



z/OS Introduction and Workshop

TSO, ISPF, and SDSF

Unit Objectives

After completing this unit, you should be able to:

- Describe and use TSO
- Describe and use ISPF
- Describe and use SDSF
- Describe and use ISPF editor
- Locate TSO, ISPF, and SDSF Manuals

Terminology

TSO - Time Sharing Option

Interactive command line interface (CLI)

Ready prompt without full screen support

ISPF – Interactive System Productivity Facility

Interactive panel driven interface with full screen support

Requires TSO as base environment

SDSF – System Display and Search Facility

Interactive panel driven interface with full screen support

Requires TSO as base environment

z/OS 3270 Applications

TSO, ISPF, and SDSF

- are fundamental z/OS navigation interfaces
- are primarily accessed using a TN3270 emulator (text based)
- are used for application development
- are used for system and operation tasks
- can be executed in background (batch)

	<u>Function</u>	<u>Key</u>
ISPF 3270	Enter	Ctrl (right side)
Keyboard	Help	F1
Function	Split	F2
	Exit, end, or return	F3
	Page Up	F7
	Page Down	F8
	Swap	F9
	Right	F10
	Left	F11
	Cancel	F12
	PA1 or Attention	Alt-Ins or Esc
	PA2	Alt-Home
	Cursor movement	Arrow keys, Tab key
	Clear	Pause
	Reset locked keyboard	Ctrl (left side)

z/OS 3270 Navigation and Data Entry

Protected Fields - *data entry denied*

Unprotected Fields - *data entry allowed*

Cursor Movement and Positioning

Arrow keys - *up, down, right, left*

Tab key - *position into next unprotected field for data entry*

Mouse click - *place cursor at position of pointer*

PA1 - *program attention interrupt*

RESET - *unlock keyboard*

******* *requires enter to proceed writing output to terminal screen*

TN3270 emulator connection

```
=====
=====
===
===      ==WELCOME==TO  THE=====
===  IBM Innovation Center - Dallas==
===
=====
=====
```

```
MVR22GA      ***  z/OS V2 R2  via TCPIP Telnet ***
```

Choose from the following commands:
(Not all applications are available in every system.)

```
TSO      - Logon TSO (24x80)
IMS      - Logon IMS
CICS     - Logon CICS TS 5.3
CICS42   - Logon CICS TS 4.2
```

```
tso █
```

ISPF Primary Option Menu using TN3270 emulator

x - terminate ISPF program

```

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

Option ==> =x|
More: +
0 Settings      Terminal and user parameters      User ID . . : ZIBM050
1 View          Display source data or listings   Time. . . : 14:04
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 : DBPROC BG
7 Dialog Test  Perform dialog testing           TSO prefix: ZIBM050
8 LM Facility  Library administrator functions   System ID  : S0W1
9 IBM Products IBM program development products MVS acct. : FB3
10 SCLM        SW Configuration Library Manager  Release . : ISPF 7.2
11 Workplace  ISPF Object/Action Workplace

----- Other Install Products -----

D Debug Tool  Debug Tool Utility V13.1
SD SDSF      System Display and Search Facility
IP IPCS      Inter Problem Control Facility
IS ISMF      Inter Storage Management Facility
SM SMP/E     SMP/E and CBIPO Dialogs
HC HCD       HW Configuration Definition Dialog
R RACF       Resource Access Control Facility
S DFSORT     Data Facility Sort
OE OEDIT     OpenEdition MVS Edit files
OB OBROWSE   OpenEdition MVS Browse files
OS OSHELL    OpenEdition MVS ISPF Shell
BR READ      BookManager READ/MVS
BB BUILD     BookManager BUILD/MVS
BI READ INDEX BookManager Index Utility
DU MVS/DITTO MVS/DITTO Utility
IN INSPECT   INSPECT for C/370 and PL/I
MQ MQSeries  MQSeries 8.0.0
D2 DB2I      Perform DB2 Interactive functions
DM DB2ADM    DB2 Admin Tool
QM QMF       Query Management Facility for DB2
CO CICS PD/MVS CICS PD/MVS Online Customization

```

Enter X to Terminate using log/list defaults

TSO READY prompt command line interface, then execute SDSF environment

READY
sdsf

```

HGX77A0 ----- SDSF PRIMARY OPTION MENU -----
COMMAND INPUT ==> █ SCROLL ==> PAGE

DA   Active users
I    Input queue
O    Output queue
H    Held output queue
ST   Status of jobs
JG   Job groups
SYM  System symbols
LOG  System log
SR   System requests
MAS  Members in the MAS
JC   Job classes
SE   Scheduling environments
RES  WLM resources
ENC  Enclaves
PS   Processes
SYS  System information
ENQ  Enqueues
DYNX Dynamic exits
AS   Address space memory

INIT Initiators
PR   Printers
PUN  Punches
RDR  Readers
LINE Lines
NODE Nodes
SO   Spool offload
SP   Spool volumes
NS   Network servers
NC   Network connections
RM   Resource monitor
CK   Health checker
LNK  Link list data sets
LPA  Link pack data sets
APF  APF data sets
PAG  Page data sets
PARM Parmlib data sets
PROC Proclib data sets
ULOG User session log

END  Exit SDSF

```

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TSO READY prompt command line interface, then execute ISPF environment

