

Being Aware of Changes in z/OS V2R4 Sooner Rather than Later



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Profile

Shigeki Kimura is the technical lead for z/OS migration/upgrade at IBM Japan. He has expertise in and deep knowledge of z/OS release-to-release migration and has participated in key reviews of z/OS Migration book and Workflow since 2006. Also, he has contributed his articles in z/OS Hot Topics magazine and z/OS Development blog since 2010. Shigeki has been with IBM for 33 years.

Abstract:

Whether you have upgraded to z/OS V2R4 already or are considering it, this session may be valuable to you. When upgrading to z/OS V2R4 from V2R2, it's necessary to understand all of the changes in functional behavior which were introduced in z/OS V2R3, V2R4 (including post-GA enhancements and other APARs). This presentation will focus on the findings from the viewpoint of an ESP user and share with you the "lessons learned" as well as "hints and tips". After attending this session, the enhancements and behavioral changes observed in z/OS V2R4 will no longer be a mystery and your deployment of z/OS V2R4 should be much smoother.

About this presentation

✦ Sharing 24 topics in total which cover both New Features and Changes in z/OS V2R4

Being Aware of Changes in z/OS **V2R4** Sooner Rather than Later

- Useful New Features in z/OS V2R4 – 5 Topics
- Some Changes in z/OS V2R4 – 19 Topics

✦ I presented z/OS V2R3 version in SHARE Sacramento in 2018 Winter (24 topics in total)

Being Aware of Changes in z/OS **V2R3** Sooner Rather than Later

✦ 4 Topics below were updated since then, so I included the most current information with STAR ★ mark in **Summary of Topics** table

- SISFLOAD requirement for SDSF address space – Updated in z/OS V2R4
- Point-and-Shoot support for Fixed Field on panel – Updated in z/OS V2R4
- VSAM DBA for CICS LSRPOOLS – Updated in z/OS V2R4 and by APAR OA54666 (z/OS V2R2,V2R3)
- Length of VSB control block in ESQA – Updated in z/OS V2R4 and by APAR OA55711 (z/OS V2R2,V2R3)

Agenda

Useful New Features in z/OS V2R4

Some changes in z/OS V2R4

Useful New Features in z/OS V2R4

- **DISPLAY DEVSUP command**
- **SUBTYPE reporting with SMF dump program**
- **MEMLIMIT value for INSTREAM SYMBOLS**
- **IEE979W SMF DATA LOSS for DATASET recording**
- **z/OS LOAD type for AUTOIPL**

DISPLAY DEVSUP command

⊕ DEVSUPxx parmlib member can be used to specify the device support functionality

- When you specify DEVSUP=xx in IEASYS parmlib member, message IEA253I is issued during initialization

```
IEE252I MEMBER DEVSUP00 FOUND IN SYS1.PARMLIB
IEA253I DEVSUP00 TAPE LIBRARY CATEGORY CODE FOR MEDIA2 =0112
IEA253I DEVSUP      DISABLED ICKDSF VERIFYOFFLINE PARAMETER DEFAULT
IEA253I DEVSUP      ISO/ANSI TAPE LABEL VERSION DEFAULT IS V3
IEA253I DEVSUP      TAPE OUTPUT DEFAULT BLOCK SIZE LIMIT IS 32760
IEA253I DEVSUP      COPYSDB DEFAULT IS INPUT
IEA253I DEVSUP      STORAGE LIMIT FOR TAPE DDR SWAP DEFAULTED TO 1000M
IEA253I DEVSUP      PERFORM NORMAL EXPIRATION DATE PROCESSING
```

- No IEA253I message is issued unless you specify the DEVSUP=xx parameter explicitly

```
D IPLINFO,DEVSUP
IEE255I SYSTEM PARAMETER 'DEVSUP': NOT_SPECIFIED
```

⊕ SET DEVSUP=xx command has been supported since z/OS V1R8 to dynamically update values

- However, current settings cannot be determined by D DEVSUP command in z/OS V2R3 and earlier

```
D DEVSUP
IEE305I D          COMMAND INVALID
```

DISPLAY DEVSUP command

⊕ Now in z/OS V2R4, DISPLAY DEVSUP command is available

- By BCP APAR OA58049 & DFSMS OA57711 (Base code)
- Command output shows all the currently effective value including the default
 - Multiple-line WTO message with >30 lines

⊕ Output message IEA253I is not a command response

- Second character on the line does not indicate R (command response)

```
NC00000000 ES24      19XXX 15:44:52.32 BEANS      00000290  D IPLINFO,DEVSUP
NR00000000 ES24      19XXX 15:44:52.32 BEANS      00000090  IEE255I SYSTEM PARAMETER 'DEVSUP': NOT_SPECIFIED
NC00000000 ES24      19XXX 15:44:56.88 BEANS      00000290  D DEVSUP
M 00000000 ES24      19XXX 15:44:56.88              00000090  IEA253I DISPLAY DEVSUP Start of Report 220
D                                  220 00000090  ALVERSION=3
D                                  220 00000090  COMPACT=NO
D                                  220 00000090  COPYSDB=INPUT
D                                  220 00000090  DDRSIZELIM=1000M
D                                  220 00000090  ENABLE(ZERO_DIR_PDS)  DISABLE(CI_LVL_CHK)  ENABLE(REFVTOC)
D                                  220 00000090  ENABLE(REFUCB)  DISABLE(PPRCSUM)  ENABLE(SSR)  DISABLE(PPRCMT)
D                                  220 00000090  DISABLE(AOM496I)
D                                  220 00000090  ENFORCE_DC_MEDIA=*
D                                  220 00000090  EOSCYCLES=0
D                                  220 00000090  EOSV2=NO
<snipped>
E                                  220 00000090  DISPLAY DEVSUP End of Report
```

z/OS V2R4

SUBTYPE reporting with SMF dump program

- ⊕ SMF data set dump program (IFASMFDP/IFASMFDL) creates a **SUMMARY ACTIVITY REPORT**
 - When DUMP option was specified and at least one record was read or written
 - **Only list record types, not list subtypes**
- ⊕ Now in z/OS V2R4, REPORTOPTS(NOSUBTYPE|SUBTYPE) new option is available to specify **whether SUMMARY ACTIVITY REPORT is to list subtypes**
 - NOSUBTYPE : Specifies to list record types but not subtypes
 - Same report format as in prior releases of z/OS
 - **SUBTYPE** : Specifies to list record types and subtypes
 - **Show records organized by record type and subtype**
 - Records that do not have subtypes will have '-' listed as subtype
- ⊕ **REPORTOPTS(SUBTYPE) does not aggregate or summarize records by type**
 - REPORTOPTS(NOSUBTYPE) is needed to know the total record number by type, for example

SUBTYPE reporting with SMF dump program

REPORTOPTS(NOSUBTYPE) z/OS V2R4

- Shows an example of summary activity report when you specify REPORTOPTS(NOSUBTYPE) parameter or allow it to default
 - RECORD TYPE indicates the identifying number of each record type read by SMF dump program

		SUMMARY ACTIVITY REPORT						
/BEANSZZ JOB CLASS=A,MSGCLASS=H,...		START DATE-TIME	XX/XX/2019-18:30:25	END DATE-TIME	XX/XX/2019-09:30:00			
/SMFDUMP EXEC PGM=IFASMFDP		RECORD TYPE	RECORDS READ	PERCENT OF TOTAL	AVG. RECORD LENGTH	MIN. RECORD LENGTH	MAX. RECORD LENGTH	RECORDS WRITTEN
/DUMPIN1 DD ...		2	0					1
/DUMPOUT DD ...		3	0					1
/SYSPRINT DD SYSOUT=*		4	72	.02 %	239.77	215	271	0
/SYSIN DD *		5	60	.01 %	145.60	145	154	0
INDD (DUMPIN1,OPTIONS(DUMP))		<snipped>						
OUTDD (DUMPOUT,TYPE(78))		30	12,675	2.78 %	1,438.95	480	32,736	0
/*		<snipped>						
IFA010I SMF DUMP PARAMETERS		42	6,531	1.43 %	791.11	196	5,640	0
IFA010I REPORTOPTS(NOSUBTYPE) -- DEFAULT		<snipped>						
IFA010I NOSIGVALIDATE -- DEFAULT		<snipped>						
IFA010I SIGSTRIP -- DEFAULT		<snipped>						
IFA010I END(2400) -- DEFAULT		<snipped>						
IFA010I START(0000) -- DEFAULT		<snipped>						
IFA010I DATE(1900000,2099366) -- DEFAULT		<snipped>						
IFA010I OUTDD(DUMPOUT,TYPE(78)) -- SYSIN		<snipped>						
IFA010I INDD(DUMPIN1,OPTIONS(DUMP)) -- SYSIN		<snipped>						
IFA020I DUMPOUT -- BEANS.TEST.DXXXX.SMF2		<snipped>						
IFA020I DUMPIN1 -- SYS1.MAN2		<snipped>						
		TOTAL	455,924	100 %	294.48	60	32,736	444
		NUMBER OF RECORDS IN ERROR 0						

SUBTYPE reporting with SMF dump program

REPORTOPTS(SUBTYPE)

z/OS V2R4

- Shows an example of summary activity report when specify REPORTOPTS(SUBTYPE) parameter
- RECORD SUBTYPE indicates the identifying number of the subtype of each record type read by SMF dump program

