

z/OS PARMLIB Successful Practices - User Experience

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D PARMLIB

IEE251I 10.07.58 PARMLIB DISPLAY 446

PARMLIB DATA SETS SPECIFIED

AT IPL

ENTRY FLAGS VOLUME DATA SET

1	S	SYSCTT	USCT.PARMLIB	On system-specific cat pack
2	S	SYSX04	SYS2.PARMLIB	Shared across all LPARs
3	D	SYSR31	SYS1.PARMLIB	IBM Vanilla, shared across lpar

How do we specify multiple parmlibs?

```
SYS1 . IPLPARM( LOADTT )  
SYSCAT      SYSCTT113CMCAT . VSYSCTT  
SYSPARM     00  
IEASYM      ( TT , 00 , VS , L )  
PARMLIB     USCT . PARMLIB  
PARMLIB     SYS2 . PARMLIB  
PARMLIB     SYS1 . PARMLIB
```

- LOADPARM 524ATTM

Symbol Usage

- We HEAVILY use symbols in our shop
- IEASYM (TT,00,VS,L)
- TT is the System (LPAR) specific
- 00 is shared by all LPARs, it sets up the TT
- VS is shared by all LPARs, unless we're in release transition (lives in SYS1.PARMLIB)

IEASYM00 - Shared by all LPARs

```
/* Static Symbol Definitions for all systems */

SYSDEF SYMDEF(&TZONE.='&EDT') /* Set current time zone */
SYMDEF(&EDT.='W.04') /* GMT offset for EDT */
SYMDEF(&EST.='W.05') /* GMT offset for EST */
SYMDEF(&SYSCDN.='1') /* XCF and CFRM CDS num 1 */
SYMDEF(&GRSMOD.='STAR') /* GRS=STAR for NDC */

/* Set system ID related symbols. Examples assume SYSNAME='USCT' */
SYMDEF(&SYSCPX.='&SYSNAME(1:3)') /* USC */
SYMDEF(&SYSSFX.='&SYSNAME(4:4).&SYSNAME(4:4)') /* TT */
SYMDEF(&SYSSID.='&SYSNAME(4:4)') /* T
```



IEASYMTT - USCT LPAR Specific

```
/* Static Symbol Definitions for system: USCT */
SYSDEF SYSNAME(USCT)
    SYSPARM(T1,TT) /* Sysplex=CSPLEXT1 Sysid=USCT */
    SYMDEF(&AALEVL.='V1220D0') /* Level of ABENDAID */
    SYMDEF(&AUDLEVL.='R121SP0B') /* Level of CA-Auditor */
    SYMDEF(&ATFLEVL.='V287B') /* Level of IBM-ATF(TICTOC) */
    SYMDEF(&CA11LVL.='R11SP00D') /* Level of CA-11 */
    SYMDEF(&CA7LEVL.='R113SP0G') /* Level of CA-7 */
    SYMDEF(&CCSLEVL.='R14SP00B') /* Level of Common Services */
    SYMDEF(&CICSLVL.='C320T01') /* Level of CICS TS */
    SYMDEF(&CICSVER.='V320') /* Version of CICS */
    SYMDEF(&DB2LEVL.='DSN910C') /* Level of DB2 */
```

There are 64 lines in this member!

IEASYMVS – z/OS Version/Release Symbols



```
/* Static Symbol Definitions for z/OS 1.13 */

SYSDEF  SYMDEF(&OSFMID.='HBB7780') /* OS FMID */
        SYMDEF(&OSNAME.='ZOS') /* OS Name */
        SYMDEF(&OSVER.='1') /* OS Version */
        SYMDEF(&OSREL.='D') /* OS RELEASE */
        SYMDEF(&OSVR.='&OSVER.&OSREL') /* OS Version / Release */
        SYMDEF(&OSVR2.='&OSVER..&OSREL') /* OS Version / Release */
```

SO...Where do we use all these dang symbols anyway??

