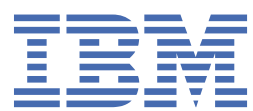


z/OS
2.5

ISPF User's Guide Volume I



Note

Before using this information and the product it supports, read the information in [“Notices” on page 177](#).

This edition applies to Version 2 Release 5 of z/OS® (5650-ZOS) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Preface

This document provides reference and usage information for programmers who develop applications with ISPF. It also provides conceptual and functional descriptions of ISPF.

About this document

This document contains two parts. The first part provides introductory information about using ISPF:

- An overview of ISPF and the ISPF user interface
- How to enter commands and perform other actions
- How to use libraries and data sets

The second part contains the appendixes. These cover using the ISRDDN diagnostic utility, and other reference material such as sample listings and command abbreviations.

For detailed information about using ISPF menu options, see the [*z/OS ISPF User's Guide Vol II*](#).

Who should use this document

This document is for application programmers who use ISPF. Users should be familiar with coding CLISTS, REXX EXECs, or programs in the MVS™ environment.

What is in this document?

Chapter 1, “Overview of ISPF,” on page 1 describes the components, functions, and utilities provided by ISPF, including the Primary Option Menu panel.

Chapter 2, “The ISPF user interface,” on page 15 describes the features of the ISPF user interface:

- Panel formats and features
- Action bars
- Commands
- Splitting the screen

Chapter 5, “Using personal data set lists and library lists,” on page 111 describes the four types of referral lists, which are used to retrieve a stored data set or library to the currently displayed panel:

- Reference data set list
- Reference library list
- Personal data set list
- Personal library list.

Chapter 3, “Using commands, function keys, and cursor selection,” on page 33 describes ISPF system commands, the function keys and their default assignments, and the cursor select facilities.

Chapter 4, “ISPF libraries and data sets,” on page 75 describes how to allocate, create, and use libraries and data sets.

Chapter 6, “Getting ready to run on MVS,” on page 135 helps you prepare to use ISPF data-element libraries.

Appendix A, “Listing formats,” on page 141 describes and displays the kinds of listings you can produce using ISPF.

Appendix B, “APL and TEXT character conversion,” on page 149 describes how APL and TEXT characters are converted by ISPF for internal storage.

Appendix C, “Abbreviations for commands and other values,” on page 151 lists commands, field values, keywords/operands, and scroll amounts that can be abbreviated.

Appendix D, “Allocation data sets,” on page 153 provides information on ALLOC commands that ISPF issues based on ISPF libraries, data set names, list IDs, options, and additional input libraries.

Appendix E, “ISRDDN diagnostic utility,” on page 155 explains how to use ISRDDN, a program that is provided with ISPF as a service aid.

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 xvii 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.

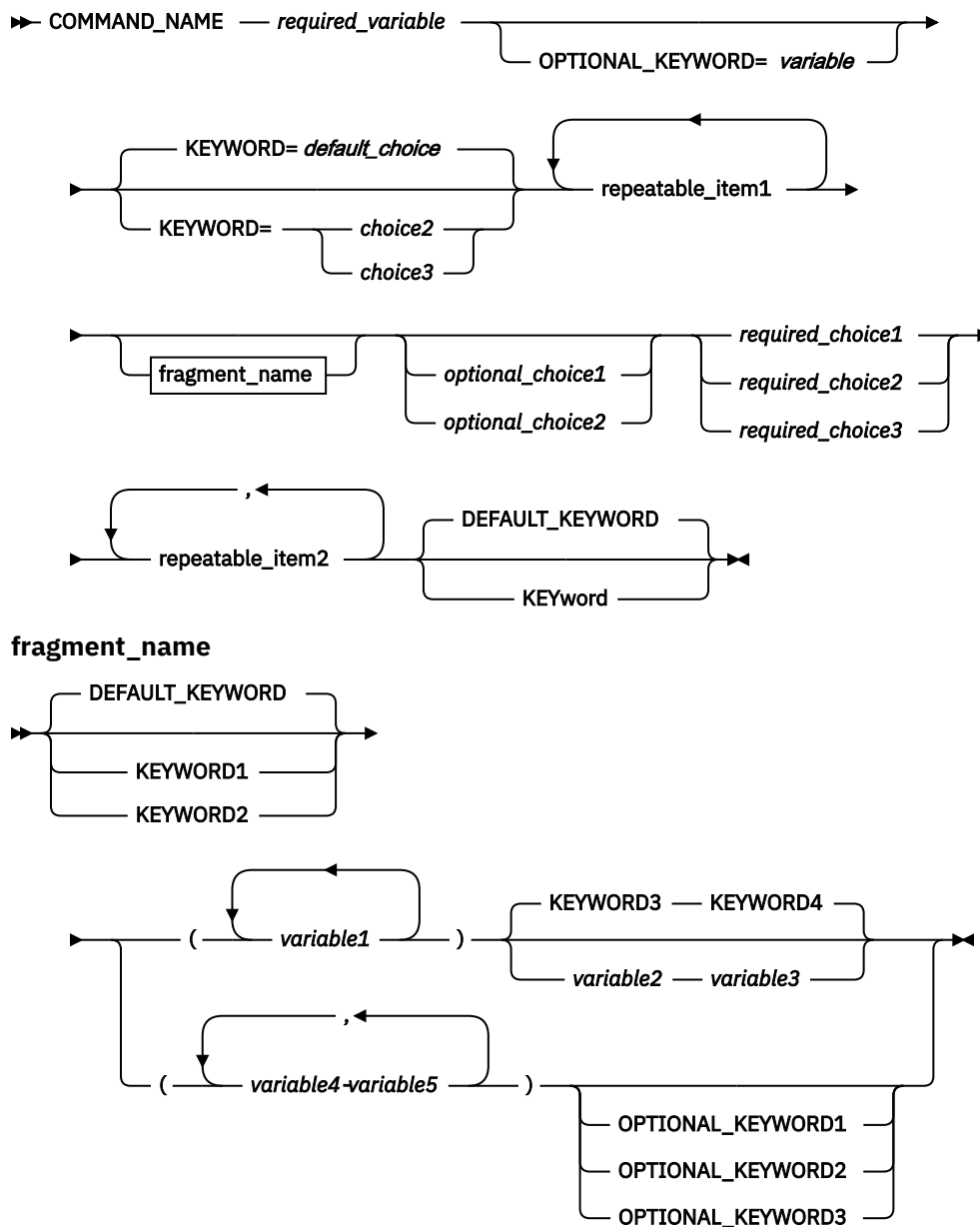


Figure 1. Sample syntax diagram

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.

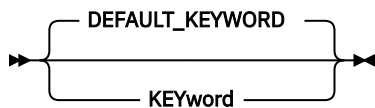
The ➡ symbol indicates the end of a statement.

Keywords

Keywords appear in uppercase letters.

➡ COMMAND_NAME ➡

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_variable* ➡

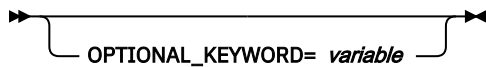
Required items

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

➡ **COMMAND_NAME** — *required_variable* ➡

Optional items

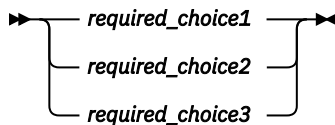
Optional items appear below the main path.



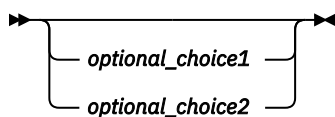
Choice of items

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

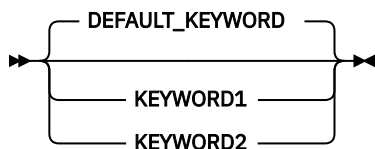
If you *must* choose one of the items, one item of the stack appears on the main path.



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

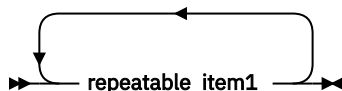


If a default value applies when you do not choose any of the items, the default value appears above the main path.

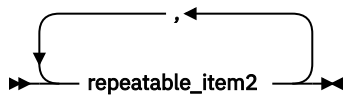


Repeatable items

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

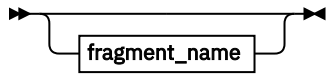


If you need to specify a separator character (such as a comma) between repeatable items, the line with the arrow returning to the left shows the separator character you must specify.



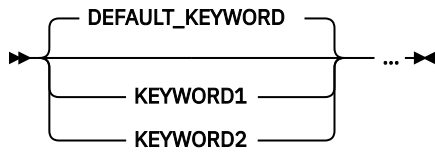
Fragments

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



⋮

fragment_name



z/OS information

This information explains how z/OS references information in other documents and on the web.

When possible, this information uses cross-document links that go directly to the topic in reference using shortened versions of the document title. For complete titles and order numbers of the documents for all products that are part of z/OS, see *z/OS Information Roadmap*.

To find the complete z/OS library, go to [IBM Documentation \(www.ibm.com/docs/en/zos\)](http://www.ibm.com/docs/en/zos).

How to send your comments to IBM

We invite you to submit comments about the z/OS product documentation. Your valuable feedback helps to ensure accurate and high-quality information.

Important: If your comment regards a technical question or problem, see instead [“If you have a technical problem”](#) on page xxiii.

Submit your feedback by using the appropriate method for your type of comment or question:

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If your comment or question is about the IBM Documentation functionality, for example search capabilities or how to arrange the browser view, send a detailed email to IBM Documentation Support at ibmdocs@us.ibm.com.

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To help us better process your submission, include the following information:

- Your name, company/university/institution name, and email address
- The following deliverable title and order number: z/OS ISPF User's Guide Vol I, SC19-3627-40
- The section title of the specific information to which your comment relates
- The text of your comment.

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- Contact your IBM service representative.
- Call IBM technical support.

Summary of changes

This information includes terminology, maintenance, and editorial changes. Technical changes or additions to the text and illustrations for the current edition are indicated by a vertical line to the left of the change.

Note: IBM z/OS policy for the integration of service information into the z/OS product documentation library is documented on the z/OS Internet Library under [IBM z/OS Product Documentation Update Policy \(www-01.ibm.com/servers/resourcelink/svc00100.nsf/pages/ibm-zos-doc-update-policy?OpenDocument\)](http://www-01.ibm.com/servers/resourcelink/svc00100.nsf/pages/ibm-zos-doc-update-policy?OpenDocument).

Summary of changes for z/OS Version 2 Release 5 (V2R5)

The following changes are made for z/OS Version 2 Release 5 (V2R5).

Changed information

- Removal of support for Workstation Agent, see the following topics:
 - [“About this document” on page xv](#)
 - [“What is in this document?” on page xv](#)
 - [“ISPF components” on page 1](#)
 - [“The Primary Option Menu panel” on page 5](#)
 - [“Primary Option Menu action bar choices” on page 8](#)
 - [Chapter 2, “The ISPF user interface,” on page 15](#)
 - [“Some terms you should know” on page 15](#)
 - [“Panel types” on page 17](#)
 - [“Menus” on page 17](#)
 - [“Action bars” on page 19](#)
 - [“Interaction of command and action bar choice” on page 22](#)
 - [“Point-and-Shoot text fields” on page 23](#)
 - [“Function keys” on page 24](#)
 - [“Selection fields” on page 25](#)
 - [“Entering commands in ISPF” on page 25](#)
 - [“Splitting the screen horizontally or vertically” on page 29](#)
 - [“The SPLIT command” on page 29](#)
 - [“3290 terminals” on page 31](#)
 - [“Reference data set list - REFLIST \(Last 30 referenced data sets\)” on page 113](#)
 - [“How to retrieve a data set from a personal data set list” on page 113](#)
 - [“Personal Data Set Lists panel action bar choices” on page 122](#)
 - [“Personal Data Set Lists panel action bar choices” on page 122](#)
 - [“Name retrieval with the NRETRIEV command” on page 128](#)
 - [“Example of an ISPF panel that enables NRETRIEV” on page 133](#)
 - [“ISPF system commands” on page 34](#)
 - [“CANCEL” on page 34](#)
 - [“FKA” on page 39](#)
 - [“PANELID” on page 45](#)

- [“PRINT” on page 46](#)
- [“PRINTG” on page 46](#)
- [“PRINT-HI” on page 47](#)
- [“PRINTL” on page 47](#)
- [“PRINTLHI” on page 47](#)
- [“SPLIT” on page 50](#)
- [“START” on page 51](#)
- [“SWAP” on page 51](#)
- [“WINDOW” on page 54](#)
- [“How Program Access \(PA\) keys affect ISPF operation” on page 71](#)
- [“The AUTOTYPE function, for automatic data set name and member name completion” on page 72](#)
- [“Rules for specifying the 'Other Data Set Name' field ” on page 73](#)
- [Chapter 4, “ISPF libraries and data sets,” on page 75](#)
- [“Using member selection lists” on page 81](#)
- [“Member selection list commands” on page 89](#)
- [“Library and data set list utility line commands” on page 98](#)
- [“Allocating CLIST, REXX, and program libraries” on page 138](#)
- [“The Current Data Set Allocations list” on page 155](#)
- [“Allocation list primary commands” on page 159](#)
- [“Utilities action bar choice” on page 20](#)
- [“The SWAP command” on page 30](#)
- [Chapter 5, “Using personal data set lists and library lists,” on page 111](#)
- [“Personal list modes” on page 127](#)
- [“Displaying member lists” on page 82](#)
- [“Types of commands” on page 26](#)
- [“ISPF primary commands” on page 27](#)
- [“ISPF line commands” on page 27](#)
- [“Entering commands in ISPF” on page 25](#)
- [Chapter 3, “Using commands, function keys, and cursor selection,” on page 33](#)

Deleted information

- Removal of support for Workstation Agent:
 - *Running in GUI mode*
 - *The SWITCH command*
 - *INT*
 - *SWITCH*
 - *TSOGUI*
 - *WS*
 - *WSCON*
 - *WSDISCON*
 - *Allocating optional image ISPF library*
 - *Installing the Client/Server component*
 - *Configuring communications for the ISPF Client/Server*

Summary of changes for z/OS Version 2 Release 4 (V2R4)

The following changes are made for z/OS Version 2 Release 4 (V2R4).

Changed information

- [“Search for members \(SRCHFOR\)” on page 96](#)
- [“Supported data types” on page 3](#)
- [“Index listings for source libraries” on page 142](#)
- [“Index listings for load libraries” on page 143](#)
- [“Running a sample ISPF session” on page 10](#)

Summary of changes for z/OS Version 2 Release 3 (V2R3)

The following changes are made for z/OS Version 2 Release 3 (V2R3).

June 2019

Maintenance and terminology changes are made for z/OS Version 2 Release 3 in June 2019.

May 2018

Maintenance and terminology changes are made for z/OS Version 2 Release 3 in May 2018.

September 2017

Changed information

- TSO 8-character ID, see the following topic:
 - [“Member list display panel fields” on page 86](#)
- Extended statistics usability, see the following topics:
 - [“ISPF member statistics” on page 83](#)
 - [“Member list display panel fields” on page 86](#)

What's in the library?

You can order the ISPF books using the numbers provided below.

Title

Order Number

z/OS ISPF Dialog Developer's Guide and Reference

SC19-3619-40

z/OS ISPF Dialog Tag Language Guide and Reference

SC19-3620-40

z/OS ISPF Edit and Edit Macros

SC19-3621-40

z/OS ISPF Messages and Codes

SC19-3622-40

z/OS ISPF Planning and Customizing

GC19-3623-40

z/OS ISPF Reference Summary

SC19-3624-40

z/OS ISPF Software Configuration and Library Manager Guide and Reference

SC19-3625-40

z/OS ISPF Services Guide

SC19-3626-40

z/OS ISPF User's Guide Vol I

SC19-3627-40

z/OS ISPF User's Guide Vol II

SC19-3628-40

Chapter 1. Overview of ISPF

ISPF is a multifaceted development tool set for the z/OS operating system. Since 1975, MVS programmers have used ISPF for host-based application development productivity. ISPF forms the basis of many TSO applications and provides extensive programmer-oriented facilities as well.

ISPF components

ISPF helps programmers develop interactive applications called *dialogs*. Dialogs are *interactive* because ISPF uses them to communicate with terminal users through a series of panels while the users do application development tasks.

ISPF panels:

- Provide access to ISPF functions through menus
- Request information from users through data entry panels
- Provide information from users through scrollable data displays

These are the main components of ISPF:

- **Dialog Manager (DM):** The Dialog Manager provides services to dialogs and end users. These include display, variable services, input and output, user and application profiles, table management, system interface services, dialog testing and debugging aids, and other services.
- **Program Development Facility (PDF):** The Program Development Facility provides services to assist the dialog or application developer. These include the edit and browse functions, data set and catalog utilities, TSO command interfaces, and data set search and compare functions.
- **Software Configuration and Library Manager (SCLM):** The SCLM facility provides library management capabilities such as versioning, auditing, and promotion. It also provides configuration management capabilities to track how all of the pieces of an application fit together, including source code, objects, load modules, test cases, documentation, and other items. The Build function tracks and invokes the necessary compilers, assemblers and linkage editors.

On May 15, 2018, IBM issued a statement of direction that the Software Configuration and Library Management (SCLM) component of ISPF is functionally stabilized. While it will continue to be maintained and supported, it won't be enhanced with new features in the future.

ISPF functions

ISPF can be used in these ways:

- Data processing administrators and system programmers can use ISPF to:
 - Monitor and control program libraries
 - Communicate with MVS through TSO commands, CLISTs, or REXX EXECs.
- Programmers can use ISPF to develop a batch, interactive, or any other type of program and its documentation.
- Terminal users can call dialogs that use Dialog Manager (DM) component and Program Development Facility (PDF) component dialog services to do the work of the application.

The View, Browse, and Edit functions, a wide range of utilities, foreground and batch compilers, program library control, and other facilities are available to help you develop ISPF dialogs.

View, Browse, Edit, edit macros, and models

The View, Browse, and Edit functions allow you to look at the contents of a dialog. While editing a dialog, you can change it by adding or deleting lines, typing over the existing source code, or copying lines from another dialog to the one being edited.

To enhance the existing Edit function, you can write edit macros. Edit macros allow you to combine several often-used functions so that you do not have to call each function separately. You can write initial edit macros that are automatically run when the Edit option is selected. Other uses for edit macros include:

- Overriding Edit commands
- Calling DM and PDF component dialog services
- Accessing cursor position and data location.

Also, ISPF provides online models that you can insert into the dialog. A *model* is an example of a service call, panel format, table format, or message that contains the proper syntax and all the available parameters for the programming language being used. Since these models are online, they can be called directly into the member being edited.

See [*z/OS ISPF Edit and Edit Macros*](#) for more information.

Dialog services

The PDF component provides View, Browse, Edit, and library access services that can be combined in a dialog with any of the ISPF services. The library access services carry out functions involving members of a programming library. These functions include adding, finding, and deleting members, and displaying member lists.

The PDF component includes a separate edit model of each service call for each programming language ISPF supports: CLIST, COBOL, EXEC, FORTRAN, PL/I, Pascal, C, and REXX. See [*z/OS ISPF Services Guide*](#) for complete information about the PDF component dialog services.

Note: For information about library access services that apply to the Software Configuration and Library Manager (SCLM), refer to the [*z/OS ISPF Software Configuration and Library Manager Guide and Reference*](#).

Utilities

ISPF provides a wide range of utilities. Utilities enable you to:

- Display and print library and data set member lists
- Reset statistics for ISPF library members
- Define commands to be used with specific dialogs
- Compare data sets and search for strings of data
- Move, copy, and print library and data set members.

Dialog Test, Foreground, and Batch

ISPF provides special facilities for testing dialogs. The Dialog Test option allows testing of individual dialog elements and complete dialogs.

After a program has been developed, you can either assemble it or compile and link it using either the Foreground or Batch option. The Foreground option allows you to watch the program being compiled. The Batch option frees the terminal, which helps when you compile a long program. If errors occur, you can use the debugging capabilities of the Dialog Test facility to correct them.

TSO commands, CLISTs, and REXX EXECs

While using ISPF, you can call TSO commands, CLISTs, or REXX EXECs by:

- Prefixing a command with TSO and entering it from any command line

- Selecting the Command option and entering the TSO command, CLIST, or REXX exec on the panel
- Entering a TSO command, CLIST, or REXX exec in the Line Command field on a data set list display or a member list display.

Software Configuration and Library Manager (SCLM)

To help you maintain different levels or versions of a library member, ISPF includes the Software Configuration and Library Manager (SCLM). SCLM is a tool that helps you develop complex software applications. Throughout the development cycle, SCLM automatically controls, maintains, and tracks all of the software components of the application. And you can lock the version being edited in a private library and then promote it. See [z/OS ISPF Software Configuration and Library Manager Guide and Reference](#) for more information.

Other IBM program development products

You might want to call another IBM program development product while using ISPF. The IBM Products option allows you to call the Tivoli® Information Management, COBOL Structuring Facility, and Screen Definition Facility licensed programs without leaving ISPF.

Online tutorial

Learning to use ISPF is made easier by the online help and tutorial facilities, which are available while using ISPF.

For example, if you need help filling in the data requested by an ISPF utility, you can use the tutorial to help you understand the data entry requirements for that utility.

Supported data types

ISPF supports partitioned (PDS), sequential (SEQ), and partitioned extended (PDSE) data sets. These data sets can be used in any of the ISPF options, such as Edit and Browse. ISPF does not support:

- Data sets with a record format of variable block spanned (VBS)
- Direct access data sets
- Multivolume data sets for the ISRLEMX program, SCLM, and File Tailoring
- Generation data group (GDG) base data sets
- Deletion of data sets allocated with an esoteric device type
- Member aliases, except under the ISPF Move/Copy utility (option 3.3)
- Partitioned data sets as File Tailoring control files (ISPCTLn)
- Unmovable data sets
 - In the ISPF Move/Copy utility (option 3.3) or using the LMMOVE or LMCOPY service
 - For allocation in the ISPF Data Set utility (option 3.2 option A) or the ISPF Data Set List utility (option 3.4 line command AL)
- Data sets allocated with the BUFNO parameter (ISPF handles its own buffering)
- Browse for packed multivolume data sets.

ISPF provides partial support for VSAM data sets and tape data sets.

- You can create and delete VSAM data sets and obtain VSAM data set information.
- VSAM data sets are supported for Edit, Browse, and View if the ISPF Configuration table has been customized to enable such support.
- You can define an interface to an external utility such as DFSMSrmm that the Data Set List utility (Option 3.4) can use to process data sets stored on tape or some other removable media. The interface is configured in the ISPF configuration table. It enables the Data Set List utility to call the tape or removable media interface for these line commands:

I	Information
S	Short Information
D	Delete
R	Rename
C	Catalog
M	Member List
P	Print
X	Print Index
CO	Copy
MO	Move

ISPF provides support for z/OS UNIX directories and files in the ISPF Edit and Browse options as well as in the ISPF services BROWSE, EDIT and VIEW. The z/OS UNIX Directory List Utility (option 3.17) supports processing of directories and files in a z/OS UNIX directory structure.

ISPF requires exclusive enqueues on data sets for many of its functions. If a data set is allocated as SHARED to a user and then is operated on by one of these functions, the allocation will be converted to OLD by MVS dynamic allocation. This allocation of OLD may remain after ISPF frees its enqueue. This is a restriction of the MVS operating system.

Member name conventions

Members created through ISPF must follow this naming convention:

- The first character must be alphabetic or special (@ # \$)
- Characters 2-8 must be alphabetic, numeric, or special (@ # \$)

Special characters are as defined in the U.S. English code page (037):

```
@ (X'7C'), # (X'7B'), $ (X'5B')
```

All member names created within ISPF are converted to uppercase. If you create members outside of ISPF that do not meet these conventions, they are displayed in ISPF member lists and can be selected from those lists. These member names can also be specified for the Browse service with the exception of member names containing lowercase alphabets. (ISPF converts the member name to uppercase before searching for the member and therefore cannot process a lowercase member.) Member names not meeting the ISPF naming convention are not supported for the other ISPF services.

Note: ISPF does not support using option M (member list) from a data set list and then selecting E to edit a member whose name contains lowercase letters. ISPF uses the Edit service in this case, and its services do not support lowercase member names.

Running ISPF

As an interactive dialog, ISPF communicates with you through panels and messages. Ordinarily, the first panel you see when you enter the ISPF command is the ISPF Primary Option Menu, shown in [Figure 2 on](#)

page 6. Panels display data, selection lists, and data-entry fields, such as a data set name or an ISPF command.

ISPF responds interactively to the information or command you enter by displaying another panel, displaying a message, or carrying out a command. For more information about how panels and messages are displayed, see [“Understanding ISPF panels”](#) on page 16.

One helpful aspect of your interaction with ISPF is the online tutorial. If you need information about using the online tutorial, see the topic about ISPF Tutorial Panels in [z/OS ISPF Dialog Developer's Guide and Reference](#).

Starting ISPF

To start ISPF:

1. Log on to TSO.
2. When the READY prompt appears, type ISPF or PDF and press Enter.

If your installation has established an alias for ISPF, such as SPF, you can enter that instead.

The ISPF and PDF commands are aliases of ISPF module ISRPCP. When you run ISRPCP or one of its aliases with no parameters, ISPF is started through this command:

```
ISPSTART PANEL(default_primary_panel) NEWAPPL(ISR)
```

The default primary panel is usually ISR@PRIM, the ISPF Primary Option Menu (see [Figure 2](#) on page 6).

You can specify any of the ISPSTART parameters when invoking ISPF, PDF, or ISRPCP. However, if you do this you must ensure that you specify *all* the parameters that ISPSTART needs to run your application in the correct environment. This is because only those parameters you specify are passed to ISPSTART. For example, if you specify:

```
ISPF NEWAPPL(ABC)
```

ISPF is invoked with this command:

```
ISPSTART NEWAPPL(ABC)
```

Note that in this case ISPF does not pass PANEL(ISR@PRIM), part of its normal default string, to ISPSTART. Because the ISPSTART command generated does not contain a PANEL(...), PGM(...) or CMD(...) keyword, there is no primary panel to display.

For information about the syntax and options for ISPSTART, including the rules for specifying or overriding the default primary panel, refer to the [z/OS ISPF Dialog Developer's Guide and Reference](#).

The Primary Option Menu panel

[Figure 2](#) on page 6 shows the first panel, the ISPF Primary Option Menu, with the license information.

```
Menu Utilities Compilers Options Status Help
-----
ISPF Primary Option Menu

0 Settings      Terminal and user parameters      User ID . : USERID
1 View          Display source data or listings      Time. . . : 11:38
2 Edit          Create or change source data        Terminal. : 3278
3 Utilities      Perform utility functions           Screen. . : 1
4 Foreground    Interactive language processing     Language. : ENGLISH
5 Batch          Submit job for language processing   Appl ID . : ISR
6 Command        Enter TSO commands                 TSO logon : ISPF
7 Dialog Test    Perform dialog testing              TSO prefix: USERID
9 IBM Products   IBM program development products    System ID : MVS8
                                           MVS acct. : IBMGSA
                                           Release . : ISPF 7.5

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Option ==>
F1=Help      F2=Split      F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions   F12=Cancel
```

Figure 2. ISPF Primary Option Menu (ISR@PRIM) with license information

Press the Enter key to dismiss the license information. The full Primary Option Menu is displayed.

```
Menu Utilities Compilers Options Status Help
-----
ISPF Primary Option Menu

0 Settings      Terminal and user parameters      User ID . : USERID
1 View          Display source data or listings      Time. . . : 11:49
2 Edit          Create or change source data        Terminal. : 3278
3 Utilities      Perform utility functions           Screen. . : 1
4 Foreground    Interactive language processing     Language. : ENGLISH
5 Batch          Submit job for language processing   Appl ID . : ISR
6 Command        Enter TSO commands                 TSO logon : ISPF
7 Dialog Test    Perform dialog testing              TSO prefix: USERID
9 IBM Products   IBM program development products    System ID : MVS8
10 SCLM          SW Configuration Library Manager    MVS acct. : IBMGSA
11 Workplace     ISPF Object/Action Workplace        Release . : ISPF 7.5
12 z/OS System   z/OS system programmer applications
13 z/OS User      z/OS user applications

Enter X to Terminate using Log/List defaults

Option ==>
F1=Help      F2=Split      F3=Exit      F7=Backward  F8=Forward  F9=Swap
F10=Actions   F12=Cancel
```

Figure 3. ISPF Primary Option Menu (ISR@PRIM)

ISPF Primary Options

When you select one of these options, ISPF displays the selected panel. These options are described in detail in the [z/OS ISPF User's Guide Vol II](#). Brief descriptions follow:

Option	Description
--------	-------------

0

Settings displays and changes selected ISPF parameters, such as terminal characteristics and function keys.

For more information, see the Settings (Option 0) topic in the [z/OS ISPF User's Guide Vol II](#).

1

View displays data using the View or Browse function. You can use View or Browse to look at (but not change) large data sets such as compiler listings. You can scroll the data up, down, left, or right. If you are using Browse, a FIND command, entered on the command line, allows you to search the data for a character string. If you are using View, you can use all the commands and macros available to you in the Edit function.

For more information, see the View (Option 1) topic in the [z/OS ISPF User's Guide Vol II](#).

2

Edit allows you to create or change source data such as program code and documentation using the ISPF full-screen editor. You can scroll the data up, down, left, or right. You can change the data by using Edit *line commands*, which are entered directly on a line number, and *primary commands*, which are entered on the command line.

For more information, see the Edit (Option 2) topic in the [z/OS ISPF User's Guide Vol II](#), and refer to [z/OS ISPF Edit and Edit Macros](#).

3

Utilities perform library and data set maintenance tasks, such as moving or copying library or data set members, displaying or printing data set names and volume table of contents (VTOC) information, comparing data sets, and searching for strings of data.

For more information, see the Utilities (Option 3) topic in the [z/OS ISPF User's Guide Vol II](#).

4

Foreground calls IBM language processing programs in the foreground.

For more information, see the Foreground (Option 4) topic in the [z/OS ISPF User's Guide Vol II](#).

5

Batch calls IBM language processing programs as batch jobs. ISPF generates Job Control Language (JCL) based on information you enter and submits the job for processing.

For more information, see the Batch (Option 5) topic in the [z/OS ISPF User's Guide Vol II](#).

6

Command calls TSO commands, CLISTs, or REXX EXECs under ISPF.

For more information, see the Command (Option 6) topic in the [z/OS ISPF User's Guide Vol II](#).

7

Dialog Test tests individual ISPF dialog components, such as panels, messages, and dialog functions (programs, commands, menus).

For more information, see the Dialog Test (Option 7) topic in the [z/OS ISPF User's Guide Vol II](#).

9

IBM Products allows you to select other installed IBM program development products on your system. Products supported are:

- Tivoli Information Management
- COBOL Structuring Facility foreground dialog (COBOL/SF)
- Screen Definition Facility II (SDF II) licensed program
- Screen Definition Facility II-P (SDF II-P) licensed program.

For more information, see the IBM Products (Option 9) topic in the [z/OS ISPF User's Guide Vol II](#).

10

SCLM controls, maintains, and tracks all of the software components of an application.

For more information, see the [z/OS ISPF Software Configuration and Library Manager Guide and Reference](#).

11

Workplace gives you access to the ISPF Workplace, which combines many of the ISPF functions onto one object-action panel.

For more information, see the ISPF Object/Action Workplace (Option 11) topic in the [z/OS ISPF User's Guide Vol II](#).

X

EXIT leaves ISPF using the log and list defaults. You can change these defaults from the Log/List pull-down on the ISPF Settings panel action bar.

Primary Option Menu action bar choices

The Primary Option Menu action bar choices function as follows:

Menu

This choice is available from most panels within ISPF. It displays many of the options listed on the Primary Option Menu panel. See the topic about the Primary Option Menu in the [z/OS ISPF User's Guide Vol II](#) for details on each choice.

Utilities

This choice is available from most panels within ISPF. It displays the options listed on the Utility Selection panel (Option 3). See the topic about the Primary Option Menu in the [z/OS ISPF User's Guide Vol II](#) for details on each choice.

Compilers

The Compilers pull-down provides access to the foreground and background compilers listed under options 4 and 5, as well as the ISPPREP (Preprocessed Panel) utility and the ISPD TLC (Dialog Tag Language Conversion) utility.

Options

The Options pull-down provides access to many ISPF settings, including CUA attributes and colors, keylists, and point-and-shoot fields, and the Dialog Test Application ID pop-up. See the topic about Settings (Option 0) in the [z/OS ISPF User's Guide Vol II](#) for details on each choice.

Status

The Status pull-down enables you to control what is displayed in the status area of the Primary Option Menu.

Note: The current setting is shown as an unavailable choice. That is, it is colored blue (the default) with an asterisk as the first digit of the selection number.

See the topic about the status area on the Primary Option Menu in the [z/OS ISPF User's Guide Vol II](#) for more information about using these choices to tailor the status area.

Help

The Help pull-down provides access to the online help and tutorial topics for the main ISPF options.

User profiles

ISPF stores information in your user profile. This allows ISPF to insert a value in panel input fields by using the values you last entered on either the same panel or a similar type of panel. Sometimes default values are provided if you have not specified otherwise. Information maintained in your user profile includes:

- Project name, group names, and type
- Job statement information ¹
- SYSOUT class for printed output ¹
- Defaults for list and log allocation and processing

¹ This information is maintained separately for SCLM.

- Terminal characteristics and function key definitions
- Edit profiles, including mask, tabs, and bounds
- Current scroll amount for Browse, Edit, Data Set List, and member lists ¹
- Processing options for each of the language processors
- Data set allocation/information parameters.

ISPF maintains this information automatically from one session to another. If you are a new user, you have to enter certain information the first time. But then, you simply review the information and make whatever changes you want before proceeding.

ISPF maintains sets of job statements for:

- JCL for printing the Log and List data sets
- The Hardcopy utility (3.6)
- The Outlist utility (3.8)
- The SuperC utility (3.12)
- The SuperCE utility (3.13)
- The Foreground Print Options panel (option 4, excluding SCRIPT/VS)
- The Batch option (5)
- The SCLM option (10)
- SCRIPT/VS draft output (4.9)
- SCRIPT/VS final output (4.9)
- Ending ISPF

Thus, you can provide different job statement parameters for each of these functions. For more information, see [“Job statement information” on page 110](#).

Getting help

The HELP command (F1/13) shows you general information about an ISPF system command, ISPF option, or panel, or offers more information about a message that has been displayed in the upper-right corner of the screen.

For short messages, HELP displays a one-line explanation. To get further information, enter the HELP command a second time for the appropriate section of the tutorial. Long messages display (by default) in a pop-up window. Enter END (F3/15) or RETURN (F4/16) to return to the screen that you were viewing when you entered the HELP command.

Ending an ISPF function or ISPF

To end an ISPF function without ending ISPF, enter END or RETURN.

Note:

1. If you are using the Hardcopy utility (option 3.6) or the Batch option (option 5), entering END or RETURN submits your job for processing. Type CANCEL (or press F12) to leave the Hardcopy utility without submitting a job.
2. If a SuperC or Search-For member list is displayed, END processes any members you have selected. Enter CANCEL or RETURN to leave one of these member lists without processing your selections.

To end ISPF from the ISPF Primary Option Menu, you can use the:

- EXIT command (F3)
- END command
- RETURN command
- Exit option (X).

If the display screen is split, taking one of the actions listed ends ISPF on the active logical screen only. See *z/OS ISPF Dialog Developer's Guide and Reference* for more information.

Exit option (X)

The Exit option ends ISPF using any defaults for processing log and list data sets that you have specified using the Log/List pull-down on the ISPF Settings panel action bar. If you have not specified any defaults and if a log or list data set has been generated, the Exit option displays the Specify Disposition of Log and List Data Sets panel.

Using the Exit option (X) with the jump function

If the current primary options panel has been coded to select the EXIT command for the X selection, you can use the *jump function*. Enter =X from any panel to immediately leave the current primary options panel. If there is only one ISPF logical screen active and that logical screen has only one primary option panel in effect, =X exits ISPF entirely.

ISPF recognizes =XALL as an extended version of =X. When you enter =XALL, ISPF propagates an =X to all active logical screens to request the termination of all logical screens and the exit of ISPF entirely.

Note: In the situation where a logical screen is running an application that does not support the =X command, ISPF suspends the =XALL termination processing at that logical screen. If you perform additional processing in that logical screen before you terminate it, the =XALL termination processing remains suspended. When that application is terminated, =XALL processing continues for any remaining logical screens.

Running a sample ISPF session

This topic provides an example of an ISPF session. For new users, it is a quick introduction to ISPF. For users with previous ISPF experience, it is a quick review. It can also be used to demonstrate that ISPF has been properly installed and is operational.

The scenario requires the installation of a data set named ISP.SISPSAMP. This data set is included on the ISPF basic distribution tape and should contain these four members:

ISRASM

Sample assembler source

ISRCOBOL

Sample COBOL source

ISRFORT

Sample FORTRAN source

ISRPLI

Sample PL/I source.

During this scenario, member ISRASM is copied from ISP.SISPSAMP to a user data set. The other three members are not used.

Table 1. A sample ISPF session	
Action	Result
1. Log on to TSO.	READY is displayed on your screen.
2. Type ISPF (or the appropriate alias) and press Enter.	The ISPF Primary Option Menu is displayed.
3. On the Option line, type 3 to select the Utilities option. Then press Enter.	The Utility Selection Panel is displayed.
4. On the Option line, type 2 to select the Data Set utility. Then press Enter.	The Data Set Utility panel is displayed.

Table 1. A sample ISPF session (continued)	
Action	Result
<p>5. On the Option line, type A to allocate a new data set. Specify an ISPF library by typing this information, but substitute your first name in the Group field:</p> <pre>Project . . your_user_id Group . . . name Type ASM</pre> <p>Now press Enter.</p>	<p>The Allocate New Data Set panel is displayed. Note: The Project name must be defined as a valid high-level identifier on your installation. Generally, user-ids are defined as such. If this is not true for your installation, ask your system programmer what project names are valid for your system.</p>
<p>6. Type the information shown.</p> <p>Note: Leave ALL fields blank except:</p> <pre>Space units TRKS Primary quantity. . . . 2 Secondary quantity. . . 1 Directory blocks. . . . 1 Record format FB Record length 80 Block size 3120</pre> <p>Now press Enter.</p>	<p>Data set <i>your_user_id.name.ASM</i> is allocated on scratch volume. The Data Set Utility panel is displayed.</p>
<p>7. Select option A again and specify this ISPF library, again substituting your first name in the Group field:</p> <pre>Project . . your_user_id Group . . . name Type OBJ</pre> <p>Press Enter.</p>	<p>The Allocate New Data Set panel is displayed.</p>
<p>8. Leave everything the same. Just press Enter.</p>	<p>Data set <i>your_user_id.name.OBJ</i> is allocated. The Data Set Utility panel is displayed.</p>
<p>9. Press F3.</p>	<p>The Utility Selection Panel is displayed.</p>
<p>10. Press F3 again.</p>	<p>The ISPF Primary Option Menu is displayed.</p>
<p>11. Type 3.3 to select the Move/Copy utility, bypassing the Utility Selection Menu. Press Enter.</p>	<p>The Move/Copy Utility panel is displayed.</p>
<p>12. Now you will copy a data set. On the Option line, type C to select Copy data set or member(s). Then, under From Other Partitioned or Sequential Data Set:, enter this data set name:</p> <pre>Data Set Name . . . 'ISP.SISPSAMP(ISRASM)'</pre> <p>Press Enter.</p>	<p>A panel titled COPY FROM ISP.SISPSAMP(ISRASM) is displayed.</p>
<p>13. Under To ISPF Library:, type these values:</p> <pre>Project . . your_user_id Group . . . name Type ASM</pre> <p>Press Enter.</p>	<p>Member ISRASM is copied from data set ISP.SISPSAMP to ISPF library <i>your_user_id.name.ASM</i>. Then, the Move/Copy Utility panel is displayed.</p>
<p>14. Press F3.</p>	<p>The ISPF Primary Option Menu is displayed.</p>

Table 1. A sample ISPF session (continued)	
Action	Result
15. Now you will browse member ISRASM. On the Option line, type 1 to select View and press Enter.	The View Entry Panel is displayed. Select Browse Mode.
16. Type these details under ISPF LIBRARY: <div> Project . . . your_user_id Group . . . name Type ASM </div> Note: Leave the Member field blank. Press Enter.	A member list is displayed, showing ISRASM as the only member in the <i>your_user_id.name.ASM</i> library.
17. Move the cursor to the left of ISRASM. Then type S to select ISRASM and press Enter.	A panel titled BROWSE <i>your_user_id.name.ASM</i> (ISRASM) is displayed. This is the first page of member ISRASM.
18. Press F8 to scroll ahead one page.	The second page of ISRASM is displayed.
19. Press F7 to scroll backward one page.	The first page of ISRASM is displayed.
20. Type FIND COMMENT on the Command line and press Enter.	The cursor moves to the first occurrence of the character string COMMENT and the string is intensified. Also, the message CHARS 'COMMENT' FOUND is displayed in the upper-right corner of the screen.
21. To find the next occurrence of COMMENT, press F5, the RFIND command.	The cursor moves to the second occurrence of COMMENT and once again the string is intensified.
22. Press F3.	The member list is displayed.
23. Press F3 again.	The View Entry Panel is displayed.
24. Press F3 one more time.	The ISPF Primary Option Menu is displayed.
25. Now you will edit member ISRASM. On the Option line, type 2 to select Edit and press Enter.	The Edit Entry Panel is displayed.
26. Type ISRASM in the Member field and press Enter.	A panel titled EDIT <i>your_user_id.name.ASM</i> (ISRASM) is displayed. This is the first page of member ISRASM.
27. On the Command line, type FIND COMMENT and press Enter to find the line containing the character string COMMENT.	The cursor moves to the first occurrence of the character string and the line number is intensified.
28. Delete COMMENT by pressing the End key.	COMMENT is erased. Any characters to the right of COMMENT are erased, also.
29. Press F5 to find the next occurrence of COMMENT.	The cursor moves to the second occurrence of COMMENT and the line number is intensified.
30. Move the cursor to the sequence number of the line below COMMENT, then move the cursor up one line. Repeat the COMMENT line by typing R over the first digit of the line number and pressing Enter.	The line is repeated.
31. Try out more Edit commands if you like, but remember: this program will be assembled later.	HAVE FUN!

<i>Table 1. A sample ISPF session (continued)</i>	
Action	Result
32. Press F3.	Member ISRASM is saved in data set <i>your_user_id.name.ASM</i> . The Edit Entry Panel is displayed.
33. Press F3 again.	The ISPF Primary Option Menu is displayed.
34. Move the cursor to Help on the action bar. Press Enter. On the resulting pop-up window, select 18 .	The beginning of the ISPF tutorial is displayed. Follow the directions to learn more about ISPF. When you have finished, press F3 to return to the ISPF Primary Option Menu.

<i>Table 2. Finishing the sample session</i>	
Action	Result
35. With the ISPF Primary Option Menu on the screen, press F3.	The ISPF Specify Disposition of Log and List Data Sets panel is displayed.
36. Select the process option to print and delete both the log and list data sets, and fill in the job statement information as required by your installation. Press Enter.	Data sets will be printed, then deleted through batch jobs submitted by ISPF. The job name is displayed at the bottom of the screen.
37. You are now out of ISPF. To leave TSO, type LOGOFF and press Enter.	This is the end of this usage scenario.

Chapter 2. The ISPF user interface

ISPF provides an action bar-driven interface that exploits many of the usability features of Common User Access (CUA) interfaces. For more information about CUA, see *Object-Oriented Interface Design: IBM Common User Access Guidelines*.

These action bars give you another way to move around in ISPF, as well as the ability to nest commands. Command nesting allows you to *suspend* an activity while you perform a new one rather than having to end a function to perform another function.

This chapter primarily explains the action bar-driven interface. If you use a non-programmable terminal to access ISPF and you do not want to use the command nesting function, you can make selections by typing in a selection number and pressing Enter.

Some terms you should know

These terms are used in this document:

action bar

The area at the top of an ISPF panel that contains choices that give you access to actions available on that panel. When you select an action bar choice, ISPF displays a *pull-down menu*.

command procedure

A CLIST or REXX exec

data set

A sequential or partitioned data set

ellipsis

Three dots that follow a pull-down choice. When you select a choice that contains an ellipsis, ISPF displays a *pop-up* window.

function key

In previous releases of ISPF, a programmed function (PF) key. *This is a change in terminology only.*

library

A partitioned data set

menu

A selection panel

mnemonics

Action bar choices can be defined with a underscored letter in the action bar choice text. You can access the action bar choice with the ACTIONS command and parameter x, where x is the underscored letter in the action bar choice text.

modal pop-up window

A type of window that requires you to interact with the panel in the pop-up before continuing. This includes canceling the window or supplying information requested.

modeless pop-up window

A type of window that allows you to interact with the dialog that produced the pop-up before interacting with the pop-up itself.

point-and-shoot text

Text on a screen that is cursor-sensitive. See [“Point-and-Shoot text fields” on page 23](#) for more information.

pop-up window

A bordered temporary window that displays over another panel.

pull-down menu

A list of numbered choices extending from the selection you made on the action bar. The action bar selection is highlighted; for example, Utilities in [Figure 6 on page 21](#) appears highlighted on your

screen. You can select an action either by typing in its number and pressing Enter or by selecting the action with your cursor. ISPF displays the requested panel. If your choice contains an ellipsis (...), ISPF displays a *pop-up window*. When you exit this panel or pop-up, ISPF closes the pull-down and returns you to the panel from which you made the initial action bar selection.

select

In conjunction with point-and-shoot text fields and action bar choices, this means moving the cursor to a field and simulating Enter.

terminal

Any of the supported display devices

Understanding ISPF panels

A *panel* is a predefined display image that you see on a display screen. ISPF formats all panels to fit on a 24-line by 80-character screen. On a 3278 Model 3 or 4, data that you can scroll occupies the full length of the screen (32 or 43 lines). On a 3278 Model 5, ISPF normally displays information in *default mode*; that is, 24 lines by 80 characters, with the same size characters as other models. "Browse" and "Edit" data that is wider than 80 characters is displayed with the smaller *native mode* characters, that is, up to 132 per line. You can use the Settings option (0) to override the automatic switching of modes.

Panel format

Figure 4 on page 16 shows how ISPF formats the first three and last few lines of each display:

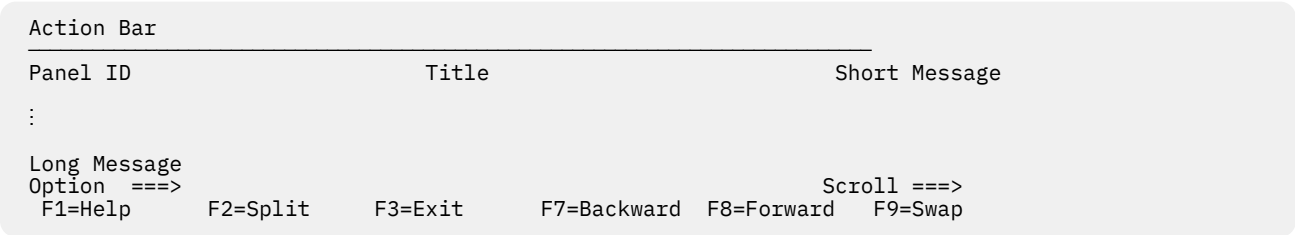


Figure 4. Panel Format

Note: The "Panel display CUA mode" field on the ISPF Settings panel determines where the Command or Option line and long messages are displayed. The default setting selects "Panel display CUA mode", which causes the Command or Option line to be displayed on the bottom of the panel. The default setting also selects "Long message in pop-up", which causes long messages to be displayed in a pop-up window directly above the Command or Option line. To display the command or option line and long messages at the top of the panel, select option 0, deselect the "Panel display CUA mode" field, and deselect the "Command line at bottom" field. See [z/OS ISPF Dialog Developer's Guide and Reference](#) for more information about the "Panel display CUA mode" and "Command line placement" fields.

The fields on [Figure 4 on page 16](#) function as follows:

Action Bar

The action bar provides access to pull-down menus that give you a new and faster way to move around in the product as well as access to command stacking. See [Figure 6 on page 21](#) for more information about using the action bar.

Panel ID

This area can be overlaid by the system commands SYSNAME, USERID, SCRNAME, or PANELID. The data displayed can be up to 17 characters wide. If none of these commands is in effect, data from the panel title line is displayed.

Note: For more information about the system commands PANELID, SCRNAME, SYSNAME, USERID, and the order of priority that determines what is displayed in this 17-character area (if you specify more than one of these commands), see ["ISPF system commands" on page 34](#).

Title

Identifies the function being carried out and, where appropriate, the library or data set information.

Short Message

Shows:

- Current line for Browse, and column positions for View, Browse, and Edit.
- Current row position in a table display if the short message area is not overlaid by a function-requested message.
- Successful completion of a processing function.
- Error conditions (with an audible alarm, if one is installed). See [z/OS ISPF Dialog Developer's Guide and Reference](#) for information about coding an alarm.

Command/Option

Allows you to enter a command or, on a menu, to enter either a command or an option.

Scroll

Indicates the scroll amount (if scrolling applies). You can type over it to change it. The valid scroll amounts are:

nnnn

A number of lines or columns (between 0 and 9999).

CSR

Move the line or column that contains the cursor to the edge of the scrollable area. For example, if you scroll right, the cursor will be positioned at the left side of the scrollable area. If you scroll down, the cursor will be positioned at the top of the scrollable area.

DATA

Scroll by one line or column less than a full page. For example, if you scroll up, the line that was displayed at the top of the page becomes the bottom line in the new page of data.

HALF

Scroll by half the number of lines or columns in the scrollable area.

MAX

Scroll to the limit of the data. For example, if you enter MAX and scroll down, the last page of data is displayed. If you enter MAX and scroll up, the first page of data is displayed. Note that MAX only applies to the next scroll command. When the MAX scroll command has been processed, the scroll amount reverts to the previous setting.

PAGE

Scroll by the full height (if scrolling up down) or width (if scrolling left or right).

Long Message

Displays an explanation of error conditions in a pop-up window when you enter the HELP command (see [“Getting help” on page 9](#)). On some displays, data may be overlaid temporarily by a long message.

Function Keys

Displays settings for the function keys. These settings are controlled through the Function keys pull-down on the action bar on the ISPF Settings panel.

Panel types

When using ISPF, you see three basic types of panels:

- Menus (selection panels)
- Data-entry panels
- Scrollable data displays.

Menus

A *menu*, or selection panel, allows you to type a number or letter in the Option field and press Enter to select one of the listed items. The number or letter can be typed in either uppercase or lowercase.

Allowable numbers and letters are shown in high intensity. You can also enter ISPF commands. See [Figure 5 on page 18](#) for an example of a menu.

Note: If the word BLANK or blank is listed, leave the Option field blank and press Enter to select that option. Do not type the word blank.

```

1  Menu  Utilities  Compilers  Options  Status  Help
-----
                                ISPF Primary Option Menu
2
0  Settings      Terminal and user parameters      User ID . : USERID
1  View          Display source data or listings    Time. . . : 13:13
2  Edit          Create or change source data    Terminal. : 3278
3  Utilities     Perform utility functions        Screen. . : 1
4  Foreground    Interactive language processing    Language. : ENGLISH
5  Batch         Submit job for language processing  Appl ID . : ISR
6  Command       Enter TSO commands                TSO logon : ISPF
7  Dialog Test   Perform dialog testing                TSO prefix: USERID
9  IBM Products  IBM program development products        System ID : MVS8
10 SCLM          SW Configuration Library Manager      MVS acct. : IBMGSA
11 Workplace     ISPF Object/Action Workplace            Release . : ISPF 7.5
12 z/OS System   z/OS system programmer applications
13 z/OS User     z/OS user applications

Enter X to Terminate using Log/List defaults

Option ==>
3  F1=Help      F2=Split      F3=Exit      F7=Backward  F8=Forward  F9=Swap
   F10=Actions  F12=Cancel

```

- 1** Action bar. You can select any of the action bar choices and display a pull-down.
- 2** Options Menu. The fields in this column are point-and-shoot text fields.
- 3** Function Key bar. Displays the Function Keys that are active on the current panel.

Figure 5. Primary Option Menu showing key features

Data entry panels

A data-entry panel is a panel on which you specify information, such as data set names, job statement parameters, and language processing options. If you do not enter a required value or if you enter inconsistent values, ISPF prompts you with a message.

Some data-entry fields retain their previous values. If so, the next time you use the panel, you do not have to type them again. Just press Enter. If you do not want those values, type over them and then press Enter.

The retained values come from your user profile, which ISPF automatically builds and maintains across sessions. See [“User profiles” on page 8](#) for more information about user profiles.

Edit modes and defaults are also maintained in the Edit portion of your user profile. See [z/OS ISPF Edit and Edit Macros](#) for more information.

