Are Your Auditors and NIST Security Configuration Controls Driving You Crazy? Configuration Manager Implementation

Session 16910

Monday, March 2, 2015: 11:15 AM - 12:15 PM

Brian Marshall(Vanguard Integrity Professionals)
Tim Bougeault(US Bank)

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that provides **education**, professional **networking** and industry **influence**.

Agenda

- Introduction
- Audit Requirements
- DISA STIGs and NIST
- VCM Usage at US Bank
- Systems Programmer Point of View
- Install and Configuration
- Using VCM

2014 3rd Quarter Stats:

- Ranking U.S. Bank is 5th largest
- U.S. commercial bank
- Period-end assets $391 billion
- Period-end deposits $273 billion
- Period-end loans $246 billion
- Customers 17.9 million
- Bank branches 3,177
- ATMs 5,026

Hardware Configuration

- 6 Sysplexes Running z/OS V2.1
- 3 Z196's, 1 Z13, and
- 3 ZEC12's
- 27 lpars, 20 of them are RACF and 7 are ACF2

RACF DB Stats

- Each RACF DB is 2K Cyls
- 83,713   USER profiles
- 29,794   DATASET profiles
- 35,406   GENERAL RESOURCE profile
- 6,845,719   USER-GROUP CONNECT profile

Why VCM for US Bank?

- Multiple Audits from different groups - internal & external
- Many auditors with different knowledge/skill sets
- Goal: Produce one report for distribution to each auditing group

The reports from VCM help us show compliance for internal and external audits.
Sox, PCI, OCC Requirements,

VCM Helps Reduce Time Impacts to Staff

Before VCM,
information for an
audit had to be
requested from
several IT staff
members.

With VCM, audit
information requests are
quickly handled by one
person.

VCM Install

- At US Bank VCM is smp/e installed as part of our Vanguard product set
- Usage requires a Vanguard product code (datecode).

VCM Opening panel

```
  Help

2.1                          VANGUARD GRC
Command ===>                                          Scroll ===> PAGE

                         Configuration Manager

Select (S) one of the following baselines:

  DISA STIG Baselines                    Enterprise Baselines
_ DISA STIG 6.21                       _ DB2 Security Checks
_ DISA STIG 6.20                       _ PCI DSS 3.0
_ DISA STIG 6.19
_ DISA STIG 6.18
_ DISA STIG 6.17
_ DISA STIG 6.16
_ DISA STIG 6.15
_ DISA STIG 6.14




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```

Pick your STIG or DB2 or PCI DSS 3.0

VCM Supported Compliance Checks

- VCM Currently Supports
  - DISA STIG levels 6.14 to Current 6.21 (completely)
  - Unlike other vendors, Vanguard Configuration Manager supports every single check in the DISA STIGs at the current level and back over 2 years.
  - DB2 Checks – VCM has built in DB2 checks that are posted on the NIST NVD.
  - PCI DSS 3.0 – VCM supports the checking of PCI DSS 3.0 requirements on the mainframe.
- VCM Future Support (Later 2015)
  - Health Checker Exploitation
  - 300+ additional Vanguard Checks

Input and Results Dataset Name Panel

VCM Required Data Files

Data Collection PDS ⬅ Data from Interviews

Input PDS

Execute Checks, Writes to Results VSAM File, Size does matter!

Results

MAX_GENERATIONS(x)
Can be encrypted

Produce Reports

Reports

At US Bank
VCM.INPUT.STIG620   PDS/e 10 cyls
VCM.RESULTS.STIG620   VSAM 1K cyls
VCM.REPORTS.STIG620   PDS 1500 cyls

Organize files by STIG level
Each year we pick one STIG level to work with

The Flow

- Common Configuration
- Interview Process
- Execute the checks
- Report and Remediate
- Audit Deliverables
- Repeat

VCM Main Panel


```
   Batch   Reports   Jobcard   Display   Help
   --------------------------------------------------------------------------
                          Vanguard Configuration Manager       Row 1 to 16 of 48
   Command ===> _____     Scroll ===> PAGE

   DISA STIG 6.20

   Line commands:  S - Select category  R - Summary report   C - Comp Cntl report
                   X - Exclude          V - CSV report


