

Unit 3: ISPF Getting Started

Objectives

What is ISPF?
What Is a Dialog?
Starting ISPF
What are the ISPF Menu Options?
A First Look at ISPF
Using Function Keys
Allocating Libraries with Option 3.2
Shortcuts for Moving within ISPF Panels
Editing an ISPF Library with Option 2
Creating and Editing an ISPF Library Member
Using an Edit Profile
Using Edit Commands

Figure: 3-1. Objectives

What is ISPF?

ISPF helps programmers develop interactive applications called dialogs.

ISPF consists of four major components; DM, PDF, SCLM, and C/S.

The DM component is the Dialog Manager, which provides services to dialogs and end-users.

The PDF component is the Program Development Facility, which provides services to assist the dialog or application developer.

The SCLM component is the Software Configuration Library Manager, which provides services to application developers to manage their application development libraries.

The C/S component is the Client/Server, which allows you to run ISPF on a programmable workstation, to display the panels using the display function of your workstation operating system, and to integrate workstation tools and data with host tools and data.

Figure: 3-2. What is ISPF?

Notes:

ISPF can be used in the following ways:

- Managers can use ISPF Edit, SCRIPT/VS, and the Hardcopy utility or another print utility provided by their installation to prepare memos.
- 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.

What Is a Dialog?

A dialog is a “conversation” between a person using an interactive display terminal and a computer executing a program for a particular application.

For example, you might develop a dialog to help the Personnel Department update employee records.

ISPF dialogs are made up of dialog elements. Some elements must appear in every dialog. Other elements are optional—they are used only for certain types of applications or certain kinds of processing.

Figure: 3-3. What Is a Dialog?

Notes :

A dialog begins either by displaying a selection panel to present the choices available to the user, or by invoking a function to perform some initial processing. When you write a dialog, you can decide which way is best; it depends on the requirements of the application.

Dialog variable Dialog variables pass information among dialog functions and ISPF services.

Starting ISPF

- To start ISPF, log on to TSO.
- When the **READY** prompt appears, type **ISPF** or **PDF** and press **Enter**.
- The **ISPF** and **PDF** commands are aliases of **ISPF** module **ISRPCP**. When you run **ISRPCP** (or one of its aliases), **ISPF** is invoked with the command **ISPSTART PANEL(ISR@PRIM) NEWAPPL(ISR)**. You may specify any of the parameters valid for **ISPSTART** when invoking **ISPF**, **PDF**, or **ISRPCP**. However, if you specify parameters on the **ISPF** or **PDF** commands, only those parameters are passed to **ISPSTART**.

Figure: 3-4. Starting ISPF

Notes:

For example, if you specify:

ISPF NEWAPPL(ABC)

ISPF will be invoked with the command: **ISPSTART NEWAPPL(ABC)**.

Notice that **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, the invocation in the preceding example causes you to remain at the Ready prompt. You must ensure that you specify all the parameters you need to run your application in the correct environment.

The ISPF Screen

The ISPF Primary Option Menu contains the options that you can use to create your own applications online. If your installation has a customized ISPF Primary Option Menu, the menu might not contain all of the following options; or, it might contain certain installation-specific options.

Figure: 3-6. The ISPF Screen

What are the ISPF Menu Options?

```
Menu Utilities Compilers Options Status Help

                                ISPF Primary Option Menu
Option ===>-----

0 Settings      Terminal and user parameters      User ID.   : MTPL003
1 View          Display source data or listings   Time. . . : 18:59
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 or Workstation commands TSO logon : USERPROC
7 Dialog Test   Perform dialog testing             TSO prefix: MTPL003
8 LM Facility   Library administrator functions    System ID  : P390
9 IBM Products  IBM program development products   MVS acct. : ACCT#
10 SCLM         SW Configuration Library Manager    Release.   : ISPF 4.5
11 Workplace    ISPF Object/Action Workplace
S SDSF          Spool Search and Display Facility
D DITTO         DITTO/ESA for MVS Version 1
DF DFSORT       Data Facility Sort
DB DB2          Data Base Product
O OMVS          MVS Open Edition

Enter X to Terminate using log/list defaults
```

Figure: 3-5. What are the ISPF Menu Options?

