Consolidated Service Test

CST3Q17 (RSU1709)

October 2, 2017

Prepared by: CST Team

As part of IBM's commitment to quality and continuous improvement, IBM established the Consolidated Service Test (CST) team consisting of cross product test representatives. CST enhances the way IBM tests and recommends maintenance packages for z/OS software, including the major subsystems. In the past, many of the key product families on the z/OS software stacks had different recommended maintenance strategies, with little or no coordination between them. CST has been put in place to address this issue so that you can obtain and install the recommended PTF service level from the CST Web site for z/OS and their key subsystems consolidated into one package. This means you will receive a tested level of service for all of the following products/tools:

- z/OS
- CICS Transaction Server for z/OS
- CICS Transaction Gateway for z/OS
- DB2 for z/OS
- GDPS/PPRC and GDPS/MzGM
- IMS
- IRLM
- JAVA
- WebSphere Application Server for z/OS
- IBM MQ for z/OS
- IBM Tivoli OMEGAMON
- IBM Security Guardium S-TAP for IMS on z/OS
- z/OS Management Facility
- z/OS Problem Determination Tools

Note: For a complete list of products/tools and levels tested, please refer to the *What Service was Installed* section.

We provide these recommendations free of charge to all z/OS customers. Note that CST testing is performed in addition to existing test criteria and does not replace any current Quality Assurance processes performed by other products.

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What is the CST Environment?

2964 – NC9 (S131)	Microcode at Driver 27I + MCL bundle S31 with CFCC P08416.005 (R21 srv lvl 02.16) • 8 LPARs running z/OS • 50 general processors shared amongst all 8 LPARs, 4 ICF processors, 6 zIIPs and 6 zAAPs logical processors • 1 GDPS control image with 5120M of Central Storage • 4 z/OS LPARs with 14848M of Central Storage • 2 z/OS LPARs with 14336M of Central Storage • 2 CF2 with 25G storage at CFCC level 21 and 2 dedicated processors each
2827 – HA1 (P03)	Microcode at Driver 15F + MCL bundle 42 with CFCC H49559.013 (R19 srv lvl 2.18) • 96 general processors, 2 zIIPS, 2 zAAPs • 2 z/OS images running 20480M each • 2 z/OS images running 204800M each • 2 z/OS images running 5120M each • 1 z/OS image running 10240M each • 2 CFs with 25G storage at CFCC level 19 and 2 dedicated processors
2827 – HA1 (P286)	Microcode at Driver 15F + MCL bundle 42 with CFCC H49559.013 (R19 srv lvl 2.18) • 96 general processors, 2 zIIPS, 2 zAAPs • 2 z/OS images running 20480M each • 1 z/OS images running 5120M each • 4 z/OS images running 14336M each • 2 CFs with 25G storage at CFCC level 19 and 2 dedicated processors
Automated Tape Library (ATL)	3584 • 16 3592 tape drives, FICON-attached
Virtual Tape Server (VTS)	3494 B20 VTS • AIX with VTS CU • 32 emulated 3490 addresses in this VTS • 6 VTS 3590 drives (not directly accessible from z/OS) • 16 3590 tape drives are accessible from z/OS (FICON)
DS8800 2421 XM550 (SQ31) DS8800 2421 XD070 (SQ32) DS8800 2421 01160 (SQ45) 2424VM240 (SQ59) 2424VM330 (SQ60)	2 Enterprise Storage Server DS8800 Microcode level is 86.31.195.0 (R10g.4b150316a) Microcode level is 87.51.63.0 (R15g.7i60204a)
GDPS	Configuration info: we simulate two logical sites, it is purely a logical designation.
Lan attached	Both SNA and TCPIP
Data Sharing Groups	• 4 Way CICS/DB2 utilizing WAS/CTG/MQ and incorporating CICS Shared Temporary Storage CF Servers • 6-way DB2/CICS • 8-way DB2/CICS (DB2 V11NFM)

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	6-way -- DB2, CICS, IBM MQ, WAS, IMS 3-way -- DB2 (DB2 V11NFM) (2) 4-way DB2/CICS 8-way DB2 V12NFM 4-way - DB2, CICS, IBM MQ, WAS, IMS, OMEGAMON 6-way DB2/WAS (2) 4-way DB2/WAS (2) 4-way DB2/WAS via CTG/CICS 2-way DB2 for system back-up, restore and recovery testing (DB2 V12R1M100 6-way DB2V11 CM 4-way DB2V12R1M500 4-way DB2V12R1M100 6-way CICS/VSAM-RLS and non-RLS (2) 4-way CICS/VSAM-RLS and non-RLS (2) 4-way TVS batch setup (2) 4 - Way CICS/VSAM workload using 3270 and CICS/Liberty Front ends 6-way IMS/TM (2) 4-way IMS/TM (2) 4-way IMS FastPath 4-way IMS/OTMA SMQ Cascading Transactions 6-way IMS/OTMA SMQ Cascading Transactions 6-way IMS/CICS (2) 4-way IMS/CICS 6-way IBM MQ/DB2 using Shared Queues (Note: DB2 used for Administration and Data Storage purposes) (2) 4-way IBM MQ/DB2 using Shared Queues and Clustering (Note: DB2 used for Administration and Data Storage purposes) - Background workloads to exploit CICS CF Servers (Shared Temporary Storage, Coupling Facility Data Tables and Named Counter Server)

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What Service was Installed:

NOTE: Refer to Appendix A for a list of the excluded maintenance due to unresolved PE fixes.

