

What's New for Sysprogs, Security, and Tuning in SYS1.PARMLIB

Session 27370



Cheryl Watson & Frank Kyne
Watson & Walker, Inc.
www.watsonwalker.com
technical@watsonwalker.com





INTRODUCTION

Welcome

- Who are we?

- Watson & Walker founded in 1988 by Cheryl Watson & Tom Walker.
- Publisher of *Cheryl Watson's Tuning Letter* and *CPU Charts* since 1991.
- After the *Tuning Letter*, our primary focus has been helping our customers reduce their software costs.
- We are completely independent, not beholden to any vendor, so we can offer objective information based on our collective experience, what we see in other customers, allowing clients to make a fully informed decision.
- In addition to our publications, our team provides consulting, classes, and software pricing advice using our SCRTPro tools.
- For more information, see www.watsonwalker.com.



Parmlib Considerations

- Introduction
 - Many, if not most, new z/OS enhancements are activated using parameters in SYS1.PARMLIB.
 - Most enhancements are shipped deactivated to match behavior before the enhancements; so customer must take explicit action to activate the enhancement.
 - Two typical methods of coding members:
 - Preferred – Only specify those statements you override.
 - Pro & con - IBM defaults might change.
 - Other – Specify every single statement.
 - Pro & con – IBM defaults might change.
 - **Our recommendation: Only code your overrides.**

Parmlib Considerations

- Introduction

- Common themes of z/OS 2.3/2.4 changes – improved security (e.g. eliminating user-key common areas), enhanced control and reporting of large pages and management of 24-bit, 31-bit, and 64-bit memory, reduction of Assembler knowledge, and support for containers or TFP pricing.
- Our recommendations in this presentation are highlighted in yellow.
- References to Watson & Walker articles are available only to paid subscribers of *Cheryl Watson's Tuning Letter*. If you're not a subscriber and would like more information about a specific article, please contact us at technical@watsonwalker.com.

References

- IBM

- [SA23-1380-40](#) – z/OS V2R4 MVS Initialization and Tuning Reference (7/26/20)
- [SA23-1379-40](#) – z/OS V2R4 MVS Initialization and Tuning Guide (12/18/19)
- [SA23-1380-30](#) – z/OS V2R3 MVS Initialization and Tuning Reference (6/24/19)
- [SA23-1379-30](#) – z/OS V2R3 MVS Initialization and Tuning Guide (5/29/19)

References

- Cheryl Watson's Tuning Letter
 - ['What's New in SYS1.Parmlib'](#) (z/OS 2.4), TL 2020 No 2
 - ['What's New in SYS1.Parmlib'](#) (z/OS 2.3), TL 2019 No 2
 - ['What's New in SYS1.Parmlib'](#) (z/OS 2.2), TL 2015 No 3
 - ['Parmlib Updates in z/OS 2.1 – Part 2'](#), TL 2014 No 1
 - ['Parmlib Updates in z/OS 1.13'](#), TL 2015 No 1
 - ['Parmlib Updates for z/OS 2.1 – Part 1'](#), TL 2013 No 4
 - ['Parmlib Updates for z/OS 1.13'](#), TL 2013 No 3
 - ['FOCUS: Parmlib Changes by Release – Part 1'](#), TL 2010 No 6
 - ['FOCUS: Parmlib Changes by Release – Part 2'](#), TL 2011 No 1
 - ['FOCUS: Parmlib Changes by Release – Part 3'](#), TL 2011 No 2
 - Also do a search for the member name (e.g. IEAOPTxx) to find ALL mentions of the member.



PARMLIB MEMBERS

- Was used for SRM constants; now controls zIIP-related features, HiperDispatch, IRD and Boost.
 - Display using RMF Monitor II (Option L.4).
- z/OS 2.3
 - ABSMSUCAPPING=YES | NO – new statement to cap an LPAR or LPAR group with an absolute cap of MSUs rather than the R4HA. Used for CBU, OOCoD, or vendor products. See our article on ['IBM's New z13s'](#) in TL 2016 No 1 (pages 25-26).
 - RTCAPLEADTIME=0 | nn – new statement to indicate the number of minutes (max of 60) when WLM's sysplex routing is influenced in advance of an upcoming soft capping action.
 - WLMIRDSTRUC=4DIGITS | 5DIGITS | NONE – was a new statement in z/OS 2.3 to indicate which IRD CF structure the system attempts to connect to at IPL. If no match is made, IRD CPU management and dynamic path management are inactive.

