278 model 5, if a user has specified SCREEN FORMAT IS STD, then ZSCREENW is 80 and ZSCREEND is 24, rather than the maximum physical size of 132 by 27.
ZSCRMAXD	shr	non	4	Maximum screen depth available for dialog use. In batch mode, this variable is set by the value specified for BATSCRD on the ISPSTART call.

System variables

Name	Pool	Type	Len	Description
ZSCRMXW	shr	non	4	Maximum screen width available for dialog use. In batch mode, this variable is set by the value specified for BATSCRW on the ISPSTART call. ZSCRMXD and ZSCRMXW are identical to ZSCREEND and ZSCREENW, except for terminals on which an alternate size is available. In that case, ZSCRMXD and ZSCRMXW contain the screen configuration size that produces the largest screen. For the 3290, these variables contain sizes of the hardware partition on which ISPF is operating.
ZSPLIT	shr	non	3	Split-screen mode in effect (YES or NO)
ZSWPBR	prof	non	1	List of logical screens displayed at bottom of screen. Has a value of Y if the SWAPBAR feature is turned on. If ZSWPBAR is not present, or does not have a value of Y then when ISPF is entered, SWAPBAR is not automatically started.
ZTERM	prof	out	8	Terminal type as defined by option 0

Scrolling

Name	Pool	Type	Len	Description
ZAMT	prof	i/o	4	Scroll amount for functions such as Dialog Test, the Keylist Utility, the Command Table Utility, and the LIBDEF Utility
ZSCBR	prof	i/o	4	Scroll amount for the BROWSE service
ZSCED	prof	i/o	4	Scroll amount for the EDIT service
ZSCML	prof	i/o	4	Scroll amount for member lists
ZSCRML	shr	non	1	Specifies if ISPF should scroll to the first member selected in the member list after processing or disable the member list from automatic scrolling and instead place the cursor in front of the last member selected.
ZSCROLLA	shr	out	4	Value from scroll amount field (PAGE, MAX, number)
ZSCROLLD	any	in	4	Value to be used as default scroll value for scrollable dynamic areas and table display
ZSCROLLN	shr	out	4	Scroll number as computed from the value in the scroll amount field
ZXSMAX	shr	non	4	Maximum scroll amount allowed to be used in any scroll operation.
ZXSMIN	shr	non	4	Minimum scroll amount allowed to be used in any scroll operation.
ZUSC	prof	i/o	4	Scroll amount for the Data Set List Utility

PRINTG command

Name	Pool	Type	Len	Description
ZASPECT	func	in	4	Aspect ratio of printed output from PRINTG
ZDEVNAM	func	in	8	Device name for PRINTG
ZFAMPRT	func	non	4	Family printer type for PRINTG

Table display service

Name	Pool	Type	Len	Description
ZTDADD	func	out	3	More rows needed to satisfy scroll request (YES NO)
ZTDAMT	func	out	4	Number of rows that the dialog should add to satisfy scroll
ZTDLROWS	func	in	6	Number of rows in the logical table (dynamic table expansion)
ZTDLTOP	func	in	6	Maps current top row in physical table to its position in logical table.
ZTDMARK	any	in	See note	User-defined text for table display Bottom-of-Data marker Note: Value can be any length that is not more than the screen width.
ZTDMSG	any	in	8	User-defined message ID for table display top-row-displayed indicator
ZTDRET	func	in	8	Defines whether dialog wants to use scroll return feature.
ZTDROWS	func	out	6	Number of table rows upon return from table display
ZTDSCRIP	func	in/out	6	CRP of top row to be displayed after the scroll
ZTDSELS	func	out	4	Number of selected table rows upon return from each table display
ZTDSIZE	func	out	4	Size (number of model sets) of the table display scrollable section
ZTDSRID	func	out	6	Rowid of the row pointed to by ZTDSCRIP
ZTDTOP	func	out	6	Row number (CRP) of top row displayed during most recent table display
ZTDVROWS	func	out	6	Number of visible table rows upon return from table display

LIST service

Name	Pool	Type	Len	Description
ZLSTLPP	shr	non	4	Number of lines per page in list data set
ZLSTNUML	shr	non	4	Number of lines written to current list data set page
ZLSTTRUN	shr	non	4	List data set record length truncation value

LOG and LIST data sets

Name	Pool	Type	Len	Description
ZLOGNAME	shr	non	44	Contains the fully qualified data set name of the log data set.
ZLSTNAME	shr	non	44	Contains the fully qualified data set name of the list data set.

Dialog error

Name	Pool	Type	Len	Description
ZERRALRM	func	out	3	Message alarm indicator (YES or NO)
ZERRHM	func	out	8	Name of help panel associated with error message
ZERRLM	func	out	512	Long error message text
ZERRMSG	func	out	8	Error message-id
ZERRSM	func	out	24	Short error message text
ZERRTYPE	func	out	8	Error message type
ZERRWIND	func	out	6	Error message window type

Tutorial panels

Name	Description
ZCONT	Name of next continuation panel
ZHINDEX	Name of first index panel
ZHTOP	Name of top panel
ZIND	YES specifies an index page
ZUP	Name of parent panel

Selection panels

Name	Description
ZCMD	Command input field
ZPARENT	Parent menu name (when in <i>explicit chain mode</i>)
ZPRIM	YES specifies panel is a primary option menu
ZSEL	Command input field truncated at first period

DTL panels or panels containing a)PANEL section

Name	Pool	Type	Len	Description
ZCURFLD	func	out	8	Name of field (or list column) containing the cursor when the user exits the panel.
ZCURINX	func	out	8	For table display panels, the current row number of the table row containing the cursor. The value ZCURINX is in character format. If the cursor is not within a table row, this value will be 0.
ZCURPOS	func	out	4	Position of the cursor within the field specified by ZCURFLD when the user exits the panel. The value in ZCURPOS is in character format. If the cursor is not within a field, ZCURPOS will contain a 1.

Note: These variables will contain the values that would result if they were set to .CURSOR, .CSRPOS, and .CSRROW, as the first statements in the panel's)PROC section.

Chapter 7. Dialog variables

This topic describes the ISPF dialog variables.

The following table lists the dialog function pool variables that are both read from and written to by several of the PDF library access services. For details of function pool variables written by other services, refer to the *z/OS ISPF Services Guide*.

The variables are listed in alphabetical order. The first column lists the variable name. The second column indicates the variable's type, which corresponds to the format parameter of the ISPF VDEFINE service. The third column specifies the variable's length, which corresponds to the length parameter of the VDEFINE service.

The fourth column lists the PDF services that either read from or write to the variable. An R in parentheses (R) after a service name indicates that the service, when called, reads from the given variable. A W in parentheses (W) after a service name indicates that the service, when called, writes to the given variable. All variables are available to a dialog unless otherwise indicated.

The last column contains a brief description of the contents of the variable and any restrictions on the value of the variable.