Option selection

You can select an ISPF option three ways:

- Select a choice from one of the pull-downs on the action bar. See [Figure 6 on page 21](#) for more information.

- Select one of the point-and-shoot fields. See [“Point-and-Shoot text fields”](#) on page 23 for more information.
- Type an option number on the Option line and press Enter.

Many options have a secondary list of options. To bypass the second menu, type two selections, separating them with a period, on the ISPF Primary Option Menu. For example, entering 3.1 on the ISPF Primary Option Menu is the same as entering 3 on the ISPF Primary Option Menu and 1 on the Utility Selection Panel.

An even faster way to select an option is to bypass both the ISPF Primary Option Menu and the secondary menus. To do this, include your options in the ISPF (or alias) command. For example:

ISPF 2

To go directly to the Edit option.

ISPF 3.1

To go directly to the Library utility (3.1).

Action bars

Action bars give you another way to move through ISPF. Most ISPF panels have action bars at the top; the choices appear on the screen in white by default. Many panels also have point-and-shoot text fields, which appear in turquoise by default. The panel shown in [Figure 5 on page 18](#) has both.

If you use a non-programmable terminal to access ISPF and you do not want to take advantage of the command nesting function, you can make selections by typing a selection number and pressing Enter.

If the cursor is located somewhere on the panel, there are several ways to move it to the action bar:

- Use the cursor movement keys to manually place the cursor on an action bar choice.
- Type ACTIONS on the command line and press Enter to move the cursor to the first action bar choice.
- Press F10 (Actions) or the Home key to move the cursor to the first action bar choice.

If mnemonics are defined for action bar choices, you can:

- – On the command line, type ACTIONS and the mnemonic letter that corresponds to an underscored letter in the action bar choice text. This results in the display of the pull-down menu for that action bar choice.
- – On the command line enter the mnemonic letter that corresponds to an underscored letter in the action bar choice text, and press the function key assigned to the ACTIONS command. This results in the display of the pull-down menu for that action bar choice.

Use the tab key to move the cursor among the action bar choices.

Note:

1. ISPF does not provide a mouse emulator program. This document uses *select* in conjunction with point-and-shoot text fields and action bar choices to mean moving the cursor to a field and simulating Enter.

Some users program their mouse emulators as follows:

- Mouse button 1: position the cursor to the pointer and simulate Enter
 - Mouse button 2: simulate F12 (Cancel)
2. If you want the Home key to position the cursor at the first input field on an ISPF panel, type SETTINGS on any command line and press Enter to display the ISPF Settings panel. Deselect the "Tab to action bar choices" option.

When you select one of the choices on the action bar, ISPF displays a pull-down menu.

The action bar choices available vary from panel to panel, as do the choices available from their pull-downs. However, Menu and Utilities are basic action bar choices, and the choices on their pull-down menus are always the same.

Menu action bar choice

The following choices are available from the Menu pull-down:

Settings

Displays the ISPF Settings panel

View

Displays the View Entry panel

Edit

Displays the Edit Entry panel

ISPF Command Shell

Displays the ISPF Command Shell panel

Dialog Test

Displays the Dialog Test Primary Option panel

Other IBM Products

Displays the Additional IBM Program Development Products panel

SCLM

Displays the SCLM Main Menu

ISPF Workplace

Displays the Workplace entry panel

Status Area

Displays the ISPF Status panel

Exit

Exits ISPF

Utilities action bar choice

The following choices are available from the Utilities pull-down:

Library

Displays the Library Utility panel

Data Set

Displays the Data Set Utility panel

Move/Copy

Displays the Move/Copy Utility panel

Data Set List

Displays the Data Set List Options panel

Reset Statistics

Displays the Reset ISPF Statistics panel

Hardcopy

Displays the Hardcopy Utility panel

Reserved

Reserved for future use by ISPF; an unavailable choice

Outlist

Displays the Outlist Utility panel

Commands

Displays the Command Table Utility panel

Reserved

Reserved for future use by ISPF; an unavailable choice

Format

Displays the Format Specification panel

SuperC

Displays the SuperC Utility panel

SuperCE

Displays the SuperCE Utility panel

Search-for

Displays the Search-For Utility panel

Search-forE

Displays the Search-ForE Utility panel

Table Utility

Displays the ISPF Table Utility panel

Directory List

Displays the z/OS UNIX Directory List Utility panel

Figure 6 on page 21 shows the pull-down menu displayed when you select Utilities on the ISPF Primary Option Menu action bar.



1

The selected action bar choice is highlighted.

Figure 6. Panel with an Action Bar Pull-Down Menu

To select a choice from the Utilities pull-down menu, type its number in the entry field (underlined) and press Enter or select the choice. To cancel a pull-down menu without making a selection, press F12 (Cancel). For example, if you select choice 9, ISPF displays the Command Table Utility pop-up, as shown in Figure 8 on page 23.

Note: If a choice displays in blue (the default) with an asterisk as the first digit of the selection number, the choice is unavailable for one of these reasons:

- Recursive entry is not permitted here

- The choice is the current state; for example, the Status is currently set to Session in [Figure 7 on page 22](#).

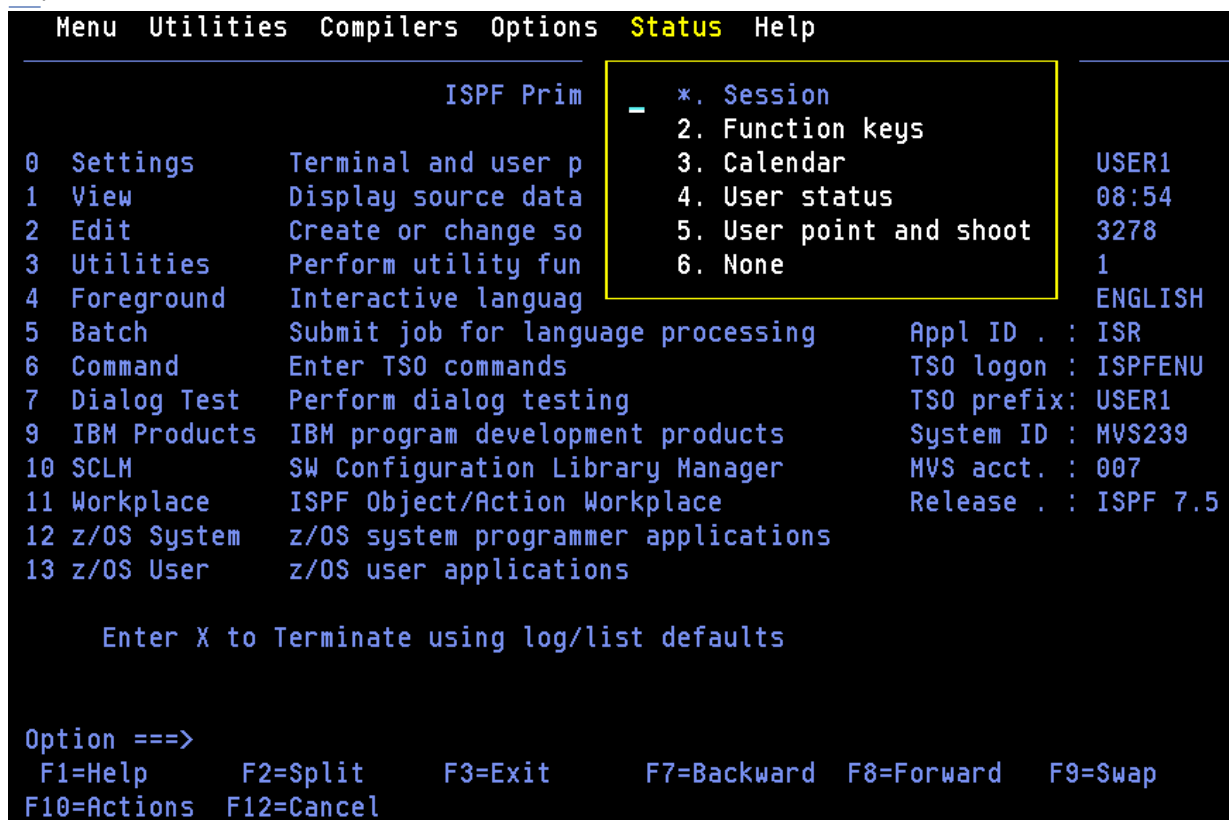


Figure 7. An Unavailable Choice on a Pull-Down

Interaction of command and action bar choice

If you enter a command on the command line before selecting an action bar choice, the command is processed and the pull-down menu is not displayed. The CANCEL, END, and RETURN commands are exceptions. These three commands are not processed and the cursor is repositioned to the first input field in the panel body. If there is no input field, the cursor is repositioned under the action bar area.

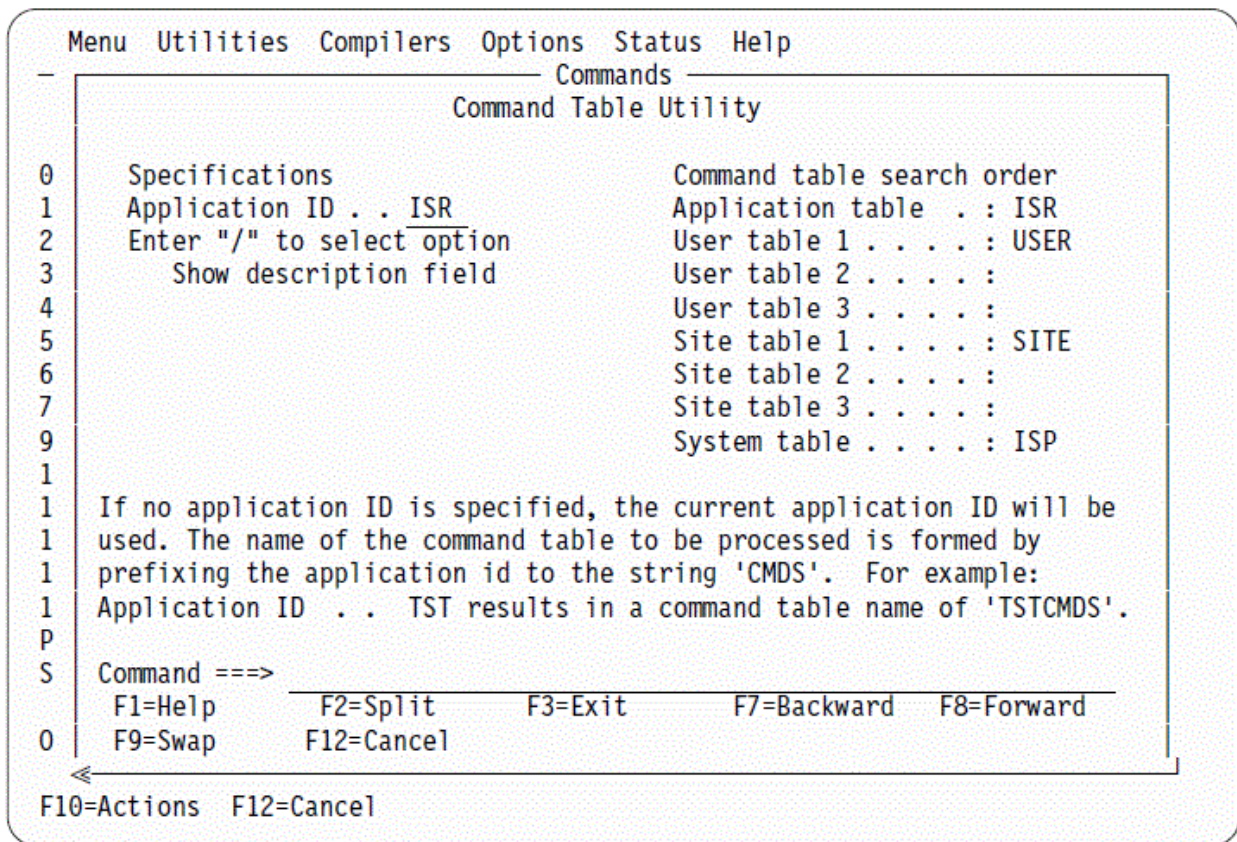


Figure 8. Pop-Up Selected from an Action Bar Pull-Down

Point-and-Shoot text fields

Point-and-shoot text fields are cursor-sensitive; if you select a field, the action described in that field is performed. For example, if you select Option 0, Settings, in [Figure 9 on page 24](#), ISPF displays the ISPF Settings panel.

Note:

1. If you have entered a command on the command line, it is processed before any point-and-shoot command.
2. As the cursor-sensitive portion of a field often extends past the field name, you may want to make this area visible. To display point-and-shoot fields in reverse video, use the PSCOLOR command to set Highlight to REVERSE.
3. You can use the Tab key to position the cursor to point-and-shoot fields by selecting the "Tab to point-and-shoot fields" option on the ISPF Settings panel (Option 0).



- 1** Action bar. You can select any of the action bar choices and display a pull-down.
- 2** Options. The fields in this column are point-and-shoot text fields.
- 3** Dynamic status area. You can specify what you want to be displayed in this area.

Figure 9. Panel with an Action Bar and Point-and-Shoot Fields

Function keys

ISPF uses CUA-compliant definitions for function keys F1-F12 (except inside the Edit function). F13-F24 are the same as in ISPF Version 3. By default you see the CUA definitions because your "Primary range" field is set to 1 (Lower - 1 to 12).

To use non-CUA-compliant keys, select the "Tailor function key display" choice from the Function keys pull-down on the ISPF Settings (option 0) panel action bar. On the Tailor Function Key Definition Display panel, specify 2 (Upper - 13 to 24) in the "Primary range" field.

These function keys help you navigate in ISPF:

- F1**
Help. Displays Help information. If you press F1 (and it is set to Help) after ISPF displays a short message, a long message displays in a pop-up window.
- F2**
Split. Divides the screen into two logical screens separated by a horizontal line or changes the location of the horizontal line.
- F3**
Exit (from a pull-down). Exits the panel underneath a pull-down.
- F3**
End. Ends the current function.

F7

Backward. Moves the screen up the scroll amount.

F8

Forward. Moves the screen down the scroll amount.

F9

Swap. Moves the cursor to where it was previously positioned on the other logical screen of a split-screen pair.

F10

Actions. Moves the cursor to the action bar. If you press F10 a second time, the cursor moves to the command line.

F12

Cancel. Issues the Cancel command. Use this command to remove a pull-down menu if you do not want to make a selection. F12 also moves the cursor from the action bar to the Option ==> field on the ISPF Primary Option Menu. See [z/OS ISPF Dialog Developer's Guide and Reference](#) for cursor-positioning rules.

F16

Return. Returns you to the ISPF Primary Option Menu or to the display from which you entered a nested dialog. RETURN is an ISPF system command.

Selection fields

ISPF uses these CUA-compliant conventions for selection fields:

A single period (.)

Member lists that use a single period in the selection field recognize only a single selection. For example, within the Edit function you see this on your screen:

EDIT USER1.UTIL.CNTL		Row 0000001 of 0000023			
Command ==>		Scroll ==> CSR			
Name	Prompt	Size	Created	Changed	ID
. ADDUSER		42	1996/12/02	2014/05/13 21:47:40	IBMUSER
. ADDUSERS		21	1996/03/11	2014/02/06 07:05:30	USER3

You can select only one member to edit.

A single underscore (_)

Selection fields marked by a single underscore prompt you to use a slash (/) to select the choice. You may use any nonblank character. For example, the "Panel display CUA mode" field on the ISPF Settings panel has a single underscore for the selection field:

```
Options
Enter "/" to select option
- Command line at bottom
- Panel display CUA mode
- Long message in pop-up
```

An underscored field (____)

Member lists or text fields that use underscores in the selection field recognize multiple selections. For example, from the Display Data Set List Option panel, you may select multiple members for print, rename, delete, edit, browse, or view processing.

Entering commands in ISPF

ISPF provides flexibility by accepting various types of commands and having many methods for entering them. [Table 3 on page 26](#) provides an overview of the entry methods and commands available.

Table 3. Entry Methods and Command Types

Entry Methods	TSO Commands, CLISTs, and REXX EXECs	ISPF Primary Commands	ISPF Line Commands
ISPF Command Shell (option 6)	X	X	
Command or Option field (1)	X (2)	X	
Line Command fields (1 - 6 characters)			X
Line Command fields (9 characters)	X		X
Note: <ol style="list-style-type: none"> 1. Case sensitivity of a primary command is dependent on the attributes of the panel field from which the command is issued. When the command field specifies CAPS(ON), any characters in the command field are translated to upper case. 2. Available when prefixed by TSO. 			

For example, to use the TSO ALLOCATE command, you could enter:

```
Command ==> TSO ALLOCATE
```

Also, CLIST names and REXX exec names can be preceded by a percent (%) symbol, as in:

```
Option ==> TSO %CLIST
```

This symbol informs TSO that the command is a CLIST or REXX exec, not a TSO command.

You can also use two command entry methods not shown in the table: the PA keys and the function keys. PA1 (ATTENTION) and PA2 (RESHOW) are hardware keys that you cannot redefine. You can use function keys to enter all commands.

Types of commands

There are two types of commands that you can enter in the ISPF Command or Option field:

- TSO commands, CLISTs, and REXX EXECs

You invoke commands through the MVS/TSO operating system. These include TSO commands, CLISTs, REXX EXECs, and the commands assigned to the PA1 and PA2 keys.

- ISPF Primary commands

You call ISPF functions, such as ISPLIBD to display active LIBDEFs, or enter commands to navigate through a dialog, such as CANCEL to cancel execution or DOWN to scroll down.

TSO commands, CLISTs, and REXX EXECs

ISPF gives you access to the MVS/TSO operating system by letting you enter TSO commands, CLISTs, and REXX EXECs from within ISPF. [z/OS TSO/E Command Reference](#) contains descriptions of all TSO commands.

You can enter most TSO commands, CLISTs, and REXX EXECs from all three panel types: data entry; menu; and scrollable data display. However, some TSO commands, such as LOGON and LOGOFF, can cause unwanted results when you enter them from ISPF. This is also true of CLISTs and REXX EXECs that contain these TSO commands. The rules for entering TSO Commands, CLISTs and REXX EXECs are described in the Command (Option 6) topic in the [z/OS ISPF User's Guide Vol II](#).

ISPF primary commands

ISPF primary commands are valid from all three types of panels. However, the validity of some commands depends on the type of panel displayed or the type of terminal you use. For example:

- The scroll commands (UP, DOWN, LEFT, and RIGHT) are valid only on scrollable data displays.
- The SPLITV command is valid only on a 3290 display terminal.
- Some commands are only valid for specific functions. For example:
 - The CAPS command is valid only when using the Edit or View function.
 - The DISPLAY command is valid only when using the Browse function.
 - The SPROF command is valid only when using the SCLM Edit function.

For a description of the ISPF commands, default function key settings, and the PA1 and PA2 keys, see “ISPF system commands” on page 34. For information about which commands are valid for a particular function, see the relevant topic in [z/OS ISPF Edit and Edit Macros](#) for edit commands, [z/OS ISPF Software Configuration and Library Manager Guide and Reference](#) for SCLM commands, or [z/OS ISPF User's Guide Vol II](#) for commands for the various ISPF options.

ISPF line commands

Line commands affect one or more specified lines that you select. For example:

- The C or CC Edit line command can copy lines or blocks of lines within a data set.
- The D line command on the ISPF Dialog Variables panel deletes one variable from the profile pool.
- The R line command on the DSLIST panel of the Data Set Utility renames an entire data set.
- The R line command on a member list panel renames a single member in a partitioned data set.

Multicultural support

Note: The term "multicultural support" has replaced the previous term "National Language Support" (or "NLS").

Multicultural support gives countries the option of translating commands and keywords so that users can enter them in the country's national language. In addition, panels, messages, and literal modules are provided with the product for the Japanese language.

When multicultural support is enabled, users can be required to enter certain keywords in the national language and not in English.

When the Danish, French, Korean, Traditional Chinese, Simplified Chinese, Spanish, Brazilian-Portuguese, Italian, German, or Swiss German session language is specified, its respective literal module is used. However, the ISPF product panels and messages are displayed in English.

ISPF command syntax notation

The notation conventions for ISPF command syntax follow.

- Uppercase commands and their uppercase parameters show required entry.
- Lowercase parameters show variables (substitute your values for them).

Stacking commands

To enter more than one command, you can stack them by typing a special delimiter between them. The default delimiter is a semicolon. Use the Settings option (0) to change the delimiter. For example, to stack two Edit CHANGE commands, use:

```
Command ==> CHANGE ALL ABC XYZ;CHANGE ALL PQR GHIJK
```

The system variable for the delimiter is ZDEL. See the topic about system variables in the [z/OS ISPF Dialog Developer's Guide and Reference](#) for more information about ZDEL.

Dual command processing

You can enter information on a command or option line in combination with pressing a related function key. The command is called first. For example, typing 4 on the command line and pressing F7 (UP command) is the same as typing UP 4 on the command line and pressing Enter.

If the command you type is unrelated to the command assigned to a function key you press, ISPF passes the entry to the function in control, which either processes or ignores the entry. For example, if the Edit function is in control, ISPF may display an error message. However, if the Tutorial is in control, the command is ignored. ISPF processes any stacked valid commands.

Line command fields

Line command fields can take many forms. Some have headings, some do not. Most are blank, but some contain single quotation marks or sequence numbers. For some, you type one character; for others, you type up to nine characters (even typing over data set names). [Table 4 on page 28](#) shows the functions that provide the line command fields.

<i>Table 4. Characteristics of the Line Command Field</i>			
Functions Providing Line Command Fields	Heading Displayed	Characters Allowed	Initial Contents
Member Selection List	None	1-9	Blank
Edit (option 2)	None	6	Quotes or numbers
Data Set List utility (option 3.4)	Command	9	Blank
Command Table utility (option 3.9)	None	4	Quotes
Format Specification utility (option 3.11)	None	1	Blank
SCRIPT/VS (option 4.9)	Line Cmd	1	Quotes
Dialog Test (option 7): Variables (option 7.3) Tables (option 7.4) Traces (option 7.7) Breakpoints (option 7.8)	None	4	Quotes

The line command field for member selection lists is blank and has no heading. This includes typical member lists, which have a 1-character line command field, and the member list displayed when you use option M of the Data Set List utility, which has a 9-character line command field.

Quotes appear when you create a new data set or member, or when you insert one or more lines. Sequence numbers appear if you have NUMBER ON in your Edit profile.

Data set lists with 9-character line command fields allow you to type over data set names, thus extending the length of the fields to allow you to type long TSO commands, CLIST names, and REXX exec names. For information about entering TSO commands, CLISTs, and REXX EXECs in a line command field, see the Data Set List Utility (Option 3.4) topic in the [z/OS ISPF User's Guide Vol II](#). Also, the rules for entering TSO Commands, CLISTs and REXX EXECs from within ISPF are described in the Command (Option 6) topic in the [z/OS ISPF User's Guide Vol II](#).

PDF component line commands

Most PDF component line commands use only one letter, such as S, for selecting a member from a member list. Others, such as many of the Edit line commands, use more than one letter and sometimes allow you to add a number so the command affects more than one line. For example, the UC line command plus the number 3, as in UC3, converts three lines to uppercase.

Another type of line command is the *block* line command, which affects the block of lines between and including the lines on which the commands are entered. For example, the UCC line command, when entered beside two different lines, converts all lines between and including the two commands to uppercase.

Command nesting

You can use the action bars to *suspend* an activity while you perform a new one.

For example, if you are editing a data set and want to allocate another data set, select the Data set choice from the Utilities pull-down on the Edit panel action bar. ISPF suspends your edit session and displays the Data Set Utility panel. When you have allocated the new data set and ended the function, ISPF returns you directly to your edit session.

By contrast, if you used the jump function (=3.2), ISPF would end your edit session before displaying the Data Set Utility.

Splitting the screen horizontally or vertically

While using a dialog, you can use the SPLIT command to partition the display into two or more logical screens. The logical screens are treated as though they are independent ISPF sessions.

The maximum number of screens available to you depends on the value of the MAXIMUM_NUMBER_OF_SPLIT_SCREEN keyword in the ISPF Configuration table. ISPF ships with a default figure of 8. Support for up to 32 split screens is available for all terminal types except the 3290.

Note: Although a 3270 screen can only display two screens at one time, there can be other screens (up to 32) that are not visible. You can select which logical screen to display by using the SWAP LIST command to display a list of logical screens.

The SPLIT command

You enter split-screen mode by using the SPLIT command. You also use this command to reposition the horizontal line that separates the two logical screens on a 3270 display. On a 3270 display the location of the cursor identifies the active logical screen. On a 3270 display, the horizontal divider line that separates the logical screens is not considered part of either logical screen. If the cursor is placed on this horizontal divider line and a function key is pressed, the result is the same as if the ENTER key was pressed and the cursor is positioned on the active logical screen's command line.

SPLIT command without parameters

If only one screen is currently being used, the physical display is divided into two logical screens with a divider at the cursor. If two or more screens exist, the divider line is moved, but no new screen is started.

SPLIT NEW command

A new logical screen is added each time the command is given, until the maximum number is reached. After the limit is reached, a message appears when the command is issued again. Each new logical screen is added below the cursor, where the split line appears. If two or more screens already exist, the new one replaces the screen in which the SPLIT command was *not* entered.

End split-screen mode by ending the application on all but one logical screen. The remaining logical screen is then expanded to the full size of the display screen.

The SWAP command

Although you can alternately use any logical screen, only one of the logical screens is considered active at a time. The location of the cursor identifies the active screen. You make a screen active by using the SWAP command and its parameters to choose the desired screen.

The parameters on the SWAP command (LIST, PREV, NEXT, *screen_name*, and *n*) control which screens you see displayed.

SWAP command without parameters

If only one screen exists, this command has no effect. If more than one screen exists, this command moves the cursor between the two logical screens that are displayed.

SWAP PREV|NEXT|screen_name|n commands

- Entering SWAP PREV changes the display to the next lower screen number from the one where the command is entered. Repeatedly issuing the same command causes each lower-numbered screen to display until screen number 1 is reached, then the counter wraps back to screen number 32 (or your installation's maximum number).
- Entering SWAP NEXT changes the display to the next higher screen number from the one where the command is entered. Repeatedly issuing the same command causes each higher-numbered screen to display until screen number 32 (or your maximum) is reached, then the counter wraps back to screen number 1.
- Entering SWAP *screen_name* changes the display to the screen named *screen_name* if it is active.
- Entering SWAP *n* changes the display to the screen numbered *n* (ZSCREEN variable) if it is active.

SWAP LIST command

This command displays the ISPF Task List (Figure 10 on page 30), from which you can select which screen to display. The screen you select replaces the screen on which you entered the command.

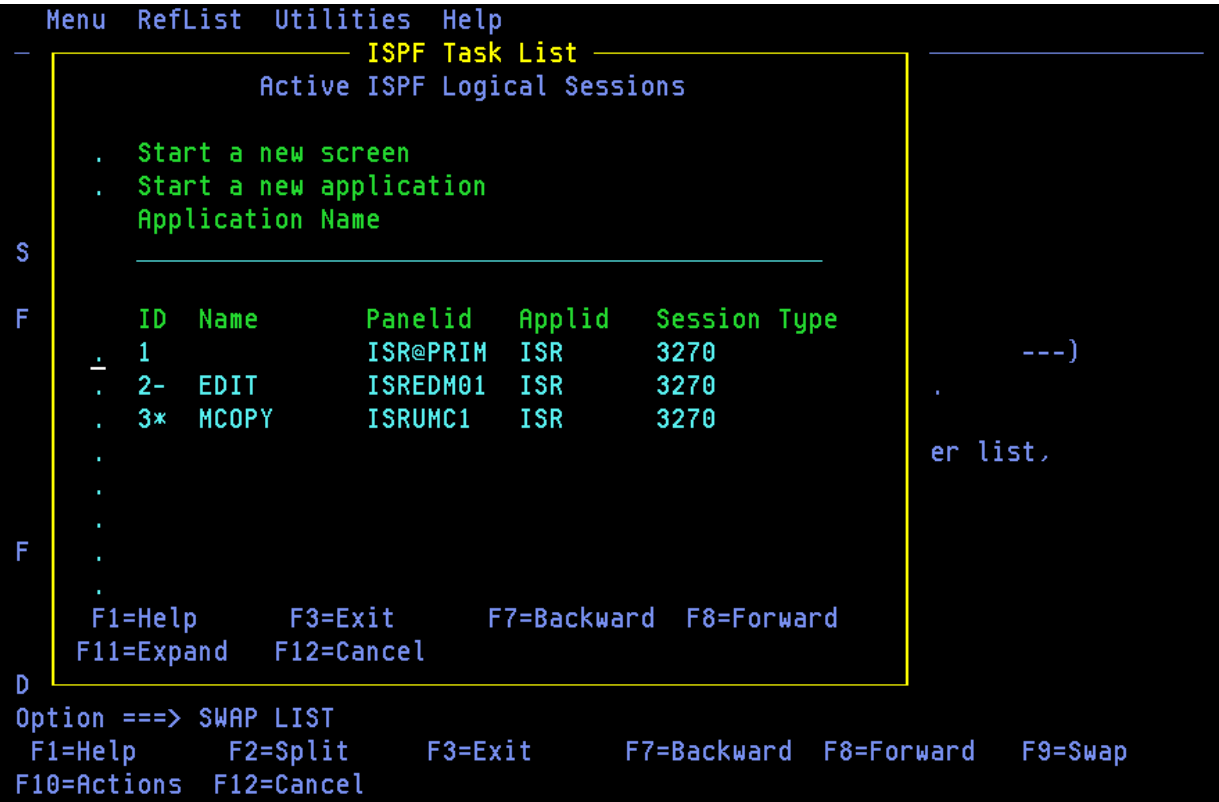


Figure 10. ISPF Task List

The result when choosing one of the fields on the ISPF Task List panel are as follows:

Start a new screen

Starts a new logical ISPF screen.

Start a new application

This field is used in conjunction with the Application Name field. If you choose "Start a new application" you must enter an application name in the "Application Name" field.

Application Name

The name of an application you want to start by choosing the "Start new application" field on the ISPF Task List panel. This application is started in a new logical screen. ISPF invokes the application through the ISPF START command, so any application name and parameters that are valid for the START command are valid in the Application Name input field. If you need more space to enter the application name and parameters, press the Expand PF key to display a pop-up window that contains a longer input field.

For example, if a user types "keylist" in the Application Name input field and presses Enter, the ISPF KEYLIST application is invoked in a new logical screen.

Select a screen from the list of active sessions

Provides a list of active sessions for you to choose from.

3290 terminals

On 3290 terminals, in addition to splitting the screen horizontally, you can use the SPLITV command to split the screen vertically, for a total of four logical screens. In the case of the 3290 terminal, four is the maximum number of screens possible. (The SPLITV function is not active if the data being displayed on a screen is more than 80 characters wide.) [Figure 11 on page 31](#) shows the effect of SPLIT and SPLITV, starting in single-screen mode.

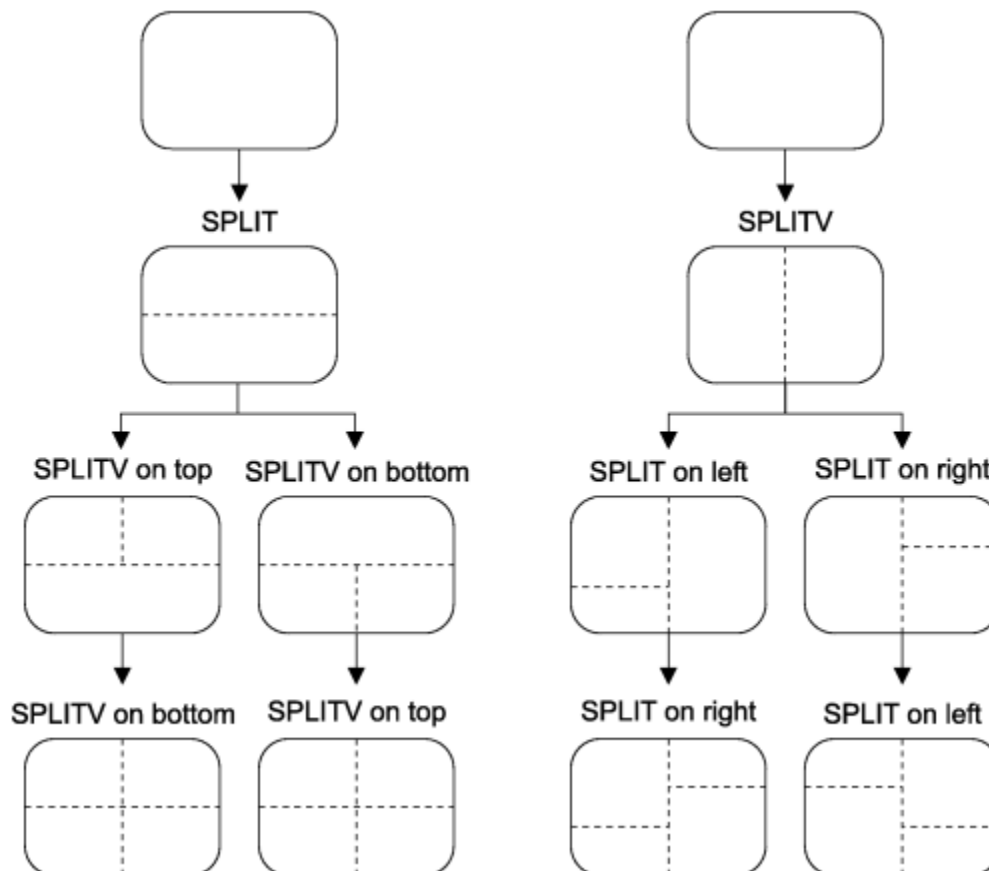


Figure 11. Splitting the 3290 Screen

Note:

Splitting the Screen

1. ISPF logical screens are separate subtasks that do not share subpool 0 (attached with SZERO=NO parameter.) Thus, VSAM data sets cannot be accessed from more than one logical screen.
2. If you are in a VSAM application, perform a split screen operation, then enter another VSAM application in the second session, you must be sure to end the second session before you end the first session, or an abend can occur.
3. On 3290 hardware, using the jump function to move from screen to screen might result in the loss of data that has been typed but not processed. The use of the 3290 hardware jump is not recommended.
4. In split-screen mode, if you type a command on the command line and swap screens before pressing Enter, the command is erased.

Chapter 3. Using commands, function keys, and cursor selection

This topic explains how to use the ISPF system commands, the function keys and their default assignments, and the cursor-select facilities.

You can use commands to request processing functions. These are the levels of commands:

System commands

Provided by the DM component and always available to a user, unless explicitly overridden by an application, a user, or a site.

User or Site commands

Defined by the site administrator (in the ISPF Configuration table) and available to a user, in addition to the system commands.

Application commands

Available to a user throughout the processing of an application.

Function commands

Meaningful only while using a particular function within an application.

System, user, site, and application commands are defined by using command tables. The DM component processes these commands. System, user, site, and application command processing is generally transparent to the dialog functions. For example, HELP is a system command.

Function commands include all commands that are processed by a dialog function. For example, the NUMBER command within the ISPF Editor (option 2) is a function command.

You can enter a command by:

- Typing the information on the command line, or in the command field, and pressing the Enter key. This includes the command field in View, Browse, Edit, and Table Displays, as well as the command field on a panel.
- Pressing the function key set to the desired command.
- Selecting an **Attention** field by using the cursor-select key. The cursor-select key is a hardware feature on 3179, 3179G, 3180, 3278, 3279, and 3290 terminals.

ISPF intercepts all commands, regardless of whether the command is typed in the command field or entered with a function key or cursor-select key. ISPF performs the command if it matches an entry in the application, user, or system command table. Otherwise, it is assumed to be a function command and is passed to the dialog function.

Case sensitivity of a primary command is dependent on the attributes of the panel field from which the command is issued. When the command field specifies CAPS(ON), any characters in the command field are translated to upper case.

You can pass commands to the operating system by entering the appropriate ISPF-provided command (TSO) followed by the actual TSO command. For example:

```
===> TSO LISTC LEVEL(Z77PHJ)
```

You can stack commands to be run by entering a special delimiter between the commands. For example, entering:

```
===> UPDATE BLDG DEPT NAME; MENU ABC
```

causes the UPDATE command to run first. When it completes, the MENU command starts. The default delimiter is a semicolon (;), which you can change with the ISPF SETTINGS option (see the Settings (Option 0) topic of the *z/OS ISPF User's Guide Vol II*).

Commands cannot be stacked following the:

- HELP command. HELP processing deletes any remaining commands in the stack.
- RETRIEVE command.

ISPF system commands

This section describes the ISPF system commands in alphabetical order.

ACTIONS

➤ ACTIONS ➤

Moves the cursor between the action bar and the panel body.

AUTOTYPE

➤ AUTOTYPE ➤

Allows you to type a partial data set or member name, then press a function key and have ISPF complete the name.

Note: AUTOTYPE is not a true ISPF system command because it is not built into the base code of ISPF and it works only on panels that are written to understand it.

BACKWARD

➤ BACKWARD ➤

Alias for the UP command. Scrolls toward the top of the data.

BOTTOM

➤ BOTTOM ➤

Alias for the DOWN MAX command. Scrolls to the bottom of the data.

CANCEL

➤ CANCEL ➤

If CANCEL is requested from an action bar pull-down, the pull-down is removed and the cursor is positioned on the first action bar choice.

If CANCEL is requested from a panel displayed using the DISPLAY, TBDISPL, or SELECT service calls, the DM component places the command in ZCMD and sets a return code of 0 from the display screen.

If CANCEL is requested from a panel displayed using the DISPLAY or TBDISPL service calls and the panel was defined with a PANEL tag (DTL) or a)PANEL statement, the DM component returns the command in ZVERB and sets a return code of 8 from the display screen.

CMDE

➤ CMDE ➤

If CMDE is entered on any command line, a pop-up panel (ISPCMDE) with a 234-character command input field is displayed.

You can enter up to 234 characters using the entry field provided. ISPF allows TSO commands, CLISTS, and REXX execs and parameters to be entered in the input field. This panel is processed much like the PDF Option 6 panel. Data passed to this panel is translated to uppercase characters. Data passed from this panel remains as it appears on the panel.

If input has been entered on the panel from which CMDE was called, it is saved and displayed when the pop-up panel ISPCMDE is displayed.

COLOR

➤ COLOR ➤

Changes the default colors on seven-color display devices.

CRETRIEV

➤ CRETRIEV ➤

The actions of the CRETRIEV (conditional retrieve) command are based on the position of the cursor when you enter the command:

- If the cursor is within the primary input field when you enter the CRETRIEV command, the command does the same processing as the RETRIEVE command; the DM component places the previous command entered, if any, in the command input field.
- If the cursor is not within the primary input field, the CRETRIEV command does the same processing as a CURSOR command; the DM component places the cursor at the beginning of the first input field on the panel, which is usually the option or command field.

CUAATTR

➤ CUAATTR ➤

Changes the default values of panel colors, intensities, and highlights for CUA panel element attributes.

CURSOR

➤ CURSOR ➤

Moves the cursor to the first input field on the panel being displayed, generally the option or command field, or moves the cursor to the alternate command field if one has been designated on the)BODY statement. If invoked a second time on a panel with scrollable data, this command causes the cursor to be moved to the second input field. Scrollable data panels include a View, Browse, Edit, or table display panel or a panel with a scrollable dynamic area.

DOWN

➤ DOWN ➤

Scrolls toward the bottom of the data.

DSLIST



Enables you to build a data set list from any command line. You can specify either a personal data set list name or a data set list name level on the command. If you do not put quotation marks around the dsname level, the TSO prefix is used as the first qualifier in the dsname level.

By issuing the command with no parameters, you cause a list of available personal data set lists to be displayed.

The DSLIST command, which invokes ISRDSLST, accepts system symbols in the parameter. For example:

```
DSLIST 'SYS2.**.&SYSPLEX'
```

DTEST

►► DTEST — *parameter number* ►◄

Enables you to start, or change the conditions of, a dialog test. Specifying a parameter number is required, and different conditions of dialog test result. For example, if you enter DTEST 8 while running an application under Dialog Test, the 7.8 Breakpoints panel is displayed. After setting the breakpoints, you return to your application with the new breakpoints activated. The panels that you can call up with DTEST are:

- 1 Invoke Functions panel
- 2 Invoke Display Panel panel
- 3 Invoke Variables panel
- 4 Invoke Tables panel
- 5 Display Browse log panel
- 6 Invoke Dialog Services panel
- 7 Invoke Traces selection panel
- 8 Invoke Breakpoint panel

END

►► END ►◄

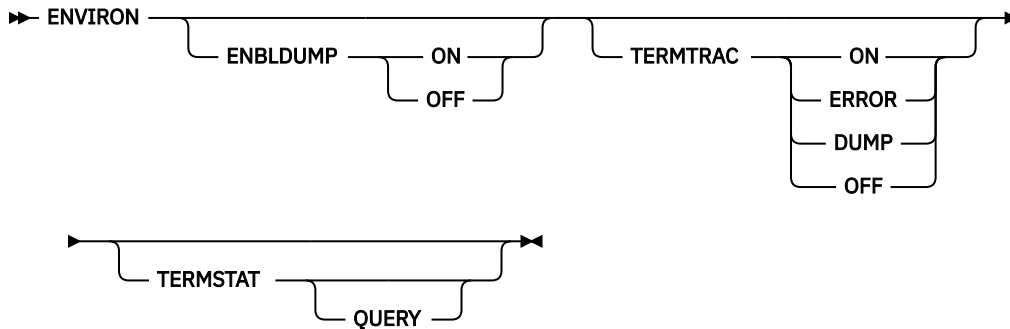
Stops the current operation and returns to the previous menu. If the ISPF Primary Option Menu is displayed, this command ends ISPF. See [“Log and list data set processing at the end of a session” on page 107](#) for a description of the processing that occurs when the END command is entered from the ISPF Primary Option Menu.

When entered on a selection panel displayed by the SELECT service, the END command causes a redisplay of the next higher menu in the hierarchy. When entered on a panel displayed by the tutorial

program, it stops the tutorial and causes a redisplay of the menu from which the tutorial was started or the panel from which HELP was requested.

When the END command is entered on a panel displayed by a dialog function through the DISPLAY or TBDISPL service, the dialog function must take whatever action is appropriate to terminate and return control. Entry of the END command is signaled by a return code of 8 from the DISPLAY or TBDISPL service.

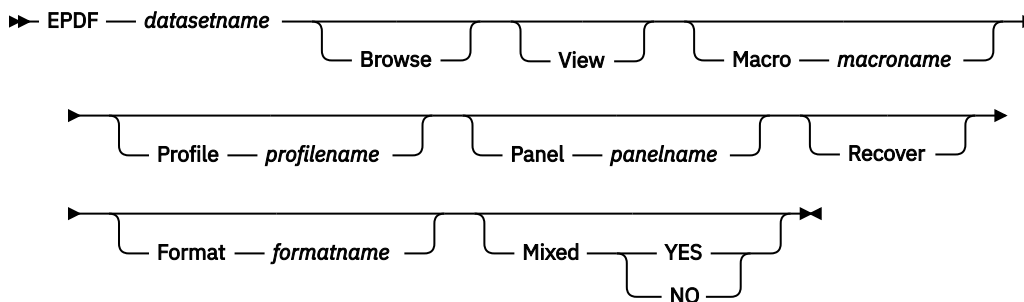
ENVIRON



Allows you to reduce service time by gathering data that can be helpful in diagnosing problems. Functions provided include:

- Enabling Abend dumps when ISPF is not in TEST mode
- Tracing and dumping ISPF terminal input and output data and errors
- Collecting terminal characteristic information.

EPDF



Enables you to edit, browse, or view a data set from a command line.

Browse

Invoke Browse instead of edit.

View

Use View mode (End/Save/Cancel disabled).

Macro macroname

Invoke the editor or view using the initial macro specified by *macroname*. Not valid with Browse.

Profile profilename

Invoke the editor or view using the edit profile specified by *profilename*. Not valid with Browse.

Panel panelname

Use alternate panel name specified by *panelname*.

Recover

Perform edit recovery if a recovery is pending. If edit recovery is used, the file name and macro specified on the command are ignored. If no edit recovery session is pending, the file is edited as usual. Not valid with Browse.

Format *formatname*

Invoke the editor using the format table specified by *formatname*.

Mixed YES|NO

Use mixed option for 5550 terminals.

The EPDF command is a REXX exec. Consequentially it substitutes dialog variables specified with the parameter. For example, this command edits the current ISPF Temporary Control Data Set:

```
EPDF '&ZTEMPF'
```

The EPDF command also processes system symbols within the data set name before passing to the Edit, View, or Browse service. A return code 4 from VSYM indicates that one or more system symbols were not recognised and these remain unchanged within the data set name. The ISPF service routine can then resolve them as dialog variables.

Here are some examples:

This command entered in the command line of an ISPF panel edits the data set defined by the current dialog variable, ZTEMPF:

```
EPDF '&ZTEMPF'
```

This command entered in the command line of an ISPF panel edits the data set SYS2.CLIST.SYSPLEX1 when executed on a system that is a member of a sysplex named SYSPLEX1:

```
EPDF 'SYS2.CLIST.&SYSPLEX'
```

EXHELP

➡ EXHELP →

Provides general information about the contents of a panel.

EXIT

➡ EXIT →

Requests that the current function be ended. When entered on a panel displayed by the tutorial program, EXIT stops the tutorial and causes a redisplay of the menu from which the tutorial was started or the panel from which HELP was requested.

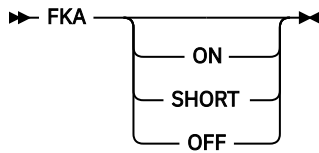
- If EXIT is requested from a panel displayed using the DISPLAY, TBDISPL, or SELECT service calls, the DM component returns the command in ZCMD and sets a return code of 0 from the display screen.
- If EXIT is requested from a panel displayed using the DISPLAY or TBDISPL service calls and the panel was defined using a PANEL tag (DTL) or a)PANEL statement, the DM component returns the command in ZVERB and sets a return code of 8 from the display screen.

EXPAND

➡ EXPAND →
ZEXPAND

Displays a variable in a dynamic area in a pop-up expand window. This only applies if the cursor is within a scrollable field. If the scrollable field is input, you will be able to update the variable in the expand window.

FKA



Toggles through the different forms of the function key area. The first time you enter the FKA command (without parameters), the long form of the function key area is displayed. The long form includes the keys that have a format specified as either long or short in the keylist. If you enter the command again, the short form is displayed. The short form displays only those keys that have the short format specified in the keylist. If you enter the command once again, the keys are removed from the display. Therefore, if you continue to enter the command, the different choices are toggled:

- Long form (default)
- Short form
- No display.

The form that you select affects all panels displayed in the session. The DM component updates the system variable ZFKA to represent the current state of the function key area form and saves the value in the system profile.

FKA ON displays the long form of the function key area.

FKA SHORT displays the short form of the function key area.

FKA OFF specifies that the function key area will not be displayed.

FORWARD

➡ FORWARD →

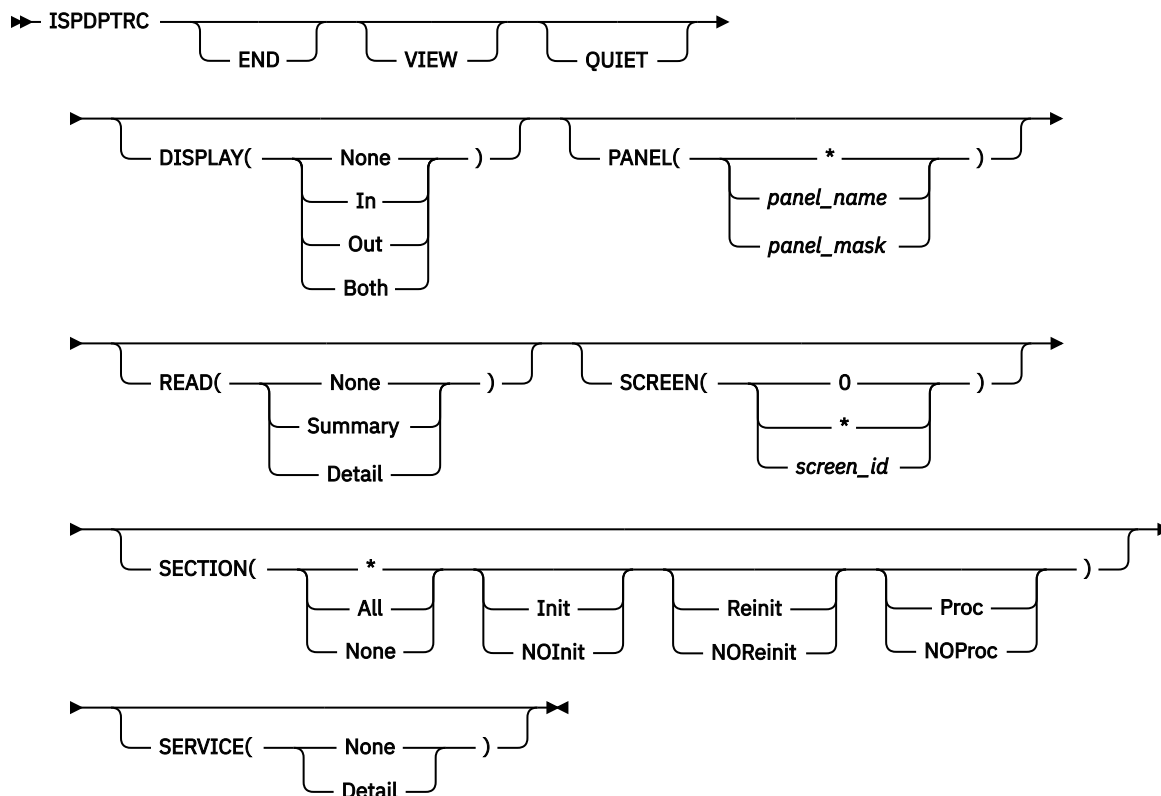
Alias for the DOWN command. Scrolls toward the bottom of the data.

HELP

➡ HELP →

Displays additional information about an error message, or provides tutorial/help information for panels, fields on panels, commands, and options.

ISPDPTRC



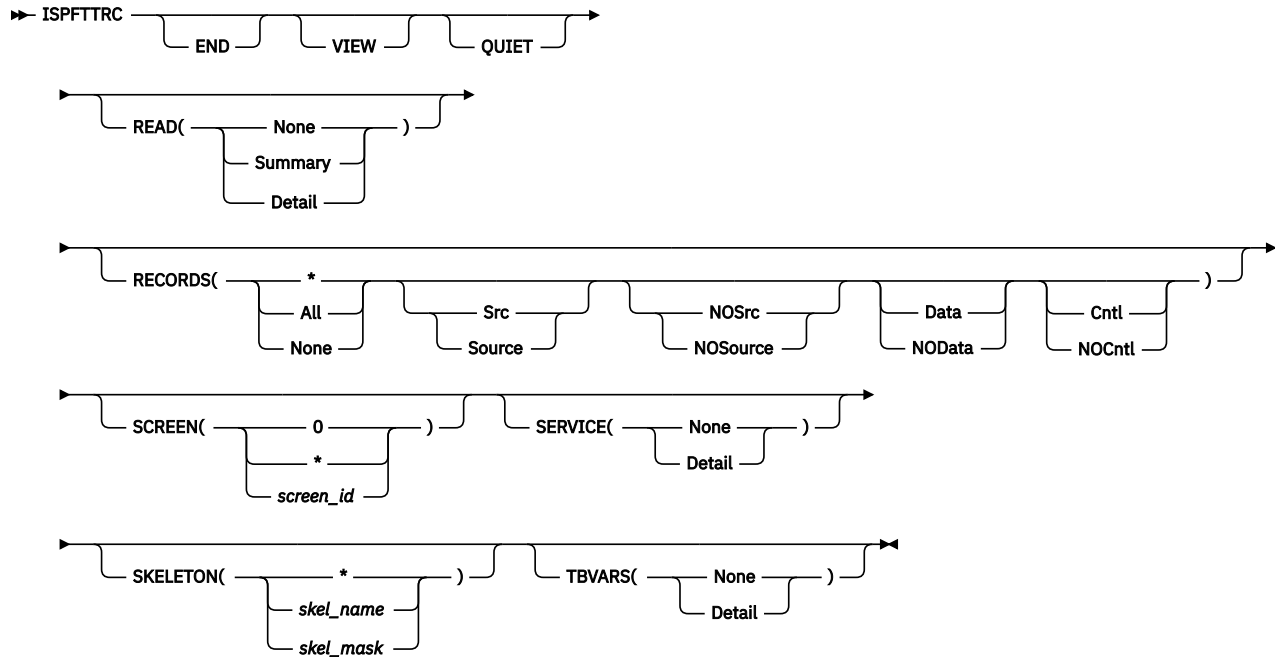
Invokes the panel trace utility, which allows you to trace both the execution of panel service calls (DISPLAY, TBDISPL, and TBQUERY) and the processing that occurs within the Dialog Manager panel code. For more information, refer to the topic about diagnostic tools and information in [z/OS ISPF Dialog Developer's Guide and Reference](#).

