

Configuring Health Checker for z/OS Hands-on Lab

Gordon Daniel
NewEra Software, Inc.

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Introduction

Hopefully you have some knowledge of the Health Checker and what it does. If not, then you will learn quickly. Basically, the Health Check is a Started Task and you are going to configure it, start it, and direct some operator commands to it, just like any other Started Task.

Have fun here and go back and try it on your own system!

Hardware and Software for this Lab

- Lenovo T500 Laptop w/8G of real, 2 Intel cores @3gz (located off site)
- Internal Hard drive ½ TB + external ESATA drive 1.0 TB (both 7200 RPM)
- OpenSuse 11.2 Linux as the laptop OS
- IBM zPDT software with one CP license
- z/VM 6.1
- Six z/OS V1R11 virtual machines for this LAB

Agenda

- Workstation Setup
 - TN3270 #1 MVS Console
 - TN3270 #2 TSO Terminal
- Edit Health Checker Started Task Procedure (HZSPROC)
- Allocate Health Checker persistent data set
- Setup Security rules
- Start the Health Checker address space
- Review the Checks
- Issue MVS commands
- Use SDSF Health Checker panels

Agenda

- Health Checker Log
- Temporarily altering a specific Health Check
- Permanently altering a specific Health Check
- Review the details of a specific Health Check
- Stopping the Health Checker address space
- References
- Questions for the author

Workstation Setup

- You have your own z/OS Virtual Machine - ZSHRx
The x value will be given to you by the instructor. Write it down here: _____
- Make sure you have two 3270 sessions open on the workstation with a z/VM Logo
 - On the first z/VM session type ZSHRx for the userid and SHRx for the password
 - On the other z/VM session skip down to the command field and type DIAL ZSHRx
- The next slide will show what you should see

Workstation Setup

MVS Console

```

Session A - Local.WS - [43 x 80]
File Edit View Communication Actions Window Help
FOMN0090
*:login/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B0086
12.29.03 STC00016 BPXF024I (OMVSKERN) Feb 24 12:29:03 inetd 65542 :
FOMN0090
*:otelnets/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B0086
12.32.03 STC00016 BPXF024I (OMVSKERN) Feb 24 12:32:03 inetd 65542 :
FOMN0090
*:login/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B0086
12.32.03 STC00016 BPXF024I (OMVSKERN) Feb 24 12:32:03 inetd 65542 :
FOMN0090
*:otelnets/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B0086
12.35.03 STC00016 BPXF024I (OMVSKERN) Feb 24 12:35:03 inetd 65542 :
FOMN0090
*:login/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B0086
12.35.03 STC00016 BPXF024I (OMVSKERN) Feb 24 12:35:03 inetd 65542 :
FOMN0090
*:otelnets/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B0086
12.38.03 STC00016 BPXF024I (OMVSKERN) Feb 24 12:38:03 inetd 65542 :
FOMN0090
*:login/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B0086
12.38.03 STC00016 BPXF024I (OMVSKERN) Feb 24 12:38:03 inetd 65542 :
FOMN0090
*:otelnets/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B0086
00 12.41.03 STC00016 BPXF024I (OMVSKERN) Feb 24 12:41:03 inetd 65542 :
FOMN0090
*:login/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B0086
12.41.03 STC00016 BPXF024I (OMVSKERN) Feb 24 12:41:03 inetd 65542 :
FOMN0090
*:otelnets/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B0086
IEE612I CN=L700 DEVMUM=0700 SYS=ADCD

IEE163I MODE= RD
a 41/003
Connected to remote server/host: 192.168.251.5 us HP LaserJet 1020 on USB001
  
