

Session 14254

# **Common z/OS Problems You Can Avoid** **(or explained)**



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# Contents

- A Reminder: IBM Health Checker for z/OS
- CDS Inconsistency
- OMVS Services failing
- ICSF/Crypto Master Keys
- Logger CF Structure
- PFA INI JAVAPATH
- FTP'ing problem documentation
- RASP using AUX slots
- RSU in IEASYSxx
- PROGxx REFRPROT
- SDUMP AUXMGMT issues

## A Reminder: Health Checker for z/OS

- **To avoid common z/OS problems:** run the IBM Health Checker for z/OS!
  - Session 14298 (Tuesday 11:00am)  
IBM Health Checker for z/OS - Intro and next steps
  - Session 14232 (Tuesday 1:30pm)  
Health Checker for z/OS 2.1 Update

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4

IBM Health Checker for z/OS is a component of MVS that identifies potential problems before they impact your availability or, in worst cases, cause outages. It checks the current active z/OS and sysplex settings and definitions for a system and compares the values to those suggested by IBM or defined by you. It is not meant to be a diagnostic or monitoring tool, but rather a continuously running preventative that finds deviations from best practices. IBM Health Checker for z/OS produces output in the form of detailed messages to let you know of both potential problems and suggested actions to take.

# CDS Inconsistency

- **Problem**: Sysplex or multi-system outage due to Sysplex CDS inconsistency. Possibly WAIT08C or WAIT0A2 on some or all of the systems in the sysplex.
  - Problem occurred after moving volume containing the Sysplex CDS's on some systems (but other systems in the sysplex are not aware of the change)
  - XCF's knowledge of its CDS's is 'split' which can result in CDS data corruption and systems/sysplex outage
  - Similar issue can occur with other components' CDS's

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Some products such as zDMF migrate system or sysplex datasets. Extreme caution must be used when using such products against CDS's. If some systems in the sysplex start using the 'new' physical CDS's while other systems continue to write to the 'old' physical CDS's then data corruption or CDS inconsistencies may result.

The impact of 'splitting' XCF's knowledge of the CDS's varies depending on what updates are done during the timeframe of the split. Wait states on some or all the systems usually occur.

# CDS Inconsistency

- **What-to-do**: Follow CDS best practices to avoid problems and disasters.
  - New! White Paper on CDS Best Practices  
<http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/WP102281>
  - Session 14229 (Monday 4:30pm)  
Sysplex Infrastructure: The Care and Feeding of Couple Datasets

Please review the above paper and session material to follow the best practices for CDS's. This will help to avoid disasters in your systems.

# OMVS Services failing

- **Problem**: OMVS services failing due to non-zero return code from RACF.
  - Problem is a result of some userid(s) with UID(0) but its default RACF group does not have a GID
  - Some program that needs UID(0) will have OMVS invoked RACF to find out who UID(0) is. If RACF finds this incomplete userid first it will return a non-zero return code since there is no GID
  - This can cause a variety of problems that are not particularly easy to figure out

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In most z/OS systems, there are always multiple userids with UID(0).

If a UID(0) userid is created or altered so that their RACF Default group does not have a GID, then the RACF commands will get a message like:

```
ICH21035I USER XXXX IS ASSIGNED AN OMVS UID, BUT DEFAULT GROUP  
XXXXGRP DOES NOT HAVE A GID. PROCESSING CONTINUES.
```

What can happen is that some program that needs UID(0) will at some point have OMVS asks RACF who UID(0) is. If this incomplete userid happens to be found first by RACF, then RACF sees that the Default Group has no GID and gives back a non-zero return code because the userid's OMVS definition is incomplete.

This can cause a variety of problems that are not particularly easy to figure out.

# OMVS Services failing

- **What-to-do:**

- Assign a GID to userids with UID(0)
- Or, migrate your RACF database to Stage 2 or Stage 3 (with OA39645 applied)
  - RACF can then provide a consistent answer on who UID(0) is
  - Health checks: RACF\_AIM\_STAGE and RACF\_UNIX\_ID (shipped in OA37164)

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In RACF, the database has a "stage" level, 0 thru 3. You move it via the IRRIRA00 utility.