   Cmd Prefix     Category Description
   ___ ACOM       Common Configuration
   ___ AAMV       z/OS Operating System Environment
   ___ ACP        Security Server (RACF) for z/OS system data
   ___ IFTP       File Transfer Protocol
   ___ ISLG       z/OS UNIX SYSLOG
   ___ ITCP       TCP/IP Communications Server
   ___ ITNT       TN3270 Telnet Server
   ___ IUTN       z/OS UNIX Telnet Server               Excluded
   ___ RACF       Security Server (RACF) Settings
   ___ ZADT       CA Auditor                            Excluded
   ___ ZAID       Compuware Abend-AID                    Excluded
   ___ ZCA1       CA-1 (Tape Management System)
   ___ ZCCS       CA Common Services
   ___ ZCIC       CICS Transaction Server
   ___ ZCLS       CL/Supersession                       Excluded
   ___ ZCSL       Catalog Solutions                     Excluded
   ----------------------------------------------------------------------------
        :00.3                  R 12 C 28   TNC2HI23
```

STIG 6.20 has 48 Categories

Collect

Common Config expedites the interview process by providing a central data repository from which the checks can share information.

Common Configuration

ACOMPROD Interview questions

Common Configuration


```
  Commands  Help
  _____

                      Vanguard Configuration Manager        Row 1 to 3 of 3
  Command ===> _____  Scroll ===> CSR

  DISA STIG 6.16 ACOM0014 Common Configuration
  Press F3 (END) to accept. Press F6 (CANCEL) to cancel.

    If request is not applicable, leave input field(s) blank.
    Data Collection Only. See help for list of checks that use this info.


    User Id or Mask . . _____
    Group Id or Mask    _____


  Line commands:  D - Delete entry     V - View group     X - Expand group

  Cmd List of Systems Programmers:
  ___ RTECOP03  (Group)
  ___ RTECOP06  (Group)
  ___ X00NMVS   GREG BLINDAUE SUPER
  ****************************** Bottom of data ******************************
```

ACOM0014 List of System Programmers
List of Systems Programmer userids Used in: over 100
checks throughout Configuration Manager
The list of sysprogs can by modified for each check that references ACOM0014

DISA STIG 6.16 ACP Security Server (RACF) for z/OS System Data

ACP00060 V-113   APF-Authorized Libraries

Not all APF LIBs are administered by the original list of sysprogs as defined in ACOM0014, for specific checks you may need to add to the sysprog List

Collection - Recollect

VCM will let you know if data for a specific check needs to be recollected.

Collection Hints

- Must have management support
- Collection questions can be printed via batch report
- You can set when data must be recollected
- DAYS_VALID specifies the number of days the collected data is valid before requiring a review. The range is 0 - 365, inclusive
- A value of 0 specifies that the collected data never expires, the default value is 30

Auto Data Collection

```
   Display  Help
  _____
                       Vanguard Configuration Manager    Row 1 to 13 of 21
  Command ===> _____   Scroll ===> PAGE

  DISA STIG 6.20 AAMV z/OS Operating System Environment

  Use F10 (Left) and F11 (Right) to swap between displays.
  Line commands:  C - Collect/Review    V - View Result      S - Select Results
                  E - Execute           R - Report           N - Comp Controls
                  X - Exclude


  Cmd Id        Vulid      Description
  ___ AAMV0010  V-82       Software Change Management Process
  ___ AAMV0012  V-7545     Operating System Software Releases
  ___ AAMV0014  V-7546     Operating System Software Support
  ___ AAMV0016  V-7547     DoD-CERT/VCTS Mailing List
  ___ AAMV0018  V-15209    Security Related Software Patches
  ___ AAMV0030  V-83       APF Libraries Parameter
  ___ AAMV0040  V-84       APF Libraries
  ___ AAMV0050  V-85       APF Library Duplicate Utilities
  ___ AAMV0060  V-86       APF Library AC=1 Modules
  ___ AAMV0160  V-90       Invalid Program Properties Table Entries
  ___ AAMV0325  V-5605     Link Pack Area (LPA) Libraries
  ___ AAMV0350  V-100      Linklist Libraries
  ___ AAMV0370  V-101      SMF Data Collection Options
          ⌖:00.3                   R 15 C 28   TNC2HI23
```

Not all checks require data collection, VCM will automatically gather the required data when the check is executed.