```

TSO Terminal

```

Session B - Local.WS - [24 x 80]
File Edit View Communication Actions Window Help
z/OS Z111S Level 1003
IP Address =
VTAM Terminal = LCL701

Application Developer System

// 0000000 SSSS
// 00 00 SS
zzzzzz // 00 00 SS
zz // 00 00 SSSS
zz // 00 00 SS
zz // 00 00 SS
zzzzzz // 0000000 SSSS

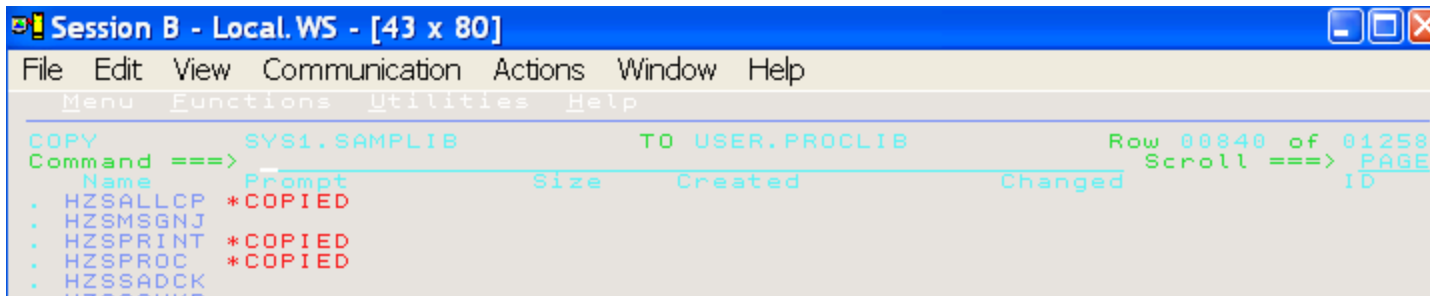
System Customization - ADCD.Z111S.*

==> Enter "LOGON" followed by the TSO userid. Example "LOGON IBMUSER" or
==> Enter L followed by the APPLID
==> Examples: "L TSO", "L CICS", "L IMS3270"

b 24/001
Connected to remote server/host: 192.168.251.5 using port: 3271 HP LaserJet 1020 on USB001
  
```

Health Checker Configuration

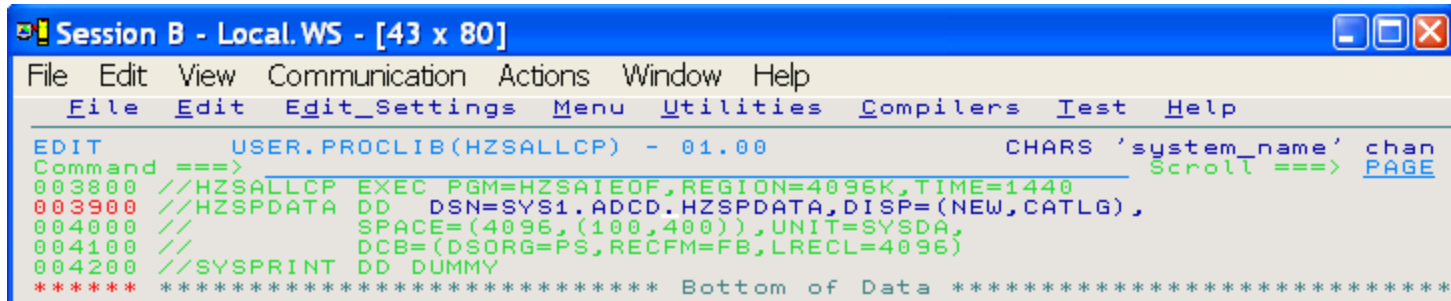
- On the TSO Terminal
 - Type TSO and hit Enter
 - On the Logon Screen
 - ADCDMST is the USERID
 - SHR x is the Password, where x is the number given to you
- Copy members HZSALLCP, HZSPRINT, and HZSPROC from SYS1.SAMPLIB to USER.PROCLIB



```
Session B - Local.WS - [43 x 80]
File Edit View Communication Actions Window Help
Menu Functions Utilities Help
COPY SYS1.SAMPLIB TO USER.PROCLIB Row 00840 of 01258
Command ==> Scroll ==> PAGE
Name Prompt Size Created Changed ID
. HZSALLCP *COPIED
. HZSMMSGNJ
. HZSPRINT *COPIED
. HZSPROC *COPIED
. HZSSADCK
. HZSCCCHK
```


Allocate the HZSPDATA dataset

- Edit member HZSALLCP in USER.PROCLIB
 - Change Line //HZSPDATA 'system_name' to 'ADCD'
 - The result should look like:



```
Session B - Local.WS - [43 x 80]
File Edit View Communication Actions Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT USER.PROCLIB(HZSALLCP) - 01.00 CHARS 'system_name' chan
Command ==> Scroll ==> PAGE
003800 //HZSALLCP EXEC PGM=HZSAIEOF,REGION=4096K,TIME=1440
003900 //HZSPDATA DD DSN=SYS1.ADCD.HZSPDATA,DISP=(NEW,CATLG),
004000 // SPACE=(4096,(100,400)),UNIT=SYSDA,
004100 // DCB=(DSORG=PS,RECFM=FB,LRECL=4096)
004200 //SYSPRINT DD DUMMY
***** Bottom of Data *****
```