Everywhere we can! - In other parmlib members:

```
LNKLST ADD NAME(PROGLT) DSN(CCSSYS.&CCSLEVL..CAILOAD)
LNKLST ADD NAME(PROGLT) DSN(CCSSYS.&CCSLEVL..CAIDCM)
LNKLST ADD NAME(PROGLT) DSN(SYNCSYS.&SYNCLVL..SORTLIB)
```

```
PCOUPLE(SYSPLEX.CSPLEXP&SYSCDN..CDS.PRI,SPXP11)
```

```
MOUNT FILESYSTEM('CICS.&SYSNAME..&CICSLVL..ZFS')
  MOUNTPOINT('/$SYSNAME/cicsts')
  TYPE(ZFS) MODE(RDWR) SYSNAME(&SYSNAME) UNMOUNT
```

```
DAE=START,DSN(&SYSNAME..DAE)
```

```
CICSSYS.&SYSNAME..BETA.SDFHLPA(LNKLST), CICS 42 LPA MODULES
TSSSYS.&TSSLEVL..CAKOLPA, TSS LPA MODULES
```

```
In JES2PARAM: INCLUDE MEMBER=HASEXIT&OSREL
```


Everywhere we can! - In Procs:

```
//CAS9      PROC DCOM=DCOMB0 ,RIMPARM=RIMPARM&SYSSID .
//CAIRIM     EXEC PGM=CAIRIM,TIME=1440
//STEPLIB    DD DISP=SHR,DSN=DISP.PROD.&DISPLVL..CAILIB
//          DD DISP=SHR,DSN=CA11.&CA11LVL..CAL7LOAD
//          DD DISP=SHR,DSN=DATACOM.PROD.&DCOM..CAILIB
//          DD DISP=SHR,DSN=ROSCOE.&ROSLEVL..RO60LIB
//PARMLIB    DD DISP=SHR,DSN=CCS.PROD.PPOPTION(&RIMPARM)

//SYSIN     DD DISP=SHR,DSN=CICS.&REL..SYSIN(&SYSNAME) SIT-OVERRIDS
//          DD DISP=SHR,DSN=CICS.&REL..SYSIN(&CICS)      SIT-OVERRIDES
//STEPLIB    DD DISP=SHR,DSN=CICS.&REL..ALIAS.&SYSNAME..SDFHAUTH
//          DD DISP=SHR,DSN=CICS.&REL..ALIAS.&SYSNAME..SDFJAUTH

//SYSTCPD   DD  DISP=SHR,DSN=CNMP.TCP32.TCPDATA(&SYSNAME)
```

Everywhere we can! - TSO Logon Procs



```
//          DD DISP=SHR,DSN=OPSS.PROD.FBCLIST          <== CA OPS/MVS
//          DD DISP=SHR,DSN=OPSS.&OPSLEVL..FBCLIST      <== CA OPS/MVS
//          DD DISP=SHR,DSN=FDR.PROD.USRCLIB           <== FDR CLIST
//          DD DISP=SHR,DSN=INT.&INTBLVL..CAICLIB       <== INTERTEST
```

In extended aliases:

```
DEFINE ALIAS (NAME(TMS.PROD.CTAPOPTN) -
              SYMBOLICRELATE(TMS.&TMSLEVL..CTAPOPTN) )
```

3.4 shows:

Command - Enter "/" to select action	Message	Volume
I	TMS.PROD.CTAPOPTN	*ALIAS

"I" Shows:

```
Data Set Information
Command ==>
Data Set Name . . . :TMS.V126SP00.CTAPOPTN
```

One change product upgrades

- So for example, if I put fixes on CA1, I create a new level of extended alias, and make one change, the system symbol:

FROM:

```
SYMDEF( &TMSLEVL. = 'V120SP0B' ) /* Level of TMS      */
```

TO:

```
SYMDEF( &TMSLEVL. = 'V126SP00' ) /* Level of TMS      */
```

I IPL, and I'm ready to go. Or I could just use IEASYMUP SETPROG for LINKLIST and APF, and rerun TMSINIT.

Extended aliases

```
DEFINE ALIAS (NAME(TMS.PROD.CTAPOPTN) -  
    SYMBOLICRELATE(TMS.&TMSLEVL..CTAPOPTN))
```

3.4 shows:

```
TMS.PROD.CTAPOPTN *ALIAS
```

“I” Shows:

```
Data Set Name . . . :TMS.V126SP00.CTAPOPTN
```

LIBDEFs, since they cannot use symbols, use the TMS.PROD alias:

```
"LIBDEF ISPMLIB DATASET ID('TMS.PROD.CTAPMENU')"
```

Similarly, TSO Alloc's, defines, etc.

So whats in USCT.PARMLIB?

