



ISPF Crazy With Some CUCI Usermods Like These
(Tom Conley)

ISPF is Dead.....



- IBM's investment in ISPF has been steadily dwindling
- z/OS V2R1 had 5 pages of enhancements
- z/OS V2R2 had 3 pages of enhancements
- z/OS V2R3 had two line items
- z/OS V2R4 had two line items, one withdrew Workstation Agent
- ISPF is no longer strategic for IBM
- z/OSMF strategic platform going forward for sysprogs
- IBM Developer for z/OS strategic platform for developers
- Future enhancements to ISPF likely limited to infrastructure support (e.g. 8-character TSO id support)

LONG LIVE ISPF!!



- In August 2017, I began to work on user-driven ISPF enhancements
- CBT Usermod Collection for ISPF (CUCI) was born
- Download [File967](http://www.cbttape.org) at <http://www.cbttape.org>
- First release V1R0 delivered on 11/16/2017, small proof of concept
- Satisfied two RFE's for abbreviated commands in ISPCMDS table
- CUCI has grown a lot since then
- Version V1R5 soon to be released, with 33 satisfied RFE's
- 17 more languages supported for highlighting

CUCI Release V1R0

- Release V1R0 delivered on 11/16/2017
 - RFE 112749 - Update ISPCMDS table entries for Minimum TRUNC values (e.g. UDLIST should be 3)
 - RFE 112745 - Add DSL as a synonym for the DSLIST command

CUCI Release V1R1

- Release V1R1 delivered on 12/24/2018 (Merry Christmas!)
 - RFE 128561 - ISPF OPT 3.4 block delete commands should delete VSAM cluster, and bypass DATA and INDEX components without stopping
 - RFE 120120 - ISPF 3.17 Should Reset UID on Exit Back to User UID from SU
 - RFE 102407 - ISPF UDLIST - for reset to users default UID on exit (same as above RFE 120120)
 - Modified ISHELL to reset user's default UID on exit (z/OS usermod)
- Experienced multiple coding difficulties
- Research for manipulating dynamic area to provide block deletes in 3.4 led me to understand code necessary for language highlighting

CUCI Release V1R2

- Release V1R2 delivered on 01/28/2019
 - RFE 122097 - ISPF EDIT highlighting for FORTRAN
 - RFE 117386 - ISPF EDIT highlighting for SQL
 - RFE 79228 - ISPF EDIT highlighting for SQL
 - RFE 57717 - ISPF EDIT highlighting for SQL
 - RFE 37007 - ISPF EDIT highlighting for SQL
 - RFE 107568 - ISPF EDIT highlighting for CARLa
 - RFE 83017 - ISPF EDIT highlighting for shell script
 - RFE 139412 - ISPF EDIT highlighting for Java
 - RFE 83016 - ISPF EDIT highlighting for Java
 - RFE 112741 - Simplify UNIX file access in ISPF by prepending current Unix directory to filename for COMPARE, COPY, CREATE, and REPLACE commands (BROWSE, EDIT, VIEW require a member name and continue to issue "Invalid member name" error message)

CUCI Release V1R3

- Release V1R3 delivered on 07/12/2020
 - RFE 143505 - Add missing ISPF options to ISPCCONF
 - RFE 42655 - ISPCCONF - Add PFKey
 - RFE 144196 - ISPF EDIT Highlighting for FLOWASM
 - RFE 143504 - ISPF EDIT Highlighting for Google GO
 - RFE 143155 - Modify SISPSAMP member ISRPXASM to add missing COBOL and PL/I keywords for highlighting (73 COBOL and 140 PL/I keywords added)
 - RFE 136261 - PDSE V2 allocated under ISPF (panel edit, should've been APAR)
 - RFE 132595 - VSCR for z/OS move ISPF SCLM members from LPA to LOAD
 - RFE 40668 - Prime ISRUMVC 'other dataset' field with current dataset for Copy/Move

