

# Consolidated Service Test



**CST4Q14 (RSU1412)**

**January 5, 2015**

**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
- Geographically Dispersed Parallel Sysplex (GDPS/PPRC) and XRC
- IMS
- IRLM
- JAVA
- WebSphere Application Server for z/OS
- WebSphere MQ for z/OS
- IBM DB2 and IMS Tools
- IBM Tivoli OMEGAMON
- InfoSphere 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.

# Consolidated Service Test



## What is the CST Environment?

2827 – H89 (P131)	<p>Microcode at Driver 15F + MCL bundle 21 with CFCC H49559.011 (R19 srv lvl 2.14)</p> <ul style="list-style-type: none"> <li>• 8 LPARs running z/OS</li> <li>• 50 general processors shared amongst all 8 LPARs, 4 ICF processors, 6 zIIPs and 6 zAAPs logical processors</li> <li>• 1 GDPS control image with 4864 of Central Storage</li> <li>• 4 z/OS LPARs with 14848M of Central Storage</li> <li>• 6 z/OS LPARs with 10240M of Central Storage</li> <li>• 2 CFs with 25G storage at CFCC level 19 and 2 dedicated processors each</li> </ul>
2827 - H43 (P134)	<p>Microcode at Driver 15F + MCL bundle 21 with CFCC code H49559.011 (R19 srv lvl 2.14)</p> <ul style="list-style-type: none"> <li>• 32 General processors</li> <li>• 5 LPARs running z/OS</li> <li>• 10240M Central storage for 3 z/OS LPARs</li> <li>• 2 GDPS control images with 3840MB Central storage</li> <li>• 1 CFs with 25G storage at CFCC level 19 and 2 dedicated processors each</li> </ul>
2097- E40 (H87)	<p>Microcode at Driver 79F + MCL bundle 79 with CFCC code N24403.017 (R16 srv lvl 4.11)</p> <ul style="list-style-type: none"> <li>• 26 General processors, 2 ICF processors, 2 zIIPs, 6 zAAPs</li> <li>• 4 LPARs running z/OS with 10240M of Central Storage</li> <li>• 1 GDPS control images with 3840MB Central storage</li> <li>• 1 CF with 25G storage at CFCC level 16 and 2 dedicated processors</li> </ul>
2817 - M66 (R01)	<p>Microcode at Driver 93G + MCL bundle 73 with CFCC code N48162.023 (R17 srv lvl 10.31)</p> <ul style="list-style-type: none"> <li>• 42 General processors on all LPARs, 4 ICF processor</li> <li>• 1 z/OS Image with 4096M Central Storage</li> <li>• 2 z/OS Images with 10240M of Central Storage each</li> <li>• 2 CFs with 25G storage at CFCC level 17 and 2 dedicated processors each</li> </ul>
2827 – HA1 (P03)	<p>Microcode at Driver 15F + MCL bundle 6 with CFCC H49559.003 (R19 srv lvl 0.31)</p> <ul style="list-style-type: none"> <li>• 96 general processors, 2 zIIPs, 2 zAAPs</li> <li>• 2 z/OS images running 770048M each</li> </ul>
2827 – HA1 (P286)	<p>Microcode at Driver 15F + MCL bundle 17 with CFCC H49559.010 (R19 srv lvl 0.31)</p> <ul style="list-style-type: none"> <li>• 96 general processors, 2 zIIPs, 2 zAAPs</li> <li>• 2 z/OS images running 770048M each</li> </ul>
Automated Tape Library (ATL)	<p>3584</p> <ul style="list-style-type: none"> <li>• 16 3592 tape drives, FICON-attached</li> </ul>
Virtual Tape Server (VTS)	<p>3494 B20 VTS</p> <ul style="list-style-type: none"> <li>• AIX with VTS CU</li> <li>• 32 emulated 3490 addresses in this VTS</li> <li>• 6 VTS 3590 drives (not directly accessible from z/OS)</li> <li>• 16 3590 tape drives are accessible from z/OS (FICON)</li> </ul>