ISPD TLC

ISPD TLC

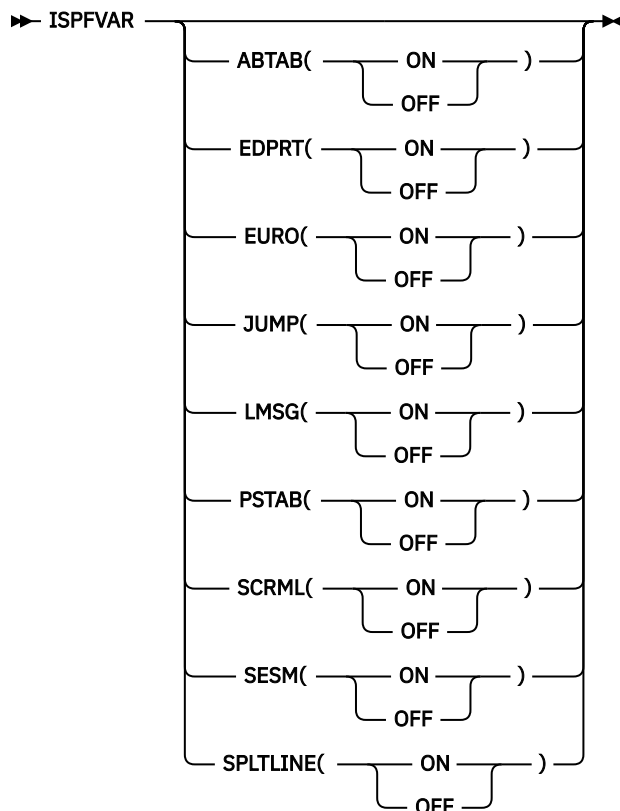
Invokes the ISPF DTL Conversion Utility. See the [z/OS ISPF Dialog Tag Language Guide and Reference](#) for additional parameters and calling options.

ISPF TTRC



Invokes the file tailoring trace utility, which allows you to trace both the execution of file tailoring service calls (FTOPEN, FTINCL, FTCLOSE, and FTERASE) and the processing that occurs within the file tailoring code and processing of each statement. For more information, refer to the topic about diagnostic tools and information in [z/OS ISPF Dialog Developer's Guide and Reference](#).

ISPF VAR



Sets these ISPF settings:

ABTAB

Tab to action bar choices

EDPRT

Edit the PRINTDS command

EURO

Enable the EURO currency symbol

JUMP

Jump from leader dots

LMSG

Display long message in pop-up

PSTAB

Tab to point-and-shoot fields

SCRML

Scroll member list

SESM

Select Session Manager mode

SPLTLINE

Always show split line

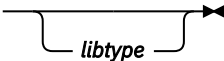
ISPFWORK

➤ ISPFWORK ➤

Starts the ISPF Workplace.

For more information, see *ISPF object/action workplace* in [z/OS ISPF User's Guide Vol II](#).

ISPLIBD

➤ ISPLIBD  ➤

Invokes the LIBDEF Display Utility. The optional parameter, *libtype*, identifies a specific LIBDEF library definition to be displayed. All LIBDEF definitions for the current logical screen are displayed if the parameter is omitted, if the parameter is longer than eight characters, or if the parameter specifies ISPPROF as the library name. See [z/OS ISPF Services Guide](#) for more information about LIBDEF and the ISPLIBD command.

ISPPREP

➤ ISPPREP ➤

Allows you to create preprocessed panels, those for which ISPF has partially processed the panel definition before it is stored in the panel data set, either interactively or in batch mode.

ISRRLIST

➤ ISRRLIST ➤

The action bar interface into referral lists. This command takes a required parameter as input. Valid values are PL1, PL2, LL1, and LL2.

PL1

Current Data Set List

PL2

List of Personal Data Set Lists

LL1

Current Library List

LL2

List of Personal Library Lists

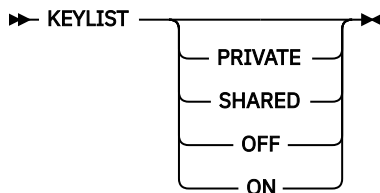
ISRROUTE

➤ ISRROUTE ➤

The action bar interface into the ISPF command stacking routing. ISRROUTE also provides an interface to the SELECT service from the ACTION/RUN statement within a pull-down choice. The parameters are the same as the ISPEXEC interface to the SELECT service.

This command is generally used for internal purposes.

KEYLIST



The parameters on this command determine where, or if, ISPF looks for keylists. The default setting for KEYLIST is equivalent to issuing the KEYLIST PRIVATE command, which means that the program looks in the user's profile table for the keylist specified on a panel before looking in the xxxxKEYS table allocated in ISPTLIB.

The KEYLIST SHARED command means that ISPF looks only in the xxxxKEYS table allocated in ISPTLIB for the keylist.

Using either the PRIVATE or SHARED parameter performs an implicit KEYLIST ON command. Both of the parameters are local to each application, so setting PRIVATE for application X does not affect application Y, which might be using SHARED.

By specifying KEYLIST OFF, you cause ISPF to ignore the keylist on all logical screens and use the ZPF variables for controlling function keys. This is in effect only for the application for which you enter the command.

The KEYLIST ON command causes ISPF to recognize keylists again, with the parameter (SHARED or PRIVATE) that was in effect immediately before the KEYLIST OFF command. KEYLIST ON and OFF are equivalent to the Enable and Disable keylist choices on the Function keys pull-down. Keylist Settings are discussed in the Settings (Option 0) topic of the *z/OS ISPF User's Guide Vol II*. SHARED and PRIVATE also appear on the Function keys pull-down in "Keylist Settings".

The KEYLIST command with no parameters causes the Keylist utility to start.

KEYS

➤ KEYS ➤

Displays the PF Key Definitions and Labels panel, which allows you to change the ZPF variable settings (ZPFVARs), as in previous versions of ISPF. However, if the KEYS command is issued from a panel with an *active* keylist, the associated Keylist Utility panel Change pop-up window is displayed.

Note: If the KEYLIST SHARED command has been issued, or the SYSTEM parameter has been specified on the KEYLIST keyword on the)PANEL statement, this action causes only a BROWSE of the keylist. See the *z/OS ISPF Dialog Developer's Guide and Reference* for more information about the SYSTEM parameter in the)PANEL statement.

KEYSHELP

➤ KEYSHELP ➤

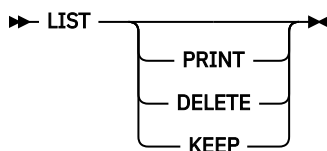
If KEYSHELP is defined, KEYSHELP provides you with a brief description of each key defined for a panel.

LEFT

➤ LEFT ➤

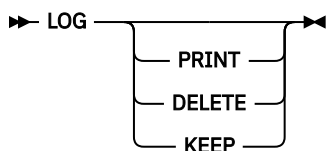
Scrolls left. If your cursor is in a scrollable field, this scrolls towards the beginning of the field.

LIST



Allows you to process the list data set without exiting ISPF. See [“Processing the log and list data sets”](#) on page 104 for a description of using the LIST command.

LOG



Allows you to process the log data set without exiting ISPF. See [“Processing the log and list data sets”](#) on page 104 for a description of using the LOG command.

MSGID



With no parameters, displays a message indicating the message ID of the last message displayed. With a parameter of ON or OFF, indicates whether a message number is to be added to the beginning of interactive long message text. During entry to ISPF, the mode is initialized to OFF, and the message ID is not displayed as part of the long message text on interactive displays. If the addition of the message ID would cause long message text to be truncated, the message is displayed in a pop-up window.

Messages that have the message number included in the long message text will continue to display the message number, even when MSGID OFF is in effect. Also, the message number will appear twice when MSGID ON is in effect.

The MSGID ON/OFF command affects only the current logical screen, so when you are running in split screen, one screen can have MSGID ON and the other MSGID OFF. The MSGID command will return only the MSGID of a message for its own logical screen.

An option on the Log Data Set Defaults and List Data Set Defaults panels, which are choices on the Log/List pull-down on the ISPF Settings panel,

```
Log Message ID . . . _ (/ = Yes)
```

allows you to select whether the message ID is written to the log data set as part of the long message text. The initial default is deselected. Note that not all lines in the log data set originate from a message member. Therefore, not every line in the log data set will have a message number associated with it.

Note: This facility does not affect long message text returned by the GETMSG service, messages displayed in the Error Box, or messages displayed by TRACEX.

NOP

➤ NOP ➤

The classic *no operation* command.

NRETRIEV

➤ NRETRIEV ➤

Data set and library name retrieved. See [“Name retrieval with the NRETRIEV command” on page 128](#) for more information.

PANELID

➤ PANELID ➤

ON

OFF

Indicates whether the panel identifier (ID) is to be displayed. If you enter PANELID without any parameters, the command toggles the display of the panel ID immediately below the action bar. If an action bar is not present, the ID is displayed in line 1 on the panel.

During initial entry to ISPF, the PANELID is set to OFF. The ID is displayed only if the panel contains a protected-field attribute byte in row 1 column 1 (relative to the action bar) and is padded with one blank.

The commands SYSNAME, USERID, PANELID, and SCRNAME share the same 17-character area at the start of the Title line. If more than one of these commands are specified, ISPF displays as many as will fit, in this order of priority: SYSNAME, if specified, is always displayed. Then, as long as there is enough room, USERID is displayed, then PANELID, then SCRNAME.

PFSHOW

➤ PFSHOW ➤

ON

OFF

TAILOR

Toggles through the different forms of the function key area. The first time you enter the PFSHOW command (without parameters), the long form of the function key area is displayed. If you enter the

command again, the short form is displayed. If you enter the command once again, the keys are removed from the display. Therefore, if you continue to enter the command, the different choices are toggled:

- Long form (default)
- Short form
- No display.

The form that you select affects all panels displayed in the session. The DM component updates the system variable ZPFSHOW to represent the current state of the function key area form and saves the value in the system profile.

PFSHOW ON displays the long form of the function key area.

PFSHOW OFF specifies that the function key area will not be displayed.

PFSHOW TAILOR displays a panel that lets you specify the set of function keys (primary, alternate, or all) for which definitions are to be displayed and the number of keys per line to display in each function key definition line.

PRINT

►► PRINT ◄◄

Records a snapshot of the physical screen image in the list data set for subsequent printing.

For the PRINT, PRINT-HI, PRINTL, and PRINTLHI commands, a screen image can exceed 121 characters. When it does, the line must be split when the output is being directed to a printer other than a 3800. The line length is obtained from a user-modifiable specification on the ISPF Settings panel for the list data set. The default length for printing is 121 characters.

Using PRINT commands with DBCS

The PRINT commands are affected in the DBCS environment as follows:

- DBCS character printing

Because shift-out and shift-in characters do not occupy positions on a printer, ISPF inserts a blank character before each shift-out and after each shift-in.

- Fields affected by the OUTLINE keyword

Field-outlining information is embedded in the record as a set-attribute (SA) order. Each SA order occupies three bytes. One SA is required to start field-outlining, one to end field-outlining, and one to change field-outlining. Therefore, each affected field normally takes six additional bytes.

Thus, the record-length of print command output is larger than the screen width. The LIST file should be large enough to contain the expanded records. If not, the output might not print correctly.

PRINTG

►► PRINTG ◄◄

Allows you to send the information on the current logical screen to a Graphical Data Display Manager (GDDM) graphics printer.

Note:

1. In split-screen mode, ISPF adds the split line to the top logical screen. If you issue the PRINTG command from the top screen, the split line is printed along with the logical screen.
2. Also, in split-screen mode, PRINTG prints all data in the visible portion of the logical screen, but only the graphics area data in the nonvisible portion of the logical screen.

If you use the other print commands (PRINT, PRINT-HI, PRINTL, and PRINTLHI) to print screen images containing a graphics area, the part of the screen containing the graphics area prints as blanks.

If you issue the PRINTG command as a COMMAND option on a DISPLAY service request, only data already defined to GDDM at the time the service request is issued will be printed. Any GDDM fields defined by the dialog (using GDDM commands) before issuing the DISPLAY service request will be printed.

Before issuing the PRINTG command from a command line you must first have initialized the GDDM graphic interface using the GRINIT service.

PRINTG does not provide return codes to a dialog; however, it does display completion or error messages.

For information about how to specify parameters related to using the PRINTG command, see the information about Print Graphics Params in the Settings (Option 0) topic of the [z/OS ISPF User's Guide Vol II](#).

PRINT-HI

➤ PRINT-HI ➤

Same as PRINT, except that high-intensity characters on the screen are printed with overstrikes to simulate the dual-intensity display.

See [“Using PRINT commands with DBCS” on page 46](#) for more information.

PRINTL

➤ PRINTL ➤

Causes a *snapshot* of the logical screen image to be recorded in the ISPF list file for subsequent printing. In split-screen mode, the PRINTL command prints what would be seen if split-screen were not in effect.

See [“Using PRINT commands with DBCS” on page 46](#) for more information.

PRINTLHI

➤ PRINTLHI ➤

Same as PRINTL, except that high-intensity characters on the logical screen are printed with overstrikes to simulate the dual-intensity display.

See [“Using PRINT commands with DBCS” on page 46](#) for more information.

PSCOLOR

➤ PSCOLOR ➤

Globally alters the color, intensity, and highlighting of point-and-shoot fields through a pop-up dialog. Valid choices include:

Color	Intensity	Highlight
RED	HIGH	NONE
PINK	LOW	BLINK
GREEN		REVERSE
YELLOW		USCORE
BLUE		
TURQ (Turquoise)		
WHITE		

To restore the ISPF default values, delete any new values you have entered (leaving the entry fields blank) and press Enter, or select the **Defaults** field.

RCHANGE

►► RCHANGE ►◄

Repeats the action of the previous CHANGE command (change one character string to another) (Edit and View only).

REFACTD

►► REFACTD — *nnnnnnnn* — *xx* ►◄

Calls the personal data set list named *nnnnnnnn* and retrieves the data set in position *xx*. See [“Command interface to the personal list function” on page 130](#) for additional information.

REFACTL

►► REFACTL — *nnnnnnnn* — *xx* ►◄

Calls the personal library list named *nnnnnnnn* and retrieves the data set in position *xx*. See [“Command interface to the personal list function” on page 130](#) for additional information.

REFADDD

►► REFADDD — *nnnnnnnn* ►◄

Updates the personal data set list named *nnnnnnnn* with the most recently referenced data set. See [“Command interface to the personal list function” on page 130](#) for additional information.

REFADDL

►► REFADDL — *nnnnnnnn* ►◄

Updates the personal library list named *nnnnnnnn* with the most recently referenced library. See [“Command interface to the personal list function” on page 130](#) for additional information.

REFLISTD

►► REFLISTD — *xx* ►◄

Calls the reference data set list dialog and retrieves the data set in position *xx*. See [“Command interface to the personal list function” on page 130](#) for additional information.

REFLISTL

►► REFLISTL — *xx* ►◄

Calls the reference library list dialog and retrieves the library in position *xx*. See [“Command interface to the personal list function” on page 130](#) for additional information.

REFOPEND

►► REFOPEND ►◄

Calls the personal data set open dialog. See [“Command interface to the personal list function” on page 130](#) for additional information.

REFOPENL

➤➤ REFOPEL ➤➤

Calls the personal library list open dialog. See [“Command interface to the personal list function”](#) on page 130 for additional information.

RESIZE

➤➤ RESIZE ➤➤

Increases the size of a pop-up window to fill the entire 3270 physical display area. The initial RESIZE command increases the pop-up window to its maximum size, and the following RESIZE reduces the window to its original size.

RETF

➤➤ RETF ➤➤

Retrieves commands from the command stack moving in the direction from the oldest command in the command stack toward the most recent commands in the command stack. Forward retrieve (RETF) retrieves the oldest command on the command stack, if RETF is entered immediately after a command is executed, before performing a RETRIEVE. See [“RETF command”](#) on page 57 for more information.

RETP

➤➤ RETP ➤➤

Causes a pop-up panel to be displayed with a list of the last 25 commands in the retrieve stack. Retrieve pop-up (RETP) enables you to select by number the command to be retrieved. The command selected is retrieved to the command line, as it is when using other retrieve commands. You will not be able to change the commands in the retrieve pop-up until the command is selected and retrieved to the command line.

The RETP pop-up panel has an OPTIONS action bar choice that allows you to set the minimum number of characters required to save a command in the retrieve stack and to choose whether to position the cursor at the beginning or end of the retrieved command when the command is retrieved to the command line. RETP displays the pop-up panel if the retrieve stack is empty, which allows the user to change the retrieve options. See [“RETP command”](#) on page 57 for more information.

RETRIEVE

➤➤ RETRIEVE ➤➤

Repeatedly entering RETRIEVE causes the commands most recently entered from the primary input field, usually the ZCMD field, to be displayed on the command line. The commands are displayed one at a time, in the reverse sequence to which they were entered (last-in, first-out). This allows you to easily recall a command for resubmission from the command line. You can edit the command before entering it if you wish. See [“RETRIEVE command”](#) on page 55 for more information.

RETURN

➤➤ RETURN ➤➤

Causes an immediate return to a primary option menu or to the display from which you entered a nested dialog. The RETURN command simulates repeated END commands, up to some appropriate stopping

point, without displaying intervening panels. See [“Using the RETURN command” on page 57](#) for more information.

RFIND

➤ RFIND ➤

Repeats the action of the previous FIND command (find one or more occurrences of a specified character string) or the FIND part of the most recent CHANGE command (Browse, Edit, and View only).

RIGHT

➤ RIGHT ➤

Scrolls right. If your cursor is in a scrollable field, this scrolls towards the end of the field.

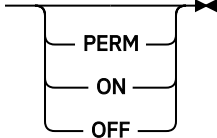
SAREA

➤ SAREA ➤

Displays the Status Area pop-up window.

SCRNAME

➤ SCRNAME — *screen name* —



Causes the logical screen in which the command is entered to be given the *screen name* specified. The name can be any set of 2 to 8 characters that conform to member naming rules, except NEXT, PREV, LIST, ON, and OFF.

PERM is an optional parameter to indicate that ISPF does not allow the SCRNAME parameter on a SELECT statement, or the setting of the modifiable system variable ZSCRNAME, to override the value being assigned by this SCRNAME command. The PERM setting lasts for the duration of the logical screen. After you end the logical screen, the setting is no longer active.

SCRNAME ON causes the name that you specify for the screen to be displayed in the *panelid* area of the screen. SCRNAME OFF removes the screen name from the visible display.

The commands SYSNAME, USERID, PANELID, and SCRNAME share the same 17-character area at the start of the Title line. If more than one of these commands are specified, ISPF displays as many as will fit, in this order of priority: SYSNAME, if specified, is always displayed. Then, as long as there is enough room, USERID is displayed, then PANELID, then SCRNAME.


SETTINGS

➤ SETTINGS ➤

Displays the ISPF Settings panel.

SPLIT

➤ SPLIT —



Causes the screen to be divided into two logical screens separated by a horizontal line or changes the location of the horizontal line. If you have de-selected the *Always show split line* option in Settings, there is no split line. See [“Splitting the screen horizontally or vertically”](#) on page 29 for more information.

SPLITV

➤ SPLITV ➤

On 3290 terminals, causes the screen to be separated into two vertical logical screens.

The SPLITV function is not active if the actual screen data display is more than 80 characters wide.

START

➤ START ➤

Starts a dialog in a new logical screen. If a logical screen does not exist, it will be created.

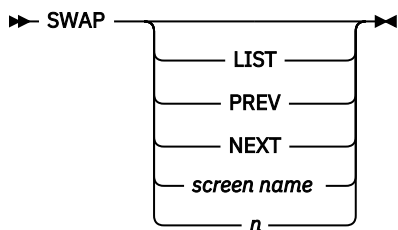
You can use the START command to:

- Issue a command from the ISPF command table; for example, START KEYLIST
- Issue a command with parameters (in single quotes; for example, START 'ISRROUTE BRI')
- Start a dialog; for example, START PANEL (ISRUTIL)

Note:

1. If you invoke START from a pull-down choice, the screen will be split where your cursor is located within the pull-down.
2. This function does not change the limitation number of logical screens. If ISPF already has the maximum number of screens when the START command is issued, the screen is re-split; that is, the split line might move.

SWAP



When no parameters are given, moves the cursor to where it was previously positioned on the other logical screen of a split-screen pair.

When operating in split-screen mode, pressing the SWAP key (F9) causes ISPF to ignore any entry on the command line.

Entering SWAP LIST displays the ISPF task list. The task list displays this information about all of the active logical screens:

- Screen ID (ZSCREEN)
- Screen name
- Panel ID
- Application ID
- Session type

You can select from this list the screen you want to display or start a new screen or application. The screen you select replaces the screen from which you issued the command.

Using a listed parameter changes the display to the PREVIOUS, NEXT, or specified logical screen.

PREV changes the focus or display to the next lower screen number until reaching 1, then wraps back to 32 or the last number used.

NEXT displays the next highest screen number until the last number used is reached (ISPF maximum 32, your installation might vary), then will wrap back to number 1.

SWAP *screen name* changes the display or focus to the screen called *screen name*, if it is active. See the SCRNAME command for more information about screen names.

SWAP *n*, where *n* is a number, changes the display or focus to the specified screen number, if it is active.

SWAPBAR

► SWAPBAR ◄

The list of logical screens can be activated by entering the SWAPBAR or SWAPBAR ON command on the command line. The list is displayed on the last line of the physical screen.

The entry for each logical screen is the screen name if assigned or, if a screen name is not available, it is the panel name of the current panel displayed for the logical screen. The entry for the active logical screen has an asterisk (*) in the first character position and, if the name is 8 bytes long, the last character is not displayed. Also, the alternate logical screen has a "-" in the first position and the 8th character is not displayed.

The list remains active until you enter the SWAPBAR or SWAPBAR OFF command. The setting for the SWAPBAR is maintained in the system profile member and applies across logons.

If the list is longer than the width of the screen, a ">" appears at the right of the list to indicate there are more entries and you can scroll right by either positioning the cursor on the ">" and pressing Enter, or by positioning the cursor on an entry and pressing PF11 which scrolls to the entry indicated. When the start of the list is not displayed, a "<" is displayed at the left of the visible part of the list to indicate that you can scroll left on the list by positioning the cursor on the "<" and Pressing Enter or by positioning the cursor on an entry and pressing PF10.

The active logical screen can be changed by positioning the cursor on an entry and pressing Enter. This logical screen then becomes the active logical screen. The SWAPBAR entries use the same physical attribute as the action bar choices and, if in the options settings **Tab to action bar choices** is selected, then tabbing to swapbar entries also occurs.

If the cursor is positioned on the swapbar entry for the currently active session and Enter is pressed, this is treated the same as Enter being pressed within the active logical screen panel. When the SWAPBAR is activated, the **Always show split line** option is deactivated and you are not able to reactivate it until the SWAPBAR is deactivated.

If SWAPBAR is activated on a screen which is split and the lower panel of the split screen does not contain enough rows to allow the SWAPBAR to be displayed, the necessary rows to allow the SWAPBAR to be displayed will be removed from the upper panel display and added to the lower panel display.

You are able to customize the SWAPBAR settings. You can:

- Choose to have a separator line between the logical screen and the SWAPBAR.
- Set the colour of the SWAPBAR.
- Set the highlighting of all the fields within the SWAPBAR (for example, reverse video, underscore or blinking attribute).
- Set the colour and highlighting attributes of an individual entry (a logical screen) with the SWAPBAR.
- Save the settings that apply to the SWAPBAR as a whole in your system profile, so that these settings apply to future ISPF sessions (until you modify them).

To set the SWAPBAR customization settings, entering the command `SWAPBAR /` on the command line. The panel ISPTLCPN is displayed. You can now set the customization attributes. The changes take effect once you exit the panel. The setting for a separator line and the colour and highlighting settings for the SWAPBAR as a whole are saved in your system profile and apply to future ISPF sessions. Any changes to individual entries in the SWAPBAR only apply to the current ISPF session (that is, the session where the SWAPBAR / command was entered), and are also lost if the logical screen should terminate and recover.

To clear the settings for a logical screen swap to that screen, enter the `SWAPBAR /` command and enter D in the option field to clear the current session.

SYSNAME

►► SYSNAME — (— ON —) —►
 OFF —

SYSNAME ON causes the name that you specify for the screen to be displayed in the *panelid* area of the screen. SYSNAME OFF removes the system name from the visible display.

The commands SYSNAME, USERID, PANELID, and SCRNAME share the same 17-character area at the start of the Title line. If more than one of these commands are specified, ISPF displays as many as will fit, in this order of priority: SYSNAME, if specified, is always displayed. Then, as long as there is enough room, USERID is displayed, then PANELID, then SCRNAME.

TOP

►► TOP —►

Alias for the UP MAX command. Scrolls to the top of the data.

TSO

►► TSO —►

Allows the user to enter a TSO command, CLIST, or REXX command procedure.

Do not enter these commands after the TSO command:

- LOGON, LOGOFF
- ISPF, PDF, ISPSTART, and SPF
- TEST
- Commands that are restricted by TSO

You can enter a CLIST or REXX name after the TSO command, but these restrictions apply:

- The CLIST or REXX command procedure cannot invoke the restricted commands shown in the preceding list.
- Restrictions that apply to CLIST attention exits are described in [*z/OS ISPF Dialog Developer's Guide and Reference*](#).
- TERMIN command procedure statements cause unpredictable results.

TSOCMD

►► TSOCMD —►

Displays the ISPF Command Shell panel.

TUTOR

➤ TUTOR — *panelid* ➤

Calls the ISPTUTOR program to display specified tutorial panels.

To display a particular tutorial panel, enter the TUTOR command along with the panel identifier of the desired tutorial panel as a parameter.

If you issue the TUTOR command without a parameter, the general tutorial help panel (ISP00000) is displayed.

UDLIST

➤ UDLIST ➤

Enables you to build a z/OS UNIX directory list from any command line. You can specify either a personal data set list name or a pathname for a z/OS UNIX directory. When a personal data set list name is specified, the pathname entries in the list are used to build the displayed directory list.

By issuing the command with no parameters, you cause a list of available personal data set lists to be displayed. You can then select the personal data set list to be used to build the displayed directory list. This panel also provides a field to enter the pathname of the directory you want to list.

Note: z/OS UNIX pathnames are case sensitive. In general, ISPF command line fields are defined with the CAPS(ON) attribute which causes data entered in the command line to be converted to uppercase. Consequently, pathnames specified as a parameter on the command line are, in general, converted to uppercase before being passed to the UDLIST command. This can result in the requested directory not being found. If this occurs ISPF converts the specified pathname to lower case and re-issues the find for the directory. If the requested directory is still not found, enter the UDLIST command without a parameter and specify the case-sensitive directory pathname in the field on the personal lists selection panel.

UP

➤ UP ➤

Scrolls toward the top of the data.

USERID

➤ USERID — (*ON* / *OFF*) ➤

USERID ON displays your user ID in the *panelid* area of the screen. USERID OFF removes your user ID from the visible display.

The commands SYSNAME, USERID, PANELID, and SCRNAME share the same 17-character area at the start of the Title line. If more than one of these commands are specified, ISPF displays as many as will fit, in this order of priority: SYSNAME, if specified, is always displayed. Then, as long as there is enough room, USERID is displayed, then PANELID, then SCRNAME.

WINDOW

➤ WINDOW ➤

Moves a pop-up that is currently displayed.

Type WINDOW at the command line. Then move the cursor to the position on your screen where you want the pop-up to appear. Press Enter.

If WINDOW is assigned to a function key, move the cursor to the position on your screen where you want the pop-up to appear, and press the function key.

You can move dialog pop-ups, help pop-ups, and message pop-ups.

If more than one pop-up is displayed on your logical screen, only the active (or most recent) pop-up will move.

A pop-up can only be moved within the logical screen from which it originated.

The position of the cursor specifies the new location for the upper left corner of the pop-up. If the pop-up will not fit on the terminal screen at its specified new location, ISPF positions the pop-up to fit on the screen. The cursor will then appear in the same relative position it was in before the pop-up was moved.

ZCLRSFLD

➡ ZCLRSFLD →

If the cursor is on a scrollable input field, that field is cleared to blanks. If the field is part of a TABLE DISPLAY operation a row select will occur when ENTER is next pressed. If the field is not scrollable the command is passed to the application.

ZKEYS

➡ ZKEYS →

Displays a panel that lets you view and change the current function key variables. This command is equivalent to selecting the Global PF Key settings choice from the Function keys pull-down on the ISPF Settings panel.

Using the RETRIEVE, RETF, and RETP commands

This topic describes how to use the RETRIEVE, RETF, and RETP commands.

RETRIEVE command

The RETRIEVE command causes the most recently entered command to be displayed on the command line. If the command recalled by RETRIEVE is longer than the current primary input field, ISPF truncates the command to the size of the primary input field for display purposes. Only the data displayed in the primary input field is processed and stored in the command retrieval stack when you press Enter or a function key. However, the original command retains its full length in the retrieval stack.

If the current panel has no input fields, then the size of the primary input field is zero and the retrieved command is not displayed. Normal stack processing occurs, however, and the internal pointer is incremented to the next saved command. This can result in an unexpected command being recalled when RETRIEVE is issued on a subsequent panel that has input fields.

If you issue the RETRIEVE command when the stack is empty, ISPF presents you with a blank command line with the cursor in the first position. If the stack is not empty, ISPF places the cursor immediately following the retrieved command.

If you are in the process of recalling a string of commands by issuing successive RETRIEVE commands, you can cause ISPF to recycle to the top of the command retrieval stack by pressing Enter when the primary input field (normally the command line) is blank.

When you are operating in split-screen mode, one stack retains commands for all logical screens.

There are five cases for which ISPF does not retain an entered command for retrieval:

- Commands entered using attention fields, such as cursor-select fields.

- Commands entered through the use of function keys. This includes any portion of a compound command that results from pressing a function key. For example, if you key PAGE into the primary input field and then press the function key set to the DOWN command, only the PAGE portion of the DOWN PAGE command is retained as a single element in the retrieval stack. The entire character string entered from the primary input field in conjunction with a function key is always retained, whereas any portion of the command resulting from the function key value is not retained.
- The RETRIEVE command, if entered as a single command. If RETRIEVE is one of the commands of a chain being processed by ISPF, the entire chain is placed on the retrieval stack. However, processing of the command chain ends when ISPF interprets the RETRIEVE command and displays the next command in the stack. Any commands following RETRIEVE in the chain are not processed.

RETRIEVE can be part of a stack element as a parameter of another command. For example, you might enter FIND RETRIEVE as a command.

- Commands entered on the COMMAND option of the DISPLAY service.
- Jump function (extended return) commands entered from a nondisplay field.

You can issue any retrieved command, as is, while it is being displayed, or you can edit the command line and then issue the modified version.

Command retrieval works on a last-in, first-out basis. For example, assume that the last three commands you have issued are PRINT, DOWN, and RIGHT, in that order. Now suppose that you want to again issue the PRINT command. Assuming that F12 is set to RETRIEVE, the sequence of operations is:

1. Press F12. RIGHT displays on the command line.
2. Press F12 again. DOWN displays on the command line.
3. Press F12 a third time. PRINT displays on the command line.
4. Press Enter.

You can also use the RETRIEVE command to check and correct errors made in keying commands. For example, suppose that you mistakenly enter PFSHOW TAYLOR. When ISPF advises you that TAYLOR is not a valid parameter, you would:

1. Press F12. PFSHOW TAYLOR displays on the command line.
2. Type over the Y with an I.
3. Press Enter.

Each ISPF session supports only one command retrieval stack, to be shared by all logical screens. The number of commands that ISPF saves for retrieval depends on:

- The size of the stack area allocated for this purpose by the installation. See *z/OS ISPF Planning and Customizing* for information on changing the size of the stack area allocated for RETRIEVE command processing.
- The lengths of the individual command lines that are saved.

As a command is entered, it goes to the top of the stack, pushing all other commands down. If there is not enough room at the bottom of the stack to hold the entire bottom command, it is dropped from the stack.

Duplicate commands are allowed in the stack, except when the command being entered is a duplicate of the command at the top of the stack. All command lines (except the RETRIEVE command) are placed in the stack as entered, regardless of validity. Actually, these commands can be any character string, up to 255 bytes each, entered from the screen's primary input field (not necessarily the ZCMD field).

Jump function commands are stored in the stack unless they are entered from a nondisplay field, regardless of whether the field is the primary input field or not.

If the RETRIEVE command is repeatedly entered until the bottom command in the stack displays, issuing the RETRIEVE command once more causes the command at the top of the stack to be displayed again. To force a return to the top of the stack, clear the command field and press Enter. Then, the next RETRIEVE command causes the command line to be set to the command at the top of the stack.

RETF command

The forward retrieve (RETF) command recalls commands from the command retrieval stack from the oldest command in the stack towards the most recent commands in the stack. This is useful when you RETRIEVE too many times in an attempt to retrieve a specific command. RETF enables you to return to the desired command without having to cycle through the entire retrieval stack.

RETP command

The retrieve pop-up (RETP) command causes a pop-up panel to be displayed with the last 25 commands in the command retrieval stack listed. You can select the command you want to retrieve by number. The selected command is retrieved to the command line. When using the RETP command, these considerations apply:

1. If a command in the command retrieval stack is too long to fit in the retrieve pop-up, the last visible character of the command is changed to a > to show that some characters are not displayed. However, the entire command is retrieved to the command line when it is selected to be retrieved.
2. The default for the minimum number of characters is one, so any command entered is saved on the retrieval stack. The user has the option of setting the value from 1-99 for the minimum number of characters to save. Therefore, if you select three characters for the minimum number to be saved in the retrieval stack and a one- or two-character command is entered, it is not added to the retrieval stack. This prevents short commands that can be easily retyped from taking up space in the retrieval stack. Changing the minimum number of characters to save in the retrieval stack does not affect commands already in the retrieval stack. This setting is saved in the variable ZRETMINL, which is saved in the user's ISPF system profile table ISPSPROF and across ISPF invocations.
3. The default for the cursor position when a command is retrieved is at the end of the command. The cursor position setting is saved in the variable ZRETPOSC, which is saved in the user's ISPF system profile table ISPSPROF and across ISPF invocations.

Using the RETURN command

The RETURN command causes the immediate return to a primary option menu or to the display from which you entered a nested dialog. When a RETURN command is entered, the DM component takes this action:

1. It simulates the END command on the panel that is currently displayed; that is, the DISPLAY or TBDISPL service returns a code of 8.
2. For subsequent requests, made through the DISPLAY or TBDISPL service, for display of a different panel, the panel is not displayed, and a return code of 8 is issued by the service.
3. However, when two consecutive display requests name the same panel, normal operation of the DISPLAY and TBDISPL services is restored and processing proceeds as though RETURN had not been entered. The DM component decides whether to proceed. Generally, because RETURN signals the application user's desire to end the current processing, a developer can limit processing after the RETURN is received to clean up and do final processing before returning control to the dialog element from which the function was started.
4. If two consecutive requests do not specify the same panel, processing continues in the mode described in item "2" on page 57 until control is returned to a primary option menu or a nested dialog completes. Then, normal operation of the DISPLAY and TBDISPL services is restored.

It might be necessary to suspend processing of a panel temporarily so that other panels can be displayed. Issue a CONTROL DISPLAY SAVE request to save the contents and control information of the panel whose processing is to be suspended. Before resuming the processing of this panel, issue CONTROL DISPLAY RESTORE to reinstate the contents and control information for the panel. If non-ISPF screens have been displayed, issue CONTROL DISPLAY REFRESH to clear the screen.

This mode of operation continues until either a primary option menu is encountered or a nested dialog completes. If a primary option menu is encountered, it is displayed. If a nested dialog completes, the

panel from which it was invoked is redisplayed. This panel is exactly as you last saw it, except that the command field is blank. In either case, this completes the action of the RETURN command.

Note: A nested dialog is one invoked from any panel by a SELECT action command. The HELP and KEYS commands invoke nested dialogs. In addition, the TSO system commands invoke nested dialogs when they are used to execute a CLIST procedure that displays panels through ISPF services.

If a dialog function needs to distinguish between END and RETURN, it can do so in one of these ways:

- If the panel was defined using the panel definition statements, upon return from the DISPLAY or TBDISPL service, with a return code of 8, the function can examine variable ZVERB in the shared pool. It contains either END or RETURN.
- If the panel was defined using the DTL, upon return from the DISPLAY or TBDISPL service, with a return code of 8, the function can examine variable ZVERB in the shared pool. It contains either EXIT or CANCEL.
- Upon return from the SELECT service when the PANEL keyword was specified, the dialog function can examine the return code from SELECT. Return code 0 indicates that the END command was entered on the selected menu panel. Return code 4 indicates that the RETURN command was entered on the selected menu panel or on some lower-level menu.

Using the jump function

The jump function allows you to go directly to any valid option from the primary option menu currently in effect. See *z/OS ISPF Dialog Developer's Guide and Reference* for information about coding primary option menus. To use the jump function, enter the option on the command line or in the command field of any panel, preceded by an equal sign and followed by a blank. For example:

```
Command ==> =3.1
```

takes you directly to the first suboption of option 3 on the primary option menu in effect.

The action is as follows:

- If not entered on a primary option menu, the jump function causes repeated END commands to be simulated until a primary option menu is encountered. What follows the equal sign is then used on the primary option menu, and pressing of the Enter key is simulated. The primary option menu is not displayed.
- If entered on a primary option menu, the jump function equal sign is ignored and the specified option is selected.

Unlike the RETURN command, the jump function is not affected by nested dialogs. For example, from the ISPF Edit option, you enter a HELP command to enter the tutorial. Then from the tutorial, you enter =1. This causes the tutorial to end, Edit to end, and primary option 1 to be started.

For convenience, you can enter a jump function in two other places:

- Any field that is preceded by an arrow. The arrow must consist of at least two equal signs followed by a greater-than sign (==>). Also, the arrow must immediately precede the input attribute byte.
- Any field preceded by leader dots (that is, ... or . .). ISPF looks at the three characters preceding the field; they must be either three consecutive dots or two dots separated by a blank.

The command field is the only field that can be initialized to =n by the dialog and have the jump function recognize it. Modifying the ZCMD field in the)PROC or)INIT section can affect jump function operation.

If ISPF encounters an error during jump function processing, the processing stops with the jump function in error displayed on the command line, unless that function was entered from a nondisplay field.

Because a jump request generally signals a user's desire to end the current processing, the dialog developer must limit processing to cleaning up and completing processing before returning control to the selection in the jump request. Otherwise, the dialog developer can cancel the jump request/return mode by providing two consecutive displays with the same panel name.

The jump function can be entered with the RETURN command or RETURN function key. For example, you type =2 and then press the RETURN function key rather than pressing Enter. The result is the same as if you had typed =2 and pressed Enter.

See [“Using the Exit option \(X\) with the jump function” on page 10](#) for more information.

Using the scrolling commands

You can use the scrolling commands if the dialog function invokes the DISPLAY service for panels with scrollable areas or scrollable dynamic areas, the table display service (TBDISPL), or the interfaces to the PDF component VIEW, BROWSE, and EDIT services. During processing of the tutorial, ISPF interprets these commands as follows:

UP (F7/19)

Same as the UP command

DOWN (F8/20)

Same as the SKIP command

LEFT (F10/22)

Same as the BACK command

RIGHT (F11/23)

Same as the Enter key (display the next page).

When scrollable data is displayed, scrolling enables you to move the screen *window* up, down, left, or right across the information. When the cursor is within a scrollable field, scrolling enables you to move left or right within the *variable data*. Only up and down scrolling is allowed for table displays and scrollable areas.

When scrolling is allowed, a scroll amount is commonly displayed at the top of the screen (line 2). This amount determines the number of lines, or columns, scrolled with each use of a scroll command. To change the scroll amount, move the cursor to the scroll field and type over the displayed amount. Valid scroll amounts are:

ZXSMIN-ZXSMAX

A value between ZXSMIN and ZXSMAX where ZXSMIN and ZXSMAX are system profile variables containing the minimum and maximum scroll values as defined in the configuration table. Can be in the range of 0 to 9999999. When the value is entered in the scroll field the user is limited to entering a 4-digit value but when the value is entered in the command field it can be any value between ZXSMIN and ZXSMAX (inclusive).

Note: If you specify a scroll amount of **0**, no scrolling occurs.

PAGE

Specifies scrolling by one page.

For scrolling purposes, a *page* is defined as the amount of information currently visible on the logical screen. Function key definition lines are not a part of the page. In split-screen mode, for example, a Browse display might have 12 lines by 80 columns of scrollable data. In this case, a scroll amount of PAGE moves the text up or down by 12 lines, or right or left by 80 columns. If the cursor is within a scrollable field, PAGE will move the text right or left the equivalent of the display field length.

DATA

For up and down scrolling, specifies scrolling by one line less than a page. For left and right scrolling, it is one column less than a page. Within a scrollable field, it is one column less than the display field length.

HALF

Specifies scrolling by half a page. Within a scrollable field, it is half the display field length.

MAX

Specifies scrolling to the top, bottom, left margin, right margin, beginning of field or end of field, depending upon which scrolling command is used and the current cursor position. For scrollable fields, the maximum right position is the field length minus the display length and the maximum left position is 1.

CSR

Specifies scrolling based on the current position of the cursor. The line or column indicated by the cursor is moved to the top, bottom, left margin, or right margin of the screen, depending upon which scrolling command is used. If the cursor is not in the body of the data or if it is already positioned at the top, bottom, left margin, or right margin, a full-page scroll occurs.

Note: Scroll amount is not used for scrollable areas.

The current scroll amount is saved in the application profile. There are three scroll amount values: one for Browse (ZSCBR), one for Edit and View (ZSCED), and one for member lists (ZSCML). When you type over the scroll amount, the new value remains in effect until you change it again. The value MAX is an exception. Following a MAX scroll, the scroll amount reverts to its previous value.

The scroll amount field is optional. If the input field following the command field in the panel body is exactly four characters long, it is assumed to be the scroll amount field. If there Otherwise, the system variable ZSCROLLD, which can be set by the dialog, is used to determine the default scroll amount. If no scroll amount field and ZSCROLLD has not been set, the default is PAGE.

When you enter a scroll request, variables ZSCROLLA, ZSCROLLN, and ZSCROLNL are set. ZSCROLLA contains the value of the scroll amount field (MAX or CSR, for example). ZSCROLLN and ZSCROLNL contain the number of lines or columns to scroll, computed from the value in the scroll amount field or entered as a scroll number. For example, if a dialog is in split-screen mode and if 12 lines are currently visible and a user requests DOWN HALF, ZSCROLLN and ZSCROLNL each contain a value of '6'. ZSCROLLN can support values up to '9999'. If a scroll number greater than '9999' is specified, ZSCROLLN is set to a value of '9999'. ZSCROLNL can support values up to '9999999'. The system variable ZVERB contains the scroll direction, DOWN in this case. If ZSCROLLA has a value of MAX, the values of ZSCROLLN and ZSCROLNL are not meaningful.

You can also use any valid scroll amount as part of the scroll command. For example, type:

```
Command ===> UP 3
```

and press Enter, or type:

```
Command ===> 3
```

and press the UP function key. Either form results in a temporary, one-time override of the scroll amount.

If ISPF does not recognize the value specified on the command line as a valid scroll amount, such as PAGE, DATA, HALF, MAX, CSR, or a positive integer, the value is interpreted as a command and passed to the function in control.

Using the EXPAND command

The expand panel displays the variable in a scrollable dynamic area. Standard up and down scrolling is supported. You can display the variable in character and hexadecimal using the primary command shown. The setting will be remembered for subsequent expand processing.

HEX ON/OFF

Turn hexadecimal display on and off.

Using command tables to define commands

ISPF implements system, user, site and application commands through the use of command tables.

A system command table (ISPCMDS) is distributed with ISPF in the table input library. An application can provide an application command table by including a table named xxxxCMDS in its table input library, where xxxx is a 1- to 4-character application ID. You can also add up to 3 user command tables and up to 3 site command tables to the ISPF Configuration table. This is a permanent place for your set of user-defined commands. When IBM updates the ISPF command table, you do not need to re-add your commands. By setting the Before or After option, you can search the site command tables either before

or after the ISP command table. The default option is Before. If the application's table input library is defined with the LIBDEF service, the LIBDEF must be active when the SELECT service call that invokes the application is issued, and the PASSLIB parameter must be specified.

You can define an application command table using either:

- The command table utility described in the Command Table Utility (Option 3.9) section of the [z/OS ISPF User's Guide Vol II](#).
- The Dialog Tag Language (DTL) and ISPF conversion utility. See the [z/OS ISPF Dialog Tag Language Guide and Reference](#) for the tags you must use.

When a user enters a command, the DM component searches the application command table (if any), then the user command tables (if any), then the site command tables (if any), and finally the system command table, ISPCMDs. This is the default search order, which assumes the option Before for the site command tables. If you choose the option After for these tables, they are searched after ISPCMDs. If it finds the command, action is taken immediately. If it does not find the command in the application or system tables, the command is passed to the dialog, unaltered, in the command field. The dialog must then take appropriate action.

Command table format

A command table is an ISPF table in which each row contains the specification for one command. Each column contains a variable for the command. The variables are:

ZCTVERB

Specifies the name of the command. A command name must be from 2-8 characters long and must begin with an alphabetic character. Note that the terms *command name* and *command verb* are synonymous and are used interchangeably.

ZCTTRUNC

Specifies the minimum number of characters that you must enter to find a match with the command name. If this number is zero or equal to the length of the name, you must enter the entire name. This number must not be one, or be greater than the length of the name.

ZCTACT

Specifies the action to be performed when the command specified in ZCTVERB is entered. Can be up to 240 characters.

ZCTDESC

Contains a brief description of the purpose of the command. This variable is optional. It is not used by the DM component in processing the command, but it is displayed by the command table utility. The description is limited to 80 characters.

The dialog manager treats ZCTVERB, ZCTTRUNC, ZCTACT, and ZCTDESC as defined function variables. They are not accessible to dialogs.

The valid actions that can be performed (ZCTACT) are:

SELECT

Followed by selection keywords causes the selected dialog (command, program, or menu) to be given control immediately.

ALIAS

Followed by another command and any parameters allows specification of command aliases.

PASSTHRU

Causes the command to be passed to the dialog instead of continuing to search the system table.

SETVERB

Causes the command to be passed to the dialog with the command verb stored in ZVERB separately from the parameters. The ISPF system commands distributed with the product that have SETVERB as an action are not always passed through to the dialog. See [“Passing commands to a dialog function” on page 65](#) for further discussion.

NOP

Causes the command to be inactive. ISPF displays an inactive command message in this case.

Blank (no action)

Causes the table entry to be ignored. Scanning continues, searching for additional entries with the same name.

A variable name

The name begins with an ampersand and can be one of the actions described in this list. This allows dynamic specification of command action.

Additional action keywords are used to indicate system commands for which special processing is required. These are CURSOR, PRINT, PRINTG, PRINT-HI, PRINTL, PRINTLHI, SPLIT, SPLITV, SWAP, and RETRIEVE. Although these are valid actions, they are intended for use only in the system command table distributed with ISPF and are intended to be used only with the associated command verb. They are not intended for use in application command tables.

Customizing the ISPCMDS command table

Use these steps to customize your ISPCMDS command table:

1. Copy the ISPCMDS into a data set concatenated before the '*.SISPTENU' data set in the ISPTLIB DD statement.
 - Name the new member using a unique prefix of up to 4 characters, for example: RSMCMDS or MOD1CMDS.
 - Allocate the copied-to data set to the ISPTABL DD card. You can use this CLIST to do a LIBDEF against ISPTABL if you have a ISPTABL DD allocated:

```
PROC 0
ISPEXEC LIBDEF ISPTABL DATASET ID(the_dataset_name)
WRITE &LASTCC
END
```

If your logon procedure does not allocate an ISPTABL DD card:

```
PROC 0
ALLOC F(ISPTABL) DA(the_dataset_name)
END
```

2. Using option 3.9, customize this member with your new commands.
 - Option 3.9 will search the ISPTLIB DD for this member.
 - Option 3.9 will save (UPDATE) this customized member to the output data set pointed to by ISPTABL.
3. After you have customized this member, you can use option 3.1 or 3.4 member list to rename this member to ISPCMDS.
4. Exit ISPF.
 - This will nullify the LIBDEF on ISPTABL.
5. Re-invoke ISPF.
 - When ISPF searches the ISPTLIB DD concatenation, your customized ISPCMDS will be found first.

SELECT action commands temporarily invoke a new dialog

A SELECT action command can be specified in a command table. The action is coded exactly the same as for the SELECT service. All SELECT keywords are valid, including NEWAPPL.

The selected dialog is started immediately when a SELECT action command is entered on the command line of any panel. This temporarily suspends the current dialog. When the selected dialog completes, the screen is refreshed and the suspended dialog resumes.

Table 5. Examples of SELECT action commands

ZCTVERB	ZCTTRUNC	ZCTACT
UPDATE	0	SELECT PGM(PQRUPDT) PARM(&ZPARM)
PREPARE	4	SELECT CMD(XPREP &ZPARM) NEWPOOL
MENU	4	SELECT PANEL(&ZPARM)

In the example, the ZCTTRUNC variable indicates that the UPDATE and MENU command names cannot be truncated. PREPARE, however, can be truncated to PREPAR, PREPA, or PREP. The functions and keywords in the ZCTACT field indicate the actions that the commands perform.

The ZPARM variable that appears in the SELECT keywords indicates that command parameters are to be substituted at that point. For example, if these commands were entered:

```
====> UPDATE BLDG DEPT NAME
====> PREPA LOG LISTING
====> MENU PQRMENU1
```

these SELECT actions would result:

```
SELECT PGM(PQRUPDT) PARM(BLDG DEPT NAME)
SELECT CMD(XPREP LOG LISTING) NEWPOOL
SELECT PANEL(PQRMENU1)
```

ZPARM, a dummy variable, is used only to substitute user-entered parameters into SELECT action commands. It is not stored in a variable pool and is not accessible to dialogs.

Note:

1. Take care with ACTIONS that use ZPARM, as the ISPF parser will add a matching parenthesis if one appears to be missing. Consider an entry of "SELECT CMD(%CMD &ZPARM) NEWAPPL(ISR)". If "(XYZ" is passed then the command will receive "(XYZ) NEWAPPL(ISR)" as a parameter.
2. Use of SELECT action commands can cause recursive entry into dialog functions, which the DM component allows. The dialog developer should either design functions for recursive use or display a message if a user attempts to reenter a nonrecursive function.

The ISPF DISPLAY and TBDISPL services can be used recursively. The current display environment is automatically saved whenever a SELECT action command is entered and is restored upon completion of the command.

Assigning command aliases

A command alias is an alternate way of expressing a command. For example, you might assign to the command UP MAX an alias of TOP to make it easier to remember and to issue. In the case of a command that includes lengthy parameters, using an alias can be a much more efficient way of entering the command. Also, using aliases can be helpful for writing dialogs in languages for which single words can meaningfully replace multiword command-parameter expressions. Normally, alias entries are used in an application command table to refer to system commands, which might or might not include parameter fields. Issuing the command or its alias causes the same result.

An alias must precede, in the command table, any reference to the command to which it refers. You can establish an alias by setting values in two command table variables. Set:

- ZCTVERB to the value you wish to use as the alias for an existing command
- ZCTACT to the keyword ALIAS followed by the command, including any parameters, for which you are establishing the alias. Thus, the value of the ZCTACT variable can be either a single-word command, such as HELP, or it can be a multipart command, such as UP MAX.

You can set the value of ZCTTRUNC in the command table to the minimum number of characters of the alias name that must be entered. For example, for the alias FORWARD, if you set ZCTTRUNC to a value

of 3, issuing the first three characters (or more) has the same effect as issuing FORWARD. If you assign a value of 0 in the ZCTTRUNC field, the complete alias name must be issued.

The maximum length of the value you can specify in ZCTACT, including the keyword ALIAS, followed by a blank, and the command verb plus any parameters, is 240 characters. This leaves a maximum of 234 characters for the command, at least one blank following the command, and any parameters. ISPF interprets up to the first 8 characters in the command name. ISPF issues an error message for command names that do not contain from 2-8 characters.

Any parameters included in the ZCTACT command table field take precedence over any parameters included with that command's alias issued from a command line. Thus, if you issue a command alias that includes parameters, ISPF:

- Recognizes the command alias verb
- Ignores the parameters you specified with the alias
- Substitutes the parameters included with the command verb in ZCTACT.

