

# z/OS 3.1 IBM Education Assistant

Solution Name: Externalize Edit HILITE Values to ISPF Z Variables

Solution Element(s): ISPF

July 2023



# Agenda

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- Trademarks
- Objectives
- Overview
- Usage & Invocation
- Interactions & Dependencies
- Upgrade & Coexistence Considerations
- Installation & Configuration
- Summary
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# Trademarks

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- See url <http://www.ibm.com/legal/copytrade.shtml> for a list of trademarks.
- Additional Trademarks:
  - None

# Objectives

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- Supporting HILITE for all existing and new programming languages is not realistic. There are too many languages and each one is not a trivial effort.
- Current HILITE options and values are displayed via the PROFILE & HILITE primary commands within EDIT.
- Externalizing the HILITE values to Z variables will allow the ISPF open-source community to add their own support for any language.

# Objectives (continued)

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- ISPF **RFE 145682** was submitted to support the CBT Usermod Collection for ISPF (CUCI) effort to provide ISPF enhancements via open-source methods.
- Externalizing HILITE values to ISPF Z variables will allow CUCI to fulfill RFE 144625 -HILITE PLI -End-of-line Comment // support and possibly assist with other languages.
- Currently, the HILITE language is unavailable through a supported programming interface.
- To satisfy **RFE 144625**, the HILITE language must be known externally.
- CUCI already supports // comments for GO, JAVA, JAVASCRIPT, PHP, and TYPESCRIPT, so if PLI were the known language, it would be a simple update to add it to the WHEN clause for GO, etc.

# Overview

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- Who (Audience)
  - System administrators
- What (Solution)
  - Make Edit Hilite options available via Z variables
- Wow (Benefit / Value, Need Addressed)
  - Externalizing these Hilite variables allows the ISPF open-source community to add their own support for any language.

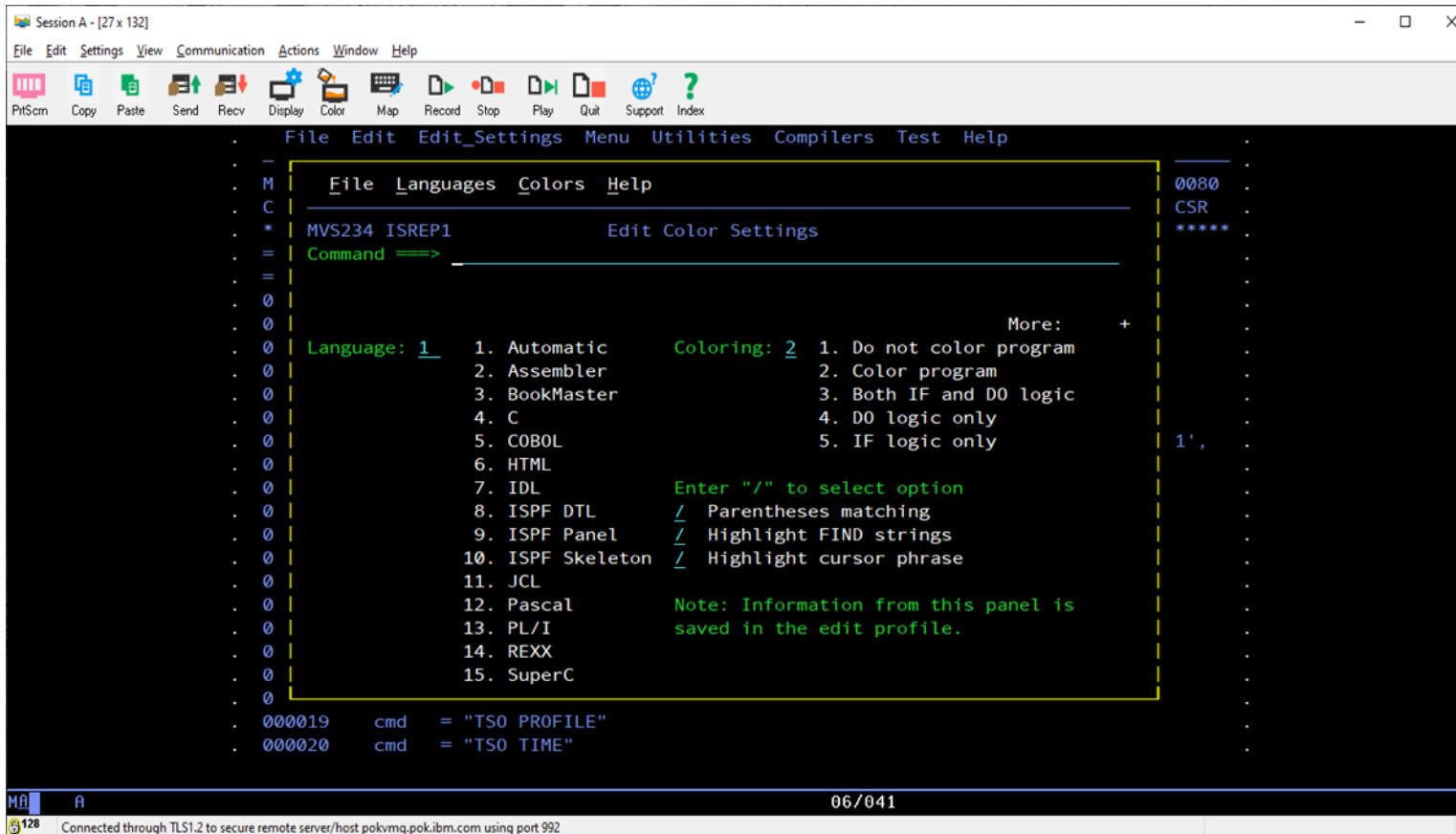
# Usage & Invocation (Variable Descriptions)