- Not much!
- Some APPC members for LUDEL of MQ ACB's
- The odd SCHEDxx or ERBRMFxx that someone is working on, but only on our test systems.
- IGGCAT00, a new parmlib member, as we migrate 1.13 through our LPARs.
- We look forward to batch jobs being able to use system symbols. 😊

IEASYS00

- `CMD=(00, &SYSSFX),`
- `LOGREC=&SYSNAME..LOGREC,`
- `LPA=(&SYSSFX, L),`
- `PROG=(00, A&SYSSID, L&SYSSID),`
- `SMF=&SYSSFX,`

z/OS Bi-Monthly maintenance

- We put two months of RSU's and PUT's on, six weeks back. (IE, on June 14, we put 1103 and 1104 PUTs on)
- We clone a new sysres, and change any necessary symbols, then IPL our little system. The changes run there for two weeks. We do have CICS/MQ/DB2/Datacom here.
- After two weeks, we IPL the other two, higher activity test lpars off the same sysres.
- After two more weeks, we begin rolling production IPLs, with the new SYSRES and symbol changes. This takes about four weeks to complete.
- We 'stage' the symbol changes the day before, and IPL with a new Load address.

z/OS Maintenance – Backout

- We've not had to backout in the three years I've been here.
- Another sysprog remembers backing out once, but can't recall the reason
- If we did, we'd simply undo the parmlib changes and IPL with the previous load address.
- We do have a daily parmlib backup to dasd that we could use.
- For more about our maintenance and deployment strategies, please see session 10787 [z/OSMF Software Deployment - User Experience](#)

Implementation Plan: Page 1

Update SYS2.PARMLIB(IEASYMM)	z/OS System Staff - 703-921-xxxx	Implementation Date / 02:00:00
FROM:	TO:	
&AALEVL.='V2110D1'	&AALEVL.='V2110D2'	
&CICSLVL.='C320T03'	&CICSLVL.='C320T01'	
&FDRPLVL.='V5475B'	&FDRPLVL.='V5475C'	
&HIPLVL.='V8000D0'	&HIPLVL.='V8000D1'	
&JCKLEVL.='R11SP01E'	&JCKLEVL.='R11SP01F'	
&MIMLEVL.='R117SP2D'	&MIMLEVL.='R117SP2E'	
&QWKLEVL.='R73A'	&QWKLEVL.='R74A'	
&SYNCLVL.='ZOSR14A'	&SYNCLVL.='ZOSR14B'	
&SYSVLVL.='R127SPOG'	&SYSVLVL.='R130SPOA'	
&TMOCLVL.='T310T01'	&TMOCLVL.='T310T03'	
&TPXLEVL.='TPX530B'	&TPXLEVL.='TPX530C'	
&TSSDB2L.='V13SP00A'	&TSSDB2L.='V13SP00B'	
&TSSLEVL.='R15SP00H'	&TSSLEVL.='R15SP00K'	
&VPSLVL.='V2R10C'	&VPSLVL.='V2R10D'	
&ZENLVL.='V210F'	&ZENLVL.='V210G'	
Update SYS2.PARMLIB(PROGLM)	z/OS System Staff - 703-921-xxxx	Implementation Date / 02:00:00

Implementation Plan: Page 2

Update <code>SYS2.PARMLIB(PROGLM)</code>	z/OS System Staff - 703-921-xxxx	Implementation Date / 02:00:00
<p>Remove the following entry after <code>SYS2.LINKLIB</code>:</p> <pre>LNKLST ADD NAME (PROGLD) DSN (DBSYS.SUBSYS.DBLOAD) VOL (DBSY04)</pre>		
Update <code>SYS2.PARMLIB(BPXPRMM)</code>	z/OS System Staff - 703-921-xxxx	Implementation Date / 02:00:00
<p>To be determined - will depend on which <u>HFSs</u> are replaced by <u>ZFSs</u>.</p> <p>After making the changes, perform a syntax check of this member by issuing the following <u>SDSF:log</u></p> <pre>SETOMVS SYNTAXCHECK=(MM)</pre>		

Catalogs

- Each LPAR has its own master catalog.
- The master catalog uses indirect addressing with sysres, and stays the same across maintenance and even z/OS releases. (We do a manual check to see if we need to add any SYS1 datasets or remove any at release change)
- All UCATs are connected to all MCATs and as such, all dasd and datasets are shared (across two sysplexes). This DOES cause an issue with PDSE's.

Incidentals

- We have great users. They are diligent testers! That helps!
All the way from CICS/MQ/DB2/Datacom to end users.
- Our implementation plan runs 60 pages. Most of it is change control junk, but we do have explicit backout procedures for each product.
- We didn't build this in a day, it evolved over years.



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Questions?