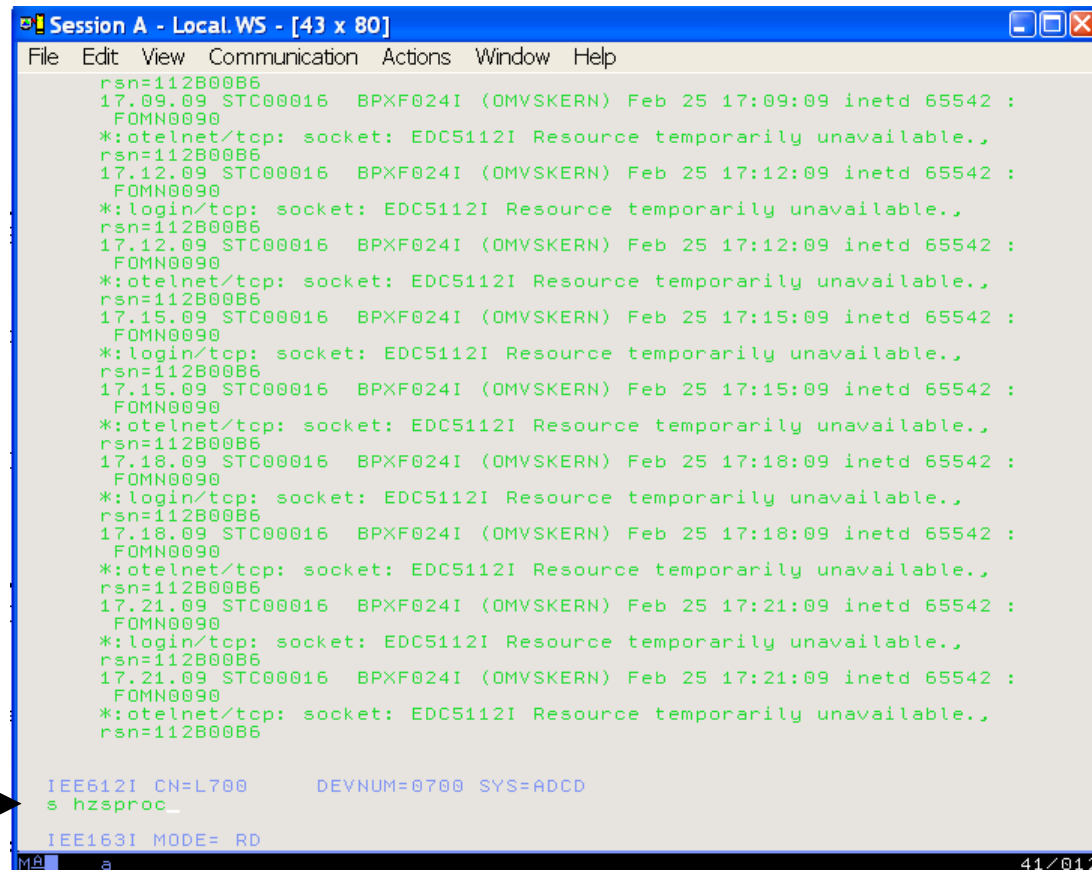
- Submit the JOB and check the output with SDSF. SDSF can be accessed via the “M” option on the ISPF Primary Option Menu

Security Setup

- The RACF definitions for the Health Checker and SDSF have been built for you for this lab. Since the lab system is your own sandbox we are going to let the user ADCDMST do just about everything. For your systems back home you really need to review the security definitions carefully.
 - Submit member BATHCK in USER.PROCLIB to do the RACF definitions for the Health Checker
 - Review the output from BATHCK for success
 - Submit member BATSDSF in USER.PROCLIB to do the RACF definitions for SDSF. The EXEC issued by this job is based on member ISFRAC which can be found in ISF.SISFEXEC
 - Review the output from BATSDSF for success