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- The following Edit Hilite Variables will be externalized for access in the ISPF SHARED Variable Pool. These values reflect the Hilite values of the active Edit Profile:
  - › **ZHIAUTO(ON/OFF)** - ON when AUTO language determination is enabled
  - › **ZHILANG(CHAR 8)** - Programming LANGUAGE name
  - › **ZHICOLOR(CHAR 8)** - Coloring indicator as well as DO-IF LOGIC enablement. OFF indicates HILITE is disabled regardless of all other variable settings. Values are ON,OFF, LOGIC, IFLOGIC and DOLOGIC
  - › **ZHIPAREN(ON/OFF)** - ON when parenthesis matching is enabled, otherwise OFF
  - › **ZHIFIND(ON/OFF)** - ON when Hilite FIND strings is enabled, otherwise OFF
  - › **ZHICURSR(ON/OFF)** - ON when Hilite cursor phrase is enabled, otherwise OFF

# Usage & Invocation (Hilite Panel)

- The z Hilite Variables correspond directly to the Edit Hilite Variables which are visible via the HILITE primary command (panel ISREP1) shown here:



```
Session A - [27 x 132]
File Edit Settings View Communication Actions Window Help
PitScri Copy Paste Send Recv Display Color Map Record Stop Play Quit Support Index