Dialog variables

Variable Name	Format	Length	Service (Access)	Description
ZCMD	Char	256	LMMDISP(W)	Primary Command field from member list panel if the command is not a valid ISPF or PDF primary command.
ZDLBLKSZ	Char	5	LMDLIST(W)	Block size.
ZDLCATNM	Char	44	LMDLIST(W)	Name of the catalog in which the data set was located.
ZDLCDATE	Char	10	LMDLIST(W)	Creation date.
ZDLDEV	Char	8	LMDLIST(W)	Device type.
ZDLDSNTP	Char	8	LMDLIST(W)	DS name type ('PDS', 'LIBRARY', or ' ').
ZDLDSORG	Char	4	LMDLIST(W)	Data set organization.
ZDLEDATE	Char	10	LMDLIST(W)	Expiration date.
ZDLEXT	Char	3	LMDLIST(W)	Number of extents used.
ZDLEXTX	Char	5	LMDLIST(W)	Number of extents used (long format).
ZDLLRECL	Char	5	LMDLIST(W)	Logical record length.
ZDLMIGR	Char	3	LMDLIST(W)	Whether the data set is migrated (YES or NO).
ZDLMVOL	Char	1	LMDLIST(W)	Multivolume indicator (Y or N).
ZDLOVF	Char	3	LMDLIST(W)	Whether variables ZDLEXTX and ZDLSIZEX are used (YES or NO).
ZDLRDATE	Char	10	LMDLIST(W)	Date last referenced.
ZDLRECFM	Char	5	LMDLIST(W)	Record format.
ZDLSIZE	Char	6	LMDLIST(W)	Data set size in tracks.
ZDLSIZEX	Char	12	LMDLIST(W)	Data set size in tracks (long format).
ZDLSPACU	Char	10	LMDLIST(W)	Space units, one of the following: CYLINDERS, MEGABYTES, KILOBYTES, BYTES, BLOCKS or TRACKS.
ZDLUSED	Char	3	LMDLIST(W)	Percentage of used tracks or pages (PDSE).
ZDLVOL	Char	6	LMDLIST(W)	Volume serial.
ZDSN	Char	44	LMMDISP(W)	Name of the first or only data set in the concatenation of the member list being displayed. This variable is only available for member list panels.
ZDST	Char	54	BRIF (W) EDIF (W)	Title line data name for EDIF and BRIF.
ZEDBDSN	Char	44	EDIT (R) EDREC(W)	Backup data set name for standard edit recovery.
ZEDILMSG	Char	240	Any Edit macro	Long message text. Corresponds to the first 240 bytes of the message that would be displayed if the command were entered from the command line instead of within an edit macro.
ZEDISMSG	Char	24	Any Edit macro	Short message text. Corresponds to the short message that would be displayed if the command were entered from the command line instead of within an edit macro.
ZEDITCMD	Char	8	Any Edit macro	The last primary command entered in Edit.
ZEDMSGNO	Char	8	Any Edit macro	Message ID. Corresponds to the message that would be displayed if the command were entered from the command line instead of within an edit macro.

Variable Name	Format	Length	Service (Access)	Description
ZEDROW	Fixed	4	EDIT (R) EDREC(W)	Row number of entry in standard edit recovery table.
ZEDSAVE	Char	8	Data_changed EDIT macro command	END command will save data (SAVE or NOSAVE).
ZEDTDSN	Char	44	EDIT (R) EDREC(W)	Target data set name for standard edit recovery.
ZEDTMCMD	Char	8	Any Edit macro	The edit command entered that caused an edit macro to run. Can be the macro name or other name is the edit DEFINE command was used to define an alias.
ZEDTMEM	Char	8	EDIT (R) EDREC(W)	Target member name (if applicable) for standard edit recovery.
ZEDTRD	Char	6	EDIT (R) EDREC(W)	Volume serial of target data set for standard edit recovery.
ZEDUSER	Char	¹	EDIT (R) EDREC(W)	User data table extension for standard edit recovery.
ZEIBSDN	Char	54	EDIF (R) EDIREC(W)	Backup data name for EDIF edit recovery.
ZEIROW	Fixed	4	EDIF (R) EDIREC(W)	Row number of entry in EDIF edit recovery table.
ZEITDSN	Char	54	EDIF (R) EDIREC(W)	Target data name for EDIF edit recovery.
ZEIUSER	Char	¹	EDIF (R) EDIREC(W)	User data table extension variable for EDIF edit recovery.
ZERRALRM	Char	3	ALL(W)	The value YES if an alarm was specified in the message definition; otherwise, the value NO. Set when ISPF services issue a return code of 8 or greater.
ZERRHM	Char	8	ALL(W)	The name of a Help panel, if one was specified in the message definition. Set when ISPF services issue a return code of 8 or greater.
ZERRLM	Char	512	ALL(W)	Long-message text in which variables have been resolved. Set when ISPF services issue a return code of 8 or greater.
ZERRMSG	Char	8	ALL(W)	Message ID. Set when ISPF services issue a return code of 8 or greater.
ZERRSM	Char	24	ALL(W)	Short-message text in which variables have been resolved. Set when ISPF services issue a return code of 8 or greater.
ZGRPLVL	Char	8	LMHIER (W)	ISPF table variable that contains the level of this ISPF library in the controlled hierarchy.
ZGRPNME	Char	8	LMHIER (W)	ISPF table variable that contains the ISPF library group name.
ZLAC	Char	2	LMMDISP(W) LMMFIND(W) LMMLIST(W)	Authorization code of the member.
ZLALIAS	Char	8	LMMDISP(W) LMMFIND(W) LMMLIST(W)	Name of the real member of which this member is an alias.
ZLAMODE	Char	3	LMMDISP(W) LMMFIND(W) LMMLIST(W)	AMODE of the member.

Dialog variables

Variable Name	Format	Length	Service (Access)	Description
ZLATTR	Char	20	LMMDISP(W) LMMFIND(W) LMMLIST(W)	Load module attributes. See the <i>z/OS ISPF Services Guide</i> .
ZLCDATE	Char	8	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(R)	Date on which the specified member was created. A character string in the national format. For example, yy/mm/dd or mm/dd/yy. If no value exists for this variable, the PDF component will set the value to blanks.
ZLC4DATE	Char	10	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(W)	Date on which the specified member was created, in 4-character year format. A character string in the national format. For example, yyyy/mm/dd or mm/dd/yyyy. If no value exists for this variable, the PDF component will set the value to blanks.
ZLCNORC	Fixed	4	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(R)	Current number of records in the specified member. A number from 0 to 65 535. If no value exists for this variable, the PDF component will set the value to blanks.
ZLINORC	Fixed	4	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(R)	Number of records in the specified member when it was first created. A number from 0 to 65 535.
ZLLIB	Fixed	4	LMMDISP(W) LMMFIND(W) LMMLIST(W)	Position of the specified member in the concatenated data sets. A number from 1 to 4.
ZLMDATE	Char	8	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(R)	Date on which the specified member was last modified. A character string in the national format. (For example, yy/mm/dd or mm/dd/yy.) If no value exists for this variable, the PDF component will set the value to blanks.
ZLM4DATE	Char	10	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(W)	Date on which the specified member was last modified, in 4-character year format. A character string in the national format. (For example, yyyy/mm/dd or mm/dd/yyyy.) If no value exists for this variable, the PDF component will set the value to blanks.
ZLMEMBER	Char	8	LMMDISP(W)	Name of the current selected member.
ZLMNORC	Fixed	4	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(R)	The number of records that have been modified in the specified member. A number from 0 to 65 535.
ZLMOD	Fixed	4	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(R)	Modification level of the specified member. A number from 0 to 99.
ZLMTIME	Char	5	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(R)	Time when the specified member was last modified. A character string in the form hh:mm.