CUCI Release V1R4

- Release V1R4 delivered on 01/12/2021
 - RFE 147822 - ISPF EDIT highlighting for TypeScript
 - RFE 147823 - ISPF EDIT highlighting for PHP
 - RFE 147824 - ISPF EDIT highlighting for JavaScript
 - RFE 147825 - ISPF EDIT highlighting for Python
 - RFE 147826 - ISPF EDIT highlighting for Ruby
 - RFE 147827 - ISPF EDIT highlighting for JSON
- Highlighting enhancements and fixes
 - Add Java 9 and 10 keywords, and add Java string and math methods
 - Remove Panel Rexx code from ISREDDE2 by creating USREDDX
 - FLOWASM highlighting fixes
 - Bypass "Top of Data" and "Bottom of Data" lines

CUCI Release V1R4



- **USRCCONF enhancements and fixes**
 - Add option 8, Miscellaneous ISPF Options
 - Add support for ZKIT=LO Calendar Notepad
 - Fix abend in 3.17 when ZULARR, ZMTFARR, or ZMTMARR are stored with nulls
 - Fix error in Calendar Colors when processing existing keyword file
- **\$MANHACK and \$MANHACJ members added for non-usermod installation**

- Release V1R5 to be delivered on 02/26/2021
 - RFE 148758 - ISPF Edit highlighting for Kotlin
 - RFE 148595 - ISPF Edit highlighting for XMLASCII
 - RFE 148594 - ISPF Edit highlighting for SAS
 - RFE 148593 - ISPF Edit highlighting for Perl
- Highlighting enhancements and fixes
 - Use loops to assign atr. and clr. stem variables, improves readability and simplifies adding languages (thanks to Robert Prins for this idea!)
 - Clean up incorrect Fortran and TypeScript keywords
 - Bypass Top of Data and Bottom of Data lines for FORTRAN
 - Make specific code changes for XMLASCII
 - Eliminate blank delimiting of tags
 - Process '#' comments

- Remove panel Rexx code from ISRUDSLO to minimize changes
 - Add exec USRUDSLI to process)INIT section of ISRUDSLO
 - Add exec USRUDSLP to process)PROC section of ISRUDSLO
- Remove panel Rexx code from BPXW99, ISRUUDLO, and ISRUULP
 - Consolidate code in each panel to call common Rexx routine to reset user's UID back to its default value
 - Add exec USRUUIDO to reset the user's UID

EDIT Highlighting for XML in ASCII mode



- On 1/12/21, I presented my ISPF is Dead, LONG LIVE ISPF! Session
- I asked for language highlighting ideas, I'm running out of languages
- A user asked for XML highlighting for z/OSMF workflows
- I said OK, I'll try
- But wait, XML is already a supported language for HILITE
- Not so fast...
- HILITE XML in an ASCII edit session gives you this...

EDIT Highlighting for XML in ASCII mode

```
zPDT
File Edit Font Transfer Macro Options Window Help

Menu Utilities View Options Help

z/OS UNIX Directory List
Row 23 to 31 of 31
Command ==> Scroll ==> CSR

Pathname . : /Z24A/usr/lpp/zosmf/workflow
EUID . . . : 0
Command  Filename                Message      Type Perm Audit Ext Fmat Owner   Group      Links  Size      Modified
-----
ea  izu.sysplex.xml                Browsed      File 755  fff-- --s- bin  OMVSKERN OMVSGRP    2      39054 2019/08/09 08:22:54
   izu.variable.part2.xml        File 755  fff-- --s- ---- OMVSKERN OMVSGRP    2      68989 2019/08/09 08:22:54
   izu.variable.xml              File 755  fff-- --s- ---- OMVSKERN OMVSGRP    2     107020 2019/08/09 08:22:53
   izu.wlm.xml                    File 755  fff-- --s- ---- OMVSKERN OMVSGRP    2     14347 2019/08/09 08:22:53
   plugins                        Dir 755  fff--          ---- OMVSKERN OMVSGRP    3         8192 2019/05/07 16:01:53
   schemas                        Dir 755  fff--          ---- OMVSKERN OMVSGRP    2         8192 2019/08/09 08:22:01
   usermanagement                 Dir 755  fff--          ---- OMVSKERN OMVSGRP    5         8192 2019/05/07 16:01:39
   IzuWorkflow.msg                 File 755  fff-- --s- ---- OMVSKERN OMVSGRP    2     14567 2019/05/07 16:01:40
   IZUCFWTS.exec                   File 755  fff-- --s- ---- OMVSKERN OMVSGRP    2         5245 2019/05/07 16:01:40
***** Bottom of data *****

*UDLIST

0.0
a 10,4
```

