ISPF Hidden Treasures and New Features

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Hidden Treasures and New Features in ISPF

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**DSLIST**

- **DLIST** *personal_list_name* | *pattern*
  - If a list name exists by that name, a data set list will be built based on the entries in the list
  - If a list name does not exist, the parameter is treated as a pattern

- **APPEND** command from within Data Set List
  - Adds entries to the displayed list
  - Specify a personal list name or a pattern

- **REFRESH** command from within Data Set List
  - Refreshes display to original list filter criteria

- **EXCLUDE** command and X line command from within Data Set List
  - Excludes data sets displayed in list
  - Shadow line displayed
New Data Set List Commands - z/OS 1.2

• **MEMBER command**
  • allows the partitioned data sets in the list to be searched for a specific member name or pattern
  • Syntax: `MEMBER string [X|EX|MX] [RECALL1|RECALL2]`
  • Message field identifies data sets containing the member(s)

• **SRCHFOR command**
  • Invokes SuperC to search the listed data sets for strings
  • Syntax: `SRCHFOR [string]`
  • Displays panel used to specifying options for SuperC
  • Message field identifies data sets containing the string
  • SuperC output written to data set (default: `userid.SRCHDSL.LIST`)

Data Set List Enhancements

• **Enhanced SORT command (z/OS 1.7)**
  • Provides ability to sort a data set list in ascending or descending order
  • Syntax: `SORT major-field [A|D] [minor-field] [A|D]`

• **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
Data Set List Enhancements...  

- **Block Line Commands (z/OS 1.10)**  
  - Allows Data Set List line commands to be entered in blocks  
  - A block of line commands is marked by entering two forward slash characters (/) at the start and end of the block  
  - The required line command is entered on the first or last line of the block, immediately following the two forward slash characters  
  - All line commands, including TSO commands, Clists and REXX execs can be executed as block commands

- **Include PREFIX in Dsname Level (z/OS 1.11)**  
  - New **PREFIX Dsname Level** option added to the Data Set List Utility entry panel  
  - If selected, ISPF will add the TSO prefix (if the user’s TSO profile has PREFIX defined) as the first qualifier if the Dsname Level entered is not enclosed in quotes

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
New Member List Commands - z/OS 1.5

- **SRCHFOR command**
  - Invokes SuperC to search the listed members for strings
  - Syntax: `SRCHFOR [string]`
  - Displays panel used to specifying options for SuperC
  - PROMPT column identifies members containing the string
  - SuperC output written to data set (default: `userid.SRCMLIST`)

- **SORT PROMPT command**
  - Sorts members with messages in the PROMPT column to the top of the member list
  - Use after `SRCHFOR` command to group all members containing `string` at the top of the member list

Member List Enhancements

- **Enhanced SORT command (z/OS 1.7)**
  - Provides ability to sort a data set list in ascending or descending order
  - Syntax: `SORT major-field [A|D] [minor-field] [A|D]`

- **New 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 also enhanced to optionally display only those members containing the `SRCHFOR` string
Member List Enhancements . . .

- **New I line command for enhanced member list (z/OS 1.13)**
  - Used to display panel showing the ISPF statistics for a member
  - Introduced to provide a display of extended line count statistics for a member with extended statistics
    - is not restricted to members that have extended line count statistics

Edit COMPARE Command

- Syntax: `COMPARE [member|data_set_name|NEXT]* [X] [SYSIN]`
- Uses SuperC APIs to compare to data sets or members
- Changes are highlighted depending on if the change is new to the source (member or data set where COMPARE command was issued), only in the target, or common
  - **NEXT** compares next member in hierarchy of ISPF library
  - **X** excludes common lines except for a few around differences
  - **SYSIN DD** has additional SuperC Process Statements

```plaintext
34567890
```

- new is "source"
- common
- common lines excluded by X parameter
- only in "target" (NEXT in this case)
- MD to "make data"
Edit COMPARE Enhancement (z/OS 1.11)

- The SYSIN keyword on the COMPARE command is enhanced to support a sub-parameter
  - User can specify the SuperC process statements data set name as a sub-parameter of the SYSIN keyword
    Syntax: `SYSIN(dsn)`
  - Alternatively, the user can request the display of a pop-up panel where the SuperC process statements data set name can be entered
    Syntax: `SYSIN(/)`

New Edit Primary Commands - z/OS 1.6

- **HIDE command**
  - Removes excluded line messages from the Edit/View display
  - Line number underscored to indicate "hidden" line(s)
  - Syntax: `HIDE X`
  - `RESET` primary command has `HIDE` option to allow redisplay of excluded line messages
    - Syntax: `RESET HIDE`