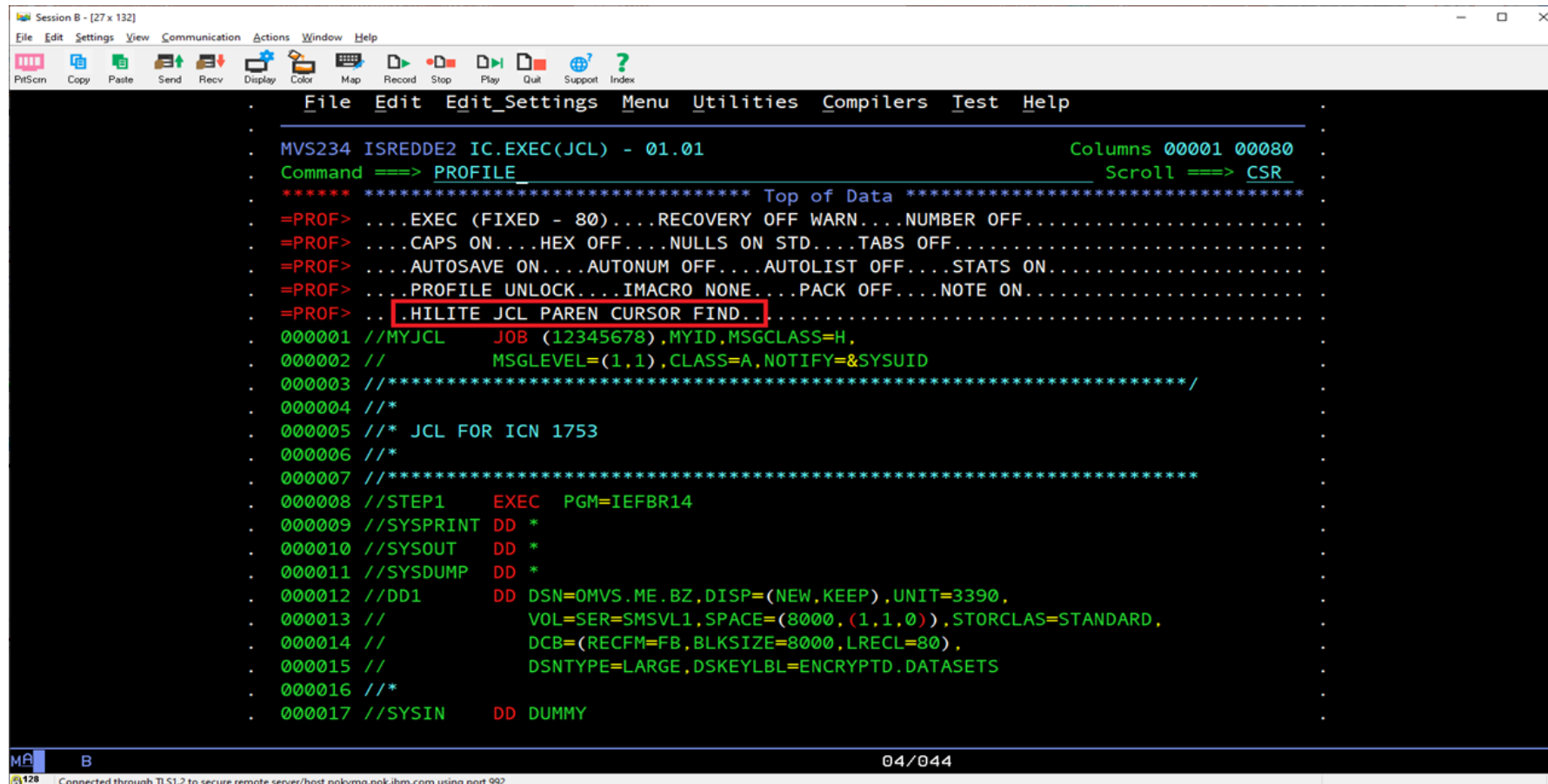
File Edit Edit_Settings Menu Utilities Compilers Test Help
-
M   File Languages Colors Help
C
*   MVS234 ISREP1           Edit Color Settings
=   Command ==>
=
0
0
0   Language: 1      1. Automatic      Coloring: 2      1. Do not color program      More: +
0                   2. Assembler      2. Color program
0                   3. BookMaster      3. Both IF and D0 logic
0                   4. C                4. D0 logic only
0                   5. COBOL           5. IF logic only
0                   6. HTML
0                   7. IDL              Enter "/" to select option
0                   8. ISPF DTL        / Parentheses matching
0                   9. ISPF Panel      / Highlight FIND strings
0                   10. ISPF Skeleton / Highlight cursor phrase
0                   11. JCL
0                   12. Pascal          Note: Information from this panel is
0                   13. PL/I           saved in the edit profile.
0                   14. REXX
0                   15. SuperC
0
000019 cmd = "TSO PROFILE"
000020 cmd = "TSO TIME"

MA A
06/041
Connected through TLS1.2 to secure remote server/host pokvmq.pok.ibm.com using port 992
```



