



z/OS 1.13 Early User Experience

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SCE Configuration

- **Two data centers about 100 KM apart**
 - One in LA County, one in Orange County
 - One is primarily for Disaster Recovery for the other
- **Four full function parallel sysplexes**
 - Two z10s and one z9
 - Sysprog sandbox (two members)
 - Development sysplex subject to SLA (two members)
 - Development sysplex was the agreed target for the ESP
 - Other sysplexes are client oriented production systems
- **Also one basic sysplex for XRC/GDPS (DR)**

Migration Ambition

- **All images were running on R12**
- **z/OS upgrade to R13 on all images**
- **We do not run multiple levels for long periods**
 - **We lose migration path for down-level releases**
 - **We install and migrate with all deliberate speed**
- **There are tools to help manage multiple levels**
 - **Use ASAP in Service Link**
 - **Run FIXCAT against each release's CSI**
 - **Order maintenance by APAR, not PTF**
 - **Submit the same order list for each level**

Migration Aids

- Several Health Checks are available
- Install via PTF and run on previous level(s)
- Named ZOSMIGVR* for z/OS release
 - **ZOSMIGV1R13_CNZ_CONS_OPER_MODE**
 - R13 defaults to distributed mode if not specified
 - **ZOSMIGV1R13_RO_SYMLINKS**
 - Possible symlink definition incompatibility
 - **ZOSMIGV1R13_ZFS_FILESYS**
 - Interface level 3 and sysplex level 'filesys' or higher
- Remember to activate checks via either...
 - UPDATE action
 - SDSF CK function

More Migration Aids

- **FIXCAT reports using enhanced hold data**
 - Means 'fix category'
- **IBM.TargetSystem-RequiredService.z/OS.V1R13**
- **Identified APARs/PTFs should be installed on all down level systems in advance of first R13 installation**
- **If pulling enhanced hold data from service.boulder.ibm.com via FTP then...**
- **...you must request **full.txt** to get FIXCAT data**

ESP Migration Time Line

- **04/29/2011 SCE orders ServerPac via ShopzSeries**
 - First ESP where we could place a 'standard' order
- **06/07/2011 Order ready for download from Shop**
- **06/07/2011 SCE downloads order (to PC)**
- **06/08/2011 SCE begins ServerPac install**
 - My first install in several years
- **06/27/2011 SCE 70+ usermods are installed**
- **06/28/2011 IPL on first sandbox sysplex member**
 - Included all 'environmental' tailoring and config
- **07/07/2011 IPL on remaining sandbox system**
- **07/20/2011 First IPL on development sysplex**

Notes on R13 ServerPac

- Download package size 13.2 GB vs. 11.3 GB for R12
- We added some products, e.g. OMEGAstuff
- Unable to download in office via SCE network ???
- From home, accessed Shop directly over internet
 - Using Download Director, process took 5 hrs 20 mins
 - Number of connections varied from two to five @ 700 KBS
- Uploaded to host via FTP to Mod-27 full-volume zFS
 - Allocated as extended VSAM for > 4 GB
 - DEFINE CLUSTER (NAME(hlq.R13WORK1.ZFS) -
 - VOLUMES(R13WK1) SHR(3) DATACLAS(EXT) -
 - CYLINDERS(**30000,100**) LINEAR)
 - EXT is our SMS data class for extended data sets

More Notes on ServerPac

- **All DASD Shark virtual allocations**
 - **Single Mod-9 sysres migratable via volume dump/restore**
 - **System zFS files migratable via logical dump/restore**
 - **Non-migrating Mod-9/Mod-27 for SMPE CAT/DLB volumes**
- **USS file system space**
 - **Multi-volume zFS simplifies migration**
 - **Use preallocated object for DFDSS RESTORE**
 - **Capacity not tied to specific volume layout**

Still More Notes on ServerPac

- **We always use the Full-System Replace option**
- **Easiest ServerPac to date**
- **Sizing of libraries better than ever**
 - **Less need to adjust space or directories**
 - **But be prepared to increase allocations over time**
- **Consider giving LINKLIST libs secondary allocations**
 - **Fixing out-of-space condition during APPLY is laborious**
 - **StarTool (or antecedent PDS command) helps a lot**
 - **Health Checker complains, but YOU run maintenance!**

ServerPac and Me

- **This was my first ServerPac installation in years**
- **One rut in the road: ‘alien’ HLQs in delivered files**
- **We rename all files to SYS1 during install**
 - **Seven RACF plexes to manage**
 - **We own SYS1, other HLQs could conflict with apps**
- **One job renames install data sets to user HLQ**
- **I had RACF problems with ‘TCPIP’, etc.**
- **There were HLQ.* profiles in place for all aliens**
 - **Created by the regular ServerPac guy**
 - **No ACCESS list in the profiles**
 - **They worked for him because he was ‘owner’**

