CICS Transaction Server V4.2 – User Experience Panel

Steve Ware, UF
Session 09324, SHARE 117
08AUG2011 (Mon.), 4:30pm
Walt Disney World Dolphin
Southern Hemisphere 4

http://nersp.cns.ufl.edu/~sfware/share117/s9324sfw.pdf (Updated: 08AUG2011)
Abstract

A panel of customers who are running CICS TS V4.2 will discuss their experiences in migrating to and using CICS Transaction Server 4.2. IBM will also discuss some experiences with the CICS beta(s) and other customers who are running CICS TS 4.2. Come and hear the story from those who have been there, done that.
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Agenda/Topics

• Introduction
• Why participate in a CICS Beta?
• Why migrate from CICS TS 4.1 to 4.2?
• ISV Program Products and Early Support Issues
• CICS TS 4.2 Installation/Migration Considerations
• Summary and Q&A
• Appendix and Additional Information
Introduction

- UF CNS, University of Florida Computing & Networking Services (formerly known as NERDC), runs the primary UF networking and data centers in Gainesville, FL

- Currently utilizing an IBM z9 BC 2096-S02 with 16GB and a zAAP, running z/OS 1.12, CICS TS 4.1 and 4.2, DB2 V8, RACF, JES2, etc. (May order an IBM z114.)

- 3 LPARs - 1 internal "sysprog sandbox", 1 test "alternate", and 1 production or "primary"

- We have 9 CICS regions configured, and run ~.5 million production transactions/weekday, and ~1.25 million on peak load days (start of academic semester term)
Introduction (cont.)

- 2 internal test/sandbox, 2 development/test, 3 test/QA/staging, and 2 production CICS regions currently configured
- As of July 14, 2011, 8 out of our 9 configured CICS regions are running the CICS TS 4.2 GA code
- Due to the UF academic schedule, the remaining 1 region is scheduled for conversion to CICS TS 4.2 in late August or early September 2011
Introduction (cont.)

- Founded in 1853, became the University of Florida in 1905. (East Florida Seminary -> Florida Agricultural College -> University of Florida)
- UF is a member of the AAU, the Association of American Universities.
- UF is one of the top five largest universities in the U.S., public or private.
- ~50K enrolled and ~250K alumni.
Introduction (cont.)

- We're considered a "Classic" CICS site. ("Legacy = It Works!")

- Web access to CICS is via the CICS Socket Interface, in use at our site since ~1997.

- ~60% of local CICS tasks utilize sockets.

- All locally developed CICS applications are Assembler and/or COBOL. We have ~8K CICS application load modules, and ~32 have CICS sockets API (for file/data transfer, email, web enablement, etc.).

- Several internal CICS applications written in C/C++ and REXX. Java has only been IVP tested, but with our z9 BC zAAP, we're looking at exploiting Java in CICS in the future.
Introduction (cont.)

• Are we now considered a **Nouveau** CICS site?


• CNS & UF Registrar Implement "MyStudentBody.com" Requirement using CICS Web Services.

• "On Friday, September 22nd, 2006, UF CNS CICS systems staff and UF Office of the University Registrar application staff implemented a new, secure (https) CICS Web service, with CICS acting as the service requester, for the MyStudentBody.com UF health requirement. The new capabilities introduced to support this initiative pave the way for implementation of encrypted Web services accessing real-time student data, making applications more accurate, serving the UF community better."
Introduction (cont.)

• CICS Transaction Server for z/OS V4.2 (CICS TS 4.2) was announced April 5, 2011 (ENUS211-080.PDF)
• CICS TS 4.2 was Generally Available (GA) on June 24, 2011
• Over 50 customer and user group requirements satisfied
• Participation in SHARE and the CICS beta(s) helps expedite CICS requirements processing and prioritization
Introduction (cont.)

- UF was invited to participate in the IBM CICS TS 4.2 "Managed" (vs "Open") Beta in late December, 2009
- z/OS V1.9 was minimum OS level at Beta start, with z/OS V1.11 the minimum at GA
- Downloaded first code drop ("Beta #1") on February 9, 2010, with an internal CICS "Release"" of 8828
Introduction (cont.)

• Installed Beta #3 twice:
  • CICS Release "8875"
  • RTC - Rational Team Concert - New "Agile" development
    • No CMAC included (initially)
    • "Alpha" customer
  • LCS - Library Control System - "Classic" VM based

• Installed Beta #5 twice:
  • CICS Release "8810" (Increment 110)
  • First try resulted in RC=12 on SMP/E APPLY
  • "Refreshed" Beta #5 installed cleanly
Introduction (cont.)

• Installed GA twice:
  • June 16, 2011 (from Managed Beta download site)
    • Same GA code to be sent to IBM Boulder for order fulfillment
  • June 24, 2011
    • Code available for download from IBM ShopzSeries after UF
      CICS TS 4.2 order fulfillment
Introduction (cont.)

• CICS "Release" and managed beta install time line:
  • 8828 (Beta #1) February 2010
  • 8851 (Beta #2) June 2010
  • 8875 (Beta #3) October 2010
  • 8894 (Beta #4) December 2010
  • 8810 (Beta #5) January 2011
  • 8838 (Beta #6) April 2011 (expires 31JUL2011 - Open beta)
  • 8858 (Beta #7) May 2011 - Gold Master
  • 0670 (GA) June 2011
Why participate in a CICS Beta?

Interested in new CICS TS V4.2 features/function/exploitation:

• Events
  • New system events
  • Improved event lifecycle management
  • New assured events

• Java
  • New 64-bit Java runtime environment
  • New multithreaded Java applications in JVM environment, with support for OSGi bundles
  • New Eclipse-based SDK
  • New Java runtime support of copybook importers
Why participate in a CICS Beta? (cont.)

Interested in new CICS TS V4.2 features/function/exploitation:

- Connectivity
  - New Java Axis2 engine for web services
  - New web services offload to System z Application Assist Processor (zAAP)
  - New Hypertext Transfer Protocol (HTTP) connection management
  - Enhanced IP interconnectivity (IPIC) capability to include function shipping
Why participate in a CICS Beta? (cont.)

Interested in new CICS TS V4.2 features/function/exploitation:

• Management
  • New CICS transaction tracking
  • Enhanced workload management
  • New 100-character password phrases
Why participate in a CICS Beta? (cont.)

Interested in new CICS TS V4.2 features/function/exploitation:

• Scalability
  • New threadsafe commands
  • New threadsafe function shipping (using IPIC)
  • New threadsafe IBM Information Management System (IMS) interface
  • New key CICS functions 64-bit enabled
  • New threadsafe performance option ("REQUIRED" Concurrency Option)
  • Enhanced CICS VSAM local shared resource (LSR) performance options
Why participate in a CICS Beta?

According to IBM, the objectives of the managed beta program are:

- To give IBM Customers early access to the new function in CICS TS V4.2
- To enable customers to prepare CICS to work with complimentary products (ISVs) for "day one" support of CICS TS V4.2 at its general availability
- To assist Marketing and Strategy in satisfying customer requirements
- To ensure that the code functions as designed and developed
- To validate the ease of use of the documentation and Help
- To enable customers to provide direct input to development, marketing, and sales on current features, deployability and performance
- To test the code in various and unique development environments
- To assist with validation of the product's General Availability (GA) readiness
- To identify early adopter reference accounts willing to speak to press and analysts
Why participate in a CICS Beta? (cont.)

Win-win knowledge transfer for IBM and Customers:

• Fun, but lots of hard work for IBM and customers
• Customers learn details about CICS and new release
• IBM learns details about customer needs and future requirements
• Future release enhancements discussed and prioritized
• CICS bugs and/or customer errors quickly resolved
• Beta process enhancements discussed and prioritized
• Encourage balance between "Classic" CICS and "New" CICS
• Encourage ISVs to have products ready at CICS GA
Why participate in a CICS Beta? (cont.)

CICS Betas very modern and efficient:

• Web-based IBM and customer discussion forum (194 threads and 905 posts as of 06JUL2011)

• Web-based education (travel not required)

• Internet downloads for everything - CICS code, CICS Information Center, CICS Explorer, etc.

• Iterative/agile development process very good - a total of 11 CICS TS 4.2 installs at our site (getting pretty good at it ;-)

• Quick and easy CICS SMP/E installation procedures, especially with the IBM provided DFHISTAR (CICS Installation Start) tool
Why participate in a CICS Beta? (cont.)

Provide current and modern CICS mainframe environment at UF:

• Attempt to never say never to customer needs and requirements
• SOA/Web Services becoming more important at UF
• Showcase benefits of CICS and the Mainframe
• Very easy/trivial migration from CICS TS 4.1 to 4.2, especially after installing CICS TS 4.2 eleven times ;-)
• All existing local applications are running unchanged in CICS TS 4.2
Why Migrate from CICS TS 4.1 to 4.2?

Lots of CICS enhancements to be exploited in 4.2, such as:

- CICS 64-bit Exploitation
  - 31-bit and 24-bit Toleration
- Java:
  - OSGi
  - 64-bit Java 6
  - Java web services (zAAP offload capabilities)
  - JVM (multithreaded) Server environment
- XML Parsing Improvements
- IPIC Extended to Function Shipping
- IPv6 Enhancements
Why Migrate from CICS 4.1 to 4.2? (cont.)

