CICS Nuts Bolts and Gotchas

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DFHDS0002 A severe error code 0204 has occurred in DFHDSTCB

- **Problem:** You are receiving a DFHDS0002 code X'0204' in module DFHDSTCB and you are running with Xpediter/CICS.

- **Cause: T**he Xpediter/CICS parameter CICSOTE was set to NO.

- **Solution:** Change the Xpediter CICSOTE parameter to YES.

DFHAP0001 0C4/AKEA at offset X'0000017A' in module DFHPEP during CICS shutdown

- **Problem:** During shutdown processing of your CICS region you receive message DFHAP0001 An abend (code 0C4/AKEA) has occurred at offset X'0000017A' in module DFHPEP.

- **Cause** Missing fix for product DumpMaster MVS from Macro 4

- **Diagnosis:** You look at the sequence of events in the CICS program domain and you can see that CICS module DFHTFP linked to program DMCPEP with a valid COMMAREA in key 8:

  Then DMCPEP does an EXEC CICS LINK to DFHPEP passing an invalid COMMAREA in key 0:

  DMCPEP is a module owned by Macro 4 and it tried to link to CICS module DFHPEP with a COMMAREA in key zero.

- **Solution:** Contact Macro 4 for fix DMO03204 for product DumpMaster MVS. The additional details from Macro 4 for this problem are:

Average CPU time is higher when using CICS-MQ adapter with CICS TS 3.2 and higher

- **Problem:** You have upgraded to CICS Transaction Server for z/OS (CICS TS) V3.2 or later and are using the CICS-MQ adapter to communicate with Websphere MQ (WMQ). You are now seeing an increase in the CICS average CPU time. However, the CPU seconds for the entire region from the MVS type 30 SMF records does not show a significant increase.

- **Symptom:** In this case, the average CPU time went from .0015 under CICS TS V2.3 to .0022 under CICS TS V3.2. This represents a 46% increase in average CPU time. With a 46% increase in average CPU time, you expected that the total CPU time would have increased accordingly.

- **Cause:** The WebSphere MQ adapter used with releases of CICS before CICS TS V3.2 has a pool of eight private TCBs. Since they are private TCBs and not CICS managed TCBs, CICS does not capture and report the CPU time spent on those TCBs in the SMF 110 records.

  Beginning with CICS TS V3.2, the CICS-MQ adapter uses CICS managed TCBs and CICS can now report the time spent on the TCB in the CICS SMF 110 records. As the MVS SMF Type 30 records show, the total CPU consumption for the region is nearly the same in both releases. However, the average CPU time shows a marked increase because it is now reporting the time spent on the CICS-MQ adapter TCBs.

- **Resolution:** Expect the average CPU time to be higher when using the CICS-MQ adapter with CICS TS V3.2 and higher. CICS is working as designed.

Compatibility of Dynamic Scripting Feature Pack with CICS TS 4.2

- **Question:** Is the existing CICS Transaction Server for z/OS (CICS TS) V4.1 Feature Pack for Dynamic Scripting compatible with CICS TS V4.2?

- **Answer:** No, the CICS TS V4.1 Feature Pack for Dynamic Scripting is not compatible with CICS TS 4.2 because this feature pack has environment variables set for using the 31bit JVM and CICS TS 4.2 only uses a 64bit JVM.

  Do *NOT* attempt to deploy the existing Dynamic Scripting Feature Pack into your CICS TS V4.2 environment.

  As documented in the CICS Transaction Server for z/OS V4.2 Announcement Letter "*IBM intends in the future to deliver a Dynamic Scripting Feature Pack for use with CICS TS V4.2.*"

UEPTERM is zero for temporary storage And File Control requests when function shipping over IPIC

- **Problem:** After upgrading to CICS Transaction Server for z/OS (CICS TS) V4.2, the UEPTERM parameter is zeros for temporary storage (TS) requests that have been function shipped over an IPIC connection (IPCONN). You are using exits XTSQRIN, XTSQROUT, XTSPTIN, and XTSPTOUT. You might also see this problem when using XFCFRIN and XFCFROUT for file control requests.

- **Cause:** Changes to temporary storage domain exits XTSQRIN, XTSQROUT, XTSPTIN, and XTSPTOUT in CICS TS 4.2 cause UEPTERM parameter to be set to zeroes (00000000). There were also changes to the file control exits XFCFRIN and XFCFROUT.