READY
ispf

```

Menu Utilities Compilers Options Status Help
-----
ISPF Primary Option Menu
Option ==> |
More: +
0 Settings Terminal and user parameters User ID . : IBMUSER
1 View Display source data or listings Time. . . : 16:30
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 : DBPROC BG
7 Dialog Test Perform dialog testing TSO prefix: IBMUSER
8 LM Facility Library administrator functions System ID : S0W1
9 IBM Products IBM program development products MVS acct. : FB3
10 SCLM SW Configuration Library Manager Release . : ISPF 7.2
11 Workplace ISPF Object/Action Workplace

----- Other Install Products -----
FA IDI Fault Analyzer 13.1.0
 D Debug Tool Debug Tool Utility V13.1
SD SDSF System Display and Search Facility
IP IPCS Inter Problem Control Facility
IS ISMF Inter Storage Management Facility
SM SMP/E SMP/E and CBIPO Dialogs
HC HCD HW Configuration Definition Dialog
 R RACF Resource Access Control Facility
 S DFSORT Data Facility Sort
OE OEDIT OpenEdition MVS Edit files
OB OBROWSE OpenEdition MVS Browse files
OS OSHELL OpenEdition MVS ISPF Shell
BR READ BookManager READ/MVS
BB BUILD BookManager BUILD/MVS
BI READ INDEX BookManager Index Utility
DA DXT ADMIN Invoke DXT Administrative Dialogs

```

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ns
panels

Enter X to Terminate using log/list defaults

TSO command line interface – the ready prompt

Primarily a base environment for ISPF and SDSF

Rarely used interactively

Limited set of commands

Execute programs and scripts

TSO environment can be executed using JCL (Batch)

Examples of using TSO environment interactively follow

TSO PROFILE and LISTC commands

```

READY
profile
CHAR(0) LINE(0)  PROMPT  INTERCOM  NOPAUSE NOMSGID NOMODE  NOWTPMSG NORECO
VER PREFIX(ZIBM050) PLANGUAGE(ENU) SLANGUAGE(ENU) VARSTORAGE(LOW)
DEFAULT LINE/CHARACTER DELETE CHARACTERS IN EFFECT FOR THIS TERMINAL
READY
time
TIME-04:34:56 PM. CPU-00:00:00 SERVICE-27861 SESSION-00:00:25 FEBRUARY 13,2017
READY
profile msgid
READY
time
IKJ56650I TIME-04:35:40 PM. CPU-00:00:00 SERVICE-27959 SESSION-00:01:09 FEBRUAR
Y 13,2017
READY
profile nomsgid
READY
time
TIME-04:35:50 PM. CPU-00:00:00 SERVICE-28053 SESSION-00:01:19 FEBRUARY 13,2017
READY
listc
IN CATALOG:CATALOG.USERAA
ZIBM050.DATA
ZIBM050.DB2.JCL
ZIBM050.DB2.SOURCE
ZIBM050.DB2.SQL
ZIBM050.EXEC
ZIBM050.INSTRUCT
ZIBM050.JCL
ZIBM050.LOAD
ZIBM050.OUTPUT
ZIBM050.RDZ.COBOL
ZIBM050.SOURCE
ZIBM050.S0W1.ISPF.ISPPROF
READY
profile noprefix
READY
listc
                                LISTING FROM CATALOG -- MASTERY.CATALOG
CLUSTER ----- 0000000000000000000000000000000000000000000000000000000000000000
DATA ----- MASTERY.CATALOG
INDEX ----- MASTERY.CATALOG.CATINDEX
*** █

```

Why? Same command with completely different results. This will be explained later. PA1 is needed to stop writing output.

TSO PROFILE and LISTC commands

```
|  
READY  
profile prefix(zibm050)  
READY  
listc  
IN CATALOG:CATALOG.USERAA  
ZIBM050.DATA  
ZIBM050.DB2.JCL  
ZIBM050.DB2.SOURCE  
ZIBM050.DB2.SQL  
ZIBM050.EXEC  
ZIBM050.INSTRUCT  
ZIBM050.JCL  
ZIBM050.LOAD  
ZIBM050.OUTPUT  
ZIBM050.RDZ.COBOL  
ZIBM050.SOURCE  
ZIBM050.SOW1.ISPF.ISPPROF  
READY  
█
```

TSO PROFILE, LISTC, and SEND command

```
|
READY
profile prefix(zibm050)
READY
listc
IN CATALOG:CATALOG.USERAA
ZIBM050.DATA
ZIBM050.DB2.JCL
ZIBM050.DB2.SOURCE
ZIBM050.DB2.SQL
ZIBM050.EXEC
ZIBM050.INSTRUCT
ZIBM050.JCL
ZIBM050.LOAD
ZIBM050.OUTPUT
ZIBM050.RDZ.COBOLE
ZIBM050.SOURCE
ZIBM050.SOW1.ISPF.ISPPROF
READY
send 'test message' user(zibm050)
test message ZIBM050
READY
ispf□
```