If the command verb in ZCTACT does not include parameters, ISPF accepts parameters specified with the command's alias from a command line. This can be useful when a command's parameters do not fit into the 240 character spaces available in ZCTACT.

You can create a chain of command-parameter aliases in a command table as long as the result is a valid executable action. The last command verb and parameter values that ISPF encounters in the alias chain within the command table are the ones that are executed. The command verb and the parameter values do not necessarily come from the same table entry.

Table 6. Examples of a chain of command-parameter aliases

ZCTVERB	ZCTTRUNC	ZCTACT
EASYKEY	0	ALIAS CMD PARM1 PARM2
CMD	0	ALIAS CMD1 PARM3
CMD1	0	ALIAS CMD2

In this example, if you entered EASYKEY from a command line, the command that would ultimately be executed would be CMD2 PARM3.

Table 7. Some more examples of defining alias values

ZCTVERB	ZCTTRUNC	ZCTACT
QUIT	0	ALIAS END
FORWARD	3	ALIAS DOWN
*TOP	0	ALIAS BACKWARD MAX
*BACKWARD	0	ALIAS UP
*ENDFILE	4	ALIAS LOW
*LOW	0	ALIAS DOWN MAX

*These four entries represent two-level chaining.

This example defines QUIT as an alias of END, FORWARD as an alias of DOWN, and so on. For example, if you enter QUIT, the system responds as though you had entered END.

Looking at the two-level chaining examples, if you enter TOP, ISPF responds as though you had entered UP MAX. This is because, at the second level when BACKWARD is replaced with UP, there is no second-level parameter to replace MAX. In the case of ENDFILE, ISPF responds as though you had entered DOWN MAX. ISPF replaces the verb LOW with DOWN and the blank parameter value with MAX.

Note: Command aliases included with ISPF in table ISPCMDS include TOP (UP MAX), BOTTOM (DOWN MAX), BACKWARD (UP), and FORWARD (DOWN).

Overriding system commands

An application can override any system command simply by including the same command name in the application command table.

Table 8. Examples of overriding a system command

ZCTVERB	ZCTTRUNC	ZCTACT
HELP	0	PASSTHRU
TSO	0	NOP

In this example, the dialog has overridden both the HELP and TSO commands. During ISPF processing, if you enter HELP, the command is passed to the dialog function in control, which determines the action to be taken. The action specified for the TSO command is NOP, which disables the TSO command. ISPF displays an inactive command message when a NOP action command has been processed.

Passing commands to a dialog function

Any command that is not found in the application or system command table is passed, unaltered in the command field, to the dialog. This occurs regardless of whether the command was typed in the command field or entered by use of a function key or the attention field.

You can force a command to be passed to the dialog, even if the command exists in the command table, by typing a greater-than symbol (>) in front of the command.

Any command in the command table that has an action of PASSTHRU is processed as though the command were not found in the table. It is passed in the command field to the dialog.

Commands can also be passed to the dialog using the SETVERB action. This action causes the dialog manager to separate the name from the command parameters, if any. The command is stored in variable ZVERB, which is in the shared pool. The left-justified command parameters are passed in the command field to the dialog.

Table 9. Examples of passing commands to the dialog

ZCTVERB	ZCTTRUNC	ZCTACT
QUERY	0	SETVERB

The verb QUERY is stored in variable ZVERB and the character string, such as DEPT 877 in the examples shown, is passed in the command field.

These actions produce the same results:

- Typing QUERY DEPT 877 in the command field and pressing Enter.
- Typing DEPT 877 in the command field and pressing a function key that has been equated to the character string QUERY.
- Pressing a function key that has been equated to the character string QUERY DEPT 877.
- Using the cursor-select key to select an attention field that contains the character string QUERY DEPT 877.

These system commands, distributed with the DM component, are defined as SETVERB action commands:

```
END      UP
RETURN   DOWN
RFIND    LEFT
RCHANGE  RIGHT
```

The ZVERB variable can be used to distinguish between END and RETURN. The effect of END and RETURN on the DISPLAY service is the same because RETURN is used to simulate repeated END commands, until a primary option menu is reached.

RFIND and RCHANGE are used only by ISPF View, Browse, and Edit. Thus, these commands are not passed back to a user dialog in ZVERB.

The commands UP, DOWN, LEFT, and RIGHT are only active when a scrollable panel is displayed. Use of these commands from a nonscrollable panel results in a command is not active message.

Specifying command actions dynamically

You can specify a command action dynamically (as part of function processing) by the use of a dialog variable. A variable action can be used to *share* commands, such as UP, DOWN, LEFT, and RIGHT, with the DM component. It can also be used to enable or disable commands during certain points in the dialog. Suppose, for example, an application command table includes these entries:

Table 10. Examples of entries in an application command table

ZCTVERB	ZCTTRUNC	ZCTACT
UP	0	&SCRVERT
DOWN	0	&SCRVERT

You can use the variable SCRVERT to dynamically control the action of the UP and DOWN vertical scroll commands as follows:

- If SCRVERT is set to NOP, the commands are not available.
- If SCRVERT is set to PASSTHRU, the commands are passed to the dialog.
- If SCRVERT is set to blank, command scanning continues. In this case, the system definitions for UP and DOWN in the system command table take effect.
- If SCRVERT is set to an action that is not valid, the commands are not available, as in NOP.

For this particular example, setting SCRVERT to SETVERB would have the same effect as setting it to blank, because UP and DOWN are defined in the system command table as SETVERB action commands.

If the dialog overrides or shares the use of the scroll commands, it becomes that dialog's responsibility to ensure that the commands have been redefined with an action of blank, or with SETVERB. This must be done before starting any ISPF function that requires View, Browse, Edit, and Table Display. The same rule applies to the RFIND command used by Browse and Edit and the RCHANGE command used by Edit.

Using function keys

Under ISPF, function keys are not automatically assigned to special functions. You equate each function key to a character string. When you press a function key, it simulates command entry. The processing is the same as if you had typed the character string in the command field and pressed the Enter key.

Note: On a 3270 display, the horizontal divider line that separates the logical screens is not considered part of either logical screen. If the cursor is placed on this horizontal divider line and a function key is pressed, the result is the same as if the ENTER key was pressed and the cursor is positioned on the active logical screen's command line.

A dialog function cannot distinguish the difference between a command entered by a function key and a command entered by typing in the command field. If the character string with which the function key is equated is longer than the screen's command field, the string is truncated without warning.

If you type information on the command line and then press a function key, the function key definition, followed by a blank, is concatenated ahead of the contents of the command field. For example, suppose F7 is equated to the character string UP. If you type 4 in the command field and then press F7, the results are exactly the same as if you had typed UP 4 in the command field and pressed the Enter key.

ISPF does not require function keys for its operation. Commands can be entered in the command field of any display, including View, Browse, Edit, and Table Display. However, for ease of use, function keys are strongly recommended.

The default function key assignments distributed with ISPF for the 3x4 key pad on the right side of the keyboard are shown in the next table. These are function keys 1-12 on a 12-key terminal or keys 13-24 on a 24-key terminal.

Table 11. Function key arrangement

Function key	Function
F1	HELP
F2	SPLIT
F3	END
F4	RETURN
F5	RFIND
F6	RCHANGE
F7	UP
F8	DOWN
F9	SWAP
F10	LEFT
F11	RIGHT
F12	RETRIEVE

Function keys can be displayed at the bottom of a panel. Using the FKA or PFSHOW command, you can display either the long or short form of the keys, or remove the keys from the panel. See [“ISPF system commands” on page 34](#) for a complete description of how to display or remove the function keys.

For panels defined without the)PANEL section, the long and short form of the function key area is the same. If you use a)PANEL section, you can use the KEYLIST command or the "Keylist settings" choice from the Function keys pull-down on the ISPF Settings panel to determine which keys appear in each form. For more information on Keylist settings, see the Settings (Option 0) topic of the [z/OS ISPF User's Guide Vol II](#).

Long

Displays the keys that appear in the short form along with all other keys you indicated should appear for the long form. The long form is the default. An example of the long form follows:

Option ==>

F1=Help	F2=Split	F3=Exit	F7=Backward	F8=Forward	F9=Swap
F10=Actions	F12=Cancel				

Short

Displays the keys that appear in the short form. An example of the short form follows:

Option ==>

F1=Help	F3=Exit	F10=Actions	F12=Cancel
---------	---------	-------------	------------

No

Removes the function key area, making the space available for the application. The keys are still active but are not displayed.

Defining function key values

You can define function key values three ways:

- Use the KEYS command to display the Keylist Utility panel or the PF Key Definitions and Labels panel, then change the function keys for the panel you are on.
- Use the ZKEYS command or select the "Non-Keylist PF Key settings" choice from the Function keys pull-down on the ISPF Settings panel. Use this method to define the function keys when the)PANEL statement has been coded on the panel. All DTL-generated panels have a)PANEL statement. For more information on working with Function Keys and Keylists, see the 'Settings (Option 0)' topic of the [z/OS ISPF User's Guide Vol II](#).
- Use the KEYLIST command or select the "Keylist settings" choice from the Function keys pull-down on the ISPF Settings panel. Use this method to define the function keys when the application panels are defined with the DTL. For more information on Keylist settings, see the 'Settings (Option 0)' topic of the [z/OS ISPF User's Guide Vol II](#).

Changing the format of the function key area

The FKA and PFSHOW commands let you change the visual display of the function keys on a panel. You can display the keys in long form or short form, or remove them completely. You can also use the PFSHOW command with the TAILOR parameter or the "Tailor function key display" choice from the Function keys pull-down on the ISPF Settings panel to display the Tailor Function Key Definition Display panel shown in [Figure 12 on page 68](#).

```

s      _____ ISPF Settings _____
          Tailor Function Key Definition Display
0  For all terminals:
    Number of keys . . . 2  1. 12
                              2. 24

    Keys per line . . . 1  1. Six
                              2. Maximum possible

    Primary range . . . 1  1. Lower - 1 to 12
                              2. Upper - 13 to 24

    For terminals with 24 PF keys:
      Display set . . . . 1  1. Primary - display keys 1 to 12
                              2. Alternate - display keys 13 to 24
                              3. All - display all keys

    Press ENTER key to save changes.  Enter END to save changes and exit.

T
C  Command ==> _____
    F1=Help    F3=Exit    F12=Cancel
    <<<_____

```

Figure 12. Tailor Function Key Definition Display Panel (ISPOPFA)

This panel lets you select:

- The number of function keys available for display.
See the information about 'Tailor Function Key Definition Display' in the Settings (Option 0) topic of [z/OS ISPF User's Guide Vol II](#) for a discussion of the rules governing the number of keys available for display.
- The number of keys per line to display in each function key definition line. System variable ZPFFMT holds the value selected.

Table 12. ZPFFMT system variable on PFSHOW

Choice	Description	ZPFFMT value
Six	Always displays six keys per line	SIX
Maximum possible	Displays as many keys as will fit on each line.	MAX

Note: The Maximum possible option is forced when you select the Panel display CUA mode option on the ISPF Settings panel.

- The set of function keys that are to be the primary and alternate keys. System variable ZPRIKEYS holds the value selected.

Table 13. ZPRIKEYS values

Choice	Description	ZPRIKEYS value
Lower - 1 to 12	Primary keys are 1-12	LOW
Upper - 13 to 24	Primary keys are 13-24.	UPP

The default value is Lower - 1 to 12.

- The set of function keys on terminals with 24 function keys for which definitions are to be displayed. System variable ZPFSET holds the value selected.

Table 14. ZPFSET system variable, on PFSHOW

Choice	Description	ZPFSET value
Primary - display keys 1 to 12	Primary set (1-12)	PRI
Alternate - display keys 13 to 24	Alternate set (13-24)	ALT
All - display all keys	All keys (1-24).	ALL

ISPF ignores these values for terminals with only 12 function keys.

Variables ZPFFMT, ZPRIKEYS, and ZPFSET are stored in the application profile pool. Dialogs can set these values directly by using the VPUT statement in a panel definition, or by using the VPUT service in a dialog function.

Dialog developers can control how the PFSHOW command behaves by using the ZPFCTL system variable. ZPFCTL is also stored in the application profile pool. Its possible values are:

USER

The user can control the display of function key definition lines by using the PFSHOW command. This is the default value.

ON

ISPF unconditionally displays function key definitions on all panels. Issuing PFSHOW OFF, FKA OFF, or toggling to the *no display* setting causes ISPF to issue an error message.

OFF

ISPF does not display function key definition lines. If PFSHOW ON, PFSHOW TAILOR, FKA ON, or toggling to the long or short form setting of either command is issued, ISPF displays an error message.

Applications can set the ZPFCTL variable value to either USER, ON, or OFF by using the VPUT service or by using a VPUT statement with the PROFILE keyword.

Note: The ZPFCTL variable is ignored if the PFSHOW/FKA command is invoked from a panel containing a)PANEL statement or if the panel was created using DTL.

Similarly, keylists can be controlled to some degree by the application.

Using the cursor select key

The ZKLUSE can be set to Y or N. If KEYLIST is ON, the value in ZKLUSE in the application profile is Y. If KEYLIST is OFF, it is N. If an application VPUTs the variable to the application profile, the keylist setting is altered.

These variables can be used by an application to determine what keylist is being used, and where it comes from.

- ZKLNAME - If KEYLIST is ON and it is a panel with the)PANEL statement, ZKLNAME contains the name of the keylist currently being used. Otherwise it is blank.
- ZKLAPPL - If KEYLIST is ON and it is a panel with the)PANEL statement, ZKLAPPL contains the application ID that the keylist currently being used came from. Otherwise it is blank.
- ZKLTYPE - If KEYLIST is ON and it is a panel with the)PANEL statement, ZKLTYPE contains either P (private) or S (shared), depending on the keylist currently being used. Otherwise it is blank.

Function key definitions appear at the bottom of each logical screen. There can be more than one logical screen, such as when you are using the split-screen function. If the application has not issued an ADDPOP service call, ISPF displays no more than four function key definition lines on one panel. If the application has issued an ADDPOP service call and the set of keys to be displayed is primary or alternate, ISPF displays no more than two lines. If all of the keys are to be displayed, no more than four lines appear. If all of the keys will not fit on the lines, ISPF wraps the keys and truncates the last keys.

Saving function key definitions

This topic applies only if you created your application panels using the ISPF panel definition statements and used the ZKEYS command or selected the "Global PF Key settings" choice from the Function keys pull-down on the ISPF Settings panel. It does not apply for keys defined with the KEYLIST command or through the "Keylist settings" choice from the Function keys pull-down on the ISPF Settings panel.

Function key definitions are kept in a set of system variables named ZPF01, ZPF02, ... ZPF24. Labels are kept in a set of system variables named ZPFL01, ZPFL02, ... ZPFL24.

When you set the "Primary range" field on the Tailor Function Key Definition Display panel to Upper - 13 to 24, variables ZPF13-ZPF24 and ZPFL13-ZPFL24 contain the *primary* PF key definitions and labels. For 24-key terminals, these definitions correspond to physical keys 13-24. For 12-key terminals, these definitions correspond to physical keys 1-12. Variables ZPF01-ZPF12 contain the *alternate* key definitions, and are meaningful only for terminals with 24 function keys.

When you set the "Primary range" field on the Tailor Function Key Definition Display panel to Lower - 1 to 12, variables ZPF01-ZPF12 and ZPFL01-ZPFL12 contain the *primary* PF key definitions and labels. For 24-key terminals, these definitions correspond to physical keys 1-12. For 12-key terminals, these definitions correspond to physical keys 1-12. Variables ZPF13-ZPF24 contain the *alternate* key definitions and are meaningful only for terminals with 24 function keys.

Current values for all 24 keys (variables ZPF01-ZPF24 and ZPFL01-ZPFL24) are kept in the application profile. Hence, unique function key definitions can be associated with different applications.

An application can provide default function key settings for a new user by providing a default profile. An application can prevent the user from changing the default function key settings by overriding the ZKEYS command. It does this by assigning the command to NOP in the application command table.

Using the cursor-select key

ISPF permits fields on a panel to be detected with a cursor-select key. The cursor-select key is a hardware feature on 3179, 3179G, 3180, 3278, 3279, and 3290 terminals.

Panel fields that are detectable by cursor selection can simulate a command entry, or give you an alternate means of selecting options from a menu. Each field must be defined as an attention field. Use an attribute character that has been defined with the ATTN(ON) keyword. The panel designer must provide the number of blank characters that are required by the terminal hardware before and after the attention attribute character.

Processing of cursor-selected fields is handled in much the same way as function key processing. The entire contents of the selected field are treated as a command and processed as though they had been typed into the command field. If the command is found in the tables, it is performed immediately. If the command is not found in the tables, it is inserted into the command field, and the entire command field is passed to the dialog. But unlike function keys, information in the command field is not concatenated with the contents of the attention field. They should not be used on data entry panels, because any information that is typed in an input field, including command fields, is lost when the attention occurs.

Attention fields can be used on a menu to simulate option selection. The panel designer must truncate any unwanted characters resulting from an attention entry into the command field. Here is an example:

```
)ATTR
  $ TYPE(TEXT) ATTN(ON)
)BODY
%----- SOME MENU -----+
%SELECT OPTION ==>_ZCMD
%
$   1 - BROWSE    +DISPLAY SOURCE DATA OR LISTINGS
$   2 - QUERY     +FIND OUT INFORMATION ABOUT SOMETHING
:
)PROC
  &ZCMD = TRUNC (&ZCMD, ' ')
  &ZSEL = TRANS (TRUNC (&ZCMD, ' '),
                1, 'PGM(ISPBR)'
                2, 'PANEL(XYZ)'
                :

```

Figure 13. Use of the attention-select Attribute

In the example, a cursor-selection of the first option would place the character string 1 - BROWSE in the ZCMD field and simulate the Enter key. In the)PROC section, the contents of the ZCMD field are truncated at the first blank before the ZSEL variable is set, based on a translation of the ZCMD field.

Panels that are included with the ISPF product do not contain the ATTN(ON) keyword in the attribute section. If cursor selection is used, it is the user's responsibility to add the ATTN(ON) keyword to the attribute section of the desired panel. See the [z/OS ISPF Dialog Developer's Guide and Reference](#) for complete descriptions of the various panel sections.

How Program Access (PA) keys affect ISPF operation

The two Program Access (PA) keys are defined as follows. These definitions cannot be changed.

ATTENTION (PA1)

Normally, you should not use this key while you are in ISPF full-screen mode. The text following discusses exceptions.

RESHOW (PA2)

Redisplays the contents of the screen. PA2 can be useful if you have pressed the ERASE INPUT or CLEAR key accidentally or have typed unwanted information but not yet pressed the Enter key or a function key.

Generally, PA1 is used to terminate TSO commands or CLISTs running under ISPF. However, some TSO commands and CLISTs process PA1 in their own way.

Restrictions that apply to CLIST attention exits are described in the [z/OS ISPF Dialog Developer's Guide and Reference](#). Also, ISPF should not be started from a CLIST that contains an attention exit because results are unpredictable.

If PA1 is pressed while ISPF is in full-screen mode after the keyboard has been unlocked, it is treated as a RESHOW request. If PA1 is pressed again, the current function is terminated and either the primary option menu or a top-level selection panel supplied by the dialog developer is displayed.

When an ISPF function is running, if the RESET key is pressed to unlock the keyboard and PA1 is pressed, ISPF attempts to terminate the current function and redisplay the primary option menu. The attempt

might not always be successful; for example, if there is an error in MVS allocation, the attempt fails. A failure might cause unpredictable results such as waits, loops, abends, or incorrect and unrelated error messages.

In a 3270 SNA environment, the ATTN key is treated the same as the PA1 key. It is a program interrupt and, like the PA1 key, causes the ISPF attention exit to get control.

The AUTOTYPE function, for automatic data set name and member name completion

The AUTOTYPE function is not available on all ISPF panels. It works only on panels that are specifically written to understand it.

If you assign the value of AUTOTYPE to a function key, you can type a partial name into a library, member, or data set name field, then press the function key to have ISPF complete the name for you.

AUTOTYPE automatically searches the catalog or PDS directory to find names that match what you entered. You can even type a pattern to limit the names that AUTOTYPE will return. AUTOTYPE works only on panels that have been enabled to use the function. You can also enable your own applications to use AUTOTYPE (see [“Enabling applications to use AUTOTYPE”](#) on page 73).

If you are using a terminal emulator, you can assign an easily reachable key to the function key that invokes AUTOTYPE. For example, you can use a control key combination or any other key or combination that is within easy reach. You can also use the function key directly.

Within ISPF, AUTOTYPE is enabled for these panels:

- Edit, Browse, and View (options 1 and 2, including recursive edit/browse/view, copy, replace and move panels).
- Library Utility panels (option 3.1)
- Data Set Utility panels (option 3.2, including Rename)
- Move/Copy (option 3.3)
- Data Set List entry panel (option 3.4)
- Reset ISPF Statistics (option 3.5)
- Hardcopy Utility (option 3.6)
- SuperC Compare (options 3.12 and 3.13 in all fields)
- SuperC Search (options 3.14 and 3.15, all fields)
- SCLM View and Edit (options 10.1 and 10.2)
- SCLM Library Utility (option 10.3.1)
- Sublibrary Management (option 10.3.2)
- SCLM Migration Utility (option 10.3.3)
- SCLM Delete from Group Utility (option 10.3.9)
- SCLM Build and Promote (options 10.4 and 10.5)
- Preprocessed panel utility (ISPPREP)
- Dialog tag language compiler (ISPDTLC)

On panels that are not enabled for AUTOTYPE, pressing the AUTOTYPE key is the same as pressing ENTER. The variable ZVERB is set to the value 'AUTOTYPE'.

How to use AUTOTYPE

1. Type a partial name (zero or more characters) into a Library field (project, group, type, or member) or the Other Data Set Name field.
2. Press the function key that has been set to AUTOTYPE. ISPF sets the field to the correct value.

3. If you immediately press the function key again, ISPF retrieves the next data set or member name. Up to 100 data set names and 700 member names can be retrieved.

Rules for specifying the 'Other Data Set Name' field

The prefix or pattern you specify is that which is to the left of the cursor. For example, if the field is 'CLIST(ABC)', with the cursor under the letter 'S', then the pattern used is 'CLI'. For more information, see [“Cursor position sensitivity” on page 73](#).

- If the content of the Data Set Name field does not begin with a quote, your TSO prefix is added. If the field does begin with a quote, no prefix is added. Unquoted data set names are not processed if you do not have a TSO prefix (except for on the Data Set List Utility panel).
- The pattern can be any pattern similar to what you use in your data set list (except that you don't have to specify your TSO prefix. Trailing wildcards are automatically added. For example, in a Data Set Name field, typing 'CHR' will result in a pattern of *prefix.CHR*. *** when searching the catalog.
- If you include a left parenthesis, followed optionally by a member name or pattern, the data set is assumed to be a PDS and the member name is returned. For example 'CLIST(XY)' would search *prefix.CLIST* for members matching the pattern *XY**. A trailing * is always added to the member name to create a pattern.

Rules for Library fields - Project, Group, Type, Member

- If the cursor is in the Project field, the other fields are not used as part of the data set name search and are erased.
- If the cursor is in a Group field, the project name and type name (if any) are added to create the search pattern. Each group name is used only once, even if there are many types in that group. As each group name is displayed, the first type name found for that project.group combination is also retrieved. The member name, if any, is not used and is erased.
- If the cursor is in the Type field, the project and first group name are used to create the pattern. The Type field is updated and the member name is erased.
- If the cursor is in the Member field, the project, first group, and type are used as the data set name. The second, third, and fourth groups are not used.

Cursor position sensitivity

The pattern or prefix used to search for names is only that which is to the left of the cursor. In this way you can refine your search simply by moving the cursor.

For example; suppose you have one hundred data sets called 'SYS1.A234.RGG.*' and you plan to use one named 'SYS1.A234.RGG.DBD0223.L422.FEB0299.TERRA'. You could type 'SYS1.A234.RGG' and press the AUTOTYPE key. That might return 'SYS1.A234.RGG.DBD0211.X331.AUG0599.FIRMA'. You can refine the next value returned by typing a '2' over the first '1' in 'DB0211' and then pressing the AUTOTYPE key again. This will use the new pattern and get you closer to the desired value.

Restrictions

AUTOTYPE only retrieves cataloged alias names. It will not retrieve generation data group or generation data set names. AUTOTYPE does not use the Volume field on any panel. It sets the Volume field associated with the current data set name field to blank.

AUTOTYPE does not use any ISPF name change exits or data set list retrieval exits.

AUTOTYPE retrieves a maximum of 100 data sets and 700 member names before cycling through the list from the beginning.

Enabling applications to use AUTOTYPE

You can enable applications to use AUTOTYPE by making some minor panel modifications as follows:

1. At the beginning of the)REINIT section, add the lines shown. Make sure the subsequent line in the)REINIT section starts in column 1 so that it does not become part of the IF clause you have inserted.

```
IF (&ZNXMSG='ISRT') .CSRPOS = &ZCSR  
                  .CURSOR = &ZCSR
```

2. At the end of the)REINIT section add this line in column 1.

```
REFRESH (*)
```

3. At the beginning of the)PROC section add the lines shown. Make sure the subsequent line in the)PROC section starts in column 1 so that it does not become part of the IF clause you have inserted. If there is a line that says: .RET = OFF in the)PROC section, it should go before these lines.

```
&ZCSR = .CURSOR  
&ZCSR = .CSRPOS  
&ZNAMES='ZCSR ZCSR PRJ1 LIB1 LIB2 LIB3 LIB4 TYP1 MEM DSN ZCMD  
PANEXIT ( (ZNAMES) , LOAD,ISRAUTOT)  
IF (&ZNXMSG='ISRT') EXIT
```

Modify the line that assigns the variable &ZNAMES. This assignment contains a list of variable names on the panel. They must all be specified in order. Use an asterisk (*) for names that are not relevant for your panel.

The values in the &ZNAMES variable are:

1. The variable containing the Cursor field name
2. The variable containing the cursor offset
3. The name of the Project variable on the panel
4. The name of the first Group variable.
5. The name of the second Group variable
6. The name of the third Group variable
7. The name of the fourth Group variable
8. The name of the Type variable
9. The name of the Member variable
10. The name of the Other Data Set Name variable
11. The name of the command line variable (clears the command line)

The cursor and name variables (described here as ZCSR, ZCSR, and ZNAMES) can have any names you choose but they must match the names used in the)INIT section and the PANEXIT statement in the)PROC section.

If a name references a read-only field, add a dash to the end of the name. If you need to limit the size of the returned name, you can append the maximum length, after a period, to the name; for example, ODSN.44. You can disable member searches for a data set name field by adding a percent sign to the end of the field name; for example, ODSN.44% or ODSN%.

Panels defined in Dialog Tag Language (DTL) can be enabled for AUTOTYPE through DTL keywords. See the [z/OS ISPF Dialog Tag Language Guide and Reference](#) for more information.

Chapter 4. ISPF libraries and data sets

ISPF enables you to work with ISPF libraries, other partitioned data sets, and sequential data sets. This topic describes how to allocate, create, and use libraries and data sets.

ISPF also provides some facilities for working with z/OS UNIX files.

- For more information about working with z/OS UNIX files, see "z/OS UNIX Directory List Utility (Option 3.17)" in the *z/OS ISPF User's Guide Vol II*.

An ISPF library is a cataloged partitioned data set (PDS) or a partitioned data set extended (PDSE). For more information about PDSE, see "Partitioned Data Set Extended (PDSE)" on page 103.

The ISPF library has a three-level name consisting of a project, group, and type. An optional library member name can also be included. A member consists of programming code, data, or text.

ISPF displays library names on line 1 of a data display, such as the member list shown in [Figure 16 on page 84](#). Each library generally contains members with the same type of information.

Before you can create and use a new ISPF library or data set, you must allocate it using option A of the Data Set utility. See the topic about "Data Set Utility (Option 3.2)" in the *z/OS ISPF User's Guide Vol II* for instructions on allocating data sets.

Naming ISPF libraries and data sets

On data entry panels that require a library or other data set name, such as the Data Set Utility (option 3.2) and Edit Entry (option 2) panels, two groups of fields are provided: one for entering an ISPF library name and one for entering another partitioned or sequential data set name.

ISPF library names

To name an ISPF library, you must specify at least a project, group, and type. For example:

```
Project . . . ISPFPR0J
Group   . . . TEST
Type    . . . PLI
```

Project

The common identifier for all ISPF libraries belonging to the same programming project. This name must be your user ID unless you are using a specific project name that has been predefined in the MVS master catalog.

Group

The identifier for a particular set of ISPF libraries, that is, the level of the libraries within the library hierarchy. For example, the group name of your private library could be PRIVATE or perhaps your first name, such as Joe in the example in [Figure 14 on page 80](#).

Type

The identifier for the type of information in the ISPF library, such as PL/I, SCRIPT, or PANELS.

Standard ISPF naming conventions

Each component of the library name can be up to 8 alphanumeric or national characters; the first one must be alphabetic. This conforms to standard TSO data set naming conventions. For convenience, any cataloged data set (sequential or partitioned) with a three-level name can be entered in the Project, Group, and Type fields, with one level of the name in each field. If a cataloged data set with four or more levels is to be entered, multiple levels of the name may be entered in each field, with each level being separated by a period.

If both a library and a data set name are specified on the same panel, the data set name takes priority. Therefore, to specify a library, leave the Data Set Name field blank.

When the library identification appears in a title line or message, the project name, group name, and type name are separated with periods. A member name, if applicable, is enclosed in parentheses. For example:

```
PROJECT.GROUP.TYPE(MEMBER)
```

On most data entry panels that allow a library name to be specified, a Member field is available:

```
Member . . . PROJ1
```

Member

The name of an ISPF library or other partitioned data set member. Leaving this field blank or entering a pattern causes ISPF to display a member list. See [“Displaying member lists” on page 82](#) for more information.

A *pattern* is a partial member name that uses either an * (asterisk) or % (percent sign) as place holders:

- A * symbol represents a string of characters
- A % symbol represents only 1 character

ISPF matches the pattern to any like member names in the specified data set.

The ISPF library's project, group, and type must always accompany the member name, if entered. If you try to edit a member that does not exist, ISPF provides an Edit display screen with a blank data area.

Member names entered in the Member field or those enclosed in parentheses and entered in the Data Set Name field must follow standard ISPF naming conventions.

If you have a partitioned data set with members whose names do not follow ISPF naming conventions, ISPF allows limited processing, as follows:

- View (option 1) allows any character string as a member name in either the Member or Data Set Name field and attempts to View or Browse the specified member.
- Edit (option 2) allows an *existing* member with a nonstandard member name to be edited. You cannot create a member with a nonstandard member name.

ISPF cannot process member names that begin with a blank or have embedded blanks which can cause unpredictable results. Also, ISPF cannot process member names that include special characters, such as an ampersand (&). CLIST processing in both Foreground (option 4) and Batch (option 5) can result in a runtime error.

Other partitioned, sequential or VSAM data set, or z/OS UNIX file names

You can use this field to specify any partitioned or sequential data set, or z/OS UNIX file path name:

```
Other Partitioned, Sequential or VSAM Data Set, or z/OS UNIX file:  
Name . . . . . _____ +
```

Note: The + at the end of the field indicates a scrollable field. The + indicates that the field may contain more data than is able to be displayed on the current screen. It is commonly used to enter long UNIX file path names but may appear on panels other than those associated with data set names.

See the descriptions of the ZEXPAND ([“EXPAND” on page 38](#)) and ZCLRSFLD ([“ZCLRSFLD” on page 55](#)) commands which operate on scrollable fields.

Specifying a data set name

Type any fully-qualified partitioned, sequential, or VSAM data set name, such as:

```
Name . . . . . 'USERID.SYS1.ASM' _____ +
```

You can include either a TSO user prefix or user ID as the first-level qualifier of the data set name. If you omit the single quotes and if you have created a TSO user prefix, that prefix is automatically added to the

beginning of the data set name. If you omit the single quotes and if you do not have a TSO user prefix, no prefix is added, and the name is used exactly as it appears.

If you include your user prefix or user ID, enclose the data set name with apostrophes. If you include the apostrophe at the beginning of the data set name but omit the one at the end, ISPF inserts it for you.

Note: ISPF does not support multivolume data sets or partitioned data sets with record format FBS or VBS.

For partitioned data sets, a member name enclosed in parentheses can follow the data set name. For example:

```
Name . . . . 'SYS1.PROCLIB(ASMHC)' +
```

If you include the parenthesis at the beginning of the member name but omit the one at the end, ISPF inserts it for you.

When you omit the member name and parentheses or use a pattern ISPF displays a member list. See [“Displaying member lists” on page 82](#) for more information.

You can refer to generation data sets by using a signed or unsigned number in place of a member name in the Data Set Name field only. For example:

```
Name . . . . 'gds.test(0)' +
```

This example refers to the most recently allocated data set in the generation data group. Minus numbers refer to previously allocated data sets; positive refer to unallocated.

Note: For Edit, Browse, and View, a VSAM data set can be specified if the ISPF Configuration Table enables VSAM processing.

Specifying a z/OS UNIX file path name

Type a z/OS UNIX file path name, such as:

```
Name . . . . /u/jsmith/test/tst1.sh +
```

The Name field is a scrollable field allowing you to enter an absolute pathname up to 1023 characters in length.

Note: If you often enter long pathnames (greater than 56 characters), consider using the KEYLIST utility to update the keylist for the panel and assign the ZEXPAND command to a function key. The ZEXPAND command displays the scrollable input field in a scrollable dynamic area in a pop-up window, making the task of entering a long pathname easier.

When you enter a z/OS UNIX file path name, a z/OS UNIX directory selection list is displayed.

When you enter a z/OS UNIX file path name containing glob characters and the entered value does not match a z/OS UNIX directory or file, ISPF uses the C/C++ glob function to search the UNIX file system for files and directories that match the mask. Unicode Conversion services are used to internally convert the path name from the terminal codepage to codepage 1047 for use by the search function.

ISPF assumes a z/OS UNIX path name when the first character entered in the Name field is one of these characters:

/

(Forward slash) Identifies an absolute path name.

~

(Tilde) The path name for your home directory.

.

(Period) The path name for your current working directory.

..

(Double period) The path name of the parent directory of your current working directory.

Library Concatenation

Glob characters and their meaning are:

?

Match any single character.

Match multiple characters.

[

Open a set of single characters.

]

Close the set of single characters. Each character in the set can match a single character at the position specified.

Examples:

~/test/tst1.sh

Equivalent to specifying the absolute pathname

```
/u/jsmith/test/tst1.sh
```

when your home directory is defined as /u/jsmith.

./pgma.c

Equivalent to specifying the absolute pathname

```
/u/proj1/dev/pgma.c
```

when your current working directory is set to /u/proj1/dev.

../test/pgma.c

Equivalent to specifying the absolute pathname

```
/u/proj1/test/pgma.c
```

when your current working directory is set to /u/proj1/dev.

u/h*/t?st[123]*

Can match /u/harry/test1do and /u/henry/tost2nok.

Volume serials

Along with a data set name, you can optionally specify a volume serial. If you do, the system catalog is not used. For example:

```
Volume Serial . . . _____ (If not cataloged)
```

Volume Serial

A real DASD volume or a virtual volume residing on an IBM 3850 Mass Storage System. To access 3850 virtual volumes, you need MOUNT authority, which is acquired through the TSO ACCOUNT command or the RACF® TSO AUTH CLASS command.

Library concatenation

Whenever the first Group field is accompanied by three additional fields horizontally across the screen, you can enter a *library concatenation sequence*, which is a series of group names chained together. ISPF searches these groups in the sequence that you enter them.

You can concatenate libraries of the same type, but only libraries that belong to the same project. You will usually concatenate the lowest-level library ahead of the next higher-level library, and so on, in bottom-to-top order. Therefore, concatenation is usually most effective if this search sequence is the same as the library hierarchy.

For example, new library members or members undergoing changes generally reside in libraries used by program developers. A test library may contain members that have been unit tested and are ready

for integration test. A master library might contain fully tested members that correspond to a previously released version of the program.

Concatenated libraries must have consistent record formats and logical record lengths. You can use concatenation with these ISPF functions:

- Viewing
- Browsing
- Editing
- Selecting Library Utility (option 3.1) functions:
 - Print index or complete data set
 - Browse, delete, edit, print, rename, or view members
 - Compress data set.
- Copying data sets or members
- Compiling
- Assembling
- link-editing
- SCRIPT/VS processing.

Note: You can also use additional input libraries for compilations and assemblies.

Figure 14 on page 80 shows a sample three-level hierarchy consisting of a set of master libraries, a set of test libraries, and three sets of private development libraries identified by user ID. Using this hierarchy, a typical concatenation sequence for a project of ISPFPROJ, a type of DATA, and a member PGM1 is:

```
ISPF Library:
Project . . . ISPFPROJ
Group . . . JOE      . . . TEST_____ . . . MASTER__
Type . . . DATA
Member . . . PGM1_____
```

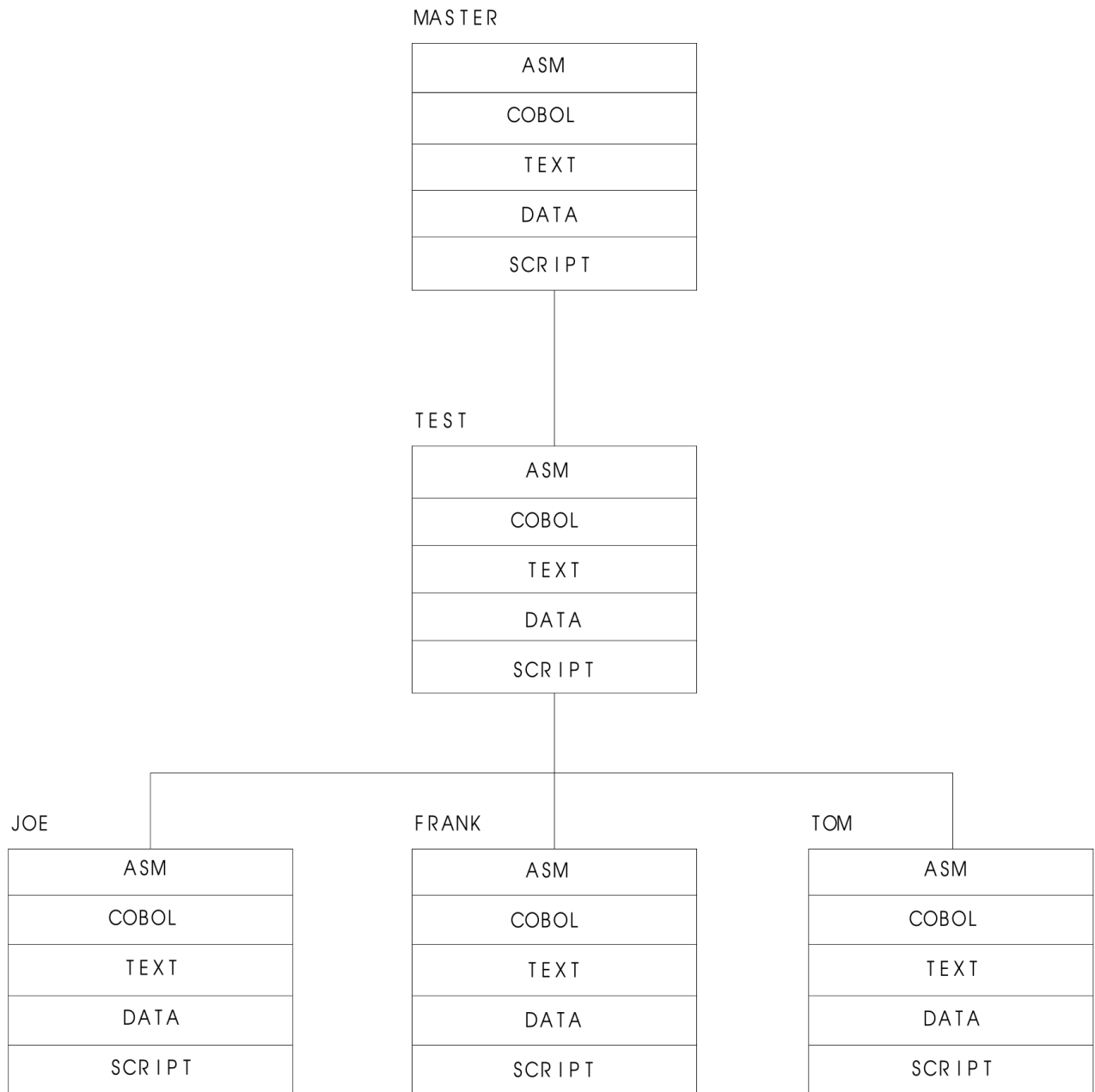


Figure 14. Hierarchy of ISPF Libraries

In this example, the search for member PGM1 goes through libraries:

```
ISPFPROJ . JOE . DATA  
ISPFPROJ . TEST . DATA  
ISPFPROJ . MASTER . DATA
```

Concatenation during editing

Using concatenation during editing provides a way to copy members to your development library. Use the concatenation sequence to search the libraries for the member to edit. The edited member is saved in your development library, the first library in the concatenation sequence, while the unchanged version remains in the test or master library. When the new version is fully tested, you can use the Move/Copy utility (option 3.3) to move the new version to a higher-level library.

Concatenation during language processing

The purpose of concatenation during language processing is to:

- Help you include source segments in their proper order when using INCLUDE or COPY statements or when using SCRIPT imbed controls
- Allow debugging of new or changed programs without altering the contents of the test or master libraries.

The output from a compilation or assembly (an object module) or from a link-edit (a load module) is stored in the lowest-level OBJ or LOAD library, the first library in the concatenation sequence.

Using member selection lists

A *member selection list*, also called a member list, is initially an alphabetic list of the members of an ISPF library or TSO partitioned data set. [Table 15 on page 81](#) provides a quick reference to the primary options that display member lists and their differences. In the Type of Selection column, "Single" means that ISPF processes only the line command that is the closest to the top of the list, ignoring all others. "Multiple" means that you can enter more than one line command simultaneously. The numbers in parentheses refer to notes following the table. See [“Member selection list commands” on page 89](#) for more information about the line commands shown in the table.

Table 15. Member Selection List Differences			
Primary Options	Type of Selection	Valid Line Commands	Prompt Field Available
View (1)	Single	S,V (4)	No
Browse (1)	Single	S,B (4)	No
Edit (2)	Single	S,E (4)	No
Library (3.1)	Multiple	B,C,D,E,G,I,J,M,P,R,T,V	Yes
Move/Copy (3.3)	Multiple	B,S (1)	Yes
Data Set List (3.4)	Multiple	B,C,D,E,G,I,J,M,P,R,T,V (2)	Yes
Reset (3.5)	Multiple	S	No
SuperC (3.12)	Multiple	S	No (3)
SuperCE (3.13)	Multiple	S	No (3)
Search-For (3.14)	Multiple	S	No
Foreground (4)	Single	S	No
Batch (5)	Single	S	No
Workplace (11)	Multiple	B,C,D,E,G,I,P,M,R,S,T,V	No

Note:

1. For the Move/Copy utility, B (browse member) enables you to browse members of an ISPF library or another partitioned data set before moving or copying them without having to use browse on another panel. Then, use S (select) to select the member or members to move or copy. See [“Line commands for the move/copy utility” on page 98](#) for more information.
2. When you select M (display member list) line command on a data set list, you can use B (browse member), C (copy member), D (delete member), E (edit member), G (reset member statistics), I (display member information), J (submit member), M (move member), P (print member), R (rename member), T (invoke TSO command for member), and V (view member). You can also enter TSO commands, CLISTs, and REXX EXECs.

S (select) is valid also, but only when the B, CO, E, MO, RS, or V line commands are used on a data set list.

3. Instead of a Prompt field, this member list has an OLDMEM field, which you can use to enter the name of a member in the old data set. For more information about this field, see the topic on SuperC Member Lists in the SuperC Utility (Option 3.12) section of the *z/OS ISPF User's Guide Vol II*.
4. For your convenience ISPF supports E as a select character from Edit member lists in addition to S and point-and-shoot selection. Similarly, V is supported from View member lists, and B is supported from Browse member lists.
5. When multiple members are selected from a member list that supports multiple selection and all members have been processed, the member list is scrolled such that the last member processed is positioned to the top of the member list display.

Displaying member lists

For each of the primary options listed in the preceding table, except Data Set List (option 3.4), you can display a member list by:

- Leaving the Member field blank for an ISPF library
- Omitting the member name from the name of another partitioned data set
- Entering a pattern as the member name.

You can use a combination of asterisks and percent signs in the same pattern. However, the pattern, including the asterisks and percent signs, can contain no more than 8 characters. For example, entering this pattern in the Member field:

```
Member . . . *prof__
```

could display this member list:

```
ISFPROF
ISPPROF
ISPSPROF
ISRPROF
LOCPROF
SUPCPROF
```

When using the Data Set List utility (option 3.4), you can display a member list by:

- Entering the M (display member list) line command
- Entering the V (view), B (browse), or E (edit) line command and then using one of the methods described in the preceding list. This applies only if you are editing or browsing members of a partitioned data set.
- Entering the CO (copy) line command
- Entering the MO (move) line command
- Entering the RS (reset) line command.

On any member list, PF10 and PF11 toggle between two different views of the member list data.

Note:

1. The column headers on a member list display (with the exception of Prompt) are point-and-shoot sort fields.
2. If you enter a slash in the line command field, the Member List Commands pop-up window shown in the next figure is displayed so that you can select the command you want to use.
3. The line command field is a point-and-shoot field. If you select the line command field beside a member name, the Member List Commands pop-up window shown in the next figure is displayed so that you can select the command you want to use.

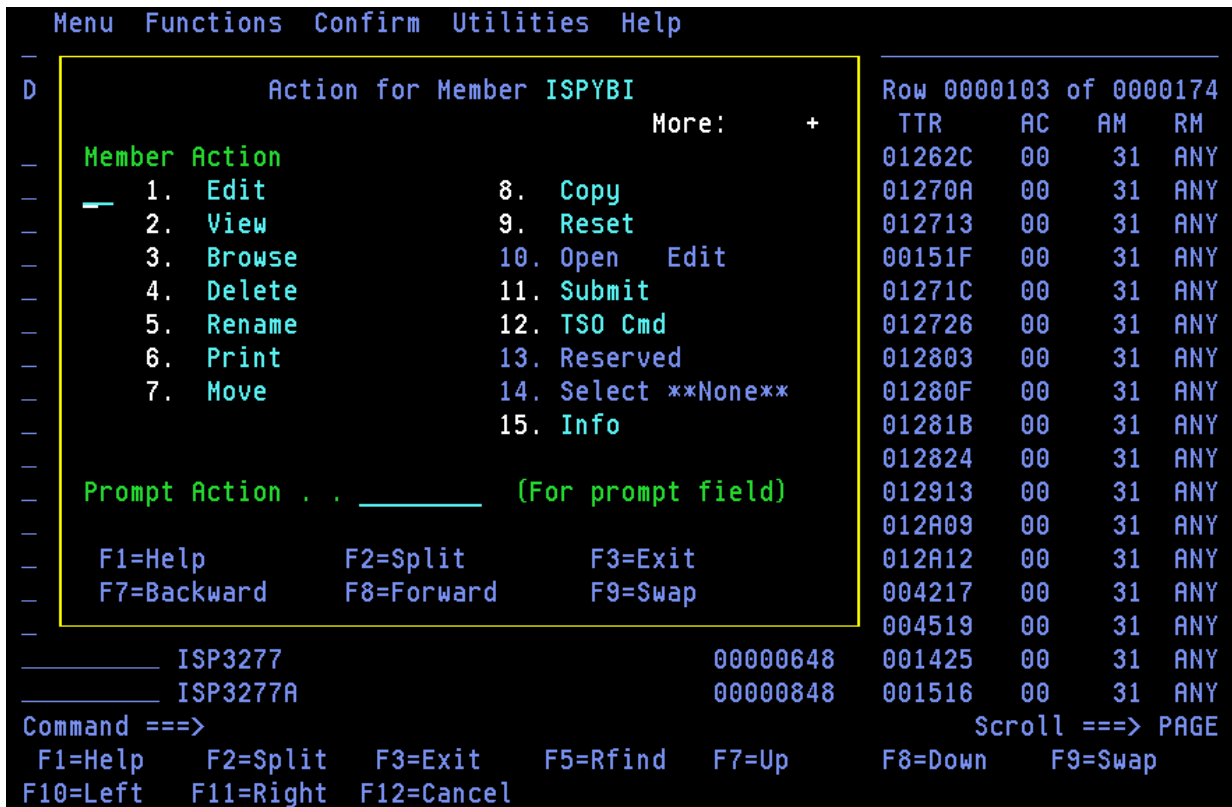


Figure 15. Member List Commands Pop-Up Window (ISRCMLEP)

4. Member list count fields show an accurate count when the number of members in a PDS or PDSE is less than 10 000 000. The row value will be truncated after member 9 999 999 and the total value will be truncated on display of the list if more than 9 999 999 members exist.
5. The Info command displays the same information as the member list. When the Extended PDS statistics function has been enabled, the extended line counts fields contain data.

Ending member lists

With two exceptions, you can end a member list by entering END (F15) or using = (the jump function) to go to another option. For the two exceptions, SuperC and Search-For member lists, enter RETURN (F16), CANCEL, or =. On these member lists, the END command processes your selections.

ISPF member statistics

On member lists, column headings appear in the national language. The information shown under the column headings contains the ISPF statistics generated for each member. You can print these statistics using option X (print index listing) of the Library utility (option 3.1) or option P (print data set list) of the Data Set List utility (option 3.4). You can also use the SAVE command to write a member list or data set list to the ISPF list data set or to a sequential data set. The statistics are displayed next to each member name.

Figure 16 on page 84 shows an example of a member list with statistics and the 1-character line command field to the left of the member names. If you want to see all of the statistics, you can scroll the screen either right or left by using PF keys 10 and 11. Figure 17 on page 84 shows an example of the screen when you scroll right. Pressing either key repeatedly results in recycling of the screens.

Menu Functions Confirm Utilities Help						
LIBRARY USERID.EXEC						
Name	Prompt	Size	Created	Changed	Row 0000001 of 0000146	ID
- ALLOCEXT		5	2002/07/25	2002/07/25 16:28:48		USERID
- AMBLIST		7	2001/01/04	2001/09/11 12:02:41		USERID
- AOPST		10	2002/05/27	2002/05/27 10:38:15		USERID
- APCTOOLS		20	2002/11/29	2003/01/21 09:59:50		USERID
- APCTOOLX		193	2002/11/29	2003/01/21 10:16:42		USERID
- APCT2AZ		2610	2002/11/29	2003/01/21 10:23:24		USERID
- APPLT1		4	2002/05/22	2002/05/22 09:32:20		USERID
- APPLT2		8	2002/05/22	2002/05/22 09:32:49		USERID
- APPLT3		4	2002/05/22	2002/05/22 09:28:59		USERID
- ASMPROG1		3	2002/01/23	2002/01/23 12:41:02		USERID
- BATCHCMP		4	2002/02/21	2002/02/21 13:04:48		USERID
- CLEDIT		3	2002/06/11	2002/06/11 09:31:02		USERID
- CMSED		39	2002/12/06	2002/12/06 14:10:55		USERID
- COMP		10	2002/10/09	2002/10/09 15:14:44		USERID
- CRZDIFF		58	2002/11/18	2002/11/18 13:39:48		USERID
- CRZDISP		14	2002/11/14	2002/11/14 15:02:03		USERID
- CRZLOAD		105	2002/11/13	2002/11/18 14:30:48		USERID
Command ==>					Scroll ==>	PAGE
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up	F8=Down	F9=Swap
F10=Left	F11=Right	F12=Cancel				

Figure 16. Member List Display (ISRUDMM)

Members that have extended statistics appear highlighted in the member list when highlighting is available. The line count values displayed on the member list have a maximum value of 65535. If extended statistics are generated for a member and an extended line count value exceeds 65535, >65535 is displayed on the member list. Use the Info command from the enhanced member list to display the extended line count values. The maximum value of extended line counts is 2147483647.

Menu Functions Confirm Utilities Help						
LIBRARY USERID.EXEC						
Name	Prompt	Size	Init	Mod	Row 0000001 of 0000146	ID
- ALLOCEXT		5	1	0	01.04	USERID
- AMBLIST		7	7	0	01.08	USERID
- AOPST		10	10	0	01.01	USERID
- APCTOOLS		20	19	0	01.03	USERID
- APCTOOLX		193	212	0	01.04	USERID
- APCT2AZ		2610	2647	0	01.16	USERID
- APPLT1		4	3	0	01.02	USERID
- APPLT2		8	5	0	01.03	USERID
- APPLT3		4	4	0	01.00	USERID
- ASMPROG1		3	1	0	01.17	USERID
- BATCHCMP		4	3	0	01.03	USERID
- CLEDIT		3	2	0	01.01	USERID
- CMSED		39	37	0	01.03	USERID
- COMP		10	10	0	01.00	USERID
- CRZDIFF		58	12	0	01.02	USERID
- CRZDISP		14	14	0	01.01	USERID
- CRZLOAD		105	57	0	01.15	USERID
Command ==>					Scroll ==>	PAGE
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up	F8=Down	F9=Swap
F10=Left	F11=Right	F12=Cancel				

Figure 17. Member List Display cont. (ISRUDMM)

Member list display panel action bar

The Member List Display panel action bar choices function as follows:

Menu

See the topic about the Primary Option Menu in the [z/OS ISPF User's Guide Vol II](#) for information about the Menu pull-down.