- **Resolution:** As documented in the CICS TS V4.2 information center under Changes to global user exits:

  - *To use IPIC connections for temporary storage requests, ensure that XTSQRIN, XTSQROUT, XTSPTIN, and XTSPTOUT check that the UEPTERM parameter is a non-zero value before trying to use it as an address.*

    XTSQRIN, XTSQROUT, XTSPTIN, and XTSPTOUT must be coded to threadsafe standards and declared threadsafe to get the benefits of threadsafe remote temporary storage queue support using an IPIC connection.

    The UEPTERM parameter is a zero for file control requests that have been function shipped over an IPIC connection. To use IPIC connections for function shipping file control requests, ensure that XFCFRIN and XFCFROUT check that the UEPTERM parameter is a non-zero value before trying to use it as an address.

    XFCFRIN and XFCFROUT must be coded to threadsafe standards and declared threadsafe to get the benefits of threadsafe remote file support using an IPIC connection.

DFHRL0002 code 022E or 0272 in DFHRLPM when installing BUNDDEF

- **Problem:** You are deploying your first event binding in CICS and the bundle definition (BUNDDEF) fails to install or deploy.
- **Symptom:**
  - For CICS TS 4.1: DFHRL0002 severe error (code X'022e') has occurred in module DFHRLPM

    For CICS TS 4.2: DFHRL0002 E A severe error (code x'0272') has occurred in module DFHRLPM
- **Cause:** Missing RDO group DFHRL that was added in CICS TS V4.1

- **Solution:** Upgrade Your CICS TS regions using the DFHCSDUO utility and ensure DFHLIST is specified in your CICS system initialization table (SIT) GRPLIST parameter. Also, make sure that the DFHLIST includes the new RDO group DFHRL as well as DFHRS, DFHWU and DFHWEB2.

DFHDB8222 Connection from CICS TS 4.2 to IMS fails. DBCTL return code is 36

- **Problem:** Your CICS region fails to connect to IMS and you receive message DFHDB8222 Connection has failed. DBCTL return code is 36 (RC36). You also receive message DFHDB8111 with return code 36 and DFHDB8102.

- **Cause:** IMS is not recognizing the new parameters being passed by CICS in the participant adapter parameter list (PAPL).

- **Resolution:** Apply the required PTF applicable to your IMS release:
  - IMS V12 New function - PM31420 (PTF not yet available). If you are in the quality partnership program (QPP), you still must install this PTF because the new function is not part of the IMS base code.

  - IMS V11 toleration only - PM31729 (PTF UK67278)

    IMS V10 toleration only - PM31730 (PTF UK67279)

ESDS AUTOJOURNAL WRITE-ADD-COMPLETE RECORDS OUT OF RBA SEQUENCE

- Files have been defined with JNLADD as AFTER. Currently CICS does not obtain a write lock around the calls to VSAM and the LG domain, and hence they are not treated as a serialized operation. This allows for races between tasks and the potential for occasional autojournal after images to be written in opposing order within a log block.
- On a busy system, it is possible for CICS tasks to interleave between calls to write to a non-recoverable ESDS file, and the subsequent calls to journal the write add complete autojournal log record for the write operation. This can lead to the ESDS RBAs being autojournalled out of the order in which records were written to the file.
- DFHFCVS has been changed to acquire the ESDS write lock enq for the duration of the request to write to VSAM and then journal the write-add-complete autojournal record. This matches the existing behavior for write-add journalling and recovery (backout) logging.

- APAR PM39961 - PTF UK69193 - CICS TS V3.2
- APAR PM39862 - PTF UK69390 - CICS TS V4.1
- OPEN APAR PM42977 - CICS TS V4.2

DFHFC0001 ABEND202 IN DFHFCVR WHEN RUNNING FILE CONTROL THREADSAFE

- ABEND202 issued by IEAVEPST when running CICS File Control Threadsafe and Transaction Isolation. CICS makes the call to VSAM on an L8 TCB in SUBSPACE Mode and at the same time the QR TCB goes into PARTITION_EXIT and issues a SVC WAIT to z/OS.

- When the ECB for the VSAM request is posted CICS will also issue POST macro to z/OS for the WAKEUP ECB in the list previously passed. This is done on the L8 TCB in SUBSPACE Mode and the abend202 is issued when z/OS turns off wait bits in the list of TCBs that is not in the same SUBSPACE.