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<p>DASD (2107/242x) DS8000=2107 25030 (SQ00) DS8000=2421 Y2430 (SQ13) DS8000=2421 Y4360 (SQ14) DS8000=2421 FA820 (SQ18) DS8000=2421 FB240 (SQ19) DS8800=2421 XM550 (SQ31) DS8800 2421 XD070 (SQ32)</p>	<p>5 Enterprise Storage Server DS8000. Microcode level is 64.33.20.0 (R12p.9b101014b)</p> <p>Microcode level is at 64.36.75.0 (R12p.9b130317ab)</p> <p>2 Enterprise Storage Server DS8800 Microcode level is R86.31.123.0 (R10g.4b140620a)</p>
<p>GDPS</p>	<p>Configuration info: we simulate two logical sites, it is purely a logical designation.</p>
<p>Lan attached</p>	<p>Both SNA and TCPIP</p>
<p>Data Sharing Groups</p>	<ul style="list-style-type: none"> <li>● 4 Way CICS/DB2 utilizing WAS/CTG/MQ and incorporating CICS Shared Temporary Storage CF Servers</li> <li>● 6-way DB2/CICS</li> <li>● 6-way -- DB2, CICS, WebSphere MQ, WAS, IMS</li> <li>● 3-way -- DB2, DRDA Client (AIX - DB2 Connect) (DB2 V9CM)</li> <li>● 3-way -- DB2, JES3 DB2 Tools</li> <li>● (2) 4-way DB2/CICS</li> <li>● 4-way DB2, CICS, WebSphere MQ, WAS, IMS, DRDA Client (AIX -DB2 Connect), OMEGAMON</li> <li>● 4-way -- DB2, CICS, WebSphere MQ, WAS, IMS, OMEGAMON</li> <li>● 6-way DB2/WAS</li> <li>● (2) 4-way DB2/WAS</li> <li>● (2) 4-way DB2/WAS via CTG/CICS</li> <li>● 2-way DB2 for system back-up, restore and recovery testing</li> <li>● 6-way CICS/VSAM-RLS and non-RLS</li> <li>● (2) 4-way CICS/VSAM-RLS and non-RLS</li> <li>● (2) 4-way TVS batch setup</li> <li>● 6-way IMS/TM</li> <li>● (2) 4-way IMS/TM</li> <li>● (2) 4-way IMS FastPath</li> <li>● 4-way IMS/OTMA SMQ Cascading Transactions</li> <li>● 6-way IMS/OTMA SMQ Cascading Transactions</li> <li>● 6-way IMS/CICS</li> <li>● (2) 4-way IMS/CICS</li> <li>● 6-way WebSphere MQ/DB2 using Shared Queues (Note: DB2 used for Administration and Data Storage purposes)</li> <li>● (2) 4-way WebSphere MQ/DB2 using Shared Queues and Clustering (Note: DB2 used for Administration and Data Storage purposes)</li> </ul>

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	<ul style="list-style-type: none"> <li>Background workloads to exploit CICS CF Servers (Shared Temporary Storage, Coupling Facility Data Tables and Named Counter Server)</li> </ul>
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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.

<b>Product/Tool</b>	<b>Maintenance Level</b>
- CICS Transaction Gateway V9.0 (z/OS)	All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014.
- CICS TS 5.1 - CICS TS 5.2 - CICS Interdependency Analyzer for z/OS V3.2	All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014 .
- DB2 V10 - DB2 V11	All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014 .
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 September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014.
- GDPS V3.10 - GDPS V3.11	All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014 .