```
   Display  Help
  _____
                       Vanguard Configuration Manager    Row 1 to 13 of 21
  Command ===> _____   Scroll ===> PAGE
  DISA STIG 6.20 AAMV z/OS Operating System Environment

  Use F10 (Left) and F11 (Right) to swap between displays.
  Line commands:  C - Collect/Review    V - View Result      S - Select Results
                  E - Execute           R - Report           N - Comp Controls
                  X - Exclude

                  -- Collected/Reviewed --
  Cmd Id        Stat By        Date        Comp Controls
  ___ AAMV0010  Cur  WTBOURG   2015/02/20    No
  ___ AAMV0012  Cur  WTBOURG   2015/02/20    No
  ___ AAMV0014  Cur  WTBOURG   2015/02/20    No
  ___ AAMV0016  Cur  WTBOURG   2015/02/20    No
  ___ AAMV0018  Cur  WTBOURG   2015/02/20    No
  ___ AAMV0030  ---                          No
  ___ AAMV0040  --                           No
  ___ AAMV0050  ---                          No
  ___ AAMV0060  Cur  WTBOURG   2015/02/20    No
  ___ AAMV0160  ---                          No
  ___ AAMV0325  ---                          No
  ___ AAMV0350  ---                          No
  ___ AAMV0370  Cur  WTBOURG   2015/02/20    No
          ⌖:00.1                   R 27 C 28   TNC2HI23
```
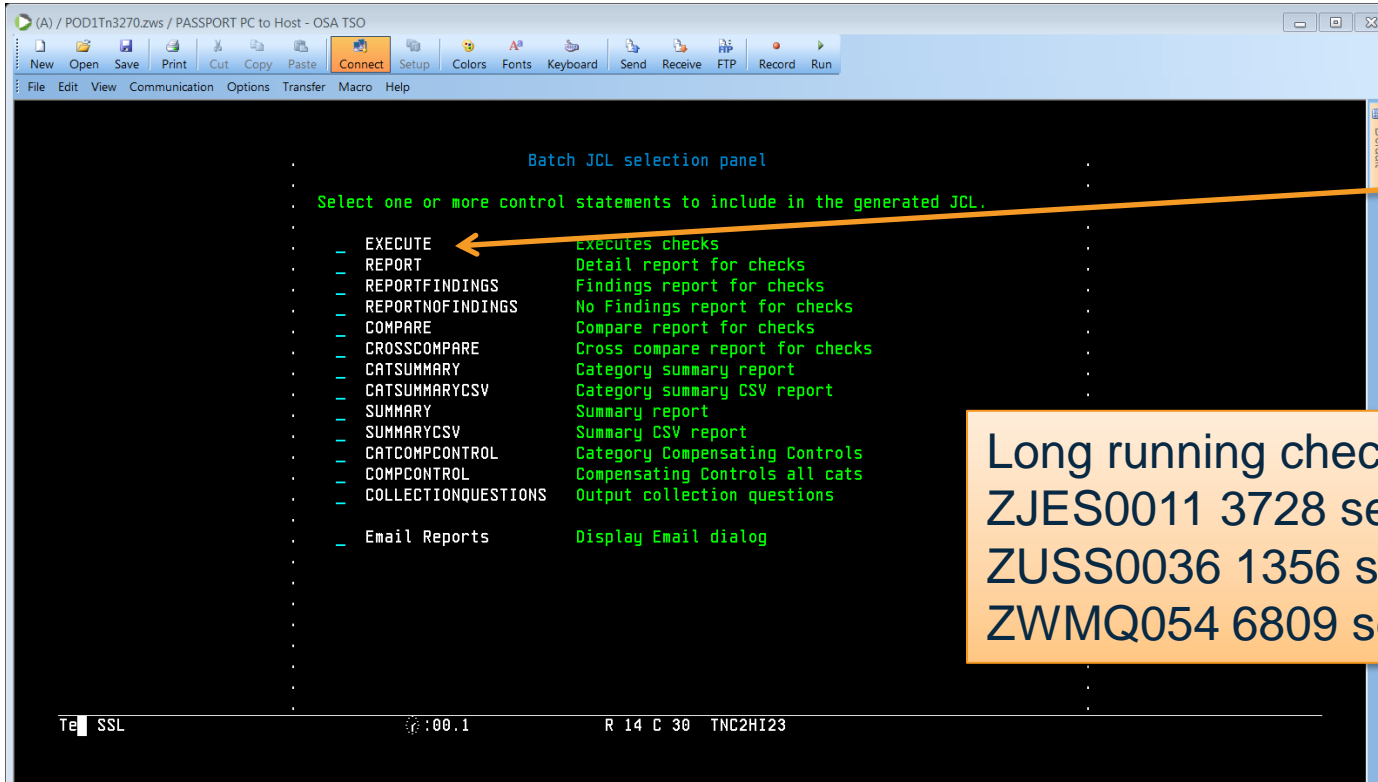
Collection in not required for checks that have --- in the Stat column.

PF11 takes you to the second screen.

Interactive Check Execution

E to execute check

Execution Counts

Batch Execution

Generates JCL