Once at Stage 2 or Stage 3 (with APAR OA39645), RACF can guarantee that any request to translate a UID or GID will result in the same answer any time. Customers who are not in those environment are not guaranteed a consistent answer.



# ICSF/Crypto Master Keys

- **Problem**: Unable to use the old key datasets (CKDS and PKDS) after migration to a new machine.
  - On a new machine, if the old key datasets are to be used, the original Master Keys are needed
  - If the Master Keys are forgotten, these old key datasets cannot be used
  - At this point the only option left is to power up the old machine and enter new Master Keys and re-encipher

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When customers using ICSF migrate to a new mainframe, they usually want to continue to use their existing Key Data Sets (ie, CKDS and PKDS). To use these datasets on the new box, you need to enter the correct Master Keys, DES & AES for the CKDS, and RSA & ECC for the PKDS. If the master keys are forgotten then these Key Data Sets can't be used and all of the keys in those Key Data Sets can't be used.

If the Master Keys are forgotten/lost the only option is to power up the old box and enter new Master Keys and re-encipher.

# ICSF/Crypto Master Keys

- **What-to-do:**
  - Remember the Master Keys (or find them) prior to the migration to a new machine
  - If the Master Keys are forgotten, you need to enter new Master Keys and re-encipher on the old machine first

## Logger CF Structure

- **Problem**: There are three flavors when System Logger encounters a size issue with the log structure.
  - Sufficient to allow the connection, but future connections may fail (**IXG201I**)
  - Structure is too small and is below the CF minimum size where the connect cannot be completed (**IXG206I/IXG207I**)
  - Structure is too large and may result in exaggerated offload times

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Structures which are too large may lead to various efficiency issues... Allocation or Offload may take too long to complete, backing up other work.

## Logger CF Structure

- **IXG201I** REQUEST TO CONNECT TO LOGSTREAM DFHLGR32.SNEAPRMS.DFHJ00 IN STRUCTURE DFHLGR32 ACCEPTED. CONNECTION TO ADDITIONAL LOGSTREAMS MAY FAIL DUE TO INSUFFICIENT STRUCTURE STORAGE
- **IXG206I** CONNECT FAILED FOR LOGSTREAM HLM.MESSAGE.LOG IN STRUCTURE HLM\_LOG. NO SUITABLE COUPLING FACILITY FOUND.
- **IXG207I** CF NAME: ST132 REASON CODE: 00000007 CF MINIMUM SIZE: 9216K BYTES.

# Use the Logger CFSizer!

**<http://www-947.ibm.com/systems/support/z/cfsizer/>**

- **System z Coupling Facility Structure Sizer Tool (CFSizer).**  
CFSizer is a web-based application that will return structure sizes based on the latest CFLEVEL for the IBM products that exploit the coupling facility.
  - Easy to use
  - Minimal input data required
  - Specify peak usage input
- **Sizing for:** APPC, BatchPipes, CICS, CommServer, DB2, DFSMSshm Common Recall Queue, Enhanced Catalog Sharing, GRS, HealthChecker, IBM Sessions Manager, IMS, InfoSphere, JES, Logrec, MQSeries, OEM, Operlog, RACF, RRS, SMF, TAPE, VSAM RLS, WLM, XCF.

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The purpose of the application is to provide an easy-to-use interface that will calculate the structure sizes for you based on some minimum input data that you provide that represents your expected usage of the structure-owning product. The inputs you supply should correspond to your expected peak usage of the product. It is generally good practice to slightly overspecify your peak values, to produce a sizing recommendation slightly larger than absolutely necessary. This will provide some room for growth, and help avoid failures caused by insufficient structure sizes.

