

# ISPF Hidden Treasures and New Features

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- Dataset list enhancements
- Member list and scroll enhancements
- Edit enhancements
- PDSE V2 member generations
- UNIX directory list
- Multiple screens
- Selected z/OS V2R2 ISPF enhancements
- Closing comments
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# **Dataset 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

The screenshot displays the Data Set List Utility (DSL) interface. The main panel shows the 'Data Set List Utility' menu with options like 'blank Display data set list', 'V Display VTOC information', 'P Print data', and 'PV Print VTOC information'. The 'Initial View' section has '2. Space' and '4. Total' selected, indicated by red arrows. A pop-up window titled 'Progress Information' shows 'Retrieving data set information ...' with a progress bar from 0 to 100. Below the main panel, the 'DSLIST - Data Sets Matching SYS1.S\*' command output is shown, displaying 'Total Tracks: 133549 non-x: 108162' and a list of data sets including SYS1.SACBCNTL, SYS1.SADRYLIB, and SYS1.SAPPDAT2.

**Progress Information**

Retrieving data set information ...

0-----100

F1=Help F2=Split F3=Exit  
F7=Backward F8=Forward F9=Swap

**Data Set List Utility**

Menu RefList RefMode Utilities Help

Option ==> \_\_\_\_\_

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

Enter one or both of the parameters below:

Dsname Level . . . sys1.s\*  
Volume serial . . . \_\_\_\_\_

**Data set list options**

Initial View

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

**DSLIST - Data Sets Matching SYS1.S\***

Command ==> \_\_\_\_\_

Total Tracks: 133549 non-x: 108162 Data Sets: 251 non-x: 246

Command - Enter "/" to select action

	Tracks	%Used	XT
SYS1.SACBCNTL	25	92	1
SYS1.SADRYLIB	10	90	1

1 data set(s) not displayed

## ■ 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.COBOLE
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
```

## ■ Block Line Commands (z/OS 1.10) continued

- The block command will be executed against excluded lines in the block if you have selected the DSLIST settings option “Execute Block Commands for excluded Data Sets.”

```

Menu  Options  View  Utilities  Compilers
-----
DSLIS 1. DSLIST Settings...
Comma 2. Refresh List
       3. Append to List...
Comma 4. Save List
----- 5. Reset
                                n
                                -----
                                DEMO.ISPLLIB
    
```

```

Data Set List Settings Main

General Options
Enter "/" to select option
/ Display Edit/View/Browse entry panel (*)
/ Automatically update reference lists
/ List pattern for MO, CO, D, and RS actions
/ Show status for MO, CO, D, and RS actions
/ Confirm Member delete
/ Confirm Data Set delete
/ Do not show expanded command
/ Enhanced member list for Edit, View, and Browse
/ Display Total Tracks
- Execute Block Commands for excluded Data Sets
- Display Expiration Date
    
```

```

Menu  Options  View  Utilities  Co
-----
DSLIST - Data Sets Matching DEMO.*
Command ==>

Command - Enter "/" to select action
-----
DEMO.FILTER.TEST
DEMO.ISPLLIB
DEMO.ISPLLIB2
DEMO.ISPTLIB
DEMO.ISPTLIB2
DEMO.LOAD
DEMO.LOAD_NEW
//submit DEMO.SUBMIT.JOB1
- - - - -
//_ DEMO.SUBMIT.JOB4
DEMO.TEST.BIGSCROL
    
```

## ■ 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

```
DSLIST - Data Sets Matching DEMO.*
Command ==> _____

Command - Enter "/" to select action
-----
- DEMO.ISPTLIB2
  DEMO.LOAD
  DEMO.SUBMIT.JOB1
  DEMO.SUBMIT.JOB2
```



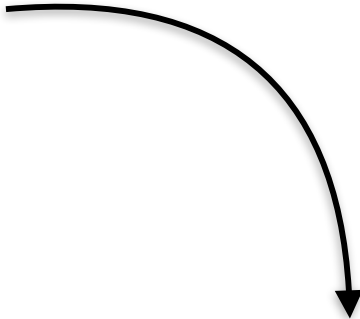
```
DSLIST - Data Sets Matching DEMO.*
Command ==> _____

Command - Enter "/" to select action
-----
- DEMO.ISPTLIB2
  al 'demo.load.new'
  DEMO.SUBMIT.JOB1
```

```
Allocate Target Data Set
Command ==> _____

Specified data set DEMO.LOAD.NEW
does not exist.
If you wish to allocate this data set, select one
below.

Allocation Options:
2 _1. Allocate using the attributes of:
    DEMO.LOAD
2. Specify allocation attributes
```



```
Menu RefList Utilities Help
Allocate New Data Set
Command ==> _____

Data Set Name . . . : DEMO.LOAD.NEW

Management class . . . _____ (Blank for default)
Storage class . . . _____ (Blank for default)
Volume serial . . . CPDLB3 (Blank for system)
Device type . . . _____ (Generic unit or)
Data class . . . _____ (Blank for default)
Space units . . . CYLINDER (BLKS, TRKS, CYL or RECORDS)

Average record unit _____ (M, K, or U)
Primary quantity . . 1 (In above units)
Secondary quantity . 2 (In above units)
Directory blocks . . 0 (Zero for sequential)
```



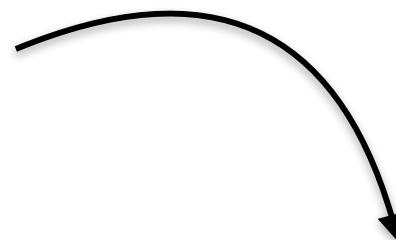
## ▪ Display z/OS UNIX Directory List (z/OS 2.1)

- Entering a valid UNIX path name in the Dsname Level field will result in the display of a z/OS UNIX Directory List

```
                                Data Set List Utility
Option ==> _____

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

Enter one or both of the parameters below:
Dsname Level . . . /etc
Volume serial . . . _____
```



```
                                z/OS UNIX Directory List          Row 1 to 14 of 35
Command ==> _____          Scroll ==> PAGE
Time zone EST5EDT is used to calculate the displayed date and time values.
Pathname . . : /etc
EUID . . . : 0
Command  Filename                Message                Type Permission Audit  Ext
-----
.                Dir      rwx-----  fff---
..              Dir      rwxr-xr-x   fff---
.nfs             File     rw-r--r--  fff--- --s-
auto.map         File     rwx-----  fff--- --s-
auto.master      File     rwx-----  fff--- --s-
banner           File     rwxr-xr-x   fff--- --s-
dce              Dir      rwxr-xr-x   fff---
dfs              Dir      rwxr-xr-x   fff---
fwftp.data       File     rw-r--r--  fff--- --s-
```

# **Member List and Scroll Enhancements**

## ■ **FILTER** command (z/OS 1.8)

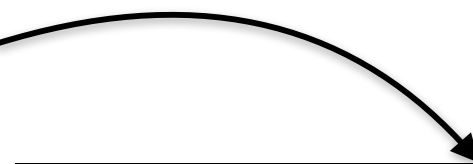
- Filter by column name
- Used to display only those members having an attribute matching a specified value
  - Syntax: **FILTER** [*field operator value*]  
*field* member list column name  
*operator* EQ, NE, LE, LT, GE, or GT  
*value* the comparison value
  - Two ways to issue:
    - Enter just **Filter** and use the menu (easy for remembering), or
    - Issue the command, ex: **Filter size GT 1000**

Member List Filter

Select field and operator then enter a value to set a member list filter.

Field	Operator
10 1. Name	1. EQ (equal)
2. Lib	2. NE (not equal)
3. VV	3. LE (less or equal)
4. MM	4. GE (greater or equal)
5. Created	5. LT (less)
6. Changed	6. GT (greater)
7. Size	
8. Initial	
9. MOD	
10. Userid	

Value GXM



Menu	Functions	Confirm	Utilities	Help
BROWSE	DEMO.FILTER.TEST			
Command ==>	Row 0000001 of 0000002			
	Name	Prompt	Size	Created
	HYDRA1		49	2001/06/07
	HYDRA2		50	2001/06/07
	**End**			

Scroll ==> PAGE TD

Changed 18:11:13 GXM

Changed 18:11:20 GXM

# Member List Enhancements

Menu	Functions	Confirm	Utilities	Help
BROWSE	DEMO.FILTER.TEST			
Command	filter size GT 50			
	Name	Prompt	Size	Created
-----	BTP107		18	1997/03/06
-----	BTP120		17	1997/03/06
-----	BTP122		5	1997
-----	BTP127		17	1997
-----	BTP148		17	1997

Menu	Functions	Confirm	Utilities	Help
BROWSE	DEMO.FILTER.TEST			
Command	=>			
	Name	Prompt	Size	Created
-----	COMMPROF		191	1997/03/07
-----	FIVE		450	2014/06/05
-----	FOUR		64	2014/06/05
-----	ONE		476	2014/06/05
-----	TWO		102	2014/06/05
**End**				

BROWSE	DEMO.FILTER.TEST			
Command	sort size			
	Name	Prompt	Size	Created
-----	COMMPROF		191	1997/03/07
-----	FIVE		450	2014/06/05
-----	FOUR		64	2014/06/05
-----	ONE		476	2014/06/05
-----	TWO		102	2014/06/05
**End**				

BROWSE	DEMO.FILTER.TEST			
Command	=>			
	Name	Prompt	Size	Created
-----	ONE		476	2014/06/05
-----	FIVE		450	2014/06/05
-----	COMMPROF		191	1997/03/07
-----	TWO		102	2014/06/05
-----	FOUR		64	2014/06/05
**End**				

## ■ FILTER command continued...

- Member List **SRCHFOR** command enhanced to use **FILTER** function to optionally display only those members containing the **SRCHFOR** string