SCE Customizing with USERMODs

- **We have more than 70 USERMODs installed via SMP/E**
- **Exits, option modules, ISPF panels, etc.**
- **Most of them reinstall with only MCS updates**
 - **FMID and req/prereq changes**
 - **REWORK() date set current for doc purposes**
- **Some changes were required for R12 → R13**
 - **RMM: EDGUX100 exit module - SAMPLE EDGCVRSX**
- **Note: migrating from N-(>1) release requires care**
 - **Most doc deals with one level change**
 - **May need to consult older doc for previous changes**

ISV Adventures

- **Getting ready for any new z/OS release**
 - Some routine, some emerging surprises
 1. Ask each ISV for required fixes or level
 2. Install required fixes/level and test
 3. Loop until no problems found
- **Some of the 'ISV' (non-ServerPac) products we run**
 - CA HSC and CA MIM for both silos and virtual tape
 - Control-D, Control-V
 - CA11, ISPW, JHS, MXG, Connect Direct (NDM)
 - StarTool, VPS, CA TPX
 - Tivoli Work Load Scheduler (TWS), OMEGAMON suite
 - CA Vision:Results (DYL280), QuickStart
- **No show stoppers!**

ISV Adventures

- **ESP customers need ducks in a row by GA - 90 days**
- **We did not find any delinquent vendors/products**
 - **I.e. every vendor we contacted had info/fixes available**
- **Our products mostly worked without upgrade**
- **One exception: CA MIM for tape drive mgmt**
 - **“MIM0095E MIM MSIERROR CODE=1805 issued by ...”**
 - **“Unable to locate IEFW21SD.IEFAB4FA”**
 - **Problem was fixed by RO26445**

PARMLIB Coexistence Issues

- **Old, chronic problem with mixed releases**
- **New keywords may not be recognized by lower level(s)**
- **Especially true during IPL with IEASYSxx**
- **Sometimes new keywords are simply ignored**
 - **Maybe a complaint, system still comes up OK**
- **Sometimes unrecognized keyword stops IPL**
- **Or worse: system comes up wrong, e.g. SMS**
 - **Unrecognized parameter results in 'default config': yikes!**
- **A problem for migration, sharing, and fallback**

PARMLIB Coexistence Issues

- One new keyword implemented so far in R13
- Parm in member DEVSUPxx (more later)
 - Controls O/C/E message description
- New keyword in DEVSUPxx is ignored by R12!
- Likewise command SET DEVSUP=xx ignores kwd
- Allows sharing of PARMLIB among releases
- Allows seamless fallback planned or otherwise
- Allows ROUTE *ALL commands regardless of level
- Note: toleration/coexistence PTFs are required
- **A major advance in system management**

First IPL Boo-boos ;-(

- **Forgot new IPL text after post-ServerPac PTF**
 - ServerPac includes a job to build IPL text
 - Before first IPL, installed a PTF that required new IPL text
 - Got wait state 075-06: IPL text does not match nucleus
- **Forgot zFS parm change on sharing system**
 - Sharing R12 system still had 'sysplex_admin_level=2'
 - Changed R12 parm to 'sysplex=filesys' and restarted ZFS task
- **Forgot about ICSF proc, missing in R13**
 - R12 had PGM= change in ICSF task incompatible with R11
 - Moved ICSF proc to sysres resident PROCLIB for all systems
 - Did not put ICSF proc into sysres PROCLIB
 - Solution: moved proc back to shared PROCLIB

Open/Close/End-of-Volume Abend and Reason Code Description

- **PARMLIB(DEVSUPxx): OCE_ABEND_DESCRIP=YES**
 - New text borrowed from message manual explanation
 - Appears in joblog and syslog
 - Not for all abends, just O/C/E
- **OS Command: SET DEVSUP=xx**
 - Allows extended message to be turned on or off
- **No granularity at this point**
 - All on or all off
 - Some customers have suggested enhancements
 - Not likely by GA, but see OA37074: shorten verbiage
- **R12 does not complain or acknowledge new parm**

O/C/E Message for IEC141I

IEC141I 013-

**18,IGG0191B,TESTMSG,ABEND214,SYSUT1,7802,BR90
02,TED066.JCL.**

ERROR DESCRIPTION:

An OPEN macro instruction was issued for a partitioned data set. The DSNNAME parameter specified a member that could not be found.

END ERROR DESCRIPTION: IEC141I

O/C/E Message for IEC031I

IEC031I D37-

**04,IFG0554P,TESTMSG,ABENDX37,SYSUT2,7802,BR90
02,TED066.TOOS**

ERROR DESCRIPTION:

A data set opened for output used all the primary space, and no secondary space was requested. Change the JCL specifying a larger primary quantity or add a secondary quantity to the space parameter on the DD statement.

