Smarter Systems for a Smarter Planet

MVS Core Technologies Project Opening

WSC Hot Topics

Session 15572 – August 4, 2014

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- Operating Systems status
- Washington Systems Center Flashes
- Announcements
- Parallel Sysplex™

z/OS Key Dates

- z/OS Version 2 Release 1
  - **July 23, 2013:** Announced
  - **September 30, 2013:** General availability via ServerPac, CBPDO

z/OS is on a 2-year release cycle - started with z/OS 2.1

z/OS Support Summary

Release	z900/z 800 WdfM	z990/ z890 WdfM	z9 EC z9 BC WdfM	z10 EC z10 BC WdfM	z196 CPC	z196 w/zBX	z114 CPC	z114 w/zBX	zEC12 zBC12	End of Service	Coexist with	Lifecycle Extension for z/OS
z/OS V1.10	X	X	X	X	X	X	X	X	X	9/11[1]	R12	9/13[1]
z/OS V1.11	X	X	X	X	X	X	X	X	X	9/12*	R13	9/14[1]
z/OS V1.12	X	X	X	X	X	X	X	X	X	9/14*	2.1	3*
z/OS V1.13	X	X	X	X	X	X	X	X	X	9/16*	2.2	3*
z/OS V2.1			X	X	X	X	X	X	X	9/18*	2.3	3*
z/OS V2.2*										9/20*	2.4*	3*

Notes:

1 **The IBM Lifecycle Extension for z/OS provides the ability for customers to purchase extended defect support for that release of z/OS for up to 24 months after the z/OS release's end of service date**

2 **See IBM GTS services for additional fee-based extended service**

3 **Optional extended service is planned to be offered**

• **Planned. All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.**

WdfM – Server has been withdrawn from Marketing

Out of Lifecycle Extension for z/OS support[4]

Defect support provided with Lifecycle Extension for z/OS

Generally supported

*** Planned. All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.**

IBM Lifecycle Extension for z/OS V1R11 (5657-A01)

- The IBM Lifecycle Extension for z/OS V1.11 provides fee-based corrective service (a fix, bypass, or restriction to a problem) for up to two years beyond the September 30th 2012 end of service date for z/OS V1.11

- This Lifecycle Extension for z/OS V1.11 enables z/OS V1.11 users to continue to receive corrective service for z/OS V1.11 for the 2 year period of October 1, 2012 through **September 30, 2014**.

- The Lifecycle Extension for z/OS V1.11 was announced February 15, 2011 and made available October 1, 2012.

- **More details: Announcement Letter 212-025 Dated April 11, 2012**

IBM Software Support Services - service extension offers defect support for IBM z/OS V1.11 and V1.12 beyond the z/OS end-of-service date

- IBM Software Support Services - service extension for z/OS is a fee-based corrective service (a fix, bypass, or restriction to a problem) for users who have not completed their migration to a newer z/OS release
- Beginning with z/OS V1.12, IBM Software Support Services replaces the IBM Lifecycle Extension for z/OS offering with a service extension for extended support coverage.
- Service extension support for z/OS V1.12 will provide for up to three years, beginning October 1, 2014 and available through September 30, 2017.
  - Additionally, service extension support for z/OS V1.11 is provided for up to two years, beginning October 1, 2014 and available through September 30, 2016

Announcement Letter: 614-010 Dated June 14, 2014

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Cryptographic Support z/OS V1R13 – z/OS V2R1

- **Flash10818**
- This Flash documents newest version of ICSF, FMID HCR77A1, called “Cryptographic Support for z/OS V1R13 – z/OS V2R1” was announced on July 23, 2013 and available for download on September 20, 2013 at the z/OS download website:

  http://www.ibm.com/systems/z/os/zos/downloads/

  - This version of ICSF provides support for the newest IBM zEnterprise EC12 and BC12
  - This flash provides highlights of this updated component of z/OS

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z/OS Version 2 Release 1 Installation Plan Checklist

- **WP102349**
- This is installation plan checklist for z/OS V2R1 that should be used as a supplement to available publications. It is not intended to replace publications for planning your installation and migration.
- *z/OS Migration,* GA32-0889
- *z/OS Planning for Installation*, GA32-0890

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System z: Advantages of Configuring More Memory for DB2 BPs

