CICS Transaction Server V3.2 – User Experience Panel

Steve Ware, UF
Session 1038, SHARE 112
March 3, 2009 (Tue.), 11:00am
Hilton Third Floor
Salon C

http://nersp.cns.ufl.edu/~sfware/share112/s1038sfw.pdf (Updated: 02-02-2009)
Abstract

A panel of customers who participated in the CICS TS 3.2 beta will discuss their experiences in migrating to CICS TS 3.2. The session chair, who works at IBM CICS Level 2 in Raleigh, NC, will also discuss some experiences with other customers who are running CICS TS 3.2. 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 3.1 to 3.2?
- ISV Program Products and Early Support Issues
- CICS TS 3.2 Installation/Migration Considerations
- CICS TS 3.2 More Recent Experiences
- Summary and Q&A
- Appendix and Additional Information
Introduction

- **UF CNS**, University of Florida Computing & Networking Services (formerly known as **NERDC**), is the primary data center at the Gainesville, FL campus.

- Currently utilizing an IBM z9 BC 2096-S02 with 16GB, running **z/OS 1.9**, **CICS TS 3.2**, **DB2 V7** and **V8**, **RACF**, **JES2**, etc.

- 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 ~1.5 million on peak load days (start of academic semester term).

- 2 internal/test sandbox, 2 development/test, 3 test/QA, and 2 production CICS regions currently configured.
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?
- "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."
Why participate in a CICS Beta?

Interested in some new CICS TS V3.2 features:

- CICS Web Services, WSDL 2.0, and Open Standards enhancements
- Threadsafe for local VSAM File Control
- IPIC - IP Interconnectivity Connections
- Dynamic Program LIBRARY
- Monitoring facility enhancements (CEMN, compression, enhanced CPU precision)
- 64-bit storage management enhancements
- CPSM WUI enhancements
Why participate in a CICS Beta?

IBM says the following about Beta Programs for customers:

As new releases of CICS products are developed, IBM may offer a beta program to provide customers with early access to new CICS functionality. The early test code must not be used in a production environment, but is made available to participants to validate in their own environment. The objectives of providing a beta program for CICS products are, at a minimum:

- To gain Marketing references for the new product
- To give IBM CICS customers early access to the new function in CICS products
- To help/assist customers learn about and use the new function to their business advantage
- To assist IBM Marketing & Strategy in satisfying customer requirements
- To provide feedback to Development, Marketing & Sales on current features, deployability, and performance
- To test the code in various and unique environments
- To help ensure that the code functions as designed and developed
- To assist with validation that the new product is ready for General Availability (GA)
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
CICS Betas very modern and efficient:

- Web-based IBM and customer discussion forum
- Web-based education (travel not required)
- Internet downloads for CICS code and Information Center
- Iterative development process very good - participation started at Iteration #4, participated through GA, including Iterations #5, #6, and GM (Gold Master - #7) - a total of 5 CICS TS 3.2 installs
- 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:

- 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 3.1 to 3.2, especially after installing CICS TS 3.2 five times
- All existing local applications are running unchanged in CICS TS 3.2
Why Migrate From CICS TS 3.1 to 3.2?

• Lots of CICS enhancements to be exploited in 3.2
• CICS TS 3.2 Web Services assisting in ISIS/Oracle PeopleSoft Integration project (with MS BizTalk involved)
• New RESPWAIT option on PIPELINE definition
• Provide CICS application developers with the latest CICS capabilities
• Dynamic Program LIBRARY assisting in avoiding CICS JCL errors at startup due to missing CICS application development group libraries.
ISV Program Products and Early Support Issues - What issues?

None in this CICS TS 3.2 Beta!

• IBM Tivoli Omegamon for CICS development staff had latest CICS iteration toleration code within days of new CICS beta iteration releases - we're running OMEGAMON XE for CICS on z/OS Version 4.1.0 (Omegamon II for CICS V560)

• CA InterTest for CICS development staff had r8 beta code with CICS TS 3.2 toleration code very early in the CICS TS 3.2 closed beta and supplied iteration fixes in a timely manner

• Bottom line: Both had 3.2 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'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 Thur., 06-28-2007 via ShopzSeries
- Specified "Internet Delivery" - CBPDO
- Available for download Mon., 07-02-2007, about 8:20am
- Including (brief) download time, meetings, lunch, and re-IPL of test LPAR for CICS TS 3.2 GA LPA/LINKLIB, first internal region running by ~1pm
- Used DFHISTAR type install, with SMP/E RECEIVE FROMNETWORK
- Easiest/smoothest CICS install ever!
Migration Considerations (cont.)

