

ISPF New Features and Hidden Treasures

Part 1 and Part 2

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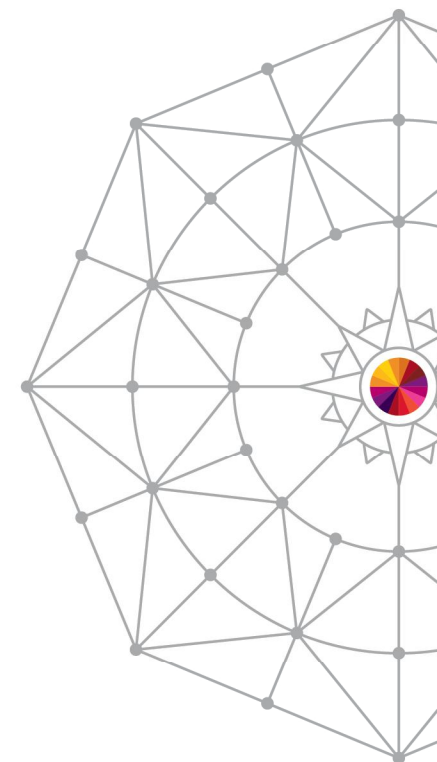
Session 15570



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Agenda



- **Recover an ISPF Configuration Table Keyword File**
- **Data Set List Enhancements**
 - Display Total Tracks
 - Block Line Commands
 - Allocate Line command
 - Display z/OS UNIX Directory List
- **Member List Enhancements**
 - Filter Command
 - Member Count > 99999
- **Scroll Amounts > 9999**



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Agenda continued...

- **Edit Enhancements**

- Multiple Targets for MOVE/COPY
- HX Line Command
- User Defined Line Commands
- COMPARE Command Enhancements
- Unicode Support
- External Data Commands – ASCII and Unicode Support
- Regular Expressions for FIND/CHANGE
- Expandable Command Field
- HILITE Enhancement – lower case characters in JCL

Agenda continued...

- **Workstation Agent: Connect Without GUI**

- **z/OS UNIX Directory List**
 - Methods for displaying a directory list
 - Path Name Filtering
 - Primary Commands
 - FILTER and SRCHFOR commands
 - Line Commands
 - New Unicode line commands
 - Block line commands
 - Running z/OS UNIX commands

Agenda continued...



- **Multiple Screen Support**
 - SWAPBAR
 - Multiple Screens at ISPF Invocation
 - =XALL Command
- **ISPF in a Web Browser (Using z/OSMF)**
- **ISRDDN Utility**
 - Process allocated data sets
 - Browse storage
 - DISASM Command



Recover an ISPF Configuration Table Keyword File (z/OS 2.1)



- Added by APAR to z/OS V2R1 OA42680
- Available as option 7 in the ISPF Configuration Utility (**TSO ISPCCONF** command)
- Generates a file containing the keywords and values from an ISPF configuration load module
- **Keyword file can be generated from:**
 - The configuration table currently loaded in the TSO address space
 - A configuration load module from a specified load library



Data Set List Enhancements



- **Display Total Tracks Value (z/OS 1.9)**
 - **Display Total Tracks** option added to the Data Set List Utility entry panel
 - If selected, an additional header line showing the total tracks used by the data sets is displayed with the **Space** and **Total** views
 - Pop-up window showing data collection progress displayed when calculating total tracks for a list of 50 or more data sets

```
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 informatio
Enter one or both of the parameters below:
Dsname Level . . . sys1.s*
Volume serial . . . _____
Data set list options
Initial View
 2 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
```



Data Set List Enhancements



Block Line Commands (z/OS 1.10)

- Allows Data Set List line commands to be entered in blocks
- A block of line commands is marked by entering two forward slash characters (//) at the start and end of the block
- The required line command is entered on the first or last line of the block, immediately following the two forward slash characters
- All line commands, including TSO commands, Clists and REXX execs can be executed as block commands

```
Menu Options View Utilities C
-----
DSLIST - Data Sets Matching DEMO.*
Command ==> █

Command - Enter "/" to select action
-----
DEMO.COBOL
DEMO.COMPARE.SYSIN
DEMO.CONFIG.TABLE
DEMO.DELETE.05
DEMO.DELETE.06
DEMO.DELETE.07
DEMO.EXEC
DEMO.FILTER.TEST
DEMO.ISPLLIB
DEMO.ISPTLIB
DEMO.LOAD
//submit DEMO.SUBMIT.JOB1
DEMO.SUBMIT.JOB2
DEMO.SUBMIT.JOB3
// DEMO.SUBMIT.JOB4
DEMO.TEST.BIGSCROL
```



Data Set List Enhancements. . .

- **Allocate Line Command (z/OS 1.13)**
 - New **AL** line command can be used to allocate a new data set
 - New data set name can be specified with the **AL** line command
 - When **AL** is entered against an existing data set the user has the option to:
 - Create the data set using the attributes of the existing data set
 - Specify the attributes of the data set on the Allocate New Data Set panel
 - If **AL** is entered against a deleted data set and a name is not specified ISPF will use the name of the deleted data set
- **Display z/OS UNIX Directory List (z/OS 2.1)**
 - Entering a valid UNIX path name in the Dsname Level field will result in the display of a z/OS UNIX Directory List

Member List Enhancements



- **FILTER** command (z/OS 1.8)
 - Filter by column name
 - Used to display only those members having an attribute matching a specified value
 - Syntax: **FILTER** [*field operator value*]
field member list column name
operator EQ, NE, LE, LT, GE, or GT
value the comparison value
 - Two ways to issue- 1) Enter just **Filter** and use the menu (easy for remembering) 2) Issue the command, ex: **Filter size GT 1000**
 - Member List **SRCHFOR** command enhanced to use **FILTER** function to optionally display only those members containing the **SRCHFOR** string
- **Member count > 99999** (z/OS 2.1)
 - Member count fields on the member list panels have been expanded to 7 digits
 - Provide accurate member count values for partitioned data sets with more than 99999 members

Scroll Amounts > 9999 (z/OS 2.1)

- **Support provided for the input of scroll amounts up to 9,999,999**
 - **Note:** The scroll fields on panels have not been changed to support the display and input of scroll amounts greater than 9999

```
Menu Utilities Compilers Help
-----
ISRBROBA  ISPFTEST.BIGFILX          Line 00000000 Col 001 076
Command ==> down 9999999          Scroll ==> CSR
***** Top of Data *****
Line Nr      1
Line Nr      2
Line Nr      3
Line Nr      4
Line Nr      5
Line Nr      6
Line Nr      7
Line Nr      8
Line Nr      9
Line Nr     10

Menu Utilities Compilers Help
-----
ISRBROBA  ISPFTEST.BIGFILX          Line 09999999 Col 001 076
Command ==>          Scroll ==> CSR
Line Nr      9999999
Line Nr     10000000
Line Nr     10000001
Line Nr     10000002
Line Nr     10000003
Line Nr     10000004
Line Nr     10000005
Line Nr     10000006
Line Nr     10000007
Line Nr     10000008
Line Nr     10000009
```

Scroll Amounts > 9999 (z/OS 2.1) cont...



- Don't forget to update your Configuration Table to support the larger scroll amounts!

ispccconf

```
Modify ISPF Sitewide Defaults
Command ==> █
More: - +

/ Show Pfkeys          _ Reset Show Pfkeys
                       _ Reset LOG Data Set Process Option
                       _ Reset LIST Data Set Process Option
                       _ Reset Command Line Placement

Select Option 7.1 Dialog Test Panel
1 1. ISPYFP
  2. ISPYFPA
  3. ISPYFPB

Command Line Placement    PRINTDS Option
1 1. Bottom              1 1. DEST
  2. Asis                2. WRITER

Scroll Defaults          Status Area Default
1 1. PAGE                2 1. Calendar
  2. HALF                2. Session
  3. MAX                 3. Function Keys
  4. CSR                 4. User Point and Shoot
  5. DATA               5. None

Reset flags
/ Reset Scroll Values

Minimum Scroll Value    0
Maximum Scroll Value    9999999
```



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Edit Enhancements

- **Multiple Targets for MOVE/COPY (z/OS 1.10)**
 - Suffix of **K** (**keep**) can now be used with MOVE/COPY destination line commands **A**, **B**, **O** and **OO**
 - Enter **AK**, **BK**, **OK**, or **OOK** line commands to indicate a multiple target MOVE/COPY command
 - Enter ‘final’ destination line command (**A**, **B**, **O** or **OO**) to initiate the ‘multiple target’ MOVE/COPY
 - ‘Final’ destination must be after the line where the **AK**, **BK**, **OK**, or **OOK** command was entered
- Very helpful, removes the need to repeat the copy/move!