- z/OS 2.4
 - IRA405I(2)=n | 50 – existing statement that defines the percent of storage that is fixed before IRA405I is issued. IBM added:
 - **IBM RECOMMENDATION:** Applications like Db2, zCX and some other applications fix the majority of frames. It is normal on systems where such applications are active that message IRA405I occurs when the default value was not changed. If you run such applications on your system, you should change the IRA405I(2) OPT parameter to a higher value.
 - RTBELEADTIME=x | 3 – new statement to indicate the number of minutes before the end of the IPL Boost period when WLM sysplex routing reduces the routing weight. We have no experience with this yet.

- Older But Very Important Parameters
 - Although the CCCAWMT and ZIIPAWMT statements appear to be similar, they are used in different situations. IIPHONORPRIORITY=YES (recommended and default) indicates that busy zIIPs should ask other CPs for help. ZIIPAWMT is used for busy zIIPs to determine how long they should wait before asking for help. The default is 3.2ms if IIPHONORPRIORITY=YES and HIPERDISPATCH=YES. CCCAWMT, on the other hand, is used by the MVS supervisor to wake up idle CPs or zIIPs and is unrelated to whether zIIPs ask for help. This is a bit confusing in the manuals.
 - We strongly recommend using the defaults of IIPHONORPRIORITY, HIPERDISPATCH, CCCAWMT, and ZIIPAWMT for all installations.
 - If you want to force lower important zIIP-eligible work to stay on zIIPs for TFP or during the R4HA, then use WLM's 'Honor Priority' setting by service class.

- z14 and z15 CP Enablement for I/O
 - Before z14, CPs were enabled for highest VH to lowest VH; once all VHs enabled, the CPs were enabled for highest VM to lowest VM.
 - From z14 on, CPs are enabled for lowest VH to highest VH; then lowest VM to highest VM.
 - WSC [Flash10337](#) – CPENABLE Recommendations for IBM Z and z/OS, 3/4/2020
 - For z14 and z15 – change CPENABLE=(5,15) from (10,30).
 - See [IBM Systems TechU Talks](#), June 4, 'HOT Topics in z/OS Performance', Kathy Walsh
 - WLM changes dispatching for z14 and z15 for I/O interrupts.
 - Next two slides are from her presentation.

z14 Introduced Changes in I/O Enablement

- Before z14
 - All VH / VM GCPs engines in a no work wait were eligible to handle I/O Interrupts

---CPU---		----- TIME % -----				--- MT % ---		LOG PROC		<u>---I/O INTERRUPTS---</u>	
NUM	TYPE	ONLINE	LPAR BUSY	MVS BUSY	PARKED	PROD	UTIL	SHARE %		RATE	% VIA TPI
0	CP	100.00	70.06	69.85	0.00	100.00	70.06	100.0	HIGH	224.3	37.00
1	CP	100.00	57.21	57.17	0.00	100.00	57.21	100.0	HIGH	90.85	41.90
2	CP	100.00	77.89	77.78	0.00	100.00	77.89	100.0	HIGH	210.4	38.82
3	CP	100.00	69.04	69.01	0.00	100.00	69.04	100.0	HIGH	88.00	43.15
4	CP	100.00	74.32	74.25	0.00	100.00	74.32	100.0	HIGH	142.4	39.31
5	CP	100.00	65.31	65.27	0.00	100.00	65.31	100.0	HIGH	92.60	42.85
6	CP	100.00	69.79	69.73	0.00	100.00	69.79	100.0	HIGH	124.3	38.46
7	CP	100.00	60.69	60.67	0.00	100.00	60.69	100.0	HIGH	2182	6.88
8	CP	100.00	51.47	51.45	0.00	100.00	51.47	100.0	HIGH	818.9	7.11
9	CP	100.00	45.92	45.89	0.00	100.00	45.92	61.9	MED	76.45	42.05
A	CP	100.00	34.71	34.69	0.00	100.00	34.71	61.9	MED	58.81	42.92
B	CP	100.00	5.58	21.30	73.82	100.00	5.58	0.0	LOW	0.00	0.00
C	CP	100.00	0.43	10.73	95.97	100.00	0.43	0.0	LOW	0.00	0.00
D	CP	100.00	0.91	54.48	98.32	100.00	0.91	0.0	LOW	0.00	0.00
E	CP	100.00	0.14	41.29	99.66	100.00	0.14	0.0	LOW	0.00	0.00
F	CP	100.00	0.00	-----	100.00	100.00	0.00	0.0	LOW	0.00	0.00
10	CP	100.00	0.00	-----	100.00	100.00	0.00	0.0	LOW	0.00	0.00
11	CP	100.00	0.00	-----	100.00	100.00	0.00	0.0	LOW	0.00	0.00
12	CP	100.00	0.00	-----	100.00	100.00	0.00	0.0	LOW	0.00	0.00
TOTAL/AVERAGE			35.97	60.31		100.00	35.97	1024		4109	15.81