ISPF Interactive System Productivity Facility

Menu-driven panels

User can select options and specify parameters

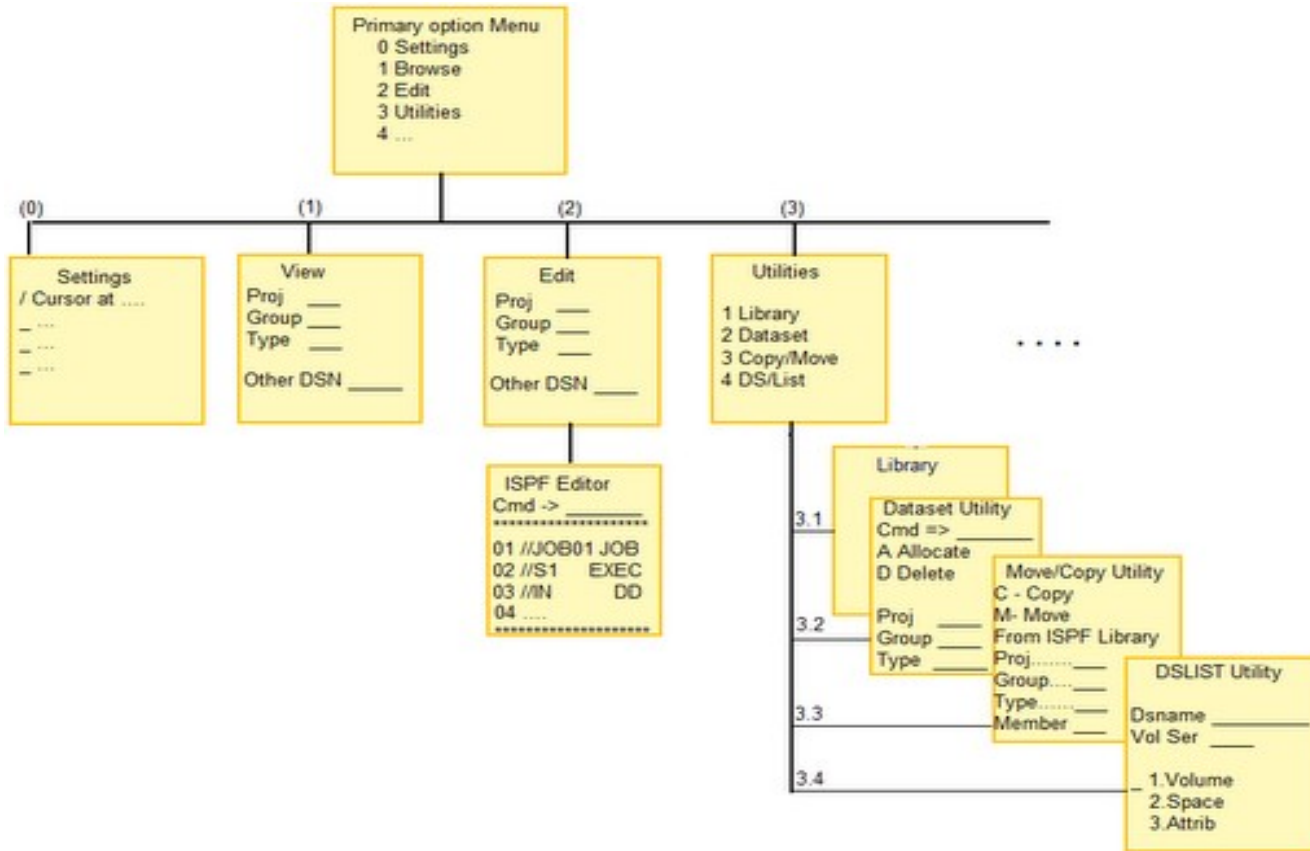
Program function (PF) keys available to simplify requests for common functions

Full screen format for information display and editing

When data does not fit on the screen, ISPF provides scrolling in all four directions

Menus, panels, selections and navigation can be customized

ISPF – A Panel Driven Interface



ISPF Panel Navigation

Menu Utilities Compilers Options Status Help

ISPF Primary Option Menu

Option ==> 3

More: +

0	Settings	Terminal and user parameters	User ID . : ZIBM050
1	View	Display source data or listings	Time. . . : 16:42
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 : DBPROCBG
7	Dialog Test	Perform dialog testing	TSO prefix: ZIBM050
8	LM Facility	Library administrator functions	System ID : S0W1
9	IBM Products	IBM program development products	MVS acct. : FB3
10	SCLM	SW Configuration Library Manager	Release . : ISPF 7.2
11	Workplace	ISPF Object/Action Workplace	

----- Other Install Products -----

FA	IDI	Fault Analyzer 13.1.0
D	Debug Tool	Debug Tool Utility V13.1
SD	SDSF	System Display and Search Facility
IP	IPCS	Inter Problem Control Facility
IS	ISMF	Inter Storage Management Facility
SM	SMP/E	SMP/E and CBIPO Dialogs

ISPF Panel Navigation

Menu Help

Utility Selection Panel

Option ==> 4

- | | | |
|----|-------------|--|
| 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, or copy 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 | Transfer | Download ISPF Client/Server or Transfer data set |
| 8 | Outlist | Display, delete, or print held job output |
| 9 | Commands | Create/change an application command table |
| 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) |
| 15 | Search-ForE | Search data sets for strings of data Extended (Extended Dialog) |
| 16 | Tables | ISPF Table Utility |
| 17 | Udlist | Print or display (to process) z/OS UNIX directory list |

ISPF Panel Navigation – Data Set Name Pattern Matching

Menu RefList RefMode Utilities Help

Data Set List Utility

Option ==> _____

blank	Display data set list	P	Print data set list
V	Display VTOC information	PV	Print VTOC information

Enter one or both of the parameters below:

Dsname Level . . . zibm050
 Volume serial . . . _____

Data set list options

<u>I</u> nitial View	Enter "/" to select option
<u>1</u> 1. Volume	/ Confirm Data Set Delete
2. Space	/ Confirm Member Delete
3. Attrib	/ Include Additional Qualifiers
4. Total	/ Display Catalog Name
	- Display Total Tracks
	- Prefix Dsname Level

When the data set list is displayed, enter either:

"/" on the data set list command field for the command prompt pop-up,
 an ISPF line command, the name of a TSO command, CLIST, or REXX exec, or
 "=" to execute the previous command.