Variable Name	Format	Length	Service (Access)	Description
ZLMSEC	Char	2	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(R)	Seconds value of last modified time.
ZLSSI	Char	8	LMMDISP(W) LMMFIND(W) LMMLIST(W)	SSI (System Status Index) of the load module.
ZLPDSUDA	Char	62	LMMDISP(W)	A character string containing the contents of the user data area in the PDS directory entry of the specified member if the member's statistics are not in PDF format.
ZLRMODE	Char	3	LMMDISP(W) LMMFIND(W) LMMLIST(W)	RMODE of the member.
ZLSIZE	Char	8	LMMDISP(W) LMMFIND(W) LMMLIST(W)	Load module size (in Hex).
ZLTTR	Char	6	LMMDISP(W) LMMFIND(W) LMMLIST(W)	TTR of the member.
ZLUSER	Char	7	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(R)	User ID of user who last modified the specified member.
ZLVERS	Fixed	4	LMMADD(R) LMMDISP(W) LMMFIND(W) LMMLIST(W) LMMREP(R)	Version number of the specified member. A number from 1 to 99. If no value exists for this variable, the PDF component will set the value to blanks.
ZMEMCNT	Char	8	LMMLIST(W)	Number of members in the member list.
ZMLCOLS	Char	80	LMMDISP(W)	A character string that contains the member statistics column headings that appear on the member list panel display. This variable is only available for member list panels.
ZMLCR	Fixed	4	LMMDISP(W)	The relative number in the member list of the member that appears at the top of the member list display. Its range is from 1-99 999. This variable is only available for member list panels.
ZMLTR	Fixed	4	LMMDISP(W)	Number of members in the member list. Its range is from 1-99 999. This variable is only available for member list panels.
ZMSRTFLD	Char	8	ALL(W)	Contains the field name used to sort a member list. Field name corresponds to the title line used in member list panels, with the exceptions of the 'VV MM' field which is returned as VVMM, and the attributes field which is returned as ATTRIBUT.
ZSCALIAS	Char	1	LMINIT(W)	Data set name is an alias ('Y' or 'N').
ZSCLM	Char	1	LMMDISP(W) LMMFIND(W) LMMLIST(W)	Last updater of member. 'Y' indicates SCLM was last updater. 'N' indicates PDF.

Dialog variables

Variable Name	Format	Length	Service (Access)	Description
ZSCMVOL	Char	1	LINIT(W)	Data set name is multivolume ('Y' or 'N').
ZUSERMAC	Char	8	EDIT(R) EDIF(R) VIEW(R) VIIF(R)	Application-wide edit macro.

1. Length limited only by ISPF restrictions on the length of table extension variables.

PDF non-modifiable variables

The following read-only variables are available to PDF component dialogs:

Variable Name	Format	Length	Service (Access)	Description
ZCUNIT	Char	8	none	Unit name to be used for temporary allocations. This variable comes from ISPF configuration table keyword PDF_DEFAULT_UNIT.
ZCUSIZE	Fixed	4	none	Number of kilobytes available for use by the edit UNDO command when running in SETUNDO STORAGE mode. This variable comes from ISPF configuration table Keyword UNDO_STORAGE_SIZE. See <i>z/OS ISPF Edit and Edit Macros</i> for further information.
ZICFPRT	Char	3	none	ICF indicator. 'YES' - All foreground print requests will be processed using ICF. 'NO' - ICF will not be used. This variable comes from ISPF configuration table keyword PRINT_USING_ICF.
ZPDFREL	Char	8	none	PDF version number in the form "PDF x.y ". The x.y is a sequence number. If x.y: <ul style="list-style-type: none"> • <= 4.2 means the x.y version.release of PDF • = 4.3 means ISPF for OS/390 Release 2 • = 4.4 means PDF 4.2.1 and ISPF OS/390 Release 3
ZSESS	Char	8	none	This variable contains either 'Y' or 'N' and comes from the ISPF configuration table keyword USE_SESSION_MANAGER. See the description of the general system variable ZSM for additional information.
ZSWIND	Char	4	none	Sliding window value used by PDF for determining the century of 2-character years. This variable comes from ISPF configuration table keyword YEAR_2000_SLIDING_RULE. Dates less than or equal to this value are 20xx. Dates greater than this value are 19xx.

Dialog variables

Chapter 8. Dialog Tag Language (DTL) tags

The following table is an alphabetic summary of the supported Dialog Tag Language (DTL) tags for z/OS V1R13.0 ISPF. The table shows the tag, tells whether an end tag is required (Yes) or optional (No), and lists the tag's attributes (if any) and the tag content (if any) in italics. The table also lists which tags you can nest within the tag, as well as which tags you can code the tag within.

Table 1. Tag summary

Tag	End tag	Attributes	Nested tags	Used within
AB	Yes	MNEMGEN= <u>YES</u> NO ABSEPSTR= <i>ab-separator-string</i> ABSEPCHAR= <i>ab-separator-character</i>	ABC	PANEL
ABC	No	HELP= <u>NO</u> YES <i>help-panel-name</i> <i>*help-message-id</i> %varname *%varname PDCVAR= <i>pdc-variable-name</i> <i>choice-description-text</i>	COMMENT M PDC PDSEP SOURCE	AB
ACTION	No	RUN= <i>internal-command-name</i> %varname PARM= <i>parameters</i> %varname APPLCMD= <u>NO</u> YES TYPE= <u>CMD</u> PGM PANEL WSCMD WSCMDV EXIT NEWAPPL NEWAPPL= <i>application-id</i> NEWWINDOW PASSLIB NEWPOOL SUSPEND SCRNAME= <i>screen-name</i> NOCHECK ADDPOP OPT= <i>option</i> %varname MODE= <u>LINE</u> FSCR LANG= <u>APL</u> CREX BARRIER NEST WSDIR= <i>ws-directory</i> WSINVOKE= <u>MODELESS</u> MODAL WSSIZE= <u>MAX</u> MIN WSVIEW= <u>VIS</u> INVIS SETVAR= <i>variable-name</i> VALUE= <u>1</u> <i>string</i> %varname TOGVAR= <i>variable-name</i> VALUE1= <u>0</u> <i>string</i> %varname VALUE2= <u>1</u> <i>string</i> %varname		CHOICE PDC

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
AREA	Yes	MARGINW= <u>1</u> n MARGIND= <u>0</u> INDENT=n DEPTH=n * EXTEND=OFF ON FORCE DIV= <u>NONE</u> BLANK SOLID DASH TEXT DIVWIDTH= <u>MAX</u> MIN FORMAT= <u>START</u> CENTER END TEXT=divider-text WIDTH=n DIR= <u>VERT</u> HORIZ	COMMENT DA DIVIDER DTACOL DTAFLD GA GENERATE GRPHDR INFO LSTFLD PNLINST REGION SELFLD SOURCE	HELP PANEL
ASSIGNI	No	VALUE=test-value RESULT=assigned-value		ASSIGNL
ASSIGNL	Yes	DESTVAR=destination-variable-name	ASSIGNI	DTAFLD
ATTENTION	Yes	<i>text</i>	DL FIG HP LINES NOTE NOTEL NT OL P PARML PS RP SL UL XMP	LI LP P
ATTR	No	ATTRCHAR=code TYPE=DATAIN DATAOUT CHAR INTENS= <u>HIGH</u> LOW NON %varname CAPS=OFF ON IN OUT %varname JUST=ASIS LEFT RIGHT %varname PAD=NULLS USER char %varname PADC=NULLS USER char %varname SKIP=OFF ON %varname GE=OFF ON %varname COLOR=WHITE RED BLUE GREEN PINK YELLOW TURQ %varname HILITE=USCORE BLINK REVERSE %varname NUMERIC=OFF ON %varname FORMAT=EBCDIC DBCS MIX %varname OUTLINE= <u>NONE</u> L R O U BOX %varname PAS=OFF ON %varname CKBOX=OFF ON %varname CUADYN=CEF EE LEF NEF VOI LID LI CH CT DT ET FP NT PIN PT SAC SI SUC WASL WT %varname CSRGRP=NO YES n ATTN=OFF ON %varname		DA

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
BOTINST	No	COMPACT <i>instruction-text</i>	HP PS RP	PANEL
CAUTION	Yes	<i>text</i>	DL FIG HP LINES NOTE NOTEL NT OL P PARML PS RP SL UL XMP	LI LP P
CHDIV	No	TYPE= <u>NONE</u> SOLID DASH TEXT GUTTER= <u>1</u> n FORMAT= <u>START</u> CENTER END <i>divider-text</i>	HP	SELFLD CHOICE