z14 Introduced Changes in I/O Enablement

- z14 and z15 will see fewer logical CPs handling interrupts
 - If logical engine(s) enabled for interrupts start running disabled or CPU intensive then no I/Os can be fielded by the LPAR
 - Enablement is determined by WLM every 20 seconds
 - Need to be more aggressive in enabling logical engines for I/O

---CPU---		----- TIME % -----				--- MT % ---		LOG PROC		<u>--I/O INTERRUPTS--</u>	
NUM	TYPE	ONLINE	LPAR BUSY	MVS BUSY	PARKED	PROD	UTIL	SHARE %		RATE	% VIA TPI
0	CP	100.00	33.06	32.97	0.00	100.00	33.06	100.0	HIGH	4834	1.22
1	CP	100.00	50.72	50.71	0.00	100.00	50.72	100.0	HIGH	0.00	0.00
2	CP	100.00	44.98	44.93	0.00	100.00	44.98	100.0	HIGH	0.00	0.00
3	CP	100.00	34.84	34.82	0.00	100.00	34.84	100.0	HIGH	0.00	0.00
4	CP	100.00	61.24	61.22	0.00	100.00	61.24	100.0	HIGH	0.00	0.00
5	CP	100.00	17.01	17.00	0.00	100.00	17.01	100.0	HIGH	0.00	0.00
6	CP	100.00	2.50	2.50	0.00	100.00	2.50	100.0	HIGH	0.00	0.00
7	CP	100.00	0.33	0.33	0.00	100.00	0.33	58.4	MED	0.00	0.00
8	CP	100.00	0.00	-----	100.00	100.00	0.00	0.0	LOW	0.00	0.00
9	CP	100.00	0.00	-----	100.00	100.00	0.00	0.0	LOW	0.00	0.00
TOTAL/AVERAGE			24.47	30.56		100.00	24.47	758.4		4834	1.22

IEFOPZxx

- z/OS 2.3
 - D IEFOPZxx
 - New member initially used for ABO (Automatic Binary Optimizer) that allows a user to concatenate a new library (PDS or PDSE) with an older library (PDS or PDSE) on a system-wide basis with no JCL changes. See our article [‘Using IEFOPZ to Migrate to New Compiler Libraries’](#) in TL 2016 No 1. **RECOMMENDATION: If you are migrating to a new compiler, such as COBOL V6, review our article to find an easy way to concatenate older PDS libraries with the newer PDSE libraries. This can save you hours of time!**

IGGCATxx

- Specifies parameters used by CAS (Catalog Address Space)
 - D IPLINFO,CATALOG or MODIFY CATALOG,REPORT
- z/OS 2.3
 - CATMAX(nnnn | 1024) – existing statement to specify the max number of catalogs that can be opened concurrently in CAS. Important change in manual.
 - **Change CATMAX to match IBM.** See ALLOCxx for sizes.