## Defining the Logger CF Structure

- **Recommendation**: specify ALLOWAUTOALT(NO) when defining the logger CF structures in the CFRM policy.
  - ALLOWAUTOALT(YES) will allow XES to automatically adjust the structure size and entry/element ratio
  - Logger has its own internal routines to perform similar functions (and also to offload data from the structure to DASD)
  - Having XES and Logger both trying to adjust the structures size and ratio is not desirable

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Defining a log stream structure with ALLOWAUTOALT(YES) can lead to inefficient and unexpected results. Basically, ALLOWAUTOALT is a XES parameter that allows the structure size and ratio to be adjusted by XES. However, Logger internally will manage and adjust the structure's ratio of entries and elements, as well as perform offloads to move the data from the structure to DASD (then deleting that data from the structure). Having both XES \*and\* Logger trying to adjust and manage the structure is not desirable.

# PFA INI JAVAPATH

**Problem** : Error messages issued at PFA modeling time

- **AIR022I** REQUEST TO INVOKE MODELING FAILED FOR CHECK NAME=  
*PFA\_LOGREC\_ARRIVAL\_RATE*  
UNIX SIGNAL RECEIVED= 00000000 EXIT VALUE= 00000002
- **AIR033I** PFA has detected that SMF is not running and has stopped processing the *PFA\_SMF\_ARRIVAL\_RATE* check. Processing will resume after SMF restarts

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Potential error messages that may appear at PFA modeling times, depending upon which checks PFA is running

**AIR022I** REQUEST TO INVOKE MODELING FAILED FOR  
CHECK NAME= PFA\_LOGREC\_ARRIVAL\_RATE  
UNIX SIGNAL RECEIVED= 00000000 EXIT VALUE= 00000002

**AIR022I** REQUEST TO INVOKE MODELING FAILED FOR  
CHECK NAME= PFA\_MESSAGE\_ARRIVAL\_RATE  
UNIX SIGNAL RECEIVED= 00000000 EXIT VALUE= 00000002

**AIR033I** PFA has detected that SMF is not running and has stopped processing the *PFA\_SMF\_ARRIVAL\_RATE* check. Processing will resume after SMF restarts.

**AIR022I** REQUEST TO INVOKE MODELING FAILED FOR  
CHECK NAME= PFA\_ENQUEUE\_REQUEST\_RATE  
UNIX SIGNAL RECEIVED= 00000000 EXIT VALUE= 00000002

## PFA INI JAVAPATH

**Problem**: PFA modeling will fail if JAVAPATH is incorrectly defined in either

- /etc/PFA/ini **or**
- PFA EXEC  
PGM=AIRAMBGN,REGION=0K,TIME=NOLIMIT,  
PARM='path=( /usr/lpp/bcp) '
- **Note:** PARM= in the PFA proc will override the JAVAPATH statement in the ini file

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16

Potential error messages that may appear at PFA modeling times, depending upon which checks PFA is running

**AIR022I** REQUEST TO INVOKE MODELING FAILED FOR  
CHECK NAME= PFA\_LOGREC\_ARRIVAL\_RATE  
UNIX SIGNAL RECEIVED= 00000000 EXIT VALUE= 00000002

**AIR022I** REQUEST TO INVOKE MODELING FAILED FOR  
CHECK NAME= PFA\_MESSAGE\_ARRIVAL\_RATE  
UNIX SIGNAL RECEIVED= 00000000 EXIT VALUE= 00000002

**AIR033I** PFA has detected that SMF is not running and has stopped processing the PFA\_SMF\_ARRIVAL\_RATE check. Processing will resume after SMF restarts.

**AIR022I** REQUEST TO INVOKE MODELING FAILED FOR  
CHECK NAME= PFA\_ENQUEUE\_REQUEST\_RATE  
UNIX SIGNAL RECEIVED= 00000000 EXIT VALUE= 00000002



# PFA INI JAVAPATH

**Problem** :      Example of ini file:

```
/*This file customized 14Sep2011 09:19:22 by Serverpac Job */
VERSION=01010101
/* NLSPATH = path to NLS files */
/* LIBPATH = path to JNI library using libpath */
/* JAVAPATH = path to JAVA code used for PFA */
PATH= /usr/lpp/java/J5.0/bin/classic:/usr/lpp/java/J5.0/bin
NLSPATH= /usr/lpp/nls/msg/%L/%n:/usr/lib/msg/%L/%n.catxlc/bin
LIBPATH=/usr/lpp/java/J5.0/bin:/usr/lpp/java/J5.0/bin/
        classic:/lib:/usr/lib:
LANG= C
JAVAPATH= /usr/lpp/bcp
```