ISPF Command Column in DSLIST Panel

Menu Options View Utilities Compilers Help

DSLIST - Data Sets Matching ZIBM050

Row 1 of 13

Command ==>

Scroll ==> PAGE

Command - Enter "/" to select action

Message

Volume

Command	Message	Volume
ZIBM050		*ALIAS
ZIBM050.DATA		VPWRKD
ZIBM050.DB2.JCL		VPWRKB
ZIBM050.DB2.SOURCE		VPWRKA
ZIBM050.DB2.SQL		VPWRKA
ZIBM050.EXEC		VPWRKC
ZIBM050.INSTRUCT		VPWRKB
/ ZIBM050.JCL		VPWRKB
ZIBM050.LOAD		VPWRKB
ZIBM050.OUTPUT		VPWRKD
ZIBM050.RDZ.COBOL		VPWRKA
ZIBM050.SOURCE		VPWRKA
ZIBM050.SOW1.ISPF.ISPPROF		VPWRKC

***** End of Data Set list *****

ISPF Command Column in DSLIST Panel

```
                                Data Set List Actions
                                More:      +
Data Set: ZIBM050.JCL

DSLIST Action
█  1.  Edit                      15. Reset
   2.  View                      16. Move
   3.  Browse                    17. Copy
   4.  Member List              18. Refadd
   5.  Delete                   19. Exclude
   6.  Rename                   20. Unexclude "NX"
   7.  Info                     21. Unexclude first "NXF"
   8.  Short Info               22. Unexclude last "NXL"
   9.  Print                    23. SuperC "SC"
  10. Catalog                   24. SuperCE "SCE"
  11. Uncatalog                 25. Search-For "SF"
  12. Compress                  26. Search-ForE "SFE"
  13. Free                      27. Allocate
  14. Print Index
```

ISPF Panel Navigation

Menu Utilities Compilers Options Status Help

ISPF Primary Option Menu

Option ==> =3.4

More: +

- 0 Settings Terminal and user parameters
- 1 View Display source data or listings
- 2 Edit Create or change source data
- 3 Utilities Perform utility functions
- 4 Foreground Interactive language processing
- 5 Batch Submit job for language processing
- 6 Command Enter TSO or Workstation commands
- 7 Dialog Test Perform dialog testing
- 8 LM Facility Library administrator functions
- 9 IBM Products IBM program development products
- 10 SCLM SW Configuration Library Manager
- 11 Workplace ISPF Object/Action Workplace

User ID . : ZIBM050
Time. . . : 16:48
Terminal. : 3278
Screen. . : 1
Language. : ENGLISH
Appl ID . : ISR
TSO logon : DBPROCGB
TSO prefix: ZIBM050
System ID : SOW1
MVS acct. : FB3
Release . : ISPF 7.2

----- Other Install Products -----

- FA IDI Fault Analyzer 13.1.0
- D Debug Tool Debug Tool Utility V13.1
- SD SDSF System Display and Search Facility
- IP IPCS Inter Problem Control Facility
- IS ISMF Inter Storage Management Facility
- SM SMP/E SMP/E and CBIPO Dialogs

Edit 'e' ZIBM050.JCL partitioned data set

Menu Options View Utilities Compilers Help

DSLISL - Data Sets Matching ZIBM050

Row 1 of 13

Command ==>

Scroll ==> PAGE

Command - Enter "/" to select action

Message

Volume

Command	Message	Volume
ZIBM050		*ALIAS
ZIBM050.DATA		VPWRKD
ZIBM050.DB2.JCL		VPWRKB
ZIBM050.DB2.SOURCE		VPWRKA
ZIBM050.DB2.SQL		VPWRKA
ZIBM050.EXEC		VPWRKC
ZIBM050.INSTRUCT		VPWRKB
e ZIBM050.JCL		VPWRKB
ZIBM050.LOAD		VPWRKB
ZIBM050.OUTPUT		VPWRKD
ZIBM050.RDZ.COBOL		VPWRKA
ZIBM050.SOURCE		VPWRKA
ZIBM050.S0W1.ISPF.ISPPROF		VPWRKC

***** End of Data Set list *****

Select 's' new member edittest

```

Menu  Functions  Confirm  Utilities  Help
-----
EDIT          ZIBM050.JCL          Row 0000001 of 0000029
Command ==> s edittest
Name          Prompt          Size  Created          Changed          PAGE
-----
ADDAMT
AREACODE
ASMRUN
CBL0001J
CBL0002J
CBL0003J
CBL0004J
CBL0005J
CBL0006J
COBOLCL
COBRUN
CRUN
DEFVSAM
JCLERROR
JCLTEST
LOG
LOG1
LOG2
LOG3
LOG4
MINE
NETRPT
RACFCMD
RACFRPT
SENDMSG
SORT
SORTCNTL
SORTPROC
ZFS
**End**

```


ISPF EDIT mode on data set ZIBM050.JCL member name EDITTEST

```
File Edit Edit Settings Menu Utilities Compilers Test Help
EDIT ZIBM050.JCL(EDITTEST) - 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.
***** ***** Bottom of Data *****
```

Text input area

Tab to first open line

Type characters into text input area

```

File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT          ZIBM050.JCL(EDITTEST) - 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.
*****
***** abcdefgh
***** 12345678
***** Line 3
***** Line 4
*****
*****
*****

```

Tab to newlines – wait to 'enter'

Only 'enter' after Line 4

Observe line numbers now present to left of text

```

File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT          ZIBM050.JCL(EDITTEST) - 01.00          Columns 00001 00072
Command ==>> profile                               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.
000100 abcdefgh
000200 12345678
000300 Line 3
000400 Line 4
***** ***** Bottom of Data *****

```

Type characters into text input area

```

File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT      ZIBM050.JCL(EDITTEST) - 01.00          Columns 00001 00072
Command ==> profile                               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.
000100 abcdefgh
000200 12345678
000300 Line 3
000400 Line 4
***** ***** Bottom of Data *****

File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT      ZIBM050.JCL(EDITTEST) - 01.00          Columns 00001 00072
Command ==>                                     Scroll ==> PAGE
***** ***** Top of Data *****
=PROF> ....JCL (FIXED - 80)....RECOVERY OFF WARN....NUMBER DISPLAY STD.....
=PROF> ....CAPS OFF....HEX OFF....NULLS ON STD....TABS OFF.....
=PROF> ....AUTOSAVE ON....AUTONUM OFF....AUTOLIST OFF....STATS ON.....
=PROF> ....PROFILE UNLOCK....IMACRO NONE....PACK OFF....NOTE ON.....
=PROF> ....HILITE OFF CURSOR FIND.....
==MSG> -Warning- The UNDO command is not available until you change
==MSG>      your edit profile using the command RECOVERY ON.
000100 abcdefgh
000200 12345678
000300 Line 3
000400 Line 4
***** ***** Bottom of Data *****

```

ISPF primary edit command 'reset' will remove the '=PROF>' and '==MSG>' lines

```

File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT          ZIBM050.JCL(EDITTEST) - 01.00          Columns 00001 00072
Command ==> reset                                     Scroll ==> PAGE
***** ***** Top of Data *****
=PROF> ....JCL (FIXED - 80)....RECOVERY OFF WARN....NUMBER DISPLAY STD.....
=PROF> ....CAPS OFF....HEX OFF....NULLS ON STD....TABS OFF.....
=PROF> ....AUTOSAVE ON....AUTONUM OFF....AUTOLIST OFF....STATS ON.....
=PROF> ....PROFILE UNLOCK....IMACRO NONE....PACK OFF....NOTE ON.....
=PROF> ....HILITE OFF CURSOR FIND.....
==MSG> -Warning- The UNDO command is not available until you change
==MSG>         your edit profile using the command RECOVERY ON.
000100 abcdefgh
000200 12345678
000300 Line 3
000400 Line 4
***** ***** Bottom of Data *****

```

```

File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT          ZIBM050.JCL(EDITTEST) - 01.00          Columns 00001 00072
Command ==>                                Scroll ==> PAGE
***** ***** Top of Data *****
000100 abcdefgh
000200 12345678
000300 Line 3
000400 Line 4
***** ***** Bottom of Data *****

```

Example of using line commands

```

EDIT      ZIBM050.JCL(EDITTEST) - 01.00          Columns 00001 00072
Command ==>                                     Scroll ==> PAGE
***** ***** Top of Data *****
d 0100 abcdefgh
r3 200 12345678
000300 Line 3
i2 400 Line 4
***** ***** Bottom of Data *****

```

Result of 'enter'

```

EDIT      ZIBM050.JCL(EDITTEST) - 01.01          Columns 00001 00072
Command ==>                                     Scroll ==> PAGE
***** ***** Top of Data *****
000200 12345678
000210 12345678
000220 12345678
000230 12345678
000300 Line 3
000400 Line 4
----- █
-----
***** ***** Bottom of Data *****

```

Example of using primary and line commands at same time

```

EDIT          ZIBM050.JCL(EDITTEST) - 01.01                Columns 00001 00072
Command ==> c "Line" "statement" all                      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.
dd 200 12345678
000210 12345678
dd 220 12345678
000230 12345678
000300 Line 3
000400 Line 4
----- ISPF has primary and line edit commands
----- Both primary and line edit commands can be typed before enter
***** ***** Bottom of Data *****

```

Result of 'enter'

```

EDIT          ZIBM050.JCL(EDITTEST) - 01.01                CHARS "LINE" changed
Command ==> reset                                         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.
000230 12345678
==CHG> statement 3
==CHG> statement 4
==CHG> ISPF has primary and statement edit commands
==CHG> Both primary and statement edit commands can be typed before enter
***** ***** Bottom of Data *****

```

Result of reset, then 'enter'

```

EDIT          ZIBM050.JCL(EDITTEST) - 01.01                Columns 00001 00072
Command ==>                                             Scroll ==> PAGE
***** ***** Top of Data *****
000230 12345678
000300 statement 3
000400 statement 4
000500 ISPF has primary and statement edit commands
000600 Both primary and statement edit commands can be typed before enter
***** ***** Bottom of Data *****

```

ISPF EDIT online tutorial

```
Tutorial ----- Edit ----- Tutorial  
Option ==> █
```

Edit allows you to create or change source data.

The following topics are presented in sequence, or may be selected by number:

- | | |
|--|---|
| 0 - General introduction | 11 - Automatic recovery |
| 1 - Types of data sets | 12 - Edit profiles |
| 2 - Edit entry panel | 13 - Edit line commands |
| 3 - SCLM edit entry panel | 14 - Edit primary commands |
| 4 - Member selection list | 15 - Labels and line ranges |
| 5 - z/OS UNIX directory selection list | |
| 6 - Display screen format | The following topics are presented
only if selected by number: |
| 7 - Scrolling data | 16 - Ending an edit session |
| 8 - Sequence numbering | 17 - Edit models |
| 9 - Display modes (CAPS/HEX/NULLS) | 18 - Miscellaneous notes about edit |
| 10 - Tabbing (hardware/software/logical) | |

Edit Tutorial help on 'line commands'

```
Tutorial ----- Edit ----- Tutorial
Option ==> 13
```

Edit allows you to create or change source data.