IBM: While the maximum value of 9999 can be specified, it is highly recommended that the value does not exceed the number of open data sets for an address space as determined by the size of the TIOT specified in Chapter 4, “ALLOCxx (allocation system defaults),” on page 65 for a description. For example, if a 32K TIOT is specified, then it is recommended that CATMAX be set to no higher than 1635. Similarly for a 64K TIOT, the recommended maximum would be 3273.

IKJTSOxx

- Defines parameters that apply to all TSO/E users.
 - D IKJTSO or PARMLIB LIST
- z/OS 2.3
 - USERIDMAX(7 | 8) – new statement to indicate whether the TSO user ID is 7 or 8 characters.
- z/OS 2.4
 - USERIDMAX - Added several comments in manual about USERIDMAX. Read them if considering changing.
 - TIMEOUT(n | 5) – new statement to specify how many minutes TSO LOGON prompting before session is terminated. Started with SHARE requirement ([RFE 47828](#)). Added with APAR [OA57937](#).

- z/OS 2.3
 - New parmlib member to provide configuration options for z/OSMF.
 - Parameters are documented in the IBM z/OS Management Facility Configuration Guide ([SC27-8419-40](#), 5/26/20).
 - If you're on z/OS 2.3+, you should DEFINITELY create an IZUPRMxx parmlib member. Because you REALLY need to have a production z/OSMF up and running by this time! All developers we've talked to support this, and users tell us it's much easier.
 - z/OSMF APARs [PH24088](#) and [PH24527](#) start to implement a new way to manage your z/OSMF parms. Recommend that you test these *thoroughly* to understand the relationship between the new GUI interface, making dynamic changes, and your IZUPRMxx member before you start using this capability in production..

SMFLIMxx

- Defines parameters to replace those specified in IEFUSI exit with assembler.
 - D SMFLIM
 - We highly recommend implementing as many of the SMFLIMxx filters and attributes as possible in order to remove your dependence on assembler.
- z/OS 2.4
 - SUBSYS(aa,bb,cc) – older filter statement but doc added to identify subsystem IDs of JES2, JES3, STC, ASCH, TSO, OMVS, and vendor-supplied IDs.
- z/OS 2.4 new filter statements:
 - SAFCHECK(aaaa) – indicates single SAF resource name in the FACILITY class.
 - REQREGION(nnM | nnG | nnK,nnM | nnG | nnK) – indicates size or range of sizes to compare to REGION size from JCL or job class.
 - REQMEMLIMIT(NOLIMIT | nnM | nnG | nnK,nnM | nnG | nnK) – indicates size or range of sizes to compare to MEMLIMIT from JCL or SMFPRMxx default.

- z/OS 2.4 attribute statements:
 - REGIONABOVE(NOLIMIT | nnG | nnM | nnK),OVERRIDEIEFUSI – added OVERRIDEIEFUSI to override IEFUSI because the default is to allow the IEFUSI exit to override SMFLIMxx unless SYSRESABOVE is also specified. **We recommend this override.**
 - REGIONBELOW(NOLIMIT | nnM | nnK),OVERRIDEIEFUSI – added OVERRIDEIEFUSI to override IEFUSI because the default is to allow the IEFUSI exit to override SMFLIMxx unless SYSRESBELOW is also specified. **We recommend this override.**
 - DSLIMITNUM(nn) – new statement to override the max number of user-key data spaces and hiperspaces allowed.
 - DSLIMITSIZE(nnM | nnG | nnT) – new statement to specify max for combined size of all user-key data spaces and hiperspaces. The max is 16TB – 1K.
 - JOBMSG(ISSUE | SUPPRESS) – new statement to indicate whether the IEF043I message appears on the job log. The message tells the user which attributes were applied by SMFLIM.