- **COLS command**
  - Causes a columns line to be displayed at the top of each Edit/View data screen (i.e. stays with the Edit/View display)
  - Syntax: `COLS [ON|OFF]`
Other Edit Enhancements

- **UNDO after SAVE (z/OS 1.9)**
  - Allows reversal of edit changes made prior to SAVE commands during the current edit session
  - New KEEP option added to the edit SETUNDO command
    - Syntax:
      
      ```
      +-STORAGE-+
      >>----SETUNDO----+---------+---------------><
      +-SETU----+  +-RECOVER-|
      +-ON------|
      +-OFF-----|
      +-KEEP----+
      ```
    - Where:
      - **KEEP** Has the same effect as **STORAGE** and also prevents the SAVE command from clearing the UNDO buffers in storage

- **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
Other 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

- **Support for User Defined Line Commands (z/OS 1.13)**
  - Support has 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
Connect Without GUI

• SETTINGS
  • Workstation pulldown (or GUIINIT)
    – Workstation connection
    – Without GUI display
  • Allows workstation commands
    – FILEXFER
    – Edit on workstation
    – SELECT WSCMD

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

• Available as ISPF option 3.17
• Provides most of the functions supported by the ISHELL utility
z/OS UNIX Directory List Utility...

- Horizontal scrolling via the RIGHT and LEFT primary commands
- Column order and size can be customized via Options pull-down

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
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 ACLs (z/OS 1.13)
  - CO - copy data out
  - CI - copy data in
  - I - display attributes
  - MM - modify mode fields
  - MX - modify extended attributes
  - X - execute a command
  - MO - Modify Owner (z/OS 1.11)
  - MG - Modify Group (z/OS 1.11)
  - MF - Modify Format (z/OS 1.11)
  - UA - User Auditing (z/OS 1.11)
  - AA - Auditor Auditing (z/OS 1.11)

z/OS UNIX Support Enhancements...

- Use ISPF Edit and Browse for z/OS UNIX Files (z/OS 1.9)
  - Edit/View/Browse “Other” Data Set Name fields support entry of z/OS UNIX pathnames
  - z/OS UNIX Directory List displayed when pathname for directory entered in the “Other” Data Set Name field
  - z/OS UNIX pathname can be specified as an operand with the following edit primary and macro commands
    - COMPARE
    - COPY
    - CREATE
    - MOVE
    - REPLACE
  - BROWSE, EDIT, and VIEW services enhanced to support processing of z/OS UNIX files
  - FILEXFER service enhanced to support the upload and download of z/OS UNIX regular files
  - Personal data set lists enhanced to support the saving and retrieval of z/OS UNIX pathnames
z/OS UNIX Support Enhancements...

- **Support for Editing ASCII Data (z/OS 1.9)**
  - ASCII edit automatically invoked for z/OS UNIX files tagged with CCSID 819 (US ASCII)
  - ASCII edit can be selected for z/OS UNIX files not tagged by either:
    - Selecting the **Edit ASCII data** option on the Edit/View Entry panel
    - Using the z/OS UNIX Directory List Utility (option 3.17) **EA** line command
  - File tagged with CCSID of 819 when saved
  - ASCII edit available with the **EDIT** and **VIEW** services by using the new **ASCII** keyword parameter

- **New UDLIST Command – z/OS 1.10**
  - Used to display a z/OS UNIX Directory List (option 3.17) from any command line
  - Syntax: **UDLIST [personal_list_name | pathname]**
    - If a personal list name is provided, a directory list will be built based on the pathname entries in the list
    - Alternatively, the pathname for a directory can be specified
      - but most command lines are CAPS(ON) – cannot enter mixed-case pathnames
    - If no parameter is specified with the **UDLIST** command a popup displays:
      - Popup allows user to:
        - enter a mixed-case pathname
        - select a personal list
Directory List Enhancements – z/OS 1.11

- z/OS UNIX commands can be entered in the command field on the z/OS UNIX Directory List panel
  - Requires option “Enter z/OS UNIX commands in Command field” to be selected on the directory list options panel
  - Entering a / (forward slash) in the command field displays a panel with a command field 255 characters in length

- Default line commands can be defined for different file types
  - Default line command is processed when the cursor is placed in the line command field and the ENTER key is pressed

- IBM-supplied default line commands:
  - Directory L (List)
  - Regular file B (Browse)
  - Character special I
  - FIFO I
  - Symbolic link I

- User can change default line commands on the “z/OS UNIX Directory List Default Line Commands” panel available from the Options pull-down

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 Task List - Swap List Command

### 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
  - 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 to simulate:
      1) placing the cursor
      2) Pressing the ENTER key
- Enabled using the new SWAPBAR system command

Syntax:  

```
SWAPBAR [ON|OFF]
```
Display System and User Id – z/OS 1.7

- New ISPF command provided which allows the system name and/or user ID to be displayed on all ISPF panels
  - SYSNAME [ON|OFF] - Display | Remove system name
  - USERID [ON|OFF] - Display | Remove user ID

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

- Panels appear similar to TN3270 ISPF layout

- Can display up to 4 ISPF logical screen in the same browser tab
ISPF in a Web Browser (Using z/OSMF)...