Starting the Health Checker

- Use the MVS Console to start the Health Checker



```
Session A - Local WS - [43 x 80]
File Edit View Communication Actions Window Help
rsn=112B00B6
17.09.09 STC00016 BPXF024I (OMVSKERN) Feb 25 17:09:09 inetd 65542 :
FOMN0090
*:otelnets/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B00B6
17.12.09 STC00016 BPXF024I (OMVSKERN) Feb 25 17:12:09 inetd 65542 :
FOMN0090
*:login/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B00B6
17.12.09 STC00016 BPXF024I (OMVSKERN) Feb 25 17:12:09 inetd 65542 :
FOMN0090
*:otelnets/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B00B6
17.15.09 STC00016 BPXF024I (OMVSKERN) Feb 25 17:15:09 inetd 65542 :
FOMN0090
*:login/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B00B6
17.15.09 STC00016 BPXF024I (OMVSKERN) Feb 25 17:15:09 inetd 65542 :
FOMN0090
*:otelnets/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B00B6
17.18.09 STC00016 BPXF024I (OMVSKERN) Feb 25 17:18:09 inetd 65542 :
FOMN0090
*:login/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B00B6
17.18.09 STC00016 BPXF024I (OMVSKERN) Feb 25 17:18:09 inetd 65542 :
FOMN0090
*:otelnets/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B00B6
17.21.09 STC00016 BPXF024I (OMVSKERN) Feb 25 17:21:09 inetd 65542 :
FOMN0090
*:login/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B00B6
17.21.09 STC00016 BPXF024I (OMVSKERN) Feb 25 17:21:09 inetd 65542 :
FOMN0090
*:otelnets/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B00B6

IEE612I CN=L700      DEVNUM=0700 SYS=ADCD
s hzsproc_
IEE163I MODE= RD
MA a 41/012
```

Health Checker Messages on the Console

- Note the critical Health Checks are show in red. These indicate that these messages will remain on the console until deleted.

```
17.57.25 STC00010 HZS0001I CHECK(IBMFDSE,FDSE_SMSPDSE1).
IGWPH0101E Check PDSE_SMSPDSE1,the restartable SMSPDSE1
address space is not active.
*17.57.26 STC00018 *HZS0003E CHECK(IBMXCF,XCF_CDS_SPOF):
*IXCH0242E One or more couple data sets have a single point of failure.
17.57.26 STC00018 HZS0002E CHECK(IBMASM,ASM_PLPA_COMMON_SIZE):
ILRH0105E PLPA/Common page data set size is below recommended value
17.57.26 STC00018 HZS0001I CHECK(IBMASM,ASM_NUMBER_LOCAL_DATASETS):
ILRH0101E Number of local page data sets is below recommended value
17.57.25 STC00018 HZS0002E CHECK(IBMXCF,XCF_TCLASS_CLASSLEN):
IXCH0420E Transport class definitions do not provide sufficient size
segregation.
17.57.26 STC00018 HZS0001I CHECK(IBMRSR,RSM_REAL):
IARH101E V=R Storage is Defined
17.57.29 STC00018 HZS0001I CHECK(IBMCSV,CSV_LNKLST_SPACE):
CSVH0980E Some LNKLST sets include data set(s) allocated with
secondary space defined.
*17.57.30 STC00018 *HZS0003E CHECK(IBMRACT,RACF_SENSITIVE_RESOURCES):
*IRRH204E The RACF_SENSITIVE_RESOURCES check has found one or
*more potential errors in the security controls on this system.
18.00.10 STC00016 BPXF024I (OMVSKERN) Feb 25 18:00:10 inetd 65542 :
FOMN0090
*:login/tcp: socket: EDC5112I Resource temporarily unavailable.,
rsn=112B00B6
```

Displaying Check Details on the Console using the MVS Modify Command

- Let's look at the details for the first one by entering:

```
f hzsproc,display,checks,check=(IBMXCF,XCF_CDS_SPOF),details
```

```
CHECK(IBMXCF,XCF_CDS_SPOF)
STATE: ACTIVE(ENABLED)           STATUS: EXCEPTION-HIGH
EXITRTN: IXCHCADC
LAST RAN: 02/25/2011 17:57       NEXT SCHEDULED: 02/25/2011 18:57
INTERVAL: 1:00
EXCEPTION INTERVAL: SYSTEM
SEVERITY: HIGH
WTOTYPE: CRITICAL EVENTUAL ACTION
SYSTEM DESC CODE: 11
THERE ARE NO PARAMETERS FOR THIS CHECK
REASON FOR CHECK:  Ensure that couple data sets are configured
                    without single points of failure.

MODIFIED BY: N/A
DEFAULT DATE: 20070730
ORIGIN: HZSADDCK
LOCALE: HZSPROC
DEBUG MODE: OFF  VERBOSE MODE: NO
```