SMFPRMxx

- Defines which record types are written to an SMF VSAM data set or SMF log stream.
 - D SMF,O
- z/OS 2.3
 - INMEM(IFASMFname,RESSIZMAX(nnM | nnG),TYPE(aa,bb | aa:bb) | NOTYPE(aa,bb | aa:bb..)) – new statement to record SMF records in memory for real-time processing. Many IBM products and ISV products are starting to use this. You get to (and should) control it. See our article on [‘SMF Streaming’](#) in TL 2016 No 1. **Become familiar with this ASAP!**
 - The range for record types used to be 0-255. Now the range can be 0-2047. **Review SMFPRMxx and replace all 255 references with 2047 so that you don’t miss any.**

- z/OS 2.3
 - HFTSINTVL(ss | 30) – new statement to provide a function called High Frequency Throughput Statistics (HFTS). HFTS can collect data in 5-second increments for a minute four times an hour. This is very useful for debugging short-duration system problems at low overhead. IBM recommendation (ours too) – Specify a value of 5 seconds and turn on SMF type 98.1 records in SMFPRMxx.
- z/OS 2.4
 - SMF record signing was a security feature added with z/OS 2.2 to protect SMF records written to a log stream using ICSF. z/OS 2.4 added the ability to specify an alternate signature method with new parameters of NOARECSIGN and ARECSIGN.
 - WIC | NOWIC – new statement to enable the IBM z/OS Workload Interaction Correlator (WIC) feature. If WIC is specified, the HFTSINTVL statement is ignored, but the HFTS records are still written to SMF 98.1 every 5 seconds, along with the zWIC 98.2+ records.

- Older BUT VERY Important Parameter
 - SMF30COUNT | NOSMF30COUNT – Indicates whether CPU MF Counters are recording in the type 30 records. Because ‘Store Into Instruction Stream’ (SIIS) code can severely impact performance and because the SMF30COUNT can be used to identify these situations, this parameter should be overridden. See WSC White Paper [WP102806](#) for all the details.
 - **RECOMMENDATION: Always run with SMF30COUNT turned on.**



AND EVEN MORE PARMLIB MEMBERS

- Defines allocation values for the system.
 - D ALLOC,OPTION
- New in z/OS 2.4
 - OPTCDB_SPLIT(EXPLICIT | CATALOG) – This is an existing statement, but the description in Init & Tuning was updated with more information for multiple system-managed tape libraries when used with OPTCD=B in JCL. **Recommendation: Review if you have more than one TLS.**
 - With EXPLICIT (the default), multi-volume data sets are only eligible to be treated as concatenated data sets if the volsers are explicitly listed in the JCL.
 - CATALOG provides the same support as EXPLICIT AND allows volumes to be concatenated if the volser info is retrieved from the catalog.
 - **NOTE:** You CAN change this dynamically using the SETALLOC command even though that is not documented in the MVS System Commands manual.

- z/OS 2.3
 - MODIFY AXR,IAXDMEM command runs exec to provide enhanced version of D VS,LFAREA for large page information. The D VS,LFAREA command only displays information about the LFAREA. IAXDMEM provides that info *and more*.
 - We recommend use of this display.
 - Refer to excellent SHARE 2019 Session [24662](#) *z/OS Virtual Memory* by **Elpida Tzortatos** for more info about optimizing use of large pages.

```
PAGEABLE 1M STATISTICS
  13.2GB : TOTAL SIZE
  753.0MB : AVAILABLE FOR PAGEABLE 1M PAGES
 1205.0MB : IN-USE FOR PAGEABLE 1M PAGES
 1243.0MB : MAX IN-USE FOR PAGEABLE 1M PAGES
   2.0MB : FIXED PAGEABLE 1M FRAMES
LFAREA 1M STATISTICS - SOURCE = DEFAULT
  0.0MB : TOTAL SIZE
  0.0MB : AVAILABLE FOR FIXED 1M PAGES
  0.0MB : IN-USE FOR FIXED 1M PAGES
  0.0MB : MAX IN-USE FOR FIXED 1M PAGES
LFAREA 2G STATISTICS - SOURCE = DEFAULT
  0.0MB : TOTAL SIZE = 0
  0.0MB : AVAILABLE FOR 2G PAGES = 0
  0.0MB : IN-USE FOR 2G PAGES = 0
  0.0MB : MAX IN-USE FOR 2G PAGES = 0
```

- Provides Language Environment runtime options
 - D CEE
- z/OS 2.3
 - IBM added a **STRONG recommendation against using the NONOVR option which indicates that runtime options can't be overridden:**
 - “CAUTION: Runtime options are intended to allow programs, both yours and programs that are supplied by software vendors, to configure how they want to run with Language Environment. Marking runtime options as NONOVR might cripple the capabilities of these programs, prevent them from being tuned properly, inhibit their ability to perform First Failure Data Capture, and prevent them from running. With very few exceptions, IBM strongly discourages customers from marking any runtime option as NONOVR.”
 - **SETCEE CLEAR command must be used to change value if you used NONOVR.**
- z/OS 2.4
 - CEENXSTG(OFF | ON) - new statement to indicate whether non-executable memory is enabled. Supported by new Instruction Execution Protection (IEP) on z14/z15. But see LE APAR [PH27025](#).