```
                            Batch JCL selection panel

        Select one or more control statements to include in the generated JCL.

          _  EXECUTE               Executes checks
          _  REPORT                Detail report for checks
          _  REPORTFINDINGS        Findings report for checks
          _  REPORTNOFINDINGS      No Findings report for checks
          _  COMPARE               Compare report for checks
          _  CROSSCOMPARE          Cross compare report for checks
          _  CATSUMMARY            Category summary report
          _  CATSUMMARYCSV         Category summary CSV report
          _  SUMMARY               Summary report
          _  SUMMARYCSV            Summary CSV report
          _  CATCOMPCONTROL        Category Compensating Controls
          _  COMPCONTROL           Compensating Controls all cats
          _  COLLECTIONQUESTIONS   Output collection questions

          _  Email Reports         Display Email dialog
```

Long running checks at US Bank:
ZJES0011 3728 seconds
ZUSS0036 1356 seconds
ZWMQ054 6809 seconds

VCM generates the JCL for executing all of the checks. Edit as required.

HINT:
//SYSTSIN DD *
PROFILE VARSTORAGE(HIGH)   <<< Help prevent some 878 abends
ISPSTART CMD(%VCMBATCH) NEWAPPL(VCM)

Vanguard Options

- Product settings VANOPTS(VCMOPT00)
- MAX_GENERATIONS(3)
  - Can be 1 to 20
- DETAIL_REPORT(SYS2.VCM.REPORTS.STIG616)

MAX_GENERATIONS specifies the maximum number of result generations to be saved for a check.

Value can be from 1 to 20

Will impact size of the results file

Reporting, Interactive

```
  Display   Help
─────────────────────────────────────────────────────────────────────────
                     Vanguard Configuration Manager      Row 1 to 13 of 35
Command ===> _____     Scroll ===> PAGE

DISA STIG 6.20 ACP  Security Server (RACF) for z/OS system data

Use F10 (Left) and F11 (Right) to swap between displays.
Line commands:  C - Collect/Review    V - View Result    S - Select Results
                E - Execute           R - Report         N - Comp Controls
                X - Exclude