```
MEMBER LIST Srchfor Options

Command ==>

You are about to search the members of the data set(s) specified.
Specify search string(s) and options and press ENTER to run the search.
Enter the END or the CANCEL command to cancel the search.

=> DEVICE
=>
=>
```

<u>M</u> enu	<u>F</u> unctions	<u>C</u> onfirm	<u>U</u> tilities	<u>H</u> elp
BROWSE				
DEMO.FILTER.TEST				
Command ==>				
	Name	Prompt	Size	Created
-----	BTP107	*Found	18	1997/03/06
-----	BTP120	*Found	17	1997/03/06
-----	BTP122		5	1997/03/06
-----	BTP127	*Found	17	1997/03/06
-----	BTP148	*Found	17	1997/03/06
-----	BTP153	*Found	17	1997/03/06
-----	BTP307	*Found	16	1997/03/06
-----	BTP309		5	1997/03/06
-----	BTP316		5	1997/03/06
-----	BTP326		5	1997/03/06
-----	BTP327		5	1997/03/06
-----	BTP328	*Found	17	1997/03/06

```
Select Process Options with /
- Mixed Mode
- Any case
- ASCII
/ Set EDIT FIND string
/ Set BROWSE FIND string
*DSLST

Select Output Option
- View output
- Save output
/ Filter list
```

```

Menu Functions Confirm Utilities Help
BROWSE DEMO.FILTER.TEST
Command ==>

```

	Name	Prompt	Size	Created
-----	BTP107	*Found	18	1997/03/06
-----	BTP120	*Found	17	1997/03/06
-----	BTP127	*Found	17	1997/03/06
-----	BTP148	*Found	17	1997/03/06
-----	BTP153	*Found	17	1997/03/06
-----	BTP307	*Found	16	1997/03/06
-----	BTP328	*Found	17	1997/03/06
-----	BTP329	*Found	21	1997/03/06
-----	BTP330	*Found	17	1997/03/06

## ■ 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

```
Menu Functions Confirm Utilities Help
BROWSE DEMO.TEST.PDS.MANYMEM Row 0203001 of 0203189
Command ==> SCROLL ==> PAGE
Name Prompt Size Created Changed ID
-----
D99831
D99832
D99833
```

- **Support provided for the input of scroll amounts up to 9,999,999 (z/OS V2R1)**
  - **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
```

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

ispcconf

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

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

Command Line Placement
1 1. Bottom
2 2. Asis

Scroll Defaults
1 1. PAGE
2 2. HALF
3 3. MAX
4 4. CSR
5 5. DATA

PRINTDS Option
1 1. DEST
2 2. WRITER

Status Area Default
2 1. Calendar
2 2. Session
3 3. Function Keys
4 4. User Point and Shoot
5 5. None

Reset flags
/ Reset Scroll Values

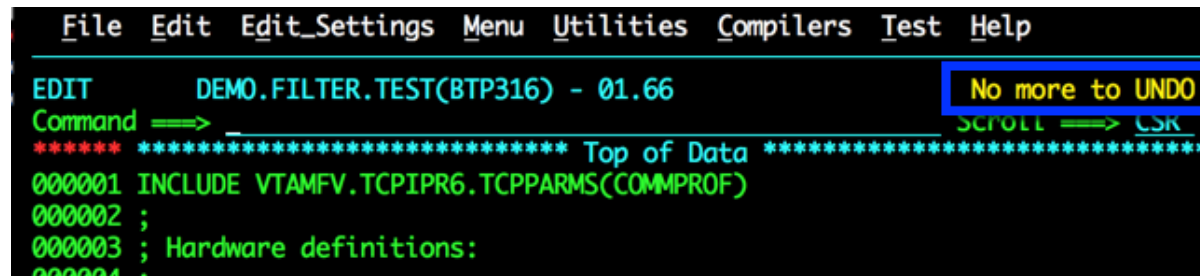
Minimum Scroll Value 0
Maximum Scroll Value 9999999
```



# **Edit Enhancements**

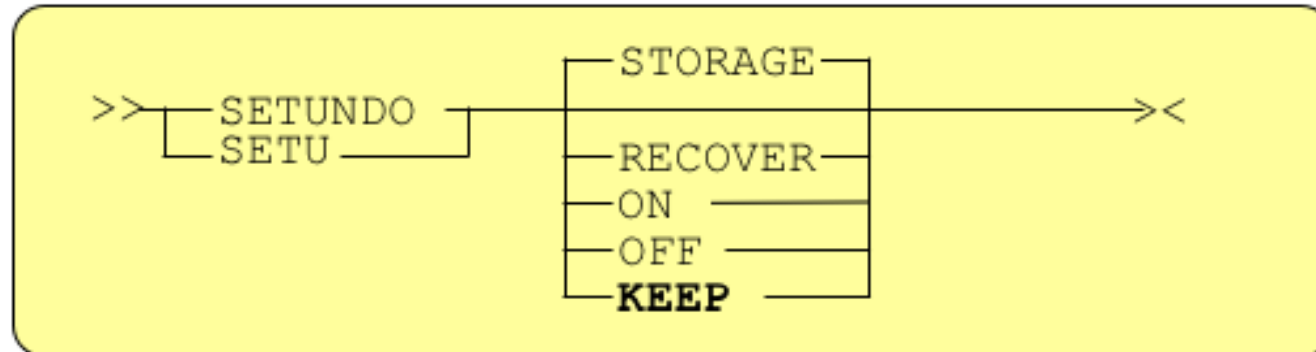
## ■ UNDO after SAVE (z/OS 1.9)

- By default, the UNDO buffers are cleared after a SAVE command is issued.