Lots of CICS enhancements to be exploited in 4.2, such as:

- Non-intrusive CICS Event Processing Enhancements - System Events
- CICS Explorer and CICSPlex SM (System Manager) Single Server (SMSS) - CICS Management Client Interface (CMCI - "CPSM lite"?) Enhancements - Explorer SDK for Eclipse
- Threadsafe Enhancements
- CESL and Password Phrases (long passwords - up to 100 char.)
ISV Program Products and Early Support Issues - What issues?

None in this CICS TS 4.2 "Managed Beta"!

- IBM Tivoli OMEGAMON for CICS development had latest CICS iteration toleration code within days of new CICS beta releases - we're running OMEGAMON XE for CICS on z/OS V420 ("Classic" interface)

- CA InterTest for CICS development had r85 code with CICS TS 4.2 toleration support very early in the CICS TS 4.2 beta

- CA utilized secure FTP site for code/doc. downloads and existing issue management infrastructure - very nice

- Bottom line: Both had 4.2 code ready at GA, so both were "Migration Contributors" as opposed to "Migration Inhibitors" - many thanks!
ISV Program Products and Early Support Issues - What issues? (cont.)

• We have a CICS command level based product that has never had CICS release migration issues, and again, none with this release

• We're RACF, and had no ESM related issues ;-) 

• As usual, be sure to check with all of your CICS ISVs
Migration Considerations

Order/installation considerations:

- Ordered on 21JUN2011 via IBM ShopzSeries
- Specified "Internet Delivery" - CBPDO
- Available for download 24JUN2011, 14:24:50 MT
- Took about 3 hours from download to first local internal region running CICS TS 4.2 GA
- Used DFHISTAR type install, with SMP/E RECEIVE FROMNETWORK
- Easiest/smoothest CICS install ever!
Migration Considerations (cont.)

CICS TS 4.2 Order Details:

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<thead>
<tr>
<th>Type</th>
<th>Program</th>
<th>Mat. ID</th>
<th>Title</th>
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Process Date: 2011-06-24
Migration Considerations (cont.)

CICS TS 4.2 Order Details:

Software Order

Electronically delivered media

551978 CB ELC ORDER ITEM

Electronically delivered publications

GC34-7212-00 CICS TS for z/OS V4.2 LPS Multilanguage Mat.S016SJS
GI13-0546-01 CICS Technical Services Flyer Mat.S016SJS
GI13-0556-01 RDz Promotional Flyer Mat.S016SJS
GI13-0557-02 CICS Deployment Assistant for z/OS flyer Mat.S016SJS
GI13-0565-00 CICS TS for z/OS V4.2 Program Directory Mat.S016SJS
GI13-0569-00 CICS TS for z/OS V4.2 Memo to Licensees Mat.S016SJS
GI13-0570-00 CICS TS for z/OS V4.2 Info Center Flyer Mat.S016SJS
Migration Considerations (cont.)

- Review CICS TS 4.2 Information Center -> Upgrading -> Upgrading from Version 4 Release 1 (or 3.1 or 3.2 or prior CICS Information Center(s))

- z/OS 1.11 is minimum required for CICS TS 4.2

- Java 6 (64-bit) required for CICS TS 4.2 - note that our CICS TS 4.1 regions run Java 6 (31-bit)

- MEMLIMIT=4G is minimum requirement
  - JOB statement or EXEC statement for CICS (DFHSIP)
  - z/OS PARMLIB SMFPRMxx or system default
  - z/OS IEFUSI exit
Migration Considerations (cont.)

• Review SIT changes
  • New SIT TSMAINLIMIT=
    • Default is 64M
    • We specify 24M
    • Must not be greater than 25% of MEMLIMIT
  • Changed SIT parameters
    • CSDLRSRNO=
      • LSR pools increased from a max. of 8 to 255
    • EDSALIM=
      • Min. now 48M
    • FCQRONLY=
      • RTFM carefully due to IPIC considerations
Migration Considerations (cont.)

- Changed SIT parameters
  - TRTABSZ=
    - Now 64-bit if TRANISO=YES and appropriate z/OS levels/maint.
    - RTFM for details
  - TRTRANSZ=
    - Now 64-bit
    - Consider increasing size, but MEMLIMIT considerations
    - RTFM for details
- Other?
Migration Considerations (cont.)

Specific 4.1 to 4.2 considerations:

- We run all 4.2 and 4.1 regions with a single 4.2 CSD, and maintain the CSD from a 4.2 region and/or 4.2 DFHCS DUP (starting with the GM or "Gold Master" Iteration #7 4.2 code)

- Our current CSD migration strategy is simply:
  - IDCAMS backup (DELETE/DEFINE/REPRO) 4.2 DFHCSD
  - IDCAMS DELETE/DEFINE 4.2 DFHCSD
  - IDCAMS REPRO 4.1 DFHCSD into 4.2 DFHCSD
  - DFHCS DUP UPGRADE REPLACE 4.2 DFHCSD

- Note: RDO compatibility group DFHCOMPE required in 4.2 CSD for 4.1 regions
Migration Considerations (cont.)