# Usage & Invocation (Hilite Profile)

- The current values for the Edit Hilite variables can also be seen via the PROFILE primary command as seen in this screen shot:



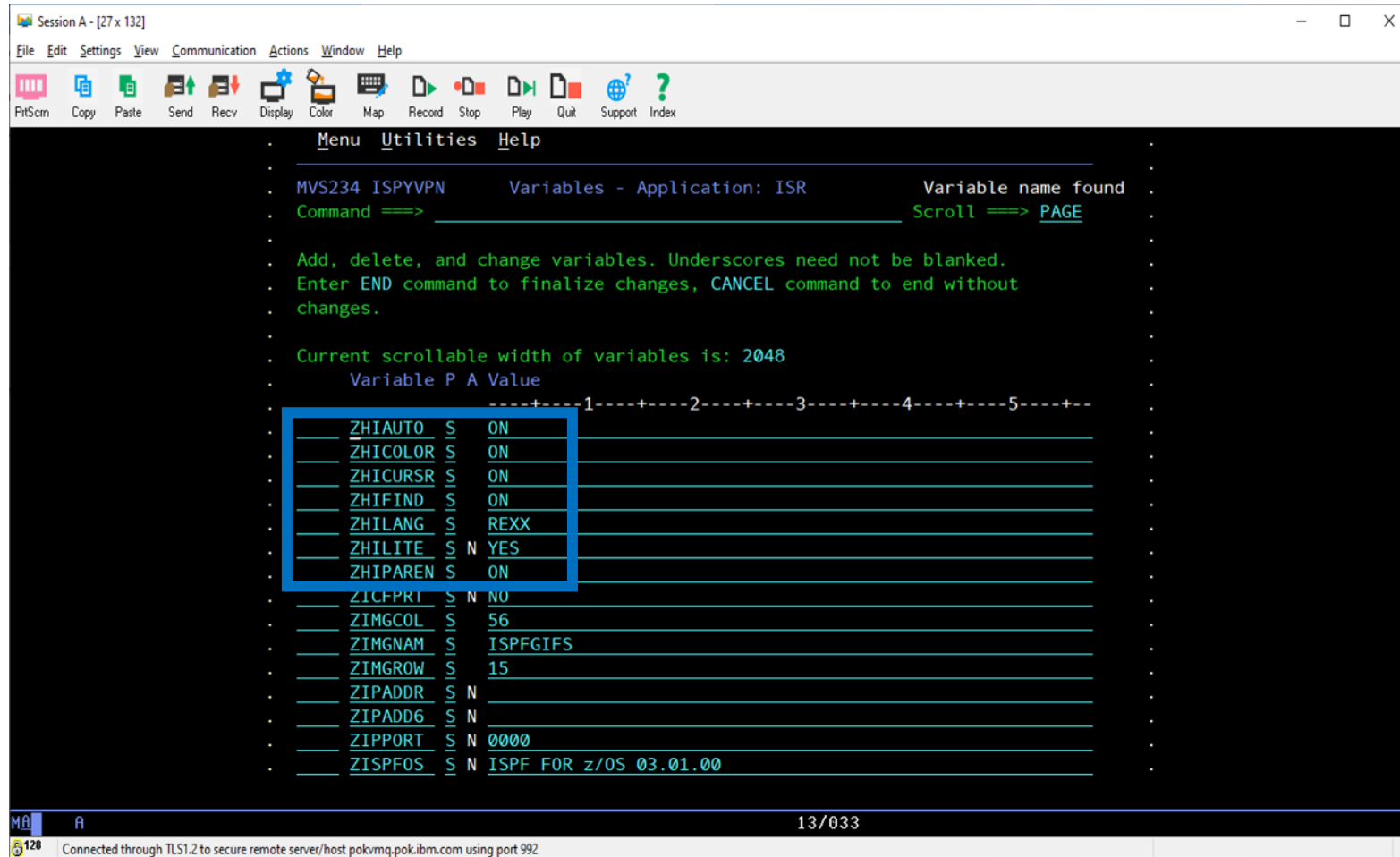
The screenshot shows a terminal window titled "Session B - [27 x 132]". The menu bar includes File, Edit, Settings, View, Communication, Actions, Window, and Help. The toolbar contains icons for PitScan, Copy, Paste, Send, Recv, Display, Color, Map, Record, Stop, Play, Quit, Support, and Index. The main window displays the following text:

```
. MVS234 ISREDD2 IC.EXEC(JCL) - 01.01 Columns 00001 00080
. Command ==> PROFILE Scroll ==> CSR
. ***** Top of Data *****
. =PROF> ....EXEC (FIXED - 80)....RECOVERY OFF WARN...NUMBER OFF.....
. =PROF> ....CAPS ON...HEX OFF...NULLS ON STD...TABS OFF.....
