Interactive System Productivity Facility (ISPF)

ISPF Hidden Treasures and New Features

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Hidden Treasures and New Features in ISPF

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  ➤ Block Line Commands
  ➤ Allocate Line command
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Hidden Treasures and New Features in ISPF

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Hidden Treasures and New Features in ISPF

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Data Set List Enhancements

❑ ***Display Total Tracks Value (z/OS 1.9)***
  - ➢ New 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

❑ **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

•Selecting the Data Set List Utility "Display Total Tracks" option tells ISPF to display an additional header line above the column headings, showing the total tracks of all data sets, the total tracks of all non-excluded data sets, the number of data sets listed and the number of non-excluded data sets listed.

  • Simplifies the task of calculating the amount of DASD space occupied by a group of data sets.

•You can also enter Data Set List Utility line commands in block command format to execute the same line command for several data sets at once.

  – You mark the block by typing a "//" at the beginning of a block of rows and another "//" at the end of the block of rows. You must type the line command either immediately after the // on the first row of the block, or immediately after the // on the last row of the block.

  – You can execute all line commands, including TSO commands, Clists and REXX execs as block commands.

  – If you have selected the DSLIST settings option "Execute Block Commands for excluded Data Sets", all applicable excluded rows are unexcluded before the block commands are executed.

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

➢ 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

➢ 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

❑ *Display z/OS UNIX Directory List (z/OS 2.1)*

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

•The AL line command accepts a new data set name as a parameter. If no parameter is supplied the data set displayed on the selected line must have been previously deleted by another command. When a new data set name is provided the displayed data set can be used as a model for allocation attributes.

•If the first character of the Dsname Level field is a dot(.), tilde (~) or forward slash (/), the value in the field is passed unchanged to the UDLIST command. If the specified value equates to a valid path name a z/OS UNIX Directory list is displayed.

Member List Enhancements

❑ *FILTER command (z/OS 1.8)*
  ➤ 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
  ➤ 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

•The member list FILTER command can be used to display only the subset of members whose attributes match the supplied comparison argument.

•The member list SRCHFOR command has be enhanced with an option to have the member list display only those members that contain the search string specified with the SRCHFOR command. This new option makes use of the FILTER function.

•Prior to z/OS 2.1 the member list could only display accurate member count values up to 99,999. If the PDS had more than 99,999 members the leftmost significant digits were lost from the displayed member count values.

  • With z/OS 2.1 the member list can display accurate member counts up to a value of 9,999,999.