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
CHECKI	No	TYPE= RANGE PARM1=low-bound %varname PARM2=high-bound %varname ALPHA CHARS PARM1=EQ PARM2=character-set VALUES PARM1=EQ PARM2=value-list VALUESX PARM1=NE PARM2=value-list BIT NAME NAMEF PICT PARM1=EQ PARM2=pictstring PICTCN PARM1=mask-character PARM2=field-mask PARM3=string NUM DBCS LISTV PARM1=EQ PARM2=%varlist LISTVX PARM1=NE PARM2=%varlist ALPHAB LEN PARM1=operator %varname PARM2=length %varname EBCDIC ENUM DSNAME DSNAMEF DSNAMEFM DSNAMEPQ DSNAMEQ MIX HEX FILEID INCLUDE PARM1=IMBLK PARM2=ALPHA ALPHAB NUM PARM3=ALPHA ALPHAB NUM IDATE STDDATE JDATE JSTD ITIME STDTIME IPADDR4		CHECKL

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
CHECKL	Yes	MSG=message-identifier	CHECKI	VARCLASS
CHOFLD	No	DATAVAR=field-data VARCLASS=variable-class-name HELP=NO YES help-panel-name *help-message-id %varname *%varname USAGE=BOTH IN OUT REQUIRED=NO YES MSG=message-identifier AUTOTAB=NO YES ENTWIDTH=n FLDSPACE=n ALIGN=START CENTER END DISPLAY=YES NO NOENDATTR PAD=NULLS USER char %varname PADC=NULLS USER char %varname OUTLINE=NONE L R O U BOX %varname PSVAR=point-and-shoot-variable %varname PSVAL=point-and-shoot-value %varname PAS=%varname EXPAND ATTRCHANGE=NO YES NEW INIT=initial-value IMAPNAME=image-name %varname IMAPNAMEP=image-namep %varname PLACE=ABOVE BELOW LEFT RIGHT %varname ATTRCHAR=code CAPS=OFF ON <i>choice-description-text</i>	ACTION COMMENT HP PS RP SOURCE	CHOICE
CHOICE	No	NAME=choice-name HELP=NO YES help-panel-name *help-message-id %varname *%varname CHECKVAR=variable-name MATCH=1 string NOMATCH=0 string AUTOTAB=YES NO SELCHAR='char(s),n' PAD=NULLS USER char %varname PADC=NULLS USER char %varname OUTLINE=NONE L R O U BOX %varname HIDE HIDEX UNAVAIL=variable-name UNAVAILMAT=1 string TRUNC=n AUTOSEL=YES NO <i>choice-description-text</i>	ACTION CHOFLD COMMENT HP PS RP SOURCE	SELFLD
CMD	No	NAME=internal-command-name ALTDESCR=command-description <i>external-command-name</i>	CMDACT T	CMDTBL

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
CMDACT	No	ACTION= 'SELECT=select-parameters' 'ALIAS=internal-command-name parameters' PASSTHRU SETVERB BACKWARD CANCEL EXIT EXHELP FKA FORWARD HELP PANELID RETRIEVE %varname application-command ASIS		CMD
CMDAREA	No	HELP= <u>NO</u> YES help-panel-name *help-message-id %varname *%varname PMTLOC= <u>BEFORE</u> NOINIT PAD=NULLS USER char %varname PADC=NULLS USER char %varname OUTLINE= <u>NONE</u> L R O U BOX %varname NAME=cmdarea-variable-name ENTWIDTH=n PMTTEXT= <u>YES</u> NO CMDLOC= <u>DEFAULT</u> ASIS CMDLEN= <u>DEFAULT</u> MAX AUTOTAB= <u>NO</u> YES SCROLLVAR=scroll-variable SCRVHELP= <u>NO</u> YES scroll-help-panel-name *scroll-help-message-id %varname *%varname SCROLLTAB= <u>NO</u> YES SCRCAPS= <u>OFF</u> ON PSBUTTON=cmd-pb-text PSVAR=point-and-shoot-variable %varname PSVAL=point-and-shoot-value %varname IMAPNAME=image-name %varname IMAPNAMEP=image-namep %varname PLACE= <u>ABOVE</u> BELOW LEFT RIGHT %varname CAPS= <u>OFF</u> ON NOJUMP= <u>OFF</u> ON VARDCL= <u>YES</u> NO command-prompt-text	HP	PANEL
CMDTBL	Yes	APPLID=application-identifier SORT= <u>NO</u> YES	CMD	

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
COMMENT	No	TYPE=END CCSID PANEL ATTR ABCINIT ABCPROC INIT REINIT PROC HELP PNTS LIST <i>comment-text</i>		ABC AREA CHOICE DA DTACOL DTAFLD HELP LSTCOL LSTFLD LSTGRP MSGMBR PANEL PDC REGION SELFLD
COMPOPT	No	REPLACE NOREPLACE SCREEN DISK NODBCS DBCS NOKANA KANA KEYLAPPL=xxxx NOPANEL PANEL NOMSGSUPP MSGSUPP NOCUASUPP CUASUPP PREP NOPREP CUAATTR NOCUAATTR NOLSTVIEW LSTVIEW STATS NOSTATS NOSCRIP SCRIPT NOLISTING LISTING NOFORMAT FORMAT NOMSGEXPAND MSGEXPAND LOGREPL NOLOGREPL LISTREPL NOLISTREPL ACTBAR NOACTBAR GUI NOGUI VERSION NOVERSION NOMERGESAREA MERGESAREA NODISPLAY DISPLAY NODISPLAYW DISPLAYW DSNCHK NODSNCHK GRAPHIC NOGRAPHIC ZVARS NOZVARS NODBALIGN DBALIGN NOMCOMMENT MCOMMENT NOVPADC PADC ADD RESET <i>national-language</i>	None	
COPYR	No	<i>copyright-text</i>		

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
DA	Yes	NAME= <u>varname</u> EXTEND= <u>OFF</u> ON FORCE LVLIN <u>E</u> = <u>variable-name</u> SCROLL= <u>OFF</u> ON CMDLINE USERMOD= <u>usermod-code</u> %varname DATAMOD= <u>datamod-code</u> %varname DEPTH= <u>n</u> * WIDTH= <u>n</u> SHADOW= <u>shadow-name</u> DIV= <u>NONE</u> BLANK SOLID DASH TEXT FORMAT= <u>START</u> CENTER END TEXT= <u>divider-text</u> SCROLLVAR= <u>scroll-variable</u> SCR <small>V</small> HELP= <u>NO</u> YES <u>scroll-help-panel-name</u> * <u>scroll-help-message-id</u> %varname *%varname SCROLLTAB= <u>NO</u> YES SCRCAPS= <u>OFF</u> ON INITATTR= <u>NT</u> CT ET WT WASL HELP= <u>NO</u> YES <u>help-panel-name</u> * <u>help-message-id</u> %varname *%varname	ATTR COMMENT SOURCE	AREA PANEL REGION
DD	No	<i>definition-description</i>	DL FIG HP LINES NOTE NOTEL NT OL P PARML PS RP SL UL XMP	DL
DDHD	No	<i>definition-description-header</i>	HP PS RP	DL
DIVIDER	No	TYPE= <u>NONE</u> SOLID DASH TEXT GAP= <u>YES</u> NO GUTTER= <u>1</u> n NOENDATTR FORMAT= <u>START</u> CENTER END <i>divider-text</i>	HP	AREA DTACOL PANEL REGION