. =PROF> ....AUTOSAVE ON...AUTONUM OFF...AUTOLIST OFF...STATS ON.....
. =PROF> ....PROFILE UNLOCK...IMACRO NONE...PACK OFF...NOTE ON.....
. =PROF> .. .HILITE JCL PAREN CURSOR FIND..
. 000001 //MYJCL JOB (12345678),MYID,MSGCLASS=H,
. 000002 // MSGLEVEL=(1,1),CLASS=A,NOTIFY=&SYSUID
. 000003 //*****
. 000004 //*
. 000005 //* JCL FOR ICN 1753
. 000006 //*
. 000007 //*****
. 000008 //STEP1 EXEC PGM=IEFBR14
. 000009 //SYSPRINT DD *
. 000010 //SYSOUT DD *
. 000011 //SYSDUMP DD *
. 000012 //DD1 DD DSN=OMVS.ME.BZ,DISP=(NEW,KEEP),UNIT=3390,
. 000013 // VOL=SER=SMSVL1,SPACE=(8000,(1,1,0)),STORCLAS=STANDARD,
. 000014 // DCB=(RECFM=FB,BLKSIZE=8000,LRECL=80),
. 000015 // DSNTYPE=LARGE,DSKEYLBL=ENCRYPTD.DATASETS
. 000016 //*
. 000017 //SYSIN DD DUMMY
```