Specific 4.1 to 4.2 considerations:

- Built new CICS TS 4.2 DFHGCD, DFHLCD, DFHLRQ, DFHHTML, DFHEJOS, DFHEJIR, DFHADEM, DFHBRNSF, DFHPIDIR, and FILEA datasets.
- Reused CICS TS 4.1 DFHAUXT, DFHDMP, DFHTEMP, and DFHINTRA datasets.
Migration Considerations (cont.)

Specific 4.1 to 4.2 considerations:

• RACF (ESM) changes for new Category 1 (never associated with a terminal), Category 2 (initiated by a terminal user), and Category 3 (exempt from security check)

• See "Security for CICS-supplied transactions" in the CICS Information Center, and review prefix.SDFHSAMP members DFH$CAT1 and DFH$CAT2

• Standard migration considerations - will need review and/or customization by the z/OS and/or CICS RACF (ESM) security administrator(s)
CICS TS 4.2 FMIDs, COMPIDs, and RETAIN Releases:

From the CICS TS 4.2 June 2011 Program Directory GI13-0565-00:

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<th>FMID</th>
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<td>CICS Explorer Feature</td>
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### Migration Considerations (cont.)

PSP (Preventive Service Planning) UPGRADE CICSTS42:

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<td>CICS Explorer Feature</td>
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</table>
Speaking of Preventive Service Planning:

- APAR Identifier ...... PM43238  Last Changed ........ 11/08/05  HIGH WATER MARK MONITOR CODE IN DFHMN BROKEN

- IBM says "A Q Type is an APAR containing a code fix, but used for problems where we found the bug in the development cycle (so it was never raised as a Field APAR)."

- CICS CMF/SMF data field PCSTGHWM "erroneous"

- We used to charge for CICS, so a CICS TS 4.1 to 4.2 comparison required a "reasonableness circumvention" until resolved with a PTF for APAR PM43238 (but not a migration "show stopper" at our site)
Migration Considerations (cont.)

• OMEGAMON toleration support for CICS TS 4.2: https://www-304.ibm.com/support/docview.wss?uid=swg1OA36801
  - PTF List (for APAR OA36801):
    - Release 410 : UA61042 available 11/06/30 (F106 )
    - Release 420 : UA61043 available 11/06/30 (F106 )
• CA-InterTest for CICS support information:
  https://support.ca.com/irj/portal/anonymous/prddtlshome?productID=1636
  - *Support for CTS 4.2 is provided with the following Maintenance:
    * CICS67
    *CBA8567 RO32035  CBA8500 RO32034
    *CSA8567 RO32040  CSA8500 RO32039
    *CLQ8567 RO32038
    *CBQ8567 RO32037  CBQ8500 RO32036
Summary

- DFHSI1517 - Control is being given to CICS!
- Participation in CICS TS 4.2 "Managed Beta" a great experience. Lots of work, but very educational and rewarding - very highly recommended.
- With CICS TS we've enjoyed 99.999% ("five nines") scheduled availability. Same for z/OS. More of the same for our IBM System z and prior zSeries hardware.
- Migration to CICS TS 4.2 from 4.1 very quick and easy. There were no migration inhibitors with our ISV vendors.
Summary

• This migration was once again "transparent" to our CICS application developers.
• CICS TS 4.2 seems to be the best and most feature rich CICS release yet, and more to come from IBM. "It's the latest and the greatest." It's a very "balanced" release with new and enhanced capability.
• We now have ten Web services in production CICS, and except for one of our external providers moving the endpoint without telling us, and another local endpoint service going down, it's been rock solid.
• Thanks, and have a great conference!
• Questions? Comments? Random thoughts?
Appendix and Additional Information

• IBM Software -> Host Transaction Processing -> CICS (Customer Information Control System):
  http://www.ibm.com/cics

• CICS TS 4.2 Information Center (use the above link and select Library, or):
  https://publib.boulder.ibm.com/infocenter/cicsts/v4r2/index.jsp

• IBM CICS Beta and Early Test Programs:

Note: For the most current plan, schedule, any questions or concerns, please contact the CICS ETP team at cicsetp@us.ibm.com for ISVs, or cicsep@uk.ibm.com for customers and customer beta info.

• IBM "software early programs" (formerly BetaWorks and formerly Product Information Center):
  https://www.ibm.com/software/productintro/
Appendix and Additional Information

- University of Florida (UF):
  http://www.ufl.edu/

- UF CNS:
  http://www.cns.ufl.edu/

- CICS at UF:
  http://cics.ufl.edu/
Presentation Information

- The **Slackware Linux** Project:  

- **OpenOffice.org** "Impress":  
  (File -> Export as PDF)

- **Samsung** N110-12PBK Netbook:  