END ERROR DESCRIPTION: IEC031I

SDSF Sysplex Communication

- **SDSF can now use XCF for sysplex communication**
- **Previously MQ was required for...**
 - Health checker
 - Processes
 - Enclaves
 - Resource monitor
- **New cmd SET CMODE 1 to accommodate down-level**
 - 1. z/OS V1R12 (z12)
 - 2. z/OS V1R13 (z13)
 - 3. Default (i.e. #2)

Multiple Colors in SDSF Operlog

- We modify console messages for color
- Each system in a plex gets its own color
- Code in WTO exit IEAVMXIT sets color flags
- These colors now show up SDSF operlog
- Also some additional color(s) based on ???
- In the following slide...
 - Green is from 'this' system (R13)
 - Blue is from the 'other' system (R12)
 - Yellow is RYO health check, green on MCS console

Multiple Colors in SDSF Operlog

```

SDSF OPERLOG  DATE 2011/08/03      6 WTORS      COLUMNS 39- 118
COMMAND INPUT ==> █                SCROLL ==> CSR
00000010 ANTX0051I NO ACTIVE XRC SESSIONS.  ISSUE XSTART COMMAND
STC01142 00000010 HZ50001I CHECK(SCE,XRC_STATUS_CHECK): 993
993 00000010 XRCH001E No active XRC sessions
993 00000010 Session: None Master: None Couple status: None
993 00000010 Current delay: 0 Current exposure: 0
993 00000010 Start XRC and try again
993 00000010 Check version: XRCK01_EXEC
00000201 $HASP249 COMMAND RECEIVED FROM AUTO COMMAND ID=7775 994
994 00000201 $RALL,Q=AEFHJOP,R=LOCAL,D=N1R99,OUTDISP=WRITE
00000201 $HASP249 COMMAND RECEIVED FROM AUTO COMMAND ID=7776 996
996 00000201 $RALL,Q=G,R=LOCAL,D=R5MD1,OUTDISP=WRITE
00000201 $HASP249 COMMAND RECEIVED FROM AUTO COMMAND ID=7777 998
998 00000201 $RALL,R=COM,D=N1R50,OUTDISP=WRITE
00000201 $HASP249 COMMAND RECEIVED FROM AUTO COMMAND ID=7778 000
000 00000201 $RALL,R=AUTOCOM,D=N1R50,OUTDISP=WRITE
00000201 $HASP249 COMMAND RECEIVED FROM AUTO COMMAND ID=7779 002
002 00000201 $RALL,R=FICHE,D=N1R50,OUTDISP=WRITE
00000201 $HASP249 COMMAND RECEIVED FROM AUTO COMMAND ID=7851 004
004 00000201 $RALL,R=R51,D=N1R51,OUTDISP=WRITE
00000201 $HASP249 COMMAND RECEIVED FROM AUTO COMMAND ID=7920 006
006 00000201 $RALL,R=R120,D=N1R120,OUTDISP=WRITE
00000201 $HASP249 COMMAND RECEIVED FROM AUTO COMMAND ID=7921 008
008 00000201 $RALL,R=R121,D=N1R121,OUTDISP=WRITE
00000201 $HASP249 COMMAND RECEIVED FROM AUTO COMMAND ID=7922 010
010 00000201 $RALL,R=R122,D=N1R122,OUTDISP=WRITE
STC      00000201 ASDA257I LINK ACTIVE from A0 to B1
00000210 ANTLB001I XQUERY ALL
00000010 ANTX0051I NO ACTIVE XRC SESSIONS.  ISSUE XSTART COMMAND
STC07990 00000010 HZ50001I CHECK(SCE,XRC_STATUS_CHECK): 116
116 00000010 XRCH001E No active XRC sessions
116 00000010 Session: None Master: None Couple status: None
116 00000010 Current delay: 0 Current exposure: 0
116 00000010 Start XRC and try again
116 00000010 Check version: XRCK01_EXEC
00000215 !AOP3102 PEER LINK A0 SEND COUNT(1210), RECEIVE COUNT(1211),
VE)
00000215 !AOP3102 PEER LINK A1 SEND COUNT(1209), RECEIVE COUNT(1208),
VE)
00000205 !AOP0208 2 ITEMS SHOWN
STC08109 00000010 *CSQX004I MB10 CSQXSPRM Channel initiator is using 37 MB of 1
120 00000010 storage, 1599 MB are free

```

Wandering SSH

- **At first we could not find SSH**
- **Orderable under 'Ported Tools'**
- **Feared we might have failed to order it**
- **We use SSH a lot**
- **SSH formerly lived in zFS AFOROOT**
- **R13 does not supply an AFOROOT zFS**
- **We eventually found SSH in OMVS ROOT zFS**
- **Same directory structure, different file location**
- **SSH works fine**

That Demon FTP

- In R13, FTP daemon FTPDx now runs APF authorized
- Previously, FTPDx messages had '+' prefix
 - '+' is standard indication for problem state tasks
- We use Tivoli AFOperator for automation
- Table driven, needs exact msgid w/ or w/out '+'
- In R12 we were looking for...
 - +EZY2702I Server-FTP: Initialization completed
 - +EZYFT59I FTP shutdown complete
- In R13 AFOP didn't know when FTPDx was up/down
- Changing AFOP to plain msgid fails under R12

CSP Stumbles, Limpes Along

- **Cross System Product**
- **Eons out of support**
- **Still worked without intervention up to z/OS R7**
- **'Compile' stage failed in z/OS R8 with new LE**
- **Workaround: use a copy of R7 SCEERUN**
- **It still works in R13 with R7 copy**

- **Anyone interested in a therapy group?**

Questions?