- Monitor OPEN APAR PM37081

AD2R abend after upgrading to DB2 9.1 when running CICS TS 4.1

- Problem: After you upgrade to DB2 V9.1 or apply maintenance to CICS Transaction Server for z/OS (CICS TS) V4.1, transactions in your CICS TS V4.1 region start to fail with an abend AD2R (abendAD2R)
  - The CICS exception trace indicates that the DB2 thread abended with an 0C4 Reason 0003EB60 (RSN3EB60)
- Solution: Apply PTF UK60422 for DB2 V9.1 APAR PM20489. This APAR was opened to address an abend 0C4 in DSNMLTOK at offset 4 and will fix this problem. You should apply this PTF before upgrading to DB2 V9.1 if running CICS TS V4.1.

0C4 in DFHFCVR and IAMACCKS while running with TRANISO

- Problem: You are running CICS Transaction Server for z/OS (CICS TS) V3.1 with transaction isolation active and you receive repeated 0C4 abends in DFHFCVR when using IAM. You might also receive message DFHRM0002

- Symptom: Abend0C4 reported in DFHFCVR, DFHRM0002, and Abend0C4 in IAMACCKS while running in Subspace

- Solution: Apply IAM fixes P-90.0024 , P-90.0023 , and P-90.0031 from Innovation Data Processing

  - If you are not able to apply the above fixes immediately, you can circumvent the problem in one of two ways:

    - Change TRANISO to NO to turn off transaction isolation in the CICS region until the maintenance is applied
    - Change the IAM global option to INDEXSPACE=ALL so IAM will not use 64 bit storage for the index

WHEN THE AGE OF A JVM EXCEEDS 49.7 DAYS AN S0C9 ABEND IN DFHSJIS OCCURS

- Problem: When the age of a JVM gets to 49.7 days, there will be an abend0C9 on the CVD instruction because the number of milli-seconds exceeds the number that will fit into the 4 bytes reserved.

- Solution: APAR PM31333 - PTF UK66058 CICS TS V4.1
- APAR PM30878 - PTF UK66020 CICS TS V3.2

Abends AEXU, AEY9 and/or S0C1 abend in DFHEMS may occur

- Symptom: You receive ABEND0C1 and AEY9 in DFHEMS due to invalid BMS request into CICS. Invalid EIB Function Code is usually 1800.

- Solution: Apply Xpediter/CICS fixes XDOJ149 and XDOJ165

ABENDC78 or ABEND878 STORAGE SHORTAGE AFTER MANY SUCCESSFUL VSAM OPENS.

- VSAM OPEN processing does not free a temporary internal control block. On long running jobs this storage leak can cause ABENDx78 for lack of storage.
  - The control block (IDACSL eyecatcher) is getmained in SP130

- Apply PTF for VSAM APAR OA30671
  - RA10 UA51154
  - RB10 UA51155
  - R180 UA51156
  - R190 UA51157

CICS IS NOT WRITING THE CORRECT RBA IN THE WRITE-UPDATE RECORDS FORWARD RECOVERY LOG FOR AN EXTENDED ESDS

- PROBLEM: XRBA value in type x'82' forward recovery log records incorrect for extended ESDS files
  - If a record to be added to an Extended ESDS does not fit within the remaining space of the Control Interval it intends to write to, it is written instead to a new Control Interval
  - If the transaction that wrote to the extended ESDS then goes into backout, the logical deletion of the record results in a write update record being logged for forward recovery. However, this contains the XRBA of where the write had originally been expected to reside, rather than the higher XRBA that was actually returned
  - Because the XRBA is incorrect, forward recovery products cannot restore the records correctly and will fail

- Solution: R500 UK60625
  R600 UK49322

DFHAP0001 ABEND0C4 INCORRECT VERSION OF DFHMQLTT USED FROM LPA

- Problem: CICS TS 3.1 and TS CICS 4.1 are on the same LPAR. An MQGET attempt to an MQ queue on CICS TS 3.1 with LPA=NO fails with an ASRA and CSQCTRUE fails with an 0C4 ABEND at offset x'FFFFFFFF'. A subsequent attempt leaves the region hanging
  - DFHMQLTT is included in CICS TS 4.1 modules eligible to be used from the MVS link pack area. In this case, the module is moved into the LPA and CICS TS 3.1 is also in the same LPAR
  - When CICS TS 3.1 starts with LPA=NO and an MQGET is attempted to one of its MQ queues, CSQALOCT identifies CICS is present and attempts an MVS link to DFHMQLTT, which is successful, except DFHMQLTT is not compatible with CICS TS 3.1 and the application fails with an ABEND 0C4
- Apply PTF R600 UK61544

ABEND0C4-3B IN IAXHC WHEN ATTEMPTING TO CREATE A SUBSPACE

- CICS Symptom:
  - DFHSM0002 CICSLA15 A severe error (code X'3026') has occurred in module DFHSMSU
  - SMSU *EXC* - SMSVC_call_has_failed - FUNCTION(CREATE_SUBSPACE)
    RESPONSE() REASON() SUBSPACE_STOKEN(00000000 , 00000000)
    REASON_CODE(0) RETURN_CODE(0

This problem is described by z/OS APAR OA32338.