		START DATE-TIME XX/XX/2019-18:30:25		SUMMARY ACTIVITY REPORT						
		END DATE-TIME XX/XX/2019-09:30:00								
		RECORD TYPE / SUBTYPE	RECORDS READ	PERCENT OF TOTAL	AVG. RECORD LENGTH	MIN. RECORD LENGTH	MAX. RECORD LENGTH	RECORDS WRITTEN		
//BEANSZZ	JOB CLASS=A,MSGCLASS=H,...	2 / -	0					1		
//SMFDUMP	EXEC PGM=IFASMFDP	3 / -	0					1		
//DUMPIN1	DD ...	4 / -	72	.02 %	239.77	215	271	0		
//DUMPOUT	DD ...	5 / -	60	.01 %	145.60	145	154	0		
//SYSPRINT	DD SYSOUT=*	<snipped>								
//SYSIN	DD *	30 / 1	332	.07 %	483.14	480	489	0		
	INDD (DUMPIN1,OPTIONS(DUMP))	30 / 2	9,803	2.15 %	1,385.73	1,240	5,566	0		
	OUTDD (DUMPOUT,TYPE(78))	30 / 4	412	.09 %	2,940.30	1,240	32,736	0		
	REPORTOPTS(SUBTYPE)	30 / 5	352	.08 %	3,230.75	1,240	32,736	0		
/*		30 / 6	1,776	.39 %	1,208.00	1,208	1,208	0		
IFA0101	SMF DUMP PARAMETERS	<snipped>								
IFA0101	NOSIGVALIDATE -- DEFAULT	42 / 1	111	.02 %	224.00	224	224	0		
IFA0101	SIGSTRIP -- DEFAULT	42 / 2	221	.05 %	196.00	196	196	0		
IFA0101	END(2400) -- DEFAULT	42 / 5	221	.05 %	3,040.94	1,976	5,640	0		
IFA0101	START(0000) -- DEFAULT	42 / 6	4,901	1.07 %	822.77	396	5,188	0		
IFA0101	DATE(1900000,2099366) -- DEFAULT	42 / 24	450	.10 %	270.00	270	270	0		
IFA0101	REPORTOPTS(SUBTYPE) -- SYSIN	42 / 27	627	.14 %	434.85	396	816	0		
IFA0101	OUTDD(DUMPOUT,TYPE(78)) -- SYSIN	<snipped>								
IFA0101	INDD(DUMPIN1,OPTIONS(DUMP)) -- SYSIN									
SYSIN										
IFA0201	DUMPOUT --									
BEANS.TEST.DXXXX.SMF2A										
IFA0201	DUMPIN1 -- SYS1.MAN2									
		TOTAL	455,924	100 %	294.48	60	32,736	444		
		NUMBER OF RECORDS IN ERROR			0					

MEMLIMIT value for INSTREAM SYMBOLS

- ⊕ z/OS V2R1 has provided a new functionality called INSTREAM SYMBOLS (very nice!)
- ⊕ However, when using instream symbols with MEMLIMIT=0 coded in JCL, for example, the system will encounter an ABEND02A-60 (MEMLIMIT(2G) is default in SMFPRMxx)
 - SUG APAR OA56222 was created to report this problem

```
//BEANSZZ JOB MSGCLASS=H,MSGLEVEL=(1,1),CLASS=A,NOTIFY=&SYSUID
//STEP1 EXEC PGM=IEBGENER,MEMLIMIT=0M
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//SYSUT2 DD SYSOUT=*
//SYSUT1 DD *,SYMBOLS=CNVTSYS
THIS JOB WAS SUBMITTED AND RUN AT &SYSNAME
/*
```

z/OS V2R3

```
13.26.11 JOB07684 $HASP373 BEANSZZ STARTED - INIT 1 - CLASS A - SYS
13.26.11 JOB07684 IEF403I BEANSZZ - STARTED - TIME=13.26.11
13.26.11 JOB07684 IEF450I BEANSZZ STEP1 - ABEND=S02A U0000 REASON=00000060 700
700 TIME=13.26.11
13.26.11 JOB07684 IEF404I BEANSZZ - ENDED - TIME=13.26.11
13.26.11 JOB07684 $HASP395 BEANSZZ ENDED - ABEND=S02A
IEF472I BEANSZZ STEP1 - COMPLETION CODE - SYSTEM=02A USER=0000 REASON=00000060
```

- ⊕ With z/OS V2R1 and V2R2, SVC dump has been taken in this situation
 - No SVC dumps are captured in z/OS V2R3 via FIN APAR OA50871 (very nice!)

MEMLIMIT value for INSTREAM SYMBOLS

⊕ Now, z/OS V2R4 resolved SUG APAR OA56222

- No longer receive ABEND02A RC60 even with MEMLIMIT=0 (very nice!)

```
//BEANSZZ JOB MSGCLASS=H,MSGLEVEL=(1,1),CLASS=A,NOTIFY=&SYSUID
//STEP1 EXEC PGM=IEBGENER, MEMLIMIT=0M
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//SYSUT2 DD SYSOUT=*
//SYSUT1 DD *,SYMBOLS=CNVTSYS
THIS JOB WAS SUBMITTED AND RUN AT &SYSNAME
/*
$HASP395 BEANSZZ ENDED - RC=0000
IEF142I BEANSZZ STEP1 - STEP WAS EXECUTED - COND CODE 0000
DATA SET UTILITY - GENERATE
IEB352I WARNING: ONE OR MORE OF THE OUTPUT DCB PARMS COPIED FROM INPUT
PROCESSING ENDED AT EOD
THIS JOB WAS SUBMITTED AND RUN AT ES24
```

z/OS V2R4

⊕ Prior to z/OS V2R4, same JCL without coding MEMLIMIT can be run or cannot be run based on the system definition

- For example, ABENDED if old default MEMLIMIT(0M) was still specified in SMFPRMxx parmlib member

IEE979W SMF DATA LOSS for DATASET recording

- ⊕ When using SMF data set recording, via RECORDING(DATASET) in SMFPRMxx parmlib member, and SMF address space has run out of buffer space, message IEE979W is issued and continues
 - **IEE979W SMF DATA LOSS - NO BUFFER SPACE AVAILABLE**
 - NOBUFFS(MSG) option needs to be in effect in SMFPRMxx parmlib member
- ⊕ Unexpected behavior in z/OS V2R1 which might be a problem for message automation
 - **If SMF type 7 records are not collected, message IEE979W may only be issued for the first instance of a data loss**
 - Message will not be issued for subsequent data loss conditions
 - ✓ data set recording environment only – RECORDING(DATASET)
- ⊕ **FIN APAR OA55058 has been taken for this problem**
- ⊕ Circumvention
 - Ensure SMF type 7 records are collected and SMF will issue IEE979W again
 - Including type 7 in STC TYPE option of SMFPRMxx parmlib member

IEE979W SMF DATA LOSS for DATASET recording

⊕ Now, z/OS V2R4 resolved the problem by SMF APAR OA57151 (Base code)

- Corrected to issue IEE979W for multiple data loss instances, regardless of whether SMF type 7 records are being collected

Additional information

⊕ New Function APAR OA52828 (z/OS V2R2,V2R3) – included in z/OS V2R4 Base code

- Provide support for a configurable SMF temporary buffer size to prevent data loss condition due to temporary buffer shortage during SMF initialization
 - You can customize the size of SMF temporary buffer that is used during IPL processing to hold data while SMF is initializing
- **New option SMFTBUFF in IEASYSxx parmlib member**
 - Specifies SMF temporary buffer size regardless of the recording mode (DATASET or LOGSTREAM)
 - ✓ Value range: 5 – 512 (MB)
 - Default: 5 (MB) was not changed by OA52828 --- You can increase the size

z/OS LOAD type for AUTOIPL

⊕ BCP APAR OA50533 (z/OS V2R1,V2R2) and z/OS V2R3 (Base code)

- Problem
 - AUTOIPL initiated IPL could result in a delay on a system with LARGE amount of REAL storage
 - ✓ Depends on amount of processing time required to CLEAR the storage during the IPL
- Solution
 - To improve the performance, by default, using the **NORMAL** option instead of **CLEAR**

⊕ BCP APAR OA54733 (z/OS V2R1,V2R2,V2R3) and z/OS V2R4 (Base code)

- Problem
 - Change in OA50533 does not properly setup storage that can be used by system for reconfiguration
- Solution
 - Change processing in AUTOIPL back to the default IPL option of **CLEAR**
 - ✓ LOAD NORMAL can be requested optionally if the performance benefit is required and the lack of reconfigurable storage being available is acceptable

z/OS LOAD type for AUTOIPL

⊕ Summary of changes (Default LOAD type for AUTOIPL) – Originally, LOAD CLEAR

z/OS	APAR OA50533		APAR OA54733
	Before PTF	After PTF	After PTF
V2R1	LOAD CLEAR	LOAD NORMAL	LOAD CLEAR
V2R2	LOAD CLEAR	LOAD NORMAL	LOAD CLEAR
V2R3	LOAD NORMAL (Base)		LOAD CLEAR
V2R4	---		LOAD CLEAR (Base)

⊕ Optionally, BCP APAR OA54733 enabled to specify a new suboption for AUTOIPL in DIAGxx parmlib member

- NUCLABEL ENABLE(BLWRSTO2)
 - AUTOIPL initiated IPL will be done using the **NORMAL** option instead of **CLEAR**
 - Reconfigurable storage will be unavailable when the IPL is done
 - ✓ Specification of this option should only be used when necessary

Some changes in z/OS V2R4

Summary of Topics

P : Changed by PTF
B : Changed by Base
APAR# : APAR number which introduced change

Component	Title	V2R1	V2R2	V2R3	V2R4	APAR#
BCP	ABEND dump suppression with IEA848I	P	P	B		OA49595
			P	P	B	OA56310
BCP	BPXWDYN ALLOC request with RECFM keyword				B	
					P	OA58520
BCP	SUPERUSER value in BPXPRMxx parmlib member			B		
JES2	JES2 elapsed time job monitoring with TIME>1439	P	P	P	B	OA54766
JES2	JES2 NOTIFY message \$HASP165				B	
RACF	PPT REPORT by RACF DSMON	P	P	P	B	OA55864
★ SDSF	SISFLOAD requirement for SDSF address space			B	B	
★ SDSF	Point-and-Shoot support for Fixed Field on panel			B	B	
SDSF	SDSF Copyright BOX			B	B	
SDSF	Dynamic allocation for HSFLOG/HSFTRACE			B		

Summary of Topics (cont.)