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
DL	Yes	TSIZE= <u>10</u> 'S1, S2,... Sn' BREAK= <u>NONE</u> FIT ALL COMPACT NOSKIP INDENT= <u>n</u> FORMAT= <u>START</u> CENTER END DIVEND= <u>NO</u> YES SPLIT= <u>NO</u> YES	DD DDHD DLDIV DT DTHD DTDIV DTHDIV	ATTENTION CAUTION DD FIG INFO LI LINES LP NT PD WARNING XMP
DLDIV	No	TYPE= <u>NONE</u> SOLID DASH TEXT GAP= <u>YES</u> NO GUTTER= <u>1</u> n FORMAT= <u>START</u> CENTER END <i>divider-text</i>	HP	DL
DT	No	FORMAT= <u>START</u> CENTER END NOSKIP SPLIT= <u>NO</u> YES <i>definition-term</i>	DTSEG HP PS RP	DL
DTACOL	Yes	PMTWIDTH= <u>n</u> * ** ENTWIDTH= <u>n</u> DESWIDTH= <u>n</u> * SELWIDTH= <u>n</u> * FLDSPACE= <u>n</u> PAD=NULLS USER char %varname PADC=NULLS USER char %varname OUTLINE= <u>NONE</u> L R O U BOX %varname PMTFMT= <u>CUA</u> ISPF NONE END AUTOTAB= <u>NO</u> YES ATTRCHANGE= <u>NO</u> YES NEW PMTLOC= <u>BEFORE</u> ABOVE DBALIGN= <u>YES</u> NO PROMPT FIELD FORCE VARCLASS= <u>variable-class-name</u> REQUIRED= <u>NO</u> YES CAPS= <u>OFF</u> ON VARDCL= <u>YES</u> NO	COMMENT DIVIDER DTAFLD GRPHDR SELFLD SOURCE	AREA PANEL REGION

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
DTAFLD	No	NAME=field-name DATAVAR=field-data VARCLASS=variable-class-name HELP= <u>NO</u> YES help-panel-name *help-message-id %varname *%varname USAGE= <u>BOTH</u> IN OUT REQUIRED= <u>NO</u> YES MSG=message-identifier AUTOTAB= <u>NO</u> YES ENTWIDTH=n PMTWIDTH=n * ** DESWIDTH=n * FLDSPACE=n ALIGN= <u>START</u> CENTER END PMTLOC= <u>BEFORE</u> ABOVE DISPLAY= <u>YES</u> NO NOENDATTR PAD=NULLS USER char %varname PADC=NULLS USER char %varname OUTLINE= <u>NONE</u> L R O U BOX %varname PMTFMT= <u>CUA</u> ISPF NONE END PSVAR=point-and-shoot-variable %varname PSVAL=point-and-shoot-value %varname PAS=%varname CSRGRP= <u>NO</u> YES n EXPAND FLDWIDTH=n ATTRCHANGE= <u>NO</u> YES NEW INIT=initial-value DEPTH=n %varname IMAPNAME=image-name %varname IMAPNAMEP=image-namep %varname PLACE= <u>ABOVE</u> BELOW LEFT RIGHT %varname DBALIGN= <u>YES</u> NO PROMPT FIELD FORCE PMTSKIP= <u>NO</u> YES DESSKIP= <u>NO</u> YES FLDTYPE= <u>CUA</u> ISPF COLOR= <u>WHITE</u> RED BLUE GREEN PINK YELLOW TURQ %varname INTENS= <u>HIGH</u> LOW NON %varname HILITE= <u>SCORE</u> BLINK REVERSE %varname ATTRCHAR=code CAPS= <u>OFF</u> ON NOJUMP= <u>OFF</u> ON AUTOTYPE= <u>PROJECT</u> GROUP1 GROUP2 GROUP3 GROUP4 TYPE MEMBER DSN AUTOVOL=volser-name AUTODMEM= <u>YES</u> NO VARDCL= <u>YES</u> NO <i>prompt-text</i>	ASSIGNL COMMENT DTAFLDD HP PS RP SOURCE SCRFLD	AREA DTACOL PANEL REGION
DTAFLDD	No	<i>description</i>	HP PS RP	DTAFLD
DTDIV	No			DL

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
DTHD	No	<i>definition-term-header</i>	HP PS RP	DL
DTHDIV	No			DL
DTSEG	No			DT
FIG	Yes	FRAME= <u>RULE</u> NONE WIDTH= <u>PAGE</u> COL NOSKIP <i>figure-content</i>	DL FIGCAP HP NOTE NOTEL NT OL P PARML PS RP SL UL XMP	ATTENTION CAUTION DD INFO LI LP NT PD WARNING
FIGCAP	No	<i>figure-caption-text</i>	HP PS RP	FIG
GA	No	NAME=graphic-area-name EXTEND= <u>OFF</u> ON FORCE DEPTH= <u>n</u> * WIDTH= <u>n</u> DIV= <u>NONE</u> BLANK SOLID DASH TEXT FORMAT= <u>START</u> CENTER END TEXT=divider-text LVLIN=variable-name		AREA PANEL REGION
GENERATE	Yes	SUBSTITUTE= <u>NO</u> YES	ATTR COMMENT SOURCE	AREA HELP PANEL REGION
GRPHDR	No	FORMAT= <u>START</u> CENTER END NONE WIDTH= <u>n</u> FMTWIDTH= <u>n</u> INDENT= <u>n</u> HEADLINE= <u>NO</u> YES DIV= <u>NONE</u> BLANK SOLID DASH DIVLOC= <u>AFTER</u> BEFORE BOTH COMPACT STRIP <i>group-heading-text</i>	HP PS RP	AREA DTACOL PANEL REGION

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
HELP	Yes	NAME=help-panel-name HELP=hhhelp-panel-name %varname HELPDEF=helpdef-id WIDTH=50 n FIT DEPTH=10 n FIT CCSID=n TUTOR KEYLIST=key-list-name KEYLTYPE=PRIVATE SHARED APPLID=application-id EXPAND=xy WINTITLE=window-title APPTITLE=application-title MERGESAREA=NO YES MSGLINE=YES NO IMAPNAME=image-name %varname IMAPROW=n %varname IMAPCOL=n %varname ZUP=zup-id ZCONT=zcont-id <i>help-panel-title</i>	AREA COMMENT DIVIDER GENERATE HP INFO REGION SOURCE TEXTLINE	
HELPDEF	No	ID=helpdef-id HELP=hhhelp-panel-name %varname WIDTH=n FIT DEPTH=n FIT CCSID=n KEYLIST=key-list-name KEYLTYPE=PRIVATE SHARED APPLID=application-id EXPAND=xy WINTITLE=window-title APPTITLE=application-title MERGESAREA=NO YES IMAPNAME=image-name %varname IMAPROW=n %varname IMAPCOL=n %varname		
H1	No	COMPACT <i>heading-text</i>		INFO
H2/H3/H4	No	COMPACT <i>heading-text</i>	HP PS RP	INFO

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
HP	Yes	TYPE=ET CH CT FP LEF LI NT PT SAC TEXT WASL WT COLOR=WHITE RED BLUE GREEN PINK YELLOW TURQ %varname INTENS=HIGH LOW NON %varname HILITE=USCORE BLINK REVERSE %varname INTENSE=varname <i>phrase-to-be-highlighted</i>		ATTENTION BOTINST CAUTION CHDIV CHOICE CMDAREA DD DDHD DIVIDER DT DTAFLD DTAFLDD DTHD FIG FIGCAP GRPHDR H2 H3 H4 HELP LI LINES LP LSTCOL LSTGRP NOTE NT P PANEL PD PNLINST PT SELFLD TOPINST WARNING XMP
INFO	Yes	WIDTH=format-width * INDENT=n	DIVIDER DL FIG Hn LINES NOTE NOTEL NT OL P PARML SL SOURCE UL XMP	AREA HELP PANEL REGION
KEYI	No	KEY=virtual-key CMD=internal-command-name CASE=UPPER MIXED FKA=NO YES LONG SHORT PARM=parm-string <i>FKA-text</i>		KEYL