- z/OS Symptom:
  - ABEND0C4-3B IN IAXHC WHEN ATTEMPTING TO CREATE A SUBSPACE

HIGHER BELOW THE LINE STORAGE USED BY CICS SOCKETS AT Z/OS V1R11

- PROBLEM DESCRIPTION: CICS ends with ABEND878 when it has many CICS Sockets subtasks.
- NTASK parameter is set to 200 (same as in previous releases). The 200 reusable subtasks created by NTASK previously only used 7 or 8 pages of storage below the line but with V1R11 it is now using 200 pages.
- When the CICS Sockets interface is defined with OTE=NO and a positive NTASKS value, CICS Sockets initialization program attaches the number of subtasks specified by NTASKS specifying SZERO=NO on the ATTACH which means that the subpool zero storage is not to be shared with the main task.
- This causes MVS to allocate an extra page of below-the-line private storage for each reuseable subtask.. If the CICS address space has many CICS Sockets subtasks then the excessive use of below-the-line private storage can cause an 878 ABEND.
- APAR : PM10451 / PTF UK56202
- This problem is fixed in the base code of the IBM Communications Server for z/OS Version 1 Release 12

ABEND878 at offset x'01DC' in module DFHDSTCB

- The cause of the ABEND878 was fragmentation of LSQA storage. The fragmentation occurred because the CICS region issued a large number of attaches of open TCBs and each time a TCB is attached it will issue a LOAD of DFHDSAUT.
- DFHCSVC has been changed. When the job step TCB loads DFHDSAUT, it saves its address in the job step TCB's AFCB. This address is propagated down to the QR TCB's AFCB and also to any immediate daughters of the QR TCB, such as the L8
- PM04543
  - R400 UK54544
  - R500 UK54545
- PM05690
  - R600 UK54504
- Note: This is a CICS only fix. There is also a z/OS fix for any subsystem that issues many program loads.
  - z/OS APAR OA33234. This problem surfaces when upgrading to z/OS 1.11

ABILITY TO OVERRIDE RLS CO-EXISTENCE PROTECTION FOR CICS

- VSAM will in general prevent simultaneous access to a data set in both RLS and non-RLS modes. However, a readonly non-RLS file can be opened if it is shareoptions 2 while RLS also has the dataset open.
- If a dataset is open to RLS within CICS, it will currently be rejected with DFHFC0512 to ensure applications get consistent views of the same underlying dataset.
- This apar will allow the user to override this co-existence protection for CICS and allow a non-RLS readonly open of a dataset that is opened in RLS mode if it is defined with shareoptions 2

- APAR PM12835 (R600) - PTF UK65921

CICS TCP/IP port hangs until CICS is recycled after applying PTFs for OMVS APAR OA29566

- You are using CICS Transaction Server for z/OS (CICS TS) and TCP/IP. Your CICS TCP/IP port hangs and is not responding. There are no errors but all work on that PORT ceases. You have to bring CICS down and back up to resolve the problem. This occurs after you apply OMVS PTF UA51856 (z/OS V1.9), UA51857 (z/OS V1.10), or UA51830 (z/OS V1.11) for APAR OA29566.

- OMVS APAR OA32088 fixes this problem. Refer to the APAR for PTFs needed for your release of z/OS.

New CICS TS 4.1 Abend AFDK

- AFDK
  - A file control request was made against a NSR file while transaction isolation was active for the task. Using NSR files with transaction isolation active is not supported. The TRANISO system initialization parameter is YES and the transaction definition has ISOLATE set to YES.
- CICS Manuals at all supported releases indicate:
  - VSAM nonshared resources (NSR) are not supported for transactions that use transaction isolation. You should specify ISOLATE(NO) when you define transactions that access VSAM files using NSR.
- NOTE: CICS APAR PM07304 / PTF UK55020 will allow READONLY Files to use NSR and Transaction Isolation.

Detailed System Requirements for CICS Transaction Server

- Detailed System Requirements (DSR) contain the supported operating system requirements, hardware requirements, software requirements, and other related information for a product.
- From this document you can select DSR for CICS Transaction Server (CICS TS) for:
  - z/OS V4.1
  - V3.2
  - V3.1
  - V2.3
  - CICS TS for VSE/ESA V1.1.1
- Website: http://www.ibm.com/support/docview.wss?uid=swg27006382

Finding CICS Information Centers

- How do you find CICS product documentation for CICS Transaction Server for z/OS (CICS TS) and the CICS tools?