P : Changed by PTF

B : Changed by Base

APAR# : APAR number which introduced change

Component	Title	V2R1	V2R2	V2R3	V2R4	APAR#
TSO/E	TSO/E Logon Pre-prompt Exit (IKJEFLD)			B		
TSO/E	TSO/E Logon Post-prompt Exit (IKJEFLD3)			B		
TSO/E	TSO/E LOGON timeout				B	
★ DFSMS	VSAM DBA for CICS LSRPOOLS		B			
			P	P	B	OA54666
★ DFSMS	Length of VSB control block in ESQA	P	B			OA44322
			P	P	B	OA55711
DFSMS	F CATALOG,REPORT,CACHE command				B	
DFSMS	Condition Code from IDCAMS LISTCAT command	P	P	B		OA47745
DFSMS	CAS DYNAMIC DUMP – IGG0CLE1 RC50 RSN20	P	P	B		OA50937 OA52118
OTHER	z/OS LOAD operation (IBM z14 Driver 36)					

ABEND dump suppression with IEA848I

⊕ Change was introduced by

ABDUMP APAR	z/OS V1R13	z/OS V2R1	z/OS V2R2	z/OS V2R3
OA49595	PTF UA81749	PTF UA81750	PTF UA81748	Base code

⊕ New behavior

- Generally, JSCBPASS bit is set when program with PPT NOPASS or NOPASS_ALLOWBATCH (after APAR OA50215) attribute was loaded from APF authorized library and running as job-step task
- **When JSCBPASS bit is set in BATCH job step**
 - **ABEND dump is no longer generated with message IEA848I even if SYSABEND, SYSMDUMP, or SYSUDUMP DD is allocated**
 - ✓ IEA848I DUMP SUPPRESSED - ABDUMP MAY NOT DUMP STORAGE FOR JSCBPASS JOB jobname
 - Routing Code: 11, Descriptor Code: 4
 - Applicable to both DASD and SYSOUT data sets
- SLIP trap may need to be requested to generate an SVC dump when problem scenario is recreated

ABEND dump suppression with IEA848I

⊕ Unexpected behavior in z/OS V2R3

- Depending on key value which it's running in, some Started task jobs are receiving message IEA848I when an ABDUMP is requested

➤ ABEND dump is suppressed when running in user-key

		JSCBPASS bit *not* set	JSCBPASS bit set
Batch JOB	Key 8	SYSUDUMP generated	DUMP suppressed with IEA848I
	Key 7	SYSUDUMP generated	DUMP suppressed with IEA848I
STC JOB	Key 8	SYSABEND generated	DUMP suppressed with IEA848I
	Key 7	SYSABEND generated	SYSABEND generated

- ✓ IEA848I DUMP SUPPRESSED - ABDUMP MAY NOT DUMP STORAGE FOR JSCBPASS JOB **DFHSM**

⊕ ABDUMP APAR OA56310 (z/OS V2R2,V2R3) and z/OS V2R4 resolved the problem

- Changing to allow all started task jobs to receive dumps **regardless of which key they are running in**
 - ABEND dump is not suppressed even when running in user-key

BPXWDYN ALLOC request with RECFM keyword

- ⊕ When a BPXWDYN ALLOC request contains a RECFM keyword with a multicharacter string (ex: RECFM(VB)), it may result in a data set being allocated with undesirable RECFM characteristics
 - RECFM only expects single-character inputs, that is, the first character of each comma-separated input

CPAC.CMDPROC(ALC1)	Data set attributes
<pre>/* REXX */ CALL BPXWDYN "ALLOC DA('BEANS.TEST.D1229.PS1') FI(DD1) NEW CATALOG", "SPACE(1,1) TRACKS VOL(SYSWKA) UNIT(3390) RECFM(FB) LRECL(80)", "DSORG(PS)"</pre>	ISRUDSLO Data Sets Matching BEANS.TEST.D1229 Command ==> Row 1 of 2 Scroll ==> CSR
CPAC.CMDPROC(ALC2)	Command - Enter "/" to select action Tracks % XT Device Dsorg Recfm Lrecl Bkksz Created Volume Referred
<pre>/* REXX */ CALL BPXWDYN "ALLOC DA('BEANS.TEST.D1229.PS2') FI(DD1) NEW CATALOG", "SPACE(1,1) TRACKS VOL(SYSWKA) UNIT(3390) RECFM(F,B) LRECL(80)", "DSORG(PS)"</pre>	----- BEANS.TEST.D1229.PS1 1 0 1 3390 PS F 80 80 2018/12/29 ***None*** SYSWKA USER.FS16.CATALOG
JCL executed	----- BEANS.TEST.D1229.PS2 1 0 1 3390 PS FB 80 27920 2018/12/29 ***None*** SYSWKA USER.FS16.CATALOG
<pre>//BEANSZZ JOB CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1),NOTIFY=&SYSUID //S1 EXEC PGM=IRXJCL,PARM='ALC1' //SYSEXEC DD DSN=CPAC.CMDPROC,DISP=SHR //S2 EXEC PGM=IRXJCL,PARM='ALC2' //SYSEXEC DD DSN=CPAC.CMDPROC,DISP=SHR</pre>	

z/OS V2R3

- ⊕ USS APAR OA56445 has been taken without PTF shipped
 - BPXWDYN ALLOC request does not adequately detect syntax errors for the RECFM keyword

BPXWDYN ALLOC request with RECFM keyword

⊕ z/OS V2R4 (Base code) addressed the problem reported by USS APAR OA56445

- If RECFM specifies multiple-character string without commas, BPXWDYN ALLOC returns a syntax error
 - When blocking is needed: RECFM(F,B) or RECFM(V,B) must be coded, for example
 - When blocking is not needed: RECFM(F) or RECFM(V) must be coded, for example

⊕ Finally, New Function APAR OA58520 has been shipped in z/OS V2R4 only

- Supporting multiple valid RECFM characters **with or without commas** for BPXWDYN ALLOC function

	z/OS V2R1,V2R2,V2R3	z/OS V2R4 Base	z/OS V2R4 with APAR OA58520
RECFM(F,B)	FB	FB	FB
RECFM(FB)	F	Syntax error	FB

- After PTF is applied, DCB information for a newly created or allocated data set could be changed
 - For example, RECFM(FB) previously would be treated as fixed unblocked and now will be treated as fixed blocked

SUPERUSER value in BPXPRMxx parmlib member

- ⊕ **Beginning in z/OS V2R3, when RACF is invoked to map UID(0) to a user ID, it returns the same value defined in SUPERUSER keyword of BPXPRMxx parmlib member**
 - Prior to z/OS V2R3, use of SUPERUSER user ID was not strict and it was possible to run without it
- ⊕ **As a result of change, user ID value for SUPERUSER must be defined to the security product and have an OMVS segment with a UID of 0**
 - z/OS MVS Initialization and Tuning Reference mentions that requirement for many releases, but it has been enforced in z/OS V2R3
- ⊕ **New Health Check called CHECK(IBMUSS,USS_SUPERUSER) is available in z/OS V2R3 to verify the configuration, and if the requirement is not satisfied, exceptional message is issued**
 - BPXH080E A problem was found with the SUPERUSER value of BPXROOT
- ⊕ **You can define BPXROOT, which is a default SUPERUSER value, or change it to specify something other than BPXROOT if you wish**
 - **ADDUSER BPXROOT** DFLTGRP(OMVSGRP) OMVS(**UID(0)** HOME('/') PROGRAM('/bin/sh'))
NOPASSWORD

SUPERUSER value in BPXPRMxx parmlib member

- ⊕ SUPERUSER(BPXROOT) is specified by default, but not defined to RACF in z/OS V2R3
- ⊕ When applying PTF UJ01705 (USS APAR OA58641), Binder failed during APPLY
 - IEW2821W DF39 **UID 0 NOT PROCESSED**. UNIX SYSTEM SERVICES FUNCTION **GETPWUID** RETURNED REASON CODE 0B4F0800 AND RETURN CODE 000000A3.
- ⊕ After translating UID 0 to a user ID (BPXROOT) and RACROUTE EXTRACT request was done against BPXROOT, which was failed with RACF RC=08 and RSN=00 (**No profile defined**)

```
z/OS V2 R3 BINDER      20:38:04 THURSDAY JANUARY  9, 2020
BATCH EMULATOR  JOB(XXXXXXXX) STEP(XXXXXXXX) PGM= HEWLH096
IEW2278I B352 INVOCATION PARAMETERS - LIST,LET,NCAL,XREF,RENT,REUS,AMODE=31,RMODE=ANY,CASE(MIXED),CALL
IEW2322I 1220 1 INCLUDE SMPWRK3(FSUMXTSM) UJ01705 SEQ # 000007
IEW2322I 1220 2 SETSSI 93500185
IEW2322I 1220 3 SETOPT PARM(PATHMODE(4,7,5,5),UID(0))
IEW2322I 1220 4 ORDER CEESTART
IEW2322I 1220 5 ENTRY CEESTART
IEW2322I 1220 6 ALIAS './tsmail'
IEW2322I 1220 7 NAME FSUMSTSM(R) MAX ACCEPTABLE RC=00
IEW2821W DF39 UID 0 NOT PROCESSED. UNIX SYSTEM SERVICES FUNCTION GETPWUID RETURNED REASON CODE 0B4F0800 AND RETURN CODE 000000A3.
GIM23911E ** LINK-EDIT PROCESSING FOR SYSMOD UJ01705 FAILED FOR MODULE FSUMXTSM
IN LMOD FSUMSTSM IN THE SFSUMLIB LIBRARY. THE RETURN CODE (04)
EXCEEDED THE ALLOWABLE VALUE. DATE 20.009 - TIME 20:38:05 -
SEQUENCE NUMBER 000009 - SYSPRINT FILE SMP00004.
```

z/OS V2R3

JES2 elapsed time job monitoring with TIME>1439

⊕ \$HASP308 message indicates...