Edit Enhancements. . .

- **Edit Line Commands for HEX Display (z/OS 1.11)**

- New edit line commands to display selected lines in hexadecimal format:

HX display a single line in hexadecimal format

HXX display a block of lines in hexadecimal format

- The **HX** and **HXX** line commands act as a toggle by switching a line's display format between normal and hexadecimal format

Edit Enhancements. . .



- **Support for User Defined Line Commands (z/OS 1.13)**
 - Support was previously been available by using the unsupported LMAC tool
 - User defined line commands and the edit macros they invoke are defined in an ISPF table
 - The ISPF Table Utility (ISPF option 3.16) is modified to assist with defining the user line command table
 - Is a **Line command table** input field on the edit and view entry panels
 - When the line command table is specified the line commands defined in the table are able to be used during the edit session
 - Don't forget -> the dataset containing the edit macros should be in the SYSEXEC concatenation !
 - The **EDIT** and **VIEW** services also allow a line command table to be passed by the caller



Edit Enhancements. . .



- **COMPARE** Command Enhancements

- SYSIN keyword enhancement (z/OS 1.11)

- SYSIN keyword can now be used to specify a data set containing SuperC process statements that will be used for compare processing

Syntax: **SYSIN(dsn)**

Ex: After editing member1, issue: Compare member2 Sysin(dns)

- Need more room?: A forward slash can be specified to request the display of a pop-up panel where the SuperC process statements data set name can be entered

Syntax: **SYSIN(/)**

- FYI: User's Guide Vol II: Refer to SuperC's process statements

- ☐ SuperC reference
 - ☐ Utility differences
 - ☐ Program description
 - ☐ Applications
 - ☐ Process options
 - ☐ **Process statements**



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Edit Enhancements. . .

- **COMPARE** Command Enhancements. . .

- New **VOL** keyword (z/OS 2.1)

- **VOL** keyword is used to specify the volser for the volume on which the target data set resides

Syntax: **VOL** (*volser*)

- Allows comparison against an uncataloged data set

Ex: COMPARE 'DEMO.PARMLIB' VOL(CPDLB3) X

(compare and exclude lines that are the same)

Edit Enhancements. . .

COMPARE Command Enhancements. . .

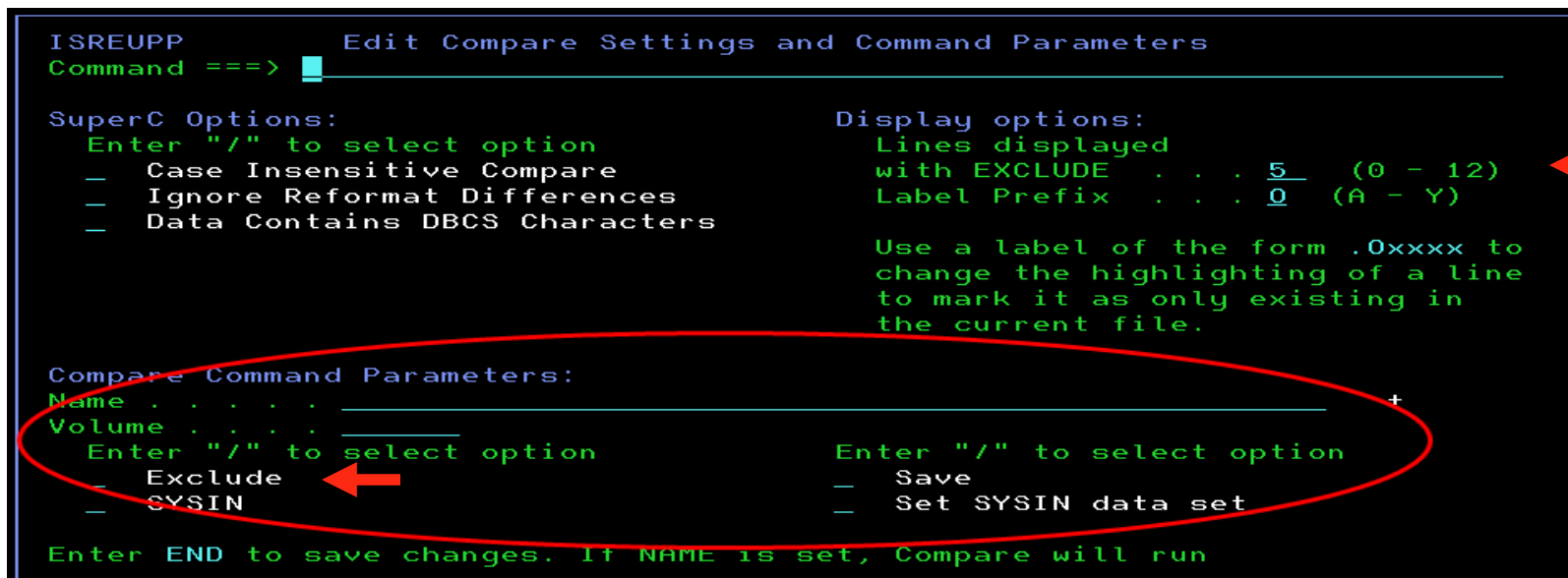
- Enhanced COMPARE Settings Panel (z/OS 2.1)
 - Edit member and just issue “Compare” to launch the settings panel
 - COMPARE Settings Panel changed to allow specification of command parameters
 - Addresses problem where **COMPARE** command is too long for the command field
 - For easier viewing: Use “**Exclude**” option to exclude lines that are the same and the exclude ‘**Display** option’ allows for displaying a few lines around the change for perspective..

```
ISREUUP          Edit Compare Settings and Command Parameters
Command ==> █

SuperC Options:          Display options:
Enter "/" to select option
  _ Case Insensitive Compare      Lines displayed
  _ Ignore Reformat Differences   with EXCLUDE . . . 5 (0 - 12)
  _ Data Contains DBCS Characters Label Prefix . . . 0 (A - Y)

Compare Command Parameters:
Name . . . . .
Volume . . . . .
Enter "/" to select option      Enter "/" to select option
  _ Exclude                      _ Save
  _ SYSIN                       _ Set SYSIN data set

Enter END to save changes. If NAME is set, Compare will run
```



Edit Enhancements. . .

- **Unicode Support (z/OS 2.1)**

- New option on Edit/View entry panels available to tell editor when data encoding is Unicode (UTF-8)

```
Data Encoding
- 1. ASCII
  2. UTF-8
```

- Editor converts data from UTF-8 to CCSID (coded character set id) of the terminal for display purposes
- New UTF8 parameter supported by the EDIT and VIEW services
- For z/OS UNIX files Unicode edit function automatically invoked for files tagged with CCSID 1208 (UTF-8)
 - New z/OS UNIX Directory List line and primary commands **EU** and **VU** available to edit/view files that are not tagged with CCSID 1208
 - Editor sets the CCSID tag to 1208 when file is saved

Edit Enhancements. . .

- **External Data Commands – ASCII and Unicode Support (z/OS 2.1)**
 - New **EBCDIC**, **ASCII** and **UTF8** keywords available for the **CREATE**, **REPLACE**, **COPY**, **MOVE**, and **CUT** edit primary commands
 - Supports the situation where the external file uses a different data encoding to that of the file being edited
 - More easily manage files with data across different character code sets
 - **CREATE** and **REPLACE** commands
 - keyword specifies the encoding the editor will convert the data to before saving in the external file
 - Example: When in an ebcdic member, issue “*Create filename UTF8*”
 - **COPY** and **MOVE** commands
 - keyword identifies the encoding for the source file. The editor converts from this encoding to that of the file being edited.
 - If in an ascii file and want to add some data from an ebcdic file, use the: *Copy filename EBCDIC*

Edit Enhancements. . .

- **External Data Commands – ASCII and Unicode Support (z/OS 2.1). . .**
 - **CUT** command
 - keyword specifies the encoding the editor will convert the data to before saving in the clipboard
 - ex: Editing UTF8 file, issue: **CUT ebcdic** (sends to clipboard)
 - **PASTE** command
 - detects the encoding of the data in the clipboard and performs a conversion of the data copied into the edited file
 - New **ASIS** keyword can be used to prevent the **PASTE** command performing the conversion
 - **SUBMIT** command
 - will always convert a file designated as ASCII or UTF8 to the terminal CCSID (EBCDIC) before writing the data to the internal reader

Edit Enhancements. . .