- Defines installation defaults for device support options.
 - Both the D DEVSUP (new in z/OS 2.4) and F DEVMAN,REPORT commands display info about DEVSUPxx member, but they show different parms.
- z/OS 2.3
 - ICKDSF_VERIFYOFFLINE=YES | NO – this controls what happens if you do not specify VERIFYOFFLINE or NOVERIFYOFFLINE in an ICKDSF INIT and REFORMAT job. Specifying ICKDSF_VERIFYOFFLINE=YES makes step behave as if VERIFYOFFLINE was specified.
- z/OS 2.4
 - ENABLE | DISABLE(HPF_FMTWRITE,HPF_IMBEDDEDLR, HPF_TTEDCW) – new statement to indicate which zHPF features are enabled. Use the default to exploit zHPF. If you are not using zHPF, see [this Techdoc](#) for info about zHPF performance.
 - ENABLE | DISABLE(VTOC_USE_ZHPF) – new statement to tell z/OS to process VTOC records using zHPF. This was provided with APAR [OA58111](#). **If zHPF is available, this should be changed to ENABLE after APAR applied.**

- z/OS 2.4
 - REFUCB_FAIL=NONE | VARYOFF_RODEV – new statement to indicate action when an error occurs while refreshing a UCB. Instead of just sending message IEA235I, you can have the device varied offline or changed to read-only. For stability, we recommend changing this to VARYOFF_RODEV. This is rolled back to 2.3 with APAR [OA57255](#).
 - LRECCW_PER_EOSCP=xnn | x30 | 48 – new statement to indicate the number of Logical Record Erase channel command words (CCWs) that can be chained per channel program for the Erase-On-Scratch function. This should only be used for non-IBM DASD subsystems, and set to the value specified by your vendor.
 - STAT011_PRESERVE_INDEX=YES | NO and RETRY(STAT011) – two new statements to indicate the action that Common VTOC Access Facility (CVAF) should take if it returns a STAT011 error to the user. (6 pages to describe this – recommend reviewing OA57331 APAR Text). We recommend using RETRY(STAT011) and STAT011_PRESERVE_INDEX=YES.

- Controls common storage tracking and GETMAIN/FREEMAIN/STORAGE traces.
 - D DIAG
- z/OS 2.3
 - Last release to support user keys in common areas of virtual storage. See article [‘Bye Bye User Key Common Storage’](#) in TL 2019 No 1. New statements – ALLOWUSERKEYCADS, VSM ALLOWUSERKEYCSA, and NUCLABEL.
 - RUCSA is a chargeable z/OS feature in z/OS 2.4 that allows you to have *one* exploiter of user key common storage in z/OS 2.4.
 - FREEMAINEDFRAMES(NO|YES EXCLUDEJOBLIST(job,...) and FF31HIGH(NO|YES EXCLUDEJOBLIST(job,...) – new statements to improve performance on z13 and later CPCs. In a [parmlib article](#) in TL15-3, we recommended that the default of FREEMAINEDFRAMES(YES) be changed to NO due to a problem with APAR [OA46291](#), which resulted in a Red Alert. **The problem has been resolved, so our new recommendation is to change it back to YES.**