- **WP102464**
- Significant performance benefits, and corresponding reductions in the cost to do processing, can be experienced by increasing DB2 buffer pool sizes.
- This was demonstrated in recent internal System z measurements in which DB2 buffer pools and associated memory were scaled at generally high (>80%) CPU utilization.
- This white paper documents the findings from those measurements

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Checklist for Establishing Group Capacity Profiles

- **WP102437**
- This paper describes the procedure for setting up a Group Capacity profile and assigning LPARs to become members of the group.
- A Group Capacity limit is similar to Defined Capacity, except it defines the software MSU limit for a group of LPARs.
- Capacity groups are defined at the HMC with a capacity limit in MSUs for all the members of the group.
  - Each LPAR may be defined to only one group
  - As LPARs in the group run work, their rolling 4-hour average is calculated
  - If the total rolling 4-hour average for the group reaches the group capacity limit, each LPAR is then capped to its target limit

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Coupling Thin Interrupts and Coupling Facility Performance in Shared Processor Environments

- **WP102400**
- Various sharing protocols, including the new Coupling Thin Interrupts introduced with CF Level 19 supported on zEC12 and zBC12, is discussed in this paper.
- Comparing the performance of these shared CF processor options it will be evident that the use of coupling thin interrupts in the CF provides significant improvement in CF shared processor environments
  - This improvement will be evident in environments that are already using shared CF processors and will expand the number of environments in which shared CF processors are viable

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PDSE Member Generation Support – z/OS V2R1

- **WP102465**
- This document describes how to use z/OS 2.1 PDSE member generations with ISPF and IBM Data Set Commander for z/OS.
- PDSE member generations allows you to have multiple copies or versions of a member.
- PDSE member generations support is provided in z/OS 2.1 DFSMS and ISPF, along with optional product IBM Data Set Commander for z/OS V8.1 (formerly known as IBM ISPF Productivity Tool for z/OS) - FMID HIQI810

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IBM zEnterprise EC12, BC12 and z/OS Usage of SMC-R RoCE

- **PRS5190**
- IBM has announced SMC-R in z/OS V2.1 and RoCE feature support in zEnterprise EC12 and BC12
- SMC-R (Shared Memory Communication – Remote) and RoCE (RDMA over Converged Ethernet) provide high throughput with low latency communications.
- This paper is developed to detail the SMC-R and RoCE support in z/OS V2.1.

RDMA: Remote Direct Memory Access

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IBM z/OS Software Delivery Enhancements: HTTPS direct-to-host download capability – Announcement Letter: 214-311 July 29, 2014

- IBM will add HTTPS (HTTP using Secure Sockets Layer) support for secure software and service delivery on October 19, 2014.
  - On the same date, IBM will enhance the Connectivity Test for SW Download Readiness website to add support for HTTPS
  - The existing support for FTPS (FTP using Secure Sockets Layer) is not affected by this change and remains available
- IBM plans to withdraw support for standard FTP connections for software and service delivery
- If you are not already using FTPS for software and service delivery, IBM recommends that you implement support in your network environment for either FTPS or HTTPS for direct-to-host connections as soon as possible to assure a smooth transition
- IBM Download Director with encryption is an alternative download method you can use to download packages to a workstation and transfer them to z/OS later.
  - It is not affected by this change and remains available.

IBM z/OS Software Delivery Enhancements: HTTPS direct-to-host download capability …

- IBM will provide the capability to download Internet orders directly to your z/OS system using HTTPS for CBPDO and ServerPac packages as of Oct. 19, 2014.
- This capability to download directly to your z/OS system using HTTPS will also be provided for Shopz service orders and for SMP/E RECEIVE ORDER.
- To use HTTPS direct-to-host downloads, you will need to:
  - Have SMP/E V3.5 with PTFs UO01692, or SMP/E V3.6 with PTFs UO01693
  - Have CustomPac Installation Dialog level 26.20.00, or higher
  - Set up a keyring and enable the CA (Certificate Authority) certificate that is used by the IBM download server or use the Java keystore file
  - Provide the appropriate HTTPS proxy or SOCKS proxy options, if required for your environment