- Regular Expressions for **FIND/CHANGE** (z/OS 2.1)
 - **FIND**, **CHANGE**, and **SEEK** commands enhanced to allow the search string to be defined using a regular expression
 - Regular expression is specified as a quoted string preceded or followed by the letter “R”

e.g. FIND r'l[ai]ne' word

- will find the words lane and line

Edit Enhancements. . .

- Regular Expressions for **FIND/CHANGE** (z/OS 2.1). . .

- Special symbols for regular expressions

- . (Period) - matches any one character
e.g. d.g matches "dig", "dug", and "dog", but not "dg"
- * (Asterisk) - matches zero or more instances of the previous character
e.g. he*ath matches "hath" and "heath"
- + (Plus) - matches one or more instances of the previous character
e.g. south+ern matches "southern", but not "soutern"
- [*string*] - matches any one of the characters in *string*
e.g. d[*iu*]g matches "dig" and "dug", but not "dog"
- [*ch1-ch2*]
and *ch2* - matches any of the characters in the range between *ch1*
and *ch2*
e.g. m[*a-z*]p matches "map" and "mop", but not "m9p"
- [*^string*] - matches any character other than those in *string*
e.g. d[*^iu*]g matches "dog", but not "dig" or "dug"

Edit Enhancements. . .



- **Expandable Command Field (z/OS 2.1)**
 - The command field on the ISPF-supplied edit display panels is changed to an expandable field
 - Supports the input of edit primary commands that would otherwise be too long for the command field
 - The **ZEXPAND** command is used to display a pop-up window with the command input field expanded to a length of 255 characters
 - PF4 is set to invoke the **ZEXPAND** command in the ISPF-supplied edit keylists

F1=Help	F2=Split	F3=Exit	F4=Expand	F5=Rfind	F6=Rchange
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel

- **NOTE:** The pop-up window is only for edit primary command, use the **CMDE** command for other (e.g. TSO) commands



Edit Enhancements. . .

- **HILITE** Enhancement – lower case characters in JCL (z/OS 2.1)
 - The edit **HILITE** command is changed to display in reverse video lower case characters invalidly used in JCL

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
ISREDDE2 VANDYKE.JCLLIB(FTPDT) - 01.01 Columns 00001 00080
Command ==> █ Scroll ==> CSR
***** Top of Data *****
000001 //VANDYKE JOB (#ACCT), 'PETER',
000002 // MSGLEVEL=(1,1),MSGCLASS=X,CLASS=A,REGION=4M,
000003 // NOTIFY=&SYSUID
000004 //*
000005 //ALLOC EXEC PGM=IEFBR14
000006 //DDF1 DD DSN=vandyke.HSD1110.F1.XMI
000007 //COPY EXEC PGM=FTP
000008 //SYSFTP DD DISP=SHR,DSN=HANKO.PDSCNTL(FTPDATA)
000009 //sysin DD *
000010 122 168 128.222
000011 xxxxxxxxx yyyyyyy
000012 bin
000013 cd "C:\SCLM Suite\FTP downloads for Boulder\SCLM DT"
000014 put 'IBM.HSD1110.F1.XMI' HSD1110.F1BIN
000015 put 'IBM.HSD1110.F2.XMI' HSD1110.F2BIN
000016 put 'IBM.HSD1110.F3.XMI' HSD1110.F3BIN
000017 put 'IBM.HSD1110.F4.XMI' HSD1110.F4BIN
000018 put 'IBM.HSD1110.F5.XMI' HSD1110.F5BIN
000019 put 'IBM.HSD1110.SMPMCS.XMI' HSD1110.MCSBIN
000020 quit
000021 /*
000022 //OUTPUT DD SYSOUT=*
***** Bottom of Data *****
```

PDSE Member Generations (z/OS V2R1 +)

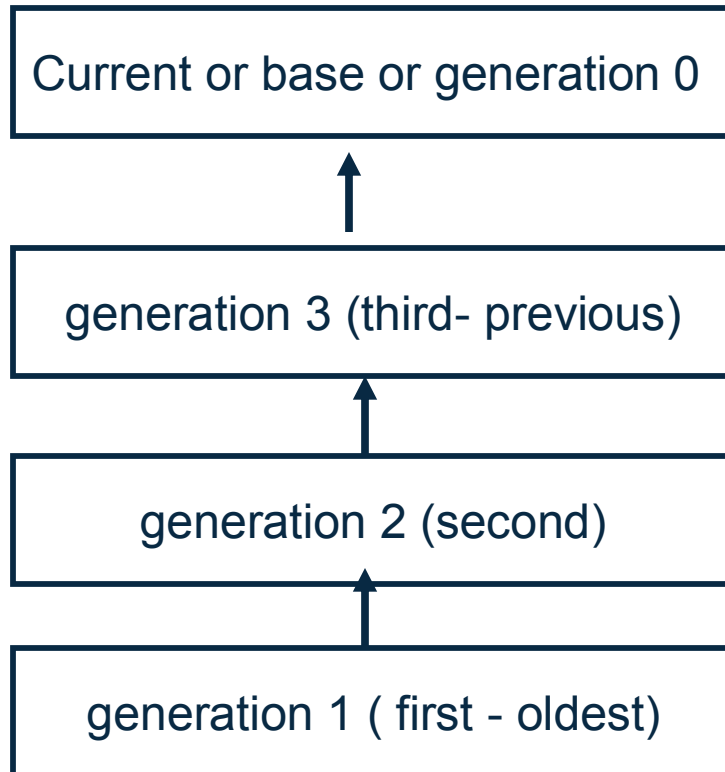


- *ISPF provided support for PDSE Version 2 Member Generations*
 - *Requires ISPF APARs OA42247 and OA42248.*
- *Provides the ability to work with previous generations of a member.*
 - *Current ISPF Support:*
 - Data set allocation (ex: option 3.2) provides the ability to specify the maximum generations
 - Data set information includes the maximum number of generations in
 - ISPF 3.4 member display using the “prompt” allows a user to specify the generation to edit or browse
 - Generation 0 (zero) is the “current” generation
 - Support in edit for **SAVE NEWGEN/NOGEN**
 - Limited support on ISPF services: DSINFO (return #), LMDLIST (return #), EDIT, VIEW, BROWSE
 - *Fyi...Data set Commander V8R1 product provides robust support for managing member generations!*



PDSE V2 Member Generations.... Can be tricky!

Example: Member1 (allowing 3 generations)



- Can edit any generation and specify “Save **Newgen**”
 - This causes the newly saved member to become generation 0
- Can edit the base generation and specify “Save **Nogen**”
 - This causes the newly saved member to be changed but no new generation is created
- Rename – causes ISPF to delete all generations.
- Delete – Deletes all generations.
- Copy with generations is not supported

Connect to Workstation Without GUI

- **Requires the ISPF Workstation Agent (WSA) to be running on the workstation**
 - A client/server component that support the transfer of file between z/OS and the workstation, edit z/OS data on the workstation, edit workstation data on z/OS and run commands on the workstation
- **WSA install program can be downloaded using ISPF option 3.7.1 (fyi Help has good instructions!)**

```
ISPWSD01      Client/Server Component Download
Command ==> █

Download methods
1  1. FTP (requires workstation FTP server)
   2. ISPF C/S (requires workstation connection)
   3. Manual

Workstation Type
1  1. Windows 2000/NT          3. AIX          5. HP UX
   2. Reserved                4. Solaris

Directory to copy file to:
C:\ISPFWSA

Data Set to copy file from:
'ISP.SISPGUI'