Functions

The Functions pull-down offers these choices:

- 1
- Save List** Saves the member list into the list data set.
- 2
- Change Colors** Displays the Member List Color Change Utility panel ([Figure 18 on page 85](#)) to allow you to change one or more of the Member List Field Attributes and press Enter to see the effect immediately. Clearing a field or selecting the Defaults field restores defaults.

Note: You can also display this panel by entering MLC on the Command line.

Member List Color Change Utility

Change one or more of the Member List Field Attributes and press Enter to see the effect immediately. Clearing a field restores defaults.

Field:	Color:	Intens:	Hilite:	Defaults:
Member Name	BLUE	LOW	NONE	Blue
Member Stats	GREEN	LOW	NONE	Green
Prompt field	TURQ	HIGH	NONE	Turq

_ Use ISPF Settings input field pad for member selection field

----- Example -----

LIBRARY		ISR.V4R2M0.ISRPENU		Row 0000001 of 0000003		
Name	Prompt	Size	Created	Changed	ID	
_ ISRBRO01 /		231	1993/03/22	1995/05/31 08:53	HEATHER	
_ ISREDM01 *Reset		207	1990/02/13	1994/01/25 13:14	EMILY	
_ ISRUDLP *Copied		123	1989/02/03	1994/01/25 13:14	X657188	
End						

Command ==>

F1=Help	F2=Split	F3=Exit	F7=Backward	F8=Forward	F9=Swap
F12=Cancel					

Defaults

Figure 18. Member List Color Change Utility Panel (ISRMLCP)

3

Initial Sort View Displays the Enhanced Member List Initial Sort panel (Figure 19 on page 86). This panel enables you to select the field to be sorted on, before the display of an enhanced member list. Member Name is the default View. Some other sort views that you can choose are:

- RECFM=BLK sets the initial view for blocked data set formats such as FB and VB.
- RECFM=U sets the initial view for unformatted data set formats such as Load.
- Any of these conditions result in a default sort view on member name:
 - Library field selected as initial sort view and member list is based on a single data set.
 - Created or Alias selected as initial sort view and extended command member list.
 - A member name is given as input to member list action.

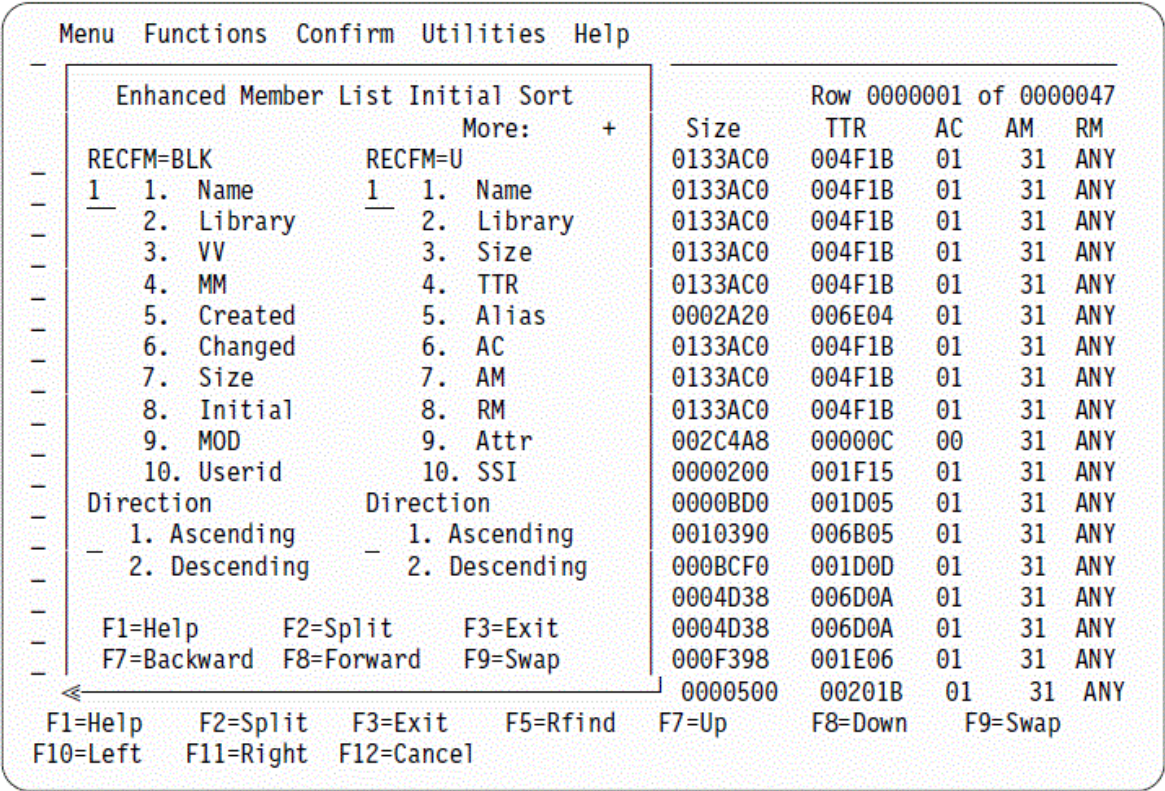


Figure 19. Enhanced Member List Initial Sort Panel (ISRMLIS)

Note:

1. You can also display this panel by entering MLS on the Command line.
2. When using LLA in FREEZE mode, member lists might appear to be out of SORT order because ISPF uses direct reads of the data set directory for initial member list build and SORT, and uses BLDL for the displayed statistics.

Confirm

Select 1 to set delete confirmation ON. Select 2 to set delete confirmation OFF.

Utilities

See the topic about the Primary Option Menu in the [z/OS ISPF User's Guide Vol II](#) for details on the Utilities pull-down.

Help

The Help pull-down provides general information about member list topics such as scrolling, pattern matching, and member list statistics, as well as information about supported primary commands and the S line command.

Member list display panel fields

ISPF generates statistics each time you edit a member, unless your edit profile is set to STATS OFF. The fields shown identify the statistics in a member list:

Note: The column headers on a member list display (with the exception of Prompt) are point-and-shoot sort fields.

Name

Name of the member.

Prompt

The Prompt field serves a variety of purposes. You can rename a member by typing the new name to the right of the member name. You can type a slash character (/) in the first position of the Prompt field so you can define additional behaviors for a given action.

Also, the Prompt field acts as a status field, showing information about the last action taken for a member. If you run an edit macro or TSO command against a member, the 7-character informational status that is returned in the dialog variable ZPROMPT at the completion of the service is shown in this field.

Lib

Library number. The Lib field appears only if you specify a concatenated sequence of libraries. It shows the library that contains the member. In this example, if the member resides in the second library in the sequence, a 2 appears in the Lib field.

VV.MM

Version number and modification level. The version number is set to 1 and the modification level is set to 0 when the member is created. The modification level is the number of times this version has been modified. For example, 02.15 means version 2, modification 15.

If a member name is just an alternate name for another member, ALIAS appears in this field.

Created

Date this version was created. The format used depends on your national format. For example, 90/06/27 means June 27, 1990 to some, but so does 06/27/90 and 27/06/90 mean it for others.

Changed

Date and time this version was last modified; date is shown in the national format. Time is shown using a 24-hour format. For example, 17:20 means 5:20 p.m..

Size

Current number of lines. The largest number this field can display is 65 535. If extended statistics are generated for a member and the current number of lines value in the extended statistics exceeds 65535, >65535 is displayed on the member list. Use the Info command from the enhanced member list to display the extended line count values. The maximum value of extended line counts is 2147483647.

Init

Initial number of lines. The largest number this field can display is 65 535. If extended statistics are generated for a member and the initial number of lines value in the extended statistics exceeds 65535, >65535 is displayed on the member list. Use the Info command from the enhanced member list to display the extended line count values. The maximum value of extended line counts is 2147483647.

Mod

Number of lines in the current member that have been added or changed. If the data is unnumbered, this number is zero. The largest number this field can display is 65 535. If extended statistics are generated for a member and the number of lines added or changed value in the extended statistics exceeds 65535, >65535 is displayed on the member list. Use the Info command from the enhanced member list to display the extended line count values. The maximum value of extended line counts is 2147483647.

ID

The user ID of the person who created or last updated this version. If the user ID is 8 characters and the member list panel layout does not allow for 8-character values, the first 6 characters are displayed followed by >. To display the 8-character value on these panels, 8-character user ID layouts must be enabled in the site configuration.

When you use View, Browse, and Edit, the current version and modification level are displayed in the title area, line 1, following the library and member name. You can change the version number, the user ID, or both, with the Reset ISPF Statistics utility (option 3.5) or with the LEVEL and VERSION Edit primary commands. Changing the version number updates most of the other statistics.

If you use the ISPF editor to delete all lines in a member of an ISPF library and then save the member, the statistics show that the member still exists but has a length of zero. To delete a member, including its statistics, use the Library utility (3.1).

Load module library member statistics

Figure 20 on page 88 shows that the ISPF library statistics displayed in a member list have a different format for load module libraries. See “Member list display panel action bar” on page 84 for a description of the action bar choices on this panel.

Menu	Functions	Confirm	Utilities	Help				
LIBRARY PDFTDEV.SVT.LOAD					Row	0000001	of	0000480
Name	Prompt	Alias-of	Size	TTR	AC	AM	RM	
FLM\$CP		FLMI024	0000A938	01E70E	00	24	24	
FLM\$CPI			000000E8	01820C	00	31	ANY	
FLM\$DE		FLMI024	0000A938	01E70E	00	24	24	
FLM\$DT		FLMI024	0000A938	01E70E	00	24	24	
FLM\$99		FLMI024	0000A938	01E70E	00	24	24	
FLMB			000A9970	01EF16	00	31	ANY	
FLMBCMD		FLMDDL	00122360	029008	00	31	ANY	
FLMBD\$		FLMDDL	00122360	029008	00	31	ANY	
FLMCMD		FLMS7C	000E62B8	02AE13	00	31	ANY	
FLMCNTGN			0001E838	028C1D	00	31	ANY	
FLMCPCS			00000150	01822A	00	31	ANY	
FLMCSLNK		FLMI024	0000A938	01E70E	00	24	24	
FLMCSPDB			00001940	01E80A	00	31	24	
FLMCXCMD		FLMI024	0000A938	01E70E	00	24	24	
FLMCXCPD		FLMI024	0000A938	01E70E	00	24	24	
FLMCXCPM		FLMI024	0000A938	01E70E	00	24	24	
FLMCXCTN		FLMI024	0000A938	01E70E	00	24	24	
Command ==>					Scroll ==> PAGE			
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up	F8=Down	F9=Swap		
F10=Left	F11=Right	F12=Cancel						

Figure 20. Load Module Library Display (ISRUDMM)

If you want to see all of the statistics, you can scroll the screen either right or left by using PF keys 10 and 11. Pressing either key repeatedly results in recycling of the screens.

The fields on a member list display for a load module library are:

Note: The column headers on a member list display (with the exception of Prompt) are point-and-shoot sort fields.

Name

Name of the member.

Prompt

The Prompt field serves a variety of purposes. You can rename a member by typing the new name to the right of the member name. You can type a slash character (/) in the first position of the Prompt field so you can define additional behaviors for a given action. Also, the Prompt field acts as a status field, showing information about the last action taken for a member.

Lib

Library number. The Lib field appears only if you specify a concatenated sequence of libraries. It shows the library that contains the member. In this example, the member resides in the second library in the sequence.

Size

Size of the member in hexadecimal. The largest number this field can display is 'FFFFFFFF'X.

TTR

Relative block address.

Alias-of

Name of the member for which this member is an alias. See following note.

AC

Authorization code.

AM

Addressing mode.

RM

Residency mode.

Attributes

The member's attributes:

NX

Not executable

DATA

Can be loaded only

OVLY

In overlay structure

RF

Refreshable

RN

Can be reentered

RU

Reusable

TEST

Module to be tested.

SSI

System Status Index

Note: Question marks (?) are placed in the member list of a load module library for members that have load module directory fields that are not valid. For example, module 14, shown in [Figure 20 on page 88](#), contains alias and authorization code information that is not valid.

Load module library lists displayed using the Data Set List utility (option 3.4) contain an extended line command field and do not display the created date.

Member selection list commands

If the member list is too large for the screen, you can see other parts of the list by using the UP and DOWN scroll commands. These commands are valid for all member list displays. However, because a member list display can be no wider than 80 characters, you cannot use the LEFT and RIGHT scroll commands. See the [z/OS ISPF Dialog Developer's Guide and Reference](#) for more information about scroll commands.

These *primary* commands can be entered on the Command line in all member list displays:

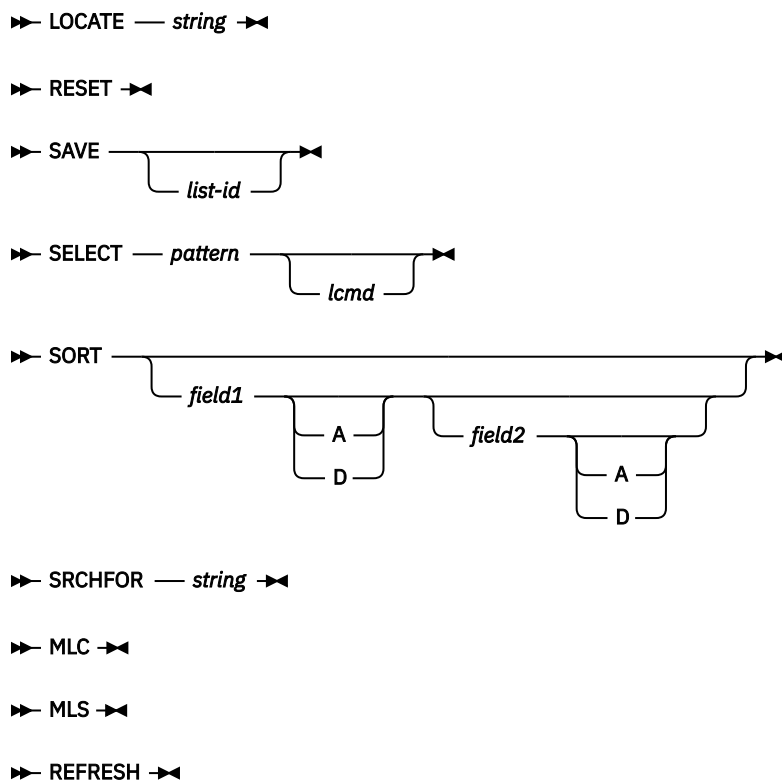
►► CONFIRM ◄◄

►► FILTER ◄◄
 └── *field* — *operator* — *value* ─┘

►► FIND ◄◄

►► RFIND ◄◄

Using member selection lists



These *line* commands can be used with member lists. These are 1-character commands that are entered to the left of the member name. The option you are using determines:

- Whether you can enter more than one line command simultaneously
- Which line commands are valid
- Whether a Prompt or OLDMEM field is available.

Table 15 on page 81 provides a quick reference to the differences between member lists and the line commands available on each one. The line commands are:

- B (browse member)
- C (copy member)
- D (delete member)
- E (edit member)
- G (reset member statistics)
- I (display member information)
- J (submit member)
- M (move member)
- P (print member)
- R (rename member)
- S (select member)
- T (invoke TSO command for member)
- V (view member)
- = (repeat last command).

The S line command is available for all member list displays except the Library and Data Set List utilities. See [“S Line Command”](#) on page 94 for more information.

The B line command is available only for the Library, Move/Copy, and Data Set List utilities. The D, E, P, R, and V line commands are available only for the Library and Data Set List utilities.

Note: For the Data Set List utility, these line commands are valid only after you enter the M (display member list) line command. See [“Library and data set list utility line commands”](#) on page 98 for information.

ISPF ignores any unprocessed member list commands when you leave a member list.

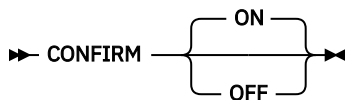
Primary commands

See:

- [“Require delete commands to be confirmed \(CONFIRM\)”](#) on page 91
- [“Display a subset of members \(FILTER\)”](#) on page 91
- [“Find a character string \(FIND and RFIND\)”](#) on page 92
- [“Locate a data string \(LOCATE\)”](#) on page 93
- [“Remove unwanted line commands and messages \(RESET\)”](#) on page 93
- [“Write a member list to a sequential data set \(SAVE\)”](#) on page 93
- [“Select a member \(SELECT\)”](#) on page 94
- [“Sort a member list \(SORT\)”](#) on page 95
- [“Search for members \(SRCHFOR\)”](#) on page 96
- [“Change member list field attributes \(MLC\)”](#) on page 97
- [“Change the default sort order for member lists \(MLS\)”](#) on page 97
- [“Refresh the member lists \(REFRESH\)”](#) on page 97

Require delete commands to be confirmed (CONFIRM)

The CONFIRM primary command controls display of the Confirm Delete panel. Use the format:



You can use these operands with the CONFIRM command:

ON

Tells ISPF to display the Confirm Delete panel when you enter the D (delete data set) line command or TSO DELETE command. This is the default setting.

OFF

Tells ISPF not to display the Confirm Delete panel.

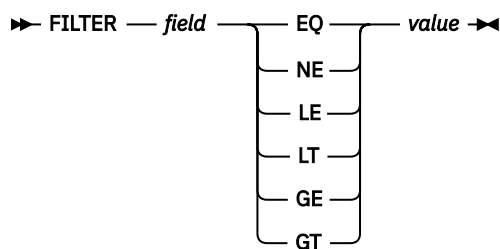
For example, this command would tell ISPF not to display the Confirm Delete panel:

```
CONFIRM OFF
```

Note: Confirm is forced ON from the workplace member list with a default action of "D".

Display a subset of members (FILTER)

Use the FILTER command to display only the subset of members whose attributes match the supplied comparison argument. You specify the comparison argument in this format:



Note:

1. It is possible to filter the member list using any of the fields on the member list panel except for Prompt.
2. If a member has no value for the specified field, the member will be considered a match for the LT and NE operators.
3. If no members match the filter criteria, the member list remains unchanged.
4. Entering the FILTER command with no parameters displays a panel in which you can select the field and operator and enter the value.
5. The FILTER command can be applied repeatedly to drill down to the subset of members that match a particular combination of attributes.

For example, to display all the members whose modification level is greater than 02, enter: `FILTER MM GT 02`

To further subset this list to display only the members in which more than 200 lines have been modified, enter: `FILTER MOD GT 200`

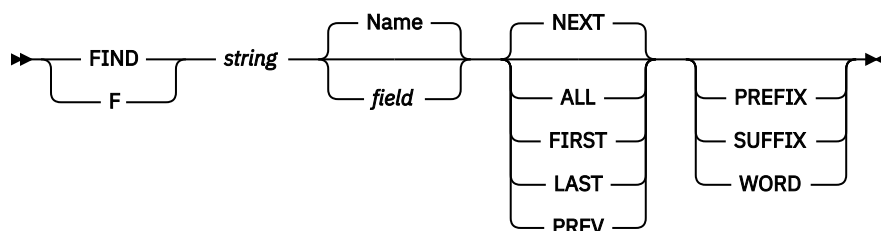
6. Enter the REFRESH command to restore the full member list.
7. EQ and NE are the only operators that can be used to filter the fields AM, RM, and ATTR.
8. The *value* must be specified in the appropriate format for the field type. For example, version number must be specified as a 1-digit or 2-digit number, creation date must be specified in date format, and load module size must be specified as a hex string:

```

FILTER VV EQ 02
FILTER CRE LT 2000/01/01
FILTER SIZE GT FFFFFFF
  
```

Find a character string (*FIND* and *RFIND*)

To find a character string within the specified field use the FIND or the RFIND command. Only one of the fields on the member list can be specified at a time for the search. Use this format:



→ RFIND →

NAME is the default field. NEXT is the default operand. For example, this command tells ISPF to find the last occurrence of the character string XLC in the NAME field:

```
FIND XLC NAME LAST
```

ISPF automatically scrolls to bring the line containing the character string to the top of the list.

Use RFIND to repeat the search without reentering the character string.

Locate a data string (LOCATE)

To find a data string, you can enter a LOCATE command in the Command field on any member list display. The format of the command is:

➤ LOCATE — *string* ➤

where:

string

A data string that is used to find an entry based on how the member list is sorted.

ISPF searches the field by which the member list was sorted for an entry equal to *string*. Either the entry, if found, or else the entry that immediately precedes the entry that you are searching for is scrolled to the top of the list.

For example, if the member list shown in Figure 20 on page 88 is sorted by name, this command causes member MODULE12 to scroll to the top of the list:

```
LOCATE MODULE12
```

Remove unwanted line commands and messages (RESET)

The RESET command removes unprocessed line commands and messages that show the result of line command processing.

➤ RESET ➤

Write a member list to a sequential data set (SAVE)

The SAVE primary command writes a member selection list to a sequential data set. The format of the SAVE command is:

➤ SAVE — *list-id* — *LONG* ➤

where:

list-id

Optional. A user-specified qualifier of the sequential data set to which the member list is written.

LONG

Optional. Results in additional information in the saved member list:

- All dates for the member are in yyyy/mm/dd format.
- For PDS data sets not containing load libraries, the untranslated member name is written after the member name.
- For members with extended statistics, an additional line is written that contains the extended statistics line count values.

ISPF names the data set:

```
prefix.userid.list-id.MEMBERS
```

prefix

Your data set prefix, as specified in your TSO user profile. If you have no prefix set, or if your prefix is the same as your user ID, the prefix is omitted and the data set name is *userid.list-id.MEMBERS*.

userid

Your TSO user ID.

The data set is created if it does not exist, or written over if it exists and has compatible attributes.

ISPF writes the member list in the current sort order and as it appears on the display, except for the column headings, line command fields, and anything you have typed on the display.

If you omit the list ID, ISPF writes the member selection list in the current sort order, including column headings, to the ISPF list data set. Processing is the same as using option X of the Library utility (primary option 3.1), except that data set information is not printed.

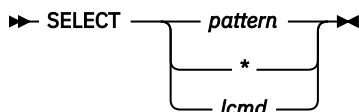
Select a member (SELECT)

You can use the `SELECT`, or `S`, command as either a primary command or a line command.

SELECT primary command

The **SELECT** primary command allows you to select one or more members in a member list, whether they are displayed or not. When you enter it on a member list displayed using the Edit option, this command even creates a member if you specify the complete member name of a member that does not exist.

The SELECT command optionally provides a quick method of calling the same line command for one or more members. The format of the SELECT command is:



where:

pattern

Either a complete member name or a partial member name that contains one or more asterisks (*), percent signs (%), or both as place holders. See [“Displaying member lists” on page 82](#) for more information about using patterns.

An asterisk, which means you want to select all members in a member list.

lcmd

One of these optional line commands: S (select), B (browse), V (view), D (delete), E (edit), or P (print). On a member list that has an expanded line command field, such as one generated by the M (member list) line command in the Data Set List utility (option 3.4), you can also enter a TSO command, CLIST, or REXX exec. If you do not enter a line command, S is the default.

The member list shown in [Figure 16 on page 84](#) contains members INT and INTTOOL. This command selects these members for printing:

```
SELECT INT* P
```

S Line Command

You can enter the S line command at the beginning of a line, ahead of one or more member names. For example, in [Figure 20 on page 88](#), you could select member MODULE9 by moving the cursor to the left of the member name, typing S, and pressing Enter.

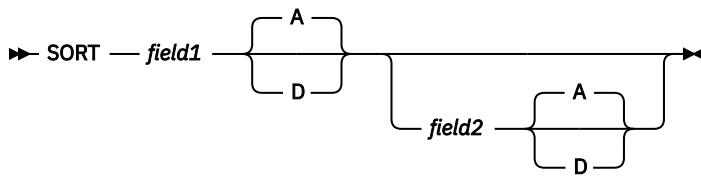
Note: On member lists displayed with the View, Browse, Edit, Foreground, and Batch options, ISPF processes only the first S entered, ignoring all others.

With the Move/Copy utility and the Convert utility, you can rename members by entering new member names in the Prompt field to the right of the member name.

Sort a member list (SORT)

The SORT primary command arranges a member list according to the fields you specify. The sort sequence, ascending or descending, is determined by the fields you choose and is maintained between member list displays.

The format of this command is:



where:

field1

The primary field by which the member list is sorted.

field2

The secondary field by which the member list is sorted.

A|D

The direction in which values are sorted for this field (A=ascending, D=descending).

Table 16 on page 95 and Table 17 on page 95 show:

- Valid values for *field1* and *field2*
- The default sort sequence used for each field
- A description of each field name.

Note: When multicultural support is enabled, the field names listed in Table 16 on page 95 and Table 17 on page 95 may be displayed in the national language. If they are then the SORT command will expect *field1* or *field2* to be entered in the national language, or the standard abbreviation to be used.

Table 16. Sort Fields for Source Libraries		
Field	Sequence	Description
Name	Ascending	Member name
Lib	Ascending	Library in concatenation sequence
VV	Ascending	ISPF version number
MM	Ascending	ISPF modification level
Created	Descending	Creation date
Changed	Descending	Date and time last changed
Size	Descending	Current number of records
Init	Descending	Initial number of records
Mod	Descending	Number of modified records
ID	Ascending	Last user
Prompt	Descending	Prompt field

Table 17. Sort Fields for Load Libraries		
Field	Sequence	Description
Name	Ascending	Member name

Table 17. Sort Fields for Load Libraries (continued)

Field	Sequence	Description
Lib	Ascending	Library in concatenation sequence
Size	Descending	Load module size
TTR	Ascending	TTRN of beginning of load module
Alias-Of	Ascending	Member this is an alias of
AC	Ascending	Authorization code
AM	Descending ²	Addressing mode
RM	Descending ²	Residency mode
Attributes	Descending	Load module attributes
SSI	Ascending	System Status Index
Prompt	Descending	Prompt field

For example, to sort a member list by size and then by track record, enter:

```
SORT SIZE TTR
```

To sort a member list by creation date in ascending order, enter:

```
SORT CREATED A
```

Search for members (SRCHFOR)

Use the SRCHFOR primary command to search the members in the member list for one or more strings of data using the SuperC Utility (see Option 3.14). Use this format:

```
➡ SRCHFOR — string ➡
```

The *string* parameter is optional but always converted to uppercase. If *string* is specified, the search is performed using the current settings in the MEMBER LIST Srchfor Options panel. For example, if "Any case" is not selected and "Filter list" is selected, the command SRCHFOR LBLBOX will list members that contain the string "LBLBOX". A member that contained "lblbox" but not "LBLBOX" would not be listed.

If *string* is not specified, the MEMBER LIST Srchfor Options panel is displayed. You can use this panel to specify multiple search strings, process options, and output options.

The operands WORD, SUFFIX, and PREFIX can be specified after each search string. Note that the search strings are case sensitive and must match exactly as specified. If you want to disregard case, use the "Any case" process option.

Select the "ASCII" process option to cause ISPF to process the data in the member as ASCII. The data read from the members is converted from ASCII to EBCDIC. Any search string given in hexadecimal notation is assumed to be in ASCII, matching the original input data. The ASCII code page is assumed to be ISO 8859-1 (CCSID 819). The terminal code page is used as the EBCDIC code page. If the terminal code page cannot be determined code page 1047 is used.

You can use the C (continuation) operand to specify that both the current and previous string must be found on the same line to constitute a match. Otherwise, lines with either string are treated as matching.

² For the AM and RM columns, the value ANY is considered to be the largest value and will therefore sort to the top of the list.

You can use the process options "Set EDIT FIND string" and "Set BROWSE FIND string" to initialize the FIND string in Edit and Browse from the first SRCHFOR string. Use the output option "Filter list" to list only the subset of members that contain one of the search strings.

<i>Table 18. MEMBER LIST Srchfor Options panel: search string examples</i>	
Search strings	Explanation
====> ABC ====> EFG	Either string ABC or EFG may be found in the search members.
====> ABC WORD ====> EFG C	The two strings (ABC and EFG) must be found on the same line. ABC must be a complete word, while EFG (a continuation definition) can be part of any word.
====> ABcD prefix	The string (ABcD) is detected if the case of each letter matches and it is a prefix of a word.
====> X '7b00 '	The hex string is specified as the search string. The listing must be browsed with 'HEX ON'.
====> 'AB C' 'D'	The string (AB C'D) is specified.

To start the search from the MEMBER LIST Srchfor Options panel, press Enter. To cancel the request and return to the Member List, enter END or CANCEL.

Output is in the listing DSN you specify and in the MESSAGE field in the DSLIST. Sort on this field to consolidate results.

Change member list field attributes (MLC)

The MLC command displays the Member List Color Change Utility. Use this panel to change one or more of the member list field attributes and to see the change immediately. Clearing a field restores the field's default setting. Use the Defaults point-and-shoot field to restore **all** field attributes to ISPF default settings.

➤ MLC ➤

You can also change the member selection field to use the ISPF Settings input field padding character instead of the member list field default padding character. The member list default padding character for single command selection lists is a period (.), and for multiple command selection lists it is an underscore (_).

Change the default sort order for member lists (MLS)

The MLS command displays the Enhanced Member List Initial Sort panel. Use this panel to change the default sort order for all ISPF enhanced member lists. You can specify separate sort orders for Load and non-Load data sets.

➤ MLS ➤

Refresh the member lists (REFRESH)

The REFRESH command refreshes the member list, adding new members, adding renamed members under their new names, and deleting members that have been removed from the list. It also resets the line command field and prompt field on the member list. Unprocessed line commands and input or messages in the prompt fields are erased by the REFRESH command.

➤ REFRESH ➤

Line commands

See:

- [“Line commands for the move/copy utility” on page 98](#)
- [“Library and data set list utility line commands” on page 98](#)

Line commands for the move/copy utility

On member list displays for the Move/Copy utility (option 3.3), you can enter these line commands at the beginning of a line, ahead of one or more member names:

B

Browse the member

S

Select the member.

The B (browse) line command allows you to browse a member or members to determine whether you really want to move or copy them. You can enter the B line command beside as many members as you want to. The first member that has a B line command beside it is browsed when you press Enter. When you finish browsing each member, the member list is redisplayed along with the unprocessed line commands. Press Enter again to browse the next member.

Once you have decided which members to move or copy, use the S (select) line command to select those members.

Library and data set list utility line commands

On member list displays for the Library utility (option 3.1) and the Data Set List utility (option 3.4), you can enter these line commands at the beginning of a line, ahead of one or more member names:

B

Browse the member

C

Copy the member

D

Delete the member

E

Edit the member

G

Reset the member statistics

I

Display the member information

J

Submit the member

M

Move the member

P

Print the member

R

Rename the member

T

Invoke a TSO command for the member

V

View the member

=

Repeat last command

Note:

1. Member lists displayed with the M line command have a 9-character line command field to accommodate TSO commands, CLISTs, and REXX EXECs. For more information, see the topics "M-Display Member List" and "TSO Commands, CLISTs, and REXX EXECs" in the Data Set List Utility (Option 3.4) section of the *z/OS ISPF User's Guide Vol II*.

Any data in the prompt field is passed as an argument to any TSO command, CLIST or REXX EXEC. When the '=' command is used the previous prompt data is also passed. Any prompt data that starts with '*' is ignored.

2. Where the member to be deleted by the D line command is the name of a primary member, the primary name and all associated alias names are deleted. Where the member is an alias member, only the alias name and its directory entry are deleted.
3. When you use the R line command, enter the new member name in the Prompt field to the right of the member name.
4. Where the data set refers to a partitioned data set load library (RECFM=U), and the member to be renamed is the name of an primary member, the user data component of any associated alias names will be updated to refer to the renamed primary name.
5. The Info command displays the same information as the member list. When extended line counts are available, this panel can be used to display the values. Otherwise these panel fields are blank.
6. When you use the T line command, enter the name of the TSO command you want to execute in the Prompt field to the right of the member name. The fully-qualified data set name, including the member is passed as a parameter to the TSO command. If you want to execute a member that is a REXX exec or CLIST, use the T line command on the line for that member, and enter EXEC in the Prompt field. If you leave the Prompt field blank, the TSO Command Action panel allows you to enter the command you want to execute.

Consider the following items when using line commands with members in a PDSE version 2 data set that is configured for member generations:

- When you use the B, E, or V line command to browse, edit, or view a member, you can use the Prompt field to access previous generations of the member. In addition to entering the line command, enter a slash (/) in the Prompt field to display a panel on which you can enter the generation that you want to access.
- When you use the D line command to delete a member, the current generation and all previous generations of the member are deleted.
- When you use the C line command to copy a member, only the current generation of the member is copied.
- When you use the M or R line command to move or rename a member, the current generation of the member is moved or renamed and all previous generations of the member are deleted.

When you press Enter, each member preceded by a line command is processed unless:

- The V (view), B (browse), or E (edit) line command is followed by another line command. When you return to the member list after viewing, browsing, or editing a member, you must press Enter again to call any remaining line commands.
- You enter a line command for a member that was deleted. The names of deleted members are not removed from the member list until it is updated. Remove the line command that precedes the deleted member, and press Enter again. See ["Updating a member list"](#) on page 100 for more information.
- You enter an R (rename) line command, but do not put a new name in the Prompt field. Enter a new member name, and press Enter again.

You can then perform one of these actions:

- Enter additional primary or line commands
- Scroll, if necessary, to bring additional members into view
- Enter the END command to return to the previous panel.

The next two figures show before and after examples that print members TEST and TEST1, delete member TEST8, and rename member TEST4 to OLDTEST.

Menu	Functions	Confirm	Utilities	Help
<hr/>				
LIBRARY	USERID.TEST.SOURCE		Row 0000001 of 0000009	
Name	Prompt	Size	Created	Changed ID
P TEST		1	2003/02/03	2003/02/03 17:04:14 USERID
P TEST1		1	2003/02/03	2003/02/03 17:04:14 USERID
- TEST2		1	2003/02/03	2003/02/03 17:04:23 USERID
- TEST3		1	2003/02/03	2003/02/03 17:04:14 USERID
R TEST4	OLDTEST	1	2003/02/03	2003/02/03 17:04:14 USERID
- TEST5		1	2003/02/03	2003/02/03 17:04:14 USERID
- TEST6		1	2003/02/03	2003/02/03 17:04:14 USERID
- TEST7		1	2003/02/03	2003/02/03 17:04:14 USERID
D TEST8		1	2003/02/03	2003/02/03 17:04:14 USERID
End				
Command ==> _____ Scroll ==> PAGE				
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up F8=Down F9=Swap
F10=Left	F11=Right	F12=Cancel		

Figure 21. Library Utility before Print, Rename, and Delete (ISRUDMM)

Menu	Functions	Confirm	Utilities	Help
<hr/>				
LIBRARY	USERID.TEST.SOURCE		Row 0000001 of 0000009	
Name	Prompt	Size	Created	Changed ID
- TEST	*Printed	1	2003/02/03	2003/02/03 17:04:14 USERID
- TEST1	*Printed	1	2003/02/03	2003/02/03 17:04:14 USERID
- TEST2		1	2003/02/03	2003/02/03 17:04:23 USERID
- TEST3		1	2003/02/03	2003/02/03 17:04:14 USERID
- TEST4	*Renamed			
- TEST5		1	2003/02/03	2003/02/03 17:04:14 USERID
- TEST6		1	2003/02/03	2003/02/03 17:04:14 USERID
- TEST7		1	2003/02/03	2003/02/03 17:04:14 USERID
- TEST8	*Deleted			
End				
Command ==> _____ Scroll ==> PAGE				
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up F8=Down F9=Swap
F10=Left	F11=Right	F12=Cancel		

Figure 22. Library Utility after Print, Rename, and Delete (ISRUDMM)

Updating a member list

When a member list is redisplayed after the completion of a function or command, it does not include these types of member:

- For View, Browse, and Edit:
 - New members created by recursive Edit calls.
 - New members created using the CREATE command in EDIT. These do not display in an Enhanced Member List display, but do display when using the traditional member list processing.
 - Members created by another user.
 - In split-screen mode, members created on another logical screen.
- For Library, Move/Copy, Data Set List, and Convert:
 - New names of members that have been renamed.
 - Fewer member names when members are deleted (Library and Data Set List) or moved (Move/Copy).

To display an up-to-date list, return to the previous panel, leave the member name blank or enter a pattern. See [“Displaying member lists”](#) on page 82 for more information about displaying member lists.

To set your system to display a traditional member list when using the E, V, or B commands (Edit, View, Browse) specifically, see the topic about DSLIST Settings in the *z/OS ISPF User's Guide Vol II*. This can be found in the Utilities (Option 3) topic, in the information about Data Set List Utility Options.

Member list positioning

After selected members have been processed, the member list is redisplayed and positioned based on the members selected and the setting of the Scroll Member List option.

When the Scroll Member List option is selected:

- If a single member is selected, the member list is redisplayed with the selected member scrolled to the top of the display. However, if the CANCEL command is used to exit the selected member, the member list is not scrolled.
- If multiple members are selected and some selections are contained in the last screen displayed before the Enter key was pressed, the first selected member on that screen is scrolled to the top of the display.
- If multiple members are selected and none of the selections are contained in the last screen displayed before the Enter key was pressed, the first selected member in the member list is scrolled to the top of the display.

When the Scroll Member List option is not selected:

- If only single selections are allowed and the selection is contained in the last screen displayed before the Enter key was pressed, the member list is not scrolled. The cursor is positioned in front of the selected member.
- If only single selections are allowed and the selection is not contained in the last screen displayed before the Enter key was pressed, the member list is redisplayed showing the last screen containing the selected member. The cursor is positioned in front of the selected member.
- If multiple selections are allowed and the last selected member is contained in the last screen displayed before the Enter key was pressed, the member list is not scrolled. The cursor is positioned in front of the last selected member.
- If multiple selections are allowed and the last selection is not contained in the last screen displayed before the Enter key was pressed, the member list is redisplayed with the last selected member scrolled to the top. The cursor is positioned in front of the last selected member.

z/OS UNIX directory selection lists

A z/OS UNIX directory selection list is displayed when you specify the pathname for a directory:

- On the View and Edit entry panels (ISPF options 1 and 2).
- On a call to the BROWSE, EDIT, and VIEW services.
- With the edit and view MOVE and COPY primary commands.

Data set passwords

- On the EDIT, VIEW, and BROWSE command entry panels displayed when using these primary commands within the browse, view, or edit function.

The directory selection list is almost identical to the list displayed from the z/OS UNIX Directory List Utility (PDF option 3.17). The selection list supports the S (select) line command, allowing you to select the file to be processed with the function that invoked the list.

For the directory list displayed by the edit MOVE and COPY commands, the only valid line commands are S (Select), B (Browse), and L (List subdirectory). For all other directory selection lists, all the line commands supported by the z/OS UNIX Directory List Utility are also supported.

Data set passwords

A Data Set Password field is included on library and data set entry panels:

```
Data Set Password . . . (If password protected)
```

The Data Set Password field contains the password for OS password-protected data sets. By assigning more than one password to the same data set, you can give some users read-only access while giving others read/write access.

Nondisplay input fields are used so that the passwords do not appear on the screen. When you specify a concatenated sequence of libraries, the password applies to all data sets in the sequence.

If you replace a long password with a shorter password, blank out the remaining spaces of the Data Set Password field.

You can use ISPF with the Resource Access Control Facility (RACF). RACF provides extensive facilities for data set security. However, when using RACF, do not enter a password on the ISPF panels, because RACF relies on your TSO user ID and logon password to identify you and check for proper authorization.

Format definitions

A Format Name field is included on the View Entry Panel and on the Edit Entry Panel:

```
Format Name . . . _____
```

The Format Name field contains the name of a format definition, which is used to view, browse, or edit a formatted data set. A *formatted* data set contains records that consist of subfields. The locations and lengths of these subfields are fixed throughout the data set. The formatted data set support in View, Browse, and Edit is particularly useful for data that contains double-byte character (DBCS) data but does not contain shift-out (SO) and shift-in (SI) characters.

The format name can consist of up to eight alphanumeric characters; the first one must be alphabetic.

A format definition can include Extended Binary Coded Decimal Interchange Code (EBCDIC) fields, DBCS fields, and mixed fields. If the specified format includes a mixed field definition, the Mixed Mode field is ignored, even if you select it. See “Mixed mode” on page 102 for information. For information about defining formats for formatted data sets, see the topic about the Format Specifications Utility (Option 3.11) in the *z/OS ISPF User's Guide Vol II*. The Format Specifications utility is provided to support the IBM 5550 terminal that uses DBCS.

When formatted data is displayed, an attribute character that does not reside in the data set and is not stored in the data set precedes each field. Therefore, the column position on the display is different from the column position in the data set.

The allowable maximum length is decreased two bytes per field definition from the standard View, Browse, and Edit allowable maximum length.

Mixed mode

A Mixed Mode field is included on the View Entry Panel and the Edit Entry Panel:

_ Mixed Mode

The Mixed Mode field specifies whether you want to view, browse, or edit unformatted mixed data that contains both EBCDIC (single-byte) and DBCS (double-byte) characters. Use a slash to select mixed mode. If your terminal does not support DBCS, the value in this field is ignored.

DBCS strings are enclosed with SO (X'0E') and SI (X'0F') characters in unformatted mixed data. The SO character precedes the DBCS character string and the SI character follows the string.

If the view, browse, or edit line contains mixed data that are not valid, ISPF assumes the line can contain only EBCDIC characters. Examples of mixed data that are not valid include:

- Unpaired SO and SI characters
- Incorrect DBCS characters between SO and SI characters
- An odd number of bytes between SO and SI characters.

If you call View, Browse, or Edit from the Library utility (option 3.1) or the Data Set List utility (option 3.4), ISPF assumes that you want to use mixed mode.

If you want to view, browse, or edit DBCS data as EBCDIC data, you must do so in non-mixed mode. You can do this by operating from a terminal that does not support DBCS or by deselecting the Mixed Mode field.

In non-mixed mode, SO and SI characters are not treated as special characters; instead, they are treated as characters that cannot be displayed. Thus, you can view, browse, or edit the data in the conventional way.

You can also view, browse, or edit DBCS data in hexadecimal format, just as you would EBCDIC data. For information about specifying hexadecimal display, see the information about "HEX-Displaying Data in Hexadecimal Format" in the View (Option 1) topic in the *z/OS ISPF User's Guide Vol II*.

Note: Do not edit a record in hexadecimal format when a DBCS string encroaches on the display boundary.

DBCS data that is not valid is not supported. If DBCS fields or DBCS strings in a mixed field contain any bytes with hexadecimal code ranging from X'00' to X'3F', you may get unwanted results.

Partitioned Data Set Extended (PDSE)

Partitioned Data Set Extended (PDSE) is a data set type that is managed by DFSMS. Externally, a PDSE is very similar to a PDS. Internally, the PDSE has a different directory structure, member format, and record format. A PDSE is indistinguishable from a PDS through most interfaces used to access a PDS directory or member. All ISPF functions support the PDSE.

You can concatenate a PDSE library with a PDS library if they have consistent record formats and logical record lengths. All functions in the Library Utility (option 3.1) support PDSEs with the exception of the compress function.

Packed data sets

The *packed* data set format allows you to use direct access storage devices (DASD) more efficiently. In this format, ISPF replaces any repeating characters with a sequence showing how many times the character is repeated. Before you can properly use data stored in this format as input to processing programs, such as compilers, you must first tell ISPF to unpack and expand the data.

The two requirements for using packed data sets are:

- To store data in packed format:
 - Enter the PACK ON Edit primary command while editing a data set or PDS member.
 - Select the Pack Option field (under To Data Set Options:) when copying or moving members using the Move/Copy utility (option 3.3).

- To unpack and expand packed data for processing, select the Source Data Packed field on the Foreground Selection panel or the Batch Selection panel. You must select this field if any of the input data, including that referred to in COPY or INCLUDE statements, is in packed format.

List and log data sets

ISPF helps you get hardcopy listings of source modules, and maintains a log of significant user activities. These items are kept in data sets called the list data set and the log data set, respectively.

When needed, the two data sets are allocated automatically. They are temporary data sets named:

```
prefix.userid.SPFn.LIST  
prefix.userid.SPFL0Gn.LIST
```

Note: The data set name used can be modified under the operation of site-defined options. See the section "Temporary data set names" in *ISPF Planning and Customizing Guide*.

prefix

The data set prefix in your TSO profile. Used only if it is different from your user ID.

userid

Your user ID.

n

A number from 0 to 9.

If you have specified in your TSO profile a data set prefix that differs from your user ID, the data set names begin with your data set prefix, followed by your user ID. Once generated, these data sets remain open throughout your ISPF session. However, even though they are open, you can still process them by using the ISPF LIST and LOG commands.

List data set

The list data set is used for temporary storage for data to be printed at a later time. This data includes, for example, data written as a result of:

- Using the LIST service
- Issuing the PRINT, PRINT-HI, PRINTL, or PRINTLHI commands (but not PRINTG)
- Using Option 3 utilities.

To avoid generating an ISPF list data set, do not request any print functions.

Log data set

The log data set is used to capture data that can be useful for such things as diagnosing problems. This data includes, for example, data written as a result of:

- Using the LOG service
- Test and trace data such as:
 - ISPF TRACE mode data
 - Dialog Test option 7.7 dialog trace data.

Use the Log/List pull-down from the ISPF Settings panel action bar to prevent generating the ISPF log data set. However, if you use the Dialog Test option (7), allow generating the log data set because Dialog Test writes trace data to the log when you request it. Also, if Dialog Test finds an unexpected condition, problem data and error messages are written to the log.

Processing the log and list data sets

You can process the log and list data sets either:

- During an ISPF session, using the LOG and LIST commands
- At the end of a session.

ISPF processes (prints, keeps, deletes) only data sets that it has allocated. Any attempt to process a log or list data set that has been preallocated by the user results in an appropriate ISPF message. Any references to ISPF processing of log or list data sets refer to data sets that ISPF has allocated. Users can supply routines to process preallocated data sets after ISPF has terminated.

How to specify log and list data set processing options

The log and list data set processing options can be specified through any of these:

- Use of the LOG and LIST commands during an ISPF session.
- Use of the Log/List pull-down on the ISPF Settings panel for setting default options.
- The ISPF termination panel, which can display when you exit from ISPF. See [“Log and list data set processing at the end of a session” on page 107](#) to find out under what conditions ISPF will display this panel.

Processing the log and list data sets during an ISPF session

The LOG and LIST commands allow you to process the log and list data sets, respectively, at any time during an ISPF session. The log and list data sets must have been allocated. You control the data set processing by specifying on the LOG or LIST command one of the three keyword options: PRINT, DELETE, or KEEP.

If you issue the LOG or LIST command with no parameter specified, ISPF displays a panel that allows you to select the data set processing options. The panels for the LOG and LIST commands are shown in [Figure 23](#) on page 105 and [Figure 24](#) on page 106, respectively.

```

Specify Disposition of Log Data Set

Log Data Set (USERID.SPFLOG2.LIST) Disposition:
  Process Option . . . . _ 1. Print data set and delete
                           2. Delete data set without printing
                           3. Keep existing data set and
                              continue with new data set

  Batch SYSOUT class . . _____
  Local printer ID or
  writer-name . . . . . _____
  Local SYSOUT class : . _____

Press ENTER key to process the log data set.
Enter END command to exit without processing the log data set.

Job statement information:  (Required for system printer)
===> _____
===> _____
===> _____
===> _____

Command ===> _____
F1=Help      F2=Split    F3=Exit      F7=Backward  F8=Forward   F9=Swap
F12=Cancel

```

Figure 23. Log Data Set Defaults Panel (ISPLLP01)

Specify Disposition of List Data Set

List Data Set (USERID.SPF1.LIST) Disposition:

```

Process Option . . . . - 1. Print data set and delete
                        2. Delete data set without printing
                        3. Keep existing data set and
                           continue with new data set

```

```
Batch SYSOUT class . . _____
Local printer ID or
writer-name . . . . . _____
Local SYSOUT class . . _____
```

Press ENTER key to process the list data set.

Enter END command to exit without processing the list data set.

Job statement information: (Required for system printer)

===> _____

===> _____

===> _____

===> _____

Command ==>

F1=Help	F2=Split	F3=Exit	F7=Backward	F8=Forward	F9=Swap
F12=Cancel					

Figure 24. List Data Set Defaults Panel (ISPLLP02)

With the appropriate panel displayed, type in the process option of your choice. If you specify Print data set and delete, you must also specify a Batch SYSOUT class, or local printer ID or writer name. After you have typed in all information that you wish to specify, press Enter to pass the input to ISPF. ISPF takes the specified action for the data set and then returns you to the panel from which you issued the LOG or LIST command. ISPF issues a message indicating whether the action requested was successful.

If you issue the END command from the Log or List Data Set Defaults panel, ISPF returns you to the panel from which you issued the LOG or LIST command without processing the data set.

ISPF initializes the Log or List Data Set Defaults panel fields with the default values specified with the Log/List pull-down on the ISPF Settings panel. If a default disposition of Keep data set has been specified, ISPF translates the value to Keep data set and allocate new data set before displaying the panel. If you modify the process option field, the new value is used to process the data set; however, it is not saved in the system profile. All other fields modified on the panel are saved in the system profile and become the default values the next time the data set is processed.

If you issue the LOG or LIST command with the PRINT, DELETE, or KEEP option, ISPF does not display a panel. Specifying PRINT, DELETE, or KEEP on the command causes data set processing equivalent to specifying Print data set and delete, Delete data set, and Keep data set and allocate new data set, respectively, on the Log or List Data Set Defaults panel.

Two system variables, ZLOGNAME and ZLSTNAME, contain the fully qualified names of the log and list data sets, respectively. If either data set is not allocated or has not been used in the session, the corresponding system variable value is blank.

Note: The values of ZLOGNAME and ZLSTNAME are set to blank immediately after the log and list data sets have been processed because the data sets are freed by the LOG/LIST command processing. A new data set will not be allocated until it is written to. If you intend to use the log or list data set name for your processing, be sure to retrieve it before issuing the LOG or LIST command.

The system variables are summarized in *z/OS ISPF Dialog Developer's Guide and Reference*.

Conditions for using the LOG and LIST commands

You can issue the LOG or LIST command from any command line except in these situations:

- The command panel for the related log or list data set is active in any logical screen.

- The ISPF termination panel is active.
- The data set to be processed is not allocated or was preallocated.
- Dialog Test option 7.5 (Browse ISPF log) is active, and you are attempting to process the log data set.

Log and list data set processing at the end of a session

Figure 25 on page 107 shows the panel that ISPF displays at the end of a session if one of these is true:

- The initial dialog began with the display of a menu, and the dialog is ended with the END command issued from that menu.
- The initial dialog began with the performance of a function, and the function ends with a return code of 0.
- The log and list data set processing defaults have not been specified, or the default values are not valid.

If the application ends with a nonzero return code, the termination panel is not displayed.

If the termination panel does not display for one of these reasons, the log and list data sets are processed using the default options.

Specify Disposition of Log and List Data Sets						More:	+
Log Data Set (USERID.SPFLOG2.LIST) Disposition:							
Process Option _	1.	Print data set and delete					
	2.	Delete data set without printing					
	3.	Keep data set - Same (allocate same data set in next session)					
	4.	Keep data set - New (allocate new data set in next session)					
Batch SYSOUT class . . _____							
Local printer ID or writer-name _____							
Local SYSOUT class . . _____							
List Data Set (USERID.SPF1.LIST) Disposition:							
Process Option _	1.	Print data set and delete					
	2.	Delete data set without printing					
	3.	Keep data set - Same (allocate same data set in next session)					
	4.	Keep data set - New (allocate new data set in next session)					
Command ==> _____							
F1=Help	F2=Split	F3=Exit	F7=Backward	F8=Forward	F9=Swap		
F12=Cancel							

Figure 25. Specify Disposition of Log and List Data Sets Panel (ISPPFT03)

The valid process options shown in Figure 25 on page 107 are described in “Data set processing options” on page 107.

Data set processing options

For each term defined here, the first value shown is the processing option that you can specify on the Log/List pull-down from the ISPF Settings panel, on the Specify Disposition of Log and List Data Sets panel, or on the Log or List Data Set Defaults panel. The value in parentheses is the corresponding LOG or LIST command parameter.