More Modify Commands

- The reason for the check is that your Couple Datasets are all on the same volume. You may issue a D XCF,COUPLE command on the MVS console and see that the datasets are all on SBRES2
- Separation of the Couple Datasets is critical for a production system, but this is your sandbox with a limited number of dasd volumes available. Let's say you want to keep the check as a reminder, but don't want it to clutter up your console. You can change the check's WTO options so the message will not remain in red on the console

- Issue the command:

```
f hzsproc,update,check=(IBMXCF,XCF_CDS_SPOF),wtotype=informational
```

This won't take effect until the check runs again, but we can run it now by this command:

```
f hzsproc,run,check=(IBMXCF,XCF_CDS_SPOF)
```

- Take a look at the MVS Console now and you will see the check is no longer red

Using SDSF to control Health Checker

- SDSF is the spool output processor on this system. You may use a different software product on your system back home. If you do, then check the documentation for that software to see how it supports the Health Checker.
- To access SDSF select the “M” option on the ISPF Primary Option Menu and then select “5” to enter SDSF.



```
Session A - Local.WS - [43 x 80]
File Edit View Communication Actions Window Help
Display Filter View Print Options Help
-----
HQX7760 ----- SDSF PRIMARY OPTION MENU ----- SCROLL ==> PAGE
COMMAND INPUT ==> _

DA Active users          INIT Initiators
I  Input queue          PR  Printers
O  Output queue         PUN Punches
H  Held output queue    RDR Readers
ST Status of jobs       LINE Lines
                               NODE Nodes
LOG System log          SO  Spool offload
SR System requests      SP  Spool volumes
MAS Members in the MAS  RM  Resource monitor
JC Job classes          CK  Health checker
SE Scheduling environments
RES WLM resources
ENC Enclaves
PS Processes
END Exit SDSF

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```

SDSF CK Command

- Enter “CK” to view the Health Check Panel. This shows all of the active Health Checks.
- Press PF1 to get the Health Check Help Panel.
- Enter “2” to view the CK command syntax.
- Press ENTER to view the format of the CK command

```
HELP: Health Checker Panel -- CK Command      Panel 2 of 3
COMMAND INPUT ==> _
Format: CK (category|E|EH|EM|EL|EN|D|ALL)
with no parameters displays active checks.
category shows only checks for that category. The value
can include * (any string of characters) or %
(any single character).
E displays all exception checks, with these variations:
EH - exception-high
EM - exception-medium
EL - exception-low
EN - exception-none
D displays deleted checks.
ALL displays deleted as well as active checks.
```


Display only Checks with Exceptions using SDSF “CK E” Command

- Press PF3 to return to the previous panel.
- Enter “CK E” on the command line. This will list just the Health Checks with Exception Status

```

SDSF HEALTH CHECKER DISPLAY ADCD                LINE 1-19 (19)
COMMAND INPUT ==> _                            SCROLL ==> PAGE
NP  NAME                                         CheckOwner      State           Status
ASM_NUMBER_LOCAL_DATASETS                      IBMASM          ACTIVE(ENABLED) EXCEPTIO
ASM_PLPA_COMMON_SIZE                          IBMASM          ACTIVE(ENABLED) EXCEPTIO
CEE_USING_LE_PARMLIB                          IBMCEE          ACTIVE(ENABLED) EXCEPTIO
CNZ_AMRF_EVENTUAL_ACTION_MSGS                 IBMCNZ          ACTIVE(ENABLED) EXCEPTIO
CNZ_CONSOLE_ROUTCODE_11                      IBMCNZ          ACTIVE(ENABLED) EXCEPTIO
CSV_LNKLST_SPACE                              IBMCSV          ACTIVE(ENABLED) EXCEPTIO
CSVTAM_VIT_DSPSIZE                            IBMCS          ACTIVE(ENABLED) EXCEPTIO
PDSE_SMSPDSE1                                 IBMPDSE        ACTIVE(ENABLED) EXCEPTIO
RACF_IBMUSER_REVOKED                          IBMRACF        ACTIVE(ENABLED) EXCEPTIO
RACF_SENSITIVE_RESOURCES                     IBMRACF        ACTIVE(ENABLED) EXCEPTIO
RACF_TAPEVOL_ACTIVE                          IBMRACF        ACTIVE(ENABLED) EXCEPTIO
RACF_TEMPDSN_ACTIVE                          IBMRACF        ACTIVE(ENABLED) EXCEPTIO
RACF_UNIXPRIV_ACTIVE                         IBMRACF        ACTIVE(ENABLED) EXCEPTIO
RSM_REAL                                      IBMRSM         ACTIVE(ENABLED) EXCEPTIO
RTM IEAVTRML                                  IBMRTM         ACTIVE(ENABLED) EXCEPTIO
TSOE_USERLOGS                                 IBMTSOE        ACTIVE(ENABLED) EXCEPTIO
USS_MAXSOCKETS_MAXFILEPROC                   IBMUSS         ACTIVE(ENABLED) EXCEPTIO
XCF_CDS_SPOF                                  IBMXCF         ACTIVE(ENABLED) EXCEPTIO
XCF_TCLASS_CLASSLEN                          IBMXCF         ACTIVE(ENABLED) EXCEPTIO

```

SDSF CK Command / Syntax

- Enter “CK EH” to show only the Health Checks with high-severity Exceptions