Enter "/" to select option
_ Create directory to which the file is to be copied.
```

Member for Windows

•ISPGUINX

Workstation Agent Parts

If install correctly, extraction will look like this on Windows

Name	Date modified	Type	Size
CP1B54E4.TRN	6/5/2014 10:01 AM	TRN File	1 KB
CP0254E4.TRN	6/5/2014 10:18 AM	TRN File	1 KB
DBCS.TBL	6/5/2014 10:01 AM	TBL File	149 KB
DTWSA.DLL	6/5/2014 10:01 AM	Application extens...	556 KB
ispftool	7/17/2014 10:41 A...	CFG File	1 KB
ispftool.ext	7/17/2014 10:41 A...	EXT File	1 KB
ispftool.tmp	6/5/2014 12:00 PM	TMP File	16 KB
ispginx	6/5/2014 10:00 AM	Application	893 KB
MSG.TBL	6/5/2014 10:01 AM	TBL File	9 KB
SBCS.TBL	6/5/2014 10:01 AM	TBL File	29 KB
test.dow	7/17/2014 10:41 A...	DOW File	1 KB
 WSA	6/5/2014 10:01 AM	Application	104 KB



This is the agent!

Connect to Workstation Without GUI. . .



- **Connection to workstation can be established using:**
 - **WSCON** and **GUIINIT** commands
 - Workstation pull-down on the Settings panel (ISPF option 0)
 - **WSCON** service
- **Select “Without GUI display” option or specify NOGUIDSP on WSCON call**

Support for codepage 1047 added with z/OS 2.1

```
ISPISMG1          Initiate Workstation Connection
Command ==> █
More: +
/ Save values in system profile? (/=Yes)

Workstation Connection          GUI Network Protocol
2  1. With GUI display          1  1. TCP/IP
   2. Without GUI display      2  2. APPC
                               3  3. Use ISPDTPRF file

GUI Title
TCP/IP Address
*
APPC Address

Host Codepage . . . 0037      Host Character Set . . . 0697
GUI Window Frame          Default Window Background Color
1  1. Standard (STD)      1  1. Dialog (DLG)
```



Connect to Workstation Without GUI. . .



- ‘Workstation Tool integration” dialog used to define workstation tools for integration with ISPF Edit and View
 - Invoked using **INT** command or via Workstation pull-down on Edit and View entry panels
 - Requires an active workstation connection

```
File  Map  Help
-----
ISRINTMN      Workstation Tool Integration Configuration
Command ==>  Scroll ==> CSR

Press EXIT to save tool configuration to connected workstation hard drive.
Press CANCEL to temporarily update tool configuration for this session.

Action: E=Edit V=View

  Description  Code  Data   Mode   Command
-  View        V    TEXT  MODAL  c:\ispfview.bat
-  Edit        E    TEXT  MODAL  notepad
**End**
```



Connect to Workstation Without GUI...

- Edit z/OS data using a workstation tool by selecting the “**Edit on Workstation**” option

```
ISREDM01                      Edit Entry Panel
Command ==> █

ISPF Library:
Project . . . . . PDFTDEV
Group . . . . . VANDYKE
Type . . . . . LOAD
Member . . . . . (Blank or pattern for member selection list)

Other Partitioned, Sequential or VSAM Data Set, or z/OS UNIX file:
Name . . . . . /u/vandyke/abort.c
Volume Serial . . . . . (If not cataloged)

Workstation File:
File Name . . . . .

Initial Macro . . . . .
Profile Name . . . . .
Format Name . . . . .
Data Set Password . . . . .
Record Length . . . . .
Line Command Table . . . . .

Options
/ Confirm Cancel/Move/Replace
Mixed Mode
/ Edit on Workstation
- Preserve VB record length

Data Encoding
- 1. ASCII
- 2. UTF-8
```



```
u.vandyke.abort.cpp - Notepad
File Edit Format View Help
#define _POSIX_SOURCE
#include <signal.h>
#include <stdio.h>
#pragma runopts(POSIX(ON))
int main()
{
    abort();
    printf("after issuing abort() ");
}
```


Connect to Workstation Without GUI...

- Edit a workstation file using the ISPF editor by entering the file name in the “**Workstation File Name**” field

```
Workstation File:
  File Name      C:\WINDOWS\system32\drivers\etc\hosts
Initial Macro    /
Profile Name     /
Format Name      /
Data Set Passed /
Options
/ Confirm Cancel/Move/Replace
- Mixed Mode
- Edit on Workstation
- Preserve VB record length
```

```
ISREDD2  C:\WINDOWS\system32\drivers\etc\hosts          Columns 00001 00124
Command ===>
***** Top of Data *****
000001 # Copyright (c) 1993-1999 Microsoft Corp.
000002 #
000003 # This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
000004 #
000005 # This file contains the mappings of IP addresses to host names. Each
000006 # entry should be kept on an individual line. The IP address should
000007 # be placed in the first column followed by the corresponding host name.
000008 # The IP address and the host name should be separated by at least one
000009 # space.
000010 #
000011 # Additionally, comments (such as these) may be inserted on individual
000012 # lines or following the machine name denoted by a '#' symbol.
000013 #
000014 # For example:
000015 #
000016 #      102.54.94.97      rhino.acme.com          # source server
000017 #      38.25.63.10     x.acme.com            # x client host
000018 #
000019 127.0.0.1      localhost
000020 # 9.44.14.174      1.w3.s81c.com
***** Bottom of Data *****
```

Connect to Workstation Without GUI...



- ISPF option 3.7.2 can be used to transfer files between z/OS and your workstation
- File transfer can also be done from a program using the **FILEXFER** service

```
Menu  RefList  RefMode  Help
-----
ISPUDLDS          Download/Upload Data Set To/From Workstation
Command ==> _____

ISPF Library:
  Project . . . . PDFTDEV
  Group . . . . VANDYKE . . . . _____ . . . . _____
  Type . . . . LOAD
  Member . . . . _____ (Blank or pattern for member selection list)

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

Workstation File:
  File Name . . . . C:\temp\*.rex

Transfer Option          Options
 1 1. Download to workstation  / Generate statistics on upload
   2. Upload from workstation  / Transfer in text mode
                                   / Replace existing member/file
```

z/OS UNIX Directory List Utility (z/OS 1.8)



- Displays a list of files in a z/OS UNIX directory
- Provides most of the functions supported by the ISHELL utility

```
Menu  RefList  RefMode  Utilities  Options  Help
-----
ISRUULP                                z/OS UNIX Directory List Utility
Option ==> █

blank Display directory list          P Print directory list

Pathname . . . /u/vandyke

Enter "/" to select option
/ Confirm File Delete
/ Confirm Non-empty Directory Delete

When the directory list is displayed, enter either:
"/" on the directory list line 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.
```

```
Menu  Utilities  View  Options  Help
-----
ISRUUDL0                                z/OS UNIX Directory List                                Row 1 to 14 of 288
Command ==> █                                Scroll ==> CSR

Pathname . . : /u/vandyke
EUID . . . . : 0
Command  Filename      Message      Type Modified      Permission
-----
.                Dir    2013/06/11 13:26:21  rwxrwxrwx
..               Dir    2013/06/11 07:03:20  rwxrwxrwx
.ishell-reflist  File  2008/11/05 15:35:34  r-----
.profile         File  2013/03/07 13:29:52  rwx---r--
.profpaul       File  2008/06/08 12:42:48  rwxrwxrwx
.setup          File  2013/03/07 13:53:51  rwx-----
.sh_history     File  2013/05/17 11:08:32  rw-----
```

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z/OS UNIX Directory List Utility. . .



- **z/OS UNIX directory list can be displayed using.... Several ways!**
 - ISPF option 3.17
 - z/OS UNIX Directory List Utility
 - ISPF options 1 & 2 (z/OS 1.9)
 - Enter a directory path name in the “Other” name field
 - **UDLIST** command (z/OS 1.10)
 - System command used to display a directory list from any command field
 - Lower case path name support added with z/OS 2.1
 - ISPF option 3.4 (z/OS 2.1)
 - Enter a directory path name in the “Dsname Level” field
 - **DIRLIST** service (z/OS 1.10)
 - Programming API available for programs wanting a directory list display



z/OS UNIX Directory List Utility Options Menu

- Option 1 - Adjust size of the filename column
- Option2 – Tailor column arrangement

1.

```

Menu Utilities View Options Help
-----
Command ==>
Pathname . : /u/user1
EUID . . . : 0
Command  Filename
-----
.
..
.bash_history      Dir  r-xr-xr-x  IBMUSER
.bash_profile      File  rw-rw-rw-  IBMUSER
.bashrc            File  rw-rw-rw-  IBMUSER
  
```

of 20
PAGE

```

1. Directory List Options...
2. Directory List Column Arrangement...
3. Directory List Default Line Commands...
4. Enable superuser mode(SU)
5. Refresh List
6. Save List
7. Reset
  
```

2.