The status bar at the bottom shows "MA B" and "04/044". A small icon and text at the bottom left indicate "Connected through TLS1.2 to secure remote server/host pokvmq.pok.ibm.com using port 992".

# Usage & Invocation (Variable Values)

- Using the Dialog Test option, the z variables will be visible in the shared pool as seen here:



Session A - [27 x 132]

File Edit Settings View Communication Actions Window Help

PrintScreen Copy Paste Send Recv Display Color Map Record Stop Play Quit Support Index

Menu Utilities Help

MVS234 ISPYVPN Variables - Application: ISR Variable name found

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: 2048

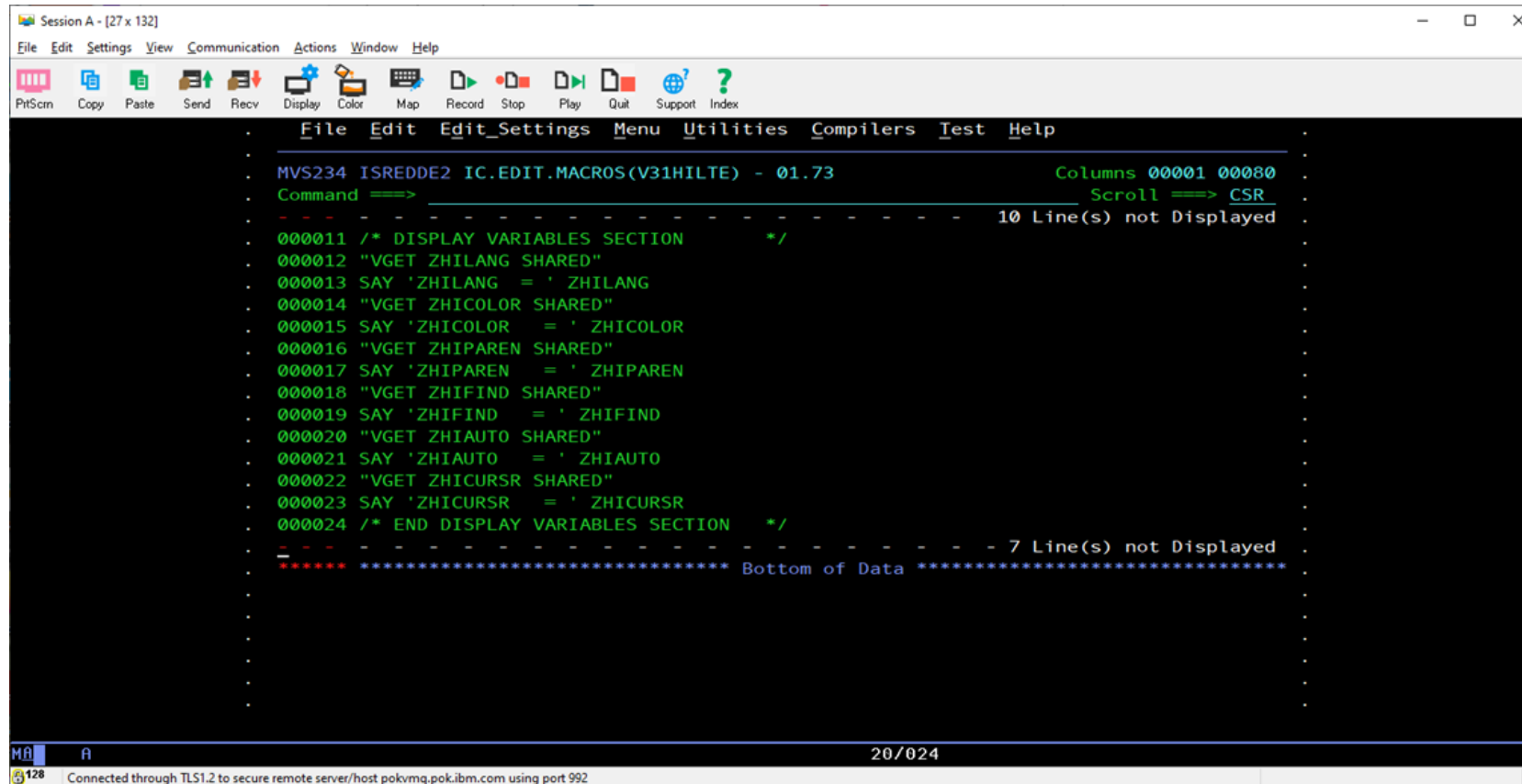
| Variable | P | A | Value                  |
|----------|---|---|------------------------|
| ZHIAUTO  | S |   | ON                     |
| ZHICOLOR | S |   | ON                     |
| ZHICURSR | S |   | ON                     |
| ZHIFIND  | S |   | ON                     |
| ZHILANG  | S |   | REXX                   |
| ZHILITE  | S | N | YES                    |
| ZHIPAREN | S |   | ON                     |
| ZICFPRI  | S | N | NO                     |
| ZIMGCOL  | S |   | 56                     |
| ZIMGNAM  | S |   | ISPF GIFS              |
| ZIMGROW  | S |   | 15                     |
| ZIPADDR  | S | N |                        |
| ZIPADD6  | S | N |                        |
| ZIPPORT  | S | N | 0000                   |
| ZISPF05  | S | N | ISPF FOR z/OS 03.01.00 |