Option Description

Option 0 – Settings

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

Option 1 – View

View displays data (you cannot change it) using the View or Browse function. Use View or Browse to look at 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 and find a character string. If you are using View, you can use all the commands and macros available to you in the Edit function.

Option 2 – Edit

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.

Figure: 3-7. Option Description

Option Description (Contd. 1)

Option 3 – Utilities

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.

Option 4 – Foreground

Foreground calls IBM language processing programs in the foreground, thus interactively executes language-processing programs.

Option 5 – Batch

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.

Option 6 – Command

Command Lets you enter TSO commands, including CLIST and REXX command procedures, while ISPF is running.

Figure: 3-8. Option Description (Contd. 1)

Option Description (Contd. 2)

Option 7 – Dialog Test

Dialog Test Helps you test individual dialog elements or entire dialogs to make sure everything works the way you want it to.

Option 8 – IBM Products

LM Facility controls and tracks the movement of members into controlled libraries and throughout library hierarchies.

Option 9 – LM Facility

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

Option 10 – SCLM

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

Figure: 3-9. Option Description (Contd. 2)

Option Description (Contd. 3)

Option 11 – Workplace

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

Option X – EXIT

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.

Figure: 3-10. Option Description (Contd. 3)

A First Look at ISPF

To begin your ISPF session, after the TSO ready prompt,

Type: ispf or

Type: pdf

Then press Enter. ISPF and PDF are the default command names; your Organization might use another command.

The ISPF Primary Option Menu appears on the screen containing the MTPL copyright logo. Press Enter to remove the IBM copyright logo pop-up window.

Figure: 3.11 A First Look at ISPF

ISPF Panel

```
OPTION ==> _          OS/390 MASTER APPLICATION MENU          SCROLL ==> PAGE
                                                                USERID - MAIN01
                                                                TIME   - 17:06

P  PDF      - ISPF/Program Development Facility
SD SDGF     - System Display and Search Facility
S  SORT     - DF/SORT Dialogs
X  EXIT     - Terminate ISPF using list/log defaults

*****
//-----//
// WELCOME TO MAINTEC COMPUTERS, HAVE A NICE DAY //
// YOU HAVE LOGGED ON TO LOGICAL PARTITION => LPAR2 //
// ON ES/9000 MAINFRAMES OPERATING ON OS/390 V2R6M0 //
//-----//
//*****//

F13=HELP  F14=SPLIT  F15=END   F16=RETURN  F17=RFIND  F18=RCHANGE
F19=UP    F20=DOWN  F21=SWAP  F22=LEFT   F23=RIGHT  F24=RETRIEVE
SA 1A1
```

Figure: 3.12. ISPF Panel

Notes:

The screen shows the standard ISPF Primary Option Menu. The panel you see might be different if your organization has added or changed some selections. Type FKA ON to view all of the function keys for the panel.

Using Function Keys

Before you start working with ISPF, you should know the operation of your function keys. Use the PFSHOW and FKA (function key area) commands to display function key values on your terminal screen for easy reference. The function keys on your terminal have default settings provided by ISPF. You do not have to use the function keys at all while you use the products, but they do make it easier to perform certain tasks. To show all function keys, type pfshow or fka on either a Command line or an Option line and press Enter.

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

The first time you type either of these commands; you see all of the function keys displayed on the panel. The partial screen illustrates a typical display of function keys where Panel display CUA mode is selected in Option 0, and Keylists are on.

Figure: 3.13. Using Function Keys

Notes:

If you type either of the commands again, you change the function keys displayed to only those that you defined as being on a short list of keys. If you type the command a third time, the keys do not display at all. As you can see, the commands work like a toggle. However, at any time, you can turn off the displayed keys by typing either pfshow off or fka off on either a Command line or an Option line and pressing Enter. Pressing a function key has the same effect as typing the command on the Command line and pressing Enter.

For instance, if a panel gives directions like this: Enter the END command to terminate. You get the same result (termination) whether you type the word END and press Enter, or press F3. For more information about using function keys, refer to ISPF User's Guide and now, it is time to get some hands-on experience with ISPF.