- TSO/E messages are displayed in a popup window

ISPF Client Gateway - ISPF from the Internet

- The Gateway provides an interface for client (and z/OS UNIX) applications to run TSO and ISPF commands and services

- Runs in z/OS UNIX and is invoked upon a request for a TSO or ISPF command
  - TSO address space established
  - If an ISPF command is requested
    - ISPF data sets are allocated and an ISPF session is established

- Command requests and command output in XML format

- Gateway IVP provides a web page for entering TSO and ISPF commands
  - /usr/lpp/ispf/bin/ISPZIVP.html
  - /usr/lpp/ispf/bin/ISPZIVP.cgi

- Shipped with z/OS 1.10
  - Backfitted to z/OS 1.8 and 1.9 (APAR OA27190)
ISRDDN Utility

- Fullscreen display of DD allocations
- Build a member list based on a DD
- Invocation: `SELECT PGM(ISRDDN) - DDLIST` command

Browse (B), Edit (E), View (V), Free the entire DD (F), Compress a PDS (C), Provide additional data set information (I), Display list of users of jobs using a data set (Q)

**ISRDDN - Primary Commands**

- **MEMBER name [string]**
  - scans allocations for a particular member
  - `string` restricts the search to DDs with `string` in their name.
  - Uses CSVQUERY to locate load modules

- **ONLY string | EXCLUDE string**
  - to show or exclude DDs with `string` in their name
ISRDDN - Primary Commands...

* SEARCH name
  * Same as MEMBER but does not search DD’s

* LOAD name
  * Explicitly loads a module
  * Uses ISPLLIB if available
  * Browses result

* APF, LINKLIST (LI), PARMLIB, LPA (LP)
  * toggle commands to add/remove pseudo-DD names
  * show the defined -
    - APF data sets
    - link-list data sets
    - PARMLIB data sets
    - LPA data sets

* CLIST
  * creates a allocation CLIST in ‘prefix.ISRDDN.CLIST’

* COUNT [string]
  * counts the number of members in PDSs

* DUP
  * searches all the PDSs in the displayed list and LPA
  * displays list of duplicate names

* ENQ
  * Enqueues on system

* CON
  * Enqueue contention
ISRDDN - Browse of Control Blocks

- **BROWSE STORAGE**
  - **SEQUENTIAL FILE**
    - Allocated to DDNAME ISRDDN
    - Fixed or VB
    - Max length of 230
      - First string on line is control block name
    - Second string is locator string
    - Everything else ignored

<table>
<thead>
<tr>
<th>Control Block</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCB</td>
<td>Addr space control blk</td>
</tr>
<tr>
<td>CVT</td>
<td>Comm Vector Table</td>
</tr>
<tr>
<td>TCB</td>
<td>Task Control Block</td>
</tr>
</tbody>
</table>

- Disassembly support available with z/OS 1.9

**NOTE:** ISRDDN is now documented in the ISPF User’s Guide Volume I

User Command Tables

- ISPF supports up to 3 user command tables (z/OS 1.5)
  - APPLID for User command tables are defined in the ISPF configuration table
  - Searched before Site and System command tables

- Many sites now define USER as the APPLID for a User command table
  - Speak to your systems programmer if your site does not
  - Allows users to define their own ISPF commands
  - User command table saved in a personal table data set in the ISPTLIB DD concatenation

- Creating and updating user command tables
  - Option 3.9 can be used to create a user command table
    - Requires table data set allocated to the ISPTABL DD
  - Option 3.9 cannot update a user command table if it is open to your ISPF session
    - Copy table to another member; use option 3.9 to update new member; copy updated member back
    - With z/OS 1.9, use option 3.16 (ISPF Table Utility)
ISRDTLCV Macro

- Shipped in SISPEXEC library
- Converts the non-displayable characters in panel output from the DTL Conversion Utility (ISPDTLC) to editable characters
- Issue `ISRDTLCV` on edit command line of generated panel