z/OS 3.1 IBM Education Assistant

Solution Name: zACS Scanner AC(1) & USS Support

Solution Element(s): IBM z/OS Authorized Code Scanner

July 2023

Agenda

- Trademarks

- Objectives

- Overview

- Usage & Invocation

- Interactions & Dependencies

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Trademarks

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

Objectives

- Scanning of AC(1) MVS Programs

- Scanning of AC(1) USS Programs

- Advanced Scanning of PCs and SVCs

- Panel Redesign

Overview

- Who (Audience)

  - Customers looking to mitigate the risk of integrity issues on their systems

- What (Solution)

  - New scanning capabilities for MVS and USS AC(1) programs, as well as advanced scanning for PCs and SVCs

- Wow (Benefit / Value, Need Addressed)

  - The expanded scope of the scanner allows for more integrity flaws to be detected in IBM, vendor, or customer code

Usage & Invocation

- Start zACS
- Run the jobs to generate tables for PCs, SVCs, *MVS programs, and *USS programs.
- Run a zACS test:
  - SVC Test : ex 'SYS1.BPN.SBPNEXEC(BPNKNSVC)' '<svc#>,<esr#>,<module_name> , *<test_type>'
    - Single SVC number - Used to run just a single SVC, specified as hexadecimal. If ESR Routing number is also specified, then only the hexadecimal values 6D, 74, 7A or 89 are accepted.
    - ESR Routing Number - Routing number to run a single Extended SVC, the single SVC number must also be specified in hexadecimal.
    - Module name - Used to run all SVCs for a single module.
    - *Test type - The type of test to be run. Specify 1 for advanced or 0 for basic. Advanced testing enables function code testing. Time until completion will increase when compared to a basic test. If nothing is specified for this parameter, a basic test will be run.
  - PC Test: ex 'SYS1.BPN.SBPNEXEC(BPNKNPCX)' '<pc#>,<sequence#>,<module_name>, *<test_type>'
    - Single PC number - Used to run just a single PC, specified in hexadecimal.
    - Sequence number - Sequence number for a PC, single PC number must also be specified in hexadecimal. If a sequence number is not specified, the default is 0.
    - Module name - Used to run all PCs for a single module.
    - *Test type - The type of test to be run. Specify 1 for advanced or 0 for basic. Advanced testing enables function code testing. Time until completion will increase when compared to a basic test. If nothing is specified for this parameter, a basic test will be run.
  - *MVS Test: ex 'SYS1.BPN.SBPNEXEC(BPNKNMVS)' '<member-name>'
    - Member name – Used to run mvs programs of a single member name
  - *USS Test: ex 'SYS1.BPN.SBPNEXEC(BPNKNUSS)' '<path-and-file-name>'
    - Path and file name – full path and file name used to run a single USS program
  - If no parameters are specified, the test is run on the entire table
    - Include/Exclude filter list may be applied in this case (specified in configuration file)
- Check the output files for any zACS hits
  - Output and summary data sets cleared upon restart

*New

Usage & Invocation - Panel

- Run via the panel: ex 'SYS1.BPN.SBPNEXEC(BPNISPFR)'

```
@-------------------------------------------------------------
                    IBM z/OS Authorized Code Scanner
     R   Run Selected Test Option        SL  View SVCs Tested Log
     S   Generate SVC Table              PL  View PCs Tested Log
     P   Generate PC Table               AL  View MVS Tested Log
     A   Generate MVS Table              UL  View USS Tested Log
     U   Generate USS Table              ST  View SVC Table
     C   Edit Configuration File         PT  View PC Table
     M   Edit Module Filter List         AT  View MVS Table
     J   Edit Job Name Filter List       UT  View USS Table
     V   View Report                     VS  View Report Summary

  Test Option:
  __     1. All SVCs       2. All PCs       3. All MVS       4. All USS
         5. SVC Module  . . . . .  _____
         6. SVC Number (hex)  . .  __          ESR Routing Number (hex) . .  __
         7. PC Module   . . . . .  _____
         8. PC Number (hex)   . .  _____  PC Sequence Number (hex) . .  _____
         9. MVS Member  . . . . .  _____
        10. USS File Name.  _

  _   Enter / for Advanced Test




  Option  ===>  ▊                                           Ready
  F1=HELP        F2=SPLIT      F3=END       F4=RETURN    F5=RFIND      F6=RCHANGE
  F7=UP          F8=DOWN       F9=SWAP      F10=LEFT     F11=RIGHT     F12=RETRIEVE
```

- Table generation, editing the configuration file, running the tests and viewing the results can all be done via the panel
- Options 1-4 run test on the entire table
  - Include/Exclude filter list may be applied in this case (specified in configuration file)
- Options 5 -10 allow the user to run with parameters
  - Placing any character in the field for option 10 will bring up a pop-up to allow for longer input

Interactions & Dependencies

- Software Dependencies
  - Running 2.4 or greater

- Hardware Dependencies
  - N/A

- Exploiters
  - N/A

Upgrade & Coexistence Considerations

- To exploit this solution, all systems in the Plex must be at the new z/OS level: No
- Dependency on OA62619
- New required configuration file keywords
  - jobAdvTimeout
  - ussWorkDir
  - useMvsVol
  - mvsUnit
  - mvsLogDSname
  - mvsLogDSlrec
  - mvsLogDSblksz
  - mvsLogDSpriSp
  - mvsLogDSsecSp
  - ussLogDSname
  - ussLogDSlrec
  - ussLogDSblksz
  - ussLogDSpriSp
  - ussLogDSsecSp
- New Optional configuration file Keywords
  - autoslip - defaults to 'OFF'
  - slipIDPrefix - defaults to 'A'
  - mvsTableDSname - defaults to '&userid.ZACS.MVSNAME'
  - ussTableDSname - defaults to'&userid.ZACS.USSNAME'

Installation & Configuration

- Due to its sensitive nature, all datasets containing the tool and its output must be protected
- The user of zACS must have READ authority to the resource BPN.RUN in the XFACILIT class
- Define a new profile for BPNZACS:

```
DEFINE STARTED BPNZACS.** UACC(NONE) STDATA(USER(userid) GROUP(SYS1) TRUSTED(YES))
```
Due to its sensitive nature, all datasets contain the tool and its output must be protected

- Registration

```
PRODUCT OWNER('IBM CORP')
NAME('z/OS')
ID(5655-ZOS)
VERSION(*) RELEASE(*) MOD(*)
FEATURENAME('ZACS')
STATE(ENABLED)
```

- To assure the submitted test jobs complete before starting the next test, the system must be set to not run jobs of the same name simultaneously.
  - To do this, set your initiators to DUPL_JOB=DELAY for JES. These are the default settings.
- It is recommended to run zACS using either LOGSTREAM or, if using a LOGREC data set to use the SETLOGRC ENF option while the scan is running to bypass the logrec data set
- zACS is for Dev/Test systems only
- * SYS1.BPN.SBPNLPA must be added to LPALIB

Summary

- Scanning capabilities expanded to AC(1) programs for MVS and USS environments

- Advanced scanning of PCs and SVCs

- Redesigned panel

Appendix

- Publication
  - IBM z/OS Authorized Code Scanner Guide