Allocating Libraries with Option 3.2

ISPF uses a library structure to name and organize data sets. This naming structure is similar to that used for TSO partitioned data sets:

A three-part name, with member names following in parentheses. The parts of the ISPF library name are: project.group.type for most organizations, the project name is your USERID.

Before you can create a member of an ISPF library, you must allocate the library. This is a different allocation from that which pairs a data set with a ddname that the operating system can recognize.

This allocation defines storage space for data sets or ISPF libraries so you can then use Edit (option 2) to create and update them.

Figure: 3.14. Allocating Libraries with Option 3.2

To allocate an ISPF library or Option 3.2

1. **Select Utilities (option 3) from the ISPF Primary Option Menu or from the action bar. The panel shown**

```
Menu Utilities Compilers Options Status Help

                                ISPF Primary Option Menu
Option ==> 3

0 Settings      Terminal and user parameters      User ID   : MTPL003
1 View          Display source data or listings   Time    . : 19:08
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 or Workstation commands TSO logon : USERPROC
7 Dialog Test   Perform dialog testing           TSO prefix: MTPL003
8 LM Facility   Library administrator functions   System ID : P390
9 IBM Products  IBM program development products MVS acct  : ACCT#
10 SCLM         SW Configuration Library Manager  Release.  : ISPF 4.5
11 Workplace    ISPF Object/Action Workplace
S SDSF         Spool Search and Display Facility
D DITTO        DITTO/ESA for MVS Version 1
DF DFSORT      Data Facility Sort
DB DB2         Data Base Product
O OMVS         MVS Open Edition
```

Figure: 3.15. To allocate an ISPF library or data set

To allocate an ISPF library or data set (Contd.1)

2. On the Utility Selection Menu, select the Data Set Utility.

Menu Help	
Utility Selection Panel	
Option ==> 2	
	More: +
1 Library	Compress or print data set. Print index listing. Print, Rename, delete, browse, edit or view members
2 Data Set	Allocate, rename, delete, catalog, uncatalog, or display Information of an entire data set
3 Move/Copy	Move, copy, or promote members or data sets
4 Dslist	Print or display (to process) list of data set names. Print or display VTOC information
5 Reset	Reset statistics for members of ISPF library
6 Hardcopy	Initiate hardcopy output
7 Download	Download ISPF C/S, VA for ISPF, transfer map, or data set.
8 Outlist	Display, delete, or print held job output
9 Commands	Create/change an application command table
10 Reserved	This option reserved for future expansion.
11 Format	Format definition for formatted data Edit/Browse
12 SuperC	Compare data sets (Standard Dialog)
13 SuperCE	Compare data sets Extended (Extended Dialog)
14 Search-For	Search data sets for strings of data (Standard Dialog)

Figure: 3.16. To allocate an ISPF library or data set (Contd.1)

To allocate an ISPF library or data set (Contd. 2)

- 3. On the Data Set Utility panel, select option A, Allocate new data set, and fill in the name of an ISPF library, as follows, using your USERID as the project name.**

```
Menu RefList Utilities Help

                                Data Set Utility

Option ==> A

      A Allocate new data set          C Catalog data set
      R Rename entire data set        U Uncatalog data set
      D Delete entire data set        S Data set information (short)
blank Data set information            M Allocate new data set
                                      V VSAM Utilities

ISPF Library:
  Project . . MTPL003
  Group . . . TEST
  Type . . . . SAMPLE

Other Partitioned, Sequential or VSAM Data Set:
  Data Set Name . . .
  Volume Serial . . . (If not cataloged, required for option "C")

Data Set Password. . (If password protected)
```

4. Press Enter

Figure: 3.17. To allocate an ISPF library or data set (Contd. 2)

To allocate an ISPF library or data set (Contd. 3)