Cmd Id         Vulid       Description
____ ACP00010 V-108       SYS1.PARMLIB
____ ACP00020 V-109       SYS1.LINKLIB
____ ACP00030 V-110       SYS1.SVCLIB
____ ACP00040 V-111       SYS1.IMAGELIB
____ ACP00050 V-112       SYS1.LPALIB
____ ACP00060 V-113       APF-Authorized Libraries
____ ACP00070 V-114       Link Pack Area (LPA) Libraries
____ ACP00080 V-115       SYS1.NUCLEUS
____ ACP00100 V-116       Libraries With PPT Modules
____ ACP00110 V-117       LINKLIST Libraries
____ ACP00120 V-118       ACP Files and Databases
____ ACP00130 V-119       Master Catalog
____ ACP00135 V-4850      User Catalogs
         :00.1               R 15 C 28   TNC2HI23
```

V to View a report with filtering switches

R to generate a report that can be searched & emailed

View the Report

Set switch to show msgs

No Info msgs will be displayed

N = Normal
F = Findings
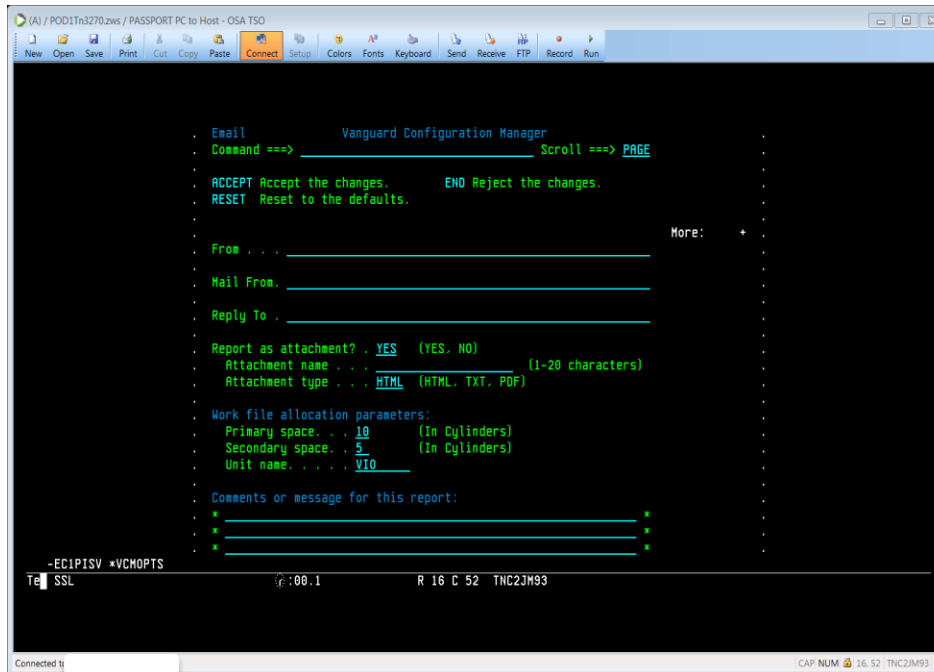C = Compensating Control

E = Errors
I = Informational

Generate a Report

VCM can also generate the JCL to create a report in batch.
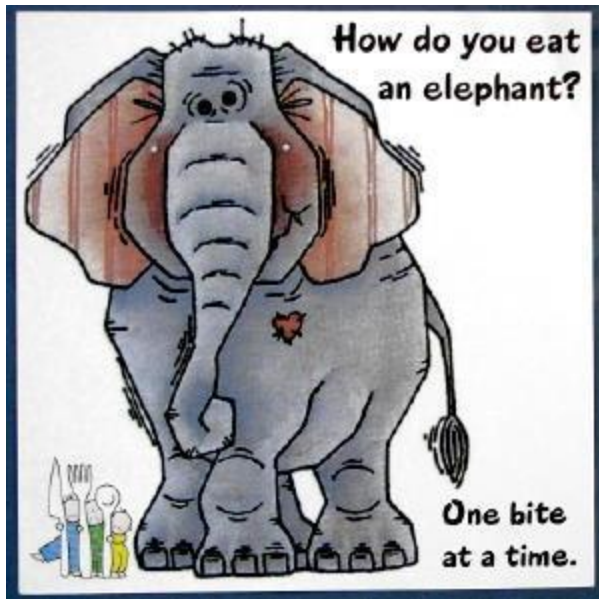
Convert Report to PDF

VANOPTS(EMAILOPT)

*   The following parameters are for PDF support

*   The TXT2PDF utility must be installed to use this feature.

*

* EMAILPDFLOAD(TXT2PDF load library)

* EMAILPDFEXEC(TXT2PDF exec library)

EMAILPDFLOAD(SYS7.XMITIP.LOAD)

EMAILPDFEXEC(SYS7.XMITIP.EXEC)

*

* EMAILPDFCONFIG(<HLQ>.VANSAMP)   Sequential or PDS dataset.

* EMAILPDFCONFIGM(PDFCONFG) EMAILPDFCONFIG is a PDS,

EMAILPDFCONFIG(SYS1.VANGUARD.VANOPTS)

EMAILPDFCONFIGM(PDFCONFG)

TXT2PDF and XMITIP can be found
at Lionel B Dyck's site:
http://www.lbdsoftware.com/

Three Choices

- Correct the reported finding
- Modify the collection data (if possible)
- Create a Compensating Control and/or a policy statement

Remediate

How do you eat an elephant? One bite at a time.

Some reports can be vary large
ACP Security Server (RACF) for z/OS system data
Check Title.: APF-Authorized Libraries
Check ID....: ACP00060

ACP0060 is about 300,000 lines.
Originally it had close to 100,000 findings.

View Report with only 'I' filter selected.
This will give a list of RACF profiles. Work one profile at a time.

Use DISA STIG Addendum as guidance.

Tools to Help
VRA – UserID in access list Report
SMF data
RACF Authority ****

Track your RFCs!

What did you do when?
"What happened to my access?!?!"

DISA STIG ADDENDUM

UNCLASSIFIED

z/OS

SECURITY TECHNICAL IMPLEMENTATION GUIDE

Addendum

Version 6 Release 16

26 July 2013

Developed by DISA for the DoD

Table 15 - Controls on z/OS System Commands

Referenced by: ACP00282, ZIOA0040

Command/Keyword	Access	Resource-Name	Auth	Log
ACTIVATE	UPDATE	MVS.ACTIVATE	a o s t	Y
CANCEL device	UPDATE	MVS.CANCEL.DEV.device	a o s t	Y
CANCEL jobname (others)	UPDATE	MVS.CANCEL.JOB.jobname	a o s t	Y
CANCEL jobname (own jobs)	UPDATE	MVS.CANCEL.JOB.jobname	*	Y
The previous commands are for jobs that are **not** a started tasks.				