- The best place to find CICS product documentation is to use the CICS TS information centers. Documentation for most of the CICS Tools is also included in the CICS TS information centers. Each release of CICS has its own information center that you can view on the www.ibm.com Web site or install on a workstation or server.

- Here is a link to an item that has all the Information Centers online, and directions to download to a workstation:

  - http://www.ibm.com/support/docview.wss?uid=swg21200934

Fix lists for CICS TS

- Fix list documents summarize all of the APARs and PTFs for a particular product Version
- Fixes by version document 7008833 contains a link to the available Fix list documents

- Direct URL:

  - http://www.ibm.com/support/docview.wss?uid=swg27008833

Preventive Service Planning

- CICS Document 1231874 has a listing of all PSP buckets for CICS Transaction Server and all CICS Tools

- Direct URL:
  - http://www.ibm.com/support/docview.wss?uid=swg21231874

New Function APARs

- Flashes for all CICS New Function (NF) APARs are posted to CICS Support page and included in MySupport email
- CICS item 1238275 has a listing of links to all New Function APARs for CICS Transaction Server and all CICS Tools

- Direct URL:
  - http://www.ibm.com/support/docview.wss?uid=swg21238275

Announcement Letters for CICS

- CICS item 1227090 contains links to all Announcement letters for CICS Transaction Server and all CICS Tools
- Can be linked to from Announcement Letters on the CICS Support page
- Direct URL:
  - http://www.ibm.com/support/docview.wss?uid=swg21227090

IBM Software Support Lifecycle

You want to know when the end of service is for any IBM Software release.

You can find the End of Service dates by navigating to the following URL:

http://www.ibm.com/software/support/lifecycle/index_c.html

CICS Transaction Server for z/OS V2.2 5697-E93	25 Jan 2002	30 Apr 2008
CICS Transaction Server for z/OS V2.3 5697-E93	19 Dec 2003	30 Sep 2009
CICS Transaction Server for z/OS V3.1 5655-M15	25 Mar 2005	
CICS Transaction Server for z/OS V3.2 5655-M15	29 Jun 2007	

Ordering CICS products and maintenance

- You would like to order a CICS® product or maintenance. You want to know what options are available for ordering the product, individual PTFs, and cumulative maintenance for CICS or any of the CICS tools
- See the following document for all product or maintenance ordering concerns

  http://www.ibm.com/support/docview.wss?uid=swg21049360

Must Gather Documentation

MustGather documents aid in problem determination and save time resolving problem management records (PMRs). These documents are located on the CICS® Web site and contain instructions about what documentation to gather for specific problems.

Collecting MustGather data early, even before opening a PMR, helps IBM® Support quickly determine if:

1. Symptoms match known problems (rediscovery).

2. There is a non-defect problem that can be identified and resolved.

3. There is a defect that identifies a workaround to reduce severity.

4. Locating root cause can speed development of a code fix.

You can find the MustGather – Read first document on the CICS Home Page or go directly to:

http://www.ibm.com/support/docview.wss?uid=swg21208053

HIPER and PE APARs

- CICS DCF item 1182322 will dynamically show all PE and HIPER maintenance for all supported releases of CICS and CPSM

- You can find this item by going directly to:
  - http://www.ibm.com/support/docview.wss?uid=swg21182322

Upgrading information for CICS when changing release of CICS, z/OS, or DB2

- CICS Document 1207399 may be used to see if there are Upgrade Issues with CICS and CPSM.

- You can find this item by going directly to:
  - http://www.ibm.com/support/docview.wss?uid=swg21207399

Additional Product Resources

- CICS Transaction Server support Web page
  http://www.ibm.com/support/entry/portal/Overview/Software/Other_Software/CICS_Transaction_Server
- IBM_CICS technical support news on Twitter
  http://www.ibm.com/support/docview.wss?uid=swg21384915
- WebSphere and CICS Support Blog
  http://www.ibm.com/developerworks/mydeveloperworks/blogs/aimsupport/
- WebSphere and CICS Support on Facebook (beta)
  http://www.facebook.com/pages/WebSphere-and-CICS-Support-BETA/137468732967250
- Technical support emails with My Notifications subscription
  http://www.ibm.com/software/support/einfo.html
- Webcasts for CICS products
  http://www.ibm.com/support/docview.wss?uid=swg27007244
- IBM Education Assistant modules
  http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp