Consolidated Service Test

CST1Q18 (RSU1803)

March 30, 2018

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 VSAM 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?

3906 – M04 (M131)	Microcode at Driver 32L + MCL bundle S05 with CFCC P42606.005 (R22 srv lvl 00.30) • 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
2827 – HA1 (P03)	Microcode at Driver D15F + MCL bundle 42 with CFCC H49559.015 (R19 srv lvl 2.21) • 87 general processors, 4 zIIPs, 4 zAAps • 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 19 and 2 dedicated processors
2964 – N63 (S72)	Microcode at Driver D271 + MCL bundle S46 with CFCC P08416.007 (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 V11NFM) • 6-way -- DB2, CICS, IBM MQ, WAS, IMS

- 3-way -- DB2 (DB2 V11NFM)
- (2) 4-way DB2/CICS
- 8-way DB2 (DB2 V11NFM)
- 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 V11NFM)
- 6-way DB2V11 NFM
- 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 V9.1/V9.2 (z/OS)	All service through the end of December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.
- CICS TS 5.3 - CICS TS 5.4 - CICS Interdependency Analyzer for z/OS V3.2	All service through the end of December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.
- DB2 V11 - DB2 V12	All service through the end of December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.
z/OS Problem Determination Tools - Application Performance Analyzer Version 13 Release 1 - Debug Tool for z/OS Version 13 Release 1 - Fault Analyzer for z/OS Version 13 Release 1 - File Manager for z/OS Version 13 Release 1	All service through the end of December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.
- GDPS V3.13 - GDPS V3.14	All service through the end of December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.
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 V5.3.0 / V5.4.0 - IBM Tivoli OMEGAMON XE on z/OS V5.3.0 / V5.5.0 -IBM Tivoli OMEGAMON XE for	All service through the end of December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.

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Messaging on z/OS V7.3.0 / V7.5.0	
- IMS V14 - IMS V15	All service through the end of December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.
- IRLM 2.3	All service through the end of December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.
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 February 2018 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 December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.
WebSphere Application Server for z/OS V8.5 – Service level 8.5.5.12 V9 – Service level 9.0.0.4	WAS 8.5 - All service through PTF UI48569 WAS V9
- IBM MQ V8.0.0 - IBM MQ V9.0.0	All service through the end of December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.
- z/OS V2R1 - z/OS V2R2 - z/OS V2R3	All service through the end of December 2017 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of February 2018.

Roll-out of CST1Q18:

   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 CST1Q18

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 V5R2 to CICS/TS V5R3

- DB2
  - (Completed) Migration of DB2 V11 to DB2 V12

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- (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) IMS catalog managed ACBs migration/coexistence IMS V14 and IMS V15. The enhancement delivers the ability to IMS V14 catalog directory to be shared by IMS V14 and IMS V15 systems to allow each to use the same IMS catalog and directory datasets.
  - (Completed) Migration of IMS V14 to IMS V15 in a 4-way SQ data sharing group and in a 4-way non-SQ data sharing group and currently running IMS V14 - IMS V15 in coexistence mode using IMS managed ACBs.
  - (Completed) Migration of IMS V13 to IMS V14 in a 6-way SQ data sharing group.
  - (Completed) Migration from ACBLIBs to IMS managed ACBs in a 6-way IMS V14 SQ data sharing group.

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

- 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:
  - (In Progress) Installing IBM Pervasive Encryption

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

Problems Encountered during CST1Q18:

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.

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CICS/TS 5.4	
PI93248	DFHDS0001 Abend0C4/AKEA in DFHDSTCB
PI92451	DFHTM1797 AKEF abend during shutdown of alternate XRF region
PI92770	CICS region using Liberty JVM can get into a tight loop scanning the free T8 TCB chain
CICS/TS 5.3	
PI93295	Restarting a region with dummy logstreams will fail with START=INITIAL
CTG 9.2	
PI95520	CTG6143E is displayed about the wrong Java type but problem was region size not large enough
DFSMS 2.3	
OA54804	Abend00C4 RC011 MOD/UNKNOWN CSECT/UNKNOWN FRR/HASCNJRC Occurred when system was shutting down
OA55082	Abend0F4 RSN7A02000D from IGWRDLCX because RLS DIAG services (RDS) pool is full
OA54572	Abend0F4 RSN6131FBC2 may occur during CF-LINK failure, hyperswap, or other outage in IDAVRED1
OA54466	SYSZCAXW and SYSIGGV2 hang during DDR swap
OA54628	DFSMSHSM recall requests fail on V2R2 after OA52901 applied to V2R3
OA54051	Abend 0F4 RC=00000024, RSN=00000050 during CF Link Failures IGWBVLC1
OA54804	Abend0C4 RC/011 HASCNJRC during system shutdown
OA54753	The PTFs for APAR OA52913 incorrectly CO-REQ the DFSMSHSM PTFS for APAR OA52901
OA54802	Abend0F4 RC00001008 RSN61609D06 occurs in IDAVRBF4
GDPS 3.14	
PI95234	Unexpected GDPS GEO113A takeover prompt while prior takeover prompt outstanding
z/OS V2R2	
OA54651	Abend0C4 in name space validation
OA54664	IXL041E connector hang SYSZLOGR contention IXG215I
z/OS V2R3	
OA54848	JES3 DM481 after starting JES3
OA55244	Abend0C4 RSN3B in IOSVFBND during a HyperSwap

How is the Customer going to obtain and install the CST1Q18 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

IMS V14 Exclude: UI50785

IMS V15 Excludes: UI52153, UI53748, UI53398

DB2 V11 Excludes: UI50536, UI51276, UI51666, UI51795, UI52290, UI52497, UI52747

DB2 V12 Excludes: UI50535, UI51665, UI51748, UI51758, UI52254, UI52296

IBM TIVOLI Discovery Library Adapter for z/OS V310 Exclude: UA94633

z/OS V2R1 Exclude: UA94518

z/OS V2R2 Exclude: UA94519

z/OS V2R3 Excludes: UA94492, UA94501, UA94575, UA94629, UA94634, UA94639, UA94667, UA94759, UA94825, UA94773, UA94812, UA94813, UA94963, UA95350