5. On the Allocate New Data Set panel shown are characteristics that you can specify for the new data set.

```

Menu RefList Utilities Help

                                Allocate New Data Set
Command ==>

Data Set Name . . . : MTPL003.TEST.SAMPLE                                More:      +

Management class . . . (Blank for default management class)
Storage class . . . . (Blank for default storage class)
Volume serial . . . . STOR01 (Blank for system default volume) **
Device type . . . . . (Generic unit or device address) **
Data class . . . . . (Blank for default data class)
Space units . . . . . TRACK (BLKS, TRKS, CYLS, KB, MB, BYTES
                             or RECORDS)
Average record unit (M, K, or U)
Primary quantity . . 5 (In above units)
Secondary quantity . 5 (In above units)
Directory blocks . . 0 (Zero for sequential data set) *
Record format . . . . FB
Record length . . . . 80
Block size . . . . . 6160
Data set name type. : (LIBRARY, HFS, PDS, or blank) *
```

Figure: 3.18. To allocate an ISPF library or data set (Contd. 3)

Notes:

Make sure that the number of directory blocks is not zero; you must allocate an ISPF library as a partitioned data set. For this exercise, make sure that the values you specify are the same as those shown on the above panel.

To allocate an ISPF library or data set (Contd. 4)

6. Press Enter.

7. Check to see if the message Data set allocated appears in the upper right corner of the Data Set Utility panel

```
Menu RefList Utilities Help

      Data Set Utility      Data set allocated
Option ==>

      A Allocate new data set      C Catalog data set
      R Rename entire data set    U Uncatalog data set
      D Delete entire data set    S Data set information (short)
blank Data set information        M Allocate new data set
                                  V VSAM Utilities

ISPF Library:
  Project . . MTPL003
  Group . . . TEST
  Type . . . . SAMPLE

Other Partitioned, Sequential or VSAM Data Set:
  Data Set Name . . .
  Volume Serial . . .      (If not cataloged, required for option "C")

Data Set Password . .      (If password protected)
```

Figure: 3.19. To allocate an ISPF library or data set (Contd. 4)

Shortcuts for Moving within ISPF Panels

- In any input field on this panel, type an equal sign (=) followed by an option number. For example, 2, (=2) and press Enter. (If the input field is not empty, be sure to leave a blank space after the =2 command.), find yourself at the Edit Entry panel? This is another way to get around ISPF panels—it is called the jump function.
- You can use the jump function to move from one option to another under the same primary option menu. Type an equal sign followed by a ISPF option number in any input field that is preceded by ==> or leader dots (...), press Enter, and you can go directly to that option without going back to the ISPF Primary Option Menu.
- You can disable the jump function from fields preceded by leader dots within Option 0 Settings by deselecting the Jump from leader dots option. You can also access options by selecting them from the action bar.

Figure: 3.20 Shortcuts for Moving within ISPF Panels

Editing an ISPF Library with Option 2

**This exercise explains how to use option 2 to edit an ISPF library.
Remember that the ISPF library must have been allocated before you
can edit it.**

```
Menu Utilities Compilers Options Status Help

                                ISPF Primary Option Menu
Option ==> 2

0 Settings      Terminal and user parameters      User ID . : MTPL003
1 View          Display source data or listings    Time. . . : 19:16
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 or Workstation commands  TSO logon : USERPROC
7 Dialog Test   Perform dialog testing              TSO prefix: MTPL003
8 LM Facility   Library administrator functions    System ID : P390
9 IBM Products  IBM program development products   MVS acct. : ACCT#
10 SCLM         SW Configuration Library Manager    Release.  : ISPF 4.5
11 Workplace    ISPF Object/Action Workplace
S SDSF          Spool Search and Display Facility
D DITTO         DITTO/ESA for MVS Version 1
DF DFSORT       Data Facility Sort
DB DB2          Data Base Product
O OMVS         MVS Open Edition
```

Figure: 3.21. Editing an ISPF Library with Option 2

Creating and Editing an ISPF Library Member

1. To create and edit member of the ISPF library that is allocated,

```
Menu RefList RefMode Utilities LMF Workstation Help

                                Edit Entry Panel

Command ==>

ISPF Library:
  Project . . . MTPL003
  Group . . . TEST      . . . . .
  Type . . . SAMPLE
  Member . . . NEW      (Blank or pattern for member selection list)

Other Partitioned or Sequential Data Set:
  Data Set Name . . .
  Volume Serial . . . (If not cataloged)

Workstation File:
  File Name . . . . .

                                Options
Initial Macro . . . . / Confirm Cancel/Move/Replace
Profile Name . . . . Mixed Mode
Format Name . . . . Edit on Workstation
Data Set Password. . . Preserve VB record length
```

Figure: 3.22. Creating and Editing an ISPF Library Member

Notes:

- You can remove any warnings in the member by typing reset on the command line and pressing Enter.
- You do not need to fill in or change any of the other information on this panel. Press Enter.