## PFA INI JAVAPATH

### **Explanation :**

- The JAVAPATH statement identifies the location of where PFA's Java code used for modeling resides
- It does NOT represent where JAVA 6.0 code resides

## PFA INI JAVAPATH

### **Solution :**

- Check the ini file to ensure that it does not point to Java 6.0 code, but rather PFA's Java modeling code
- Check the PARM= value in the PFA PROCLIB EXEC statement to ensure it does not point to Java 6.0 code, but rather PFA's Java modeling code

## FTP'ing Problem Doc

- **Problem**: L2 is not able to readily find the problem documentation that you FTP.
  - File name of ppppp.bbb.ccc.short.desc should be used (ppppp=problem number, bbb=branch, ccc=country)
    - Automation tools look for it and update PMR with doc arrival information
  - Use of file names like pmrxxxxx.bbb.ccc.short.desc will be an anomaly and your doc will not be found readily

Remember to use the recommended file name of ppppp.bbb.ccc.short.desc. It will be found readily by the automation tools and will be processed right away.

# FTP'ing Problem Doc

- **What-to-do:** Use the recommended file name of ppppp.bbb.ccc.short.desc
- Example (doc for MVS L2)

Please send your documentation using the z/OS Problem Documentation Upload Utility (MTFTPS prior to R13). Place the files in directory /toibm/mvs on the geographically closest server:

Americas:	testcase.boulder.ibm.com (or 170.225.15.31)
Europe	ftp.ecurep.ibm.com (or 192.109.81.7)
AP	ftp.ap.ecurep.ibm.com (or 210.143.141.69)

OR 1.Compress your dataset using AMATERSE (TRSMAN replacement).  
2.FTP to the server and directory above using userid:anonymous  
3.Specify BINary mode for transfer of the dataset.  
4.PUT the file using your PMR number as the start of the file name  
**ppppp.bbb.ccc.short.desc[.TRS]**

Small files ( <2Gb ) can be sent as an attachment through SR.  
For more information and FAQ's on transferring documentation to IBM  
see url <http://www-05.ibm.com/de/support/ecurep/index.html>

# RASP using AUX Slots

- **Problem:** Growth in Auxiliary paging slots owned by the RSM Address Space (RASP ASID 3)
- IRA206I showing RASP with relatively small real frames, but very large amount of AUX slots

\*IRA200E AUXILIARY STORAGE SHORTAGE

\*IRA206I JMONDB2A ASID 0089 FRAMES 0002307735 SLOTS 0000555697 % OF AUX 13.2

\*IRA206I DBNGDBM1 ASID 01E1 FRAMES 0000592191 SLOTS 0000323722 % OF AUX 7.7

\*IRA206I DBNGDBM1 ASID 00D7 FRAMES 0000139593 SLOTS 0000219606 % OF AUX 5.2

\*IRA206I DBNGDBM1 ASID 01A0 FRAMES 0000111173 SLOTS 0000200963 % OF AUX 4.7

\*IRA206I RASP ASID 0003 FRAMES 0000000468 SLOTS 0000192729 % OF AUX 4.5

When you are in an auxiliary storage shortage condition, you will receive messages indicating the top users of aux slots. RASP (ASID 3) may own few real frames but a large amount of aux slots. This is not an indication that RASP has a problem.

# RASP using AUX Slots

## **Explanation :**

- When High Virtual Shared or Common storage (above the 2Gig bar) is used by any job, frames used to back this area of storage are owned by the job which obtained the storage area
- When REAL storage is low enough to drive paging, these High Virtual pages that are paged to AUX slots are given to and owned by the RSM address space (RASP)
- Need to find out which jobs are using High Virtual Shared or Common storage (and if the amount is higher than normal)
  - One way is to get a dump and use IPCS RSMDATA (see next pages)

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The RASP aux slot counts are actually slots used for high virtual shared or common pages belonging to jobs in the system. One way to identify the owner of these pages is to take a dump and issue the IPCS RSMDATA command. See next 2 pages for examples.