MA A 13/033

Connected through TLS1.2 to secure remote server/host pokvmq.pok.ibm.com using port 992

# Usage & Invocation (Variables in Services)

- The z variables will be accessible using ISPF services. In this screen shot the variables are simply dumped to the console from a Rexx edit macro:



The screenshot shows a terminal window titled "Session A - [27 x 132]". The window has a menu bar with "File", "Edit", "Settings", "View", "Communication", "Actions", "Window", and "Help". Below the menu bar is a toolbar with icons for PrintScreen, Copy, Paste, Send, Recv, Display, Color, Map, Record, Stop, Play, Quit, Support, and Index. The main area displays the output of a Rexx edit macro. The output starts with "MVS234 ISREDDE2 IC.EDIT.MACROS(V31HILTE) - 01.73" and "Columns 00001 00080". It then shows a series of commands and their outputs, including "VGET ZHILANG SHARED", "VGET ZHICOLOR SHARED", "VGET ZHIPAREN SHARED", "VGET ZHIFIND SHARED", "VGET ZHIAUTO SHARED", and "VGET ZHICURSR SHARED". The output ends with "Bottom of Data".

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
MVS234 ISREDDE2 IC.EDIT.MACROS(V31HILTE) - 01.73 Columns 00001 00080
Command ==> Scroll ==> CSR
10 Line(s) not Displayed
000011 /* DISPLAY VARIABLES SECTION */
000012 "VGET ZHILANG SHARED"
000013 SAY 'ZHILANG = ' ZHILANG
000014 "VGET ZHICOLOR SHARED"
000015 SAY 'ZHICOLOR = ' ZHICOLOR
000016 "VGET ZHIPAREN SHARED"
000017 SAY 'ZHIPAREN = ' ZHIPAREN
000018 "VGET ZHIFIND SHARED"
000019 SAY 'ZHIFIND = ' ZHIFIND
000020 "VGET ZHIAUTO SHARED"
000021 SAY 'ZHIAUTO = ' ZHIAUTO
000022 "VGET ZHICURSR SHARED"
000023 SAY 'ZHICURSR = ' ZHICURSR
000024 /* END DISPLAY VARIABLES SECTION */
7 Line(s) not Displayed
***** Bottom of Data *****
```

# Interactions & Dependencies

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- Software Dependencies
  - None
- Hardware Dependencies
  - None
- Exploiters
  - CBT Usermod Collection for ISPF (CUCI)
  - Any ISPF application that needs to programmatically retrieve the Edit HILITE settings

# Upgrade & Coexistence Considerations

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- To exploit this solution, all systems in the Plex must be at the new z/OS level: **No**
- List any toleration/coexistence APARs/PTFs: **None**
- List anything that doesn't work the same anymore: **None**
- Upgrade or coexistence concerns: **None**

# Installation & Configuration

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- The new ISPF Z variables are available by default.
- This feature was rolled back to V2R3, V2R4, and V2R5 via APAR OA62409.

# Summary

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- Various Edit Hilite variables have been externalized and are accessible via Z variables.

# Appendix

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- z/OS ISPF Publications
  - **ISPF Dialog Developers Guide and Reference SC19-3619-60**
  - ISPF Dialog Tag Language Guide and Reference SC19-3620-60
  - **ISPF Edit and Edit Macros SC19-3621-60**
  - ISPF Messages and Codes SC19-3622-60
  - **ISPF Planning and Customization SC19-3623-60**
  - **ISPF Reference Summary SC19-3624-60**
  - ISPF SCLM Guide and Reference SC19-3625-60
  - ISPF Services Guide SC19-3626-60
  - ISPF Users Guide Volume I SC19-3627-60
  - ISPF Users Guide Volume II SC19-3628-60