```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT DEMO.FILTER.TEST(BTP316) - 01.66 No more to UNDO
Command ==> SCROLL ==> CSR
***** ***** Top of Data *****
000001 INCLUDE VTAMFV.TCPIPR6.TCPPARMS(COMMPROF)
000002 ;
000003 ; Hardware definitions:
000004 ;
```

- KEEP option added to the edit SETUNDO command



- KEEP prevents the SAVE command from clearing the UNDO buffers in storage
  - Allows reversal of edit changes made prior to SAVE commands during the current edit session

## ■ Enabling SETUNDO KEEP

- Must be enabled from the ISPF Configuration Utility
  - Under “Editor Settings”, set Undo Storage Size to a non-zero value, put a ‘/’ by SETUNDO ON, and force SETUNDO

```
Modify PDF Edit Configuration Settings
Command ==> _____ More: +
Miscellaneous Edit Settings
Maximum Number of Edit Profiles . . . . 25
Maximum Number of Edit Clipboards . . . 11
Site-wide Initial Macro . . . . .
Maximum Initial Storage for Edit . . . . 0 (Number of 1K Blocks)
Maximum Edit Clipboard Size . . . . . 0 (Number of 4K Pages)
Undo Storage Size . . . . . 1024 (Number of 1K Blocks)
Text Flow Terminators . . . . . :&<
Edit CUT Default Action . . . . . REPLACE (APPEND or REPLACE)
Edit PASTE Default Action . . . . . KEEP (DELETE or KEEP)
Disable PACK globally . . . . .
Global Line Command Table . . . . .
```


```
Enter "/" to select option      Enter "/" to force settings
/  STATS ON                     -  STATS
-  STATS EXT                    -  STATS EXT
-  RECOVERY ON                  -  RECOVERY
/  RECOVERY warning message     -  RECOVERY warning
/  SETUNDO ON                   /  SETUNDO
-  PACK ON                      -  PACK
-  CAPS ON
/  NOTE ON                      HEX Mode . . . 2 1. ON
```

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

<b>HXX</b>	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 DEMO.COBOL(TEST1) - 01.34
Command ==>
000040 000040
hxx050 000050 Program-id.      IGYTCARA.
000060 000060 Author.          A. Programmer.
hxx070 000070 Installation.     IBM - Santa Teresa Laboratory.
000080 000080 Date-written.      April 1991.
```



## ■ 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

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      USER.PARMLIB(AUTOSTRT) - 01.02
Command === compare 'demo.parmlib(autostrt)' x
***** ***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until you change
MSG>
```

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      USER.PARMLIB(AUTOSTRT) - 01.02 Columns 00001 00072
Command === compare 'demo.parmlib(autostrt)' vol(cpd1b3) x Scroll ==> CSR
***** ***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until you change
```

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      USER.PARMLIB(AUTOSTRT) - 01.02 Changes are shown
Command ==> Scroll ==> CSR
000300 /* AUTOMATICALLY START SEVERAL VTAM APPLICATIONS */
.OAAAA /* THIS LINE IS IN USER.PARMLIB */
000400 /*-----*/
000500 /* VARY 2E30-2E31,ONLINE */
===== * ADDED THIS NEW LINE 1
000600 PAUSE 10 /* WAIT FOR LOCALS TO COME UP */
000700 S TSO /* TIME SHARING OPTION */
- - - - - 18 Line(s) not Displayed
```

## 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.

**Ex: Exclude all but 5 lines to give perspective**

```

ISREUPP      Edit Compare Settings and Command Parameters
Command ==>

SuperC Options:
Enter "/" to select option
- Case Insensitive Compare
- Ignore Reformat Differences
- Data Contains DBCS Characters

Display options:
Lines displayed
with EXCLUDE . . . 5 (0 - 12)
Label Prefix . . . 0 (A - Y)

Use a label of the form .0xxxx to
change the highlighting of a line
to mark it as only existing in
the current file.

Compare Command Parameters:
Name . . . . .
Volume . . . . .
Enter "/" to select option
- Exclude
- SYSIN

Enter "/" to select option
- Save
- Set SYSIN data set

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

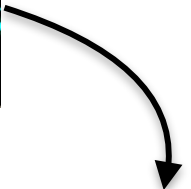
## ▪ Regular Expressions for **FIND/CHANGE** (z/OS 2.1)

- **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          DEMO.TEST.CHARSET($RX) - 01.03
Command ==> f r'l[ai]ne' all
***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until
```



```
EDIT          DEMO.TEST.CHARSET($RX) - 01.03
Command ==>
000006 ;
000007 1 This will find lane
000008 :
```

## ■ Regular Expressions for **FIND/CHANGE** (z/OS 2.1)

- Special symbols for regular expressions

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



## ■ 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	<b>F4=Expand</b>	F5=Rfind	F6=Rchange
F7=Up	F8=Down	F9=Swap	F10=Left	F11=Right	F12=Cancel

```
EDIT          DEMO.TEST CHARSET(MOUSE)      01.15      Columns 00001 00072
Command ==> c 'The mouse was chased by the cat' 'The mouse_ Scroll ==> CSR
***** Top of Data *****
==MSG> -CAUTION- Profile changed to NUMBER ON STD (from NUMBER OFF).
```

PF4

```
                                ZCMD+0
Command ==> _____ Line
                                Scroll
c 'The mouse was chased by the cat' 'The mouse
_____
_____
_____
```

## ■ **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

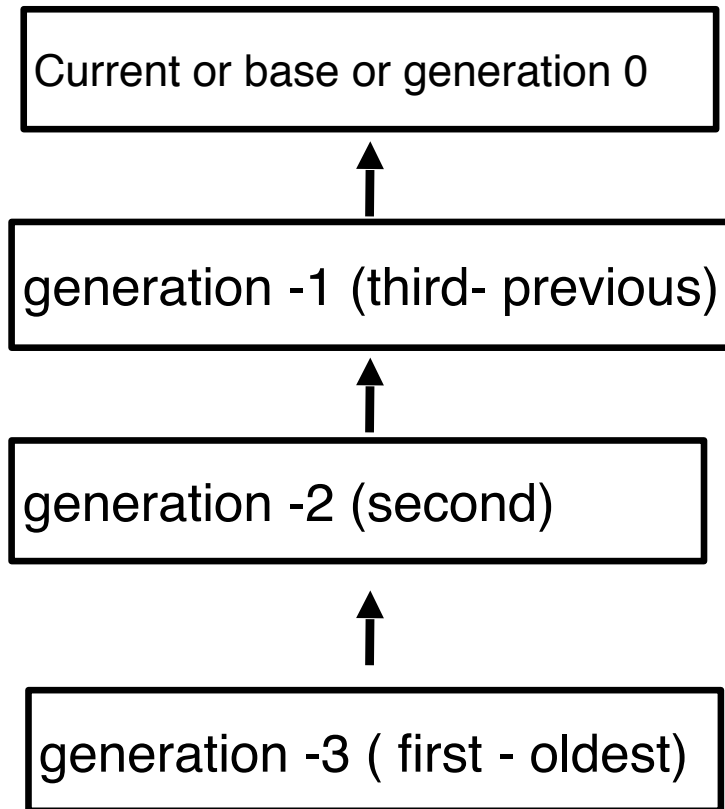
```
File Edit Edit_Settings Menu Utilities Compilers Test Help
ISREDDE2 VANDYKE.JCLLIB(FTPDT) - 01.01 Columns 00001 00080
Command ==> █ Scroll ==> CSR_
***** Top of Data *****
000001 //VANDYKE JOB (#ACCT),'PETER',
000002 // MSGLEVEL=(1,1),MSGCLASS=X,CLASS=A,REGION=4M,
000003 // NOTIFY=&SYSUID
000004 //*
000005 //ALLOC EXEC PGM=IEFBR14
000006 //DDF1 DD DSN=vandyke.HSD1110.F1.XMI
000007 //COPY EXEC PGM=FTP
000008 //SYSTPD DD DISP=SHR,DSN=HANKO.PDSCNTL(FTPDATA)
000009 //sysin DD *
000010 132 168 128.222
000011 xxxxxxxx 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 V2 Member Generations**