- z/OS 2.3
 - CBLOC VIRTUAL31(CNZSSICB) – new statement to move the SSOB, SSIB, and SSWT above 16 MB. You need to change any AMODE=24 SSI routines to AMODE=31. At a minimum, identify anyone using below 16 MB with 'D SSI,ALL,FUNC=(9,10,14)'.
 - Recommendation: If you care about below 16 MB storage, then identify the products using these control blocks and determine their AMODE before specifying this statement.
 - **Note that in a future release**, IBM might change the location of the SSOB, SSIB, and SSDM control blocks to reside solely in 31-bit storage.
- z/OS 2.4
 - ASLR(NO | YES | YES3164 | YES64) – new statement to indicate whether address space layout randomization (ASLR) is to be used. May lead to some storage loss but reduces potential of hacking. Recommendation: To improve security, work on changing this default. See 'Address space layout randomization' in the [Init & Tuning Guide](#) for information about how to test this feature.
 - AUTOIPL SADMP(xxx) MVS(yyy) NUCLABEL ENABLE(BLWRST02) – by default, Auto IPL does an IPL CLEAR. Specifying NUCLABEL ENABLE(BLWRST02) causes a (faster) IPL NORMAL. However, note that this could lead to the unavailability of reconfigurable storage. This function was rolled back to z/OS 2.3 with APAR [OA54733](#).

- z/OS 2.4
 - CBLOC VIRTUAL24(xxx) VIRTUAL31(xxx) REAL31(xxx) REAL64(xxx). The new REAL parameters are in support of future function – if you try to use them today, you will get an ASA007I ERRORS IN PARMLIB MEMBER=DIAGxx message.
 - TRAPS NAME(names) – new trap called IARRUCSAFLT to create a dump and LOGREC entry if IEASYSxx RUCSA is turned on and an invalid request is made to user-key CSA without the proper RUCSA SAF authorization. This was rolled back to 2.3 with APAR [OA57889](#). Turn on to simplify finding user-key access without SAF READ authority.
 - VSM ALLOWUSERKEYCSA(NO) is forced for toleration but ignored.
 - Old NUCLABEL was removed.

- Provides pointers to other parmlib members and defines some of the most important system-wide parameters.
 - D IPLINFO or D IPLINFO,sysparm
- z/OS 2.3
 - LFAREA – this statement description was updated to reflect the changes in how LFAREA is managed in z/OS 2.3. Recommendation: **Review this new and enhanced info.**
 - RUCSA(xM,yM) – new statement to indicate the size of the area below 16MB and above 16MB that can be used for common storage for security-controlled users. See [‘Bye Bye User Key Common Storage’](#) article in TL 2091 No 1. The default is that no storage is reserved. Recommendation: **Identify the users of this new common storage and set the parameters as needed. But remember that this is a chargeable feature.**
 - OSPROTECT=SYSTEM | 1 – new statement to activate the default mitigation mode for the 2018 ‘Meltdown’ exposure. See [‘Meltdown Mania’](#) (pages 11-12) article in TL 2018 No 3. Recommendation: **Change to OSPROTECT=1 to eliminate the exposure, but be sure to measure the impact, which should be quite small according to most customers.**

- z/OS 2.3
 - ICSF=xx | NONE – new statement to point to a *single* CSFPRMxx member to be used during ICSF initialization.
 - ICSFPROC=procname | NONE – new statement to specify the name of the procedure that is started at IPL if ICSF=xx is also specified.
- z/OS 2.4
 - BOOST=SYSTEM | ZIIP | SPEED | NO[NE] – new statement for z15 to indicate which type of System Recovery Boost is preferred. SYSTEM is a combination of both ZIIP and SPEED. Display with ‘D IPLINFO,BOOST’.
 - RACF=(aa,bb,cc) – new statement to specify up to three IRRPRMxx members for RACF. **This had several user requests - consider this to reduce dependency on Assembler.**
 - SMFTBUFF=nnn | 5 – new statement to define the size of the temporary buffer (in MBs) to hold SMF records at IPL. This defaults to 5 MB, the existing value, but can now be overridden if SMF data is regularly lost at IPL. **Recommendation: Look at SMF fields SMF0TBUF, SMF7TBLS, and SMF23MBU.**

- Contains most system-level SMS parameters.
 - D SMS,OPTIONS
- z/OS 2.3
 - DB2SSID(ssid | NONE) – new statement to provide the Db2 SSID used for an Object Access Method (OAM) configuration.
 - OAMPROC(procname) – new statement to add the name of the procedure to start the OAM address space during SMS initialization.
 - CA_RECLAIM(NONE | DATACLAS | DATACLASS – existing statement to indicate whether CA reclaim should be used for SMS-managed VSAM data sets. The default was changed from NONE to DATACLAS in z/OS 2.3. **Woohoo! Change this if you were specifying NONE or if you didn't see our recommendation in 2011. But check recent HIPER APAR [OA59381](#).**
- z/OS 2.4
 - VSAM_ZHYPERLINK(YES | NO) – new statement to indicate whether VSAM data sets can exploit zHyperLink on this system.