New z/OS V2.1 Function

- A new, browser-based SDSF application now runs in a z/OSMF environment
  - This new SDSF Task supports many of the same functions provided by the ISPF and TSO/E based SDSF application, but takes advantage of the richer display capabilities of the GUI (Graphical User Interface)
  - Requires z/OSMF V2.1 (5610-A01)
  - Support was provided by the PTF for APAR PM86303 in 1Q2014

z/OS Management Facility Version 2.1

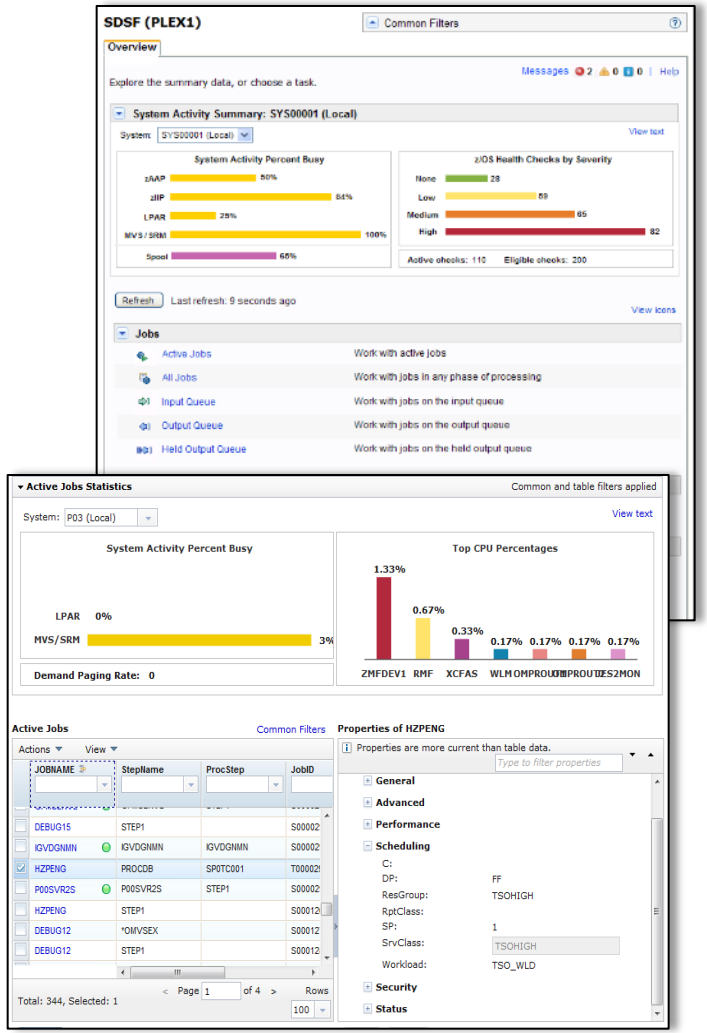
Improved visualization transforms typical tasks

- **Improve productivity with z/OSMF-based SDSF support**
  - New SDSF functions of ISPF and TSO/E are supported with a simplified GUI for a rich user experience

Allows you to:

- Bring the familiar power of SDSF capabilities to z/OSMF
- View SDSF displays in either graphical or text format
- Work with jobs easily from an intuitive user interface
- See active jobs that are the largest consumers of CPU
- Seamlessly and quickly perform actions on jobs, like canceling a job
- Retrieve recent history of commands

A new UI for SDSF, a powerful tool you are already familiar with!



Shows jobs that are the largest consumers of CPU, as well as CPU busy

QSAM HiperBatch Support for zHPF

- HiperBatch doesn't cache data from zHPF devices
  - The DLF objects are not cached and thus HiperBatch Monitor shows zeroes
  - The PTFs which provided zHPF support for QSAM on R12 moved QSAM channel programs to 31-bit storage , but QSAM HiperBatch is still using 24-bit CCW address
  - Following fix changes QSAM HiperBatch to use 31-bit CCW address
    - UA69553 for z/OS 1.12
    - UA69565 for z/OS 1.13
    - UA69566 for z/OS 2.1
    - The fix is Hiper

GTZ Enhanced to Release SYSDSN ENQ for PARMLIB

- The GTZ address space reads GTZPRMxx PARMLIB members at startup, if specified by system parameter GTZ
- If PARMLIB members are specified and read, the shared SYSTEMS ENQ for datasets in the PARMLIB concatenation are acquired for the duration of the read but are not properly released
  - Instead the ENQs are being held for the lifetime of the GTZ address space
  - This causes contention for other system functions when they try to acquire exclusive ENQs for those datasets
  - To verify: d grs,c

```
ISG343I 07.51.17 GRS STATUS 700
S=SYSTEMS SYSDSN SYS2.PARMLIB
SYSNAME JOBNAME ASID TCBADDR EXC/SHR STATUS
SYSA       GTZ   0010 008FF6F8 SHARE   OWN
SYSA   IVPCMDTX 0098 008F8588 EXCLUSIVE WAIT
NO REQUESTS PENDING FOR ISGLOCK STRUCTURE
NO LATCH CONTENTION EXISTS
```