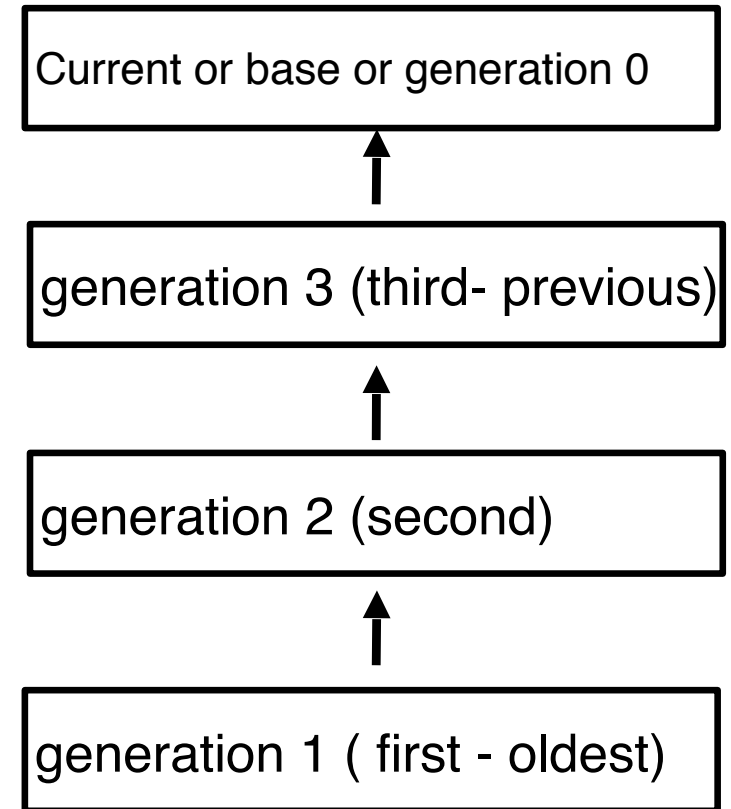
- ISPF provided support for PDSE Version 2 Member Generations included with DFSMS APAR **OA42358**
  - Requires ISPF APARs **OA42247** and **OA42248**.
  - DFSMS parmlib member IGDSMSxx, MAXGENS\_LIMIT setting
- Provides the ability to work with previous generations of a member.
  - *Current ISPF Support:*
    - 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 the data set
    - DSIList 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!

- Two ways to interact with generations, specifying

**Relative**  
(maybe most intuitive when  
accessing recent generations)



**Absolute**  
(easy to quickly get to oldest)




**Example with 3 Generations**

- By default:
  - Editing the current member (Gen 0) without specifying a generation results in a new generation being created
  - Editing prior generations does NOT result in a new generation
- However,
  - Can edit any generation and specify “**SAVE NEWGEN**”
    - Newly saved member will become generation 0 (base).
  - Can edit the base generation and specify “**SAVE NOGEN**”
    - Newly saved member is changed but no new generation is created.
- Rename – causes ISPF to delete all generations except base
- Delete – deletes all generations
- Copy - only copies the base generation
- Edit will tell you which absolute generation you are working with

```
EDIT          TREED.GENTST2(TST1) - 01.00          Columns 00001 00080
Command ==> _____ Scroll ==> CSR
***** ***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until you change
==MSG>          your edit profile using the command RECOVERY ON.
==MSG> -CAUTION- Edit session has been invoked for generation 1
==MSG>          High generation number is currently 2
000100 Generation1                                00010000
000200 this is a test                             00020000
***** ***** Bottom of Data *****
```

## Allocate 3.2

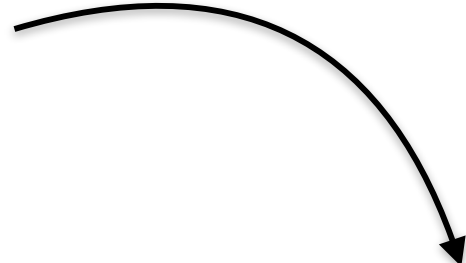
Management class . . .	<u>          </u>	(B
Storage class . . .	<u>          </u>	(B
Volume serial . . .	<u>CPDLB2</u>	(B
Device type . . .	<u>          </u>	(G
Data class . . .	<u>          </u>	(B
Space units . . .	<u>CYLINDER</u>	(B
Average record unit	<u>  </u>	(M
Primary quantity . .	<u>  3</u>	(I
Secondary quantity	<u>  1</u>	(I
Directory blocks . .	<u>  0</u>	(Z
Record format . . .	<u>FB</u>	
Record length . . .	<u>80</u>	
Block size . . .	<u>27920</u>	
		
Data set name type	<u>LIBRARY</u>	(L
Data set version . :	<u>2</u>	E
Num of generations :	<u>3</u>	

## Dataset Information

Volume serial . . .	<u>CPDLB2</u>
Device type . . .	<u>3390</u>
Data class . . .	<u>**None**</u>
Organization . . .	<u>P0</u>
Record format . . .	<u>FB</u>
Record length . . .	<u>80</u>
Block size . . .	<u>27920</u>
1st extent cylinders:	<u>3</u>
Secondary cylinders :	<u>1</u>
Data set name type :	<u>LIBRARY</u>
Data set version . :	<u>2</u>
Num of generations :	<u>3</u>

## Browsing a generation

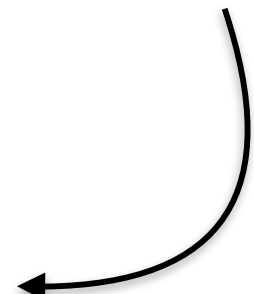
```
EDIT DEMO.TEST.PDSEMG
Command ==>
Name Prompt S
b. ABCTEST /
SEUSS
SEUSS2
```



```
BROWSE Entry Panel

Object Name:
'DEMO.TEST.PDSEMG(SEUSS)'
PDSE Generation. -1
```

```
BROWSE DEMO.TEST.PDSEMG(SEUSS) - 01.04
Command ==>
***** Top of Data
My cat in the hat
My cat in the hat, part 2
My cat in the hat, part 3
***** Bottom of Data
```





# Unix Directory List

- **z/OS UNIX directory list can be displayed .... Several ways!**
  - ISPF option 3.17 (z/OS 1.8)
    - 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
  - **DIRLIST** service (z/OS 1.10)
    - Programming API available for programs wanting a directory list display
  - ISPF option 3.4 (z/OS 2.1)
    - Enter a directory path name in the “Dlname Level” field

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

```

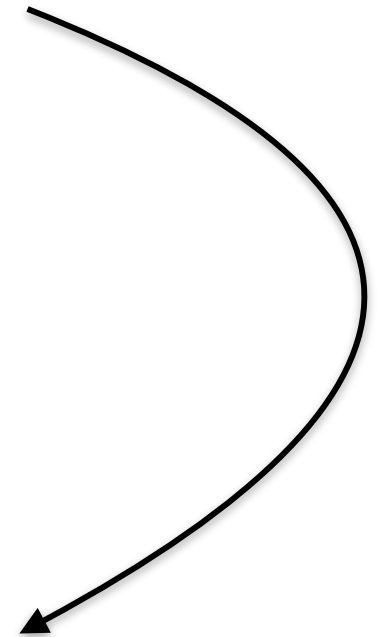
Menu  RefList  RefMode  Utilities  Options  File_Systems
-----
                                z/OS UNIX Directory List Utility
Option ==>
Time zone EST5EDT is used to calculate the displayed date and
blank Display directory list          P Print directory
Pathname . . . /etc

```

```

                                z/OS UNIX Directory List          Row 1 of 1
Command ==>
Pathname . : /etc
EUID . . . : 0
Command  Filename                Message                Type Permission Audit
-----
.                Dir      rwx-----  fff--
..              Dir      rwxr-xr-x   fff--
.nfsc           File     rw-r--r--  fff--
auto.map        File     rwx-----  fff--
auto.master     File     rwx-----  fff--
banner          File     rwxr-xr-x   fff--
dce             Dir      rwxr-xr-x   fff--

```



■ Option 1 - Adjust size of the filename column

The diagram illustrates the steps to adjust the filename column width in the z/OS UNIX Directory List Utility. It consists of three terminal window screenshots connected by arrows.

**Top Screenshot: Main Menu**

```
Menu  Utilities  View  Options  Help
z/OS UNIX Directory List
Command ==>
Time zone EST5EDT is used to calculate the displayed date
Pathname . : /etc
EUID . . . : 0
Command  Filename      Message      Type  Per
-----
.                               Dir   rwx
..                              Dir   rwx
.nfsc                          File  rw-
auto.map                      File  rwx
```

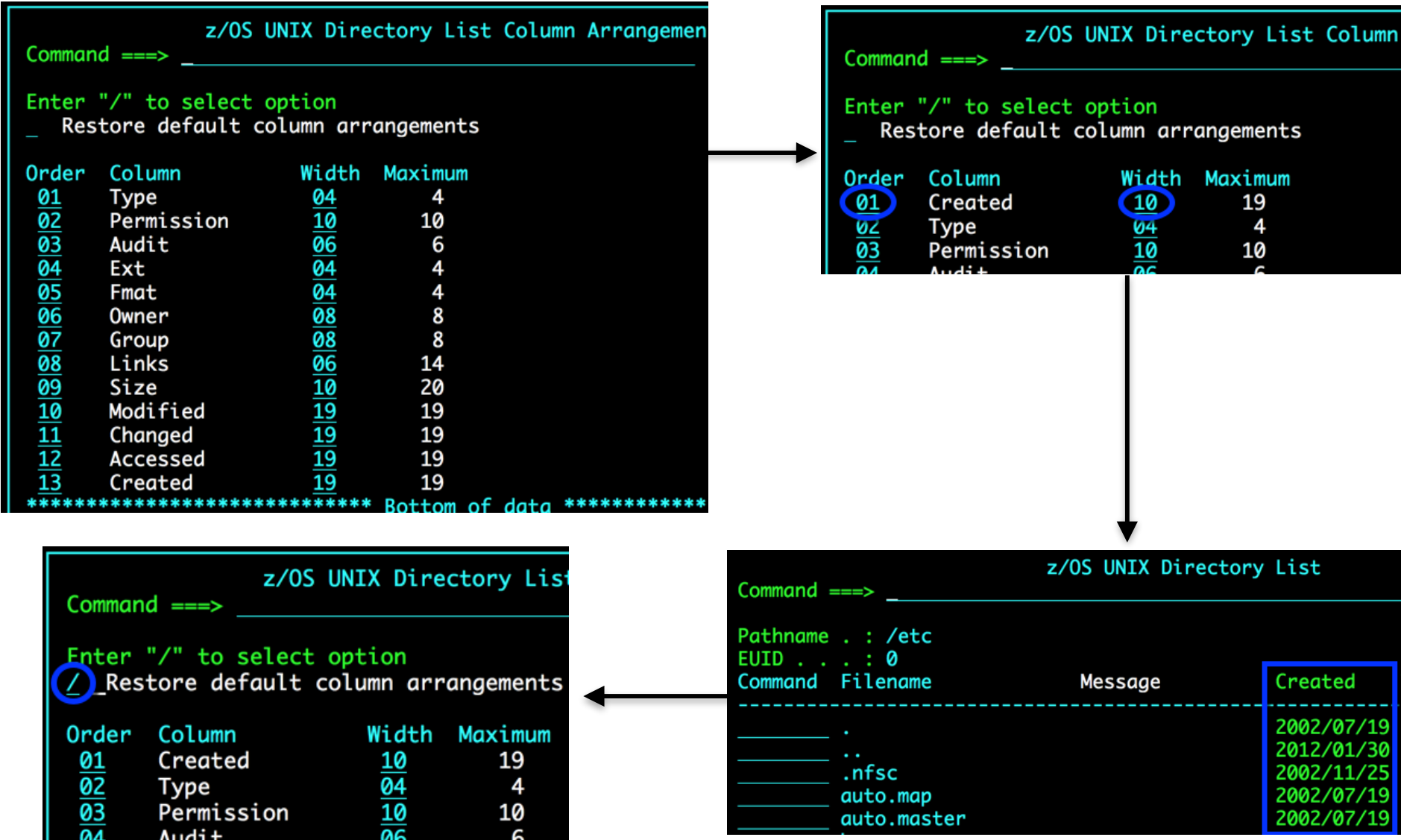
**Middle Screenshot: Options Menu**

```
Menu  Utilities  View  Options  Help
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
```

**Bottom Screenshot: z/OS UNIX Directory List Options**

```
z/OS UNIX Directory List Options
Command ==>
Width of filename column . . . . . 20
Pathname substitution character . . . . 1
z/OS UNIX command time limit . . . . .
Enter "/" to select option
/ Confirm File Delete
/ Confirm Non-empty Directory Delete
- Bypass z/OS UNIX File Edit Options panel
- Display permissions in octal format
/ Enter z/OS UNIX commands in Command field
Output Mode
2 1. View
2. Browse
```

■ Option 2 – Tailor column arrangement



## ■ 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

## ▪ Filtering of z/OS UNIX path names (z/OS 2.1)

### • Example:

```
Pathname . . . /usr/l*/[cs]*_
```

```
Menu Utilities View Options Help
```

```
z/OS UNIX Directory List
```

```
Command ==> _
```

```
List . . . : /usr/l*/[cs]*
```

```
EUID . . . : 0
```

```
Command Pathname Message
```

```
_____ /usr/lib/cdserprt.dll
```

```
_____ /usr/lib/cdsibmut.dll
```

```
_____ /usr/lib/cdskwtf.dll
```

```
. . .
```

```
_____ /usr/lpp/cpo
```

```
_____ /usr/lpp/customizer
```

```
_____ /usr/lpp/cyanea
```

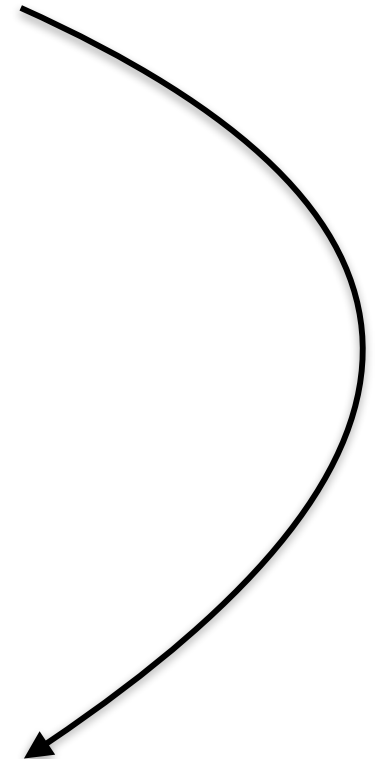
```
_____ /usr/lpp/sdsf
```

```
_____ /usr/lpp/set
```

- Further filtering of the path name:

```
Menu Utilities View Options Help
z/OS UNIX Directory List
Command ==> filter /IBM/CP*
List . . . : /usr/l*/[cs]*
EUID . . . : 0
Command Pathname Message
-----
      /usr/lib/cdserprt.dll
      /usr/lib/cdsibmut.dll
```

```
Menu Utilities View Options Help
z/OS UNIX Directory List
Command ==> 
List . . . : /usr/l*/[cs]*/IBM/CP*
EUID . . . : 0
Command Pathname Message
-----
      /usr/lpp/cpo/IBM/CPOCOMM
      /usr/lpp/cpo/IBM/CPOPCFG
      /usr/lpp/cpo/IBM/CPOCPREG
      /usr/lpp/cpo/IBM/CPOCPSCH
```





## ■ 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

## ■ 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)

## ▪ **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

- Block line commands

```
z/OS UNIX Directory List
Command ==>
Pathname . : /u/user1/demo
EUID . . . : 0
Command  Filename                Message                Created
-----
asciitxt2
del1.txt
//d del2.txt                        2015/05/18
del3.txt                        2015/05/24
// del4.txt                        2015/05/24
del5.txt                        2015/02/27
```

```
z/OS UNIX Directory List
Command ==>
Pathname . : /u/user1/demo
EUID . . . : 0
Command  Filename                Message                Created
-----
asciitxt2
del1.txt
Deleted
del2.txt                        Deleted
del3.txt                        Deleted
del4.txt
del5.txt                        2015/02/27
```

## ■ 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

```
Command ==> udlist /etc Edit Entry Panel
ISPF Library:
Project . . . 
Group . . . . .
```