# IPCS RSMDATA HVSHRDATA Example

S	START VSA	END VSA	ST	K	F	VT	JOBNAME	ASID	CREATE TIME	REQUESTOR	RQAS
L	00000200_50700000	00000200_551FFFFF	S	2	Y	-	J7DTA1	018E	06/23/2013 08:26:20	ALAAED78	000F
							J7D42	0190			
							J7D09	0154			
L	00000200_55200000	00000200_583FFFFF	S	2	Y	-	J7DDM	018F	06/23/2013 08:26:20	ALAAED78	000F
L	00000200_58400000	00000200_5CEFFFFF	S	8	Y	-	J7D45S	0197	06/23/2013 08:27:07	ALAAED78	000F
							J7D09S	0198			
L	00000200_5CF00000	00000200_600FFFFF	S	8	Y	-	J7DDMS	019C	06/23/2013 08:30:46	ALAAED78	000F
G	00000200_80000000	00000220_7FFFFFFF	R	7	Y	-	TCPIP	0043	06/23/2013 07:17:55	9F062AAC	0041
							DB2DIST	005E			
							DB2DBM1	005C			
							DB2MSTR	0041			

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24

The output of the IPCS RSMDATA HVSHRDATA command shows the high virtual shared pages owned by jobs in the system. Please see [z/OS MVS Diagnosis: Reference](#) for details.



# IPCS RSMDATA HVCOMMON Example

START VSA	END VSA	Size	St	T	K	F	L	JOBNAME	JOBID	CREATE TIME	REQUESTOR	RQAS
0000017F_82600000	0000017F_829FFFFF	0004	AC	J	2	Y	N	PFA	STC57270	07/21/2013 02:29:33	AC119DF8	003D
0000017F_82A00000	0000017F_82DFFFFF	0004	AC	J	6	N	N	ACFNET	STC57367	07/21/2013 02:30:56	AC5C98D2	009A
0000017F_82E00000	0000017F_82EFFFFF	0001	AC	J	1	Y	N	JESFAUX	.....	07/21/2013 02:30:57	A544BDFA	00A1
0000017F_83000000	0000017F_830FFFFF	0001	AC	J	1	Y	N	JESFAUX	.....	07/21/2013 02:30:57	A544BDFA	00A1
0000017F_83100000	00000180_243FFFFF	0A13	AC	J	6	Y	N	TCPIP	STC57382	07/21/2013 02:30:58	A4B93968	00A7

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25

The output of the IPCS RSMDATA HVCOMMON command shows the high virtual common pages owned by jobs in the system. Please see [z/OS MVS Diagnosis: Reference](#) for details.

## RSU in IEASYSxx

- **Problem:** IRA400E Pageable Storage Shortage (more likely after machine upgrade or real storage increase)
- RSU = Reconfigurable Storage Units
- This storage will not be used by RSM to satisfy fixed (or non-pageable) pages
- Problem occurred due to coding a RSU value without specifying a unit (see next page)

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The RSU parameter in IEASYSxx specifies the amount of central storage to be made available for storage reconfiguration. The frames in these storage increments are not to be used for long-term pages and will be designated the non-preferred area. (Long-term pages include SQA pages, common area fixed pages and LSQA or private area fixed pages associated with non-swappable address spaces.)

If you specify a value of 1-9999 without a qualifier (M, G, T, or %), the value is considered to be the number of the units, and the default storage increment size is used. For example, if your machine has a storage increment size of 64 megabytes, specifying 20 causes 20 units of 64M (1.25G in total) to be set aside for storage reconfiguration. Note that the storage increment size is entirely hardware dependent, based not only on the hardware model, but possibly also on the amount of real storage installed on the physical machine (not the LPAR). This means using an unqualified value of 1-9999 can have unexpected results, because its meaning can change dramatically with a simple upgrade to the amount of real storage on the system.