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
KEYL	Yes	NAME=key-list-name HELP=help-panel-name ACTION= <u>UPDATE</u> DELETE APPLID=application-id	KEYI	
LI	No	SPACE= <u>NO</u> YES NOSKIP <i>item-text</i>	ATTENTION CAUTION DL FIG HP LINES NOTE NOTEL NT OL P PARML PS RP SL UL WARNING XMP	NOTEL OL SL UL
LINES	Yes	NOSKIP <i>text</i>	DL HP NOTE NOTEL NT OL P PARML PS RP SL UL XMP	ATTENTION CAUTION DD INFO LI LP NT PD WARNING
LIT	Yes	<i>literal-display-value</i>		XLATI
LP	No	NOSKIP <i>implied-paragraph</i>	ATTENTION CAUTION DL FIG HP LINES NOTE NOTEL NT OL P PARML PS RP SL UL WARNING XMP	NOTEL OL SL UL

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
LSTCOL	No	DATAVAR=column-data VARCLASS=variable-class-name HELP= <u>NO</u> YES help-panel-name * help-message-id %varname *%varname USAGE= <u>BOTH</u> IN OUT REQUIRED= <u>NO</u> YES MSG=message-id COLWIDTH=data-width ALIGN= <u>START</u> CENTER END AUTOTAB= <u>NO</u> YES LINE=n CLEAR POSITION=n FORMAT= <u>START</u> CENTER END TEXT=descriptive-text TEXTLOC= <u>BEFORE</u> AFTER TEXTFMT= <u>START</u> CENTER END TEXTLEN=n TEXTSKIP= <u>NO</u> YES NOENDATTR PAD=NULLS USER char %varname PADC=NULLS USER char %varname OUTLINE= <u>NONE</u> L R O U BOX %varname PAS= <u>OFF</u> ON %varname CSRGRP= <u>NO</u> YES n ATTRCHANGE= <u>NO</u> YES NEW COLSPACE=n COLTYPE= <u>CUA</u> ISPF EE VOI LID COLOR= <u>WHITE</u> RED BLUE GREEN PINK YELLOW TURQ %varname INTENS= <u>HIGH</u> LOW NON %varname HILITE= <u>USCORE</u> BLINK REVERSE %varname CAPS= <u>OFF</u> ON DISPLAY= <u>YES</u> NO VARDCL= <u>YES</u> NO <i>column-heading</i>	COMMENT HP PS RP SOURCE SCRFLD	LSTFLD LSTGRP
LSTFLD	Yes	RULES= <u>NONE</u> HORIZ VERT BOTH ROWS= <u>NOSCAN</u> SCAN %varname DIV= <u>NONE</u> BLANK SOLID DASH char SCROLLVAR=scroll-variable SCRHELP= <u>NO</u> YES scroll-help-panel-name *scroll-help-message-id %varname *%varname SCROLLTAB= <u>NO</u> YES SCRCAPS= <u>OFF</u> ON ATTRCHANGE= <u>NO</u> YES NEW VARDCL= <u>YES</u> NO	COMMENT LSTCOL LSTGRP LSTVAR SOURCE	AREA PANEL REGION
LSTGRP	Yes	HEADLINE= <u>NO</u> YES DASH ALIGN= <u>CENTER</u> START END <i>column-group-heading</i>	COMMENT HP LSTCOL LSTGRP LSTVAR PS RP SOURCE	LSTFLD LSTGRP

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
LSTVAR	No	DATAVAR=variable-model-name LINE=n <i>column-heading</i>	COMMENT HP PS RP SOURCE	LSTFLD LSTGRP
M	No	<i>mnemonic-character</i>		ABC PDC
MSG	No	SUFFIX=message-suffix-number HELP=help-panel-name %varname * MSGTYPE=INFO WARNING ACTION CRITICAL %varname LOCATION=AREA MODAL MODAL(L) MODELESS MODELESS (L) %varname DISP=KANA NOKANA ALARM=NO YES %varname ABBREV=NONE KEYWORD VALUE BOTH FORMAT=FLOW ASIS SMSG=short-message-text <i>message-text</i>	VARSUB	MSGMBR
MSGMBR	Yes	NAME=message-member-name CCSID=n WIDTH=76 68	COMMENT MSG	
NOTE	No	NOSKIP INDENT=n TYPE=ET CH CT FP LEF LI NT PT SAC TEXT WASL WT COLOR=WHITE RED BLUE GREEN PINK YELLOW TURQ %varname INTENS=HIGH LOW NON %varname HILITE=USCORE BLINK REVERSE %varname TEXT=alternate-note-heading <i>note-text</i>	HP PS RP	ATTENTION CAUTION DD FIG INFO LI LINES LP PD WARNING XMP
NOTEL	Yes	COMPACT NOSKIP SPACE=NO YES INDENT=n TYPE=ET CH CT FP LEF LI NT PT SAC TEXT WASL WT COLOR=WHITE RED BLUE GREEN PINK YELLOW TURQ %varname INTENS=HIGH LOW NON %varname HILITE=USCORE BLINK REVERSE %varname TEXT=alternate-note-heading	LI LP	ATTENTION CAUTION DD FIG INFO LI LINES LP PD WARNING XMP

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
NT	Yes	NOSKIP INDENT= <u>n</u> TYPE= <u>ET</u> CH CT FP LEF LI NT PT SAC TEXT WASL WT COLOR=WHITE RED BLUE GREEN PINK YELLOW TURQ %varname INTENS= <u>HIGH</u> LOW NON %varname HILITE= <u>USCORE</u> BLINK REVERSE %varname TEXT=alternate-note-heading <i>note-text</i>	DL FIG HP LINES OL P PARML PS RP SL UL XMP	ATTENTION CAUTION DD FIG INFO LI LINES LP PD WARNING XMP
OL	Yes	COMPACT NOSKIP SPACE= <u>NO</u> YES INDENT= <u>n</u> TEXT=OL-heading-text	LI LP	ATTENTION CAUTION DD FIG INFO LI LINES LP NT PD WARNING XMP
P	No	COMPACT INTENSE= <u>varname</u> INDENT= <u>n</u> OFFSET= <u>n</u> SPACE= <u>NO</u> YES <i>paragraph-text</i>	ATTENTION CAUTION HP PS RP WARNING	ATTENTION CAUTION DD FIG INFO LI LINES LP NT PD WARNING XMP

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
PANDEF	No	ID=pandef-id HELP=help-panel-name %varname DEPTH=n FIT WIDTH=n FIT %varname KEYLIST=key-list-name KEYLTYPE=PRIVATE SHARED APPLID=application-id CCSID=n WINDOW=YES NO WINTITLE=window-title APPTITLE=application-title PAD=NULLS USER char %varname PADC=NULLS USER char %varname OUTLINE=NONE L R O U BOX %varname EXPAND=xy MERGESAREA=NO YES ENTKEYTEXT=enter-key-text IMAPNAME=image-name %varname IMAPROW=n %varname IMAPCOL=n %varname TMARGIN=n BMARGIN=n		

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
PANEL	Yes	NAME=panel-name HELP=help-panel-name %varname PANDEF=pandef-id DEPTH=22 n FIT WIDTH=76 n FIT %varname KEYLIST=key-list-name KEYLTYPE=PRIVATE SHARED APPLID=application-id CURSOR=cursor-field CSRINDEX=index-value CSRPOS=position-value CCSID=n MENU PRIME TUTOR WINDOW=YES NO WINTITLE=window-title APPTITLE=application-title PAD=NULLS USER char %varname PADC=NULLS USER char %varname OUTLINE=NONE L R O U BOX %varname EXPAND=xy MSGLINE=YES NO TITLINE=YES NO CMDLINE=YES NO ATTRUSE=NO YES ALL ENDATTR=DEFAULT TEXT TYPE=BOTH GUI NOGUI MSG=short-msg-fieldname LMSG=long-msg-fieldname ASIS ACTBAR MERGESAREA=NO YES PANELSTMT=YES NO ENTKEYTEXT=enter-key-text IMAPNAME=image-name %varname IMAPROW=n %varname IMAPCOL=n %varname TMARGIN=n BMARGIN=n ERRORCHECK=NO YES ZUP=zup-id ZCONT=zcont-id AUTONRET=NO YES AUTOTCMD=NO YES PROC panel-title-text	AB AREA BOTINST CMDAREA COMMENT DA DIVIDER DTACOL DTAFLD GA GENERATE GRPHDR HP INFO LSTFLD PNLINST REGION SELFLD SOURCE TEXTLINE TOPINST	