```
SDSF HEALTH CHECKER DISPLAY ADCD                LINE 1-2 (2)
COMMAND INPUT ==>                               SCROLL ==> PAGE
NP  NAME                                         CheckOwner   State         Status
    RACF_SENSITIVE_RESOURCES                   IBMRACF      ACTIVE(ENABLED)  EXCEPTIO
    XCF_CDS_SPOF                               IBMXCF       ACTIVE(ENABLED)  EXCEPTIO
```

- Press PF1 to view the HELP Panel
- Enter “3” to get the syntax of the Action Characters

```
Action characters that can be entered in the NP column
by authorized users are:

//      Block repeat; type // on the first row and
        another // on the last row to be processed
=       Repeat previous action character or overwrite
+       Expand the NP column. (Use RESET to reset.)
A       Activate
D       Display
DL      Display long
DP      Display policies
DPD     Display policies that are outdated and not applied
DS      Display status
E       Refresh
H       Deactivate
```

SDSF Health Check Line Commands

- Enter “DL” on the line with XCF_CDS_XPOF. DL means “Display Long”

```
SDSF HEALTH CHECKER DISPLAY ADCD          LINE 1-2 (2)
COMMAND INPUT ===>                        SCROLL ===> PAGE
NP      NAME                               CheckOwner   State         Status
      RACF_SENSITIVE_RESOURCES           IBMRACF      ACTIVE(ENABLED) EXCEPTIO
DL_    XCF_CDS_SPOF                       IBMXCF       ACTIVE(ENABLED) EXCEPTIO
```

SDSF Display Check Details

You should see the following output. Note how this looks very much like the MVS Console output of:

```
f hzsproc,display,checks,check=(IBMXCF,XCF_CDS_SPOF),details
```

```
HZS0201I 23.59.55 CHECK DETAIL          109
CHECK(IBMXCF,XCF_CDS_SPOF)
STATE: ACTIVE(ENABLED)                   STATUS: EXCEPTION-HIGH
EXITRTN: IXCHCADC
LAST RAN: 02/28/2011 23:10      NEXT SCHEDULED: 03/01/2011 00:10
INTERVAL: 1:00
EXCEPTION INTERVAL: SYSTEM
SEVERITY: HIGH
WTOTYPE: CRITICAL EVENTUAL ACTION
SYSTEM DESC CODE: 11
THERE ARE NO PARAMETERS FOR THIS CHECK
REASON FOR CHECK:  Ensure that couple data sets are configured
                    without single points of failure.
MODIFIED BY: N/A
DEFAULT DATE: 20070730
ORIGIN: HZSADDCK
LOCALE: HZSPROC
DEBUG MODE: OFF  VERBOSE MODE: NO
```

SDSF CK Command Scrolling

- On the command line Enter “CK EH” again to view those checks
- You can scroll to the right using to view more information about the checks. Press PF11 three times and you will see “TOType” on the header line. Type “1” in the Command Input and press PF10 to scroll back one column and you should see this:

```
SDSF HEALTH CHECKER DISPLAY  ADCD                                LINE 1-2 (2)
COMMAND INPUT ===> _                                           SCROLL ===> PAGE
NP      NAME                                                    WTOType   ModifiedBy   PolicyStatus
      RACF_SENSITIVE_RESOURCES  CRITICAL
      XCF_CDS_SPOF              INFO      MODIFY COMMAND
```

- Note the indication that our earlier MVS console Modify Command changed the WTOType

Temporary Check Alteration and Running using SDSF

- Press PF11 a few times while you look at the information that is displayed. Note that the **green** fields are input fields that you are allowed to change. Press PF10 to scroll back to the left until you return to the WTOType field. Overtyping the INFO with CRITICAL and Press Enter.