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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 <u>not</u> 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
```

With z/OS 2.1, when issuing a scrolling command a scroll amount of up to 9,999,999 can be entered in the primary input field. Scroll fields on ISPF panels continue to be limited to values up to 9999.

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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

•The editor line command A, B, O, and OO that are used to identify the destination to copy or move data now support the suffix of K ('keep' this destination). The destination line command can be specified with the K suffix multiple times. This is done to identify multiple destinations where data is to be copied/moved.

•Specifying a destination line command without the K suffix causes the 'multiple target' COPY/MOVE process to occur. The destination without the K suffix must be after the lines where the K suffix was specified.

Edit Enhancements. . .

❑ *New 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

•The HX line command is used to display the characters on the selected line in hexadecimal format.

•A number can be specified after HX to have multiple lines displayed in hexadecimal format.

•The HXX line command can be used to display a block of lines in hexadecimal format.

•Use the HX and HXX line commands to change lines in hexadecimal format back to normal format. Alternatively the HEX OFF primary command can also be used to change all lines in hexadecimal format back to normal 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

➢ New 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

➢ The EDIT and VIEW services also allow a line command table to be passed by the caller

•This support allows a user to create and use their own editor line commands.

•The processing logic for a user line command must be handled by an edit macro.

•An ISPF table must be created to identify to the editor the user defined line commands and the associated edit macro.

– The ISPF table utility (option 3.16) provides an option which assists in creating the user edit line command table

•The user edit line command table name must be provided when invoking the editor

– Edit entry panels have a new field for entering the name of the user edit line command table

– The EDIT and VIEW services have a new parameter to pass the name of the user edit line command table

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*)**

▪ Alternatively 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(/)**

• The SYSIN keyword for the COMPARE command can now be used to specify the name of a data set containing SuperC process statements. These process statements are used to customize the compare processing.

A forward slash (/) can be specified with the SYSIN keyword. This causes the display of the 'Edit Compare SYSIN specification' panel where the user can specify the name of a data set containing SuperC Process statements that are used for the compare.

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

•The new VOL keyword is provided to allow comparing against an uncataloged data set. The keyword is used to specify the volser of the volume containing the uncataloged target data set.

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Edit Enhancements. . .

❑ COMPARE Command Enhancements. . .

➢ Enhanced COMPARE Settings Panel (z/OS 2.1)

- COMPARE Settings Panel changed to allow specification of command parameters
- Addresses problem where COMPARE command is too long for the command field

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

SuperC Options:                         Display options:
  Enter "/" to select option              Lines displayed
  _  Case Insensitive Compare             with EXCLUDE  . . .  5   (0 - 12)
  _  Ignore Reformat Differences          Label Prefix  . . .  O   (A - Y)
  _  Data Contains DBCS Characters
                                          Use a label of the form .Oxxxx 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              Enter "/" to select option
  _  Exclude                              _  Save
  _  SYSIN                                _  Set SYSIN data set

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

•Prior to z/OS 2.1 the user was required to specify the name of the target data set or file along with the COMPARE command. If this name was long it could result in the COMPARE command being too long for the command field.

•If the COMPARE command is entered without any parameters the 'Edit Compare Settings' panel is displayed. With z/OS 2.1 this panel has been updated to include fields for entering the COMPARE command parameters.

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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 of the terminal for display purposes

➢ 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

➢ New UTF8 parameter supported by the EDIT and VIEW services

• The ISPF editor is enhanced to support the display and editing of data encoded as Unicode (UTF-8).

  – To make Unicode data "readable" the editor converts the data from CCSID 1208 (UTF-8) to the CCSID of the user's terminal

• New "Data Encoding" option field available on Edit and View entry panels.

• If a z/OS UNIX file is tagged with CCSID 1208 the editor automatically invokes Unicode support for the E or V line commands of the z/OS UNIX Directory List Utility (ISPF option 3.17)

• New z/OS UNIX Directory List Utility line and primary commands EU (Edit Unicode) and VU (View Unicode) are available for processing files containing Unicode data but without a CCSID tag of 1208.

• The EDIT and VIEW service APIs are updated to support a new UTF8 parameter.

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

➢ CREATE and REPLACE commands
  ▪ keyword specifies the encoding the editor will convert the data to before saving in the external file

➢ 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.

•Keywords EBCDIC, ASCII and UTF8 can now be specified with the CREATE, REPLACE, COPY, MOVE, and CUT edit primary commands.

•For CREATE and REPLACE the keyword tells the editor to convert the data to that encoding before saving in the external file.

•For COPY and MOVE the keyword tells the editor the data encoding for the source file. The editor converts the source data from this encoding to either the character set for the file being edited or to the terminal character set.

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

➢ 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

•For the CUT command the keyword tells the editor the encoding to convert the data to before saving in the clipboard.

•The encoding is saved with the clipboard data so when the PASTE command is used the editor is able to perform the necessary data conversion.

  – An ASIS keyword is available with the PASTE command to prevent conversion being done.

•With the SUBMIT command the editor will always convert the data in a a file defined as ASCII or UTF8 to the terminal CCSID before writing the data 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
```

•The FIND and CHANGE primary commands and the SEEK macro command now allow the search string to be specified as a regular expression using the form r'*regular expression*' or '*regular expression*'r.

•**Note**: The 'replacement' string for the CHANGE command cannot be specified as a regular expression.

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]       - 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"
```

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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

•Scrollable and expandable field have been supported for some time by ISPF. The ISPF-supplied editor panels are changed to make the command field expandable.

•The ZEXPAND command is used to display a pop-up panel with the command field expanded to 255 characters. PF4 in the ISPF-supplied editor keylists can be used to issue the ZEXPAND command.

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

- The ISPF editor HILITE command provides language sensitive colouring for JCL.
- The HILITE command to identify lower case characters used incorrectly in JCL

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*