```

Menu Utilities View Options Help
-----
z/OS UNIX Directory List Column Arrangement
Command ==>
Enter "/" to select option
- Restore default column arrangements

Order  Column           Width  Maximum
01     Type              04     4
02     Permission        10     10
03     Owner             08     8
04     Ext               04     4
05     Fmat             04     4
06     Audit            06     6
07     Group            08     8
08     Links            06     14
09     Size             10     20
10     Modified         19     19
11     Changed         19     19
12     Accessed         19     19
13     Created          19     19
  
```

z/OS UNIX Directory List Utility. . .



- **At Option 3.17 - Filtering the display of z/OS UNIX path names (z/OS 2.1)**

- Support is added to allow the following global or pattern-matching characters to be specified in a path name entered for a z/OS UNIX Directory List display:

<code>?</code>	match any single character
<code>*</code> (asterisk)	match multiple characters
<code>[</code>	open a set of single characters
<code>]</code>	close the set of single characters. Each character in the set can match a single character at the position specified.

- ISPF builds a list consisting of files and directories with path names that match the specified pattern
- This support is available for all ISPF functions that can be used to display a z/OS UNIX directory list



z/OS UNIX Directory List Utility. . .

- **Filtering of z/OS UNIX path names (z/OS 2.1). . .**
 - **Example:** List from the sub-directories in /usr all entries that have a first character of i or l all files with an 8 character name starting with c and an extension beginning with c, d, or h

```
Pathname . . . /usr/[il]*/[c]??????.[cdh]*
```

Menu Utilities View Options Help

ISRUUDL0 z/OS UNIX Directory List Row 1 to 15 of 15
Command ==> Scroll ==> PAGE

```
List . . . : /usr/[il]*/[c]??????.[cdh]*  
EUID . . . : 0
```

Command	Pathname	Message	Type	Permission
	/usr/include/ceedcct.h		File	rw-r--r--
	/usr/include/csnpdefs.h		Syml	rwxrwxrwx
	/usr/include/cssmdefs.h		Syml	rwxrwxrwx
	/usr/include/cssmport.h		Syml	rwxrwxrwx
	/usr/include/cssmtype.h		Syml	rwxrwxrwx
	/usr/lib/cdserprt.dll		Syml	rwxrwxrwx
	/usr/lib/cdsibmut.dll		Syml	rwxrwxrwx
	/usr/lib/cdskwuucs.dll		Syml	rwxrwxrwx
	/usr/lib/cdsnspsp.dll		Syml	rwxrwxrwx
	/usr/lib/cdsrandm.dll		Syml	rwxrwxrwx
	/usr/lib/ceasapii.dll		File	rwxr-xr-x
	/usr/lib/ceasapis.dll		File	rwxr-xr-x
	/usr/lib/ceasapiw.dll		File	rwxr-xr-x
	/usr/lib/cssmmanp.dll		Syml	rwxrwxrwx
	/usr/lib/cssmusep.dll		Syml	rwxrwxrwx

z/OS UNIX Directory List Utility. . .

- Primary commands available:
 - **EDIT** - edit a file in the current directory
 - **FIND** - find a string within a filename
 - **LEFT** - scroll the directory list columns to the left
 - **LOCATE** - locate a directory list entry based on the sort order
 - **REFRESH** - redisplay directory list with any changes that have occurred
 - **RESET** - redisplay list removing line commands and messages
 - **RIGHT** - scroll the directory list columns to the right
 - **SAVE** - write the directory list data to a data set
 - **SORT** - sort the directory list by the specified fields
- New with z/OS 2.1:
 - **FILTER** - filter the list using a file name pattern
 - **SRCHFOR** - search for string in regular files in the list
 - Similar to the **DSL** and member list **SRCHFOR** commands
 - Support for ASCII search strings

z/OS UNIX Directory List Utility. . .



- Line commands available:

- **E** - Edit a file
- **B** - Browse a file
- **N** - Create a new file
- **L** - List a directory
- **D** - Delete a file
- **R** - Rename a file
- **V** - View a file (z/OS 1.9)
- **EA** - ASCII edit (z/OS 1.9)
- **VA** - ASCII view (z/OS 1.9)
- **RA** - REFLIST add (z/OS 1.10)
- **FS** - File system (z/OS 1.11)
- **MA** - Modify ACL (z/OS 1.13)

- **CO** - Copy data out

- **CI** - Copy data in
- **I** - Display attributes
- **MM** - Modify mode fields
- **MX** - Modify extended attributes
- **X** - Execute a command
- **MO** - Modify owner (z/OS 1.11)
- **MG** - Modify group (z/OS 1.11)
- **MF** - Modify format (z/OS 1.11)
- **UA** - User auditing (z/OS 1.11)
- **AA** - Auditor auditing (z/OS 1.11)



z/OS UNIX Directory List Utility. . .continued



- Line commands available for ASCII and Unicode:

- New with z/OS 2.1:

- Require if the file is not “tagged” with CCSID

- **EU** - Unicode edit
- **VU** - Unicode view

– *The **E** and **V** line commands will provide the same functions if the file is tagged with CCSID 1208*

Not “tagged”



```
Pathname . . . : /u/user1/demo/utf8
General Data
File Type . . . : File
File Size . . . : 4698
Links . . . . . : 1
Inode . . . . . : 1C75
File Format . . . : nl
Last Modified : 2014/06/17 00:07:22
Last Changed  : 2014/06/17 00:07:22
Last Accessed : 2014/06/18 13:07:38
Created . . . . : 2014/06/17 00:07:22
CCSID . . . . . :
Text Convert  : NO
Owner
File . . . . . : IBMUSER(0)
Group . . . . . : FWGRP(0)
```



z/OS UNIX Directory List Utility. . .



- **Block Line Commands (z/OS 2.1)**
 - Allows the same line command to be executed against multiple files at once
 - Implementation is similar to the block line command support in the ISPF Data Set List Utility (ISPF option 3.4)
 - The start and end of the block is indicated by the user typing 2 forward slash (//) characters in the line command fields for the start and end of the block
 - The line command must immediately follow the 2 forward slashes at either the start or end of the block
 - All line commands, including z/OS UNIX commands, TSO commands, CLISTs and REXX execs can be invoked as block commands



z/OS UNIX Directory List Utility. . .



- Block Line Commands (z/OS 2.1). . .

```
Menu Utilities View Options Help
ISRUUDL0 z/OS UNIX Directory List Row 41 to 80 of 113
Command ==> Scroll ==> PAGE

Pathname . : /SYSTEM/tmp
EUID . . . : 0
Command Filename Message Type Modified Permission Audit Ext Fmat Owner Group
-----
BWBCALLR File 2011/02/23 15:20:33 rwxr-xr-x fff--- --s- ---- IBMUSER
//d CEEDUMP.20120815.111620.957 File 2012/08/15 11:16:20 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.111624.930 File 2012/08/15 11:16:24 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.111632.940 File 2012/08/15 11:16:32 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.111752.167781 File 2012/08/15 11:17:52 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.111841.671096 File 2012/08/15 11:19:13 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.112314.965 File 2012/08/15 11:23:14 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.112318.167781 File 2012/08/15 11:23:18 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.112326.918 File 2012/08/15 11:23:26 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.112345.167781 File 2012/08/15 11:23:45 rw-rw-rw- fff--- --s- ---- FEJJMON
// CEEDUMP.20120815.112404.964 File 2012/08/15 11:24:04 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.112405.503325 File 2012/08/15 11:24:05 rw-rw-rw- fff--- --s- ---- IBMUSER
CEEDUMP.20120815.112409.671097 File 2012/08/15 11:24:09 rw-rw-rw- fff--- --s- ---- IBMUSER
CEEDUMP.20120815.112805.972 File 2012/08/15 11:28:05 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.113927.838870 File 2012/08/15 11:39:27 rw-rw-rw- fff--- --s- ---- FEJJMON
DOHERTL Dir 2008/05/05 10:00:48 rwxr-xr-x fff--- --s- ----
DOHERTL.ISPF.SYSTSPRT File 2011/01/13 16:42:11 rwx----- fff--- --s- ---- IBMUSER
```

```
Menu Utilities View Options Help
ISRUUDL0 z/OS UNIX Directory List Row 41 to 80 of 113
Command ==> Scroll ==> PAGE