1. Print data set and delete (PRINT)

Print the data set, then delete it. You must specify a Batch SYSOUT class or local printer ID or writer name.

- If the Batch SYSOUT class is specified, ISPF submits a background job to print and deletes the data set or sets.
- If a local printer ID or writer name is specified, ISPF uses the TSO PRINTDS command to route the data set to the specified printer or external writer program and then deletes the data set.

Note: If you have selected Edit PRINTDS Command on the ISPF Settings panel (option 0), ISPF displays the Local Print Command Edit panel to allow you to intercept and edit the PRINTDS command before it processes. See [“Editing the PRINTDS command” on page 108](#) for additional information.

ISPF uses file tailoring services to print data on a system printer. Therefore, if this option is specified during an ISPF session, along with a Batch SYSOUT class, file tailoring must not be active on the logical screen from which the LOG or LIST command is issued. If an FTOPEN or FTINCL has been issued without a subsequent FTCLOSE, ISPF issues an appropriate message.

2. Delete data set without printing (DELETE)

Delete the data set.

3. Keep data set - Same

Not applicable to LOG or LIST command. Close and free the data set. For the LOG or LIST data set, allocate the same data set at the beginning of the next session. If the data set does not exist, ISPF creates one with the same name.

4. Keep data set - New (KEEP)

Close and free the data set. Allocate a different data set for the next time log or list information is generated in this session or in the next session.

Editing the PRINTDS command

If you have selected Edit PRINTDS Command on the ISPF Settings panel (option 0) and you specify a local printer ID or writer name on either the Log and List Data Set Termination Options panel or the Hardcopy Utility panel, ISPF displays the Local Print Command Edit panel shown in [Figure 26 on page 108](#) to allow you to edit the PRINTDS command before it processes.

Local Print Command Edit

Select function to perform and press Enter to exit and print.
End or Cancel will exit without printing.

Local Print Command Options:

Function to perform . . . <u>1</u>	1. Exit and issue PRINTDS command
	2. Exit without printing

PRINTDS Header:

```
. . : PRINTDS DATASET('USERID.SPFLOG3.LIST') DEST(PRINTER1) CCHAR
```

Configuration table PRINTDS operands:

```
. . . NONUM
```

User PRINTDS operands:

```
. . .
```

F1=Help	F2=Split	F3=Exit	F7=Backward	F8=Forward	F9=Swap
F12=Cancel					

Figure 26. Local Print Command Edit Panel (ISPCHPPL)

The fields on this panel function as follows:

Function to perform

Specify the print function you want ISPF to perform:

- 1** Exit ISPF and issue the PRINTDS command (as edited)
- 2** Exit ISPF without printing.

Note: If you arrive at this panel from ISPF termination processing, you will continue with termination and exit the product after your print request is issued or canceled.

PRINTDS Header

This field cannot be edited. It contains the PRINTDS command, the data set name, the printer ID or writer name, and the CCHAR operand, if appropriate.

Configuration table PRINTDS operands

These operands operate at a system level and can be altered only in the ISPF Configuration table.

User PRINTDS operands

Enter additional operands (for example, COPIES or FORMS). These operands can be edited and are saved in the application command table.

If you enter CANCEL (or select Cancel), the PRINTDS command is not issued. If you enter END or RETURN or use a jump function, the PRINTDS command is issued and you receive a completion message.

Foreground and batch output listings

These additional listing data sets are allocated as needed for foreground or batch processing:

```
prefix.userid.list-id.LIST
prefix.userid.list-id.LINKLIST
prefix.userid.list-id.TERM
prefix.userid.list-id.TESTLIST
```

prefix

The data set prefix in your TSO profile. Use it only if you have one and it is different from your user ID.

userid

Your user ID.

list-id

The name specified in the List ID field on the foreground or batch data entry panel. This name is required for sequential data sets. However, for partitioned data sets, the member name becomes the default *list-id* if the List ID field is blank.

The particular data set names you use depend on the foreground or batch processing option chosen.

For batch processing, the output can either be directed to a list data set or printed as part of the batch job. When batch processing is finished, you can browse the list data set, and then use the Hardcopy utility (option 3.6) to print it. Using this utility, show whether you want to keep the data set or delete it after printing. ISPF does not delete these data sets when you end ISPF.

For the foreground option, the output listing is directed to a list data set and automatically displayed for browsing. When you end the browse function, ISPF displays a selection panel that allows you to choose whether to print, keep, or delete the list data set. Again, ISPF does not delete this data set when you end ISPF.

Other temporary data sets

If you are using virtual I/O (VIO), you can allocate space for temporary data sets, and then VIO assigns them system-generated names. Otherwise, ISPF allocates temporary control and listing data sets, as

needed, for its own internal use. You are usually not aware of their existence. They are assigned these names:

```
prefix.userid.SPFTEMPn.CNTL  
prefix.userid.SPFTEMPn.LIST  
prefix.userid.SPFTEMPn.WORK  
prefix.userid.appl-idzzzz.BACKUP  
prefix.userid.appl-idzzzz.BACKUPI  
prefix.userid.SPFnnn.OUTLIST
```

Note: The data set name used can be modified under the operation of site-defined options. See the section "Temporary data set names" in *ISPF Planning and Customizing Guide*.

prefix

The data set prefix in your TSO profile. It is used only if you have one and it is different from your user ID.

userid

Your user ID.

n

A number that corresponds to the logical screen that is active. *n* can be between 0-9 and A-W for CNTL data sets and between 1-9 and A-W for LIST and WORK data sets, where 1 is the first logical screen, 9 is the ninth logical screen, A is the tenth logical screen, and so on.

appl-id

The application ID.

zzzz

A number from 0001-0008, or higher if customized, controlled by the edit recovery table (*appl-id* EDRT for the EDREC service and *appl-id* EIRT for the EDIREC service) and the number of concurrent edit calls that are active.

nnn

A number generated by ISPF, which has a range of 100-999.

These data sets are deleted:

- By edit recovery when the data sets are no longer needed
- When you specifically request that they be deleted.
- By Move/Copy when no IEBCOPY errors are encountered.

Job statement information

ISPF allows you to submit Batch jobs for printing and language processing. However, before submitting a Batch job, you must supply job statement information. For this purpose, four lines are provided on each job submission panel.

You can use the lines that contain `//*`:

- As continuation lines by removing the asterisk (*)
- To enter other JCL statements, such as JOBLIB DD.

If you do not need these lines, you can blank them out. Blank lines are not submitted to the job stream.

Chapter 5. Using personal data set lists and library lists

Personal lists are named lists of data sets, z/OS UNIX files and ISPF libraries that you can use to speed up access to frequently used data sets. You can use personal lists to fill in panel fields quickly and to create data set lists that are built from more than one level name. **Personal data set lists** contain data set names, volumes, and z/OS UNIX files. **Personal library lists** contain lists of ISPF library names and concatenations.

Reference lists are active lists of data sets, z/OS UNIX files, and libraries that you have referenced in your ISPF session. ISPF adds a data set name to the data set reference list when you enter a data set name in the Other Partitioned or Sequential Data Set Name field. ISPF also adds a z/OS UNIX file pathname to the data set reference list when you enter a pathname in the Other Partitioned or Sequential Data Set, or z/OS UNIX File Name field. A library is added to the library reference list when you enter a library in the ISPF Library field. Only data sets and libraries that are successfully allocated by ISPF's ALLOCATE routine are added to the reference lists.

Note: Reference lists can be manipulated just like any other personal list, but ISPF might dynamically change reference lists when new data sets or libraries are referenced by ISPF.

You can have a personal data set list with the same name as a personal library list. ISPF reserves the name REFLIST as the name of the reference lists, so there is a personal data set list called REFLIST, and a personal library list called REFLIST.

Current lists are the most recently opened or the last list to which something was saved from within the Personal List panels. One named data set list and one named library list are the current lists at any time. The current list is used for the NRETRIEV key and in the RefList pull-downs. The current list names are shown in the RefList pull-down choices, and in the lists of personal lists.

Personal lists

ISPF provides four types of personal lists:

Personal data set list

Lists of up to 30 data set names and z/OS UNIX files. For data sets, each name can include a member name or a volume name, or both. z/OS UNIX file path names can be for regular files, directories, or symbolic links to directories or regular files. Personal data set lists can also contain data set name levels. See [“Personal data set lists” on page 112](#).

Reference data set list

A special kind of personal data set list in which ISPF saves the names of the most recently used data sets, data set name levels, and z/OS UNIX files and directories. This list is always named REFLIST. See [Reference data set lists](#).

Personal library list

Lists of up to 8 ISPF library names or ISPF library concatenations. ISPF library names contain three qualifiers called **project**, **group**, and **type**. Personal library list entries can optionally contain a member name. See [“Personal library lists” on page 114](#).

Reference library list

A special kind of personal library list in which ISPF saves the names of the most recently used ISPF library qualifiers (project, group 1, group 2, group 3, group 3, type, and member). This list is always named REFLIST. See [Reference library lists](#).

You can access personal lists from the RefList action bar choice on most panels that input library or data set names.

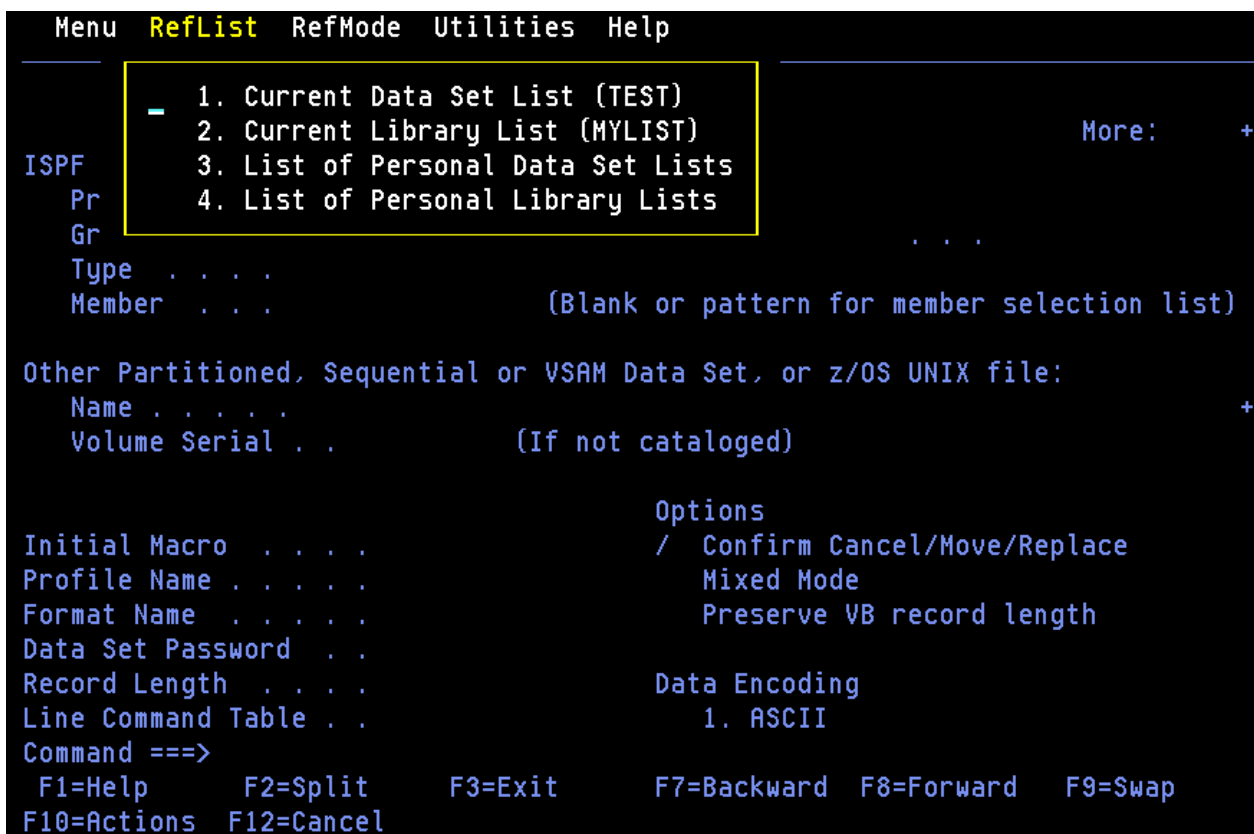


Figure 27. RefList Pull-Down Menu

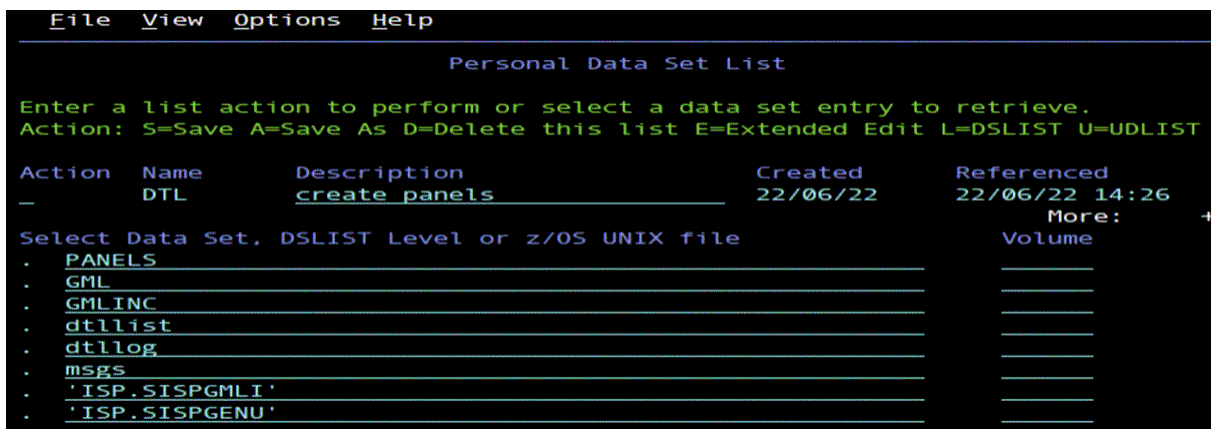
Note: The RefList pull-down is unavailable from Utilities options 8, 9, 11, 13, and 15; it does not offer library list choices from Utilities options 4 and 6.

You can also access personal lists from the Workplace.

Personal data set lists

You can build lists of personal data sets that contain up to 30 data set names and z/OS UNIX file path names. You can have as many lists as you like as long as each has a unique name. Personal data set lists are a good way to group (by project, for example) those data sets and z/OS UNIX file path names that you use frequently. You can use personal data set lists to avoid typing in data set names and z/OS UNIX file path names and to create customized data set lists like those using ISPF Option 3.4.

For example, you might have a personal data set list that has all the data sets you need to build Dialog Tag Language panels.



How to create a personal data set list

There are several ways to create personal data set lists:

- Type data set names into an empty list.
 1. Select the New choice from the File pull-down on the Personal Data Set List panel action bar or use the NEW primary command to display an empty temporary list.
 2. Type in the data set names.
 3. Save the list.
- Use the reference data set list as a starting point.
 1. Display the reference data set list by selecting the Reference Data Set List choice from the RefList pull-down on the View Entry, Edit Entry, or Utilities panel action bar.
 2. If you want to save this entire list as a personal data set list, select the Save as... choice from the File pull-down on the Reference Data Set List panel action bar.
 3. If you want to save some subset of the reference data set list, see the next item for more information.
- Use an existing list as a base, edit it, and save it.
 1. Display an existing list.
 2. Modify this list by typing over data set names or adding new ones. Do not select any data sets.
 3. Select the Save choice from the File pull-down on the Personal Data Set List panel action bar.

Note: Closing the list display by pressing Exit or End will Save the list. It is possible to have a single list open on multiple screens. Therefore, it is recommended that a list only be open on one screen if modifications are to be made. This will prevent the loss of updates when an unchanged list display is closed after a modified one.
- Use an existing list as a base and save it under another name.
 1. Display an existing list.
 2. Modify this list by typing over data set names or adding new ones. Do not select a choice.
 3. Select the Save as... choice from the File pull-down on the Personal Data Set List panel action bar and assign a unique name to this list.
 4. ISPF displays the new list.
- Issue the REFADDD command and specify a new list name. Issuing REFADDD NEWLIST from the command line creates a new personal data set list called NEWLIST. The list will contain the last referenced data set name.

How to retrieve a data set from a personal data set list

You have three choices for retrieving a data set name from a personal list.

- Use the NRETRIEV function key. Assign a function key to the value "NRETRIEV". On panels where NRETRIEV is available (such as edit, view, and some of the utilities), pressing the NRETRIEV key fills in the data set name field based on where the cursor is when the key is pressed. See [“Command interface to the personal list function” on page 130](#) for more information.
- Use the RefList pull-down on the View Entry, Edit Entry, or Utilities panel action bar. From either the current personal list (option 1), or one of the personal data sets lists in the list of personal data set lists (option 3), you can point to a data set name and press Enter to retrieve or use the name that you selected. See [“Personal list modes” on page 127](#) for more information.
- Use the REFACTD described in [“Command interface to the personal list function” on page 130](#).

Reference data set list - REFLIST (Last 30 referenced data sets)

The Reference Data Set List is a special personal data set list that contains a list of up to 30 data set names (and the volumes on which they are located), data set level names, and z/OS UNIX file path names

that you have referenced (that is, entered on panels or called with services) throughout ISPF. Data set names are also added to the list when ISPF refers to them, such as during a MOVE/COPY operation or a DELETE function. ISPF adds z/OS UNIX file path names to the Reference Data Set List whenever they are referenced in Edit, Browse, or View, or on the z/OS UNIX Directory List Utility entry panel. Data Set Level names are added when entered on the Data Set List utility (option 3.4), ISPF Workplace (option 11), or as a parameter on the command DSLIST.

The Reference Data Set List is a personal data set list with the name REFLIST. The name REFLIST is reserved by ISPF to refer to the reference list, but you can use the list just like any other list. If you save a personal list under the name REFLIST, the reference list reflects the names you save into it, but it is still updated when other data set are referenced by ISPF.

Personal library lists

You can build personal library lists of up to 8 ISPF libraries. You can have as many lists as you like as long as each has a unique name. Personal library lists are a good way to group (by project, for example) those libraries that you use frequently.

For example, if you are on a team that is developing COBOL programs, you can have a personal library list to include the library hierarchy concatenation for each of the types you use frequently.

Action	Name	Description	Created	Referenced
	SCLMSRC	SCLMSRC development	22/06/22	22/06/22 08:59

Select ISPF Library

Project	SCLMSRC	DEVELOP	TEST	RELEASE
Group	SCLMSRC	DEVELOP	TEST	RELEASE
Type	SCLMSRC	COBCOPY	RELEASE	
Member	SCLMSRC	COBLIST	RELEASE	
Project	SCLMSRC	DEVELOP	TEST	RELEASE
Group	SCLMSRC	DEVELOP	TEST	RELEASE
Type	SCLMSRC	OBJ	RELEASE	
Member	SCLMSRC			

Command =====>

Note: Personal library lists are not available from RefList pull-downs for any options that do not support library names. For example, the data set list utility and data set print utilities do not support personal library lists.

How to create a personal library list

There are several ways to create personal library lists:

- Type library names into an empty list.
 1. Select the New choice from the File pull-down on the Personal Library List panel action bar or use the NEW primary command to display an empty temporary list.
 2. Type in the library names.
 3. Save the list.
- Use the reference library list as a starting point.
 1. Display the reference library list by selecting the Reference Library List choice from the RefList pull-down on the View Entry, Edit Entry, or Utilities panel action bar.

2. If you want to save this entire list as a personal library list, select the Save as... choice from the File pull-down on the Reference Library List panel action bar.
 3. If you want to save some subset of the reference library list, see the next item for more information.
- Use an existing list as a base, edit it, and save it.
 1. Display an existing list.
 2. Modify this list by typing over library names or adding new ones. Do not select any libraries.
 3. Select the Save choice from the File pull-down on the Personal Library List panel action bar.
- Note:** Closing the list display by pressing Exit or End will Save the list. It is possible to have a single list open on multiple screens. Therefore, it is recommended that a list only be open on one screen if modifications are to be made. This will prevent the loss of updates when an unchanged list display is closed after a modified one.
- Use an existing list as a base and save it under another name.
 1. Display an existing list.
 2. Modify this list by typing over library names or adding new ones. Do not select a choice.
 3. Select the Save as... choice from the File pull-down on the Personal Library List panel action bar and assign a unique name to this list.
 4. ISPF displays the new list.
 - Issue the REFADDL command and specify a new list name. Issuing REFADDL NEWLIST from the command line creates a new personal library list called NEWLIST. The list will contain the last referenced library specification.

How to retrieve a library from a personal library list

You have three choices for retrieving a data set name from a personal list.

- Use the NRETRIEV function key. Assign a function key to the value "NRETRIEV". On panels where NRETRIEV is available (such as edit, view, and some of the utilities), pressing the NRETRIEV key fills in the library name fields based on where the cursor is when the key is pressed. See [“Command interface to the personal list function” on page 130](#) for more information.
- Use the RefList pull-down on the View Entry, Edit Entry, or Utilities panel action bar. From either the current personal list (option 2), or one of the personal library lists in the list of personal library lists (option 4), you can point to a library name and press Enter to retrieve the name you selected. See [“Personal list modes” on page 127](#) for more information.
- Use the REFACTL described in [“Command interface to the personal list function” on page 130](#).

Reference library list - REFLIST (Last 8 referenced libraries)

The reference library list is a special personal library list named REFLIST that contains a list of up to 8 library names that you have referenced through panels or ISPF services. The reference library list is updated by the system when ISPF uses ISPF libraries. In all other respects, it functions like a regular personal library list.

Personal list settings

You can control the personal lists by using the Personal List Settings choice from the Options action bar choice on any personal list.

```

Personal List Settings

General Options
Enter "/" to select option
/ Automatically update reference list
/ Update REFLIST with Dsname Level
- Use selection immediately in VIEW
- Use selection immediately in EDIT
- Use selection immediately in DSLIST
- NRETRIEV verifies data set exists
/ Display catalog name in Total view
/ Display Total Tracks

View Options
Data Set List View
1 1. Volume
2 2. Space
3 3. Attrib
4 4. Total

Press ENTER to save Personal List options.
Press EXIT or CANCEL to exit options panel.

```

From the Personal List Settings panel, you can select any of the general options:

- Automatically update reference list
- Update REFLIST with Dsname Level
- Use selection immediately in VIEW
- Use selection immediately in EDIT
- Use selection immediately in DSLIST
- NRETRIEV verifies data set exists
- Display catalog name in Total view
- Display Total Tracks

You can specify whether to use a Data Set List View of Volume, Space, Attrib, or Total, just as you can from the Data Set List Utility.

In addition, you can also control whether the reference list is automatically updated from the Workplace Settings pull-down choice from the Options action bar choice on the ISPF Workplace (option 11), or the DSLIST Settings pull-down choice from the Options action bar choice of the Data Set List utility (option 3.4).

How to get a list of your personal lists

To see a list of your personal lists, perform one of following actions:

- Select the List of Personal Data Set Lists or the List of Personal Library Lists choice from the RefList pull-down on the Edit Entry, View Entry, or Utilities panel action bar.
- Select the Open List of Lists choice from the File pull-down on the Personal Data Set List or Personal Library List panel action bar.
- Type MORE on the command line of the Personal Data Set List panel or the Personal Library List panel.
- Enter the REFOPEND (for data set lists) or REFOPENL (for library lists) command on any ISPF command line.

How to use personal lists to create customized DSLIST displays

You can use any personal data set list or personal library list to create a data set list (similar to ISPF option 3.4) which contains multiple level names. The easiest way to use a Personal Data Set List to create a DSLIST is to type `DSLIST listname` on an ISPF command line, where `listname` is the name of the personal data set list. If you are already viewing a DSLIST, you can add names listed in a personal data set list by typing `APPEND listname` on the command line.

You can also create a list with the L action while displaying a personal list or a list of personal lists.

For example, you can create a personal data set list called Command that contains the data sets you use to hold REXX and CLIST.

You can work with your personal data set lists in three ways:

- Use the choices in the File, View, or Options pull-downs.
- Select one of the point-and-shoot options (for example, Save As).
- Type an action mnemonic in the Action field and press Enter. Actions are listed at the top of the panel.

There are two primary commands that you can use on this panel:

MORE

Displays the list of all your personal data set lists. This is the same action as selecting Open List of Lists from the File pull-down.

NEW

Saves the current list and displays a new list with the data sets from the previous list. This is the same action as selecting New List from the File pull-down.

Personal Data Set List panel action bar choices

The Personal Data Set List panel action bar choices function as follows:

File

The File pull-down offers you the following choices:

1 - New List

Displays a temporary personal data set list. After you save this list, it is permanent until you delete it.

2 - Open List of Lists

Displays a list of your personal data set lists. You can open a list to change it and make it the current active list.

3 - Save

Saves the current contents of a personal data set list.

4 - Save as...

Saves the current contents to a new personal data set list. You are prompted for a list name and optional description.

5 - Delete

Deletes the current personal data set list. You are not asked to confirm the delete action. After the current list is deleted, ISPF displays an empty personal data set list as if you had requested a New action.

6 - Edit

Enters the personal list edit dialog.

7 - DSLIST

Builds a DSLIST based on list entries.

8 - UDLIST

Builds a z/OS UNIX directory list based on list entries.

9 - Cancel

Cancels the function.

10 - Exit

Returns you to the panel from which you accessed the personal list.

View

The View pull-down offers you the following choices:

1 – Standard view

The list contains the data set entries.

2 – Extended view

The list contains the data set entries with notes.

3 - Sort by data set name

The data set list is sorted by the Data Set Name field. The sort routine deletes duplicate names, sorts blank entries to the end of the list, saves the list, and redisplay the personal list.

Note: If a volume or entry description exists without a data set field entry, the volume and description are deleted by the sort routine.

4 - Sort by data set volume

The data set list is sorted by data set volume field. The sort routine deletes duplicate names, sorts blank entries to the end of the list, saves the list, and redisplay the personal list.

Note: If a volume or entry description exists without a data set field entry, the volume and description are deleted by the sort routine.

5 - Sort by data set note

The data set list is sorted by data set note field. The sort routine deletes duplicate names, sorts blank entries to the end of the list, saves the list, and redisplay the personal list.

Note: If a volume or entry description exists without a data set field entry, the volume and description are deleted by the sort routine.

Options

The Options pull-down offers you the following choices:

1 - Personal List Settings

Displays the Personal List Settings panel. From this panel, you can alter all settings that affect personal lists. See [“Personal list settings” on page 115](#) for additional information.

2 - Browse shared lists

Displays shared personal data set lists. See [“Shared personal lists” on page 127](#) for additional information.

Help

The Help pull-down provides access to the online tutorial.

Personal Data Set List panel fields

The fields on the Personal Data Set List Panel function as follows:

Action

These choices are valid in the Action field:

Note: The dots in the Action field are point-and-shoot selectable. If you select a data set name, and you started this dialog from a panel that supports the RefList pull-down, ISPF retrieves the selected data set, terminates this panel, and places the name that you selected in the ISPF Other Data Set Name field. If you have the RefMode set to "List Execute", ISPF also simulates pressing the Enter key on the panel.

S=Save

Saves the current list. If the list is new, you are prompted to enter a name for the list.

A=Save as

Saves the current list with a different list name.

D=Delete this list

Deletes the personal data set list that you are working with. You are asked to confirm this delete action. The currently active list cannot be deleted.

E=Extended edit

Starts the personal list editor dialog. The editor enables you to insert, repeat, and delete lines in the list. You can also add or change the notes for the data sets.

L=DSLIS

Starts DSLIS based on list entries.

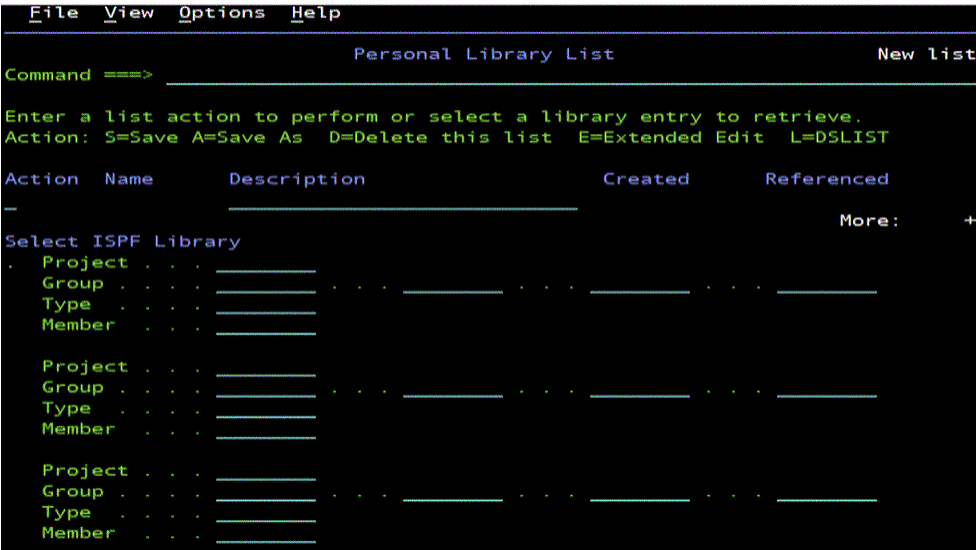
U=UDLIST

Displays a z/OS UNIX directory list based on the list entries.

Name	The name of the personal data set list.
Description	A brief description of the personal data set list. The Description field is an input field. You can change the description for all personal lists except the reference list (REFLIST).
Created	The date the personal data set list was created.
Referenced	The last date/time the personal data set list was referenced.

Personal Library List panel

Use the Personal Library List panel to save, delete, or edit a list. You can also create a data set list from the libraries on the panel.



- You can work with your personal library lists in three ways:
- Use the choices in the File, View, or Options pull-downs.
 - Select one of the point-and-shoot options (for example, Save As).
 - Type an action mnemonic in the Action field and press Enter. Actions are listed at the top of the panel.
- There are two primary commands that you can use on this panel:
- MORE**
 Displays the list of all your personal library lists. This is the same action as selecting Open List of Lists from the File pull-down.
- NEW**
 Saves the current list and displays a new list with the libraries from the previous list. This is the same action as selecting New List from the File pull-down.

Personal Library List panel action bar choices

The Personal Library List panel action bar choices function as follows:

- File**
 The File pull-down offers you these choices:
- 1 - New List**
 Displays a temporary personal library list. After you save this list, it is permanent until you delete it.

2 - Open List of Lists...

Displays a list of your personal library lists. You can open a list to change it and make it the current active list.

3 - Save

Saves the current contents of a personal library list.

4 - Save as...

Saves the current contents to a new personal library list. You are prompted for a list name and optional description.

5 - Delete

Deletes the current personal library list. You are not asked to confirm the delete action.

6 - Edit

Enters the personal list edit dialog.

7 - DSLIST

Builds a DSLIST based on list entries.

8 - Cancel

Cancels the function.

9 - Exit

Returns you to the panel from which you accessed the personal list.

View

The View pull-down offers you these choices:

1 - By libraries

The list contains the library entries.

2 - By libraries and notes

The list contains the library entries with notes.

Options

The Options pull-down offers you these choices:

1 - Personal List Settings

Displays the Personal List Settings panel. From this panel, you can alter all settings that affect personal lists. See [“Personal list settings” on page 115](#) for additional information.

2 - Browse shared lists

Displays shared personal data set lists. See [Shared personal lists](#) for additional information.

Help

The Help pull-down provides access to the online tutorial.

Personal Library List panel fields

The fields on the Personal Library List panel function as follows:

Action

These choices are valid in the Action field:

Note: The dots in the Action field are point-and-shoot selectable. If you select a library name, and you invoked this dialog from a panel that supports the RefList pull-down, ISPF retrieves the selected library name, terminates this panel, and places the name that you selected in the ISPF library field. If you have the RefMode set to "List Execute", ISPF also simulates pressing the Enter key on the panel.

S=Save

Saves the current list. If the list is new, you are prompted to enter a name for the list.

A=Save as

Saves the current list with a different list name.

D=Delete this list

Deletes the personal library list that you are working with. You are asked to confirm this delete action. The currently active list cannot be deleted.

E=Extended edit

Invokes the personal list editor dialog. This enables you to insert, repeat, and delete lines in the list. You can also add or change the notes for the libraries.

L=DSLIS

Invokes DSLIST based on list entries.

Name

The name of the personal data set list.

Description

A brief description of the personal library list. The Description field is an input field. You can change the description for all personal lists except the reference list (REFLIST).

Created

The date the personal library list was created.

Referenced

The last date/time the personal library list was referenced.

Personal Data Set Lists panel

The Personal Data Set Lists panel shows a list of your personal data set lists. You can show the Personal Data Set Lists panel by selecting it from the RefList pull-down or by using the REFOPEND command.

```

File View Options Help
-----
ISRPLTAB EFLIST          Personal Data Set Lists          List 1 of 3

Action: 0=Open  A=Save As  D=Delete  E=Edit  L=DSLIS  U=UDLIST

  Name          Description          Created    Referenced
-  REFLIST      Last 30 referenced data sets  07/05/02 14:20
-  TEST        Test list              07/04/23  07/05/02 13:33
-  TEST2       Second Test List        05/08/09  07/05/01 12:36
  **End**

Command ==>          Scroll ==> PAGE
F1=Help    F3=Exit    F4=Settings  F5=ShrList  F11=ChgView  F12=Cancel

```

Personal Data Set Lists panel action bar choices

The Personal Data Set Lists Panel action bar choices function as follows:

Note: The current setting is shown as an unavailable choice; that is, it displays in blue (the default) with an asterisk as the first digit of the selection number.

File

The File pull-down offers you these choices:

1 - New List

Displays a new personal list.

2 - Open

Displays the entries for the selected list.

3 - Save as...

Saves the selected list to a new list.

4 - Delete...

Deletes the selected list. You will be asked to confirm the delete action.

5 - Edit

Invokes the personal list edit dialog for the selected list.

6 - DSLIST

Invokes DSLIST based on the entries in the selected list.

7 - UDLIST

Builds a z/OS UNIX directory list based on entries in the selected list.

8 - Exit

Returns you to the panel from which you accessed the Open dialog.

View

The View pull-down offers you these choices:

1 - Standard View

Displays a list of personal lists with list name, list description, and list statistics.

2 - Extended View

Displays a list of personal lists with list name, list description, list statistics, and a partial view of list entries.

3 - Sort by name

Sorts the displayed list alphabetically by the Name field.

4 - Sort by description

Sorts the displayed list alphabetically by the Description field.

5 - Sort by created

Sorts the displayed list in descending order by the Created field.

6 - Sort by referenced

Sorts the displayed list in descending order by the Referenced field.

Options

The Options pull-down offers you these choices:

1 - Personal List Settings...

Displays the Personal List Settings panel, from which you can alter all settings that affect personal lists. See [“Personal list settings” on page 115](#) for additional information.

2 - Browse shared lists...

Displays shared personal data set lists. See [Shared personal lists](#) for additional information.

Help

The Help pull-down provides access to the online tutorial.

Personal Data Set Lists panel fields

The fields on the Personal Data Set Lists Panel function as follows:

The current (Active) list is indicated to the left of the panel title.

Action

These choices are valid in the Action field:

Note: The dots in the Action field are point-and-shoot selectable. Selecting a list opens the list. This means that you can open a list by moving the cursor to the action field and pressing Enter.

N=New

Displays an empty (temporary) personal data set list. Once you save this list, it is permanent until you delete it.

O=Open

Opens the selected list to modify it, perform actions, or selections of data sets.

A=Save as

Saves the current contents of the selected list to a personal data set list. You will be prompted for a list name and optional description.

D=Delete

Deletes the selected personal data set list. You will be asked to confirm the delete action. The currently active list cannot be deleted.

E=Edit

Invokes the personal list editor dialog for the selected personal data set list.

L=DSLIS

Invokes DSLIS based on the entries in the selected personal data set list.

U=UDLIS

Displays a z/OS UNIX directory list based on the entries in the personal data set list.

Name

The name of the personal data set list. The Name field is a point-and-shoot sort field.

Description

A brief description of the personal data set list. The Description field is a point-and-shoot sort field.

Created

The date the personal data set list was created. The Created field is a point-and-shoot sort field.

Referenced

The last date/time the personal data set list was referenced. The Referenced field is a point-and-shoot sort field.

Note: A personal list is updated whenever a save action is performed against it.

The LOCATE command is supported as follows:

- L xxxxxxxx
- LOC xxxxxxxx
- LOCATE xxxxxxxx

Where: xxxxxxxx is the name of the list that you want to locate.

An asterisk is supported in the last position of the list name. For example, enter LOCATE PRIV* to locate the list named PRIVATE.

The SELECT command is supported as supported as follows:

- S nnnnnnnn A
- SEL nnnnnnnn A
- SELECT nnnnnnnn A

Where: nnnnnnnn is the name of the list that you want to select, and A is the action to perform. If you do not enter an action, the list is opened.

An asterisk is supported in the last position of the list name. For example, enter SELECT PRIV* L to select the list named PRIVATE, with a DSLIS action of "L".

Personal Library Lists panel

The Personal Library Lists panel shows a list of your personal library lists. You can show the Personal Library Lists panel by selecting it from the RefList pull-down or by using the REFOPENL command.

```

File View Options Help
Active: SCLMSRC                      Personal Library Lists                      List 1 of 4
Command ==> _____ Scroll ==> PAGE
Action: 0=Open  A=Save As  D=Delete  E=Edit  L=DSLISL

  Name                Description                Created    Referenced
-  SCLMSRC            SCLMSRC development                22/06/22   23/02/01 18:40
-  MYLIBS                                            22/06/21   22/06/21 16:15
-  PRIVATE                                            23/02/01 11:53
-  REFLIST              Last 8 referenced libraries          23/02/01 18:41
  **End**

```

Personal Library Lists panel action bar choices

The Personal Library Lists Panel action bar choices function as follows:

Note: The current setting is shown as an unavailable choice; that is, it displays in blue (the default) with an asterisk as the first digit of the selection number.

File

The File pull-down offers you these choices:

1 - New List

Displays a new personal list.

2 - Open

Displays the entries for the selected list.

3 - Save as...

Saves the selected list to a new list.

4 - Delete...

Deletes the selected list. You will be asked to confirm the delete action.

5 - Edit

Invokes the personal list edit dialog for the selected list.

6 - DSLIST

Invokes DSLIST based on the entries in the selected list.

7 - Exit

Returns you to the panel from which you accessed the Open dialog.

View

The View pull-down offers you these choices:

1 - Standard View

Displays a list of personal lists with list name, list description, and list statistics.

2 - Extended View

Displays a list of personal lists with list name, list description, list statistics, and the first library in the list.

3 - Sort by name

Sorts the displayed list alphabetically by the Name field.

4 - Sort by description

Sorts the displayed list alphabetically by the Description field.

5 - Sort by created

Sorts the displayed list in descending order by the Created field.

6 - Sort by referenced

Sorts the displayed list in descending order by the Referenced field.

Options

The Options pull-down offers you these choices:

1 - Personal List Settings...

Displays the Personal List Settings panel, from which you can alter all settings that affect personal lists. See [“Personal list settings” on page 115](#) for additional information.

2 - Browse shared lists...

Displays shared personal data set lists. See [Shared personal lists](#) for additional information.

Help

The Help pull-down provides access to the online tutorial.

Personal Library Lists panel fields

The fields on the Personal Library Lists panel function as follows:

The current (Active) list is indicated to the left of the panel title.

Action

These choices are valid in the Action field:

Note: The dots in the Action field are point-and-shoot selectable. Selecting a list opens the list. This means that you can open a list by moving the cursor to the action field and pressing Enter.

N=New

Displays an empty (temporary) personal data set list. Once you save this list, it is permanent until you delete it.

O=Open

Opens the selected list to modify it, perform actions, or selections of data sets.

A=Save as

Saves the current contents of the selected list to a personal data set list. You will be prompted for a list name and optional description.

D=Delete

Deletes the selected personal data set list. You will be asked to confirm the delete action. The currently active list cannot be deleted.

E=Edit

Invokes the personal list editor dialog.

L=DSLIS

Invokes DSLIS based on list entries.

Name

The name of the personal library list. The Name field is a point-and-shoot sort field.

Description

A brief description of the personal data set list. The Description field is a point-and-shoot sort field.

Created

The date the personal data set list was created. The Created field is a point-and-shoot sort field.

Referenced

The last date/time the personal data set list was referenced. The Referenced field is a point-and-shoot sort field.

Note: A personal list is updated whenever a save action is performed against it.

The LOCATE command is supported as follows:

- L xxxxxxxx
- LOC xxxxxxxx
- LOCATE xxxxxxxx

Where: xxxxxxxx is the name of the list that you want to locate.

An asterisk is supported in the last position of the list name. For example, enter LOCATE PRIV* to locate the list named PRIVATE.

The SELECT command is supported as supported as follows:

- S nnnnnnnn A
- SEL nnnnnnnn A
- SELECT nnnnnnnn A

Where: nnnnnnnn is the name of the list that you want to select and A is the action to perform. If you do not enter an action, the list is opened.

An asterisk is supported in the last position of the list name. For example, enter SELECT PRIV* L to select the list named PRIVATE, with a DSLIST action of "L".

Personal list modes

The action taken when you select a data set or a library from a list depends on how you have the Mode set. All personal lists can be set to either Retrieve or Execute mode from the RefMode pull-down on the action bar of the View Entry, Edit Entry, and most Utilities panels, as shown in [Figure 28 on page 127](#). List Retrieve displays in blue (the default) with an asterisk as the first digit of the selection number, which indicates that RefMode is currently set to Retrieve.

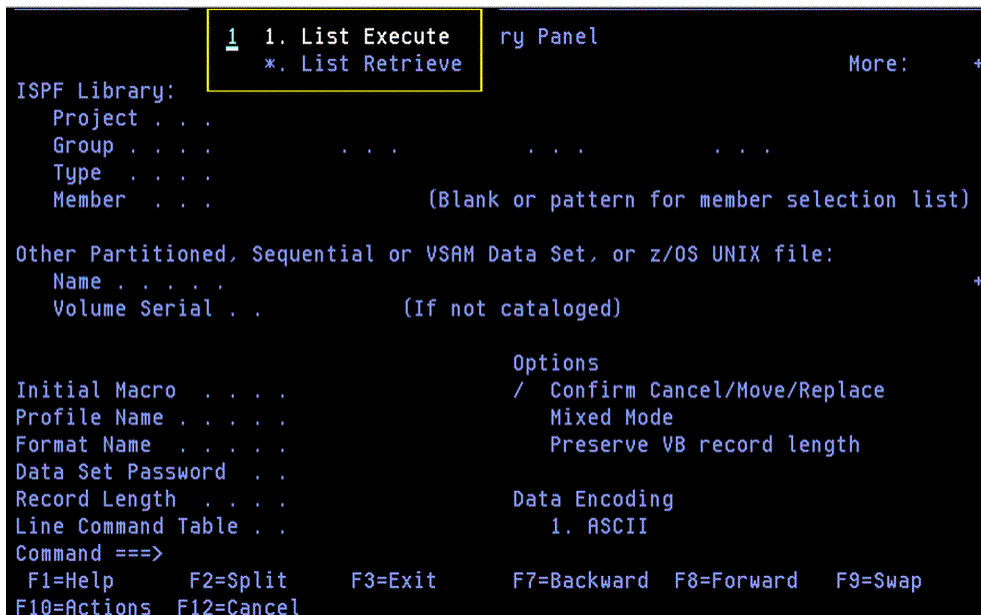


Figure 28. RefMode Pull-Down Menu

The RefMode pull-down offers you these choices:

List Execute

Sets personal data set lists and personal library lists to Execute mode; that is, when you select an entry from the list, the information is placed into the ISPF Library or Other Data Set Name field, and ISPF proceeds as if you also pressed the Enter key.

List Retrieve

Sets personal data set lists and personal library lists to Retrieve mode; that is, when you select an entry from the list, the information is placed into the ISPF Library or Other Data Set Name field, but the simulated pressing of the Enter key is not performed. This allows you to set other options before you press Enter.

Shared personal lists

Personal lists (library and data set) can be shared with other users on the system. Tables ISRPLSHR for data sets and ISRLLSHR for libraries are shared lists. They are kept in an ISPTLIB concatenated data set.

Private lists are tables ISRPLIST (for data set lists) and ISRLLIST (for library lists). They are kept in the ISPPROF user profile data set.

Create a shared list by using the Move/Copy Utility (option 3.3) to copy an existing personal list table from a user profile data set to a data set concatenated to ISPTLIB. You must rename the table to ISRPLSHR (for data set lists) or ISRLLSHR (for library lists) during the copy operation.

For example, if you want to share a personal data set list called ISP from your profile data set, 'USER1.PROFILE', use the Move/Copy Utility to copy member ISRPLIST from your profile data set to a data set in the ISPTLIB concatenation, 'TEAMPROJ.TABLES' setting the new member name to ISRPLSHR. Then, anyone who also has 'TEAMPROJ.TABLES' in their ISPTLIB concatenation can see all the personal data set lists you copied from 'USER1.PROFILE'.

To use a shared personal list, use the primary commands REFOPEND (for a data set list) or the REFOPENL (for a library list). From the Options action bar choice, select 2, Browse shared lists.

```
ISRPLSHP                               Shared Personal Data Set Lists                List 1 of 3
Command ==> _____ Scroll ==> PAGE

Action: A=Save As  0=Open

  Name      Description                               Created      Referenced
-  ISP      19/04/11 23/02/03 13:25
-  COMMAND  rexx and clist                          23/02/01 23/02/03 13:24
-  REFLIST  Last 30 referenced data sets              23/02/03 13:27
  **End**
```

You must save the shared list to a personal list before you can retrieve names from it.

These actions are available for shared personal lists:

- Open (to see the entries in the list)
- Save As (to save the contents of the selected list to a new personal list)

You cannot update or delete a shared list.

For example, to retrieve names from the shared list ISP, select the list with the A action. Enter a name and optionally a description on the Personal Data Set List Save As panel. When you return to your Personal Data Set Lists, the newly saved list appears. You can use the new list like any other personal list.

Name retrieval with the NRETRIEV command

The ISPF command table contains an entry named NRETRIEV. On enabled panels such as Edit, NRETRIEV retrieves the library names from the current library referral list, or data set name or z/OS UNIX file name from the current data set referral list. You are responsible for assigning the NRETRIEV command to a function key.

When the cursor is not in the Other Data Set Name field or the Volume Serial field, and the NRETRIEV key is pressed, the ISPF library fields are filled in from the current list. As long as the cursor is not placed in these fields, subsequent presses of the NRETRIEV key will retrieve the next library concatenation from the list.

When the cursor is in the Other Data Set Name field or the Volume Serial field, and the NRETRIEV key is pressed, the data set name or z/OS UNIX file name is filled in from the current data set list. ISPF attempts to determine if the name in the list is a z/OS UNIX file name or a data set name. As long as the cursor is placed in these fields, subsequent presses of the NRETRIEV key will retrieve the next data set name or z/OS UNIX file name from the list.

Use the personal list settings panel to force the NRETRIEV command to verify the existence of a data set before retrieving it. If verification is active, then a check is made to see if a data set name exists before a

retrieval attempt. If a volume name is not in the personal list entry, then the catalog is checked to see if the data set name is cataloged. If a volume name exists, an OBTAIN macro is used to check the volume for the data set. Verification does not check ISPF library names or z/OS UNIX file names, and does not check for the existence of PDSE members. In the data set list Dsname Level field, verification is inactive.

NRETRIEV is enabled on the following options:

- View, including extended move, copy, create, and replace panels
- Edit, including extended move, copy, create, and replace panels
- Library Utility (Option 3.1)
- Data Set Utility (Option 3.2)
- Move/Copy Utility (Option 3.3)
- Data Set List (Option 3.4)
- Reset ISPF Statistics (Option 3.5)
- Hardcopy Utility (Option 3.6)
- SuperC (Options 3.12 and 3.14)
- ISPF Table Utility (Option 3.16)
- z/OS UNIX Directory List Utility (Option 3.17)
- SCLM Options:
 - View (Option 1)
 - Edit (Option 2)
 - Member list (Option 3.1)
 - Migration (Option 3.3)
 - Unit of Work (Option 3.11)
 - Build (Option 4)
 - Promote (Option 5)
 - Easy Cmds (Option 6A)

SCLM considerations for NRETRIEV

The NRETRIEV command is enabled to work in several of the SCLM options. There are certain restrictions and considerations to keep in mind when you choose to use NRETRIEV in SCLM.

SCLM restrictions

SCLM has the following restrictions for the NRETRIEV command:

- The NRETRIEV key within SCLM does not use the standard reference list or personal lists. Instead, it uses a stack that is stored internally. The stack is not editable. The stack is saved from session to session as a single-line table called ISRSLIST.
Note: In the SCLM View option, the Other Data Set Name field does use the standard reference list because the Other Data Set Name field has no particular meaning to SCLM.
- In SCLM, there is no validation of saved or retrieved names. That means that if you type in a library name and press Enter, it is added to the list of saved names, even if SCLM does not process it. This contrasts with the standard reference list processing, which does not add a data set or library name until the data set or library is successfully allocated.
- On name retrieval (when the NRETRIEV key is pressed) there is no validation of the existence of data sets or libraries.
- The regular NRETRIEV command is screen independent (it uses a separate list indicator for each screen in split screen mode). There is only 1 position locator for SCLM lists. This means that split screens

with SCLM NRETRIEV will use the same pointer into the list. An NRETRIEV on screen 1 followed by an NRETRIEV on screen 2 will get list entries 1 and 2 respectively.

Stack management for SCLM

A library name (or concatenation) is added to the list of saved library names by pressing Enter on a panel that supports saving names. If the library or concatenation exists in the list already, it is moved to the top of the list. Where the Project field or the first Group field is an output field (SCLM options 2, 3, 4, and 5), the output fields are not used in the comparison between what was typed on the panel and what is already in the list. This enables you to work in different but similar projects.

In other words, on the edit screen that has both the Project and Group1 as output fields, the concatenation:

```
SCLM Library:
Project...: PDFTDEV
Group ....: DGN      ....STG      ....INT      ....SVT
Type .....: ARCHDEF
Member ...:
```

would match:

```
SCLM Library:
Project...: PDFTOS25
Group ....: JSM      ....STG      ....INT      ....SVT
Type .....: ARCHDEF
Member ...:
```

Similarly, where groups 2, 3, and 4 are not used, those groups are not used when checking to see if the name already exists.

If a match is found, the existing entry in the list is moved to the top of the list.

A library name (or concatenation) is added to the list of saved library names by pressing Enter on a panel that supports saving names. If the library or concatenation exists in the list already, it is moved to the top of the list. Where the Project field or the first Group field is an output field (SCLM options 2, 3, 4, and 5), the output fields are not used in the comparison between what was typed on the panel and what is already in the list. This enables you to work in different but similar projects.

In other words, on the edit screen that has both the Project and Group1 as output fields, the concatenation:

```
SCLM Library:
Project...: PDFTDEV
Group ....: DGN      ....STG      ....INT      ....SVT
Type .....: ARCHDEF
Member ...:
```

would match:

```
SCLM Library:
Project...: PDFTOS25
Group ....: JSM      ....STG      ....INT      ....SVT
Type .....: ARCHDEF
Member ...:
```

Similarly, where groups 2, 3, and 4 are not used, those groups are not used when checking to see if the name already exists.

If a match is found, the existing entry in the list is moved to the top of the list.

Command interface to the personal list function

You can use these commands to access the referral list function rather than using the action bar pull-down menus:

REFLISTD xx

Start the personal data set list dialog with the reference data set list and retrieve the data set in position xx. The xx parameter is optional. This sets the current data set list to the reference list (REFLIST).

REFLISTL x

Start the personal library list dialog with the reference library list and retrieve the library in position x. The x parameter is optional. This sets the current library list to the reference list (REFLIST).

REFACTD nnnnnnnn xx

Start the personal data set list named nnnnnnnn and retrieve the data set in position xx. For example, enter

```
REFACTD MYLIST 2
```

to retrieve the second data set from the personal data set list named MYLIST and place it in the Data Set Name field. The nnnnnnnn and xx parameters are optional.

REFACTL nnnnnnnn x

Start the personal library list named nnnnnnnn and retrieve the library in position x. For example, enter

```
REFACTL MYLIB 1
```

to retrieve the first library from the personal library list named MYLIB and place it in the Library field. The nnnnnnnn and x parameters are optional.

REFOPEN

Start the personal data set open dialog.

REFOPENL

Start the personal library open dialog.

REFADD nnnnnnnn

Update the personal data set list named nnnnnnnn with the most recently referenced data set. For example, enter

```
REFADD NEWLIST
```

to add the most recently referenced data set to the personal data set list named NEWLIST.