CANCEL jobname.id	UPDATE	MVS.CANCEL.STC.mbrname.id	a o s t	Y
CANCEL id	UPDATE	MVS.CANCEL.STC.mbrname.id	a o s t	Y
The previous command is for a started task for which an identifier is provided.				
CANCEL jobname	UPDATE	MVS.CANCEL.STC.mbrname.jobname	a o s t	Y
The previous command is for a started task for which an identifier was **not** provided. mbrname is the name of the member containing the JCL source.				
CANCEL jobname	UPDATE	MVS.CANCEL.ATX.jobname	a o s t $	Y
The previous command is for APPC transaction programs.				
CANCEL U=userid	UPDATE	MVS.CANCEL.TSU.userid	a o s t $	Y
CHNGDUMP	UPDATE	MVS.CHNGDUMP	a o s t	Y
CMDS DISPLAY	READ	MVS.CMDS.DISPLAY	*	Y
CMDS SHOW	READ	MVS.CMDS.SHOW	*	Y
CMDS REMOVE	CONTROL	MVS.CMDS.REMOVE	a o s t	Y
CMDS ABEND	CONTROL	MVS.CMDS.ABEND	a o s t	Y
CONFIG	CONTROL	MVS.CONFIG	a o s t	Y
CONTROL	READ	MVS.CONTROL.A	*	
Note: The access authority for all CONTROL commands except CONTROL M is normally READ, but the L=name (console name) operand can change the access level. When L=name specifies a console that is not full-capability and is not the issuing console, the access authority is UPDATE. When L=name specifies a console that is full-capability and is not the issuing console, the access authority is CONTROL.				
CONTROL C	READ	MVS.CONTROL.C	*	
Note: See the note for the CONTROL A command for exceptions.				
CONTROL D	READ	MVS.CONTROL.D	*	
Note: See the note for the CONTROL A command for exceptions.				
CONTROL E	READ	MVS.CONTROL.E	*	
Note: See the note for the CONTROL A command for exceptions.				
CONTROL M	CONTROL	MVS.CONTROL.M	a c o s t	
CONTROL N	READ	MVS.CONTROL.N	*	

Contains background, guidance, definitions, and so on…

Download from Vanguard
https://www.go2vanguard.com/download_checklist1.php
Download from DISA Website
http://iase.disa.mil/stigs/os/mainframe/z_os.html

DISA STIG ADDENDUM

Referenced by: ACP00282, ZIOA0040

CONTROLS ON z/OS SYSTEM COMMANDS				
Command/Keyword	Access	Resource-Name	Auth	Log
ACTIVATE	UPDATE	MVS.ACTIVATE	a o s t	Y
CANCEL device	UPDATE	MVS.CANCEL.DEV.device	a o s t	Y
CANCEL jobname (others)	UPDATE	MVS.CANCEL.JOB.jobname	a o s t	Y
CANCEL jobname (own jobs)	UPDATE	MVS.CANCEL.JOB.jobname	*	Y

The previous commands are for jobs that are **not** a started tasks.

Auth column
a - AUTOAUDT, Automated operations.
c - CONSOLES, System consoles
d - DASDAUDT, Storage Management
o - OPERAUDT, Operations staff
s - SYSPAUDT, Systems Programming staff
t - TSTCAUDT, Trusted Started Tasks
* - All Users
$ - May be given to All Users using SDSF, CA Roscoe, and similar products that interface with a user's input/output requiring the issuing of console commands.

Java Viewer

Compensating Controls

But we are a Bank not the DOD!

Compensating Controls

N to open text box
to enter Compensating
Control

Re-execute the check, status changes to Comp Controls

Compensating Controls

The finding is still there;
Why the number will
never be zero
Msg IFTP0050-00C

VCM Filters