```
SDSF HEALTH CHECKER DISPLAY ADCD                               LINE 1-2 (2)
COMMAND INPUT ===> _                                         SCROLL ===> PAGE
NP  NAME                                                    WTOType  ModifiedBy  Pol
   RACF_SENSITIVE_RESOURCES                                CRITICAL
   XCF_CDS_SPOF                                           CRITICAL  MODIFY COMMAND
```

- Just as in the MVS console command the WTOType has been changed, but it won't take effect until the next time the check runs. You can run it now by typing an "R" in the NP field next to the check and Press Enter. Now look at the MVS Console and you will again see the messages for that Health Check in red.

```
NP  NAME                               CheckOwner  State                Status
r_  RACF_SENSITIVE_RESOURCES            IBMRACF      ACTIVE(ENABLED)     EXCEPTION-HIG
   XCF_CDS_SPOF                         IBMXCF       ACTIVE(ENABLED)     EXCEPTION-HIG
```

Printing Health Check Results via a Batch JOB

- The HZSPRINT utility may be used to print the results of Health Checks with a batch job
- Go back and Edit USER.PROCLIB again
 - Select member HZSPRINT
 - Scroll down to the //HZSPRINT EXEC PGM=HZSPRINT line
 - You will see several options to use; most are commented out
 - Let's print all of the Health Checks that have Exceptions
 - Change the data to look like this:

```
//HZSPRINT EXEC PGM=HZSPRINT,TIME=1440,REGION=0M,  
//  PARM=('CHECK(*,*)','EXCEPTIONS')
```
- Submit the job
- Review the output with SDSF

Making Permanent Modifications to Checks

- We are going to make the temporary change to the WTOTYPE that we make earlier a permanent change
- Create a new member, HZSPRM01, in USER.PARMLIB with the following contents:

```
EDIT          USER.PARMLIB(HZSPRM01) - 01.02          Columns 00001 00072
Command ==> _____ Scroll ==> PAGE
***** ***** Top of Data *****
000001  ADDREPLACE POLICY STMT(POL1) UPDATE,
000002  CHECK(IBMxcf,XCF_CDS_SPOF),
000003  WTOTYPE(INFORMATIONAL),
000004  REASON('CHANGE WTO'),
000005  DATE('20110228')
***** ***** Bottom of Data *****
```


Making Changes to Checks Permanent: Adding new Parmlib Member

- Activate the new member using the Health Checker Modify Command on the MVS Console using this command:

```
f hzsproc,add,parmlib=01
```

- You should see the following response:

```
00- 22.07.22          F HZSPROC,ADD,PARMLIB=01
      22.07.22 STC00028 HZS0403I ADD PARMLIB PROCESSING HAS BEEN COMPLETED
IEE612I CN=L700      DEVNUM=0700 SYS=ADCD
-
IEE163I MODE= RD
```

Making Changes to Checks Permanent: Updating the Health Checker Proc

- To make the Health Checker use this new Parmlib Member in addition to the default HZSPRM00 member when the Health Checker is restarted, the PROC must be updated.
- Edit HZSPROC in USER.PROCLIB and change the HZSPARM value from 00 to (00,01). See below:

```
000038 //*****  
000039 //HZSPROC  PROC HZSPRM='(00,01)'  
000040 //HZSTEP  EXEC  PGM=HZSINIT,REGION=0K,TIME=NOLIMIT,  
000041 //          PARM='SET PARMLIB=&HZSPRM'  
000042 //HZSPDATA DD   DSN=SYS1.&SYSNAME..HZSPDATA,DISP=OLD
```

- Now let's stop and restart the Health Checker to make sure the change is permanent.

Stopping the Health Checker

- On the MVS Console Enter “P HZSPROC”
- Watch the Health Checker wait for all the Checks to terminate prior to ending

Restart the Health Checker and Verify the Change

- On the MVS Console Enter “S HZSPROC”
- Wait a few seconds for the Checks to complete
- Let’s look at the details to verify that our change worked by entering:

```
f hzsproc,display,checks,check=(IBMXCF,XCF_CDS_SPOF),details
```

```
22.25.30          f hzsproc,display,checks,check=(IBMXCF,XCF_CDS_SPOF),
details
22.25.30 STC00028  HZS02011 22.25.30 CHECK DETAIL      498
CHECK(IBMXCF,XCF_CDS_SPOF)
STATE: ACTIVE(ENABLED)           STATUS: EXCEPTION-HIGH
EXITRTN: IXCHCADC
LAST RAN: 03/01/2011 21:56      NEXT SCHEDULED: 03/01/2011 22:56
INTERVAL: 1:00
EXCEPTION INTERVAL: SYSTEM
SEVERITY: HIGH
WTOTYPE: INFORMATIONAL
SYSTEM_DESCCODE: 12
THERE ARE NO PARAMETERS FOR THIS CHECK
REASON FOR CHECK:  Ensure that couple data sets are configured
                    without single points of failure.
MODIFIED BY: STMT(POL1)
REASON FOR UPDATE: CHANGE WTO
DEFAULT DATE: 20070730  USER DATE: 20110228
ORIGIN: HZSADDCK
LOCALE: HZSPROC
DEBUG MODE: OFF  VERBOSE MODE: NO
121 CN=1700      DEVNUM=0700 SYS=ADCD
```

Free Time

- If you have time go back to the HZSPRINT output and look at the RACF Sensitive Resource Check. This type of check contains reports in addition to the normal check output. These are important checks that show potential integrity exposures
- Feel free to look at some of the other Health Checks

Reference: BATHCK JOB

EDIT USER.PROCLIB(BATHCK) - 01.00 Columns 00001 00072

Command ==> Scroll ==> PAGE

***** Top of Data *****

```
000100 //BATHCK JOB (),
000200 // CLASS=A,
000300 // MSGCLASS=X,
000400 // MSGLEVEL=(1,1),
000500 // NOTIFY=&SYSUID,
000600 // TIME=1440
000610 /*
000620 /* SETUP AUTHORIZATIONS FOR HEALTH CHECKER
000630 /*
000640 //S1 EXEC PGM=IKJEFT01
000800 //SYSPRINT DD SYSOUT=*
000900 //SYSTSPRT DD SYSOUT=*
001000 //SYSTEM DD DUMMY
001100 //SYSUADS DD DSN=SYS1.UADS,DISP=SHR
001200 //SYSLBC DD DSN=SYS1.BROADCAST,DISP=SHR
001300 //SYSTSIN DD *
001400 RDEFINE XFACILIT HZS.** UACC(NONE)
001500 PERMIT HZS.** CLASS(XFACILIT) ID(ADCDMST) ACCESS(CONTROL)
001600 PERMIT HZS.** CLASS(XFACILIT) ID(IBMUSER) ACCESS(CONTROL)
001700 SETROPTS REFRESH RACLIST(XFACILIT)
```

***** Bottom of Data *****

Reference: BATSDSF JOB

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Command ==>

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```
000100 //BATSDSF JOB (),
000200 // CLASS=A,
000300 // MSGCLASS=X,
000400 // MSGLEVEL=(1,1),
000500 // NOTIFY=&SYSUID,
000600 // TIME=1440
000610 //*
000620 //* SETUP AUTHORIZATIONS FOR SDSF
000630 //*
000700 //S1 EXEC PGM=IKJEFT01
000800 //SYSPRINT DD SYSOUT=*
000802 //SYSTSPRT DD SYSOUT=*
000803 //SYSTSIN DD *
000804 EX 'ADCDMST.EXEC(ISFRAC)' L
```

***** Bottom of Data *****

Reference List

- IBM Health Checker for z/OS User's Guide
- Exploiting the IBM Health Checker for z/OS Infrastructure (IBM Red paper – see www.redbooks.ibm.com)
- Configuring the z/OS UNIX Health Checks and Exploiting UNIX REXX Functions (a very good introduction to the Health Checker in general – see Share proceedings from 2008 San Jose)
- Lots more on Google

Follow Up

If you have any questions and you wish to contact me:

NewEra Software

Gordon Daniel

gordon@newera.com

I will be happy to try to answer any questions!