REFADDL nnnnnnnn

Update the personal library list named nnnnnnnn with the most recently referenced library. For example, enter

```
REFADDL NEWLIB
```

to add the most recently referenced library to the personal library list named NEWLIB.

NRETRIEV

Retrieve a name from the current library or data set list on panels which support NRETRIEV commands. This command is normally assigned to a program function (PF) key. NRETRIEV uses the position of the cursor to determine what type of personal list to use and what fields on the panel to fill in. See [“Name retrieval with the NRETRIEV command” on page 128](#) for more information about NRETRIEV.

Using function keys with personal lists

You can set function keys to process any of the personal list commands, as shown in [Figure 29 on page 132](#).

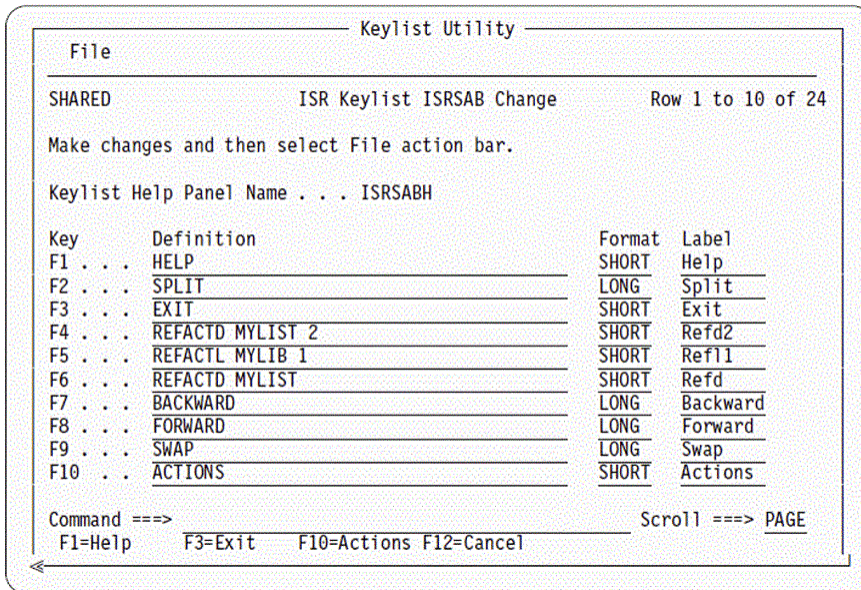


Figure 29. Defining Function Keys to Issue Referral List Commands

If you used these function key settings, you could:

- Press F4 to place the second data set name on the personal data set list named MYLIST in the Data Set Name field.
- Press F5 to place the first library name on the personal library list named MYLIB in the Library field.
- Press F6 to display the personal data set list named MYLIST so that you can select a data set to process.

Note: You could also type a number on the command line and press F6 to place the data set name in the specified position on the personal data set list named MYLIST in the Data Set Name field; for example, if you type 6 on the command line and press F6, the sixth data set on MYLIST would be placed in the Data Set Name field.

Example of an ISPF panel that uses a referral list

Here is the panel definition for a panel that uses a referral list.

```
)PANEL KEYLIST(ISRSAB,ISR)
)ATTR DEFAULT(...) FORMAT(MIX)
0B TYPE(AB)
04 TYPE(ABSL)
05 TYPE(PT)
09 TYPE(FP)
0A TYPE(NT)
0C TYPE(NT) SKIP(ON)
11 TYPE(SAC)
12 TYPE(CEF) PADC(USER)
13 TYPE(NEF) PADC(USER)
19 TYPE(DT)
22 TYPE(WASL) SKIP(ON)
08 TYPE(CH)
10 TYPE(ET)
)ABC DESC('RefList')
PDC DESC('Reference Data Set List')
ACTION RUN(ISRRLIST) PARM('RL1')
PDC DESC('Reference Library List')
ACTION RUN(ISRRLIST) PARM('LR1')
PDC DESC('Personal Data Set List')
ACTION RUN(ISRRLIST) PARM('PL1')
PDC DESC('Personal Data Set List Open')
ACTION RUN(ISRRLIST) PARM('PL2')
PDC DESC('Personal Library List')
ACTION RUN(ISRRLIST) PARM('LL1')
PDC DESC('Personal Library List Open')
ACTION RUN(ISRRLIST) PARM('LL2')
)ABCINIT
```

```

.ZVARS=REFLIST
)ABC DESC('RefMode')
PDC DESC('List Execute') UNAVAIL(ZRME1)
  ACTION RUN(ISRRLIST) PARM('EEX')
PDC DESC('List Retrieve') UNAVAIL(ZRME2)
  ACTION RUN(ISRRLIST) PARM('ERT')
)ABCINIT
.ZVARS=LISTFILE
VGET (ZELIST) PROFILE
IF (&ZELIST = 'EXECUTE')
  &zrme1 = 1
  &zrme2 = 0
  &listfile = 2
ELSE
  &zrme1 = 0
  &zrme2 = 1
  &listfile = 1
)BODY CMD(ZCMD)
)
)INIT
)
)REINIT
  REFRESH (PRJ1,LIB1,LIB2,LIB3,LIB4,TYP1,MEM,DSN) /*refresh panel vars*/
)PROC
/* the following is the logic for reference or personal data set list */
VGET (ZRDSN) SHARED /* get data set reflist key var */
IF (&ZRDSN ^= ' ') /* if reflist has set dsname var */
  &DSN = &ZRDSN /* set panel other dsname to zrdsn */
  VGET (ZREFVOLM) PROFILE /* get volume retrieve mode */
  IF (&ZREFVOLM = 'ON') /* if volume retrieve on */
    &VOL = &ZRVOL /* set panel volume to zrvol */
  &ZRDSN = ' ' /* blank zrdsn */
  &ZRVOL = ' ' /* blank zrvol */
  VPUT (ZRDSN ZRVOL) SHARED /* return blank reflist vars */
  .CURSOR = DSN /* set cursor to panel dsname field */
  VGET (ZELIST) PROFILE /* get edit execute/retrieve mode */
  IF (&ZELIST ^= 'EXECUTE') /* determine if retrieve or execute */
    .MSG = ISRDS003 /* force redisplay if retrieve mode */
/* End of logic for reference or personal data set list */
/* the following is the logic for reference or personal library list */
VGET (DSALSEL) SHARED /* get library reflist key var */
IF (&DSALSEL ^= ' ') /* if reflist has set lib indicator */
  VGET (DSA1,DSA2,DSA3,DSA4,DSA5,DSA6,DSA7) SHARED /* get vars */
  &PRJ1 = &DSA1 /* set panel project */
  &LIB1 = &DSA2 /* set panel library 1 */
  &LIB2 = &DSA3 /* set panel library 2 */
  &LIB3 = &DSA4 /* set panel library 3 */
  &LIB4 = &DSA5 /* set panel library 4 */
  &TYP1 = &DSA6 /* set panel type */
  &MEM = &DSA7 /* set panel member */
  &DSN = ' ' /* blank panel other dsname */
  &DSALSEL = ' ' /* blank reflist lib indicator */
  VPUT (DSALSEL) SHARED /* return to shared pool */
  .CURSOR = MEM /* set cursor to panel member field */
  VGET (ZELIST) PROFILE /* get edit execute/retrieve ind */
  IF (&ZELIST ^= 'EXECUTE') /* determine if retrieve or execute */
    .MSG = ISRDS003 /* setmsg if retrieve mode */
/* End of logic for reference or personal library list */
)END

```

The library name variables on the panel are set from the following variables in the shared pool:

- DSA1 - project name
- DSA1 - group 1 name
- DSA3 - group 2 name
- DSA4 - group 3 name
- DSA5 - group 4 name
- DSA6 - type name
- DSA7 - member name

Example of an ISPF panel that enables NRETRIEV

Figure 30 on page 134 shows the panel definition for a panel that uses a referral list.

```

)BODY
%----- NRETRIEV Test Panel -----%
%COMMAND%==>_ZCMD
+
+
+ Project ==>_PROJECT +
+ Group  ==>_GROUP1 +==>_GROUP2 +==>_GROUP3 +==>_GROUP4 +
+ Type   ==>_TYPE   +
+ Member ==>_MEMBER +
+
+ DS Name ==>_OTHERDSN +
+ Volume  ==>_VOLUME+

)INIT
.NRET = ON /* Make NRETRIEV key active */
)REINIT
  REFRESH (*)
  .NRET = ON /* Make NRETRIEV key active */
)PROC
.NRET = OFF /*IMPORTANT - Make NRETRIEV key inactive */
VGET (ZVERB) SHARED
IF (&ZVERB = NRETRIEV) /* if NRETRIEV was entered */
  IF (.CURSOR NE OTHERDSN, VOLUME)
    .NRET = LIB /* Reset data set counter */
    IF (&ZNRLIB = YES) /* If library retrieve was OK*/
      .CURSOR = MEMBER /* set cursor to member field*/
      &PROJECT = &ZNRPROJ /* set library variables from*/
      &GROUP1 = &ZNRGRP1 /* the variables set by */
      &GROUP2 = &ZNRGRP2 /* NRETRIEV */
      &GROUP3 = &ZNRGRP3
      &GROUP4 = &ZNRGRP4
      &TYPE = &ZNRTYPE
      &MEMBER = &ZNRMEM
      &OTHERDSN = &Z /* Blank out odsn field */
      &VOLUME = &Z /* Blank out volume field */
      .MSG = ISRDS013 /* Indicate good retrieval */
    ELSE .MSG = ISRDS011 /* Else bad library list */
  ELSE
    .NRET = DSN
    IF (&ZNRDS = YES) /* If dsname retrieve was OK */
      .CURSOR = OTHERDSN /* Move cursor to dsn name */
      &OTHERDSN = &ZNRODSN /* Set other dsn name */
      &VOL = &ZNRVOL /* Set volume variable */
      .MSG = ISRDS014 /* Indicate good retrieval */
    ELSE .MSG = ISRDS012 /* Else bad ds referral list */
)END

```

Figure 30. Example Panel Definition Enabling NRETRIEV

For more information about the .NRET control variable and the function pool variables to hold the data set name values, see [z/OS ISPF Dialog Developer's Guide and Reference](#).

Chapter 6. Getting ready to run on MVS

This topic helps you prepare to use ISPF data-element libraries. ISPF data elements include such things as panels and messages. Libraries to be accessed during processing of a dialog must be defined to ISPF. This topic describes the kinds of data-element libraries required when ISPF is active. It also describes and provides examples of how to define library data sets to ISPF, both before starting a session, and dynamically during a session.

Setting up ISPF libraries

To set up libraries for developing and testing dialogs, follow these steps:

1. Set up the panel, message, skeleton, table, and program libraries for the application. Allocate new partitioned data sets.
2. Create a CLIST or REXX command procedure that contains the necessary ALLOCATE statements to allocate the libraries. Concatenate the application libraries ahead of the libraries required by ISPF, as described in [“Library concatenation” on page 78](#).

Note: You can use the LIBDEF service to dynamically allocate libraries instead of allocating them before invoking ISPF. For more information see the [z/OS ISPF Services Guide](#).

3. Create the panels, messages, and skeletons by editing directly into the application libraries.
4. Create the dialog functions and ensure that the load modules are in libraries accessible to ISPF.

Functions coded as program modules *must* be link-edited. When a function is link-edited, the ISPLINK subroutine must be included (explicitly or by automatic call) in the load module. ISPLINK is distributed in load module format and can be placed in a system library for automatic call during link-edit.

5. Invoke the application. To do this, add an ISPSTART command to the command procedure created in step 2. The ISPSTART command should start the application using the appropriate PANEL, CMD, or PGM parameter. Users can start the application by using this command procedure or by selecting the application from the master menu or another menu.

Allocating required ISPF libraries

The libraries described in [Table 19 on page 135](#) are partitioned data sets required for operation of ISPF in the MVS/TSO environment:

<i>Table 19. Required Partitioned Data Sets</i>				
DDNAME	Description	RECFM	LRECL	BLKSIZE
ISPPLIB	Panel Library	FB	80	3120
ISPMLIB	Message Library	FB	80	3120
ISPSLIB	Skeleton Library	FB	80	3120
ISPTLIB	Table Input Library	FB	80	3120
ISPPROF	User Profile Library	FB	80	(see note)
SYSPROC	Command Procedures Lib	FB	80	3120

Note: The block size must be a multiple of 80. You can specify BLKSIZE=0 to use a system determined block size.

The panel, message, skeleton, and table input libraries are distributed with ISPF. As distributed, the libraries have the characteristics listed. These libraries can be reblocked by the installation to a larger block size. In addition, the panel, message, and skeleton libraries can be copied into a variable record

format. The maximum length records supported are 160 for panels, 80 for messages, and 255 for skeletons. If data sets having unequal record lengths are to be concatenated, the record format must be variable. If you have preprocessed any panels in the panel library, they must be reprocessed using the ISPPREP utility after changing the panel library's record size or record format. Preprocessed panels will not function correctly if copied directly to a data set with a different record size or format.

Table 20 on page 136 contains the LRECL limits which are enforced during ISPF initialization:

<i>Table 20. LRECL Limits during ISPF Initialization</i>				
DDNAME	Description	RECFM	Minimum LRECL	Maximum LRECL
ISPPLIB	Panel Library	FB VB	80 84	160 164
ISPMLIB	Message Library	FB VB	80 84	80 84
ISPSLIB	Skeleton Library	FB VB	80 84	255 259

The VB libraries require the LRECL to contain 4 extra bytes for the record descriptor word.

Note: Use of the BUFNO parameter on allocation of ISPF libraries is not supported.

Problems can occur when using file tailoring services together with other services (EDIT, COPY, ...) that result in modifying the data set members in the ISPSLIB concatenation. ISPSLIB is the input skeleton library, and it is assumed to be a static library. FTINCL obtains existing DCB/DEB information based on the last OPEN done against ISPSLIB by ISPF.

It is recommended that applications that use file tailoring and that also modify members of ISPSLIB use the LIBDEF service for ISPSLIB to point to the application's skeleton library. Additionally, the application should check for any changes to the data set information (DCB/DEB) before invoking file tailoring services. If there has been a change, then the application should issue a NULL LIBDEF for ISPSLIB and then re-issue the original LIBDEF for ISPSLIB. This forces the ISPSLIB library to close and then re-open.

ISPF assumes that ISPSLIB is a static library. When you make allocations, consider limiting the possibility of extents by allocating the skeleton with the largest optimal block size.

There is a separate profile library for each end user. Its contents are dynamically generated and updated while ISPF is running. There is also a unique profile library for each national language version.

The recommended data set names for these libraries are shown here. Check with your ISPF system administrator to determine if these are the actual data set names used at your installation.

DDNAME

DSNAME

ISPPLIB

ISP.SISPPxxx

ISPMLIB

ISP.SISPMxxx

ISPSLIB

ISP.SISPSxxx ISP.SISPSLIB

ISPTLIB

ISP.SISPTxxx

ISPPROF

User-selected. Unique for each national language used.

SYSPROC

ISP.SISPEXEC ISP.SISPCLIB

xxx is a placeholder that represents the specific language you are using:

xxx

Language

ENU

US English

JPN

Japanese

ENP

Uppercase English.

You should concatenate application libraries for panels, messages, skeletons, and tables ahead of the corresponding ISPF libraries using the ddnames shown. The application libraries must have the same data set characteristics as the required libraries, as described. For example, assume that application XYZ uses these partitioned data sets for panels, messages, skeletons, and tables:

```
XYZ.PANELS
XYZ.MSGS
XYZ.SKELS
XYZ.TABLES
```

You would issue these allocations:

```
//ISPPLIB DD DSN=XYZ.PANELS,DISP=SHR
//        DD DSN=ISP.SISPPxxx,DISP=SHR

//ISPM LIB DD DSN=XYZ.MSGS,DISP=SHR
//        DD DSN=ISP.SISPMxxx,DISP=SHR

//ISPSLIB DD DSN=XYZ.SKELS,DISP=SHR
//        DD DSN=ISP.SISPSxxx,DISP=SHR
//        DD DSN=ISP.SISPSLIB,DISP=SHR

//ISPTLIB DD DSN=XYZ.TABLES,DISP=SHR
//        DD DSN=ISP.SISPTENU,DISP=SHR

//ISPPROF DD DSN=USERAA.ISPF.PROFILE,DISP=OLD

//SYSPROC DD DSN=ISP.SISPEXEC,DISP=SHR
//        DD DSN=ISP.SISPCLIB,DISP=SHR
```

These allocations must be performed before you start ISPF. They can be done in the user's TSO LOGON procedure by using DD statements, as shown, or in a CLIST or REXX command procedure by using the corresponding TSO ALLOCATE commands.

Allocating optional ISPF table libraries

The data set described in [Table 21 on page 137](#) is optional. You must allocate it only if an application uses table services.

Table 21. Table Data Sets				
DDNAME	Description	RECFM	LRECL	BLKSIZE
ISPTABL	Table Output Library	FB	80	(See note)

Note: The block size must be a multiple of 80. You can specify BLKSIZE=0 to use a system determined block size.

The table output library must be a partitioned data set. The ISPTABL ddname that defines the table *output* library can specify the same data set as the table *input* library, ddname ISPTLIB. The first data set in the ISPTLIB concatenation should be the same as the data set used for ISPTABL. This ensures predictable behavior of dialogs that use table services without specifying the LIBRARY keyword. The output and input data sets must be the same if the updated version of a table is to be reprocessed by the same dialog that updated it.

You must allocate the table output library to ddname ISPTABL before using table services. ISPF includes ENQ logic to prevent simultaneous updates. ISPTABL must *not* specify a concatenated sequence of data sets. It is possible to have the dialog dynamically allocate ISPTABL and free it upon completion. However,

in an environment in which multiple dialogs can be executing, it is more practical to permanently allocate ISPTABL. ISPTABL should be allocated with DISP=SHR, even though it specifies an output data set. An application can use the ISPTABL allocation if it already exists or use a LIBDEF for ISPTABL so that only this application is affected.

For more information about table locking and allocation, see the "Protecting Table Resources" topic in *z/OS ISPF Dialog Developer's Guide and Reference*.

Allocating optional file tailoring ISPF libraries

The data set described in [Table 22 on page 138](#) is optional. You must allocate it only if an application uses file-tailoring services.

Table 22. File-Tailoring Data Sets				
DDNAME	Description	RECFM	LRECL	BLKSIZE
ISPFIL	File-Tailoring Output	FB/VB	255 max.	

File-tailoring output can be written to a temporary sequential data set provided by ISPF. The temporary data set is allocated automatically, so there is no need for the dialog to allocate a data set. The fully qualified name of the temporary data set is available in system variable ZTEMPF. The ddname is available in ZTEMPN. This temporary data set always uses 80-character fixed-length records.

If the temporary data set is not used, file-tailoring output can be written to either a partitioned or a sequential data set. Both fixed-length and variable-length records are permitted. The maximum logical record length is 255 bytes. A data set must be allocated to ddname ISPFIL before starting file-tailoring services. The dialog can dynamically allocate the output library, and can free it upon completion.

For a sequential data set, ISPFIL must be allocated with DISP=OLD. For a partitioned data set, ISPFIL can be allocated with DISP=SHR. ISPFIL must not specify a concatenated sequence of data sets.

Allocating CLIST, REXX, and program libraries

Dialog functions that are coded as CLIST or REXX command procedures can be in a procedure library that has been allocated to ddname SYSPROC before starting ISPF. A REXX command procedure can also be allocated to the SYSEXEC ddname. The SYSEXEC ddname is described in *z/OS TSO/E REXX User's Guide*.

You must link-edit dialog functions that have been coded as programs. The load module can reside in a step library, a system link library (such as SYS1.LINKLIB), or the link pack area. Alternatively, it can be in a partitioned data set (RECFM=U) allocated to ddname ISPLLIB(DISP=SHR). This library (the ISPF Link Library) can be used for testing new dialogs that contain program-coded functions. If used, it must be allocated prior to starting ISPF. ISPLLIB can specify a concatenated sequence of partitioned data sets.

ISPLLIB is used as a task library when fetching load modules. It is searched before the system link libraries and the link pack area. If ISPF product modules are kept in a step library and a task library (ISPLLIB) is used, the data sets containing the ISPF product modules should be included in the ISPLLIB concatenation sequence as well as the step library concatenation. If a program is to be used in split-screen mode it should be linked as reentrant or nonreusable.

If you are using the z/OS UNIX Directory List Utility, the Language Environment® run-time library data sets SCEERUN and SCEERUN2 must be in STEPLIB or LNKLIST. The modules in these data sets are not searched for in ISPLLIB.

Allocating DBCS libraries

DBCS users can use alternate message, panel, and skeleton libraries. To do so, the DBCS versions of the libraries must have been allocated using these ddnames:

ISPMALT

Alternate message library

ISPPALT

Alternate panel library

ISPSALT

Alternate skeleton library.

You can allocate these libraries when you allocate the distributed ISPF libraries. If the alternate libraries are allocated and the terminal has DBCS capability, ISPF uses the alternate libraries. If either of these two conditions is not satisfied, ISPF uses the distributed libraries.

Selecting the National Language for ISPF sessions

An ISPF session can be run in any installation-supported national language. Before starting ISPF with the ISPSTART command, a user must perform the necessary allocations. For example, command procedure ISPFE might be issued for an English session.

The same set of ddnames (ISPPLIB, ISPMLIB, ISPSLIB, ISPTLIB, and ISPPROF) must be allocated regardless of the command procedure used. At logon time, the necessary allocations for the national language at an installation can be performed by a CLIST or REXX logon procedure.

The language in which a session runs reflects the value (not always the full language name) in the read-only system variable ZLANG, which is available to dialogs running under ISPF. The default value for session languages is specified when ISPF is installed, and is discussed in *z/OS ISPF Planning and Customizing*. You can override the default session language with an alternate language keyword on the ISPSTART command. See the *z/OS ISPF Dialog Developer's Guide and Reference* for the exact syntax to use.

By specifying a default session language, the installation can ensure that both ISPF initialization messages and the normal session messages are in the default language. Even if you override the session default language with an alternate language using an ISPSTART language keyword, some of the first initialization messages, issued before the command scan, are in the default session language. However, any messages issued after processing of the ISPSTART parameters are in the language specified by the keyword.

If the terminal does not support DBCS, and the default language (or the alternate language selected by the language keyword) requires DBCS, ISPF uses English as the session language.

In cases where the session language requires DBCS, certain messages are always issued in English. These messages are:

- ISPF Main taskabend.
- ISPF Subtaskabend.
- The following required module for the selected language could not be loaded.
- ISPF command not allowed. You are already under ISPF.
- Invalid environment; TSO/E version 2.1 or later required.

Appendix A. Listing formats

This topic describes and displays the kinds of listings you can produce using ISPF. The sample listings shown are for illustration purposes only. They are not intended to be exact replicas, because printouts of ISPF listings vary according to the kind of printer you are using.

Source and index listings

If autolist mode is on, the ISPF editor automatically generates a source listing when you finish editing. You can also get source listings and index listings by using these utility options:

Library (3.1)

P - Print member

Move/Copy (3.3)

CP - Copy and print

MP - Move and print

Data Set List (3.4)

P - Print data set list

PV - Print VTOC entries

Hardcopy (3.6)

PK - Print and keep data set

PD - Print and delete data set

Outlist (3.8)

P - Print job output

Source listings

Figure 31 on page 141 shows a sample source listing.

	PROJECT: ISPFDEMO	MEMBER: COINS	DATE: 86/07/30	
	GROUP: MYLIB	LEVEL: 01.04	TIME: 17:22	
	TYPE: PLI	USERID: USERID	PAGE 01 OF 01	
START				MOD
COL	-----1-----2-----3-----4-----5-----6-----7-----8-----			FLAGS
2	COINS		00010001	*
4	PROCEDURE OPTIONS (MAIN):		00020000	
6	DECLARE		00030000	
8	COUNT		00040000	
8	HALVES		00050000	
8	QUARTERS		00060003	*
8	DIMES		00070000	
8	NICKELS		00080004	**
8	SYSPRINT		00090000	
6	DO HALVES = 100 TO 0 BY -50;		00100000	
8	DO QUARTERS = (100 - HALVES) TO 0 BY -25;		00110000	
10	DO DIMES = ((100 - HALVES - QUARTERS)/10)*10 TO 0 BY -10;		00120000	
12	NICKELS = 100 - HALVES - QUARTERS - DIMES;		00130000	
12	PUT FILE (SYSPRINT) DATA (COUNT, HALVES, QUARTERS, DIMES, NICKELS);		00140000	
12	COUNT = COUNT + 1;		00150000	
10	END;		00160000	
8	END;		00170000	
6	END;		00180000	
4	END COINS;		00190001	*

Figure 31. Sample Source Listing

Information at the top of the page includes project, group, type, and member name, current version and modification level, user ID, date and time that the listing was produced, and page number.

A column-positioning line is printed following the heading and preceding the actual data. The *start column* is printed to the left of each line, indicating the position of the first character in each line that is not a blank.

For ISPF library members with statistics, asterisks are either printed or not printed to the right of each line according to the setting of the modification flag, as follows:

- If the modification flag (columns 79-80) in the line is 00, no asterisks are printed.
- If the modification flag is nonzero but differs from the current modification level of the member, a single asterisk (*) is printed.
- If the modification flag is nonzero and has the same value as the current modification level of the member, two asterisks (**) are printed.

The asterisks allow you to scan the listing quickly for lines that were added or changed since the version was created (*) and for lines that were added or changed during the last update (**).

Index listings

ISPF provides index listings at your request through the X (Print index listing) option of the Library utility (3.1), or the X or PX options of the Data Set List utility (3.4).

Index listings for source libraries

Figure 32 on page 142 shows a sample index listing for an ISPF library.

```

DATASET:      ISPF.TEMP.PANELS                                DATE: 18/09/19
                                                         TIME: 15:34
                                                         PAGE: 001

GENERAL DATA:
MANAGEMENT CLASS: NOACT          RECORD FORMAT: FB
STORAGE CLASS:   NORMAL         RECORD LENGTH: 80
DATA CLASS:      **None**       BLOCK SIZE: 27,920
VOLUME SERIAL:   CPDLB0         1ST EXTENT SIZE: 14
DEVICE TYPE:     3390           SECONDARY QUAN: 5
ORGANIZATION:    PO
DATA SET NAME TYPE: PDS
CREATION DATE:   2015/06/10
EXPIRATION DATE: ***None***
DATA SET ENCRYPTION: NO
EXTENDED ATTRIBUTE:
CREATE JOBNAME:
CREATE STEPNAME:

CURRENT ALLOCATION:
56 BLOCKS
8 EXTENTS
5 DIRECTORY BLOCKS

CURRENT UTILIZATION:
52 BLOCKS
8 EXTENTS
2 DIRECTORY BLOCKS
8 MEMBERS

MEMBER      TTR    VERS.MOD    CREATION    DATE AND TIME    CURRENT    INITIAL    MODIFIED    USER
NAME        (HEX)   LEVEL      DATE          LAST MODIFIED    NO. LINES  NO. LINES  NO. LINES  ID
ISRUADCS    001909    01.00     2018/04/23    2018/04/23 13:19:13    21         21         0         USER123
ISRUAIPS    001907    01.00     2018/04/23    2018/04/23 13:18:42    35         35         0         USER123
ISRUAI50    001903    01.00     2018/04/23    2018/04/23 12:54:14    33         33         0         USER123
ISRUAI5X    001905    01.00     2018/04/23    2018/04/23 13:02:12   136        136         0         USER123
ISR01734    000102    01.13     2015/06/10    2016/09/29 15:58:42    32         27         0         USER123
ISR01735    000009    01.01     2015/06/10    2015/06/10 15:15:15    27         27         0         USER123
ISR01739    000E01    01.07     2017/12/07    2017/12/08 08:54:36   654        843         0         USER123
ISR01750    001801    01.11     2017/12/07    2017/12/08 12:03:05   871        843         0         USER123
MAXIMUMS:   01.13     2018/04/23    2018/04/23 13:19:13   1809        843         0
TOTALS:
END OF MEMBER LIST

```

Figure 32. Sample Index Listing - Managed Source Library

The sample index listing shown here is for a source library that is managed by the Storage Management Subsystem.

Note: This index listing format is available only when DFSMSdfp is installed and available, and when Storage Management Subsystem is active.

The heading information includes:

- Project, group (library), and type
- Date and time the listing was produced
- Page number.

This is followed by general information about the data set, including current space allocation and utilization. The only differences between this index listing and one for a non-managed source library are:

- Management, storage, and data classes are shown under the GENERAL DATA heading.
- The 1st extent size, secondary quantity, current allocation, and current utilization sizes can be shown in bytes, kilobytes, or megabytes, in addition to tracks, blocks, or cylinders.

The 1st extent quantity, secondary quantity, current allocation, and current utilization sizes are shown in tracks for data sets that are allocated in bytes, kilobytes, or megabytes on a non-managed volume. Following this, the member name and statistics are printed for each member in the data set, arranged in alphabetical order. For sequential data sets, the index listing contains only the general information.

Index listings for load libraries

An index listing for an OBJ library is similar to an index listing for a source library, except that no statistics are maintained. A sample index listing for a LOAD library that is managed by the Storage Management Subsystem is shown in [Figure 33 on page 143](#).

Note: This index listing format is available only when DFSMSdfp is installed and available, and when Storage Management Subsystem is active.

Here, the module attributes are printed to the right of each member name.

```

DATASET:      ISPF.TEMP.LOAD                                DATE: 18/09/19
                                                         TIME: 15:13
                                                         PAGE: 001

GENERAL DATA:
MANAGEMENT CLASS: NOACT
STORAGE CLASS:   NORMAL
DATA CLASS:      ***None***
VOLUME SERIAL:   CPDLB0
DEVICE TYPE:     3390
ORGANIZATION:    PO
DATA SET NAME TYPE: LIBRARY
CREATION DATE:   2018/09/19
EXPIRATION DATE: ***None***
DATA SET ENCRYPTION: NO
EXTENDED ATTRIBUTE:
CREATE JOBNAME:
CREATE STEPNAME:

GENERAL DATA:
RECORD FORMAT:    U
RECORD LENGTH:    0
BLOCK SIZE:       32,760
1ST EXTENT SIZE:  390
SECONDARY QUAN:   250

CURRENT ALLOCATION:
390 BLOCKS
1 EXTENT
50 DIRECTORY BLOCKS

CURRENT UTILIZATION:
70 BLOCKS
1 EXTENT
2 DIRECTORY BLOCKS
10 MEMBERS

MEMBER NAME      ALIAS OF      SSI      SIZE (HEX)      SIZE (DEC)      ENTRY POINT      TTR (HEX)      AUTH CODE      AMODE      RMODE      MODULE ATTRIBUTES
ISPCIP           ISPSUBS      82390274 001063A8 1,074,088 000A9D78 000107 00 31 ANY RN RU
ISPSUBS          82390274 001063A8 1,074,088 00000000 000107 00 31 ANY RN RU
ISRPLEX          00015860 88,160 00000008 00420A 00 31 ANY RN RU
ISRSEPRM         00013D48 81,224 00000008 003F0B 00 31 ANY RN RU
ISRSFM           00008FE8 36,840 00000008 003E09 00 31 ANY RN RU
ISRSSM           0000A640 42,560 00000008 003C0C 00 31 ANY RN RU
ISRSUBS          82560449 000F6200 1,008,128 00000000 002314 00 31 ANY RN RU
ISRUDA           82560435 000541C0 344,512 00000008 001A08 00 31 ANY RN RU
ISRUDL           82560435 000541C0 344,512 0002E1F8 001A08 00 31 ANY RN RU
ISRUOLP          00002AB8 10,936 00000000 00230A 00 31 ANY RN RU
TOTALS:          0028FDF0 2,686,448
END OF MEMBER LIST

MODULE ATTRIBUTE CODES:
NX      NOT EXECUTABLE
OL      DATA ONLY, NOT LOADABLE
OV      IN OVERLAY STRUCTURE
RF      REFRESHABLE
RN      REENTERABLE
RU      REUSABLE
TS      MODULE CONTAINS TEST INFORMATION
SC      SCATTER LOAD

```

Figure 33. Sample Index Listing - Managed Load Library

The only differences between this index listing and one for a non-managed LOAD library are:

- Management, storage, and data classes are shown under the GENERAL DATA heading.
- The 1st extent size, secondary quantity, current allocation, and current utilization sizes can be shown in bytes, kilobytes, or megabytes, in addition to tracks, blocks, or cylinders.

As in the source library index listing, the 1st extent quantity, secondary quantity, current allocation, and current utilization sizes are shown in tracks for data sets that are allocated in bytes, kilobytes, or megabytes on a non-managed volume.

ISPF log listings

Figure 34 on page 144 shows a sample ISPF log listing. The log contains a message for each significant user action, such as saving edited data, moving members from one data set to another, or submitting a batch job.

	TIME	*** ISPF TRANSACTION LOG **	USERID: USERID	DATE: 86/06/29	PAGE: 1
	17:11	START OF ISPF SESSION LOG #64	-----		
	17:12	UTILITY - ALLOCATE	- ISPFDEMO.NEWLIB,PLI	ALLOCATED ON VOLUME WORK 97	
	17:13	UTILITY - MOVE/COPY	- ISPFDEMO.MYLIB,PLI	(ACCOUNT) COPIED	
	17:13			TO ISPFDEMO.NEWLIB,PLI (ACCTXX)	
	17:13	UTILITY - MOVE/COPY	- ISPFDEMO.MYLIB,PLI	(ACCT1) COPIED	
	17:13			TO ISPFDEMO.NEWLIB,PLI (ACCTYY)	
	17:13	UTILITY - MOVE COPY	- ISPFDEMO.MYLIB,PLI	(ACCT2) COPIED	
	17:13			TO ISPFDEMO.NEWLIB,PLI (ACCTZZ)	
	17:13	UTILITY - MOVE COPY	- ISPFDEMO.MYLIB,PLI	(COINS) COPIED	
	17:13			TO ISPFDEMO.NEWLIB,PLI (COINS)	
	17:14	EDIT - SAVE	- ISPFDEMO.NEWLIB,PLI	(COINS) - MEMBER SAVED	
	17:15	EDIT - CREATE	- ISPFDEMO.NEWLIB,PLI	(ACCTNEW) - MEMBER CREATED	
	17:15	EDIT - SAVE	- ISPFDEMO.NEWLIB,PLI	(ACCTXX) - MEMBER SAVED	
	17:15	EDIT - SAVE	- ISPFDEMO.NEWLIB,PLI	(ACCTYY) - MEMBER SAVED	
	17:16	EDIT - SAVE	- ISPFDEMO.NEWLIB,PLI	(ACCTZZ) - MEMBER SAVED	
	17:17	UTILITY - DELETE	- ISPFDEMO.NEWLIB,PLI	(ACCTZZ) DELETED	
	17:17	TSO - COMMAND	- LISTC		
	17:17	UTILITY - ALLOCATE	- ISPFDEMO.NEWLIB,OBJ	ALLOCATED ON VOLUME WORK98	
	17:19	JOB - USER8	- PLI OPT COMPILE --	TO ISPFDEMO.NEWLIB,OBJ (COINS)	
	17:19	JOB - USER8	- SUBMITTED		
	17:20	END OF ISPF SESSION LOG #64	-----		

Figure 34. Sample ISPF Log Listing

Member list listings

This topic shows samples of member list listings created by the SAVE command. With this command, you can create listings for both source and load libraries.

The sample listings show the format used when you do not specify a list ID.

Member list listings for source libraries

Figure 35 on page 145 shows a sample member list listing for a source library. These listings contain the relative block address of each member, shown in hexadecimal format, and other characteristics when available.

TIME	*** ISPF TRANSACTION LOG ***		USERID: USERID	DATE: 86/06/29	PAGE: 1
17:11	START OF ISPF SESSION LOG #64 -----				
17:12	UTILITY - ALLOCATE	- ISPFDEMO.NEWLIB.PLI	ALLOCATED ON VOLUME WORK 97		
17:13	UTILITY - MOVE/COPY	- ISPFDEMO.MYLIB.PLI	(ACCOUNT) COPIED		
17:13			TO ISPFDEMO.NEWLIB.PLI (ACCTXX)		
17:13	UTILITY - MOVE/COPY	- ISPFDEMO.MYLIB.PLI	(ACCT1) COPIED		
17:13			TO ISPFDEMO.NEWLIB.PLI (ACCTYY)		
17:13	UTILITY - MOVE COPY	- ISPFDEMO.MYLIB.PLI	(ACCT2) COPIED		
17:13			TO ISPFDEMO.NEWLIB.PLI (ACCTZZ)		
17:13	UTILITY - MOVE COPY	- ISPFDEMO.MYLIB.PLI	(COINS) COPIED		
17:13			TO ISPFDEMO.NEWLIB.PLI (COINS)		
17:14	EDIT - SAVE	- ISPFDEMO.NEWLIB.PLI	(COINS) - MEMBER SAVED		
17:15	EDIT - CREATE	- ISPFDEMO.NEWLIB.PLI	(ACCTNEW) - MEMBER CREATED		
17:15	EDIT - SAVE	- ISPFDEMO.NEWLIB.PLI	(ACCTXX) - MEMBER SAVED		
17:15	EDIT - SAVE	- ISPFDEMO.NEWLIB.PLI	(ACCTYY) - MEMBER SAVED		
17:16	EDIT - SAVE	- ISPFDEMO.NEWLIB.PLI	(ACCTZZ) - MEMBER SAVED		
17:17	UTILITY - DELETE	- ISPFDEMO.NEWLIB.PLI	(ACCTZZ) DELETED		
17:17	TSO - COMMAND	- LISTC			
17:17	UTILITY - ALLOCATE	- ISPFDEMO.NEWLIB.OBJ	ALLOCATED ON VOLUME WORK98		
17:19	JOB - USER8	- PLI OPT COMPILE --	TO ISPFDEMO.NEWLIB.OBJ (COINS)		
17:19	JOB - USER8	- SUBMITTED			
17:20	END OF ISPF SESSION LOG #64 -----				

Figure 35. Sample Member List Listing for a Source Library

Member list listings for load libraries

Figure 36 on page 145 shows a sample member list listing for a source library. These listings contain the size of each load module, shown in hexadecimal format, and other characteristics when available.

DATA SET: ISPF.PRIVATE.PLS									DATE: 99/03/15
									TIME: 10:53
									PAGE: 001
MEMBER	TTR	VERS.MOD	CREATION	DATE AND TIME	CURRENT	INITIAL	MODIFIED	USER	
NAME	(HEX)	LEVEL	DATE	LAST MODIFIED	NO. LINES	NO. LINES	NO. LINES	ID	
\$FORMAT	006A01	01,00	1997/06/03	1997/06/03 10:36:39	3376	3376	0	PDFTOOL	
ACCTEX2	005E05	01,00	1997/10/09	1997/10/09 13:06:00	46	43	3	P020136	
ALLMEMS	002B03	01,00	1997/10/09	1997/10/09 13:06:00	117	112	20	P020136	
ALLMEM2	001C06	01,00	1997/10/09	1997/10/09 13:06:00	135	135	0	P020136	
APAR3	005501	01,00	1997/10/09	1997/10/09 13:06:00	250	251	0	P020136	
BINDER	003501	01,06	1994/02/17	1994/02/17 15:20:38	74	46	44	P020136	
CALLER	001B01	01,04	1992/01/30	1992/01/30 12:41:16	165	164	7	TSTLMF4	
EXPDATE1	013208	01,00	1996/11/10	2005/05/05 12:12:00	1	1	0	PDFTOOL	
ISRCNFIG	009F01								
END OF MEMBER LIST									

Figure 36. Sample Member List Listing for a Load Library

Formats for member list listings

Shown here is the format used by the SAVE command to create a member list listing for a source library. The members of a source library have formatted records (RECFM=U).

<i>Table 23. Format of Source Library Member List Listing</i>		
Starting Column	Length in Characters	Description
4	8	Member name
19	6	Relative block address in hexadecimal format
25	2	Version number
28	2	Modification level
31	8	Creation date
40	8	Date last modified
49	5	Time last modified
55	5	Current number of lines
61	5	Initial number of lines
67	5	Number of modified lines
73	7	User ID

Shown here is the format used by the SAVE command to create a member list listing for a load library. The members of a load library have unformatted records (RECFM=U).

<i>Table 24. Format of Load Library Member List Listing</i>		
Starting Column	Length in Characters	Description
4	8	Member name
24	6	Load module size in hexadecimal format
33	6	Load module relative block address in hexadecimal format
40	8	Alias
49	2	Authorization code
53	3	Addressing mode
56	3	Residency mode
61	18	Load module attributes

Data set list listings

The sample listing in [Figure 37 on page 147](#) shows the format used when you do not specify a data set list ID.

LISTING OF DATA SETS										DATE: 87/04/14
										TIME: 28:06
										PAGE 1
DATA SET NAME	VOLUME	ORG	RECFM	LRECL	BLKSZ	TRKS	\$USED	XT	CREATED	
USERID.CLIST	HSMPOC	PO-E	VB	255	6160	1	100	1	1985/10/03	
USERID.DB2X.DXT210.DVRIMEXE	HSMPOF	PO	FB	80	3120	15	6	1	1987/03/05	
USERID.DB2X.DXT210.DVRJEDIE	HSMPOF	PO	FB	30	6160	15	13	1	1987/03/05	
USERID.EXAMPLE.DATASETS	HSMPO7	PS	FB	132	6072	19	5	1	1987/04/14	
USERID.FWB.CLIST	MIGRAT									
USERID.FWB.SCRIPT	HSMPO7	PO	VB		3120	1	100	1	1986/03/19	
USERID.FWB.TABLES	MIGRAT			30						
USERID.ISPTABL	HSMPOF	PO	FB		3120	1	100	1	1987/02/02	
USERID.LOG.MISC	MIGRAT			80						
USERID.MASTER.ISPROF	MIGRAT									
USERID.PRIVATE.CLIST	HSMPOC	PO-E	VB		6160	1	100	1	1986/10/03	
USERID.PRIVATE.LOAD	HSMPOC	PO	U		6144	1	100	1	1986/10/03	
USERID.PRIVATE.MSGS	HSMPOC	PO	FB	255	6160	1	100	1	1986/10/03	
USERID.PRIVATE.PANELS	HSMPOC	PO	FB	0	6160	2	100	1	1986/10/03	
USERID.PRIVATE.SKELS	HSMPOC	PO	FB		6160	1	100	1	1986/10/03	
USERID.PRIVATE.TABLES	HSMPOC	PO	FB	30	6160	2	100	1	1986/10/03	
USERID.SMALL.FIXED	HSMPOB	PO	FB	80	600	1	100	1	1987/04/09	
USERID.TEST.CLIST	MIGRAT			80						
USERID.TEST.MSGS	MIGRAT									
USERID.TEST.SCRIPT	MIGRAT			60						
USERID.TEST1.SCRIPT	MIGRAT									
USERID.TEST2.SCRIPT	MIGRAT									

Figure 37. Sample Data Set List Listing



Format for data set list listings

Table 25 on page 147 shows the format of the data set list written by the SAVE command when a data set list ID is specified.

Table 25. Format of Data Set List Listing		
Starting Column	Length in Characters	Description
1	44	Data set name
46	7	Volume and volume indicator
53	4	Data set organization
58	5	Data set record format
64	5	Data set logical record length
70	5	Data set block size
76	6	Data set size in tracks
83	3	Percentage of used tracks or pages (PDSE)
87	3	Number of extents used
91	8	Device type
100	10	Creation date
111	10	Expiration date
122	10	Last reference date

Appendix B. APL and TEXT character conversion

You can use APL keyboards for all models of 3270 terminals, and TEXT keyboards for 3278 and 3279 terminals with ISPF. [Figure 38 on page 149](#) and [Figure 39 on page 150](#) show that the 2-byte transmission codes for APL and TEXT characters are converted by ISPF into 1-byte codes for internal storage.

-  3278 only; character is not valid on 3277
-  National use character. Graphics shown are for U.S. Keyboards; graphics differ in other countries.

00																
10																
20																
30																
40	sp	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>	<u>N</u>	<u>O</u>
50	&	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>	<u>N</u>	<u>O</u>	<u>P</u>	<u>Q</u>	<u>R</u>	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>
60	—	/	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>	<u>Y</u>	<u>Z</u>	<u> </u>	<u>,</u>	<u>%</u>	<u>_</u>	<u>></u>	<u>?</u>
70		^	..						v	\	:	#	@	!	=	
80	~	a	b	c	d	e	f	g	h	i	↑	↓	≤	┌	└	→
90	□	j	k	l	m	n	o	p	q	r	⌋	⌈		o		←
A0	—	~	s	t	u	v	w	x	y	z	∩	∪	⊥	[≥	◦
B0	α	ε	ℓ	ρ	ω		x	\	÷		▽	△	T]	≠	
C0	{	A	B	C	D	E	F	G	H	I	∞	∞		Φ		⊙
D0	}	J	K	L	M	N	O	P	Q	R	I	!	ψ	Δ	▢	⊙
E0	\		S	T	U	V	W	X	Y	Z	/	\		⊖	⊕	⊗
F0	0	1	2	3	4	5	6	7	8	9		~	Δ	⊗	⊕	
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

Figure 38. Internal Character Representations for APL Keyboards

3278 only; character is not valid on 3277

00															
10															
20															
30															
40	sp									€	.	<	(+	
50	&	1	2	3					↓	!	\$	*)	;	⌈
60	—	/									,	%	—	>	?
70	n	o							\	:	#	@	!	=	"
80		a	b	c	d	e	f	g	h	i	↑	{	≤	(+
90	□	j	k	l	m	n	o	p	q	r		}	□)	±
A0	—	~	s	t	u	v	w	x	y	z	⊕	└	┌	[•
B0	0	1	2	3	4	5	6	7	8	9	▽	└	┌]	≠
C0	{	A	B	C	D	E	F	G	H	I	Δ	⊥	⊤	∇	÷
D0	}	J	K	L	M	N	O	P	Q	R	⊞	Δ	§	¶	←
E0	\	\	S	T	U	V	W	X	Y	Z	∇	└	┌	⊞	⊞
F0		1	2	3	4	5	6	7	8	9		└	⊞	⊞	└
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E
															F

Figure 39. Internal Character Representations for Text Keyboards

Appendix C. Abbreviations for commands and other values

The list shown in “[Command abbreviations](#)” on page 151 includes the commands, field values, keywords/operands, and scroll amounts that can be abbreviated, followed by the allowable abbreviations. To improve readability, avoid using abbreviations in edit macros.

Command abbreviations

BACK BROWSE CANCEL COLUMNS CONFIRM	B BRO CAN COLS CON	COL C		
DISPLAY FIND INDEX LOCATE RESUME	DISPL F I LOC RES	DISP L	DIS	
SELECT SHOWCMD SKIP TOP UP	SEL SHOW S T U	S		

Field value abbreviations

%USED AFTER ALIAS-OF ATTRIBUTES BEFORE	% AFT ALIAS ATTR BEF	A B		
BLOCK BOTTOM CHANGED CREATED CYLINDER	BLKS BOT CHA CRE CYLS	B CHG	C	
DEVICE EXPIRES GET MESSAGE NO	DEV EXP G MES N			
PUT REFERRED TOP TRACK VOLUME YES	P REF T TRKS VOL Y	0		

Keyword/Operand, Scroll Amount, and Programming Language Abbreviations

CHANGE CHARS	CHA CHAR	CHG	C
-----------------	-------------	-----	---

Keyword/Operand Abbreviations

COBOL DISPLAY	COB DISPL	DIS
ERROR LABELS PREFIX SPECIAL	ERR LABEL PRE SPE	LAB
STANDARD SUFFIX VERTICAL VOLUME	STD SUF VERT VOL	

Scroll amount abbreviations

CUR DATA HALF MAX PAGE	CSR D H M P	C
------------------------------------	-------------------------	---

Programming language abbreviations

ASSEMBLER	ASSEMBLE	ASSEM	ASM
COBOL	COB		
FORTTRAN	FORT	FOR	FTN
PASCAL	PAS		
PLI	PLIOPT	PL1	
SCRIPT	SCR	TEXT	

Appendix D. Allocation data sets

ISPF issues ALLOC commands based on the ISPF libraries, data set names, list IDs, options, and additional input libraries you enter on the Foreground Assembler H and Foreground VS COBOL II Compile panels. All allocations are done before Assembler H and the VS COBOL II compiler are called.

Because Assembler H and VS COBOL II do not provide a language prompter, ISPF allocates the required data sets for you. Subsequent topics describe the data sets ISPF allocates when you use Assembler H or the VS COBOL II compiler.

SYSIN data set

The SYSIN data set is the main input into Assembler H and VS COBOL II. It contains the ISPF libraries or other partitioned or sequential data sets that you enter on the Foreground Assembler H and VS COBOL II Compile panels. This data set is used to find the member that contains the program to be assembled or compiled. For a PDS, the ALLOC command would be:

```
ALLOC FI(SYSIN) DA('proj.lib.type(mem)')
```

For a sequential data set, the ALLOC command would be:

```
ALLOC FI(SYSIN) DA('proj.lib.type')
```

In both commands, `lib` is the library in which the member or data set was found.

SYSLIB data set

The SYSLIB data set contains the ISPF library concatenation sequence used to resolve any copy statements specified in your program. It contains the ISPF libraries or other partitioned or sequential data sets and the additional input libraries you specify on the Foreground Assembler H and VS COBOL II Compile panels. For example:

```
ALLOC FI(SYSLIB) DA('SYS1.MACLIB','proj.lib1.type',...  
'proj.lib4.type','additional lib1','additional lib2')
```

SYSPRINT data set

The SYSPRINT data set contains the generated output listing. The entry in the List ID field determines the destination of the output listing. If you enter a name in the List ID field, the output listing is stored in a sequential data set:

```
ALLOC FI(SYSPRINT) DA('prefix.listid.LIST')
```

where `listid` is the name entered in the List ID field. However, if you leave the List ID field blank, ISPF uses the name of the member being assembled or compiled instead of the list ID:

```
ALLOC FI(SYSPRINT) DA('prefix.member.LIST')
```

If you enter an asterisk (*) in the List ID field, ISPF displays the output listing at your terminal, using this command:

```
ALLOC FI(SYSPRINT) DA(*)
```

See the information about list data sets in the Foreground (Option 4) topic in the [z/OS ISPF User's Guide Vol II](#) for more information.

SYSTEM data set

The SYSTEM data set contains a summary of the information in the listing data set (SYSPRINT). It is displayed at the terminal if the TERM option is used:

```
ALLOC FI(SYSTEM) DA(*)
```

SYSLIN data set

The SYSLIN data set must be preallocated before running Foreground (option 4) or Batch (option 5). The SYSLIN data set contains the object module. This object module will be the input when you link-edit. For a PDS, the ALLOC command would be:

```
ALLOC FI(SYSLIN) DA('proj.lib1.OBJ(mem)')
```

For a sequential data set, the ALLOC command would be:

```
ALLOC FI(SYSLIN) DA('proj.lib1.OBJ')
```

SYSPUNCH data set

The SYSPUNCH data set is the same as the SYSLIN data set. ISPF does not use this data set. The DUMMY parameter on the ALLOC statement means it should not be used:

```
ALLOC FI(SYSPUNCH) DUMMY
```

SYSUT1 data set

The SYSUT1 data set is a temporary utility data set used during processing. It is deleted after it is used.

For Assembler H, the format is:

```
ALLOC FI(SYSUT1) UNIT(SYSDA) NEW DELETE
```

For VS COBOL II, the format is:

```
ALLOC FI(SYSUT1) UNIT(SYSDA) NEW DELETE SPACE(1,1) CYLINDER
```

SYSUT2 to SYSUT7 data sets

The SYSUT2, SYSUT3, ..., SYSUT7 data sets are temporary utility data sets used by VS COBOL II only during processing. They are deleted after they are used:

```
ALLOC FI(SYSUT2) UNIT(SYSDA) NEW DELETE SPACE(1,1) CYLINDER
ALLOC FI(SYSUT3) UNIT(SYSDA) NEW DELETE SPACE(1,1) CYLINDER
ALLOC FI(SYSUT4) UNIT(SYSDA) NEW DELETE SPACE(1,1) CYLINDER
ALLOC FI(SYSUT5) UNIT(SYSDA) NEW DELETE SPACE(1,1) CYLINDER
ALLOC FI(SYSUT6) UNIT(SYSDA) NEW DELETE SPACE(1,1) CYLINDER
ALLOC FI(SYSUT7) UNIT(SYSDA) NEW DELETE SPACE(1,1) CYLINDER
```

Note: SYSUT6 and SYSUT7 are required only if VS COBOL II Version 1, Release 3 is being used.

Appendix E. ISRDDN diagnostic utility

ISRDDN is a utility that assists IBM support in evaluating and solving problems. It provides a list of allocated ddnames, a list of system ENQs, a list of data sets causing system ENQ contention, and a means of viewing storage within a TSO user's address space. ISRDDN also provides some facilities for gathering information about your system environment.