The following topics are presented in sequence, or may be selected by number:

- | | |
|--|-------------------------------------|
| 0 - General introduction | 11 - Automatic recovery |
| 1 - Types of data sets | 12 - Edit profiles |
| 2 - Edit entry panel | 13 - Edit line commands |
| 3 - SCLM edit entry panel | 14 - Edit primary commands |
| 4 - Member selection list | 15 - Labels and line ranges |
| 5 - z/OS UNIX directory selection list | |
| 6 - Display screen format | The following topics are presented |
| 7 - Scrolling data | only if selected by number: |
| 8 - Sequence numbering | 16 - Ending an edit session |
| 9 - Display modes (CAPS/HEX/NULLS) | 17 - Edit models |
| 10 - Tabbing (hardware/software/logical) | 18 - Miscellaneous notes about edit |

```
TUTORIAL ----- EDIT - LINE COMMANDS ----- TUTORIAL
OPTION ==>
```

```
-----
|           EDIT           |
|       LINE COMMANDS     |
|-----|
```

The following topics are presented in sequence, or can be selected by number. Individual commands can be selected by entering the command name.

- | | |
|-----------------------------|--------------------------------|
| 0 - Line commands: | General information |
| 1 - Basic commands: | I D R |
| 2 - Move/Copy commands: | C M A B O |
| 3 - Shifting commands: |) (> < |
| 4 - Exclude/Show commands: | X F L S |
| 5 - Text handling commands: | TE TF TS LC UC |
| 6 - Miscellaneous commands: | BNDS COLS MASK TABS |
| 7 - Data commands: | MD HX |

Edit Tutorial help on 'primary commands'

```
Tutorial ----- Edit ----- Tutorial
Option ==> 14
```

Edit allows you to create or change source data.

The following topics are presented in sequence, or may be selected by number:

- | | |
|--|-------------------------------------|
| 0 - General introduction | 11 - Automatic recovery |
| 1 - Types of data sets | 12 - Edit profiles |
| 2 - Edit entry panel | 13 - Edit line commands |
| 3 - SCLM edit entry panel | 14 - Edit primary commands |
| 4 - Member selection list | 15 - Labels and line ranges |
| 5 - z/OS UNIX directory selection list | |
| 6 - Display screen format | The following topics are presented |
| 7 - Scrolling data | only if selected by number: |
| 8 - Sequence numbering | 16 - Ending an edit session |
| 9 - Display modes (CAPS/HEX/NULLS) | 17 - Edit models |
| 10 - Tabbing (hardware/software/logical) | 18 - Miscellaneous notes about edit |

```
Tutorial ----- Edit Primary Commands ----- Tutorial
Option ==> █
```

The following topics are presented in sequence, or may be selected by number. Individual commands may be selected by entering the command name.

- 0 - Primary commands (general information)
- 1 - Miscellaneous commands
- 2 - FIND/CHANGE/EXCLUDE commands
- 3 - Number control commands
- 4 - Display mode control commands
- 5 - Termination control commands
- 6 - External data commands
- 7 - Macro control commands
- 8 - Data editing commands
- 9 - Edit settings command

Note: Select >CANCEL to see information for the CANCEL command.

F3 will automatically save changes and return

```

EDIT                               ZIBM050.JCL                               Member EDITTEST saved
Command ==> |                               Scroll ==> PAGE
-----|-----|-----|-----|-----|-----|-----|-----|
Name      Prompt      Size  Created  Changed  Time      ID
-----|-----|-----|-----|-----|-----|-----|
EDITTEST  *Edited      5    2017/02/13  2017/02/13  18:09:11  ZIBM050
JCLERROR
JCLTEST
LOG
LOG1
LOG2
LOG3
LOG4
MINE
NETRPT
RACFCMD
RACFRPT
SENDMSG
SORT
SORTCNTL
SORTPROC
ZFS
**End**

```

ISPF – Navigate to SDSF environment

sd is SDSF option selection

preceding = is executing option as if on ISPF Primary Option Menu

```

Menu  RefList  RefMode  Utilities  Help
-----
Option ==> =sd
Data Set List Utility

blank Display data set list          P Print data set list
  V Display VTOC information          PV Print VTOC information
  
```

Enter one or both of the parameters below:

```

Dsname Level . . . ZIBM050
Volume serial . . . _____
  