```
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.
```

•The Client/Server component of ISPF takes the form of an application called the ISPF Workstation Agent (WSA). The WSA runs on your local workstation and maintains a connection between the workstation and your ISPF session running on z/OS.

•The WSA provides the ability to:

– transfer files between z/OS and the workstation

– edit z/OS data on your workstation and workstation data on z/OS (known as *distributed editing*)

– invoke workstation commands from z/OS.

•The WSA also provides the ability to display the ISPF panels using the display function of your workstation operating system (known as running in *GUI mode*).

•The WSA installation program is supplied with ISPF and must be downloaded from the host to the local workstation and then installed and initialized before these functions are available.

– This can be downloaded using ISPF option 3.7.1

– The different versions of the installation program are stored as members in the data set 'ISP.SISPGUI'. There is one for each of the supported workstation operating systems. The Windows version is in member ISPGUINX.

•The installation program is downloaded as ISPFINST.EXE. This is a self-extracting executable program that generates additional files required to run the WSA. One of the files generated is WSA.EXE. This is the program that starts the WSA running on your workstation.

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*

```
ISPISMGI              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. APPC
                                              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)
```

  ➢ Support for codepage 1047 added with z/OS 2.1

• The WSCON and GUIINIT commands are used to display "Initiate Workstation Connection" panel. This panel can also be displayed by selecting the "Workstation connection" option from the Workstation pull-down on the ISPF Settings panel.

  – You must provide the TCP/IP address for your workstation. If you specify * (asterisk) ISPF will try to obtain the TCP/IP address based on your TN3270 connection.

  – If you select the "Without GUI display" option ISPF will establish the connection with the workstation and you can continue to use through your TN3270 connection.

• You can also create a connection with your workstation from a program using the WSCON service.

• With z/OS 2.1 support for codepage 1047 is added. This is very helpful for people writing C code who want to ensure the square bracket characters are displayed and translated correctly on both the workstation and z/OS.

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**
```

•The ISPF Workstation Tool Integration dialog, or tool integrator, is a workstation customization tool that enables any workstation application to use data from a z/OS host system. After setting up the tool integrator, your workstation-installed

applications can interact with the ISPF View and Edit functions and services. Data flow goes both ways with the tool integrator connection. You can work with workstation files on the host or with host files on the workstation.

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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  . . _____

                                  Options
Initial Macro  . . . . _____   /  Confirm Cancel/Move/Replace
Profile Name . . . . . _____      Mixed Mode
Format Name  . . . . . _____   /  Edit on Workstation
Data Set Password  . .            _  Preserve VB record length
Record Length  . . . . _____
Line Command Table . . _____   Data Encoding
                                    _  1. ASCII
                                       2. UTF-8
```

```
u.vandyke.abort.cpp - Notepad                        [_][□][X]
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() ") ;
}
```

• With a workstation connection established and selecting the "Edit on Workstation" option, a workstation based editor can be used to edit data in a file on z/OS.

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

```
ISREDDE2   C:\WINDOWS\system32\drivers\etc\hosts                        Columns 00001 00124
Command ===>                                                              Scroll ===> CSR
****** ******************************************** 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 *****************************************
```

•With a workstation connection established and entering a file name in the "Workstation File Name" field, a workstation file can be edited using the ISPF editor.

Connect to Workstation Without GUI. . .

❑ *ISPF option 3.7.2 can be used to transfer files between z/OS and your workstation*

```
   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
```

❑ *File transfer can also be done from a program using the FILEXFER service*

• With a workstation connection established ISPF option 3.7.2 can be used to transfer files between z/OS and the workstation. The FILEXFER service can also be used to initiate file transfers from a program.

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-------
```

• The z/OS UNIX Directory List Utility first became available in ISPF with z/OS 1.8 and has undergone numerous enhancements since. It is aimed to be a replacement for the ISHELL utility.

z/OS UNIX Directory List Utility. . .

❑ *z/OS UNIX directory list can be displayed using:*

➢ 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

➢ DIRLIST service (z/OS 1.10)
- API available for programs wanting a directory list display

➢ ISPF option 3.4 (z/OS 2.1)
- Enter a directory path name in the "Dsname Level" field

•With z/OS 1.8 a z/OS UNIX directory list display could be obtained using ISPF option 3.17, the z/OS UNIX Directory List Utility.

•With z/OS 1.9 ISPF options 1 (View) and 2 (Edit) were enhanced to display a directory list when a directory path name was entered in the "Other" name field.

•The UDLIST system command was provided with z/OS 1.10. UDLIST allows a user to get a directory list display from any command field in ISPF. A directory path name can be specified as parameter for the UDLIST command. Alternatively a personal data set list name can be specified in which case ISPF creates a directory list based on the path name entries defined in the list.