- z/OS 2.3
 - New Parmlib member to provide RACF data set name table, range table, and sysplex communications function.
 - Format documented in z/OS Security Server RACF System Programmer's Guide ([SA23-2287-40](#)).
 - Moves parameters from ICHRDSNT and ICHRRNG to reduce dependence on assembler coding.
 - Based on comments from RACF administrators, we think this technique should be used by all sites.

- Defines System Logger customization options.
 - D LOGGER,IXGCF
- z/OS 2.3
 - MANAGE OFFLOAD USEOFFLOADMIN(YES | NO) – new statement to ensure that log stream offload data sets are at least 1 MB. Default should reduce logger problems.
 - MANAGE STAGING USESTAGINGMIN(YES | NO) – new statement to ensure that log stream staging data sets are at least 10 MB in size. Default should reduce logger problems.

- z/OS 2.4
 - MANAGE HYPERWRITE ALLOWUSE(YES | NO) – The default for this parm was changed to NO with APAR [OA57408](#) to be consistent with IBM's practice of NOT automatically enabling new functions by default. See our article '[zHyperWrite User Experience](#)' in TL 2018 No 4. **We recommend specifying YES if zHyperWrite is available.**
 - MANAGE LOGRCDS – has updated doc to clarify usage of the sysplex-scope LOGR CDS. **Review this.**
 - MANAGE USECDSTYPE(LOGR | LOGRY | LOGRZ) – new statement to specify the couple data set type for *this* system. **LOGRZ and LOGRY are for GDPS K-system environments.**
 - ZAI TPNAME(NONE | transport) – new parameter to identify a transport provider name when logger sets the transport affinity (TCP/IP stack affinity) for zAware. This the transport_name value must match a transport provider specified on the NAME parameter for a SUBFILESYSTYPE statement in BPXPRMxx. Rolled back to z/OS 2.2 and 2.3 with APAR [OA53111](#).

- Controls many aspects of how the system is loaded, the name of the Master catalog, the list of PDSes in the PARMLIB concatenation and more.
 - There is no single command to display all the LOADxx settings, but most of that information is displayed in the messages immediately after an IPL.
- z/OS 2.3
 - Added an option to MACHMIG to allow bypassing the GSF (HW-based Guarded-Storage Facility).
- z/OS 2.4
 - Added doc to say that TX (transactional-execution facility) is ignored. This is because this function is used by parts of the operating system in 2.4, so you can't turn it off.

- Not really really new, *but* perhaps something that you are not aware of...
- You can run zFS in its own address space or in the OMVS address space.
- The BPXPRMxx member shipped with z/OS is set up to have zFS in its own address space:
 - FILESYSTYPE TYPE(ZFS) ENTRYPOINT(IOEFSCM) **ASNAME(ZFS,'SUB=MSTR')**
- However, [according to IBM](#), as of z/OS 2.2, it is possible to run ZFS in the OMVS address space, AND this is more CPU efficient than running ZFS in its own address space.
 - This was borne out in testing on our little zPDT system – running zFS in the OMVS address space took *minutes* off the z/OSMF startup time.

Summary

- We hope that this short presentation was some help.
- Apart from making you aware of some new parms that you might not be familiar with, we hope that this session illustrates the importance of watching the MVS Init and Tuning Reference and [Cheryl Watson's Tuning Letter](#) for the latest changes to Parmlib.
- If you have any questions about this or any of our other material, please email us at technical@watsonwalker.com.
- We hope that you all enjoyed the first Virtual SHARE, and we look forward to meeting up again in person, maybe next summer.

Your feedback is important!



Submit a session evaluation for each session you attend:

SHARE Virtual: Session Page

www.share.org/evaluation