```

Data set list options

```

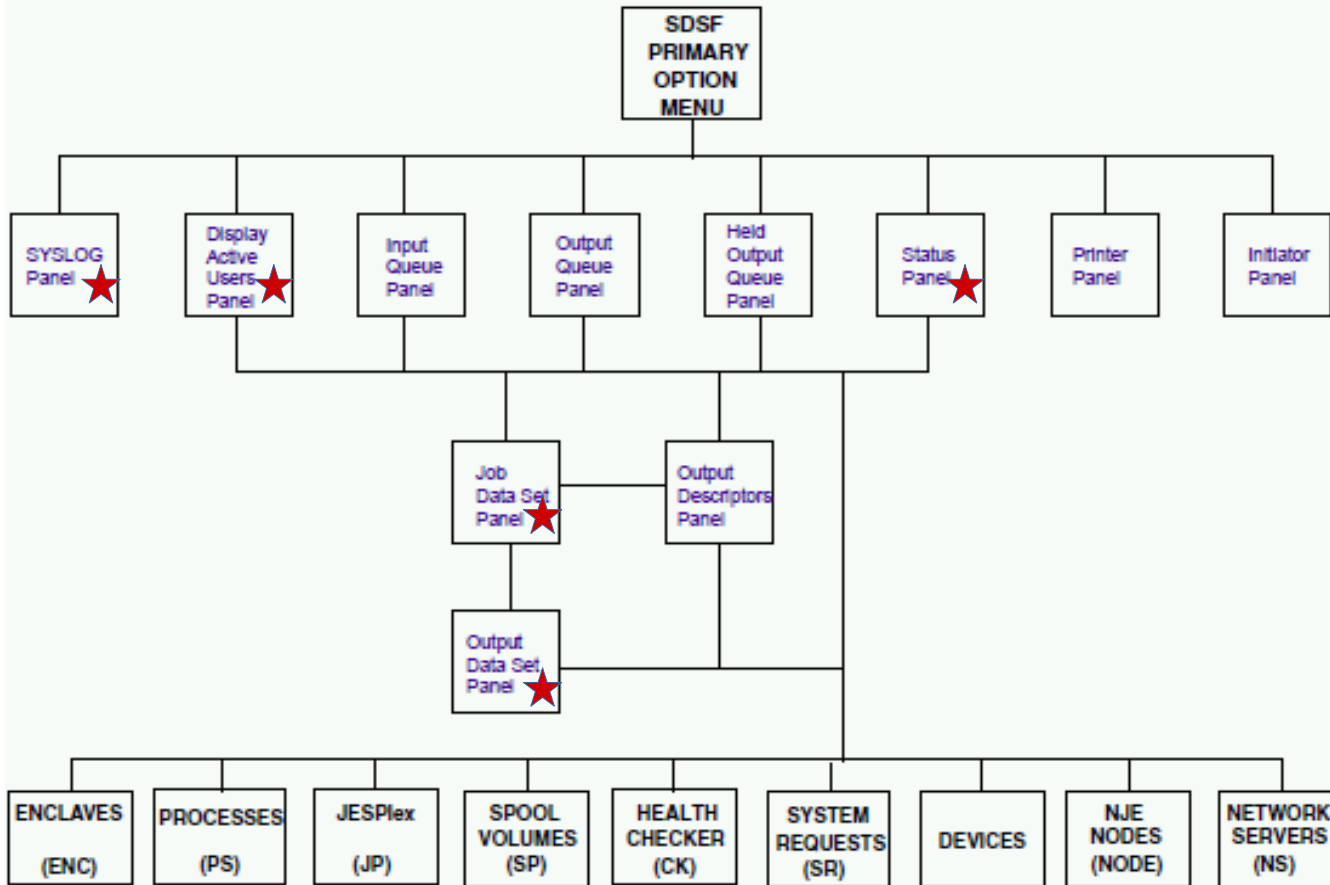
Initial View
 1 1. Volume
 2 2. Space
 3 3. Attrib
 4 4. Total

Enter "/" to select option
/ Confirm Data Set Delete
/ Confirm Member Delete
/ Include Additional Qualifiers
/ Display Catalog Name
_ Display Total Tracks
_ Prefix Dsname Level
  
```

When the data set list is displayed, enter either:

"/" on the data set list command field for the command prompt pop-up, an ISPF line command, the name of a TSO command, CLIST, or REXX exec, or "=" to execute the previous command.

SDSF – A Panel Driven Interface



SDSF Panel Driven Interface – enter help or F1 from Primary Option Menu

```

                                HELP: SDSF -- Table of Contents
COMMAND INPUT ==>>> █

    Select a topic by number, or press Enter to view topics in sequence.

    1 - What's new
    2 - Job and workload panels
    3 - Device and resource panels
    4 - System information panels
    5 - Search and scroll commands
    6 - Filter commands
    7 - View commands
    8 - Printing data
    9 - Options commands
   10 - Other commands
   11 - Server commands
   12 - SDSF command

   13 - Help commands
   14 - Action bar
   15 - PF keys and keylists
   16 - Action characters
   17 - Overtypable fields
   18 - JES and MVS commands
   19 - Point-and-shoot
   20 - Online library

   99 - SDSF messages

    REXXHelp - SDSF REXX (ISPF only)

    SEARCH - Search the help (ISPF only)

    F1 = Help           F10 = Previous           Enter = Forward
    F3 = Exit           F7 = Up                TOC = Menu
  
```

SDSF - LOG command

```

  _Display  _Filter  _View  _Print  _Options  _Search  _Help
-----
HQX77A0 ----- SDSF PRIMARY OPTION MENU -----
COMMAND INPUT ==> log█                               SCROLL ==> PAGE

★DA      Active users
 I       Input queue
 O       Output queue
 H       Held output queue
★ST      Status of jobs
 JG      Job groups
 SYM     System symbols
★LOG     System log
 SR      System requests
 MAS     Members in the MAS
 JC      Job classes
 SE      Scheduling environments
 RES     WLM resources
 ENC     Enclaves
 PS      Processes
 SYS     System information
 ENQ     Enqueues
 DYNX    Dynamic exits
 AS      Address space memory

INIT     Initiators
 PR      Printers
 PUN     Punches
 RDR     Readers
 LINE    Lines
 NODE    Nodes
 SO      Spool offload
 SP      Spool volumes
 NS      Network servers
 NC      Network connections
 RM      Resource monitor
 CK      Health checker
 LNK     Link list data sets
 LPA     Link pack data sets
 APF     APF data sets
 PAG     Page data sets
 PARM    Parmlib data sets
 PROC    Proclib data sets
 ULOG    User session log

END      Exit SDSF

```

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SDSF – System Log (SYSLOG)

