Consolidated Service Test

CST2Q19 (RSU1906)

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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, DB2 and Data Sets on z/OS
- z/OS Management Facility

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?

3906 – M04 (M131)	Microcode at Driver 36C + MCL bundle S08 with CFCC P41419.002 (R23 srv lvl 00.12) • 9 LPARs running z/OS • 120 general processors shared amongst all 9 LPARs, 6 ICF processors and 6 zIIP processors • 1 GDPS control image with 8192M of Central Storage • 6 z/OS LPARs with 20480M of Central Storage • 2 z/OS LPARs with 204800M of Central Storage • 2 CFs with 25G storage at CFCC level 22 and 2 dedicated processors each
3906 – M02 (M402)	Microcode at Driver 32L + MCL bundle S50 with CFCC P42606.007 (R22 srv lvl 00.35) • 87 general processors, 8 zIIPs • 2 z/OS images running 20480M each • 2 z/OS images running 204800M each • 2 GDPS control images running 8192M each • 1 z/OS image running 10240M • 2 CFs with 25G storage at CFCC level 22 and 2 dedicated processors
2964 – N63 (S72)	Microcode at Driver D27I + MCL bundle S46 with CFCC P08416.008 (R21 srv lvl 02.18) • 64 general processors, 4 zIIPs • 4 z/OS images running 20480M each • 1 GDPS control image running 8192M • 2 CFs with 25G storage at CFCC level 21 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 86.31.220.0 (R10g.4b1171228a) Microcode level is 87.51.103.0 (R15g.7b171016a)
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 V12R1M100) • 6-way -- DB2, CICS, IBM MQ, WAS, IMS • 3-way -- DB2 (DB2 V11 CM)

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- 3-way -- DB2 (DB2 V11 MFM)
- (2) 4-way DB2/CICS
- 8-way DB2 (DB2 V12R1M100)
- 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 DB2V12R1M501
- 4-way DB2V12R1M500
- 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)

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 V9.1/V9.2 (z/OS)	All service through the end of March 2019 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of May 2019.

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- CICS TS 5.4 - CICS TS 5.5 - CICS Interdependency Analyzer for z/OS V3.2	All service through the end of March 2019 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of May 2019.
- DB2 V11 - DB2 V12	All service through the end of March 2019 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of May 2019.
- GDPS V3.14 - GDPS V4.1	All service through the end of March 2019 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of May 2019.
IBM Tivoli - IBM Tivoli Monitoring Services on z/OS V6.3.0 - IBM Tivoli OMEGAMON XE for CICS on z/OS V5.3.0 / V5.5.0 - 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 V5.3.0 / V5.5.0 - IBM Tivoli OMEGAMON XE for Mainframe Networks V5.3.0 / V5.5.0 - IBM Tivoli OMEGAMON XE for Storage on z/OS V5.4.0 / V5.5.0 - IBM Tivoli OMEGAMON XE on z/OS V5.3.0 / V5.5.0 -IBM Tivoli OMEGAMON XE for Messaging on z/OS V7.3.0 / V7.5.0	All service through the end of March 2019 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of May 2019.
- IMS V14 - IMS V15	All service through the end of March 2019 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of May 2019.
- IRLM 2.3	All service through the end of March 2019 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of May 2019.
JAVA Technology Edition - IBM 31-bit SDK for z/OS V8 - IBM 64-bit SDK for z/OS V8	All service through the end of May 2019 not already marked RSU.
- IBM Security Guardium S-TAP for IMS on z/OS V10.1.3 - IBM Security Guardium S-TAP for Data Sets on z/OS V10.1.3 - IBM Security Guardium S-TAP for DB2 on z/OS v10.1.3	All service through the end of March 2019 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of May 2019.
WebSphere Application Server for z/OS V8.5 – Service level 8.5.5.15 V9 – Service level 9.0.0.11	All service through the end of May 2019
- IBM MQ V9.1.0	All service through the end of March 2019 not already marked RSU. PE

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- IBM MQ V9.0.0	resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of May 2019.
- z/OS V2R2 - z/OS V2R3	All service through the end of March 2019 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of May 2019.

Roll-out of CST2Q19:

   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, DB2 and Data Sets on z/OS) 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.

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 "Mission" page of the CST website:

https://www-03.ibm.com/systems/z/os/zos/support/servicetest/mission.html

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Highlights of CST2Q19

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

Some highlights follow:

- CICS/TS
  - (Completed) Migrating from CICS/TS V5R3 to CICS/TS V5R4
  - (Completed) Migrating from CICS/TS V5R4 to CICS/TS V5R5

- GDPS
  - (In Progress) Migrating to GDPS 4.2 from GDPS 4.1
  - (In Progress) Migrating to GDPS 4.1 from GDPS 3.14

- IMS
  - (In Progress) IBM z Pervasive Encryption – Setup and run IMS Workload with encrypted IMS datasets.

- IBM WebSphere Application Server
  - (Completed) Migrating from WAS V8.5 to WAS V9
  - (In Progress) Migrating from WAS V8 to WAS V8.5

- z/OS:
  - (Completed) Encryption of datasets for use with VSAM RLS workloads
  - (Ongoing) Working on Pervasive Encryption
  - (In Progress) Working on preparation for migration to z/OS V2R4 at GA

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

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Problems Encountered during CST2Q19:

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 5.5	
PH11356	Abend0C4 in DFHDUIO after end of volume abend writing to transaction dump dataset
PH12501	EXEC CICS READNEXT corrupts RIDFLD
PH09525	DFHWU4007 sending a CMCI REST request VIA a DATAPOWER adds an XML Declaration which causes problems parsing the request
CICS/T 5.4	
PH13245	PH07976 and PI97207 need to be applied at the same time
PH13491	TDQUEUE definitions not refreshed after TDQ is disabled and reinstalled
GDPS 3.14	
PH11533	GEOTRCNO,FLIP,WLM CDS switch skipped, unallocated CDS cannot be GDPS managed
PH12127	SYSPLEX='CDS SITE2' ended RC=0 when not all CDS completed
PH12277	Abend0C4 during execution of GDPS health check GDPS_CHECK_SPOF
GDPS 4.1	
PH09014	XDR-A DISABLED but PPRC and HyperSwap status = OK
IBM Tivoli Management Services on z/OS 6.3	
OA57649	KLV$FMEM MEMORY ERROR 21
	NOT part of the CST RSU
CICS Explorer	
IJ15874	Several errors while creating new work space

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How is the Customer going to obtain and install the CST2Q19 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

IBM Tivoli OMEGAMON for Storage
Exclude (UA98449)