```
 Batch   Reports   Jobcard   Display   Help

                    Vanguard Configuration Manager      Row 1 to 16 of 26
 Command ===> _____    Scroll ===> PAGE
```

An X will hide the category

```
 Line commands:  S - Select category   R - Summary report   C - Comp Cntl report
                 X - Exclude           V - CSV report


 Cmd  Prefix     Category Description
 ____  ACOM      Common Configuration
 ____  AAMV      z/OS Operating System Environment
 ____  ACP       Security Server (RACF) for z/OS system data
 ____  IFTP      File Transfer Protocol
 ____  ISLG      z/OS UNIX SYSLOG
 ____  ITCP      TCP/IP Communications Server
 ____  ITNT      TN3270 Telnet Server
 x___  IUTN      z/OS UNIX Telnet Server
 ____  RACF      Security Server (RACF) Settings
 ____  ZCA1      CA-1 (Tape Management System)
 ____  ZCCS      CA Common Services
 ____  ZCIC      CICS Transaction Server
 ____  ZDBM      Database Management Systems
 ____  ZFDR      Fast Dump Restore
 ____  ZHCD      Hardware Configuration Definition
 ____  ZHCK      IBM Health Checker
        (r):00.5              R 19 C 29   TNC2HI23
```

Remove unwanted categories and individual checks from your display

VCM Filters

```
 Batch  Reports  Jobcard  Display  Help
───────────────────────────────────────────────────────────────────
                    Vanguard Configuration Manager      Row 1 to 16 of 25
Command ===> _____  Scroll ===> PAGE

DISA STIG 6.20

Line commands:  S - Select category   R - Summary report   C - Comp Cntl report
                X - Exclude           V - CSV report