- Job has exceeded its estimated elapsed (wall clock) time in JES2 execution phase by nnn minutes

➤ Can be seen when JES2PARM ESTIME OPT=YES is explicitly specified

```
14:37:11.53 JOB06537 $HASP308 BEANSZZ ESTIMATED TIME EXCEEDED
14:38:11.52 JOB06537 $HASP308 BEANSZZ ESTIMATED TIME EXCEEDED BY 1 MINUTE
14:39:11.53 JOB06537 $HASP308 BEANSZZ ESTIMATED TIME EXCEEDED BY 2 MINUTES
14:40:11.53 JOB06537 $HASP308 BEANSZZ ESTIMATED TIME EXCEEDED BY 3 MINUTES
```

⊕ JES2PARM ESTIME statement

- Specifies default elapsed wall clock time for a job, interval at which \$HASP308 message is issued and **whether JES2 elapsed time job monitor feature is supported**
 - Default: NUM=2,INT=1,**OPT=NO**
- Optionally, **estimated elapsed time (value range: 1-9999)** can be specified by JOB basis
 - JOB statement's accounting field - TIME subparameter
 - JECL /*JOBPARM TIME parameter

JES2 elapsed time job monitoring with TIME>1439

⊕ Unexpected behavior in z/OS V2R3

- If TIME value specified on JOBPARM statement is greater than 1439 minutes, it is ignored while documented range is 0-9999 minutes

➤ No \$HASP308 message issued with TIME=1440

z/OS V2R3

```
//BEANSZZ JOB CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1),NOTIFY=&SYSUID
/*JOBPARM TIME=1440
//S1 EXEC PGM=XXXXXXXXX
//BEANSYY JOB CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1),NOTIFY=&SYSUID
/*JOBPARM TIME=1439
//S1 EXEC PGM=XXXXXXXXX

N 4000000 CPAC 18190 01:28:02.31 JOB06575 00000090 $HASP373 BEANSZZ STARTED - INIT 1 - CLASS A - SYS CPAC
N 0000000 CPAC 18190 01:28:02.31 JOB06575 00000090 IEF403I BEANSZZ - STARTED - TIME=01.28.02
N 4000000 CPAC 18190 11:08:58.77 JOB06578 00000090 $HASP373 BEANSYY STARTED - INIT 2 - CLASS A - SYS CPAC
N 0000000 CPAC 18190 11:08:58.77 JOB06578 00000090 IEF403I BEANSYY - STARTED - TIME=11.08.58
N C000000 CPAC 18191 11:07:58.77 JOB06578 00000090 $HASP308 BEANSYY ESTIMATED TIME EXCEEDED
N C000000 CPAC 18191 11:08:58.76 JOB06578 00000090 $HASP308 BEANSYY ESTIMATED TIME EXCEEDED BY 1 MINUTE
N C000000 CPAC 18191 11:09:58.76 JOB06578 00000090 $HASP308 BEANSYY ESTIMATED TIME EXCEEDED BY 2 MINUTES
N C000000 CPAC 18191 11:10:58.76 JOB06578 00000090 $HASP308 BEANSYY ESTIMATED TIME EXCEEDED BY 3 MINUTES
NC0000000 CPAC 18191 11:20:51.46 BEANS 00000290 $DJ(*),Q=XEQ,XEQHOURS
NR0000000 CPAC 18191 11:20:51.46 JOB06575 00000090 $HASP890 JOB(BEANSZZ) XEQHOURS=33
NR0000000 CPAC 18191 11:20:51.46 JOB06578 00000090 $HASP890 JOB(BEANSYY) XEQHOURS=24
```

⊕ JES2 APAR OA54766 (z/OS V2R1,V2R2,V2R3) and z/OS V2R4 resolved the problem

- Corrected to issue \$HASP308 message when TIME specifies 1440 or greater minutes

JES2 NOTIFY message \$HASP165

- ⊕ **NOTIFY message \$HASP165 includes an extra blank/space between node name and MAXCC**
 - Applicable to both NOTIFY parameter on JOB statement and NOTIFY statement
 - NOTIFY statement was introduced in z/OS V2R3 JES2
- ⊕ JES2 FIN APAR OA56130 has been taken for this problem
- ⊕ **z/OS V2R4 resolved the problem by JES2 APAR OA57151 (Base code)**
 - Extra blank/space has been removed in message \$HASP165 from both NOTIFY function

JCL executed

```
//BEANSZZ JOB CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1),NOTIFY=&SYSUID  
//NTFY   NOTIFY USER=&SYSUID,WHEN='RC=0'  
//STEP1  EXEC PGM=IEFBR14
```

z/OS V2R3

```
NI00000000 CPAC      19246 21:44:28.26 JOB07633 00000290 SE '21.44.28 JOB07633 $HASP165 BEANSZZ ENDED AT N1 MAXCC=0000',LOGON,  
SI  
NC00000000 CPAC      19246 21:44:28.26 INTERNAL 00000290 SE '21.44.28 JOB07633 $HASP165 BEANSZZ ENDED AT N1 MAXCC=0000',LOGON,  
SC USER=(BEANS)
```

z/OS V2R4 with PTF UJ00312 (APAR OA57722)

```
NI00000000 ES24      19257 14:15:42.22 JOB01422 00000290 SE '14.15.42 JOB01422 $HASP165 BEANSZZ ENDED AT N1 MAXCC=0000',LOGON,  
SI USER=(BEANS)  
NC00000000 ES24      19257 14:15:42.22 INTERNAL 00000290 SE '14.15.42 JOB01422 $HASP165 BEANSZZ ENDED AT N1 MAXCC=0000',LOGON,  
SC USER=(BEANS)
```


JES2 NOTIFY message \$HASP165

- ⊕ z/OS V2R4 resolved additional problem by JES2 APAR OA57151 (Base code)
 - Extra blank/space has been removed in message \$HASP165 from NOTIFY statement
 - In this scenario, no changes for &HASP165 message from NOTIFY parameter on JOB statement

z/OS V2R3									
NI00000000	CPAC	18230	15:11:00.85	JOB07164	00000290	SE '15.11.00	JOB07164 \$HASP165 BEANSZZ	ENDED AT N1 - JCL ERROR',LOGON,	
SI						USER=(BEANS)			
NC00000000	CPAC	18230	15:11:00.85	INTERNAL	00000290	SE '15.11.00	JOB07164 \$HASP165 BEANSZZ	ENDED AT N1 - JCL ERROR',LOGON,	
SC						USER=(BEANS)			
z/OS V2R4 with PTF UJ00312 (APAR OA57722)									
NI00000000	ES24	19245	20:58:05.87	JOB01064	00000290	SE '20.58.05	JOB01064 \$HASP165 BEANSZZ	ENDED AT N1 - JCL ERROR',LOGON,	
SI						USER=(BEANS)			
NC00000000	ES24	19245	20:58:05.87	INTERNAL	00000290	SE '20.58.05	JOB01064 \$HASP165 BEANSZZ	ENDED AT N1 - JCL ERROR',LOGON,	
SC						USER=(BEANS)			
z/OS V2R3									
NI00000000	CPAC	18247	11:14:09.58	JOB07593	00000290	SE '11.14.09	JOB07593 \$HASP165 BEANSZZ	ENDED AT N1 - ABENDED S013 U0000',LOGON,USER=(IBMUSER)	
SI									
NC00000000	CPAC	18247	11:14:09.58	INTERNAL	00000290	SE '11.14.09	JOB07593 \$HASP165 BEANSZZ	ENDED AT N1 - ABENDED S013 U0000',LOGON,USER=(BEANS)	
SC									
z/OS V2R4 with PTF UJ00312 (APAR OA57722)									
NI00000000	ES24	19246	21:53:36.85	JOB01122	00000290	SE '21.53.36	JOB01122 \$HASP165 BEANSZZ	ENDED AT N1 - ABENDED S013 U0000',LOGON,USER=(IBMUSER)	
SI									
NC00000000	ES24	19246	21:53:36.85	INTERNAL	00000290	SE '21.53.36	JOB01122 \$HASP165 BEANSZZ	ENDED AT N1 - ABENDED S013 U0000',LOGON,USER=(BEANS)	
SC									

PPT REPORT by RACF DSMON

- ⊕ When running RACF DSMON (PGM=ICHDSM00) with FUNCTION SYSPPT statement, PROGRAM PROPERTIES TABLE REPORT is generated
 - **BYPASS PASSWORD PROTECTION** column indicates whether program is authorized to bypass security checking when accessing RACF-protected data sets
 - Value is either NO (PPT PASS) or YES (PPT NOPASS)
- ⊕ When a program is assigned attribute NOPASS in the PPT, YES is displayed under column BYPASS PASSWORD PROTECTION
 - Displaying **NO** if a program is assigned NOPASS_ALLOWBATCH attribute
 - NOPASS_ALLOWBATCH was introduced by APAR OA50215 (z/OS V1R13,V2R1,V2R2) and z/OS V2R3 to allow NOPASS attribute for Batch jobs
- ⊕ RACF APAR OA55864 (z/OS V2R1,V2R2,V2R3) and z/OS V2R4 changed to display **BATCH** if a program was assigned NOPASS_ALLOWBATCH
 - After the change, you need to check BATCH as well as YES for auditing purposes

PPT REPORT by RACF DSMON

SYS1.PARMLIB(SCHED77)

PPT definition

PPT PGMNAME(TESTPGM1) KEY(8) PASS
PPT PGMNAME(TESTPGM2) KEY(8) NOPASS

PPT PGMNAME(TESTPGM3) KEY(8) NOPASS_ALLOWBATCH

D PPT,NAME=TESTPGM*

IEF386I 01.04.51 DISPLAY PPT 676

Parmlib Values Matching: TESTPGM*

PgmName	NC	NS	PR	ST	ND	BP	Key	2P	1P	NP	NH	CP	DA	PA
TESTPGM1	8	.	.	.	.	.	.	.
TESTPGM2	Y	8	.	.	.	.	.	.	.
TESTPGM3	8	.	.	.	.	.	.	Y

No Default Values

Reference

<snipped>

```
//BEANSZZ JOB CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//S1      EXEC PGM=ICHDSMOO
//SYSPRINT DD SYSOUT=*
//SYSUT2  DD SYSOUT=*
//SYSIN   DD *
          FUNCTION SYSPP
/*
```