## RSU in IEASYSxx

### **Explanation :**

- For best performance, it is recommended that RSU=0 is coded (Healthcheck: RSM\_RSU)
- If you need to code a RSU value, use units of M, G or %, instead of a number (which means storage increments)
- Storage increments size can change after a machine upgrade or increase in real storage (see PR/SM Planning Guide)

## PROGxx REFRPROT to protect code

### **Problem:**

- Overlays to code are difficult to debug and can cause serious system impact.

### **Example:**

- Recently a customer experienced a 1-bit overlay to authorized code living in Key0 private storage in a CICS region.
- This 1-bit code overlay led to a 5-word overlay of code in Key0 CSA storage.
- Recurring ABEND0C1 errors in the CSA-resident code had significant system impact.

## PROGxx REFRPROT to protect code

### **Recommendation:**

- Use the REFRPROT statement type to specify that REFR programs are to be protected from modification by placing them in key 0, non-fetch protected storage, and page protecting the full pages.
  - Place REFRPROT in PROGxx parmlib member  
OR
  - SETPROG REFRPROT
- REFRPROT protects all REFReshable modules, regardless of APF authorization

For more information on protection of REFR programs, see [z/OS MVS Program Management: User's Guide and Reference](#).

# PROGxx REFRPROT to protect code

## Explanation:

- Use the PROGxx REFRPROT option in test environments to surface such issues before the problem code makes it to production.
  - Page protects all full-page portions of load modules linked as REFReshable.
  - Any attempt to alter page-protected storage results in an ABEND0C4 PIC4 and the overlay is averted.
  - Dump/logrec of the ABEND0C4 can be used to determine the culprit.
    - Problem program may produce dump/logrec as a result of the ABEND0C4.
    - SLIP can be used to gather documentation on a recurrence.

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30

### **About the REFR link edit attribute:**

The module is refreshable. It can be replaced by a new copy during execution without changing the sequence or results of processing. A refreshable module cannot be modified during execution. A module can only be refreshable if all the control sections within it are refreshable. The refreshable attribute is negated if any input modules are not refreshable. Refreshable modules are also reentrant and serially reusable.

The refreshable attribute can be specified for any non-modifiable module.

If **REFRPROT** has been specified on the SETPROG command or in parmlib member PROGxx, the module is protected from modification by placing it in key 0, non-fetch protected storage, and page protecting the whole pages.

REFRPROT can be used on production systems as well as test systems, but be aware that ABEND0C4 can occur if a module is link edited as REFR but turns out to be modified.

# SDUMP MAXSPACE

## **Problem:**

DB2 dump was partial due to reaching MAXSPACE. What should I set MAXSPACE to?

- **IEA043I** SVC DUMP REACHED MAXSPACE LIMIT  
– MAXSPACE=xxxxxxxx MEG
- **IEA611I** {COMPLETE|PARTIAL} DUMP ON  
dsname. MAXSPACE LIMIT REACHED WHILE  
CAPTURING DUMP

Since dump processing will write captured storage to a dump data set on DASD as soon as the dump data capture completes, the presence of captured data for multiple dumps would imply an issue with obtaining the storage needed to allocate dump data sets.

# SDUMP MAXSPACE

## **Explanation:**

- MAXSPACE parameter acts as a throttle to limit the maximum amount of virtual storage that SDUMP can “capture” at any given time.
  - Storage can belong to one or more captured SDUMPs
  - MAXSPACE set via CHNGDUMP (CD) command
- **CD SET,SDUMP,MAXSPACE=yyyyyyyyyyMeg**  
(default = 500M, can range from 1-999999999)

Since dump processing will write captured storage to a dump data set on DASD as soon as the dump data capture completes, the presence of captured data for multiple dumps would imply an issue with obtaining the DASD storage needed to allocate dump data sets.



## SDUMP MAXSPACE

### **Solution:**

1. Check sizes of your largest dumps. Given these sizes, what seems like a reasonable value for MAXSPACE?
2. Examine your AUX storage definitions. How much is 1/3rd of your AUX?
3. If Answer1  $\leq$  Answer2, then choose a MAXSPACE value in between the two. This will protect your system, while giving you the greatest probability of obtaining a complete dump.