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
PARML	Yes	TSIZE= <u>10</u> 'S1 S2... Sn' BREAK= <u>ALL</u> FIT NONE COMPACT SKIP INDENT= <u>n</u> FORMAT= <u>START</u> CENTER END DIVEND= <u>NO</u> YES SPLIT= <u>NO</u> YES	PLDIV PT PTDIV PD	ATTENTION CAUTION DD FIG INFO LI LINES LP NT PD WARNING XMP
PD	No	<i>parameter-description</i>	DL FIG HP LINES NOTE NOTEL NT OL P PARML PS RP SL UL XMP	PARML
PDC	No	HELP= <u>NO</u> YES help-panel-name *help-message-id %varname *%varname UNAVAIL=unavail-variable-name CHECKVAR=check-variable-name MATCH= <u>1</u> match-string ACC1=key1 ACC2=key2 ACC3=key3 <i>pull-down-description-text</i>	ACTION COMMENT M SOURCE	ABC
PDSEP	No			PDC
PLDIV	No	TYPE= <u>NONE</u> SOLID DASH TEXT GAP= <u>YES</u> NO GUTTER= <u>1</u> n FORMAT= <u>START</u> CENTER END <i>divider-text</i>	HP	PARML
PNLINST	No	COMPACT <i>instruction-text</i>	HP PS RP	AREA REGION PANEL

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
PS	Yes	VAR=point-and-shoot-variable-name %varname VALUE=point-and-shoot-value %varname * CSRGRP=NO YES n DEPTH=n %varname IMAPNAME=image-name %varname IMAPNAMEP=image-namep %varname PLACE=ABOVE BELOW LEFT RIGHT %varname <i>point-and-shoot-text</i>		ATTENTION BOTINST CAUTION CHOFLD CHOICE DD DDHD DT DTAFLD DTAFLDD DTHD FIG FIGCAP GRPHDR H2 H3 H4 LI LINES LP LSTCOL LSTGRP NOTE NT P PD PNLINST PT SELFLD TOPINST WARNING XMP
PT	No	FORMAT=START CENTER END NOSKIP SPLIT=NO YES <i>parameter-term</i>	HP PS PTSEG RP	PARML
PTDIV	No			PARML
PTSEG	No			PT
REGION	Yes	DIR=VERT HORIZ INDENT=n WIDTH=n * DEPTH=n * EXTEND=OFF ON FORCE ALIGN=YES NO GRPBOX=NO YES GRPWIDTH=n GRPBOXVAR=variable-name GRPBOXMAT=1 string LOCATION=DEFAULT TITLE <i>group-box-title</i>	COMMENT DA DIVIDER DTACOL DTAFLD GA GENERATE GRPHDR INFO LSTFLD PNLINST REGION SELFLD SOURCE	AREA HELP PANEL REGION

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
RP	Yes	HELP= help-panel-name help-message-id %varname *%varname <i>reference-phrase</i>		ATTENTION BOTINST CAUTION CHOFLD CHOICE DD DDHD DT DTAFLD DTAFLDD DTHD FIG FIGCAP GRPHDR H2 H3 H4 LI LINES LP LSTCOL LSTGRP NOTE NT P PD PNLINST PT SELFLD TOPINST WARNING XMP
SCRFLD	Yes	DISPLEN= n %varname INDVAR=ind-var INDVAL='ind-chars' LINDVAR=lind-var LINDVAL='lind-char' RINDVAR=rind-var RINDVAL='rind-char' SINDVAR=sind-var SINDVAL='sind-chars' LCOLIND=lcol-var LCOLDISP= <u>NO</u> YES RCOLIND=rcol-var RCOLDISP= <u>NO</u> YES SCALE=scale-var SCROLL= <u>ON</u> OFF %varname FLDSPOS= <u>BELOW</u> ABOVE	COMMENT SOURCE	DTAFLD LSTCOL

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
SELFLD	Yes	NAME=field-name HELP= <u>NO</u> YES help-panel-name *help-message-id %varname *%varname TYPE= <u>SINGLE</u> MULTI MENU MODEL TUTOR PMTLOC= <u>ABOVE</u> BEFORE PMTWIDTH=n * ** SELWIDTH=n * ENTWIDTH=2 n 'e1 e2...en' REQUIRED= <u>NO</u> YES MSG=message-identifier FCHOICE=1 0 AUTOTAB= <u>YES</u> NO DEPTH=n * EXTEND= <u>OFF</u> ON FORCE TRAIL='trail-var-1 trail-var-2 ... trail-var-n' CHOICECOLS=1 n CHOICEDEPTH=n * CWIDTHS='w1 w2...wn' PAD=NULLS USER char %varname PADC=NULLS USER char %varname OUTLINE= <u>NONE</u> L R O U BOX %varname SELMSG=selfld-msg-identifier SELMSGU=selfld-msg-unavailable INIT= <u>YES</u> NO init-value VERIFY= <u>YES</u> NO REFRESH= <u>YES</u> NO SELFMT= <u>START</u> END CHKBOX= <u>YES</u> NO ZGUI= <u>YES</u> NO CSRGRP= <u>NO</u> YES n TSIZE='s1 s2...sn' LISTTYPE=RADIO LISTBOX DDLIST COMBO LISTREF=list-name LISTDEPTH=n DBALIGN= <u>YES</u> NO FIELD FORCE NOSEL=no-selection-value SELDEFAULT=x PMTSKIP= <u>NO</u> YES FLDTYPE= <u>CUA</u> ISPF COLOR=WHITE RED BLUE GREEN PINK YELLOW TURQ %varname INTENS= <u>HIGH</u> LOW NON %varname HILITE= <u>USCORE</u> BLINK REVERSE %varname SELCHECK= <u>NO</u> YES VARDCL= <u>YES</u> NO <i>field-prompt-text</i>	CHDIV CHOICE COMMENT HP PS RP SOURCE	AREA DTACOL PANEL REGION

Summary of DTL tags

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
SL	Yes	COMPACT NOSKIP SPACE= <u>NO</u> YES INDENT= <u>n</u> TEXT='SL-heading-text'	LI LP	ATTENTION CAUTION DD FIG INFO LI LINES LP NT PD WARNING XMP
SOURCE	Yes	TYPE= <u>PROC</u> REINIT INIT ABCINIT ABCPROC <i>text</i>		ABC AREA CHOICE DA DTACOL DTAFLD HELP LSTCOL LSTFLD LSTGRP PANEL PDC REGION SELFLD
T	No			CMD
TEXTLINE	Yes		DTAFLD TEXTSEG	HELP PANEL
TEXTSEG	No	EXPAND= <u>AFTER</u> BEFORE BOTH WIDTH= <u>n</u> <i>text</i>	HP	TEXTLINE
TOPINST	No	COMPACT <i>instruction-text</i>	HP PS RP	PANEL
UL	Yes	COMPACT NOSKIP SPACE= <u>NO</u> YES INDENT= <u>n</u> TEXT=UL-heading-text	LI LP	ATTENTION CAUTION DD FIG INFO LI LINES LP NT PD WARNING XMP

Table 1. Tag summary (continued)