Display	Filter	View	Print	Options	Search	Help
SDSF SYSLOG						4,791
COMMAND INPUT						COLUMNS 02- 81
266.101 S0W1 S0W1 02/14/2017 0W						SCROLL ==> PAGE
ER				661	00000090	\$HASP003 MATCH
M 0000000	S0W1	17045	07:50:56.46		00000090	\$HASP249 COMMAND RECEIVE
E				662	00000090	\$OT(1-9999)
MR0000000	S0W1	17045	07:50:56.46	INTERNAL	00000090	\$HASP003 RC=(52),0 663
DR				663	00000090	\$HASP003 RC=(52),0 T(1-9
ER				663	00000090	\$HASP003 MATCH
M 0000000	S0W1	17045	07:50:56.58		00000090	\$HASP249 COMMAND RECEIVE
E				664	00000090	\$POJOBQ,READY,Q=W
NR0000000	S0W1	17045	07:50:56.58	STC00336	00000090	\$HASP686 OUTPUT(BPXAS)
NR0000000	S0W1	17045	07:50:56.58	STC00338	00000090	\$HASP686 OUTPUT(SMFDUMPS
NR0000000	S0W1	17045	07:50:56.58	STC00342	00000090	\$HASP686 OUTPUT(BPXAS)
NR0000000	S0W1	17045	07:50:56.58	STC00343	00000090	\$HASP686 OUTPUT(SMFDUMPS
NR0000000	S0W1	17045	07:50:56.58	STC00344	00000090	\$HASP686 OUTPUT(SMFDUMPS
M 0000000	S0W1	17045	07:50:56.59		00000090	\$HASP249 COMMAND RECEIVE
E				670	00000090	\$DSP00L,ALL
MR0000000	S0W1	17045	07:50:56.59	INTERNAL	00000090	\$HASP893 VOLUME(VPSPON)
DR				671	00000090	\$HASP893 VOLUME(VPSPON)
DR				671	00000090	\$HASP893
DR				671	00000090	\$HASP893
ER				671	00000090	\$HASP893
MR0000000	S0W1	17045	07:50:56.59	INTERNAL	00000090	\$HASP893 VOLUME(VPSPOP)
DR				672	00000090	\$HASP893 VOLUME(VPSPOP)
DR				672	00000090	\$HASP893
DR				672	00000090	\$HASP893
ER				672	00000090	\$HASP893
MR0000000	S0W1	17045	07:50:56.59	INTERNAL	00000090	\$HASP893 VOLUME(VPSPOL)
DR				673	00000090	\$HASP893 VOLUME(VPSPOL)
DR				673	00000090	\$HASP893
DR				673	00000090	\$HASP893
ER				673	00000090	\$HASP893
NR0000000	S0W1	17045	07:50:56.59	INTERNAL	00000090	\$HASP646 6.3787 PERCENT
N 0200000	S0W1	17045	07:50:56.71	STC00336	00000090	\$HASP250 BPXAS PURGED --
N 0200000	S0W1	17045	07:50:56.71	STC00342	00000090	\$HASP250 BPXAS PURGED --
N 0200000	S0W1	17045	07:50:56.71	STC00338	00000090	\$HASP250 SMFDUMPS PURGED
N 0200000	S0W1	17045	07:50:56.71	STC00343	00000090	\$HASP250 SMFDUMPS PURGED
NC0000000	S0W1	17045	07:54:44.41	INSTREAM	00000290	LOGON
N 0200000	S0W1	17045	07:54:54.03	TSU00345	00000281	\$HASP100 ZIBM050 ON TSO
N 4000000	S0W1	17045	07:54:54.39	TSU00345	00000090	\$HASP373 ZIBM050 STARTE
***** BOTTOM OF DATA *****						

SDSF Help – enter help or F1 while in system log

```
HELP: SYSLOG Panel
COMMAND INPUT ==> █

Select a topic by number, or press Enter to view them in sequence.

1 - Introduction to the SYSLOG panel
2 - Using the SYSLOG panel in the JES3 environment
3 - Syntax of the LOG command
4 - Fields on the SYSLOG panel
5 - Commands: display WTOR messages, search, etc.

These topics are displayed only if selected:

97 - What's new
98 - Search and navigate the help
99 - Messages

For system messages, use LookAt at:
http://www.ibm.com/systems/z/os/zos/bkserv/lookat/

F1 = Help           F10 = Previous      Enter = Forward
F3 = Exit           F7 = Up             TOC = Menu
```


Time Sharing Option & hosted full screen applications

TSO is a command line interface with a limited set of commands

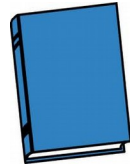
ISPF is a full screen panel driven interface used to edit data sets, edit unix files, and execute system utilities

SDSF is a full screen panel drive interface used to view input queue, execution queue, output queue, system log (syslog), and enter system commands when authorized.

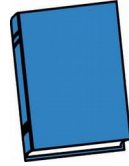
Note: TSO, ISPF, and SDSF interactive functions can be executed using JCL (Batch)

IBM z/OS Manuals (Web Based Bookshelves)

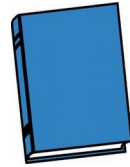
TSO Bookshelf



ISPF Bookshelf



SDSF Bookshelf



hyperlinks

Unit summary

Having completed this unit, you should be able to:

- ✓ Describe and use TSO command line interface
- ✓ Describe and use ISPF panels
- ✓ Describe and use SDSF panels
- ✓ Describe and use ISPF editor
- ✓ Locate TSO, ISPF, and SDSF manuals