Menu Utilities View Options Help

z/OS UNIX Directory List

Command ==> \_\_\_\_\_

Time zone EST5EDT is used to calculate the displayed da

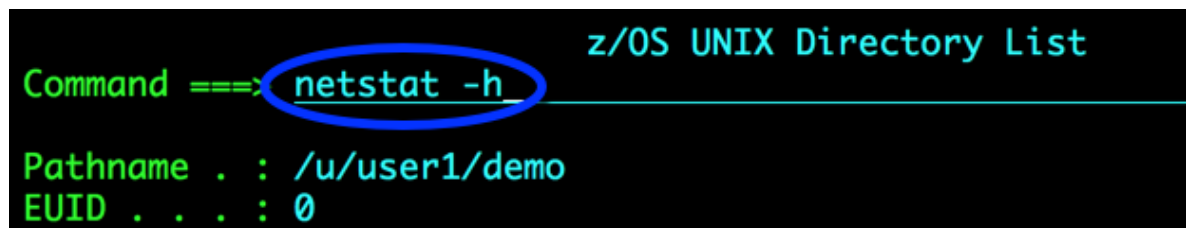
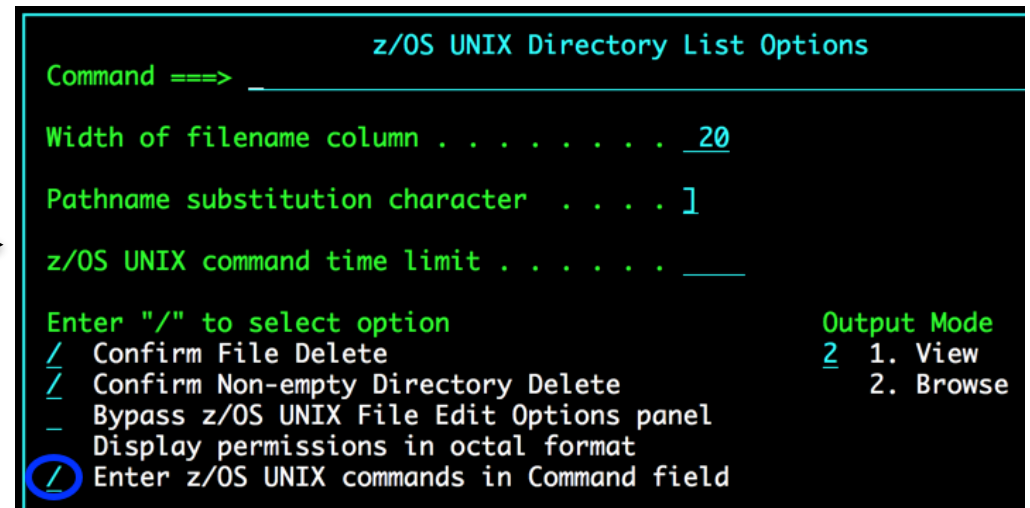
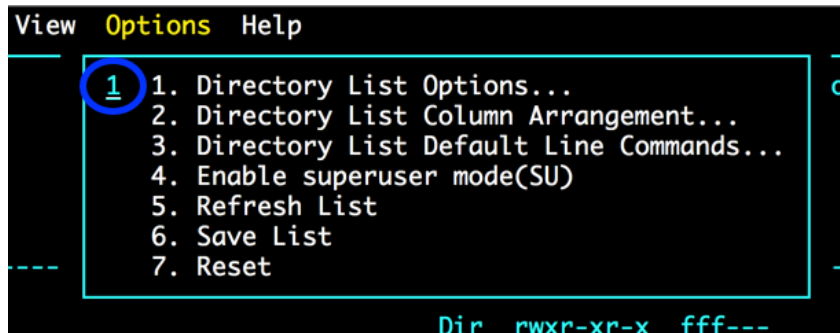
Pathname . : /etc

EUID . . . : 0

Command	Filename	Message	Type	Per
_____	.		Dir	rwX
_____	..		Dir	rwX
_____	.nfsc		File	rw-
_____	auto.map		File	rwX

## ▪ Running z/OS UNIX Commands

- z/OS UNIX commands 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 output mode (z/OS 2.1)
  - Option available to display command output using either browse or view



## ■ Running z/OS UNIX Commands (continued)

- 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 long z/OS UNIX 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 Directory List
Command ==> /
Pathname . : /u/user1/demo
EUID . . . : 0
```

```
List Mode Functions
z/OS UNIX Directory List Command Entry Panel
Enter commands below:
==>
Place cursor on choice and press enter to Retrieve command
=> ps -ef
=> netstat -h
=> ls -al
=>
```

List	Mode	Functions
Enter	-	*. Retrieve 2. Execute 3. Delete
==>		

You can choose to retrieve a command to the command line, execute it, or delete it from the list.

```
List Mode Functions
-----
                                z/OS UNIX Directory List Command Entry Panel
Enter commands below:
==> netstat -h

Place cursor on choice and press enter to Retrieve command

=> ps -ef
=> netstat -h
=> ls -ul
=>
```

List	Mode	Functions
<u>1</u>	1. Update On *. Update Off	UNIX D
==>		

You can choose whether or not to add a command to the list.



# 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)

- ISPF Task List panel (invoked using **SWAP LIST** command):

ISPF Task List				
Active ISPF Logical Sessions				
. Start a new screen				
. Start a new application				
Application Name				
-----				
ID	Name	Panelid	Applid	Session Type
. 1		ISR@PRIM	ISR	3270
. 2*	DSLIS	ISRUDLP	ISR	3270
. 3-	UDLIST	ISRUULP	ISR	3270
. 4	CMD	ISRTSO	ISR	3270
.				
.				
.				
.				

## ■ 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

```
ISR@PRIM *DSLIST -UDLIST CMD
```

- 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 placing the cursor and pressing the enter key.

Ex: With PCOMM - from "File" pull-down, go to "Edit"->"Preferences"->"Mouse" and 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

- Syntax:

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

- Format of the SWAPBAR display can be customized (z/OS 2.1) by specifying **SWAPBAR /**

```
—— ISPF Settings ——  
Tailor SWAPBAR Display  
  
- Show SWAPBAR divider line ( enter "/" to select)  
  
- S to update SWAPBAR, C for current session,  
  D to clear current session  
  
Enter first letter of color and hilite to set  
- color (Blue,Red,Pink,Green,Turquoise,Yellow,White)  
- hilite (None,Blink,Reverse,Underscore)
```

## ■ 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;START 3.4;START 3.17;START 6;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)**

## ■ 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

Under Option 7.3

```
_____ ZSTART _____ P _____ ISPF;START 3.4;START 3.17;START 6;SWAP 2_____
```

```
READY
ispf■

Data Set List Utility

Option ==> _____ Mo

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 . . . DEMO.*
Volume serial . . . _____

Data set list options
Initial View
2 1. Volume
  2. Space
  3. Attrib
  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-u
ISR@PRIM *DSLST -UDLIST CMD
```

## ■ 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

ISRL0999 Licensed Materials - Property of IBM      ons
5650-ZOS      Copyright IBM Corp. 1980, 2013.      pps
US Government Users Restricted Rights -           y
Use, duplication or disclosure restricted
by GSA ADP Schedule Contract with IBM Corp.

*ISR@PRI
```

- **=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



# **Selected z/OS V2R2 ISPF Enhancements**

- An ISPF configuration load module cannot be updated if the source keyword file is not available.
- In V2R2, the ISPF Configuration Utility (TSO ISPCCONF command) is enhanced to provide a method for converting the active configuration load module, or one residing in a data set, to a keyword file.
  - From the ISPF Configuration Utility, select option 7
  - The generated keyword file can then be updated using existing option 1 or 2 of the ISPF Configuration Utility.
  - A configuration load module can then be built from the updated keyword file using existing option 4 of the ISPF Configuration Utility.
  - Added to z/OS V2R1 by APAR OA42680

```
ISPF Configuration Utility
Option ==> _____
1  Create/Modify Settings and Regenerate Keyword File
2  Edit Keyword File Configuration Table
3  Verify Keyword Table Contents
4  Build Configuration Table Load Module
5  Convert Assembler Configuration Table to Keyword File
6  Build SMP/E USERMOD
7  Convert Configuration Table Loadmod to Keyword File ←
Keyword File Data Set
Data Set . . . . 'PACKETT.KEYWORD'
Member . . . . . AGPTBL2
Configuration Table Assembler Source Data Set
Data Set . . . . _____
Member . . . . . _____
Output File Content for Keyword File
1  1. Include only non-default values
   2. Include defaults as comments
   3. Include all values
Current Configuration Table
Keyword File : MYSBUILD.SOURCE.ISPCFIGU(ISPCFIGU)
Identifier . : ISPCFIGU                      Level . . . . : 480R8001
Compile Date : 2005/06/19                    Compile Time : 11:37
```

```
Specify Input
Command ==> _____
Input Data Set Name
Input Member
Instructions:
Press Enter to perform conversion against the in-storage
configuration module.
Alternatively enter a fully qualified data set name and member name.
The member name defaults to ISPCFIGU if not entered.
```