Cmd  Prefix      Category Description
___   ACOM       Common Configuration
___   AAMV       z/OS Operating System Environment
___   ACP        Security Server (RACF) for z/OS system data
___   IFTP       File Transfer Protocol
___   ISLG       z/OS UNIX SYSLOG
___   ITCP       TCP/IP Communications Server
___   ITNT       TN3270 Telnet Server
___   RACF       Security Server (RACF) Settings
___   ZCA1       CA-1 (Tape Management System)
___   ZCCS       CA Common Services
___   ZCIC       CICS Transaction Server
___   ZDBM       Database Management Systems
___   ZFDR       Fast Dump Restore
___   ZHCD       Hardware Configuration Definition
___   ZHCK       IBM Health Checker
___   ZICS       Integrated Cryptographic Service Facility
───────────────────────────────────────────────────────────────────
      :00.4                    R 19 C 28   TNC2HI23
```

The IUNT z/OS UNIX Telnet Server category is now filtered from the display.

VCM Filters

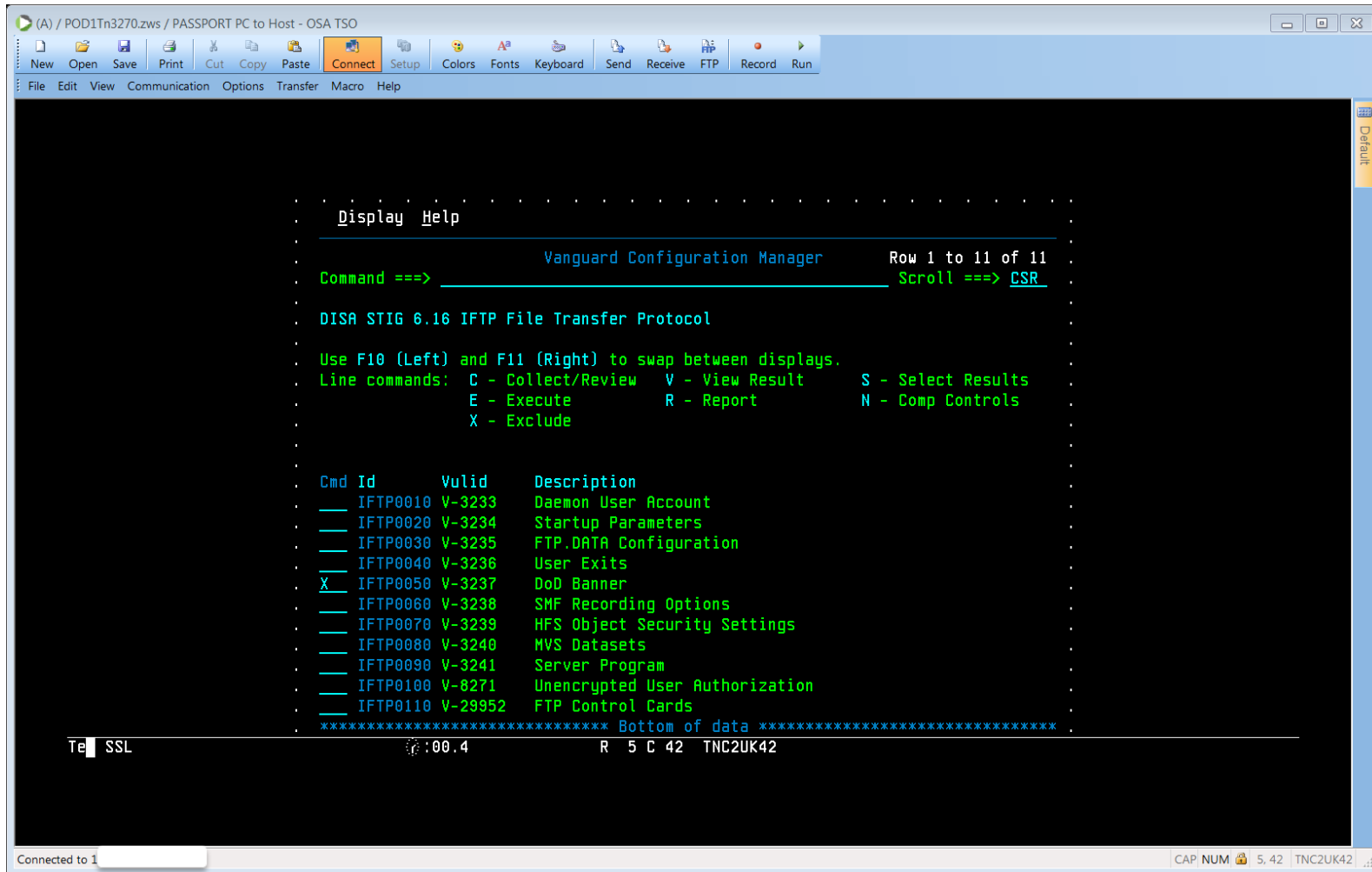

```
 Batch   Reports  Jobcard  Display  Help
 ─────────────────────────────────────────────────────────────────────────────
                               Var ┌─ 1. Sort...          anager    Row 1 to 16 of 48
 Command ===> _____ │ _ 2. Locate...                  Scroll ===> PAGE
                                  │    3. Hide/Show Excluded
 DISA STIG 6.20                   │    4. Hide/Show Commands
                                  └─────────────────────────┘
 Line commands:  S - Select category   R - Summary report   C - Comp Cntl report
                 X - Exclude           V - CSV report

 Cmd  Prefix     Category Description
 ____  ACOM       Common Configuration
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 ____  ISLG       z/OS UNIX SYSLOG
 ____  ITCP       TCP/IP Communications Server
 ____  ITNT       TN3270 Telnet Server
 ____  IUTN       z/OS UNIX Telnet Server                          Excluded
 ____  RACF       Security Server (RACF) Settings
 ____  ZADT       CA Auditor                                       Excluded
 ____  ZAID       Compuware Abend-AID                               Excluded
 ____  ZCA1       CA-1 (Tape Management System)
 ____  ZCCS       CA Common Services
 ____  ZCIC       CICS Transaction Server
 ____  ZCLS       CL/Supersession                                  Excluded
 ____  ZCSL       Catalog Solutions                                Excluded
         :00.3                      R 12 C 28   TNC2HI23
```

Use the Display drop down menu to see what is currently removed from the category list.

VCM Filters

X to exclude an individual check

VCM Compare

From main category list select using an S to get this panel
C is used to pick the new and old Gen to compare
CC is used for a cross stig level compare

Compare Results

Cross STIG Level Compare

More Information

- www.go2vanguard.com
- iase.disa.mil/stigs/

Stop by and visit us at Booth 607!