Tag	End tag	Attributes	Nested tags	Used within
VARCLASS	No	NAME=variable-class-name TYPE='CHAR maximum length' 'DBCS maximum length' 'MIXED maximum length' 'ANY maximum length' 'EBCDIC maximum length' '%varname maximum length' ITIME STDTIME IDATE STDDATE JDATE JSTD 'VMASK maximum-length' 'NUMERIC total-digits <u>0</u> fractional-digits' MSG=message-identifier	CHECKL XLATL	
VARDCL	No	NAME=name VARCLASS=variable-class-name		VARLIST
VARLIST	Yes		VARDCL	
VARSUB	No	VAR=variable-name		MSG
WARNING	Yes	<i>text</i>	DL FIG HP LINES NOTE NOTEL NT OL P PARML PS RP SL UL XMP	LI LP P
XLATI	No	VALUE=internal-value <i>displayed-value</i>	LIT	XLATL
XLATL	Yes	FORMAT= <u>NONE</u> UPPER TRUNC=n char MSG=message-identifier	XLATI	VARCLASS
XMP	Yes	NOSKIP <i>text</i>	DL HP NOTE NOTEL NT OL P PARML PS RP SL UL	ATTENTION CAUTION DD FIG INFO LI LINES LP NT PD WARNING

Appendix. Accessibility

Publications for this product are offered in Adobe Portable Document Format (PDF) and should be compliant with accessibility standards. If you experience difficulties when using PDF files, you may view the information through the z/OS Internet Library website or the z/OS Information Center. If you continue to experience problems, send an email to mhvrcfs@us.ibm.com or write to:

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Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in z/OS enable users to:

- Use assistive technologies such as screen readers and screen magnifier software
- Operate specific or equivalent features using only the keyboard
- Customize display attributes such as color, contrast, and font size

Using assistive technologies

Assistive technology products, such as screen readers, function with the user interfaces found in z/OS. Consult the assistive technology documentation for specific information when using such products to access z/OS interfaces.

Keyboard navigation of the user interface

Users can access z/OS user interfaces using TSO/E or ISPF. Refer to *z/OS TSO/E Primer*, *z/OS TSO/E User's Guide*, and *z/OS ISPF User's Guide Vol I* for information about accessing TSO/E and ISPF interfaces. These guides describe how to use TSO/E and ISPF, including the use of keyboard shortcuts or function keys (PF keys). Each guide includes the default settings for the PF keys and explains how to modify their functions.

z/OS information

z/OS information is accessible using screen readers with the BookServer or Library Server versions of z/OS books in the Internet library at:

<http://www.ibm.com/systems/z/os/zos/bkserv/>

One exception is command syntax that is published in railroad track format, which is accessible using screen readers with the Information Center, as described in "Dotted decimal syntax diagrams."

Dotted decimal syntax diagrams

Syntax diagrams are provided in dotted decimal format for users accessing the Information Center using a screen reader. In dotted decimal format, each syntax element is written on a separate line. If two or more syntax elements are always

present together (or always absent together), they can appear on the same line, because they can be considered as a single compound syntax element.

Each line starts with a dotted decimal number; for example, 3 or 3.1 or 3.1.1. To hear these numbers correctly, make sure that your screen reader is set to read out punctuation. All the syntax elements that have the same dotted decimal number (for example, all the syntax elements that have the number 3.1) are mutually exclusive alternatives. If you hear the lines 3.1 USERID and 3.1 SYSTEMID, you know that your syntax can include either USERID or SYSTEMID, but not both.

The dotted decimal numbering level denotes the level of nesting. For example, if a syntax element with dotted decimal number 3 is followed by a series of syntax elements with dotted decimal number 3.1, all the syntax elements numbered 3.1 are subordinate to the syntax element numbered 3.

Certain words and symbols are used next to the dotted decimal numbers to add information about the syntax elements. Occasionally, these words and symbols might occur at the beginning of the element itself. For ease of identification, if the word or symbol is a part of the syntax element, it is preceded by the backslash (\) character. The * symbol can be used next to a dotted decimal number to indicate that the syntax element repeats. For example, syntax element *FILE with dotted decimal number 3 is given the format 3 * FILE. Format 3* FILE indicates that syntax element FILE repeats. Format 3* * FILE indicates that syntax element * FILE repeats.

Characters such as commas, which are used to separate a string of syntax elements, are shown in the syntax just before the items they separate. These characters can appear on the same line as each item, or on a separate line with the same dotted decimal number as the relevant items. The line can also show another symbol giving information about the syntax elements. For example, the lines 5.1*, 5.1 LASTRUN, and 5.1 DELETE mean that if you use more than one of the LASTRUN and DELETE syntax elements, the elements must be separated by a comma. If no separator is given, assume that you use a blank to separate each syntax element.

If a syntax element is preceded by the % symbol, this indicates a reference that is defined elsewhere. The string following the % symbol is the name of a syntax fragment rather than a literal. For example, the line 2.1 %OP1 means that you should refer to separate syntax fragment OP1.

The following words and symbols are used next to the dotted decimal numbers:

- ? means an optional syntax element. A dotted decimal number followed by the ? symbol indicates that all the syntax elements with a corresponding dotted decimal number, and any subordinate syntax elements, are optional. If there is only one syntax element with a dotted decimal number, the ? symbol is displayed on the same line as the syntax element, (for example 5? NOTIFY). If there is more than one syntax element with a dotted decimal number, the ? symbol is displayed on a line by itself, followed by the syntax elements that are optional. For example, if you hear the lines 5 ?, 5 NOTIFY, and 5 UPDATE, you know that syntax elements NOTIFY and UPDATE are optional; that is, you can choose one or none of them. The ? symbol is equivalent to a bypass line in a railroad diagram.
- ! means a default syntax element. A dotted decimal number followed by the ! symbol and a syntax element indicate that the syntax element is the default option for all syntax elements that share the same dotted decimal number. Only

one of the syntax elements that share the same dotted decimal number can specify a ! symbol. For example, if you hear the lines 2? FILE, 2.1! (KEEP), and 2.1 (DELETE), you know that (KEEP) is the default option for the FILE keyword. In this example, if you include the FILE keyword but do not specify an option, default option KEEP will be applied. A default option also applies to the next higher dotted decimal number. In this example, if the FILE keyword is omitted, default FILE(KEEP) is used. However, if you hear the lines 2? FILE, 2.1, 2.1.1! (KEEP), and 2.1.1 (DELETE), the default option KEEP only applies to the next higher dotted decimal number, 2.1 (which does not have an associated keyword), and does not apply to 2? FILE. Nothing is used if the keyword FILE is omitted.

- * means a syntax element that can be repeated 0 or more times. A dotted decimal number followed by the * symbol indicates that this syntax element can be used zero or more times; that is, it is optional and can be repeated. For example, if you hear the line 5.1* data area, you know that you can include one data area, more than one data area, or no data area. If you hear the lines 3*, 3 HOST, and 3 STATE, you know that you can include HOST, STATE, both together, or nothing.

Notes:

1. If a dotted decimal number has an asterisk (*) next to it and there is only one item with that dotted decimal number, you can repeat that same item more than once.
 2. If a dotted decimal number has an asterisk next to it and several items have that dotted decimal number, you can use more than one item from the list, but you cannot use the items more than once each. In the previous example, you could write HOST STATE, but you could not write HOST HOST.
 3. The * symbol is equivalent to a loop-back line in a railroad syntax diagram.
- + means a syntax element that must be included one or more times. A dotted decimal number followed by the + symbol indicates that this syntax element must be included one or more times; that is, it must be included at least once and can be repeated. For example, if you hear the line 6.1+ data area, you must include at least one data area. If you hear the lines 2+, 2 HOST, and 2 STATE, you know that you must include HOST, STATE, or both. Similar to the * symbol, the + symbol can only repeat a particular item if it is the only item with that dotted decimal number. The + symbol, like the * symbol, is equivalent to a loop-back line in a railroad syntax diagram.

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