You can start ISRDDN by issuing the commands TSO ISRDDN or DDLIST from any ISPF command line.

The allocated ddname list shows you all of the ddnames allocated to your TSO session. From the list you can perform functions such as Edit or Compress against individual data sets, ddnames, or sets of ddnames. You can also perform actions against the entire list of displayed ddnames.

The ENQ list, available by typing ENQ on the allocation list command line, shows you ENQs on your system. You can limit the size of the list by specifying the QNAME, RNAME, job, user or address space name, and system name.

The ENQ contention list, available by typing CON on the allocation list command line, shows you ENQ contentions on your system for data sets (QNAME SYSDSN).

You can Browse storage using the BROWSE primary command from the allocation list. You can only browse storage which an unauthorized program can see (private and common).

ISRDDN can be used to manipulate the data sets that are allocated, but it also provides the ability to answer questions like:

- Where did a module the user has loaded come from?
- What data sets contain a specific member?
- Are the I/O errors and ABENDs the user is getting due to mixed record format allocations?
- Who is currently allocated to "SYS1.BROADCAST"?
- What member names or LPA load modules are duplicated in the user's current allocations?
- How many members are in the allocated libraries and which libraries are empty?
- Is the user running ISPF out of LPA or from STEPLIB?

To invoke the ISRDDN program, type TSO ISRDDN on any ISPF command line.

The Current Data Set Allocations list

When you start ISRDDN, the Current Data Set Allocations list displays, as shown in [Figure 40 on page 156](#).

Current Data Set Allocations					Row 1 of 98
Volume	Disposition	Act	DDname	Data Set Name	Actions: B E V M F C I Q
*VIO	NEW,DEL	> _	ISPCTL0	SYS20177.T082936.RA000.USER1.R0100373	
*VIO	NEW,DEL	> _	ISPCTL1	SYS20177.T082936.RA000.USER1.R0100374	
*VIO	NEW,DEL	> _	ISPCTL2	SYS20177.T082936.RA000.USER1.R0100375	
ISPF25	SHR,KEEP	> _	ISPEXEC	CS390.ISPF25.STG.SISPEXEC	
CS390A	SHR,KEEP	> _		CS390.EXEC	
CSV2R5	SHR,KEEP	> _		CS390.CS25.PRD.SEZAINST	
G83AAA	SHR,KEEP	> _	ISPHELP	SLDMVSS.HELP	
*VIO	NEW,DEL	> _	ISPLST1	SYS20177.T082936.RA000.USER1.R0100376	
*VIO	NEW,DEL	> _	ISPLST2	SYS20177.T082936.RA000.USER1.R0100377	
ISPF25	SHR,KEEP	> _	ISPHLIB	CS390.ISPF25.STG.SISPMENU	
ZOS250	SHR,KEEP	> _		SYS1.SBPXMENU	
ZOS250	SHR,KEEP	> _		GIM.SGIMMENU	
CSV2R5	SHR,KEEP	> _		CS390.CS25.PRD.SEZAMENU	
ZOS250	SHR,KEEP	> _		ISF.SISFMLIB	
ZOS250	SHR,KEEP	> _		SYS1.SBLMSG0	
ZOS250	SHR,KEEP	> _		SYS1.DGTMLIB	
ZOS250	SHR,KEEP	> _		SYS1.DFQMLIB	
G20AAA	SHR,KEEP	> _		G20.SISPMENU	
Command ==>					Scroll ==> PAGE
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up	F8=Down
F10=Left	F11=Right	F12=Cancel			F9=Swap

Figure 40. Current Data Set Allocations List panel

On the right side of the display is a list of ddnames and their associated data sets. The list of data sets can also contain indicators of DUMMY allocations, subsystem files, or allocations to the terminal. The ddname is shown in white, unless the first data set in the concatenation is scrolled off the top of the screen. If the first data set in a concatenation is not on the screen, the ddname is shown in yellow.

In the center of the display is a column of 1-character input fields, preceded by greater-than signs (>). These input fields are used for line commands such as E for Edit and I for Information. For data set with an XTIO, this input field may be unavailable if XTIO support is not enabled in the ISPF configuration table. Data sets with an XTIO have the data set name displayed in yellow. A column with a heading of X is displayed next to the ENQW column. A value of Y is displayed in this column if the data set has an XTIO. This column is shown in [Figure 42 on page 158](#).

The left side of the display contains columns of information about individual data sets. When you scroll right or left, the left side of the screen changes. Initially, the left side of the screen contains the volume name and disposition. If the disposition is red, there are other jobs waiting to use this data set as shown. You can use the Q line command to see what jobs are waiting. You can view the VTOC information for a volume by placing the cursor on the volume name and pressing the Enter key.

ISRDDN automatically checks for mixed concatenations when it is started. If you have concatenations of mixed data set types or formats, you are shown a message to that effect when you press the Enter key or scroll the first time. ISRDDN also checks for mixed concatenations when you use the RESET command.

If you scroll right once, you see the attributes of each data set, as shown in [Figure 41 on page 157](#).

Current Data Set Allocations							Row 1 of 98
Blksz	Lrecl	RCFM	Org	Act	DDname	Data Set Name	Actions: B E V M F C I Q
				> _	ISPCTL0	SYS20177.T082936.RA000.USER1.R0100373	
				> _	ISPCTL1	SYS20177.T082936.RA000.USER1.R0100374	
				> _	ISPCTL2	SYS20177.T082936.RA000.USER1.R0100375	
27920	80	FB	P0	> _	ISPEXEC	CS390.ISPF25.STG.SISPEXEC	
27920	80	FB	P0	> _		CS390.EXEC	
27920	80	FB	P0	> _		CS390.CS25.PRD.SEZAINST	
32720	80	FB	PS	> _	ISPHELP	SLDMVSS.HELP	
				> _	ISPLST1	SYS20177.T082936.RA000.USER1.R0100376	
				> _	ISPLST2	SYS20177.T082936.RA000.USER1.R0100377	
27920	80	FB	P0	> _	ISPMLIB	CS390.ISPF25.STG.SISPMENU	
27920	80	FB	P0	> _		SYS1.SBPXMENU	
27920	80	FB	P0	> _		GIM.SGIMMENU	
27920	80	FB	P0	> _		CS390.CS25.PRD.SEZAMENU	
27920	80	FB	P0	> _		ISF.SISFMLIB	
27920	80	FB	P0	> _		SYS1.SBLSMSG0	
27920	80	FB	P0	> _		SYS1.DGTHLIB	
27920	80	FB	P0	> _		SYS1.DFQMLIB	
8800	80	FB	P0	> _		G20.SISPMENU	
Command ==> _____							Scroll ==> PAGE
F1=Help		F2=Split		F3=Exit		F5=Rfind	
F7=Up		F8=Down		F9=Swap			
F10=Left		F11=Right		F12=Cancel			

Figure 41. Data Set Attributes in ISRDDN

For some types of allocations, such as subsystem allocations, you might see different information. If you have mixed concatenations, a message with this information appears when you press the Enter key or scroll the first time. You can suppress this message for future innovations of ISRDDN by using the CHECK OFF command.

If you scroll right a second time, you see information that includes whether the ddname is open and if so, by how many active DCBs, as shown in [Figure 42 on page 158](#).

Current Data Set Allocations							Row 1 of 98
Open	SMS	ENQW	X	Act	DDname	Data Set Name	Actions: B E V M F C I Q
	SMS		>	-	ISPCTL0	SYS20177.T082936.RA000.USER1.R0100373	
	SMS		>	-	ISPCTL1	SYS20177.T082936.RA000.USER1.R0100374	
	SMS		>	-	ISPCTL2	SYS20177.T082936.RA000.USER1.R0100375	
			>	-	ISPEXEC	CS390.ISPF25.STG.SISPEXEC	
			>	-		CS390.EXEC	
			>	-		CS390.CS25.PRD.SEZAINST	
			>	-	ISPHELP	SLDMVSS.HELP	
	SMS		>	-	ISPLST1	SYS20177.T082936.RA000.USER1.R0100376	
	SMS		>	-	ISPLST2	SYS20177.T082936.RA000.USER1.R0100377	
Open			>	-	ISPHLIB	CS390.ISPF25.STG.SISPMENU	
Open			>	-		SYS1.SBPXMENU	
Open			>	-		GIM.SGIMMENU	
Open			>	-		CS390.CS25.PRD.SEZAMENU	
Open			>	-		ISF.SISFMLIB	
Open			>	-		SYS1.SBLSMSG0	
Open			>	-		SYS1.DGTHLIB	
Open			>	-		SYS1.DFQMLIB	
Open			>	-		G20.SISPMENU	
Command ==>							Scroll ==> PAGE
F1=Help		F2=Split		F3=Exit		F5=Rfind	F7=Up
F10=Left		F11=Right		F12=Cancel		F8=Down	F9=Swap

Figure 42. Additional DD Information

You also see the indicator *SMS* if the data set is SMS-managed, and information about jobs waiting on the resource. For JES files you might see additional information such as the class and the writer name.

Some primary commands, MEMBER and COUNT, for example, put messages in a fourth status screen (Figure 43 on page 159).

Current Data Set Allocations				Row 1 of 98	
Message	Act	DDname	Data Set Name	Actions: B E V M F C I Q	
	> _	ISPCTL0	SYS20177.T082936.RA000.USER1.R0100373		
	> _	ISPCTL1	SYS20177.T082936.RA000.USER1.R0100374		
	> _	ISPCTL2	SYS20177.T082936.RA000.USER1.R0100375		
Members: 43	> _	ISPEXEC	CS390.ISPF25.STG.SISPEXEC		
Members: 54	> _		CS390.EXEC		
Members: 675	> _		CS390.CS25.PRD.SEZAINST		
	> _	ISPHELP	SLDMVSS.HELP		
	> _	ISPLST1	SYS20177.T082936.RA000.USER1.R0100376		
	> _	ISPLST2	SYS20177.T082936.RA000.USER1.R0100377		
Members: 653	> _	ISPLIB	CS390.ISPF25.STG.SISPMENU		
Members: 118	> _		SYS1.SBPXMENU		
Members: 71	> _		GIM.SGIMMENU		
Members: 31	> _		CS390.CS25.PRD.SEZAMENU		
Members: 8	> _		ISF.SISFMLIB		
Members: 115	> _		SYS1.SBLSMSG0		
Members: 419	> _		SYS1.DGTMLIB		
Members: 14	> _		SYS1.DFQMLIB		
Members: 28	> _		G20.SISPMENU		
Command ==>				Scroll ==> PAGE	
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up	F8=Down
F10=Left	F11=Right	F12=Cancel			F9=Swap

Figure 43. Additional DD Information

If messages exist and you scroll right again, you see the messages. The message screen is only shown if messages exist. If messages do *not* exist, a third scroll to the right returns you to the initial screen.

Using commands on the displayed list

The Current Data Set Allocations list supports both primary commands and line commands. The *displayed list* is the list of ddnames that you can see by scrolling up and down. You can use primary commands to limit what is displayed in the list. Many of the primary commands work only on the contents of the displayed list.

ISRDDN can also create pseudo-ddnames that show useful data set names. For example, the LPA command adds two pseudo-ddnames, LINKLIST and LPALIB, which contain lists of the current link list and LPA libraries.

Allocation list primary commands

Primary commands are used to limit the contents of the displayed list, to add pseudo-ddnames, to operate on all the contents of the displayed list and to invoke other ISRDDN options.

All primary commands can be invoked with their minimum unique names. For example, MEMBER can be abbreviated as M, while CLIST can be abbreviated as CL. The allocation list primary commands follow.

You can specify an initial primary command when you start ISRDDN. For example, if you enter DDLISTB 10.??? on an ISPF command line, you will immediately browse the storage containing the TCB control block. When you exit the Browse screen, you are not returned to the DD allocation list. This feature is useful for calling ISRDDN from within a program when, for example, you want to limit the list to specific dd names, view ENQs, save the current allocations, or browse storage.

Only (O) and Exclude (EX, X)

ONLY and EXCLUDE are used to limit the ddnames in the displayed list. They take one operand: a whole or partial ddname. For example, the command O PLI causes the list to contain only ddnames that contain the string "PLI", such as STE**PL**IB and IS**PPL**IB.

The ONLY and EXCLUDE commands are useful when you want to limit the ddnames or pseudo-ddnames that are operated on by commands like MEMBER and DUPLICATES. They are also helpful in reducing the size of the displayed list for easier viewing.

Find (F) and Locate (L))

FIND and LOCATE search the list for a string. LOCATE looks only at ddnames and always locates the first matching ddname. FIND looks at everything currently in the displayed list and finds the next occurrence of the string following the current cursor position. You can repeat a FIND operation by pressing the RFIND key.

When a string is found by FIND, the string is highlighted and the cursor is placed on the string. When a string is found by LOCATE, the string is highlighted and the cursor is placed in the line command area next to the located ddname.

Reset (R))

The RESET command rebuilds the list. In most screen formats the list is automatically rebuilt when you press Enter. However, if you have used the COUNT command or the MEMBER command and have messages showing in the list, you might need to use the RESET command to refresh the list.

Short (S) and Long (LON)

The SHORT and LONG commands alter the format of the list. The SHORT command places the ddname of a concatenation next to the first data set (as shown in [Figure 40 on page 156](#)). The LONG command formats the list with ddnames of concatenations placed on a separate line before the data set names (as shown in [Figure 44 on page 160](#)).

Current Data Set Allocations						Row 1 of 123	
Volume	Disposition	Act	DDname	Data Set Name	Actions: B E V M F C I Q		
		> _	ISPCTL0				
*VIO	NEW,DEL	> _		SYS20177.T082936.RA000.USER1.R0100373			
		> _	ISPCTL1				
*VIO	NEW,DEL	> _		SYS20177.T082936.RA000.USER1.R0100374			
		> _	ISPCTL2				
*VIO	NEW,DEL	> _		SYS20177.T082936.RA000.USER1.R0100375			
		> _	ISPEXEC				
ISPF25	SHR,KEEP	> _		CS390.ISPF25.STG.SISPEXEC			
CS390A	SHR,KEEP	> _		CS390.EXEC			
CSV2R5	SHR,KEEP	> _		CS390.CS25.PRD.SEZAINST			
		> _	ISPHELP				
G83AAA	SHR,KEEP	> _		SLDMVSS.HELP			
		> _	ISPLST1				
*VIO	NEW,DEL	> _		SYS20177.T082936.RA000.USER1.R0100376			
		> _	ISPLST2				
*VIO	NEW,DEL	> _		SYS20177.T082936.RA000.USER1.R0100377			
		> _	ISPLIB				
ISPF25	SHR,KEEP	> _		CS390.ISPF25.STG.SISPMENU			
Command ==>						Scroll ==>	PAGE
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up	F8=Down	F9=Swap	
F10=Left	F11=Right	F12=Cancel					

Figure 44. Current Data Set Allocations List in LONG Format

The SHORT format shows more information on one screen. Use the LONG format when you want to use line commands that operate on whole concatenations, such as E and V, on only the first data set in a concatenation.

Member (M)

The MEMBER command is a very useful command in ISRDDN. MEMBER searches the displayed list (or just ddnames containing a given string) for a member whose name matches a pattern. For example, the command M ISRSUBS searches the data sets in the displayed list, the job pack area, and the link pack directory for members named ISRSUBS. Data sets that contain the member are flagged with a message on the left side of the list, as shown in Figure 45 on page 161.

Current Data Set Allocation				Member was found			
Message	Act	DDname	Data Set Name	Actions: B E V M F C I Q			
Member: ISRSUBS	> _	ISPCTL0	SYS20177.T082936.RA000.USER1.R0100373				
	> _	ISPCTL1	SYS20177.T082936.RA000.USER1.R0100374				
	> _	ISPCTL2	SYS20177.T082936.RA000.USER1.R0100375				
	> _	ISPEXEC	CS390.ISPF25.STG.SISPEXEC				
	> _		CS390.EXEC				
	> _		CS390.CS25.PRD.SEZAINST				
	> _	ISPHELP	SLDMVSS.HELP				
	> _	ISPLLIB	ZBT.PACKETT.ISPFR25.PACKELX.SISPLDAD				
	> _		ZBT.PACKETT.ISPFR25.PACKELX.SISPLPA				
	> _		ZBT.PACKETT.ISPFR25.PACKELX.SIEALNKE				
	> _		ZBT.PACKETT.ISPFR25.PACKELX.LINKLIB				
	> _	ISPLST1	SYS20177.T082936.RA000.USER1.R0100376				
	> _	ISPLST2	SYS20177.T082936.RA000.USER1.R0100377				
	> _	ISPLLIB	ZBT.PACKETT.ISPFR25.PACKELX.MSGENU				
	> _		CS390.ISPF25.STG.SISPMENU				
	> _		SYS1.SBPXMENU				
	> _		GIM.SGIMMENU				
	> _		CS390.CS25.PRD.SEZAMENU				
Command ==>				Scroll ==> PAGE			
F1=Help		F2=Split	F3=Exit	F5=Rfind	F7=Up	F8=Down	F9=Swap
F10=Left		F11=Right	F12=Cancel				

Figure 45. Results of the MEMBER Command

If the name is the name of a loaded module in the job pack area or LPA, you also see a panel similar to the one in Figure 47 on page 164.

When a member name is used on the MEMBER command (such as, M ISRSUBS) and an E, V, or B line command is used next to a data set in which that member is found, ONLY that member is Edited, Viewed, or Browsed. When the M line command is used, the member list is shown with the selected member at the top of the list.

When a member name pattern is used on the member command (such as, M ISR*), the E, V, B, and M line commands display member lists with members that match the given pattern.

Use the MEMBER command in situations when you do not know from where a member is coming or when you suspect that you might be accessing the wrong copy of a member. For example, if you are developing ISPF panels and you do not see your version of the panel being displayed, you can issue the MEMBER command to search for other copies of the panel.

Usually the MEMBER command operates on the entire displayed list. You can add a second operand that is a partial ddname. For example, the command M ISRSUBS PL searches only ddnames containing the string PL, such as ISPLLIB and STEPLIB. This avoids having to use the ONLY command to limit the search.

Clist (CL) or Save (SA)

The CLIST command creates a CLIST that contains TSO ALLOCATE statements to reproduce the allocations in the displayed list. The CLIST is saved in a sequential data set named 'userid.ISRDDN.CLIST' or 'prefix.userid.ISRDDN.CLIST'. If the ISPF configuration table field USE_ADDITIONAL_QUAL_FOR_PDF_DATA_SETS is set to YES, an additional qualifier defined with

the ISPF_TEMPORARY_DATA_SET_QUALIFIER field is included before the ISRDDN qualifier. You can use the command name SAVE instead of CLIST.

Use this command when you want to change allocations for testing purposes. For example, to add a panel library to your ISPLIB concatenation:

- Enter ISRDDN
- Type O ISPLIB to limit the displayed list to ddname ISPLIB
- Type CLIST to create and edit the ISRDDN.CLIST data set
- Change the ALLOCATE statement to add your data set
- Exit ISPF
- Execute the CLIST (that is, EX ISRDDN)

Like the MEMBER command, you can add a whole or partial ddname to limit the number of ddnames that are included in the generated CLIST. For example, to create a CLIST that only contains allocation statements for ddnames containing the string ISP, type CLIST ISP or SAVE ISP.

Check (CH)

The CHECK command turns on or off automatic checking for mixed concatenations. CHECK or CHECK ON enables automatic checking, and CHECK OFF disables it. When checking for mixed concatenations is enabled, ISRDDN checks for concatenations with mixed record formats, mixed fixed record lengths, and mixed data set organizations. Because there are times when these concatenations are intended, you might want to turn off the warning generated by ISRDDN.

Count (C)

The COUNT command displays the number of members in a partitioned data set. The number of members is shown in the message area on the left side of the list.

COUNT can be used to find out if you have empty data sets in your concatenations. For example, if you want to find out if all members of an SCLM-controlled library system were successfully promoted, you can edit the hierarchy, invoke ISRDDN, and use the COUNT command to verify that all of the expected libraries in the concatenation are empty.

Like the MEMBER command, you can add a whole or partial ddname to limit the number of ddnames that are searched.

Duplicates (DUP)

The DUPLICATES command searches all of the partitioned data sets in the displayed list and the LPA and displays a list of duplicate names. From the duplicates list, you can use the E (edit), B (browse), and V (view) line commands to view the PDS member or LPA storage. Use the DUPLICATES command to see where you might have potential conflicts with old or modified versions of load modules, REXX or CLIST programs, ISPF panels, or other PDS members.

For module names found in the Link Pack directory, the address of the module and its size are shown on the left side of the screen. If the name is an alias of a different module, the real name (major name) is shown instead of the size.

The duplicates list is shown in [Figure 46 on page 163](#). Like the MEMBER command, you can add a whole or partial ddname to limit the number of ddnames that are searched. For example, to search only ddnames that contain the string LLIB, enter DUP LLIB.

Duplicate members list						Row 1 of 562
Address	Siz/Maj	DDname	Act	Member	Data set name	Actions: B, E, V
00D8A5F8	FLMI024	ISPLLIB	> _	FLM\$CP	PDFTDEV.SVT.LOAD	
		--LPA---	> _			
04668F20	000000E0	ISPLLIB	> _	FLM\$CPI	PDFTDEV.SVT.LOAD	
		--LPA---	> _			
00D8B218	FLMI024	ISPLLIB	> _	FLM\$DE	PDFTDEV.SVT.LOAD	
		--LPA---	> _			
00D8B9D8	FLMI024	ISPLLIB	> _	FLM\$DT	PDFTDEV.SVT.LOAD	
		--LPA---	> _			
00D88DF8	FLMI024	ISPLLIB	> _	FLM\$99	PDFTDEV.SVT.LOAD	
		--LPA---	> _			
		ISPLLIB	> _	FLM@SCAN	PDFTOOL.COMMON.LOAD	
		ISPLLIB	> _		PDFTOOL.FLM@SCAN.LOAD	
Command ==>						Scroll ==> <u>PAGE</u>
F1=Help	F2=Split	F3=Exit	F5=Rfind	F7=Up	F8=Down	F9=Swap
F10=Left	F11=Right	F12=Cancel				

Figure 46. The Duplicates List Display

The SAVE command can be entered from the duplicate list display to have the duplicate member data written to a sequential data set named 'userid.ISRDDN.DUPLICAT' or 'prefix.userid.ISRDDN.DUPLICAT'. If the ISPF configuration table field USE_ADDITIONAL_QUAL_FOR_PDF_DATA_SETS is set to YES, an additional qualifier defined with the ISPF_TEMPORARY_DATA_SET_QUALIFIER field is included before the ISRDDN qualifier.

APF, Linklist (LI), Parmlib, and Lpa (LP)

The APF, LINKLIST, PARMLIB, and LPA commands add and remove pseudo-ddnames that show the defined APF libraries, link list libraries, PARMLIB libraries, and LPA libraries respectively. These pseudo-ddnames are shown as if they are allocated ddnames, but no actual allocation to the libraries is made. You can use most of the primary and line commands with these names, just as you would with real ddnames.

In the confirmation panel, you can type YES to process the libraries, or SKIP to process the libraries and avoid the confirmation panel in the future. Dynamic LPA, Link lists, PARMLIB, and APF lists are all supported.

The LINKLIST and LPA commands add both the LINKLIST and LPALIB pseudo-ddnames. To delete any pseudo-ddname, enter the appropriate command a second time. For example, to add APF libraries to the list, use the APF command. To remove the APF libraries from the list, enter the APF command a second time.

Select (S) and Load (L)

The SELECT command searches the job pack area (JPA) and link pack area (LPA) to see if a module is loaded. If the module is found, you see the CSVQUERY Results panel shown in [Figure 47 on page 164](#).

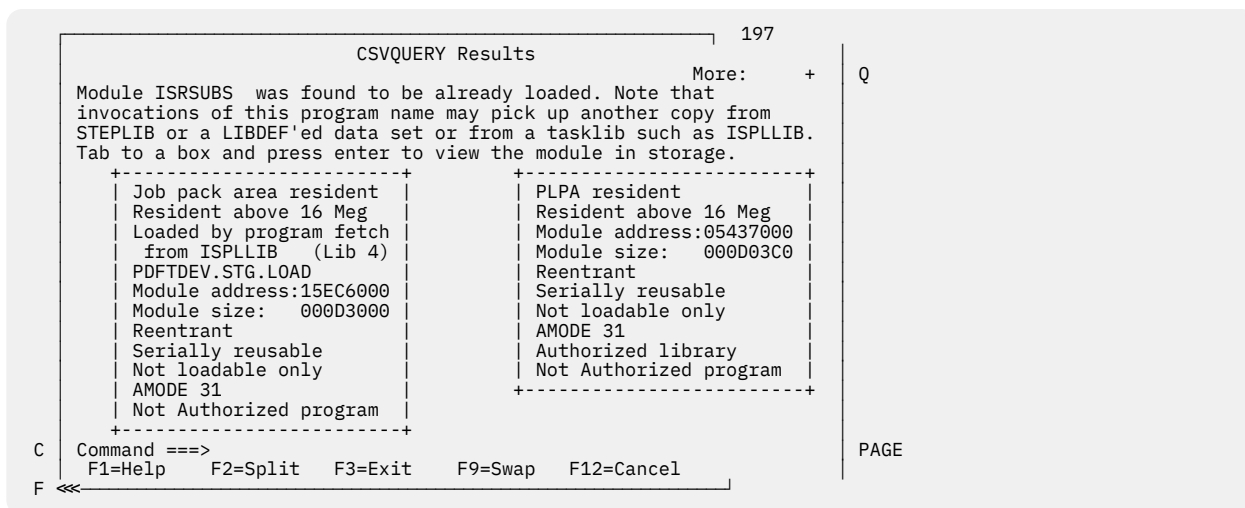


Figure 47. The CSVQUERY Results Panel

The information shown in the CSVQUERY Results panel is mostly derived by issuing a CSVQUERY macro. The data set name from which the module was loaded is shown if it can be determined. However, because of the way this information is gathered, the data set name can be incorrect if the original ddname from which the data set was loaded has been reallocated since the module was loaded.

On the CSVQUERY Results panel, you can use the TAB key to place the cursor inside the boxes describing the load module. If you then press Enter, you can browse the load module in storage.

The SELECT command is useful in situations where you need to know where a loaded program came from, for example, when you think you might be running mixed levels of ISPF or of an application under ISPF.

If a module is not loaded but you want to see its attributes, you can use the LOAD command instead of the SELECT command. LOAD uses the current tasklib such as ISPLLIB, but you should verify that the loaded module came from the source you were expecting it to come from. LOAD automatically browses the load module storage.

Custom (CU)

The CUSTOM command shows several settings about your ISPF installation. It shows the values that used to be set in the ISPDFTS CSECT but are now in the ISPF Configuration table, and it shows the values configured in module ISPTCM. This command is helpful when you are having trouble with the way certain programs are invoked. For more information about ISPTCM, refer to [z/OS ISPF Planning and Customizing](#).

MList (ML)

The MLIST command displays the eyecatchers for some of the ISPF CSECTs contained in modules ISPSUBS and ISRSUBS. This command can sometimes be used to verify that you are running with a particular level of maintenance because the eyecatchers in most ISPF modules contain a release number or a PTF level.

Browse (B)

ISRDDN provides a method of browsing storage using ISPF BROWSE. The storage can be browsed as unformatted data, as minimally formatted data, or as a side-by-side hexadecimal and EBCDIC dump format. ISRDDN also enables you to automatically chain lists, view arrays, and view the data pointed to by control blocks that are mainly lists of pointers (such as CVT).

The BROWSE primary command accepts a storage address, module name, or TSO TEST address locator string.

Table 26. Some examples invoking BROWSE	
Command	Explanation
B ISRSUBS	Browse the already loaded module named ISRSUBS.
B 10.	Browse storage at hexadecimal location 10. To distinguish hexadecimal addresses from module names, absolute addresses must end with a period.
B 0.+21c?+b4?+108?+8	Browse storage based on a TSO TEST style string. In this case, the control block called the Protected Step Control Block or PSCB is shown.
B ISRSUBS+60?	Browse the address pointed to by the 4 bytes at offset hexadecimal 60 into module ISRSUBS.
B ? or B +0?	When executed from within the storage browser, this command uses the address 0 bytes from the beginning of the displayed storage as a pointer and starts a new browse session to show that storage.

Enq (E)

You can view ENQs on the system using the ENQ command. A display similar to the one shown in [Figure 48 on page 165](#) appears. You can reduce the size of the list by specifying a QNAME, RNAME, address space name, and a system name. All entries are treated as prefixes, so you might not need to specify complete names.

System ENQ Status		Row 1 of 183
Scroll LEFT or RIGHT to see type or system name.		
Major name prefix . . .	SYSDSN (SYSDSN, SPFEDIT, etc)	
Minor name prefix . . .		(dsn etc)
Address id prefix . . .	USERID (Job name, User id, etc)	
System prefix	(System name)	
Major	Minor	Job Name
SYSDSN	AOP.SAOPEXEC	USERID
SYSDSN	AOP.SAOPMENU	USERID
SYSDSN	AOP.SAOPPENU	USERID
SYSDSN	AZZ.V1R1.SAZZCLIB	USERID
SYSDSN	AZZ.V1R1.SAZZMENU	USERID
SYSDSN	AZZ.V1R1.SAZZPENU	USERID
SYSDSN	AZZ.V1R1.SAZZSENU	USERID
SYSDSN	BZZ.SBZZCLIB	USERID
SYSDSN	BZZ.SBZZMENU	USERID
SYSDSN	BZZ.SBZZPENU	USERID
SYSDSN	BZZ.SBZZSENU	USERID
Command ==>		Scroll ==> PAGE
F1=Help	F2=Split	F3=Exit
F10=Left	F11=Right	F12=Cancel
	F5=Rfind	F7=Up
	F8=Down	F9=Swap

Figure 48. The System ENQ Status List Panel

The Major column shows the QNAME. The Minor field shows the RNAME and if the RNAME is 8 bytes or less, it shows the hexadecimal representation of the RNAME next to the EBCDIC representation.

In the System ENQ Status list, the Job Name field is color-coded to indicate the type of ENQ that the address space holds or is waiting for. Green indicates a shared ENQ. Red indicates an exclusive ENQ.

If an address space does not hold the ENQ but is waiting for it, the job name is shown highlighted in reverse video.

On narrow screens, you can scroll right or left for more information. By scrolling left and right you see the system name and ENQ options (SYS (system), SYSS (systems), STEP, G (global), and R (reserve)). On wide screens you see all of the information on one screen without scrolling left or right.

On the System ENQ Status display, press END to return to the Current Data Set Allocations list, or enter CON to view the System ENQ Contention display. You can also use the ALL command to view all ENQs or use the RESET command to see only the data set ENQs (QNAME SYSDSN) for your TSO user id.

Con (C)

You can view ENQ contention on the system by using the CON command. When ENQ contention exists, you see a screen similar to the one in [Figure 48 on page 165](#), but without the input fields. When no contention exists, a message displays instead of the list.

Allocation list line commands

Allocation list line commands are entered next to a ddname or data set. By default the allocation list is in *short* format. This means that for concatenations, the ddname is next to the first data set name in the concatenation.

When a line command is entered next to a ddname, the command is intended to work on the DD allocation rather than the data set name on that line. For example, an E command next to the ddname that refers to a concatenation edits the whole concatenation. If you want to edit just the first data set in a concatenation, use the LONG command to place the list in *long* format. In long format, the ddname for a concatenation is on a separate line so that you can place line commands next to the first data set name in the concatenation.

The Edit, Browse, View, and Member list commands are sensitive to the results of the MEMBER primary command. When the MEMBER primary command searches the displayed list for a member or members matching a name pattern, the member or pattern is shown in the list. Placing an E, B, V, or M next to a name in which the member or pattern was found displays either a member list with member names matching the pattern or the specific found member.

E - Edit

The E line command edits a data set or concatenation. It can be used on any data set or any ddname allocated to a data set (real or VIO). You might want to use the E line command for editing temporary files such as JCL that was created by file tailoring and written to the ISPCTLn ddname.

B - Browse

The B line command browses a data set or concatenation. It can be used on any data set or any ddname allocated to a data set (real or VIO). You can use the B line command for browsing allocated files. For example, the compress option in the PDF utilities, option 3.1, creates a listing data set that is sometimes allocated to the ISPCTL1. When you press the HELP key after compressing a data set in option 3.1, you might see that the listing was saved in a temporary data set. The B line command in ISRDDN is an easy way to browse that data set.

V - View

Use the V line command to view a data set or concatenation. This is similar to E (Edit) but there is no SAVE command. Use this when you want to view a data set and modify it for easier viewing without risking changes to the data set.

M - Member list

The M command displays an enhanced member list for a data set or concatenation. This gives you greater flexibility in working with allocated data sets. You might use this command when you have several different operations to perform on members.

F - Free

Use the FREE command to free an allocation. The Free command must be specified next to a ddname. F commands next to data sets in a concatenation with an F next to the ddname are ignored because those data sets are removed from the list before the F commands are processed.

The F command uses SVC 99 (dynamic allocation) to free the ddname. However, if SVC 99 cannot free the data set, ISRDDN invokes the TSO FREE command. The TSO FREE command might write a message to the screen with information on why the free failed. This command is useful when you need to free allocations such as those left by prematurely terminated or poorly behaved programs.

C or Z - Compress

Use the COMPRESS command to compress partitioned data sets. The COMPRESS command can be used with data sets that are allocated as shared and can be used next to data set names or ddnames.

I - Information

The I command attempts to invoke the PDF data set information utility to display information about a data set. It can be used next to any real data set name. VIO data sets are not supported. This command can provide information such as the number of allocated directory blocks or a data set's SMS management class, or other information that is not shown by scrolling the Current Data Set Allocations list left or right.

Q - Query ENQs

The Q command shows all SYSDSN and SPFEDIT ENQs that exist for a data set. This command is useful when you want to see what other users or jobs are using a data set you have allocated. Using the Q command provides the same information as using the ENQ primary command and selecting an RNAME of the data set name.

T - Test Directory

The T line command reads the directory of a PDS directly, and performs a BLDL command on each member to see if the BLDL service returns accurate information for the directory. The results are displayed in a separate Browse session. The T command can be used to debug problems such as I/O errors or the need to refresh LLA or other directory caching systems.

K- VTOC Information

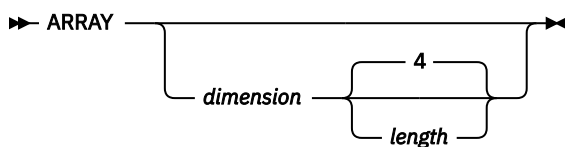
The K line command displays VTOC information for the first volume on which the data set resides. The information returned is the same as in the Data Set List utility (option 3.4, command V). You can also view VTOC information by placing the cursor on the volume name and pressing Enter. If the data set is not on a physical volume, the K command does not provide any information.

Browsing storage and loaded modules

You can use the BROWSE command within ISRDDN to view the contents of storage within your address space. When you are browsing storage, you can use any of the standard ISPF Browse primary commands. In addition, there are several commands you can use to format and move around in the storage list.

If you are not using one of the special display formats (CHAIN, ARRAY, or ARRAYP), you can scroll UP even when the "Top of Data" line is displayed so that you can see what data exists before your requested storage location. After you scroll up once, you can scroll up or down to the limits of the contiguous addressable storage.

ARRAY command



where:

dimension

The number of array elements in decimal.

length

The length of each element in hexadecimal.

When you are viewing an array, you can show the array elements as separate blocks of storage.

For example, the static link list table is an array. Assuming that each element is 45 bytes (hexadecimal 2D) and that you want the first 30 entries, enter ISRDDN and type:

```
B 10.?.+4DC?.+8
ARRAY 30 2D
```

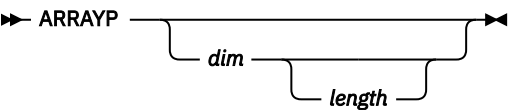
You see a screen similar to [Figure 49 on page 168](#).

BROWSE	STORAGE	Start:00F3E6C0	Line	00000001	Col	001	080
+1	(00F3E6C0)	0CE2E8E2 F14BD3C9 D5D2D3C9 C2404040	*	.SYS1.LINKLIB	*		
	(00F3E6D0)	40404040 40404040 40404040 40404040	*		*		
	(00F3E6E0)	40404040 40404040 40404040 40	*		*		
+2	(00F3E6ED)	0BE2E8E2 F14BD4C9 C7D3C9C2 40404040	*	.SYS1.MIGLIB	*		
	(00F3E6FD)	40404040 40404040 40404040 40404040	*		*		
	(00F3E70D)	40404040 40404040 40404040 40	*		*		
+3	(00F3E71A)	0BE2E8E2 F14BC3E2 E2D3C9C2 40404040	*	.SYS1.CSSLIB	*		
	(00F3E72A)	40404040 40404040 40404040 40404040	*		*		
	(00F3E73A)	40404040 40404040 40404040 40	*		*		
+4	(00F3E747)	11E2E8E2 E74BC9E2 C4F14BD3 C9D5D2D3	*	.SYSX.ISD1.LINKL	*		
	(00F3E757)	C9C24040 40404040 40404040 40404040	*	IB	*		
	(00F3E767)	40404040 40404040 40404040 40	*		*		
+5	(00F3E774)	15E2E8E2 E74BE2E8 E2D7D3C5 E7C44BD3	*	.SYSX.SYSPLEXD.L	*		
	(00F3E784)	C9D5D2D3 C9C24040 40404040 40404040	*	INKLIB	*		
	(00F3E794)	40404040 40404040 40404040 40	*		*		
Command ==> _____ Scroll ==> PAGE							
F1=HELP	F2=	F3=END	F4=DATASETS	F5=FIN	F6=CHANGE		
F9=SWAP	F10=LEFT	F11=RIGHT	F12=SUBMIT				

Figure 49. ARRAY Storage Format

In the ARRAY format display, the offsets on the left are the array element number followed by the address of the displayed line.

ARRAYP command



where:

dim
The decimal number of pointers in the array.

length
The hexadecimal length of each element pointed to by the pointer. The default for *length* is whatever fits on one line in the current display format.

Many control blocks are mainly list of pointers. For example, the Communications Vector Table (CVT) is an MVS control block that points to many other control blocks. The ARRAYP command shows the data pointed to by the pointers in a control block. Use the ARRAYP command when you are looking for the offset of a pointer to a particular storage location.

For example, to see what is pointed to by the elements of CVT, enter ISRDDN and type

```
B 10.?  
ARRAYP
```

You see a screen similar to [Figure 50 on page 169](#).

In the ARRAYP format display, the offsets on the left are the offsets within the array of pointers followed by the pointer itself. This is followed by the data to which the pointer refers.

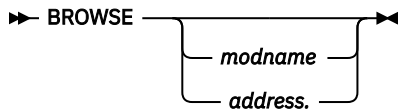
```

BROWSE      STORAGE      Start:00FC6CB8                               Line 00000001 Col 001 080
+0 (00000218) 00889E88 00889E88 00FC4D80 00F90100 * .häh.häh..(Ī.9.. *
+4 (00FDEFC4) 0DA01211 A7240008 10114111 00001111 * .Ä..x.....ä.... *
+8 (00FC6C34) 00000000 00000000 00000000 00000000 * ..... *
+C (00FC72A0) C1E4E2C3 C2010000 00FCA440 40404040 * AUSCB....u *
+10 (00000000) 000A0000 000130E1 00000000 00000000 * ..... *
+14 (00FEB70C) 00FEB63C 00FEB63C 00FEB63C 00FEB63C * .Ä..Ä..Ä..Ä..Ä.. *
+18 (00FE7096) 58F00224 58F0F06C 58F0F070 58F0F004 * ý0..ý00%ý00°ý00. *
+1C (00FDA0E8) 47F0F028 47F0F034 47F0F020 47F0F018 * 000.000.000.000. *
+20 (00FD9F1C) 47F0F028 47F0F0E6 47F0F020 47F0F018 * 000.000W000.000. *
+24 (0181B7F8) D3D3C3C2 04820000 00000000 00F8BB00 * LLCB.b.....8]. *
+28 (0126F150) 47F0F01C 16C3E2E5 D3D3E3D9 D440F0F2 * 000..CSVLLTRM 02 *
+2C (00FD8C50) 05F047F0 F00600E6 05A04AF0 F00407FF * .0000..W.Ä000... *
+30 (00F29C70) 0088FF8E FA0E0000 00000000 00E4C3C2 * .h.·|.....UCB *
+34 (00FDC2F0) 0DF058F0 F2020BEF 00FDC34C 00FDC360 * .0ý02..i.ĴC<.ĴC- *
+38 (0103034F) 0C4104A0 045000E1 08961060 7E584000 * .ä.A.&...o.-=ý. *
+3C (00FC72C8) 15C7A300 D4E2C5D9 15CD6B40 000000FF * .Gt.MSER.=, .... *
+40 (00F16000) 02000000 52000000 00000000 1000263C * ...Ü..... *
+44 (00FEDE78) 47F0F008 41EE0002 1FCC43CE 00009110 * 000.äË...÷ô%..j. *
+48 (00FDEFE8) 0DF04111 00000BE0 58F0F00E 0BEF0000 * .0ä....\ý00..1.. *
+4C (00000000) 000A0000 000130E1 00000000 00000000 * ..... *
Command ==>
F1=HELP      F2=----- F3=END----- F4=DATASETS F5=FIND
F9=SWAP      F10=LEFT    F11=RIGHT   F12=SUBMIT

```

Figure 50. ARRAYP Storage Format

BROWSE command



where:

modname

The name of the module you want to browse.

address

The address of the module you want to browse. The address must be terminated with a period.

The BROWSE command lets you browse a module that is already loaded. If it is not loaded, you can use the LOAD command to explicitly load and browse it.

You can also use the BROWSE command in "point and shoot" mode. Type BROWSE on the command line, place the cursor over an address within the display, and press Enter. A new browse session is started to view the storage pointed to by the cursor. If the cursor is not on a valid, accessible address, an error message is displayed.

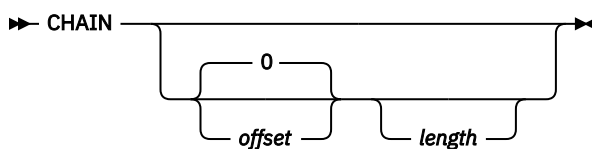
When the BROWSE command is invoked within an existing browse session, a new browse session is started. The END command returns you to the previous browse session.

CANCEL command

```
➡ CANCEL ➡
```

The CANCEL command ends all browse sessions and returns to the Current Data Set Allocations list.

CHAIN command



where:

offset

A hexadecimal offset of the 4-byte pointer to the next link.

length

The length of each element in hexadecimal. The default for length is whatever fits on one line in the current display format.

When you are viewing a linked list, you can use the CHAIN command to view more than one link at a time.

The chain is considered terminated when one of these is found:

- A pointer of zero.
- A pointer to the first node.
- A pointer to unavailable storage.

Entering the CHAIN command a second time turns the chain formatting off.

For example, to see the current ASCB chain, enter ISRDDN and type

```
B 10.??+C?  
CHAIN 4 20
```

You see a screen similar to [Figure 51 on page 170](#).

BROWSE	STORAGE	Start:00F90100	Line	00000001	Col	001	080
+0	(00F90100)	C1E2C3C2 00F92B80 00F90280 00000000	* ASCB.9.İ.9.İ.... *				
+10	(00F90110)	008FD788 00029982 00000000 00000000	* ..Ph..rb..... *				
+30	(00F92B80)	C1E2C3C2 00F98500 00F90100 00000000	* ASCB.9e..9..... *				
+40	(00F92B90)	008FD880 000005B4 00000000 00000000	* ..Qİ...®..... *				
+60	(00F98500)	C1E2C3C2 00F90700 00F92B80 00000000	* ASCB.9...9.İ.... *				
+70	(00F98510)	008FD598 0000E527 00000000 00000000	* ..Nq..V..... *				
+90	(00F90700)	C1E2C3C2 00F90580 00F98500 00000000	* ASCB.9.İ.9e..... *				
+A0	(00F90710)	008FD690 00009130 00000000 00000000	* ..0...j..... *				
+C0	(00F90580)	C1E2C3C2 00000000 00F90700 00000000	* ASCB.....9..... *				
+D0	(00F90590)	008FD788 00007EC0 00000000 00000000	* ..Ph..={..... *				
***** Bottom of Data *****							

Command ==> _____ Scroll ==> PAGE							
F1=HELP	F2=	F3=END	F4=DATASETS	F5=	F6=CHANGE		
F9=SWAP	F10=LEFT	F11=RIGHT	F12=SUBMIT				

Figure 51. CHAIN Storage Format

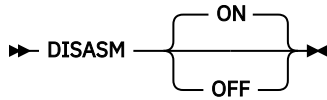
In the CHAIN format display, the offsets on the left are the offsets within a particular link followed by the actual address of the start of the line.

DATA command

➡ DATA ➡

The DATA command displays the storage as an unformatted string of data with offsets shown on the left side of the screen. Use this format to give you a better context of the storage you are browsing.

DISASM command



where:

ON

Disassembles the load module being browsed.

OFF

Releases any resources acquired for the disassembly function and returns to the previous browse mode.

While browsing a load module in storage, you can enter the DISASM command (with either no parameter or the NO parameter) to disassemble the load module you are browsing being browsed and display the resulting instructions.

When you have finished browsing the disassembly, you should issue the DISASM command again (this time with the OFF parameter) to release the resources obtained to support the disassembly. If you terminate the browse without issuing the DISASM OFF command, the resources are not freed until you terminate the logical screen.

DUMP command

➡ DUMP ➡

The DUMP command lets you view storage in dump format.

Note: The DUMP command is analogous with the FORMAT command.

FORMAT command

➡ FORMAT ➡

The FORMAT command displays the storage in both hexadecimal and EBCDIC, the way you might see the format in a data dump (see [Figure 52 on page 172](#)).

When data is displayed in wide format (see [“WIDE command” on page 173](#)), the format includes 16 bytes per line (8 sets of 4 bytes). When data is displayed in narrow format (see [“NARROW command” on page 172](#)), the format contains 8 bytes per line (4 sets of 4 bytes).

FORMAT is the default format that appears whenever a storage browse session is started.

```

BROWSE      ISPSUBS JPA Start:15D8C890 Size:000E5770   Line 00000000 Col 001 080
***** Top of Data *****
+0 (15D8C890) C9E2D7E3 E2C3F040 000003BC 15E03450 * ISPTSC0 ...».\.& *
+10 (15D8C8A0) 15DCE850 15DB0C48 15E1EDB0 15DE49A0 * .³Y&.¹.b.É^..±Á *
+20 (15D8C8B0) 15DE7BF8 15E21780 15E00E48 15E71848 * .#8.S.I.\.b.X.b *
+30 (15D8C8C0) 15E1E1A0 15DCEA40 15E1F400 15E1FEE0 * .Á.³..4..r *
+40 (15D8C8D0) 15E0D540 15E0E148 15E20038 15E6BE98 * .\N.\.b.S...Wq *
+50 (15D8C8E0) 15E106D0 15E202B8 15E0E950 15DD0380 * .}.S.¢.\Z&."LI *
+60 (15D8C8F0) 15D8DC30 15E0F7C0 15E10308 15E0F1A0 * .Q³..\7¿...¹Á *
+70 (15D8C900) 15E1EB98 15E20700 15DBA490 15E0B518 * .Éq.S...¹u..º. *
+80 (15D8C910) 15E6D018 15DA8AC0 15DA5D58 15E20AE0 * .W}...½¿..)ý.S.\ *
+90 (15D8C920) 15E25D20 15DA9A30 15E6D3D0 15E6DB98 * .S)...¬..WL}.W²q *
+A0 (15D8C930) 15E212C0 15E21540 15DFFB08 15E6F128 * .S.¿.S. ....W1. *
+B0 (15D8C940) 15DAE7D8 15E083C8 15DB0428 15E0EFB0 * .XQ.\cH.¹...¹^ *
+C0 (15D8C950) 15E0F628 15E0F290 15E0AB60 15E209D8 * .\6..\2..\¹-.S.Q *
+D0 (15D8C960) 15E224F0 15DFDBE0 15E0D050 15DCD0B0 * .S.0..¹\.\} &.³}^ *
+E0 (15D8C970) 15DCD3D0 15DCD190 15E23A80 15E6F480 * .³L}.³J..S.İ.W4İ *
+F0 (15D8C980) 15E23B58 15E24BE8 15D8D630 15E24E40 * .S.ý.S.Y.Q0..S+ *
+100 (15D8C990) 15D8CC50 15E252A8 15E25468 15E25B20 * .Q÷&.SÜy.SbÄ.S$. *
+110 (15D8C9A0) 15E29E30 15E6FDA8 15E2B778 15E0D358 * .Sä..Wly.S...LY *
+120 (15D8C9B0) 15E70AC8 15DCEB10 15E2B998 15DFF458 * .X.H.³É..S¥q..4ý *

Command ==>
F1=HELP      F2=----- F3=END----- F4=DATASETS F5=FINF      F6=CHANGE
F9=SWAP      F10=LEFT    F11=RIGHT   F12=SUBMIT

```

Figure 52. Storage Viewed in FORMAT Mode

LIMIT command

➤ LIMIT ➤

The LIMIT command shows the address limits and size of the contiguous storage area being browsed and resets the currently browsed address to the lowest address in that storage.

LOAD command

➤ LOAD — *modname* ➤

where:

modname

The name of the module you want to load and browse.

The LOAD command loads and browses a module.

NARROW command

➤ NARROW ➤

The NARROW command switches the display from wide format to narrow format.

To return to wide format, issue the WIDE command.

The wide or narrow format, set by the WIDE and NARROW commands respectively:

- Is maintained from one session to the next by means of a profile variable.
- Applies to data when it is displayed with a type setting of FORMAT, DATA, DUMP, or RAW. When data is displayed with a type setting of DISASM, the WIDE and NARROW commands have no effect.

RAW command

➤ RAW ➤

The RAW command displays storage data as unformatted text. Storage is shown on the screen without any formatting. The data on a line is the data that immediately follows the data on the previous line. Because the FIND command is actually searching the screen image and not storage itself, it is best to search storage while in the RAW display format. Note that even in unformatted displays, if your search string would span lines, FIND does not locate the string. To avoid this, search for the string in RAW format,

then enter the command B +20 to find the string again. This shifts the display by 32 bytes (hexadecimal 20) and the line breaks occur in different places.

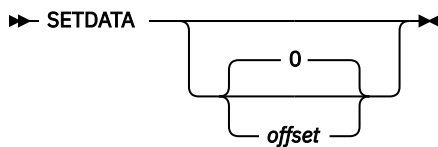
REFRESH command

➤ REFRESH ➤

Use the REFRESH command to scroll the display back to the +0 offset. REFRESH is useful if you have scrolled up past the initial "Top of Data" line and want to return to your original referenced storage location.

REFRESH is not available in CHAIN, ARRAY, or ARRAYP formatted displays.

SETDATA command



where:

offset

The offset at which ISRDDN is to treat the code as data rather than as an instruction.

The SETDATA command lets you specify an offset at which you want ISRDDN to treat the code as data rather than as an instruction.

WIDE command

➤ WIDE ➤

The WIDE command switches the display from narrow format to wide format.

If the screen is too narrow to handle the wide format, you must scroll right and left to see all of the data.

To return to narrow format, issue the NARROW command.

The wide or narrow format, set by the WIDE and NARROW commands respectively:

- Is maintained from one session to the next by means of a profile variable.
- Applies to data when it is displayed with a type setting of FORMAT, DATA, DUMP, or RAW. When data is displayed with a type setting of DISASM, the WIDE and NARROW commands have no effect.

Defining named storage locations

If you browse the same storage locations or control blocks frequently, you might want to set up a file that names those storage locations so that you can use a name in the BROWSE command.

To enable the BROWSE command to use a named reference to storage, you must allocate a sequential file to the ddname ISRDDN. Each line in that file is either a comment or a named storage location. Comments start with a semi-colon (;).

Location definitions have a name as the first word, followed by a TSO TEST style locator string. Anything after the locator string is ignored. The TSO TEST locator string can use another defined name as a starting point. If the locator string cannot be resolved because of syntax or other errors, the line is ignored.

For example, if you allocate a sequential file like the one shown in [Figure 53 on page 174](#) to ddname ISRDDN, you could then browse your User Profile Table, which stores your TSO PROFILE settings, by typing B UPT on the command line.

CVT	10.?	Communications Vector Table
PSCB	JSCB+108?	TSO Protected Step Control Block
JSCB	TCB+B4?	Job/Step Control Block
TCB	CVT??	Task Control Block
UPT	PSCB+34?	User Profile Table

Figure 53. Sample ISRDDN Named Storage File

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```
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