DSMON JCL

RACF DATA SECURITY MONITOR
PROGRAM PROPERTIES TABLE
NAME BYPASS PASSWORD PROTECTION SYSTEM KEY
DATE: 12/17/18

TESTPGM1 NO NO
TESTPGM2 YES NO
TESTPGM3 NO NO

z/OS V2R3

Report output

RACF DATA SECURITY MONITOR
PROGRAM PROPERTIES TABLE
NAME BYPASS PASSWORD PROTECTION SYSTEM KEY
DATE: 09/14/19

TESTPGM1 NO NO
TESTPGM2 YES NO
TESTPGM3 BATCH NO

z/OS V2R4

SISFLOAD requirement for SDSF address space

2018 Sacramento

- ⊕ In z/OS V2R1 and V2R2 SDSF, the SDSFAUX address space must meet following requirements
 - SISFLOAD data set must be either in the LNKLIST or specified in the STEPLIB
 - If SISFLOAD is in the LPALST, it must be specified in the STEPLIB
 - SISFLOAD must also be APF authorized
- ⊕ In z/OS V2R3 SDSF, the same requirements are now applicable to the SDSF address space
 - SDSF server address space requires that the ISF.SISFLOAD data set either be in system LNKLIST or a STEPLIB in the SDSF server JCL
 - **This is a new requirement for the SDSF server in SDSF V2R3**
 - If these requirements are not satisfied...
 - HSF0067E CSVDYLPA add for module HSFSRVRM failed RC=00000004 RSN=00000401 DIAG=20004001
 - HSF0067E CSVDYLPA add for module HSFRCOVER failed RC=00000004 RSN=00000401 DIAG=20004001
 - **Consideration:**
 - Sample SDSF server JCL member ISF.SISFJCL(ISFSRJCL) has been updated with comments to reflect these requirements via SDSF APAR PI91178

SISFLOAD requirement for SDSF address space

2020 Fort Worth

⊕ In z/OS V2R4 SDSF, the same requirements are no longer applicable

- There is no need for STEPLIB --- STEPLIB will still work
- SISFLOAD can be in either LPA or LNKLIST
- Following comment in sample JCL has been removed

➤ ~~IF SISFLOAD IS IN THE LPA LIST, IT MUST BE SPECIFIED IN THE STEPLIB STATEMENT IN THIS JCL.~~

⊕ STEPLIB requirement for SISFLOAD when specified in LPA LST

- Again in z/OS V2R4, you can execute SDSF from the link pack area (LPA) for improved performance

	z/OS V2R1	z/OS V2R2	z/OS V2R3	z/OS V2R4
SDSF	No	No	Yes	No
SDSFAUX	Yes	Yes	Yes	No

Point-and-Shoot support for Fixed Field on panel

2018 Sacramento

- ✦ In z/OS V2R3 SDSF and under ISPF, the point-and-shoot is enabled by default for the fixed field on the tabular panel
 - Only panels with secondary displays enable FFPS (Fixed Field Point-and-Shoot)
 - For example, for the DA panel, the fixed field is **JOBNAME**
 - When point-and-shoot is enabled, placing the cursor anywhere within the fixed field and pressing Enter results in the associated panel being displayed (e.g. DA panel → JDS panel)
 - This is equivalent to entering the corresponding action character
- ✦ Use SET FFPS OFF command to disable point-and-shoot for the fixed field on the tabular panel
 - SET FFPS ON/OFF: (selected value is saved across SDSF sessions when running under ISPF)
 - ON - Enables point-and-shoot for the fixed field (**This is the default**)
 - OFF - Disables point-and-shoot for the fixed field
 - **Consideration:**
 - Values you set for the JOBNAME column via SET SCREEN command are ignored due to the point-and-shoot field (**The default color is Turquoise in this case**)

Point-and-Shoot support for Fixed Field on panel

2018 Sacramento

z/OS V2R3: SDSF ST panel display

Default display

- JOBNAME column is a Point-and-Shoot field and displayed in Turquoise color by default
- You cannot determine if the job is active or not from the JOBNAME column

After issuing the SET FFPS OFF command

- Point-and-Shoot for the JOBNAME column was deactivated
- JOBNAME column is displayed in the SET SCREEN color by default

z/OS V2R3													
Display Filter View Print Options Search Help													
SDSF	STATUS	DISPLAY	ALL	CLASSES	LINE 1-36 (461)								
NP	JOBNAME	JobID	Owner	Prty	Queue	C	Pos	SAff	ASys	Status			
	KIMURA	TSU02013	KIMURA	15	EXECUTION			CPAC	CPAC				
	SYSLOG	STC01815	+MASTER+	15	EXECUTION			CPAC	CPAC				
	TCPIP	STC01817	IBMUSER	15	EXECUTION			CPAC	CPAC				
	TN3270	STC01820	IBMUSER	15	EXECUTION			CPAC	CPAC				
	RMF	STC01821	IBMUSER	15	EXECUTION			CPAC	CPAC				
	ZFS	STC01824	ZFS	15	EXECUTION			CPAC	CPAC				
	HZSPROC	STC01829	IBMUSER	15	EXECUTION			CPAC	CPAC				
	INIT	STC01830	IBMUSER	15	EXECUTION			CPAC	CPAC				
	INIT	STC01831	IBMUSER	15	EXECUTION			CPAC	CPAC				
	INIT	STC01832	IBMUSER	15	EXECUTION			CPAC	CPAC				
	INIT	STC01833	IBMUSER	15	EXECUTION			CPAC	CPAC				
	RACF	STC01838	IBMUSER	15	EXECUTION			CPAC	CPAC				
	BPXAS	STC01839	IBMUSER	15	EXECUTION			CPAC	CPAC				
	IZUSVR1	STC01842	IZUSVR	15	EXECUTION			CPAC	CPAC				
	VTAM	STC01843	IBMUSER	15	EXECUTION			CPAC	CPAC				
	GPMSERVE	STC01844	IBMUSER	15	EXECUTION			CPAC	CPAC				
	TSO	STC01940	IBMUSER	15	EXECUTION			CPAC	CPAC				
	SDSF	STC02009	SDSF	15	EXECUTION			CPAC	CPAC				
	SDSFAUX	STC02010	IBMUSER	15	EXECUTION			CPAC	CPAC				
	RACF	STC01431	IBMUSER	15	OUTPUT							HOLD	
	RACF	STC01575	IBMUSER	15	OUTPUT							HOLD	
	\$MASCOMM	STC00001	IBMUSER	15	PRINT		1						
	SYSLOG	STC00002	+MASTER+	1	PRINT		2						
	SYSLOG	STC00037	+MASTER+	1	PRINT		3						

Point-and-Shoot support for Fixed Field on panel

2020 Fort Worth

z/OS V2R4: SDSF ST panel display – Default display was the same as V2R3

After issuing SET FFPS HIDE command

- JOBNAME column is displayed in SET SCREEN color (White) by default
- However, Point-and-Shoot for JOBNAME column was still activated

After hitting ENTER on JOBNAME column

- JDS panel was displayed!!!

z/OS V2R4

Display Filter View Print Options Search Help									
SDSF STATUS DISPLAY ALL CLASSES									
PREFIX=* DEST=(ALL) OWNER=* SYSNAME=									
LINE 1-35 (536)									
NP	JOBNAME	JobID	Owner	Prty	Queue	C	Pos	Saff	ASys Status
	BEANS	TSU04356	BEANS	15	EXECUTION			ES24	ES24
	CFZCIM	STC04313	CFZSRV	15	EXECUTION			ES24	ES24
	VTAM	STC04314	IBMUSER	15	EXECUTION			ES24	ES24
	SYSLOG	STC04316	+MASTER+	15	EXECUTION			ES24	ES24
	OSNMFD	STC04319	IBMUSER	15	EXECUTION			ES24	ES24
	RMF	STC04321	IBMUSER	15	EXECUTION			ES24	ES24
	TCPIP	STC04322	IBMUSER	15	EXECUTION			ES24	ES24
	HZSPROC	STC04323	IBMUSER	15	EXECUTION			ES24	ES24
	SDSF	STC04324	SDSF	15	EXECUTION			ES24	ES24
	ZFS	STC04325	ZFS	15	EXECUTION			ES24	ES24
	INIT	STC04329	IBMUSER	15	EXECUTION			ES24	ES24
	INIT	STC04330	IBMUSER	15	EXECUTION			ES24	ES24
	INIT	STC04331	IBMUSER	15	EXECUTION			ES24	ES24
	INIT	STC04332	IBMUSER	15	EXECUTION			ES24	ES24
	SDSFAUX	STC04333	IBMUSER	15	EXECUTION			ES24	ES24
	BPXAS	STC04334	IBMUSER	15	EXECUTION			ES24	ES24
	BPXAS	STC04335	IBMUSER	15	EXECUTION			ES24	ES24
	IZUANG1	STC04340	IZUSVR	15	EXECUTION			ES24	ES24
	IZUSVR1	STC04341	IZUSVR	15	EXECUTION			ES24	ES24
	RACF	STC04343	IBMUSER	15	EXECUTION			ES24	ES24
	TSO	STC04345	IBMUSER	15	EXECUTION			ES24	ES24
	IN3270	STC04346	IBMUSER	15	EXECUTION			ES24	ES24
	\$MASCOMM	STC00001	IBMUSER	15	PRINT		1		
	TADA	TSU03417	TADA	1	PRINT		2		
	TADA	TSU03431	TADA	1	PRINT		3		
	TADA	TSU03432	TADA	1	PRINT		4		
	TADA	TSU03434	TADA	1	PRINT		5		
	TADA	TSU03437	TADA	1	PRINT		6		
	BEANS	TSU03435	BEANS	1	PRINT		7		
	TADA	TSU03440	TADA	1	PRINT		8		
	TADA	TSU03443	TADA	1	PRINT		9		
	TADA	TSU03444	TADA	1	PRINT		10		
	TADA	TSU03447	TADA	1	PRINT		11		
	TADA	TSU03442	TADA	1	PRINT		12		
	TADA	TSU03446	TADA	1	PRINT		13		

Filter View Print Options Search Help									
SDSF JOB DATA SET DISPLAY - JOB BEANS									
PREFIX=* DEST=(ALL) OWNER=* SYSNAME= (TSU04356)									
LINE 1-3 (3)									
NP	DDNAME	StepName	ProcStep	DSID	Owner	C	Dest	Rec-Cnt	Page
	JESMSGLG	JES2		2	BEANS	K		2	
	JESJCL	JES2		3	BEANS	K		25	
	JESYSMSG	JES2		4	BEANS	K		2	

SDSF Copyright BOX

With scrollable main menu in z/OS V2R3 SDSF, copyright box/information became noticeable