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<p>IBM Tivoli</p> <ul style="list-style-type: none"> <li>- IBM Tivoli Monitoring Services on z/OS V6.2.3/6.3.0</li> <li>- IBM Tivoli OMEGAMON XE for CICS on z/OS V5.1.0 / V4.2.0</li> <li>- IBM Tivoli OMEGAMON XE for CICS Transaction Gateway on z/OS V5.1.0 / V4.2.0</li> <li>- IBM Tivoli OMEGAMON XE for DB2 Performance Expert on z/OS V5.2.0 / V5.1.1</li> <li>- IBM Tivoli OMEGAMON XE for IMS on z/OS V5.1.0 / V4.2.0</li> <li>- IBM Tivoli OMEGAMON XE for Mainframe Networks V5.1.0 / V4.2.0</li> <li>- IBM Tivoli OMEGAMON XE for Storage on z/OS V5.2.0 / V5.1.0</li> <li>- IBM Tivoli OMEGAMON XE on z/OS V5.1.0 / V4.2.0</li> <li>- IBM Tivoli OMEGAMON XE for Messaging on z/OS V7.1.0 / V7.0.1</li> </ul>	<p>All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014 .</p>
<ul style="list-style-type: none"> <li>- IMS V12</li> <li>- IMS V13</li> </ul>	<p>All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014 .</p>
<ul style="list-style-type: none"> <li>- IRLM 2.3</li> </ul>	<p>All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014 .</p>
<p>IBM DB2 and IMS Tools</p> <p><u>DB2 Tools:</u></p> <ul style="list-style-type: none"> <li>- Administration Tool for z/OS V10.2 and V11.1</li> <li>- High Performance Unload for z/OS V4.2</li> <li>- Object Comparison Tool for z/OS V10.2 and V11.1</li> </ul> <p><u>IMS Tools:</u></p> <ul style="list-style-type: none"> <li>- IMS High Performance Load V2.1</li> <li>- IMS High Performance Prefix Resolution V3.1</li> <li>- IMS High Performance Image Copy V4.2</li> <li>- IMS High Performance Pointer Checker 3.1</li> <li>- IMS Library Integrity Utilities V2.1</li> <li>- IMS Index Builder V3.1</li> <li>- IMS Performance Analyzer V4.2</li> <li>- IMS Queue Control Facility 3.1</li> <li>- IMS High Performance Unload V1.2</li> </ul>	<p>All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014 .</p>

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<ul style="list-style-type: none"> <li>- IBM 31-bit SDK for z/OS,Java 2 Technology Edition, V6, service level SR16 FP1 (PTF UI19838)</li> <li>- IBM 64-bit SDK for z/OS,Java Technology Edition, V6, service level SR16 FP1 (PTF UI19839)</li> <li>- IBM 31-bit SDK for z/OS,Java Technology Edition, V7, service level SR7 FP1 (PTF UI19908)</li> <li>- IBM 64-bit SDK for z/OS,Java Technology Edition, V7, service level SR7 FP1 (PTF UI19909)</li> </ul>	<p>All service through the end of November 2014 not already marked RSU.</p>
<p>InfoSphere Guardium S-TAP for IMS on z/OS V9</p>	<p>All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014 .</p>
<p>WebSphere Application Server for z/OS V8.0 – Service level 8.0.0.9 V8.5 – Service level 8.5.5.3</p>	<p>WAS 8.0 - All service through PTF UI18629 WAS 8.5 - All service through PTF UI20205</p>
<ul style="list-style-type: none"> <li>- WebSphere MQ V7.1.0</li> <li>- WebSphere MQ V8.0.0.</li> </ul>	<p>All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014 .</p>
<ul style="list-style-type: none"> <li>- z/OS V1R13</li> <li>- z/OS V1R13H</li> <li>- z/OS V2R1</li> </ul>	<p>All service through the end of September 2014 not already marked RSU. PE resolution and HIPER/Security/Integrity/Pervasive PTFs and their associated requisites and supersedes through the end of November 2014 .</p>

## **Roll-out of CST4Q14:**

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, WebSphere MQ, WebSphere Application Server for z/OS, IBM DB2 and IMS Tools, IBM Tivoli OMEGAMON, InfoSphere 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.

# Consolidated Service Test



## **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](http://www-03.ibm.com/systems/resources/zos_preventive_maintenance_strategy.pdf)

## **Highlights of CST4Q14**

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
  - (Completed) Upgrade to CICS/TS 5.2 from CICS/TS 5.1
  - (In Progress) Removal of CICS/TS 4.2 while upgrading to CICS/TS 5.1
  
- DB2
  - (Completed) – Migration to DB2 V11
  - (Added) One 4 way was migrated to V11NFM
  - (Added) One 4-way was migrated to V11CM
  - (Added) One 6-way migrated to V10NFM
  - (Added) One 3-way migrated to V10M9
  - (Added) 1 4-way V10NFM
  - (Added) 2-way to V11NFM
  - (Added) 3-way JES3 V10NFM