GTZ Enhanced to Release SYSDSN ENQ for PARMLIB …

- Until fix for OA43372 (PTF UA70931) is applied, circumvention can be:
  - STOP GTZ, command to release the ENQs.
    - Note that all track data will be erased by the STOP and you might want to consider saving the track data first via for example the GTZPRINT utility or the D GTZ,TRACKDATA command
  - Do not specify system parameter GTZ in IEASYSxx, re-IPL and then issue the SET GTZ=xx command to manually specify the desired GTZPRMxx

New Function APAR OA43674
I/O Timing for TAPE with MSGONLY=YES is now supported

- The use of this support requires that MSGONLY=YES is coded because full I/O timing support for TAPE is not available at this time
- This support can be enabled using IECIOSxx PARMLIB MIH Statement
  - MIH IOTTAPE=mm:ss or
  - MIH DEV=dddd,IOTIMING=mm:ss or
  - SETIOS MIH command using the IOTTAPE=mm:ss keyword or using DEV=dddd,IOTIMING=mm:ss keywords
- Details:
  - *z/OS MVS System Commands (SA22-7627, SA38-0666)*

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Serial Rebuild with Structure Priority

- Unplanned events such as CF failure and loss of connectivity result in rebuilds, break-duplexing, and re-duplexing that are processed in parallel
- These rebuilds could affect availability, since the applications are unavailable during CF structure rebuild processing
- CFRM active policy contention is caused when many CF structures are rebuilt at the same time.
  - System functions that depend on important structures can be unavailable for periods of time, and this problem might be caused by less important structures competing for CFRM resources
- During the rebuild process, systems and CF are stressed with XCF and users coordinating structure rebuild processing, which increases the contention.
- **Serial rebuild with structure priority is introduced in z/OS V2R1**

Serial Rebuild with Structure Priority Change …

- This function performs *system initiated* rebuilds in a more serial manner
  - It performs these actions in a policy controlled priority order which insures the most important structures are rebuilt faster.
- The new support is called CFLossConnRecoveryManagement or **CFLCRMGMT**
- To exploit it, define the priority of your structures in the CFRM policy
  - The structure definition statements have been updated to include an optional RECPRTY keyword

```
STRUCTURE NAME(ISGLOCK)
          SIZE(65536) REBUILDPERCENT(1)
          PREFLIST(CF02,CF01) RECPRTY(n)
```

n = 1 Highest

n = 4 Lowest

Serial Rebuild with Structure Priority Change …

- RECPRTY statement specifies the rebuild priority to be given to the structure for CFLCRMGMT when the system loses connectivity to a CF
- When RECPRTY is not specified, the system takes a default
  - RECPRTY(3) is assigned to all structures
  - Lock structures will be processed before list and cache structures
  - RECPRTY does not apply to XCF signalling structures
  - RECPRTY takes effect immediately with policy activation

Serial Rebuild with Structure Priority Change …

To enable CFLCRMGMT, EVENT MANAGEMENT must be MESSAGE-BASED, all Systems are at z/OSV2R1 and then:

```
RO *ALL,SETXCF FUNCTIONS,ENABLE=CFLCRMGMT
SETXCF FUNCTIONS,ENABLE=CFLCRMGMT
SETXCF FUNCTIONS,ENABLE=CFLCRMGMT
SETXCF FUNCTIONS,ENABLE=CFLCRMGMT
SETXCF FUNCTIONS,ENABLE=CFLCRMGMT
IXC373I XCF / XES OPTIONAL FUNCTIONS ENABLED: 839
        CFLCRMGMT
IXC373I XCF / XES OPTIONAL FUNCTIONS ENABLED: 199
        CFLCRMGMT
IXC373I XCF / XES OPTIONAL FUNCTIONS ENABLED: 217
        CFLCRMGMT
IXC373I XCF / XES OPTIONAL FUNCTIONS ENABLED: 782
        CFLCRMGMT
IXC548I CFRM EVENT MANAGEMENT ENVIRONMENT UPDATED 840
EVENT MANAGEMENT PROTOCOL: MESSAGE-BASED
REASON FOR CHANGE: MANAGEMENT LEVEL
TRANSITION SEQUENCE NUMBER: 00000005
TRANSITION TIME: 07/08/2014 16:20:06.809581
MANAGER SYSTEM NAME: SYSB
MANAGER SYSTEM NUMBER: 01000761
MANAGEMENT LEVEL: 01052010
```