- In prior releases, it shows up at the bottom of SDSF Primary Option Menu
 - Not displayed if you jump to another panel instead of this one, such as typing SD;ST from CUSTOMPAC MASTER APPLICATION MENU
- In z/OS V2R3, it is issued as ISPF message, and hence is shown on the first visible screen
 - For example, SD.ST will avoid copyright but stacking command SD;ST will not avoid

```
Display Filter View Print Options Search Help
HQX7790 ----- SDSF PRIMARY OPTION MENU -----
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
SYM System symbols   NODE Nodes
LOG System log       SO  Spool offload
SR  System requests  SP  Spool volumes
MAS Members in the MAS NS Network servers
JC  Job classes      NC Network connections
SE  Scheduling environments RM Resource monitor
RES WLM resources    CK Health checker

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COMMAND INPUT ==>
F1=HELP F2=SPLIT F3=END F4=RETURN F5=IFIND F6=BOOK
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE

SCROLL ==> CSR
```

z/OS V2R1

```
Display Filter View Print Options Search Help
SDSF MENU V2R3M0 LOCAL CPAC LINE 1-19 (49)
NP NAME Description Group Status
DA Active users Jobs
I Input Queue Jobs
O Output Queue Output
H Held output Queue Output
ST Status of jobs Jobs
JG Job groups JES
SYM System symbols System
LOG System log Log

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COMMAND INPUT ==>
F1=HELP F2=SPLIT F3=END F4=RETURN F5=IFIND F6=BOOK
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE

SCROLL ==> CSR
```

z/OS V2R3

SDSF Copyright BOX

- ⊕ ISFM701 message is used as copyright information that appears on SDSF screen
 - Member ISFM70 in ISF.SISFMLIB data set
- ⊕ In z/OS V2R3, when running SDSF under ISPF, you need to allocate ISF.SISFMLIB data set in ISPMLIB DD concatenation to support issuing copyright message (ISFM701)
 - Without this consideration, SDSF will not be initialized with ABENDU0093
 - SDSF MENU or first visible screen cannot be displayed

```
+ISF039I ERROR PROCESSING ISPF SETMSG   RC=12: Message ISFM701
+ISF039I ISFM701  message not found in 'ISPMLIB' library.
<snipped>
IEA794I SVC DUMP HAS CAPTURED: 140
DUMPID=001 REQUESTED BY JOB (BEANS  )
DUMP TITLE=ABEND=U0093,RC=0000,COMPON=SDSF-ESTAE,COMPID=5665-48
          801,ISSUER=ISFSTAE,SDSF ABEND ROUTINE
```

- ⊕ Similar consideration is applicable when running CLIST ISFACP to convert to ISFPRMxx parmlib member from ISFPARMS

SDSF Copyright BOX

- ✦ In z/OS V2R4 SDSF, copyright box is suppressed on entry to SDSF
 - On SDSF MENU or first visible screen, regardless of typing SD.ST and SD;ST, for example
- ✦ Enter ABOUT command from any tabular panel to display SDSF copyright notice
 - Viewing copyright notice from Help About is another way

```
Display Filter View Print Options Search Help
SDSF MENU V2R4M0 LOCAL ES24
PREFIX=* DEST=(ALL) OWNER=* SYSNAME=
NP NAME Description Group
DA Active users Jobs
I Input Queue Jobs
O Output Queue Output
H Held output Queue Output
ST Status of jobs Jobs
JG Job groups JES
SYM System symbols System
LOG System log Log
SR System requests Log
```

11 1. Extended help...
2. Keys help...
3. Help Index...
4. Tutorial...
5. Book...
6. Web sites...
7. REXX generation
8. REXX examples
9. REXX help...
10. Columns help...
11. About...

z/OS V2R4

```
Display Filter View Print Options Search Help
SDSF MENU V2R4M0 LOCAL ES24 LINE 1-18 (64)
PREFIX=* DEST=(ALL) OWNER=* SYSNAME=
NP NAME Description Group Status
DA Active users Jobs
I Input Queue Jobs
O Output Queue Output
H Held output Queue Output
ST Status of jobs Jobs
JG Job groups JES
SYM System symbols System
```

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```
COMMAND INPUT ==>
F1=HELP F2=SPLIT F3=END F4=RETURN F5=IFIND F6=BOOK
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE
```

SCROLL ==> CSR

- ✦ Without aforementioned consideration in z/OS V2R4, ABENDU0093 is no longer be happened
 - However, if you intend to display copyright notice by above operation, then ABENDU0093 is issued

Dynamic allocation for HSFLOG/HSFTRACE

⊕ In z/OS V2R3, when starting SDSF server address space by ISF.SISFJCL(SDSF) procedure

- SYSOUT data sets are dynamically allocated to both HSFLOG DD and HSFTRACE DD

```
//SDSF      PROC  M=00,          /* Suffix for ISFPRMxx */  
//          P='LC(A)'          /* Use sysout class A for SDSFLOG */  
/*      This is a sample procedure to start the SDSF server.  
<snipped>  
/*  
//SDSF      EXEC  PGM=ISFHCTL,REGION=0M,TIME=NOLIMIT,PARM='M(&M) ,&P'  
/*STEPLIB DD  DISP=SHR,DSN=ISF.SISFLOAD  
/*  
<snipped>
```

⊕ How to specify the SYSOUT class for dynamic allocation?

	SDSF server PARM option	Default
HSFLOG DD	LC(sysout-class)	LC(A)
HSFTRACE DD	TC(Sysout-class)	ISFPRMxx : OPTIONS TRCLASS(sysout-class) Default: A
		ISFPARMS : ISFPMAC TRCLASS=sysout-class Default: A

⊕ Specifying each DD statement with SYSOUT class prevents dynamic allocation

- SDSF uses specified SYSOUT class in such case

Dynamic allocation for HSFLOG/HSFTRACE

⊕ When starting SDSF server address space by ISF.SISFJCL(SDSF) procedure

- **SYSOUT class is A** for both HSFLOG DD and HSFTRACE DD

z/OS V2R3

SDSF JOB DATA SET DISPLAY - JOB SDSF (STC08851) LINE 1-6 (6)									
NP	DDNAME	STEPNAME	PROCSTEP	DSID	OWNER	C	DEST	REC-CNT	PAGE
	JESMSG LG	JES2		2	SDSF	K	LOCAL	32	
	JESJCL	JES2		3	SDSF	K	LOCAL	37	
	JESYSMSG	JES2		4	SDSF	K	LOCAL	31	
	HSFLOG	SDSF		101	SDSF	A	LOCAL	253	
	HSFTRACE	SDSF		102	SDSF	A	LOCAL	21	
	SDSFLOG	SDSF		103	SDSF	A	LOCAL	1,427	

⊕ You might want to specify right SYSOUT class based on your system operation

- LC controls HSFLOG/SDSFLOG DD while TC controls HSFTRACE DD

z/OS V2R3

//SDSF PROC M=00, P='LC(A),TC(K)'									
SDSF JOB DATA SET DISPLAY - JOB SDSF (STC05620)									
NP	DDNAME	StepName	ProcStep	DSID	Owner	C	Dest		
	JESMSG LG	JES2		2	SDSF	K			
	JESJCL	JES2		3	SDSF	K			
	JESYSMSG	JES2		4	SDSF	K			
	HSFLOG	SDSF		101	SDSF	A			
	HSFTRACE	SDSF		102	SDSF	K			
	SDSFLOG	SDSF		103	SDSF	A	LOCAL		

//SDSF PROC M=00, P='LC(K),TC(K)'									
SDSF JOB DATA SET DISPLAY - JOB SDSF (STC05623)									
NP	DDNAME	StepName	ProcStep	DSID	Owner	C	Dest		
	JESMSG LG	JES2		2	SDSF	K			
	JESJCL	JES2		3	SDSF	K			
	JESYSMSG	JES2		4	SDSF	K			
	HSFLOG	SDSF		101	SDSF	K			
	HSFTRACE	SDSF		102	SDSF	K			
	SDSFLOG	SDSF		103	SDSF	K	LOCAL		

TSO/E Logon Pre-prompt Exit (IKJEFLD)

⊕ Two Exits enable you to modify the way logon operations are performed

- Logon pre-prompt Exit **IKJEFLD**
- Authorized logon pre-prompt Exit **IKJEFLD1**

	IKJEFLD Exit	IKJEFLD1 Exit
State	Problem program	Supervisor
Key	8	8
Mode	AMODE(24),RMODE(24)	AMODE(24),RMODE(24) AMODE(31),RMODE(ANY)

⊕ How to install those Logon Exits?

- Link-edit IKJEFLD1 as a separate load module : IKJEFLD1 resides in its own load module
 - Can reside in LPA or LNKLIST
- **You must link-edit IKJEFLD with load module IKJEFLA shipped in SYS1.LPALIB**
 - **Regenerated IKJEFLA module will be activated via MLPA (IEALPAXx)**

⊕ When installing IKJEFLD Exit in z/OS V2R3, you must use IKJEFLA load module in SYS1.LPALIB data set shipped by z/OS V2R3 due to the change introduced in z/OS V2R3

- IKJEFLIO should have at least a date of 17075 and HTE77B0 eyecatcher

TSO/E Logon Pre-prompt Exit (IKJEFLD)

- ⊕ If old IKJEFLA module binded with IKJEFLD continues to activate in z/OS V2R3 system, you might see an unexpected LOGON related problem, for example...
 - Within the initial CLIST, SET &DSNAME = &SYSUID..ISPF.ISPPROF generates an invalid profile name due to the null &SYSUID returned
 - IKJ56709I INVALID DATA SET NAME, '.ISPF.ISPPROF'
 - IPSTART command abended with S0C4
- ⊕ If **ISRFIND LMOD(IKJEFLA)** operation discovers that module in any other library, such as STEPLIB, ahead of installed one, it might contain older code
 - Need to remove old IKJEFLA module to pick up regenerated module in z/OS V2R3
- ⊕ Of course, for upgrading to z/OS V2R4 and installing IKJEFLD Exit, you might use IKJEFLA load module in SYS1.LPALIB data set shipped by z/OS V2R4
 - BTW, size of IKJEFLA module is the same (x'4EE8') between z/OS V2R3 and V2R4

TSO/E Logon Post-prompt Exit (IKJEFLD3)

- ⊕ Prior to z/OS V2R3, when JCL JOB statement was built by TSO/E logon processor and passed to IKJEFLD3 Logon Exit, it was always on one 80-byte card
- ⊕ Starting at z/OS V2R3 and later ...
 - JOB statement will be continued to a second 80-byte card if JOB card contains both ACCT# (account number) and REGION (region size) parameters
 - The first card will end in a comma to indicate that it is continued
 - If ACCT# and REGION are not both specified, TSO/E Logon built JOB statement is on one 80-byte card

z/OS V2R1	z/OS V2R3
<pre>1 //BEANS JOB '1234',REGION=4096K 2 //IKJACNT EXEC IKJACNT XX*----- XX* SERVERPAC LOGON PROCEDURE XX* XX* THIS PROCEDURE ENABLES USERS TO LOG ON TO TSO/E. XX* THE CLIST ISPPDF, WHICH RESIDES IN CPAC.COMDPROC, XX* IS EXECUTED AT FIRST TO INVOKE THE ISPF. XX*----- 3 XXIKJACNT PROC 4 XXIKJACNT EXEC PGM=IKJEFT01,DYNAMNBR=500,PARM=ISPPDF <snipped></pre>	<pre>1 //BEANS JOB '1234', // REGION=4096K 2 //IKJACNT EXEC IKJACNT XX*----- XX* SERVERPAC LOGON PROCEDURE XX* XX* THIS PROCEDURE ENABLES USERS TO LOG ON TO TSO/E. XX* THE CLIST ISPPDF, WHICH RESIDES IN CPAC.COMDPROC, XX* IS EXECUTED AT FIRST TO INVOKE THE ISPF. XX*----- 3 XXIKJACNT PROC 4 XXIKJACNT EXEC PGM=IKJEFT01,DYNAMNBR=500,PARM=ISPPDF4 <snipped></pre>

TSO/E Logon Post-prompt Exit (IKJEFLD3)

- ⊕ **Change was introduced by enhancement of 8-characters TSO/E userid support**
 - Does not depend on LOGON USERIDMAX(7|8) parameter in IKJTSOxx parmlib member
- ⊕ **When attempting to log on to TSO/E, and if IKJEFLD3 Exit ends up modifying the JOB statement incorrectly**
 - **IKJ56453I SESSION CANCELLED** and LOGON failure might be seen
 - For example, the comma to continue the first JOB statement card to a second one might have been omitted inadvertently by IKJEFLD3 Exit
- ⊕ **Pay attention to TSO/E DOC APAR OA57290 (z/OS V2R3)**
 - ALL TSO/E USERS THAT RUN WITH AN IKJEFLD3 USER EXIT MAY NEED THE EXIT TO BE MODIFIED AFTER INSTALLING V2.3

TSO/E LOGON timeout

- ⊕ **In z/OS V2R4 TSO/E, LOGON command now has a timeout value**
 - If LOGON prompting takes longer than 5 minutes by default, LOGON session will be terminated
 - IKJ604I TSOLOGON TIMED OUT. USERID UNKNOWN, PROC UNKNOWN
 - ✓ New ABEND ABEND01A reason Code x'30' – SVC dump is not captured
- ⊕ **Additionally, z/OS V2R4 TSO/E APAR OA57937 (Base code) introduced new capability**
 - You can set a LOGON timeout value (5 minutes by default) or disable timeout
 - LOGON TIMEOUT(n) in IKJTSOxx parmlib member
 - ✓ Specifies a value between 0 and 255 denoting how many minutes TSO LOGON prompting is allowed before LOGON session is terminated
- ⊕ **Specifying LOGON TIMEOUT(0) is needed to disable TSO/E LOGON timeout feature**
 - Recommendation in this case is to apply TSO/E APAR OA58288 to avoid ABEND32E RC324 during LOGON

TSO/E LOGON timeout

- ⊕ If you keep full-screen LOGON panel display for any reason, LOGON timeout can be resulted after 5 minutes by default since "IKJ56700A ENTER USERID -" prompt
- userid *LOGON* is shown until LOGON processing is completed

z/OS V2R4

```
01:43:05.41 INSTREAM 00000290 LOGON
01:43:10.54 IBMUSER 00000290 D TS,L
01:43:10.54 IBMUSER 00000090 CNZ4105I 01.43.10 DISPLAY ACTIVITY 701
                                701 00000090 JOBS      M/S      TS USERS  SYSAS      INITS      ACTIVE/MAX VTAM      OAS
                                701 00000090 00001    00016    00002    00036    00005    00002/00010    00010
                                701 00000090 IBMUSER  IN      *LOGON*  OWT
01:47:44.38 IBMUSER 00000290 D TS,L
01:47:44.38 IBMUSER 00000090 CNZ4105I 01.47.44 DISPLAY ACTIVITY 705
                                705 00000090 JOBS      M/S      TS USERS  SYSAS      INITS      ACTIVE/MAX VTAM      OAS
                                705 00000090 00001    00016    00002    00036    00005    00002/00010    00010
                                705 00000090 IBMUSER  IN      *LOGON*  OWT
01:48:05.41          00000090 IKJ604I TSOLOGON TIMED OUT. USERID UNKNOWN, PROC UNKNOWN
01:48:05.41          00000290 IEA989I SLIP TRAP ID=X13E MATCHED. JOBNAME=*UNAVAIL, ASID=003F.
01:48:05.41 STC01581 00000090 IST804I CLOSE IN PROGRESS FOR TS00003 OPENED BY ***NA***
01:48:05.41 STC01581 00000090 IST400I TERMINATION IN PROGRESS FOR APPLID TS00003
01:48:05.41          00000290 IEA989I SLIP TRAP ID=X33E MATCHED. JOBNAME=*UNAVAIL, ASID=003F.
01:48:05.41 STC01581 00000090 IST805I VTAM CLOSE COMPLETE FOR TS00003
01:48:05.41 INSTREAM 00000290 LOGON
```

- ⊕ If RACROUTE REQUEST=VERIFY is successful, prompting task terminates, timer is reset, and user's session is scheduled to start

TSO/E LOGON timeout

⊕ Another example for LOGON timeout

● Reply pending for RACF WTOR message

- RACF SPECIAL user attempts to LOGON with an incorrect password a sufficient number of times to reach revoke count
- RACF issues message to console asking if he should be revoked

```
ICH301I MAXIMUM PASSWORD ATTEMPTS BY SPECIAL USER XXXXX AT TERMINAL XXXXXXXX.  
ICH302D REPLY Y TO ALLOW ANOTHER ATTEMPT OR N TO REVOKE USER XXXXX
```

- Time between when LOGON started and waiting for operator response reaches timeout value
- LOGON session is terminated, resulting in ABEND during RACINIT processing

```
IKJ604I TSOLOGON TIMED OUT. USERID UNKNOWN, PROC UNKNOWN  
ICH409I 13E-000 ABEND DURING RACINIT PROCESSING
```

VSAM DBA for CICS LSRPOOLS

2018 Sacramento

✚ In z/OS V2R2, DFSMS VSAM introduced Dynamic Buffer addition (DBA) capability for LSR pools

- If VSAM detects that there are not enough buffers allocated, then VSAM will create new ones and issue new message IDA9990I

```
IDA9990I VSAM DBA ADDED   xxx DATA BUFFERS OF   24576 BYTES EACH TO  
SHRPOOL      1 BECAUSE THERE WERE INSUFFICIENT BUFFERS TO PROCESS THE  
REQUEST. RECOMMENDATION: FOR PERFORMANCE, REBUILD THE SHARED POOL WITH  
AN INCREASE IN SIZE.
```

- **It states how many buffers of what size were added and recommends that the shared pool resource definition might be updated**
- **Consideration:**
 - When CICS has dynamically created the LSRPOOL definition, there is no resource definition to update (Ref: CICS TS DOC APAR PI75316 – May, 2017)
 - There is no way to turn off DBA which causes too many buffers to be added for CICS LSRPOOLS

✚ CICS TS APAR PI92486 (for V5R1,V5R2,V5R3,V5R4) has been taken to disable the VSAM Dynamic Buffer Addition for CICS LSRPOOLS

- CICS File Control has been changed to specify DBA=NO on the BLDVRP macros when building the LSRPOOLS

VSAM DBA for CICS LSRPOOLS

2020 Fort Worth

- ⊕ Starting in DFSMS APAR OA54666 (z/OS V2R2,V2R3) and z/OS V2R4, calculations for amount of buffers to be dynamically added for DBA has been changed
 - No smaller than four and no larger than fifteen
 - INTENTION TO ADJUST DYNAMIC BUFFER ADDITION PROCESSING FOR LSR

⊕ Summary of changes:

	Releases	APAR#	Base level	
z/OS DFSMS	V2R2, V2R3	OA54666	V2R4	Adjust DBA processing (4-15 buffers)
CICS TS	V5R1, V5R2, V5R3, V5R4	PI92486	V5R5	DBA was disabled by default via BLDVRP DBA=NO (cannot be overridden)
IMS	V12 V13 V14	PI43661 PI45377 PI45378	V15	

Length of VSB control block in ESQA

2018 Sacramento

- ⊕ VSB (Volume Statistics Block) control blocks in ESQA are built to represent volume statistics which are used to capture SMF type 42 subtype 5 and 6 records, regardless of recording these SMF type/subtype
 - VSB control block is allocated for each online volume that is used, regardless of SMS-managed or not, and it's true even when SMS null configuration is activated
- ⊕ In z/OS V2R2, the length of VSB (Volume Statistics Block) has been increased to 616 bytes (x'268') from 216 bytes (x'D8') to support new DFSMS statistics
 - Same change was introduced by:
 - DFSMS APAR OA44322 (z/OS V2R1)
 - **For example, additional 4MB ESQA storage should be needed to support 10,000 online and used volumes**
 - **Consideration:**
 - Message IRA103I might be observed after this change, which suggests that you might evaluate the system requirement for SQA /ESQA storage
 - ✓ IRA103I SQA/ESQA HAS EXPANDED INTO CSA/ECSA BY nn PAGES

Length of VSB control block in ESQA

2020 Fort Worth

⊕ Change was introduced by

DFSMS APAR	z/OS V2R2	z/OS V2R3	z/OS V2R4
OA55711	PTF UA98305	PTF UA98304	Base code

- Prior to APAR OA55711, each online DASD device allocated 616 bytes in 31 bit common storage for VTOC and VVDS IO statistics
- With APAR OA55711, each online device will allocate 48 bytes in 31 bit common storage and an additional 896 bytes above 2G bar

➤ New function to provide I/O statistics for system I/O and Data transfers between DASD and cloud

⊕ **VSCR for ESQA by moving VSBs to HVCOMMON while the total length for VSB was again increased to 944 (48 + 896) bytes from 616 bytes**

	Without APAR OA44322	With APAR OA44322	With APAR OA55711
z/OS V2R1	ESQA 216 bytes	ESQA 616 bytes	n/a
z/OS V2R2 z/OS V2R3	n/a	ESQA 616 bytes	ESQA 48 bytes HVCOMMON 896 bytes

F CATALOG,REPORT,CACHE command

⊕ F CATALOG,REPORT,CACHE command output (message IEC359I) is useful

- Gathering global statistics about user catalog usage and performance

⊕ Problem with display of HIT% column

- Percent sign is missing in case that at least one search was done but there are zero hits
- If no search was done at all, there are also zero hits, but in that case there is a percent sign

F CATALOG,REPORT,CACHE							
*CAS*****							
* HIT%	* -RECORDS-	* -SEARCHES	* --FOUND--	* -DELETES-	* -SHR UPD-	* --PURGE--	*
*	*	*	*	*	*	*	*
* CATALOG.USER1				(VLF)			*
* 84%	177	15,854	13,475	522	0	7	*
* CATALOG.USER2				(ISC)			*
* 0%	1	0	0	0	0	732	*
* CATALOG.USER3				(ISC)			*
* 0	1	1	0	0	0	7	*
* CATALOG.USER4				(ISC)			*
* 0	13	43,902	195	22	0	0	*

z/OS V2R3

Condition	HIT% column
SEARCH is zero	0%
SEARCH is non-zero and FOUND is 0	0
SEARCH is non-zero and ((FOUND * 100) / SEARCH) is less than 1	0

⊕ DFSMS SUG APAR OA56253 has been taken for this problem

- PERCENT SIGN MISSING IN CATALOG CACHE REPORT

F CATALOG,REPORT,CACHE command

⌘ z/OS V2R4 resolved the problem by DFSMS APAR OA57308 (Base code)

- Removed % sign entirely from cache hit rate

⌘ New style of HIT% column in message IEC359I

- Position for number of HIT% has not changed

z/OS V2R4