- A problem with the UDLIST command is that almost all ISPF command fields are defined with the attribute CAPS(ON) meaning any path name entered is converted to upper case before it is passed to the UDLIST command. This prevents the UDLIST command processing lower case or mixed case path names. With z/OS 2.1 the UDLIST command is enhanced with support for lower case path names. This is implemented by changing the UDLIST command so that if a directory is not found for the specified path name the path name is converted to lower case and another attempt is made to find the directory.

•The DIRLIST service was also provided with z/OS 1.10. This API can be used from a program to display a directory list.

•With z/OS 2.1 the Data Set List Utility (ISPF option 3.4) is modified to display a directory list when a directory path name to be entered in the "Dsname Level" field.

z/OS UNIX Directory List Utility. . .

❑ *Filtering 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:

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

➤ 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

– This enhancement makes it easier for ISPF users to find directories and files in the z/OS UNIX file system by allowing pattern matching characters to be specified when entering a path name for a directory list display. The list displayed will show all the directories and files that match the path name pattern.

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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/ceeedcct.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/cdskwucs.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
```

Hidden Treasures/New Features | Sessions 14649 & 14650   March 2014   © 2014 IBM Corporation

> – This slide shows an example of entering a path name pattern to get a directory list display showing the files with path names that match the pattern.

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 DSLIST and member list SRCHFOR commands**
    - **Support for ASCII search strings**

•There are a number of primary commands that work on the entire directory list.

•Two new primary commands are added with z/OS 2.1:

– The FILTER command can be used to append to or replace the current path name filter used in building the displayed list.

– The SRCHFOR command invokes the SuperC utility to search for data strings in the <u>regular</u> files in the currently displayed directory.

• An ASCII search option is available. When this option is selected SuperC will convert the data in the input files from ASCII to EBCDIC before the data is checked for the search string.

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)

❑ *New with z/OS 2.1:*

- **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

• There are a numerous line command available to work with individual files in the z/OS UNIX directory list display.

• Two new line commands are added with z/OS 2.1:

– The EU and VU line commands invoke the ISPF editor with Unicode support enabled. This allows you to update and view files containing Unicode data. If the file is tagged with CCSID then you can simply use the E or V line commands to update or view the Unicode data.

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

The z/OS UNIX Directory List Utility is enhanced to provide block line command support in a similar way to the block line command support in the ISPD Data Set List Utility. Entering line commands in block command format causes the same line command to be executed against several files at once. A block is defined by typing a "//" at the beginning of a block of rows and another "//" at the end of the block of rows. The line command for the block is entered either immediately after the // on the first row of the block, or immediately after the // on the last row of the block. Several blocks of commands can be entered at the same time, but they cannot nest them. Single line commands are not allowed within a block command. Blocks can be used to execute all line commands, including z/OS UNIX commands, TSO commands, Clists and REXX execs.

z/OS UNIX Directory List Utility. . .

❑ *Block Line Commands (z/OS 2.1). . .*

This slide shows an example of using the D (delete) line command in a block to delete a group of 10 z/OS UNIX files.

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

• Since z/OS 1.11 it has been possible to enter z/OS UNIX commands in the command field of the directory list display.

• With z/OS 2.1 a new z/OS UNIX command shell is available. The command shell is invoked by entering a / (forward slash) in the primary command field of the z/OS UNIX Directory List panel. This displays the he z/OS UNIX Directory List Command Entry panel which provides a 255 character length command field for entering long z/OS UNIX and TSO commands. The panel also has a list of point-and-shoot fields showing the last 10 z/OS UNIX commands entered from the z/OS UNIX Directory List Utility. The point-and-shoot fields allow the user to retrieve and execute z/OS UNIX commands.

• The new "Output Mode" field is available on the z/OS UNIX Directory List Options panel. Selecting the View option causes the ISPF editor to be used to display the output from a z/OS UNIX command. Otherwise the browse function continues to be used to display command output.

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
    =>
    =>
    =>
```

This slide shows how the z/OS UNIX Directory List Command Entry panel is displayed by entering / in the command field of the directory list display.

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)

• ISPF allows a user to create up to 32 logical screens in their ISPF session. **Note**: The ISPF supplied default is a maximum of 8 logical screens.

• A new logical screen can be created using the SPLIT command or the START command.

• Navigation between logical screens is done using the SWAP command. You can use SWAP LIST to display a panel showing a list of all you logical screens. You can use this list to navigate between screens.

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

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

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

•The SWAPBAR command was introduced with z/OS 1.10. This command display on the bottom line of the physical screen a list point-and-shoot fields for each logical screen. The screen name or panel ID is used to identify each logical screen.

•Swapping logical screens is done by placing the cursor on the point-and-shoot field for the target screen and pressing the ENTER key. Many TN3270 emulator can be configured to simulate these actions through the click of a mouse button.

•With z/OS 2.1 the format of the SWAPBAR display can be customized. A panel with customization options is displayed when the SWAPBAR / command is entered.

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 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

•The enhancement is implemented through a ISPF variable which contains an initial command stack that will be run by ISPF at start up. The command stack can contain commands to start different logical screens.

•The variable that contains the initial command stack is specified to ISPF as an option with the ISPF or ISPSTART command. For ISPSTART the variable must be specified as the value for the OPT keyword and the variable name must be in upper case.

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

```
READY
ispf█
```

```
   Menu   Utilities   Help
 ────────────────────────────────────────────────────────────────
 ISPYVPN            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#EDIMF 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
```

ISPF will look at variable ZSTART for a default initial command stack if a variable is not specified with the ISPF or ISPSTART command.

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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  by GSA ADP Schedule Contract with IBM Corp.      y

    *ISR@PRI
```

The BASIC keyword can be specified with the ISPF or ISPSTART command when a user wants to avoid ISPF running an initial command stack at invocation.

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

To help users terminate multiple logical screens and exit ISPF the =XALL command is provided. This command propagates an =X command to each logical screen.
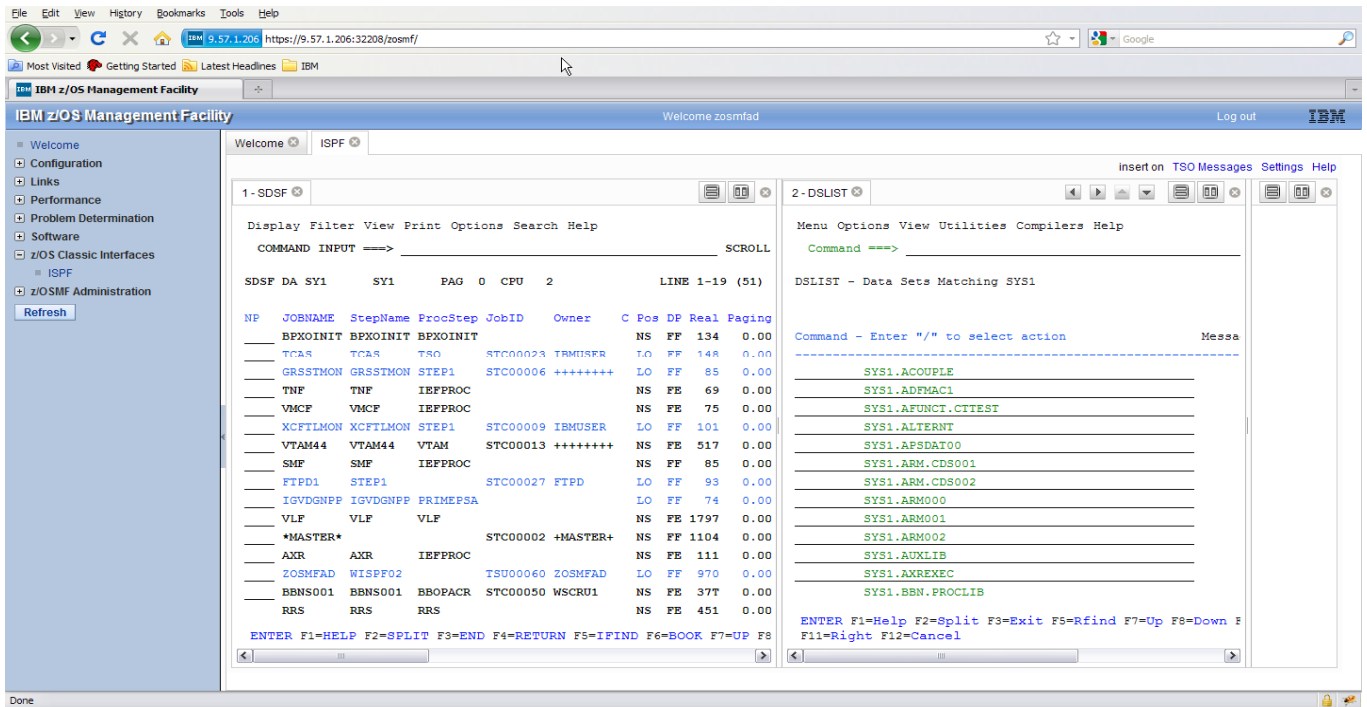
ISPF in a Web Browser (Using z/OSMF)

❑ *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

IBM z/OS Management Facility

- ▪ Welcome
- ⊞ Configuration
- ⊞ Links
- ⊞ Performance
- ⊞ Problem Determination
- ⊞ Software
- ⊟ z/OS Classic Interfaces
  - ▪ ISPF
- ⊞ z/OSMF Administration
- **Refresh**

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

OK   Apply   Cancel   Help

•With z/OS 1.13, ISPF became available for invocation through z/OS Management Facility (z/OSMF). This means system administrators are able to run ISPF-based applications and tools in a web browser.

•When you invoke the ISPF task from z/OSMF you are presented with a settings window that has some similarities to the TSO/E logon panel. You are required to provide information such as the TSO logon procedure, region size, and account number as you are on the TSO/E logon panel.

•Your existing TSO logon procedures can continue to be used when invoking ISPF from z/OSMF.

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

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

In z/OSMF ISPF logical screens can be split both horizontally and vertically with up to 4 logical screens able to be displayed in the one z/OSMF tab.

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

❑ **TSO/E messages are displayed in a popup window**
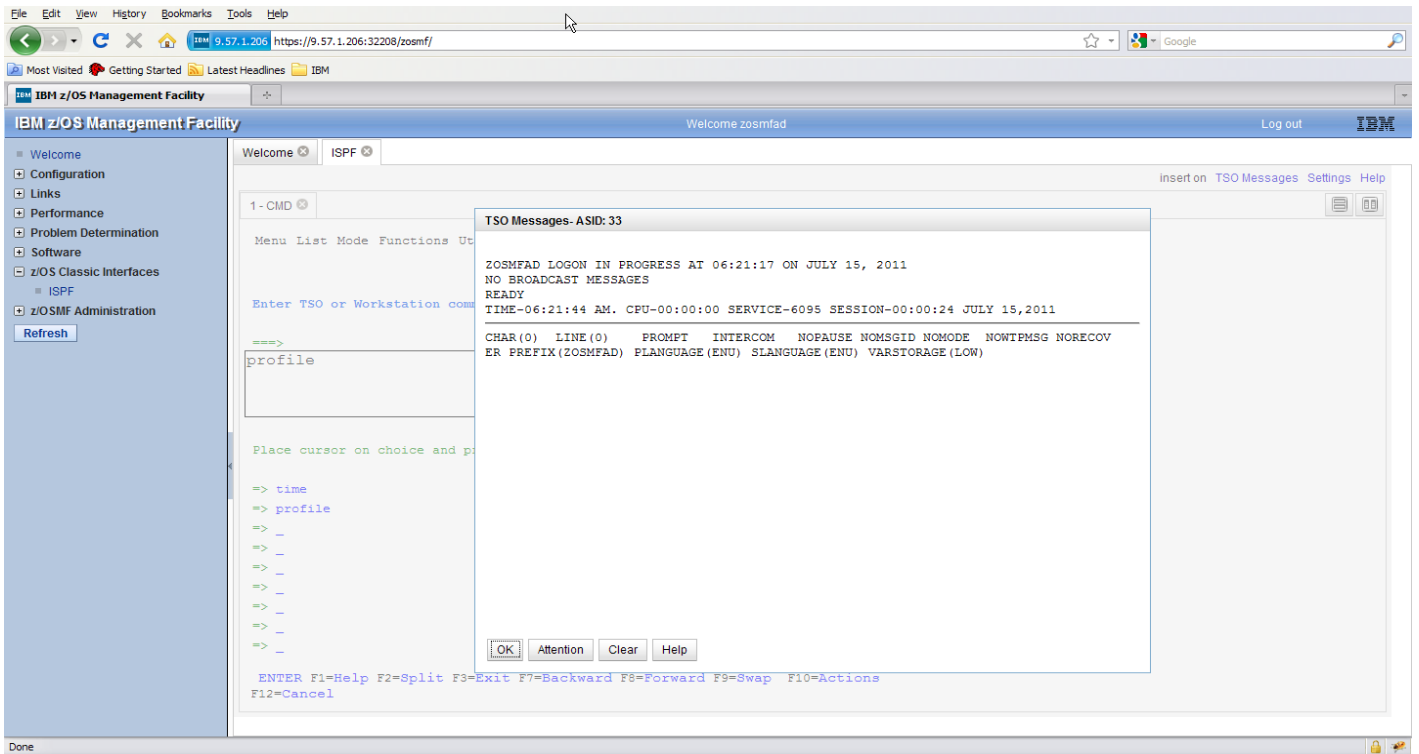
The TSO Messages window services TSO commands. It displays output from TSO commands, and when a command requires input, it displays an input box. The messages are displayed in ascending order according to the date and time it occurred. That is, the most recent information is displayed last.

ISRDDN Utility

❑ *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
                         > _  ALLOCPDS
  A$SY01   SHR,KEEP      > _              SYS2.ALLOCLIB.SYSPLEXA
                         > _  ASMLANGX
  A$IS08   SHR,KEEP      > _              PDFTDEV.VANDYKE.WDBLANGX
  A$IS10   SHR,KEEP      > _              PDFTDEV.COMMON.WDBLANGX
                         > _  HASPINDX
  A1SY01   SHR,KEEP      > _              SYS2.HASPINDX.ISA1
                         > _  IDIOPTS
  A$US14   SHR,KEEP      > _              VANDYKE.SOURCE(IDIOPTS)
                         > _  ISPILIB
  A$IS03   SHR,KEEP      > _              PDFTDEV.VANDYKE.GIF
  A$IS12   SHR,KEEP      > _              PDFTDEV.STG.GIF
  A$IS03   SHR,KEEP      > _              PDFTDEV.INT.GIF
  A$IS04   SHR,KEEP      > _              PDFTDEV.SVT.GIF
                         > _  ISPLLIB
  A$US13   SHR,KEEP      > _              VANDYKE.LOADLIB
  A$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 is a utility that supports processing of the data sets allocated to a user's TSO address space. The ISRDDN displays lists the allocated data sets and the associated DD names. Line commands are available to process individual data sets or the data sets in a DD concatenation.

• The utility is invoked by issuing the commands TSO ISRDDN or DDLIST from any ISPF command line.

• ISRDDN is documented in appendix G of the ISPF User's Guide Volume I.

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 provides primary commands to limit the contents of the displayed list, add pseudo-ddnames, operate on all the contents of the displayed list and invoke other ISRDDN options.

•The primary commands APF (A), LINKLIST (LI), LPA (LP), and PARMLIB (P) add and remove pseudo-DDnames that show the defined APF libraries, link list libraries, PARMLIB libraries, and LPA libraries respectively. These pseudo-DDnames are shown as if they are allocated DDnames, but no actual allocation to the libraries is made. You can use most of the primary and line commands with these names, just as you would with real DDnames.

•The ENQ primary command is used to display ENQs on the system. You can reduce the size of the ENQ list displayed by specifying a QNAME, RNAME, address space name, and/or system name.

•The CON primary command can be used to display ENQ contentions 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.?
```

```
ISRDDBRS   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.Ì...Ì *
   +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   * cÀ[]..Φ¹n..^%.{rq *
```

• ISRDDN provides the BROWSE primary command as a method of browsing storage in the TSO address space using the ISPF BROWSE function.

• The BROWSE primary command accepts a storage address, module name, or TSO TEST address locator string.

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... ^0ìh.. *
```

```
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)
```

With z/OS 1.9 the DISASM command was added to ISRDDN. The DISASM primary command is available when in the browse display for a load module. This command disassembles the load module being browsed and display the resulting instructions.

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

❑ *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

Session 14649   Session 14650

With z/OS 2.1 the ISPF Configuration Utility provides a new option that can be used to create a file containing the keywords and values from an ISPF configuration module. This is obviously helpful in a situation where a configuration keyword file has been lost or corrupted.