Pathname . : /SYSTEM/tmp
EUID . . . : 0
Command Filename Message Type Modified Permission Audit Ext Fmat Owner Group
-----
BWBCALLR File 2011/02/23 15:20:33 rwxr-xr-x fff--- --s- ---- IBMUSER
CEEDUMP.20120815.111620.957 Deleted
CEEDUMP.20120815.111624.930 Deleted
CEEDUMP.20120815.111632.940 Deleted
CEEDUMP.20120815.111752.167781 Deleted
CEEDUMP.20120815.111841.671096 Deleted
CEEDUMP.20120815.112314.965 Deleted
CEEDUMP.20120815.112318.167781 Deleted
CEEDUMP.20120815.112326.918 Deleted
CEEDUMP.20120815.112345.167781 Deleted
CEEDUMP.20120815.112404.964 Deleted
CEEDUMP.20120815.112405.503325 File 2012/08/15 11:24:05 rw-rw-rw- fff--- --s- ---- IBMUSER
CEEDUMP.20120815.112409.671097 File 2012/08/15 11:24:09 rw-rw-rw- fff--- --s- ---- IBMUSER
CEEDUMP.20120815.112805.972 File 2012/08/15 11:28:05 rw-rw-rw- fff--- --s- ---- FEJJMON
CEEDUMP.20120815.113927.838870 File 2012/08/15 11:39:27 rw-rw-rw- fff--- --s- ---- FEJJMON
DOHERTL Dir 2008/05/05 10:00:48 rwxr-xr-x fff--- --s- ----
DOHERTL.ISPF.SYSTSPRT File 2011/01/13 16:42:11 rwx----- fff--- --s- ---- IBMUSER
```

Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

z/OS UNIX Directory List Utility. . .



- **Running z/OS UNIX Commands**
 - z/OS UNIX command can be entered in the command field on the directory list panel (z/OS 1.11)
 - Directory list option “Enter z/OS UNIX commands in Command field” must be selected
 - output to stdout and stderr captured and displayed using the browse function
 - z/OS UNIX Command Shell (z/OS 2.1)
 - Provides the ability to enter, save and retrieve z/OS UNIX commands
 - Works in a similar way to the ISPF Command Shell (ISPF option 6)
 - Invoked by entering a / (forward slash) in the primary command field of the z/OS UNIX Directory List panel
 - *A 255 character length command field is provided for entering long z/OS UNIX and TSO commands*
 - *a list of point-and-shoot fields showing the last 10 z/OS UNIX commands entered*
 - *user can control retrieval from and updates to the list*
 - z/OS UNIX Command output mode (z/OS 2.1)
 - Option available to display command output using either browse or view



z/OS UNIX Directory List Utility. . .



- Running z/OS UNIX Commands. . .

```
ISRUUDL0          z/OS UNIX Directory List          Row 1 to 13 of 282
Command ==> /      Scroll ==> CSR

  List  Mode  Functions
-----
ISRULCME          z/OS UNIX Directory List Command Entry Panel
Enter commands below:

==>

Place cursor on choice and press enter to Retrieve command

=> printenv STEPLIB
=> /u/vandyke/hello
=> man ps
=> /u/vandyke/psents
=> man echo
=> echo $HOME
=> ps -ef
=>
=>
=>
```



Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

Using Multiple Screens



- ISPF allows up to 32 synchronously multi-tasking screens under one ISPF session
- Create new logical screens using:
 - **SPLIT [NEW]** command
 - reposition horizontal line separating 2 screens on 3270 display
 - new logical screen created when **NEW** specified

- **START** command
 - creates new logical screen with different "initial dialog"

```
START PANEL(panel) | PGM(program) | CMD(command)
[select_parameters]
| ISPF_command
| primary_option_menu_option
```

- Navigate screens using:
 - **SWAP [LIST | PREV | NEXT | screen name | n]** command
 - ISPF Task List panel (invoked using **SWAP LIST** command)



Using Multiple Screens. . .



- **SWAPBAR (z/OS 1.10)**
 - Simplifies the task of swapping between ISPF logical screens
 - Displays at the bottom of the physical screen point-and-shoot fields associated with each logical screen for the session

```
SETTINGS SCLM      *DSLIST  -ISR@PRI SDSF      EDIT      DTEST
```

- Use the point-and-shoot field to invoke the associated logical screen

Tip: Customize your terminal emulator to make the action of clicking the mouse simulate:

- 1) Placing the cursor
- 2) Pressing the ENTER key

Ex: with PCOMM from “File” pull-down, go to “Edit”->”Preferences”->”Mouse” select “Customize”. From “File” select “Customize Macro/Script”. Program the Right mouse button to simulate “Mouse Position” and then “Enter”.

- Enabled using the **SWAPBAR** system command
 - Format of the SWAPBAR display can be customized (z/OS 2.1)

Syntax: **SWAPBAR** [/ | ON | OFF]



Using Multiple Screens. . .



- **Multiple Screens at ISPF Invocation (z/OS 2.1)**
 - Allows a user to define a set of logical screens that are automatically created when ISPF is invoked
 - ISPF profile variable (7.3) is used to define a series of commands to start ISPF logical screens at ISPF invocation
 - Variable must contain the identifier **ISPF**, followed by the command delimiter then the command stack used to start the logical screens

```
_____ MYSTART P  ISPF;2;START 3.4;START 10;START S;LOG;SWAP 1
```

- The variable name is specified as an option with the **ISPF** or **ISPSTART** command

Syntax: **ISPF MYSTART** or

ISPSTART PANEL (ISR@PRIM) NEWAPPL (ISR) OPT (MYSTART)

- *Screen 1 – ISPF option 2 (edit), Screen 2 – ISPF option 3.4 (DSLIST), Screen 3 – ISPF option 10 (SCLM), Screen 4 – SDSF Log panel (assuming S is the option for SDSF on the primary menu)*
- **SWAP** command is used to make the edit panel the initial screen displayed when ISPF is invoked



Using Multiple Screens. . .

- **Multiple Screens at ISPF Invocation (z/OS 2.1). . .**
 - If a variable name is not specified with **ISPF/ISPSTART** default profile variable **ZSTART** is used for the initial command stack
 - If **ZSTART** is not found or does not contain the **ISPF** identifier then ISPF starts normally

Option 7.3

```

READY
ispf

Menu  Utilities  Help

ISPYVPM          Variables - Application: ISR          Row 822 to 832 of 949
Command ==>      Scroll ==> PAGE

Add, delete, and change variables. Underscores need not be blanked.
Enter END command to finalize changes, CANCEL command to end without
changes.

Current scrollable width of variables is: 57
Variable P A Value
-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+---
ZSTART    P      ISPF;7.3;L ZSTART;START 3.4;START 2;START 10;SWAP 1
ZSVIEWWS  P
ZT#EDDEF  P      OFF
ZT#EDIME  P      OFF
ZT#EXCS#  P X
ZT#EXDC   P
ZT#EXHDF  P      ON
ZT#EXHS#  P X
ZT#EXMC   P
ZT#EXPDM  P      V
ZT#EXPL#  P X
*DTEST   DSLIST   -EDIT   SCLM
  
```

Using Multiple Screens. . .

- **Multiple Screens at ISPF Invocation (z/OS 2.1). . .**
 - New **BASIC** keyword for **ISPF/ISPSTART** command can be used to start ISPF normally at the primary panel

```
READY
ispf basic

Menu  Utilities  Compilers  Options  Status  Help

ISR@PRIM                    ISPF Primary Option Menu
Option ==>

0  Settings      Terminal and user parameters      User ID . . : PVANDYK
1  View          Display source data or listings   Time. . . . : 09:36
2  Edit          Create or change source data      Terminal. . : 3278T
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 . : ISPF
7  Dialog Test  Perform dialog testing            TSO prefix: PVANDYK
9  IBM Products IBM program development products System ID . : ISA1
10 SCLM         SW Configuration Library Manager  MVS acct. . : IBMGSA
                                           Release . . : ISPF 7.1