Serial Rebuild with Structure Priority Change …

```
D xcf,c
SYSTEM NODE DESCRIPTOR: 002827.IBM.02.0000000132C7
                        PARTITION: 01    CPCID: 00

SYSTEM IDENTIFIER: 32C72827 01000761

NETWORK ADDRESS: N/A

PARTITION IMAGE NAME: N/A

IPL TOKEN: N/A

COUPLEXX PARMLIB MEMBER USED AT IPL:  COUPLEZ1

OPTIONAL FUNCTION STATUS:
  FUNCTION NAME                  STATUS      DEFAULT
  DUPLEXCF16                     DISABLED    DISABLED
  SYSSTATDETECT                  ENABLED     ENABLED
  USERINTERVAL                   DISABLED    DISABLED
  CRITICALPAGING                 DISABLED    DISABLED
  DUPLEXCFDIAG                   DISABLED    DISABLED
  CFLCRMGMT                      ENABLED     DISABLED
  COUPLINGTHININT                ENABLED     ENABLED
  CFSTRQMON                      DISABLED    DISABLED
```

Serial Rebuild with Structure Priority Change …

```
D XCF,STR,STRNM=DB2X_GBP0
IXC360I  17.02.42  DISPLAY XCF 866
STRNAME: DB2X_GBP0
 STATUS: ALLOCATED
 EVENT MANAGEMENT: POLICY-BASED
 TYPE: CACHE
 POLICY INFORMATION:
  POLICY SIZE    : 250 M
.....
 MAX CONNECTIONS: 32
  # CONNECTIONS  : 4

 SYSTEM RECPRTY  : 3

 CONNECTION NAME  ID VERSION  SYSNAME  JOBNAME  ASID STATE
 ---------------- -- -------- -------- -------- ---- ----------------
 DB2_DB21         01 00010016 SYSA     DB21DBM1 0055 ACTIVE
 DB2_DB22         03 0003000E SYSB     DB22DBM1 005F ACTIVE
 DB2_DB23         02 00020011 SYSC     DB23DBM1 0029 ACTIVE
 DB2_DB24         04 00040006 SYSD     DB24DBM1 0056 ACTIVE

 DIAGNOSTIC INFORMATION:  STRNUM: 0000004C STRSEQ: 00000002
                          MANAGER SYSTEM ID:  01000761
  NAME/MGR  #QUEUED   1STQESN   LASTQESN  CMPESN    NOTIFYESN
  SYSB      00000000  00000000  00000000  0000000B  0000000B
  MGR SYS   00000000  00000000  00000000  0000000B  00000000

EVENT MANAGEMENT: MESSAGE-BASED       MANAGER SYSTEM NAME:  SYSB
                                      MANAGEMENT LEVEL   :  01052010
```

Serial Rebuild with Structure Priority Change …

- Do not forget to update your COUPLExx in PARMLIB
  FUNCTIONS ENABLR(CFLCRMGMT)
- Message-based event processing is a pre-requisite to enabling serial rebuild
- All systems in the sysplex must enable CFLCRMGMT before CFRM can properly process structures in a serial manner
- There are no hardware dependencies.
  - It will work on any processor model that supports z/OS V2R1
- There are no toleration or coexistence PTFs for this change and no rollback to previous z/OS releases
- The function can be enabled one system at a time, although the structures may not all be processed serially until all systems have enabled CFLCRMGMT
- The function can be dynamically disabled with:
  - SETXCF FUNCTIONS,DISABLE=CFLCRMGMT

CFSizer has been updated

- Support for CFCC Level 19 exploitation of the Flash Express feature
- Following are now available:
  - The **MQSeries** input page now accepts an input describing the number of minutes of overflow capacity desired
  - Specifying a non-zero value for the input will trigger the Flash Express calculations
  - http://www.ibm.com/systems/support/z/cfsizer/mqseries
  - The alternate sizing technique page now provides two versions of the Sizer utility for download
    - The new version 1.01 supports Flash Express along with other significant changes
    - The previous version 0.12, is provided for fallback/compatibility and will eventually be depricated
  - http://www.ibm.com/systems/support/z/cfsizer/altsize.html

Thank You !