```
F CATALOG,REPORT,CACHE
IEC351I CATALOG ADDRESS SPACE MODIFY COMMAND ACTIVE
IEC359I CATALOG CACHE REPORT 302
*CAS*****
*   HIT% -RECORDS- -SEARCHES --FOUND-- -DELETES- -SHR UPD- --PURGE-- *
*
* USER.FS16.CATALOG                      (ISC)
*   50          7          53          27          5          0          1
* UCAT.ES24.SMPE                          (ISC)
*   66          1          3          2          0          0          0
* UCAT.ES24.OMVS                          (ISC)
*   85         29         199         170         0          0          0
* MCAT.ES24                              (ISC)
*   67        146        4,756        3,211         0          0          1
*CAS*****
IEC352I CATALOG ADDRESS SPACE MODIFY COMMAND COMPLETED
```


Condition Code from IDCAMS LISTCAT command

⊕ Change was introduced by

DFSMS APAR	z/OS V2R1	z/OS V2R2	z/OS V2R3
OA47745	PTF UA78100	PTF UA78101	Base code

⊕ Old behavior

- When issuing IDCAMS LISTCAT command for **empty objects**
 - In some cases, total count of items displayed is **zero** while returns a successful return code of **zero**

⊕ New behavior

- **Issues a warning return code of 4, when LISTCAT lists no items for the object**

```
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 4
IDC0002I IDCAMS PROCESSING COMPLETE. MAXIMUM CONDITION CODE WAS 4
IEF142I BEANSZZ STEP1 - STEP WAS EXECUTED - COND CODE 0004
```

⊕ IDCAMS message update

- IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS cde
 - Note: One reason for a condition code of 4 could be that the LISTCAT resulted in no entries being returned by CATALOG

Condition Code from IDCAMS LISTCAT command

⊕ Migrating to z/OS V2R3 from z/OS V2R1 without OA47745 (and listing specific entry type)

- Housekeeping JOB consists of 3 steps
 - STEP1: Initialize data set to store SYSPRINT information generated by IDCAMS LISTCAT command
 - STEP2: Run LISTCAT command against all the UCATs to list NONVSAM entries
 - ✓ **LISTCAT CAT(ucat-name) NONVSAM VOL**
 - STEP3: Scan output data set to retrieve VOLSER information for tape data sets only when the condition code from STEP2 was 0
- **Due to the existing UCAT without NONVSAM entry, CC from STEP2 was changed to 4 from 0**

Before change	After change
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0	IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0	IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0	IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 4
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0	IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0
IDC0002I IDCAMS PROCESSING COMPLETE. MAXIMUM CONDITION CODE WAS 0	IDC0002I IDCAMS PROCESSING COMPLETE. MAXIMUM CONDITION CODE WAS 4

- JCL EXEC statement for STEP3 needs to adjust to be able to run even in above case
 - COND=(0,LT,STEP2) should be replaced by COND=(4,LT,STEP2)

CAS DYNAMIC DUMP – IGG0CLE1 RC50 RSN20

⊕ Change was introduced by

DFSMS APAR	z/OS V2R1	z/OS V2R2	z/OS V2R3
OA50937 OA52118	PTF UA83667	PTF UA83668	Base code

⊕ Old behavior

- When catalog name cannot be found in VVCR record within VVDS
 - **Suppress taking of a dump**
 - ✓ Return and reason code of 050-020 from VVDS manager
 - **Suppress issuing IEC331I message which indicates catalog module to generate error**

⊕ New behavior

- Suppressing both 050-020 dump and message IEC331I **has been eliminated**
 - Better first-failure data capture can occur

CAS DYNAMIC DUMP – IGG0CLE1 RC50 RSN20

⊕ Testing in z/OS V2R3 environment with zapped VVCR

- Environment
 - MCAT has CONNECTOR RECORD (U) for UCAT.TEST.BEANS
 - UCAT.TEST.BEANS resides on expected volume
 - **No** UCAT.TEST.BEANS name found in VVCR – renamed via AMASPZAP intentionally
- Issued IDCAMS LISTCAT UERCATALOG CAT(UCAT.TEST.BEANS) command to open UCAT
 - CAS DYNAMIC DUMP was captured with IEC331I 050-020 message
- There are some return codes that will cause dump to be taken regardless of the dynamic dumping status (DUMPON/DUMPOFF)
 - 050-020 error code is one of these

```
IEA045I AN SVC DUMP HAS STARTED AT TIME=22.14.37 DATE=11/19/2018 115
FOR ASIDS(0031,0001)
QUIESCE = YES
IEA794I SVC DUMP HAS CAPTURED: 116
DUMPID=001 REQUESTED BY JOB (CATALOG )
DUMP TITLE=CAS DYNAMIC DUMP-IGG0CLE1 RC50 RSN20
IEC331I 050-020(UCAT.TES,MN23C1),CATALOG,ALLOCATE,VVCR,IGG0CLE1
IEC331I 004-34,CATALOG ,ALLOCATE,OPN VSM ACB,IFG0191X
IEC331I UCAT.TEST.BEANS
IEC161I 004-080,CATALOG,ALLOCATE,SYS00043
IEC331I 004-86,CATALOG ,ALLOCATE,OPN CATALOG,IDACAT11
IEC331I UCAT.TEST.BEANS
IEA611I COMPLETE DUMP ON SYS1.CPAC.DMP00004 152
DUMPID=001 REQUESTED BY JOB (CATALOG )
FOR ASIDS(0031,0001)
```

z/OS V2R3

CAS DYNAMIC DUMP – IGG0CLE1 RC50 RSN20

⊕ Migrating to z/OS V2R3 from z/OS V2R1 without OA50937/OA52118

- Environment
 - MCAT has still CONNECTOR RECORD (U) for UCAT.old
 - **No** UCAT.old resides on expected volume
 - **No** UCAT.old name found in VVCR
- UCAT.old was specified on data set name field in ISPF OPT3.4
 - CAS DYNAMIC DUMP was captured with IEC331I 050-020 message
- IDCAMS EXPORT DISCONNECT command needs to run to avoid capturing dump
 - Cleanup obsolete CONNECTOR RECORD (U) in MCAT

z/OS LOAD operation (IBM z14 Driver 36)

⊕ IBM z14 HMC Version 2.14.1 (Driver 36) introduced SCSI Load Enhancements

- Allows you to perform a load without clearing memory first
 - Now, there is faster load time when loaded program does not require memory to be cleared for proper operation

	LOAD NORMAL	LOAD CLEAR
Standard LOAD (z/OS)	Yes	Yes
SCSI LOAD	No (Before change) Yes (After change)	Yes

⊕ "Customize Image Profiles" window - "Load" option

- New item -- Standard load
 - To perform load on the logical partition, click Standard load

	Before change	After change
Load type	<input type="radio"/> Clear <input type="radio"/> SCSI <input type="radio"/> SCSI dump	<input checked="" type="radio"/> Standard load <input type="radio"/> SCSI load <input type="radio"/> SCSI dump

z/OS LOAD operation (IBM z14 Driver 36)

⊕ "Load Task" on "Image" - "Load" window

- New item -- Clear the main memory on this partition before loading it

➤ **Select this to clear main memory storage on the logical partition before a load**

	Before change	After change
Load type	<input type="radio"/> Normal <input type="radio"/> Clear <input type="radio"/> SCSI <input type="radio"/> SCSI dump	<input type="radio"/> Standard load <input type="radio"/> SCSI load <input type="radio"/> SCSI dump <input type="checkbox"/> Clear the main memory on this partition before loading it

⊕ New operation - How to specify z/OS LOAD type (NORMAL/CLEAR)?

- Operational guide needs to be updated to reflect the change

	Load type	Clear the main memory on this partition before loading it
LOAD NORMAL	Standard load	Not select (Not check)
LOAD CLEAR	Standard load	Select (Check)

QUESTIONS?

Thank You



Your feedback is important!

Submit a session evaluation for each session you attend:

SHARE mobile app -or- www.share.org/evaluation