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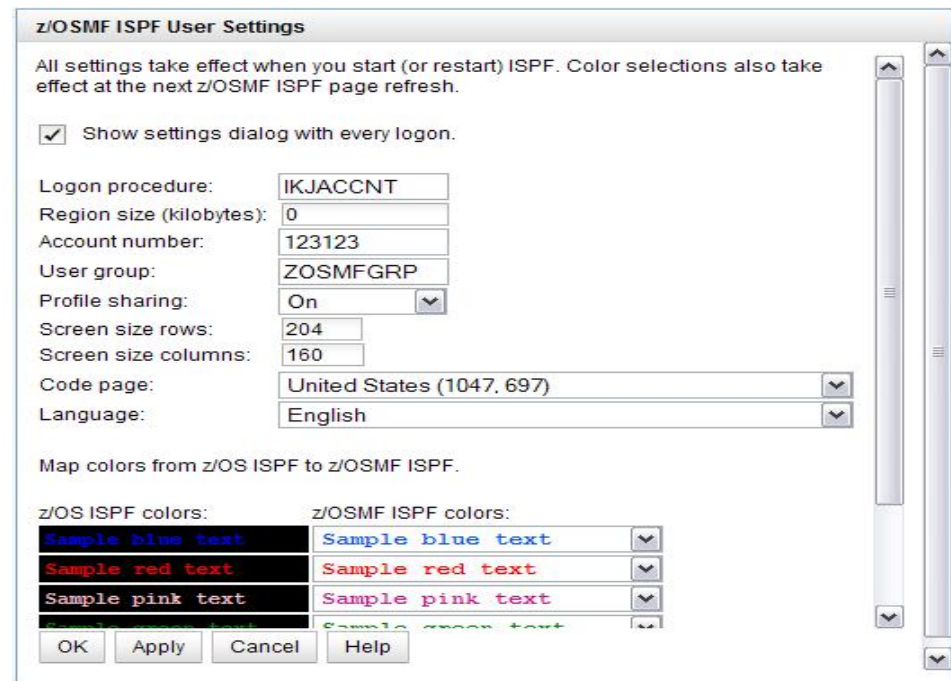
*ISR@PRI
```

Using Multiple Screens. . .

- **=XALL** Command (z/OS 2.1)
 - Provided to help terminate all logical screens with one command
 - **=X** command propagated to every logical session to terminate each application that supports **=X**
 - If **=X** not supported termination process halts on that logical screen
 - *Once that logical screen is terminated **=XALL** processing can be continued for each remaining logical screen*

ISPF in a Web Browser (Using z/OSMF)

- With z/OS 1.13, z/OSMF users can invoke ISPF in a web browser
- New ISPF task under z/OS Classic Interfaces category
 - Used to launch a “classic” ISPF session in the browser
 - Existing TSO logon procedure is used to define TSO/ISPF environment



z/OSMF ISPF User Settings

All settings take effect when you start (or restart) ISPF. Color selections also take effect at the next z/OSMF ISPF page refresh.

Show settings dialog with every logon.

Logon procedure: IKJACCNT
Region size (kilobytes): 0
Account number: 123123
User group: ZOSMFGRP
Profile sharing: On
Screen size rows: 204
Screen size columns: 160
Code page: United States (1047, 697)
Language: English

Map colors from z/OS ISPF to z/OSMF ISPF.

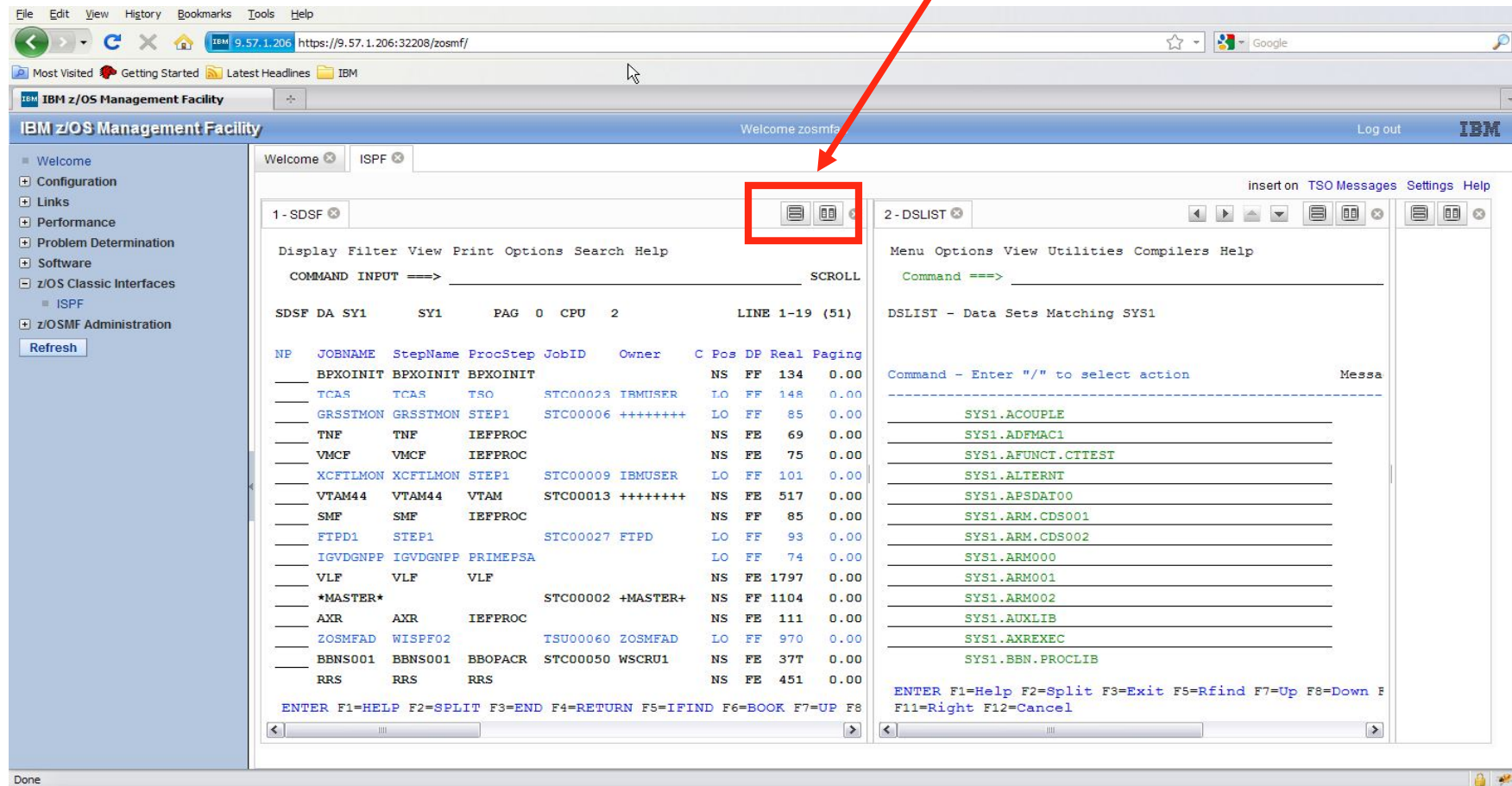
z/OS ISPF colors:	z/OSMF ISPF colors:
Sample blue text	Sample blue text
Sample red text	Sample red text
Sample pink text	Sample pink text
Sample green text	Sample green text

OK Apply Cancel Help

ISPF in a Web Browser (Using z/OSMF)...

- Up to 4 ISPF logical screen can be displayed in the same z/OSMF tab

Split buttons



The screenshot displays the IBM z/OSMF web interface with two ISPF logical screens open in a single browser tab. The left screen, titled '1-SDSF', shows a table of job information. The right screen, titled '2-DSLISL', shows a list of data sets. A red box highlights the split buttons (two overlapping rectangles) in the top right corner of the first screen, with a red arrow pointing to the text 'Split buttons' above it.

SDSF	DA	SY1	SY1	PAG	0	CPU	2	LINE	1-19	(51)
NP	JOBNAME	StepName	ProcStep	JobID	Owner	C	Pos	DF	Real	Paging
---	BPXOINIT	BPXOINIT	BPXOINIT			NS	FF	134	0.00	
---	TCAS	TCAS	TSO	STC00023	IBMUSER	LO	FF	148	0.00	
---	GRSSIMON	GRSSIMON	STEP1	STC00006	++++++	LO	FF	85	0.00	
---	TNF	TNF	IEFFPROC			NS	FE	69	0.00	
---	VMCF	VMCF	IEFFPROC			NS	FE	75	0.00	
---	KCFILMON	KCFILMON	STEP1	STC00009	IBMUSER	LO	FF	101	0.00	
---	VTAM44	VTAM44	VTAM	STC00013	++++++	NS	FE	517	0.00	
---	SMF	SMF	IEFFPROC			NS	FF	85	0.00	
---	FTPD1	STEP1		STC00027	FTPD	LO	FF	93	0.00	
---	IGVDGNPP	IGVDGNPP	PRIMEPSA			LO	FF	74	0.00	
---	VLF	VLF	VLF			NS	FE	1797	0.00	
---	*MASTER*			STC00002	+MASTER+	NS	FF	1104	0.00	
---	AXR	AXR	IEFFPROC			NS	FE	111	0.00	
---	ZOSMFAD	WISPF02		TSU00060	ZOSMFAD	LO	FF	970	0.00	
---	BBNS001	BBNS001	BBOPACR	STC00050	WSCR01	NS	FE	377	0.00	
---	RRS	RRS	RRS			NS	FE	451	0.00	

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ISPF in a Web Browser (Using z/OSMF)...



- TSO/E messages are displayed in a popup window

The screenshot displays the IBM z/OS Management Facility (z/OSMF) web interface. The browser address bar shows the URL `https://9.57.1.206:32208/zosmf/`. The main content area is titled "IBM z/OS Management Facility" and includes a navigation menu on the left with options like "Welcome", "Configuration", "Links", "Performance", "Problem Determination", "Software", "z/OS Classic Interfaces", "ISPF", and "z/OSMF Administration". A "Refresh" button is located below the menu.

The central workspace shows a TSO session. The main window contains the following text:

```
1 - CMD
Menu List Mode Functions Ut
Enter TSO or Workstation comm
====>
profile

Place cursor on choice and p

=> time
=> profile
=> _
=> _
=> _
=> _
=> _
=> _
=> _
```

A popup window titled "TSO Messages- ASID: 33" is overlaid on the session, displaying the following messages:

```
ZOSMFAD LOGON IN PROGRESS AT 06:21:17 ON JULY 15, 2011
NO BROADCAST MESSAGES
READY
TIME-06:21:44 AM. CPU-00:00:00 SERVICE-6095 SESSION-00:00:24 JULY 15,2011
```

Below the messages is a table header:

CHAR(0)	LINE(0)	PROMPT	INTERCOM	NO PAUSE	NOMSGID	NOMODE	NOWTMSG	NORECOV
---------	---------	--------	----------	----------	---------	--------	---------	---------

At the bottom of the popup window, there are buttons for "OK", "Attention", "Clear", and "Help". The main session window also includes a footer with function key definitions: "ENTER F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap F10=Actions F12=Cancel".

Complete your session evaluations online at www.SHARE.org/Pittsburgh-Eval

ISRDDN Utility (DDLIST)

- Displays a list of allocated data sets and provides functions to process these data sets

```

ISRDDNP                               Current Data Set Allocations                               Row 1 of 230
Command ==> █                               Scroll ==> CSR

Volume   Disposition Act DDname   Data Set Name   Actions: B E V M F C I Q
-----
A$SY01   SHR, KEEP   >  _ ALLOCPDS   SYS2.ALLOCLIB.SYSPLEXA
A$IS08   SHR, KEEP   >  _ ASMLANGX   PDFTDEV.VANDYKE.WDBLANGX
A$IS10   SHR, KEEP   >  _ PDFTDEV.COMMON.WDBLANGX
A1SY01   SHR, KEEP   >  _ HASPINDX   SYS2.HASPINDX.ISA1
A$US14   SHR, KEEP   >  _ IDIOPTS    VANDYKE.SOURCE(IDIOPTS)
A$IS03   SHR, KEEP   >  _ ISPILIB    PDFTDEV.VANDYKE.GIF
A$IS12   SHR, KEEP   >  _ PDFTDEV.STG.GIF
A$IS03   SHR, KEEP   >  _ PDFTDEV.INT.GIF
A$IS04   SHR, KEEP   >  _ PDFTDEV.SVT.GIF
A$US13   SHR, KEEP   >  _ ISPLLIB    VANDYKE.LOADLIB
A$US15   SHR, KEEP   >  _ VANDYKE.LOAD
A$PP01   SHR, KEEP   >  _ WDB.WDBDEV.LOAD
A$IS10   SHR, KEEP   >  _ PDFTDEV.VANDYKE.LOAD
A$IS04   SHR, KEEP   >  _ PDFTOOL.COMMON.LOAD
  
```


ISRDDN Utility. . .

- **Primary commands to add pseudo-DDs to the list:**
 - **A** – Displays the APF data sets
 - **LI** – Displays the link list and LPA data sets
 - **LP** – Displays the LPA data sets
 - **P** – Displays the PARMLIB data sets
- **Primary commands to display ENQs and ENQ contention**
 - **ENQ** – Displays a list of ENQs
 - Change list using QNAME, RNAME, address space and system ID fields
 - **CON** – Displays and ENQ contention on the system

ISRDDN Utility. . .

- **BROWSE (B)** primary commands displays address space storage
- **Parameters:**
 - Storage address (hexadecimal value)
 - Module name
 - TSO TEST address locator string

Command ==> b 10.?

```

ISRDBRS  STORAGE  Start: 00FDE070                                10.?
Command ==> █ Scroll ==> CSR
***** Top of Data *****
+0 (00FDE070)  00000218 00FF615C 00FDDFEC 00FDB2D0 * ...../*..Φ+|.Φ2} *
+10 (00FDE080) 00000000 00FE973C 00FF7FA6 00FE8172 * .....[p..."w.[aÊ *
+20 (00FDE090) 00FE7EFC 01A0E8F8 81541978 00FF1078 * .[=Φ.-Y8aè.Ï...Ï *
+30 (00FDE0A0) 00F29DE8 00FF38B8 0113168F 00FDB170 * .2)Y...8...†.Φ1n *
+40 (00FDE0B0) 00F12000 00FFA058 00FF6182 00000000 * .1....-ì../b.... *
+50 (00FDE0C0) 0A0307FE 00FDDFF4 00FDB2F8 00000000 * ...[.Φ+4.Φ28.... *
+60 (00FDE0D0) 40C3E5E3 00FDF008 00FF61B6 00FF61C0 * CVT.Φ0.../6../{ *
+70 (00FDE0E0) 00F554A0 9BFE1308 00620004 00FEF480 * .5è-}[...Â...[40 *
+80 (00FDE0F0) 00000000 815A6810 00FF5FE8 019DFA18 * .....a!Ç...^Y.)|. *
+90 (00FDE100) 83649000 00FDB170 00FF5F6C 00C09998 * cÃ[]..Φ1n..^%.{rq *

```

ISRDDN Utility. . .

- **DISASM** primary command (z/OS 1.9) available in browse display of module storage
- Provides display of disassembled module storage

```

ISRDDBRS  ISRDSLST PLPA Start:0541B0F0 Size:00008680 Line 00000000 Col 001 080
Command ==> disasm Scroll ==> CSR
***** Top of Data *****
+0 (0541B0F0)  A7F40010 1AC9E2D9 C4E2D3E2 E340F2F0 * x4..ISRDSLST 20 *
+10 (0541B100) F0F84BF3 F4F360C2 C1E2C540 A9F1C200 * 08.343-BASE z1B. *
+20 (0541B110)  90ECD00C A7850004 0541EF80 58880000 * } .xe... ^0ih.. *
  
```

```

ISRDDBRS  ISRDSLST PLPA Start:0541B0F0 Size:00008680 Line 00000000 Col 001 080
Command ==>   Scroll ==> CSR
***** Top of Data *****
(0541B110)      +20  90EC D00C      A0000000 STM      R14,R12,12(R13)
(0541B114)      +24  A785 0004      JAS      R8,*+8
(0541B118)      +28  0541      BALR     R4,R1
(0541B11A)      +2A  EF80 5888 0000 LMD      R8,R0,2184(R5),0
(0541B120)      +30  0D90      BASR     R9,0
(0541B122)      +32  41F0 0000      LA      R15,0
(0541B126)      +36  5800 8008      L      R0,8(,R8)
(0541B12A)      +3A  5890 D038      L      R9,56(,R13)
(0541B12E)      +3E  0700      NOPR     0
(0541B130)      +40  A715 0004      JAS      R1,*+8
(0541B134)      +44  0541      BALR     R4,R1
(0541B136)      +46  B144 5811 0000 DC      X'B14458110000'
(0541B13C)      +4C  B240 0001      BAKR     0,R1
(0541B140)      +50  A7F4 0007      J      *+14
(0541B144)      +54  4DE0 9184      BAS      R14,388(,R9)
  
```

Thank You!!!

- We hope this was helpful
- Feedback welcome