Product/Tool	Maintenance Level
- CICS Transaction Gateway V9.0 (z/OS)	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.
- CICS TS 5.2 - CICS TS 5.3 - CICS Interdependency Analyzer for z/OS V3.2	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.
- DB2 V11 - DB2 V12	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.
z/OS Problem Determination Tools - Application Performance Analyzer Version 12 Release 1 - Application Performance Analyzer Version 13 Release 1 - Debug Tool for z/OS Version 12 Release 1 - Debug Tool for z/OS Version 13 Release 1 - Fault Analyzer for z/OS Version 12 Release 1 - Fault Analyzer for z/OS Version 13 Release 1 - File Manager for z/OS Version 12 Release 1 - File Manager for z/OS Version 13 Release 1	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.
- GDPS V3.13 - GDPS V3.14	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.
IBM Tivoli - IBM Tivoli Monitoring Services on z/OS V6.3.0 - IBM Tivoli OMEGAMON XE for CICS on z/OS V5.1.0 / V5.3.0 - IBM Tivoli OMEGAMON XE for DB2 Performance Expert on z/OS V5.3.0 / V5.4.0 - IBM Tivoli OMEGAMON XE for IMS on z/OS V5.1.0 / V5.3.0 - IBM Tivoli OMEGAMON XE for Mainframe Networks V5.1.0 / V5.3.0	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.

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- IBM Tivoli OMEGAMON XE for Storage on z/OS V5.3.0 / V5.4.0 - IBM Tivoli OMEGAMON XE on z/OS V5.1.0 / V5.3.0 -IBM Tivoli OMEGAMON XE for Messaging on z/OS V7.1.0 / V7.3.0	
- IMS V13 - IMS V14	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.
- IRLM 2.3	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.
- IBM 31-bit SDK for z/OS V710 - IBM 64-bit SDK for z/OS V710 - IBM 31-bit SDK for z/OS V8 - IBM 64-bit SDK for z/OS V8	All service through the end of August 2017 not already marked RSU.
IBM Security Guardium S-TAP for IMS on z/OS V10.0 and V9.1	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.
WebSphere Application Server for z/OS V8.0 – Service level 8.0.0.12 V8.5 – Service level 8.5.5.12	 WAS 8.0 - All service through PTF UI34439 WAS 8.5 - All service through PTF UI48569
- IBM MQ V8.0.0 - IBM MQ V9	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.
- z/OS V2R1 - z/OS V2R2	All service through the end of June 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of August 2017.

Roll-out of CST3Q17 :

   IBM recommends that the Customer stage the roll-out of the quarterly recommended service upgrade (RSU) by product on any single system, and not change all the major products (such as z/OS, DB2, IMS, CICS, CTG, GDPS, Java, IBM MQ, WebSphere Application Server for z/OS, IBM Tivoli OMEGAMON, IBM Security Guardium S-TAP for IMS on z/OS and z/OS Problem Determination Tools) all at once. Changing all the major products in a single system simultaneously complicates the tasks of problem diagnosis and back-out, if a severe problem occurs.

   Additionally, IBM recommends that the Customer thoroughly test the maintenance level applied, including testing in a parallel sysplex application data sharing environment.

   IBM makes this recommendation based on our testing in the environment described in this report. Your environment and applications are likely to differ in numerous ways.   Therefore, your results may be different than ours.   The Customer must consider their environment, their maintenance philosophy and their production needs in making the final decision on what maintenance to apply, and how you roll this maintenance out in your environment.

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What's New

As part of IBM's continuing efforts to provide Customers with suggestions on maintaining their z/OS systems for availability, we have provided a new document which describes a *z/OS Preventive Maintenance Strategy to Maintain System Availability.*

A link to the document can be found on the "links" page of the CST website:

http://www-03.ibm.com/systems/z/os/zos/support/servicetest/links.html

or can be directly accessed at:

http://www-03.ibm.com/systems/resources/zos_preventive_maintenance_strategy.pdf

Highlights of CST3Q17

This quarterly CST focused on enhancements to the environment and workloads.   This included:

- Additional product(s)

- Additional tool(s)

- Additional product / tool scenarios

- Additional workloads / applications

- Workloads run continuously

- Service applied, as needed

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Some highlights follow:

- CICS/TS
  - (In Progress) Migrating from CICS/TS V5R3 to CICS/TS V5R4
  - (In Progress) Migrating from CICS/TS V5R2 to CICS/TS V5R3