- The ISPF Gateway does not support a conversational mode of interaction between the remote client and TSO/ISPF.
  - For example, a REXX program that prompts for a response
- In V2R2, the ISPF Gateway API is enhanced to support conversational mode interaction.
  - Uses z/OS TSO CEA Address Space Services to create TSO address spaces and provide communication between the remote client and the address space.
- The ISPF Gateway can be used to run programs that are interactive, issuing TSO/ISPF conversational mode commands.

- No updates are necessary to programs exploiting the ISPF Gateway API unless you wish to exploit the new conversational mode interaction capability.
- To exploit the new capability, the environment variable CGI\_CEATSO must be set to TRUE, and the new API capabilities utilized as described in ISPF Planning and Customizing.
- More details in the appendix

- Use of the user Line Command Table was provided by specifying the table as a parameter to ISPF services Edit/View and on Edit/View entry panels. With V2R2, also provided on EDIF and VIIF services.
  - Requires passing the table as a parameter on services or specifying on Edit/View entry panels
- V2R2 provides support for globally specifying a Line Command Table
  - A new setting, GLOBAL\_LINE\_COMMAND\_TABLE, defines a line command table that will be active when not otherwise specified by the user or supplied as parameter on the service call.
  - Defined in Editor Settings via “Global Line Command Table” field

- The PACK command controls how data is stored.

- There is no way to globally disable the Pack option.

- If it is inadvertently set ... oops!

- V2R2 provides the ability to globally disable the Pack option:

- The PACK option for Move/Copy utility
  - The Edit Pack primary command
  - A new setting, GLOBAL\_DISABLE\_PACK, disables the pack operation used by the editor. Any currently packed data will be unpacked if saved. This option also disables PACK from having any effect with COPY and MOVE services.

COPY Entry Panel

---

TEST.CHARSET(EBCDNEWX)

Options:

Enter "/" to se

Replace like

Process memb

---

(If not cataloged)

(Blank unless memb

---

Pack Option

3 1. Yes

2. No

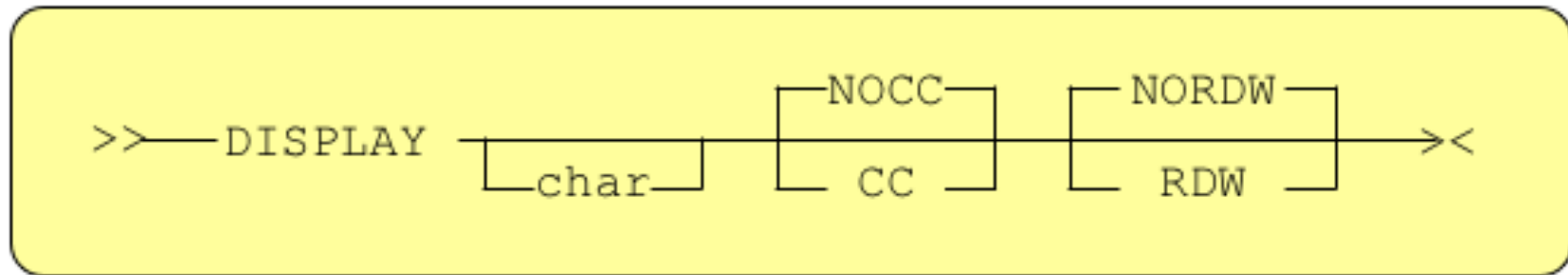
3. Default

```
VERSION_LEVEL_OF_SITWIDE_DEFAULTS      = 43001
SCROLL_MAX                             = 9999999
RESET_SCROLL_VALUE                      = YES
GLOBAL_DISABLE_PACK                    = YES
SITE_COMMAND_TABLE_SEARCH_ORDER        = AFTER
/*-----
```

- The Browse primary DISPLAY command allows for viewing data that would not normally be displayed.
  - For a dataset with variable length records (formats V or VB), users have requested the ability to display the record descriptor word (RDW).
    - The RDW is a 4-byte field describing the record. The first 2 bytes contain the length of the logical record (including the 4-byte RDW).
- V2R2 enhances the Browse primary DISPLAY command to optionally show the record descriptor word (RDW) for variable length records.
  - Allows visibility to the length of variable length records



- In V2R2, the existing Browse primary DISPLAY command now has an RDW option:



- RDW: Display the record descriptor word. Hex mode is automatically turned on.
- NORDW: The record descriptor word is removed from the display and hex mode is turned off. This is the default.

```
BROWSE      DEMO.CONFIG TABLE(MYTABLE) - 01.01
Command ==> display rdw
***** Top of Data *****
/* ISPF Configuration table definition.  Generated
/*   Created 03:16:44 on 8 Jul 2014
```

```

$ ...RESET_SCROLL_VALUE = YES
0300DCECE6ECDDDD6ECDEC4444444444444444444444444444474ECE
$ 050095253D239633D5134500000000000000000000000000000E0852
$ -----
$ ...TEST_LINE=1
0000ECEE6DCDC7F
0F003523D395E1
$ -----

```

- There are multiple locations for working with UNIX file systems
  - The File\_Systems pull-down menu in the UNIX System Services ISPF Shell (ISHELL)
  - ISPF option 3.17 (z/OS UNIX Directory List Utility)
- Usability issues exist when there are many file systems to be displayed and managed in ISHELL
- V2R2 adds the ISHELL file system functions to ISPF option 3.17
- Provide enhanced displays for mounted file systems
  - Lists ordered by either file system name or mount point name
  - Lists that can be expanded and collapsed to improve usability
- File system functions consolidated in single location
- Improved usability for mounted file systems displays

- A new “File Systems” menu is added under ISPF option 3.17

```
de Utilities Options File_Systems Help
z/OS UNIX Direct 2 1. Mount Table by File System...
                  2. Mount Table by Mount Point...
                  3. Mount...
tory list         4. New zFS...
ser1/demo        5. zFS aggregates...
```

Menu Utilities Options Help			
z/OS UNIX Mounted File Systems			Row
Command ==>			Scroll
Mount Point	Owner	File System Name	
-/	MVS044	ZOS220S.ROOT.ZOS220.ZFS	
+/bld	MVS044	VTMDEV.BLDSSL.MNTPNT.HFS	
+/build390	MVS044	CS390.MOUNTPNT.HFS	
/csauto	MVS044	CSAUTO.AUTO.ARTIFACT.HFS	
/cstools	MVS044	CS390.CSTOOLS.ZFS	
/etc	MVS044	OMVS.MVS600.ETC	
/home	MVS044	CSREG.MVS044.HFS	
/idss	MVS044	CS390.IDSS.HFS	
/opt	MVS044	OMVS.OPT.HFS	
+/u	MVS044	*AMD/u	
+/usr/*			
/var	MVS044	OMVS.VAR.ZFS	
/wwwr2	MVS044	CS390.WWWR2.HFS	

- List entries can expand/contract for access to files systems of interest

Mount Point

---

— -/

— +/bld

— +/build390

— /csauto

— /cstools

— /etc

— /home

— /idss

— /opt

— +/u

xa — +/usr/\*

— /var

— /usr/\*

→

— /opt MVS044 OMVS.0

— +/u MVS044 \*AMD/U

— -/usr/\*

— -/usr/local MVS044 CS390.