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33

DB2 and WAS tend to produce the largest SVC dumps.

If you have no dumps to use for comparison, see Diagnosis: Tools and Service Aids 2.1.2.1 Allocating SYS1.DUMPxx data sets with secondary extents.

[DB2 guideline is add up the DB2 address spaces + CSA (including above the bar CSA) + up to 800Meg (for buffer pools).]

# SDUMP MAXSPACE

## **Solution:**

4. If Answer1 > Answer2, then you need to make a decision.
- To minimize the likelihood of a partial dump, increase your AUX storage definition to at least 3 times the MAXSPACE that you require.
  - If you are not in a position to increase your aux storage definition, then you will need to lower MAXSPACE to 1/3rd of the defined size.

## **Considerations:**

- Partial dumps compromise the ability to diagnose critical problems
- SDUMP tries to dump storage strategically by starting with the more critical areas of storage

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DB2 and WAS tend to produce the largest SVC dumps.

If you have no dumps to use for comparison, see Diagnosis: Tools and Service Aids 2.1.2.1 Allocating SYS1.DUMPxx data sets with secondary extents.

[DB2 guideline is add up the DB2 address spaces + CSA (including above the bar CSA) + up to 800Meg (for buffer pools).]

# SDUMP AUXMGMT

## Problem:

I ran into AUX storage issues when taking an SVC dump. I'm using a reasonable MAXSPACE. Why did this happen ?

- **IRA205I** 50% AUXILIARY STORAGE ALLOCATED
- **IRA200E** AUXILIARY STORAGE SHORTAGE
- **IRA201E** CRITICAL AUXILIARY STORAGE SHORTAGE
- **IEE711I** [SYSTEM UNABLE TO DUMP|SYSTEM DUMP NOT TAKEN. A CRITICAL AUXILIARY STORAGE SHORTAGE EXISTS]

# SDUMP AUXMGMT

## **Explanation:**

Even with a properly set MAXSPACE, SDUMP can still trigger an AUX storage condition if the overall system is using a sizeable amount of AUX storage. The AUXMGMT parameter offers additional system protection.

# SDUMP AUXMGMT

## Solution:

**Use AUXMGMT parameter!**

- SDUMP AUXMGMT acts as a safety net **for systems exceeding recommended AUX utilization (=30%)**.
  - **CD SET,SDUMP,AUXMGMT=ON** (the default)
- New SDUMPs are prevented when AUX storage usage reaches 50%
- SDUMPs in the process of being captured are stopped when AUX usage reaches 65%.
- If AUXMGMT=OFF, then SDUMP function is not affected until AUX usage goes to 85% (critical)

# SDUMP AUXMGMT

## **Problem:**

AUXMGMT protection detected aux storage usage greater than 50% and is preventing any new SVC dumps from being taken. How do I recover my system's ability to take a dump?

- **IEA611I** {COMPLETE|PARTIAL} DUMP ON dsname. A CRITICAL AUXILIARY STORAGE SHORTAGE EXISTS

**Note:** SDUMP's critical storage indication means the AUXMGMT threshold has been reached, but doesn't mean the system has 70%-85% AUX storage used.

## SDUMP AUXMGMT

### **Explanation:**

A low threshold of 35% must be attained (35%) before SDUMP processing is allowed to resume.

- Resetting AUXMGMT=OFF after AUX storage utilization has reached the 50% threshold will **\*not\*** relieve the above low threshold requirement! Once you hit the AUXMGMT ON limit you **MUST** hit the low limit (35%) before SDUMPs will again be allowed.

# SDUMP AUXMGMT

## Solution:

There are two ways to attain the low limit:

1. CANCEL or wait for the address spaces that have pages on AUX to free the storage or the job to end  
**OR**
2. Add page datasets such that the percentage of overall available AUX slots is then below 35%. If you hit a AUXMGMT limit, and **cannot** add additional page datasets, you will have to revert to option 1.

➤ If set correctly, MAXSPACE and AUXMGMT work hand in hand to protect the system.