EDIT Highlighting for XML in ASCII mode

```
zPDT
File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT /Z24A/usr/lpp/zosmf/workflow/izu.sysplex.xml HILITE unavailable
Command ==> hilite xml Scroll ==> CSR
***** Top of Data *****
==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
==MSG> ==> FIND P'.' to position cursor to these
000001 <?xml version="1.0" encoding="UTF-8"?>
000002
000003 <!--
000004 # PROPRIETARY STATEMENT:
000005 # Licensed Materials - Property of IBM
000006 # 5650-Z05
000007 # Copyright IBM Corp. 2009, 2019
000008 #
000009 # US Government Users Restricted Rights
000010 #
000011 # Status = HSMA240
000012 #
000013 # Information:
000014 #
000015 # SID=%I%
000016 # Delta Date=%G%
000017 # Delta Time=%U%
000018 #
000019 # Description= Workflow XML file for z/OSMF SYSPLEX.
000020 # This file is the part for set-up of virtual z/OSMF or clone in multi-system sysplex.
000021 #
000022 # Invocation= This XML file is ISRE936 The HILITE command is not available in ascii or utf8 edit sessions.
000023 #
000024 #
*UDLIST
```

EDIT Highlighting for XML in ASCII mode

- Since HILITE not available, HILITE OTHER can't do comments, quoted strings, etc.
- So I started to create XMLASCII highlighting
- I figured, OK, the keywords will have to be embedded ASCII hex
- So I put <title> into my USRHILIT exec as '3C7469746C653E'x
- I wasn't getting a hit on it
- Displaying the line with HX showed it was correct...

EDIT Highlighting for XML in ASCII mode

- Oddly enough, when I put the tag in as <title>, it worked
- So IBM displays XML in EBCDIC, but HX shows ASCII hex
- Confused yet?
- Another issue was blank delimiting
- For all other languages, keywords are blank delimited
- Requires changing math symbols, parens, etc. to blanks
- With XML, tags are typically not blank delimited, and we need < >
- So I had to bypass blank delimiting for XMLASCII
- I also had to bypass translation to uppercase
- There is more work to be done, such as quoted strings non-HTML tags, etc.
- This is how it looks so far...

EDIT Highlighting for XML in ASCII mode

```
zPDT
File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT      /Z24A/usr/lpp/zosmf/workflow/izu.sysplex.xml
Command ==> █
000025 # Change Activity=
000026 # DEFECT      DATE      USER ID  DESCRIPTION
000027 # MZ08300    01/07/2015 Y.Tian Initial creation.
000028 #
000029 -->
000030
000031 <step name= "Multi-systemEnvBegin" >
000032 <title>Using z/OSMF in a multi-system environment</title>
000033 <description>By default, the z/OSMF configuration process produces a configuration that is set up for a single-system
000034 environment. Your installation, however, might need to create more instances of z/OSMF on other
000035 systems in the same sysplex or in another sysplex. And, you might need to enable communication
000036 between instances of z/OSMF, based on the capabilities of the optional plug-ins that you have selected to
000037 enable.
000038 <p>If you plan to use z/OSMF in a multi-system environment, or across sysplexes, the decisions you make
000039 during the first-time setup can help to simplify the management of z/OSMF later. You can, for example,
000040 deploy the initial instance of z/OSMF in such a way that the product can be started from any system in
000041 your sysplex. Doing so can help to address other important points, such as high availability and cloning.
000042 These are important considerations when deploying any application in a sysplex environment.</p>
000043 <p>This workflows provides considerations for configuring z/OSMF for a multi-system environment in the
000044 following topics:
000045 <ul>
000046 <li>"Configuring z/OSMF for high availability"</li>
000047 <li>"Configuring a primary z/OSMF for communicating with secondary instances"</li>
000048 <li>"Modifying the z/OSMF host name"</li>
000049 </ul>
000050 </p>
000051 </description>
*UDLIST
```

Columns 00001 00152
Scroll ==> CSR