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- IBM DB2 Tools:
  - DB2 Tools:
    - (Added) High Performance Unload V4.2 testing with DB2 V10 and V11
    - (Added) Administration Tool for z/OS V11.1 was tested with DB2 V10 and V11
    - (Added) Object Comparison Tool for z/OS V11.1 was tested with DB2 V10 and V11
    - (Added) Administration Tool for z/OS V10.2 was tested with DB2 V10
    - (Added) Object Comparison Tool for z/OS V10.2 was tested with DB2 V10
  - IBM Tivoli
    - (Added) We have installed and are testing the following:
      - IBM Tivoli Monitoring Services on z/OS V6.2.3 and 6.3.0
      - IBM Tivoli OMEGAMON XE for CICS on z/OS V5.1.0 and V5.3.0
      - IBM Tivoli OMEGAMON XE for CICS Transaction Gateway on z/OS V4.2.0 and V5.1.0
      - IBM Tivoli OMEGAMON XE for IMS on z/OS V4.2.0 and V5.1.0
      - IBM Tivoli OMEGAMON XE for Mainframe Networks V.42.0 and V5.1.0
      - IBM Tivoli OMEGAMON XE for Storage on z/OS V5.2.0 and V5.3.0
      - IBM Tivoli OMEGAMON XE on z/OS V4.2.0 and V5.1.0
      - IBM Tivoli OMEGAMON XE for DB2 Performance Expert on z/OS V5.1.0 and V5.2.0
      - IBM Tivoli OMEGAMON XE for Messaging on z/OS V7.1.0 and V7.3.0
- IMS:
  - (Updated) FDBR address spaces to lower the amount of virtual storage for the VSAM buffer pool to minimize FDBR virtual storage usage
  - (Enabled) 64-bit RLS buffers for IMS RECON with IMS V12 and IMS V13
  - (Added) Various IMS Logger Block Sequence Number (BSN) values for each IMS in a data sharing group and ran test scenarios with various BSN values.
- WebSphere MQ
  - (Completed) Migration from WebSphere for MQ V7.0.1 to V7.1.0
  - (In progress) Migrating from WebSphere for MQ V7.1.0 to V8
- GDPS
  - (In progress) Setting up BHS (Basic Hyperswap) to perform planned and unplanned hyperswaps
- z/OS:
  - (Completed) Ongoing work to complete the setup of z/OSMF in our environment
  - (Completed) Installation of zAware (Advanced Workload Analysis Reporter)
  - (Completed) Installation of SCM (Storage Class Memory Flash Express) with the z/OS 1.13 Web Deliverable FMID JBB778H and runs on zEC12
  - (Completed) Adding two additional zEC12's with large images
- CICS, CTG, DB2, GDPS, IMS, WebSphere MQ, WAS, and z/OS recovery scenarios performed



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## Problems Encountered during CST4Q14:

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.

<b>CICS/TS 4.2</b>	
PI27424	DFHEIQDS returns invalid key length in case of extended KSDS files
<b>CICS/TS 5.2.0</b>	
PI31042	EYU\$M680 missing from CPSM sample dataset SEYUSAMP
PI29554	DFHEIQDS returns invalid key length in case of extended KSDS files
<b>DFSMS D10</b>	
OA46366	AbendU0427 or AbendU0844 in IMS due to VSAM RPLFDBK=2F080020
<b>DFSMS 2.1</b>	
OA45945	Logrec Entries out of IGWBCRL2 RSN1F041236
OA46374	IEBCOPY UNLOAD and LOAD with BLKSIZE < 5 fails with Abend0F4
<b>DB2 V11</b>	
PI30965	Abend04E RC00C90101 during INSERT because current segment number was less than first segment number
<b>InfoSphere Guardium S-TAP for IMS V910</b>	
PI27712	Abend0C1 disable AUIFLGX0 exit cascading when driven as an enhanced exit
<b>JAVA V7</b>	
IV67333	During JVM shutdown, LE may report ABEND user code 4083 with reason code 00000002

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<b>OMEGAMON XE for IMS 510</b>	
OA46281	Abend0C4 and dump of XE IMS agent address space following abnormal termination of CQS while IMS is monitored
<b>WAS 8.5</b>	
PI31273	OSGI error log messages are written to the screen in ASCII instead of EBCDIC
<b>WMQ V8</b>	
PI31377	Abend0C4 in CSQ3RRSM reported by message CSQ3009E
<b>z/OS V2R1</b>	
OA44680	New function in logger
OA46036	Abend0C4 Reason 3B in IRASASRV

## **How is the Customer going to obtain and install the CST4Q14 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

Excludes (UI20002, UI21203)

DB2 V10

Excludes (UI20718, UI21202)

IMS V12

Exclude (UI21358)