— -/usr/local/bin MVS044 VTMDEV

— /usr/local/bin/sasp MVS044 CS390.

— -/usr/local/db2/\*

— /usr/local/db2/v5t1 MVS044 OMVSM

- Columns can be rearranged and the width of “Mount Point” and “File System” columns can be adjusted

Menu Utilities Options Help

Command ==>

Mount Point

-----

1. Mount Table List Options...

2. Mount Table Column Arrangement...

3. Expand All Entries

4. Mount...

→

Mount Table Column

Command ==>

Enter "/" to select option

— Restore default column arrangements

Order	Column	Width	Maximum
<u>01</u>	Owner	<u>008</u>	8
<u>02</u>	File System Name	<u>035</u>	70
<u>03</u>	Type	<u>004</u>	8
<u>04</u>	Mode	<u>004</u>	4
<u>05</u>	A/M	<u>003</u>	3
<u>06</u>	Status	<u>010</u>	40
<u>07</u>	I/O Counts	<u>010</u>	10

\*\*\*\*\* Bottom of

# Closing Comments

# Appendix

# **Additional ISPF Enhancements in z/OS V2R2**

- z/OS V2.1 is the last release to include the IBM HTTP Server Powered by Domino® (IHS powered by Domino).
  - IBM recommends that customers migrate to the IBM HTTP Server Powered by Apache. This is provided as part of the z/OS Ported Tools.
  - ISPF documents in ISPF Planning and Customizing how the TSO/ISPF Client Gateway APIs (which provide for remote access to TSO/ISPF) can be used with the IBM HTTP Server Powered by Domino. Sample function which uses the Gateway is also provided.
- V2R2 removes samples and documentation specific to the IBM HTTP Server Powered by Domino, and provides updated documentation and samples that allow the gateway to be used with IHS Powered by Apache.

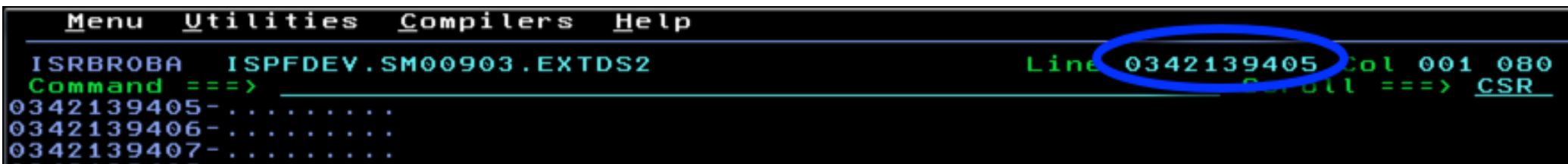


- z/OS V2R1 was the last release for the BookManager Build Optional Feature.
  - Official statements of direction provided in 2013.
  - Access to BookManager Build application provided under Primary options menu 13 (z/OS User) option 1
  - BookManager Build is no longer provided by IBM as of z/OS V2R2.
- V2R2 ISPF removes option 13.1

- Even though the TSO Data Utilities product is no longer supported, there are six commands related to that product that still exist in ISPTCM:
  - COPY, FORM, FORMAT, LIST, MERGE, and PASCALVS
- In V2R2, these six commands have been removed.

- The final return code from the DTL compiler needs to be available to influence the JCL step return codes.
- In V2R2, the final return code from the DTL compiler is stored into the ISPF shared pool variable ZISPFRC.
  - Allows a batch invocation of ISPD TLC to be aware of the success/failure of the DTL compilation

- Prior to V2R2, the number of records that browse can process is limited to 99,999,999.
- V2R2 increases the number of records that browse can process to 2,147,483,647.
  - The browse LOCATE command is enhanced to increase the maximum line number value allowed.
  - The BRIF service uses the new limit when the caller passes a new parameter (EXTEND) and the READ routine is altered to accept record numbers up to the new maximum value.



```
Menu  Utilities  Compilers  Help
ISRBROBA  ISPFDEV.SM00903.EXTDS2
Command ==>
0342139405- .....
0342139406- .....
0342139407- .....
0342139408- .....
0342139409- .....
```

- In V2R1, the ISPSTART command was enhanced to provide support for an initial command stack
  - Command stack is processed as though entered on the first panel
  - One way to control the use of an initial command stack is by using the OPT parameter.
  
- There are issues with the OPT parameter specification
  - OPT(ZSTART) is not used as the default
  - Only upper-case values are accepted
  - There is no documentation for using the OPT parameter to control the use of an initial command stack

- V2R2 allows OPT(ZSTART) to be the default in cases where the OPT parameter can be specified, but is omitted.
  - The OPT parameter controls the use of the initial command stack
    - You can specify OPT(ZSTART) when an initial command stack is defined in profile variable ZSTART
    - You can specify OPT(*varname*) when an initial command stack is defined in profile variable *varname*
    - You can specify OPT(BASIC) to bypass processing of a defined ZSTART variable
    - If OPT parameter is omitted, OPT(ZSTART) is used as default
      - ISPSTART PANEL(), with the OPT parameter not specified
  - Mixed or lower case can be used when either the keyword BASIC or an initial command stack variable is specified on the OPT parameter.
- This provides better usability when specifying an initial command stack with ISPSTART
- Provides documentation for using the OPT parameter for controlling the use of an initial command stack

- In z/OS V1R13, new support was provided for user-defined line commands. These can be defined in an ISPF command table (option 3.16 can assist with defining)
  - EDIT and VIEW services supported passing a command table as a parameter.
  - EDIF (Edit Interface service) and VIIF (View Interface service) were not enhanced to support the passing of the user line command table.
- V2R2 allows for passing a new parameter: User Line Command Table
  - When invoking EDIF and VIIF services, the user line command table can now be passed as the last positional parameter.
  - The parameter is 8 characters (padded with blanks).

```
CALL ISPLINK ('VIIF','EDIFDSN','EDIFPROF','F',  
             80,RDRTN,CMDRTN,MYDATA,LINCMTAB);
```

- A command table can be used to indicate that a command should not be processed by ISPF, but instead should be passed to the dialog for processing
  - Indicated by using the PASSTHRU action in the command table
  - Using a command table to control the pass through of a command results in that command always being passed to the dialog for processing
  - Some dialogs need more granular control for the LEFT and RIGHT scroll commands than the command table provides
    - For example, only pass the LEFT and RIGHT scroll commands to the dialog while in help panels



- V2R2 enhances the CONTROL service to allow for controlling the pass through of the LEFT and RIGHT scroll commands.
  - Allow the dialog to turn the pass through of these commands on and off as needed
  - Allow the dialog to query the current status of the pass through of these commands
  - Provides more granular control of pass through of the LEFT and RIGHT scroll commands
  - A new parameter is provided on the CONTROL service.

PASSTHRU cmd option

where:

cmd = LRSCROLL

option is one of the following:

PASON: LEFT and RIGHT scroll commands are passed to the dialog

PASOFF: LEFT and RIGHT scroll commands not passed to the dialog

PASQUERY: Query PASSTHRU status for LEFT & RIGHT scroll commands

# **Interactive ISPF Gateway (V2R2)**

## **Additional Details**

- NEWTSO
  - Start a new TSO/E address space. Do not start ISPF.
- NEWTSOISPF
  - Start a new TSO/E address space. Start ISPF.
- RECONNTSO
  - Reconnect to a dormant TSO/E address space. Do not start ISPF.
- RECONNTSOISPF
  - Reconnect to a dormant TSO/E address space. Start ISPF.
- REUSE
  - Reuse a TSO/E address space for a new command.
- RESPOND
  - Respond to a prompt from a TSO/E address space.

- PING
  - Ping a TSO/E address space. Required every 15 minutes to keep the address space alive.
- ATTN
  - Send an attention interrupt to a TSO/E address space.
- DORMANT
  - Put a TSO/E address space in a dormant state. Activating a dormant address space is faster than starting a new address space.
- LOGOFF
  - Log off a TSO/E address space.
- CANCEL
  - Cancel a TSO/E address space.

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