- DB2
  - (Completed) Migration of DB2 V11 to DB2 V12
  - (Completed) Migration of DB2 V10 to DB2 V11 CM and DB2 V11 NFM

- IBM Security Guardium S-TAP for IMS on z/OS
  - (In Progress) Installing IBM Security Guardium S-TAP for DB2 on z/OS V10
  - (In Progress) Installing IBM Security Guardium S-TAP for Data Set on z/OS V10

- IMS
  - (Completed) Built IMS catalog databases in a 4-way non-SQ IMS V14 data sharing group and in a 4-way SQ IMS V14 data sharing group and successfully migrated to IMS-managed ACBs

- JAVA
  - (Completed) Migration of JAVA V7 to JAVA V8 in preparation for migration to z/OS V2R3

- Misc
  - (Completed) Removed COBOL V5 and installed COBOL V6

- GDPS
  - (Completed) Migration of 3.13 to 3.14 in one environment and 3.12 to 3.13 on the other.

- IBM MQ
  - (Completed) Migration of IBM MQ V7 to IBM MQ V8
  - (Completed) Migration of IBM MQ V8 to IBM MQ V9

- z/OS:
  - (Completed) Installing IBM z14 processor
  - (In Progress) Preparing for z/OS V2R3 installation
  - (In Progress) Installing IBM Pervasive Encryption

- CICS, DB2, GDPS, IMS, IBM MQ, WAS, and z/OS recovery scenarios performed

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Problems Encountered during CST3Q17 :

The APARs listed in the table below represent the problems the CST team encountered during the quarterly test; however, if a problem was encountered and corrected for this recommendation, it will not be listed in the table below. The APARs listed below are either open, or their associated PTFs were not yet available for testing in the CST environment prior to this recommendation.

Customers should verify APAR status through normal means.

Note: Consolidated Service Test does not replace the regular service procedure. If a problem is encountered with product code, you should report the problem to IBM support.

CICS/TS 5.4	
PI85450	DFHSM0133 CICS is under stress (short on storage above 16MB)
PI85774	CPSM MAS agent startup duplicating security checking done
PI87272	CPSM CSYSDEF records sometimes not updatable through CICS Explorer
PI87117	DFHIS0002 severe error code 0688 in module DFHISXM at shutdown
CICS/REXX	
OA52866	CICS/TS 5.4 has changed the default data location for program definitions
DFSMS 2.1.0	
OA53296	HASP003 RC=(125),SPOOLDEF - CYL_MANAGED=ALLOWED requires LARGEDS=ALLOWED or LARGEDS=ALWAYS. LARGEDS=FAIL cannot be specified if CYL_MANAGED=ALLOWED
OA53383	Abend0C4 in IGW8ROP2 can happen if DFSMStvs is being restarted and trying to OPEN a data set defined with LOG(NONE)
DFSMS 2.2.0	
OA51691	AbendU801,RSN=6E2A9551,CB_UMOUNT
OA52198	Abend0F4 RSN130D1600 during copy of PDSE
GDPS 3.14	
PI83803	GEO270I NON-DISRUPTIVE STATESAVE REQUESTED FOR DISK SUBSYSTEM 00VM241. REASON=AUTONOMIC REQUEST FOR IOS071I unexpectedly issued
PI85245	GDPS task hang after attempt to retrieve Netview variable from unresponsive system
PI85628	Takeover script flags not cleared after takeover script ends
PI86825	Invalid SDF trace entry "z/Proxy Feature is enabled" when Netview is up, but GDPS not initialized in the alternate K-sys

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z/OS V2R1	
OA52479	Loop in IXGF2BRW on a IXGBRWSE REQUEST
Not part of the CST RSU Recommendation:	
TWS V9.3	
PI79321	When running EQQJOBS, the Step List repository is inserted in the migration JCL (EQQICNVS), provided that the STEP AWARENESS indicator is set to Yes.
SA 4.1	
OA53910	Abend0C4 in IEAVEPST due to ecb address being zero

How is the Customer going to obtain and install the CST3Q17 level of service?

Please proceed to the CST website for the steps involved.

The URL is http://www-03.ibm.com/systems/z/os/zos/support/servicetest/

For Questions and Comments

To submit questions or comments regarding Consolidated Service Test or the CST Web site, please use the feedback form on the CST web site (URL is: http://www-03.ibm.com/systems/z/os/zos/support/servicetest/contact.html)

Appendix A: Excluded Maintenance

DB2 V11
  Exclude (UI46594)

DB2 V12
  Excludes (UI46553, UI48042)

IMS V13
  Excludes (UI42746, UI42745, UI47374, UI48141, UI48142, UI44334, UI44335)

IMS V14
  Excludes (UI46771, UI48084)

z/OS V2R1
  Excludes (UA91848, UA92261, UA92283)

z/OS V2R2
  Excludes: (UA91849, UA92262, UA92284)