Creating and Editing an ISPF Library Member (Contd.1)

- 2. On the panel, press the Tab key to move to the text area and enter the following (or some text of your own choice):**

```
File Edit Confirm Menu Utilities Compilers Test Help

EDIT      MTPL003.TEST.SAMPLE(NEW) - 01.00          Columns 00001 00072
Command ==>                                Scroll ==> PAGE
***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until you change
==MSG>      your edit profile using the command RECOVERY ON.
***** SOME TEXT OF YOUR CHOICE
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
*****
```

Figure: 3.23. Creating and Editing an ISPF Library Member (Contd.1)

Creating and Editing an ISPF Library Member (Contd.2)

- 3. When you finish typing the text, press Enter. The cursor moves below the last line of input, and all the text you just typed is now in capital letters! To understand what caused that to happen, we have to look at the edit profile for this data set.**

```
File Edit Confirm Menu Utilities Compilers Test Help

EDIT    MTPL003.TEST.SAMPLE(NEW) - 01.00          Columns 00001 00072
Command ==>                               Scroll ==> PAGE
***** Top of Data *****
000100 SOME TEXT OF YOUR CHOICE
***** Bottom of Data *****
```

Figure: 3.24. Creating and Editing an ISPF Library Member (Contd.2)

Editing an ISPF Library Member

1. First, move the cursor back to the Command line.

```
File Edit Confirm Menu Utilities Compilers Test Help

EDIT    MTPL003.TEST.SAMPLE(NEW) - 01.00          Columns 00001 00072
Command ==> PROFILE                               Scroll ==> PAGE
***** ***** Top of Data *****
=PROF> ....SAMPLE (FIXED - 80)....RECOVERY OFF WARN....NUMBER DISPLAY STD.....
=PROF> ....CAPS OFF....HEX OFF....NULLS OFF....TABS OFF.....
=PROF> ....AUTOSAVE ON....AUTONUM OFF....AUTOLIST OFF....STATS ON.....
=PROF> ....PROFILE UNLOCK....IMACRO NONE....PACK OFF....NOTE ON.....
=PROF> ....HILITE OFF FIND.....
000100 SOME TEXT OF YOUR CHOICE
***** ***** Bottom of Data *****
```

Figure: 3.25. Editing an ISPF Library Member

Using an Edit Profile

An edit profile is a set of characteristics that defines the way you can edit a data set.

For example, a profile can be set up to edit data that is all in capital letters, or to edit data that is in mixed-case letters. ISPF generates a default edit profile based on the library type of the data set you are editing. Usually, the default profile is suitable for the kind of data you want to put in the data set. Sometimes, however, it is not.

To look at the edit profile for this data set, type:

Command ===> profile, On the Command line and press Enter.

The default edit profile appears on five lines above the data set member

Figure: 3.26. Using an Edit Profile

Using Edit Commands

There are two kinds of commands within the Edit option:

- **Primary commands**
- **Line commands**

Primary commands are the ones you type in on the edit Command line at the top of your data. For example: PROFILE, CAPS OFF, UNNUM, and RESET.

Line commands are commands that you enter on the edit line numbers, which are located on the left side of the data.

Figure: 3.27. Using Edit Commands

Notes:

Saving a Data Set Member

Pressing F3 saves the member and takes you back to the Edit Entry panel, where you see the Member NEW saved message in the short message area in the upper-right corner.

Unit Summary

ISPF Getting Started gives you some general information about ISPF and introduces some terminology that is used in the ISPF environment. It discusses some ISPF services and summarizes the options. It also provides practice using the product.

Figure: 2.19 Unit Summary