CICS TS 3.2 Order Details:

- Code downloaded
- Documentation, Licenses, and softcopy books such as the Release Guide downloaded
- Physical box arrived about a week later with Optional Source tapes, CICS TS 3.2 Information Center CD June 2007, WDz CDs, Rational Application Developer for WebSphere CDs
- Note: A CICS Tools Trial Download Announce Flyer PDF was included in the CICS TS 3.2 GA order download
Migration Considerations (cont.)

- z/OS 1.7 required for CICS TS 3.2, but already installed at UF for z9 BC/DS8100 upgrade
- z/OS 1.9 XML toolkit required and installed by MVS sysprog
- z/OS APAR OA19565 - see the CICS TS 3.2 GA PSP Bucket
- z/OS Unix HFS vs zFS considerations
- z/OS MEMLIMIT considerations for CICS 64-bit storage
- CICS TS 3.2 APAR PK48150 - phasein zero length issue
Specific 3.1 to 3.2 considerations:

- We copied all required local CSD groups and lists from CICS TS 3.1 CSD to a 3.2 CSD, and run all 3.1 and 3.2 regions with a single 3.2 CSD, and maintain the CSD from a 3.2 region and/or 3.2 DFHCSUDP.

- Note: Compatibility group DFHCOMPC required in 3.2 CSD for 3.1 lists if using XML Toolkit or WSAT in 3.1.
Specific 3.1 to 3.2 considerations:

- Built new CICS TS 3.2 DFHGCD, DFHLCD, DFHLRQ, DFHHTML, DFHEJOS, DFHEJIR, DFHADEM, and DFHBRNSF datasets.
- Reused CICS TS 3.1 DFHAUXT, DFHDMP, DFHTEMP, and DFHINTRA datasets.
Migration Considerations (cont.)

Specific 3.1 to 3.2 considerations:

- SIT changes:
  - MNSUBSYS= obsolete
  - FCQRONLY= new
  - XHFS= new
  - XRES= new

Review changes to:

- APPLID=, CONFDATA=, EDSALIM=, ICVTSD=, MSGCASE=, UOWNETQL=, 
Specific 3.1 to 3.2 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 migrations considerations - will need review and/or customization by the z/OS and/or CICS RACF (ESM) security administrator
Migration Considerations (cont.)

CICSTS32 PSP (Preventive Service Planning) UPGRADE Product Index:

```
******************************************************************************
* UPGRADE CICSTS32 *
******************************************************************************
This upgrade contains installation information and/or high impact/
pervasive APAR information for Version 3, Release 2, Modification 0
for CICS TRANSACTION SERVER.

******************************************************************************
* 
* PRODUCT INDEX
* 
******************************************************************************

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Migration Considerations (cont.)

CICS TS 3.2 Documentation:

• CICS TS 3.2 Information Center CD June 2007

• Only .boo file with product order is/was the Release Guide

• CICS TS 3.2 Information Center now includes "Licensed Manuals", including Data Areas, Diagnosis Reference, Supplementary Data Areas, and Debugging Tools Interfaces Reference

• Now rarely use IBM BookManager – the CICS Information Center is now personal preference (and runs in Linux)
Migration Considerations (cont.)

From the CICS TS 3.2 Announcement Letter, 207-051:

"BookManager® publications: CICS TS V3.2 will be the last level of CICS TS for which BookManager publications (delivered in the Collection Kit for Transaction Processing and Data Products, and in the Product Kit (PKIT)) will be made available. They will be delivered for CICS TS V3.2 as initially shipped, but will not subsequently be updated. (Note: The CICS TS V3.2 publications will not be included in the Collection Kit until its planned refresh in 2008).

The BookManager publications for previous levels of CICS TS will continue to be updated, where the product is still in service, until the end of 2008.

Customers currently using BookManager publications are recommended to use the Information Center."
Recent Experiences – Local VSAM Threadsafe

CICS TS 3.2 Local VSAM Threadsafe:

- Not available at CICS TS 3.2 GA (but RLS threadsafe supported) - no RLS nor remote VSAM files at our site

- APAR PK45354 – “FILE CONTROL THREADSAFETY ENABLER FOR LOCAL VSAM LSR FILES”

- PTF UK37688, available July 2, 2008. Requires z/OS 1.9 or higher, and VSAM APAR OA20352 PTF UA41954 (if z/OS 1.9). Search in IBMLink for PK45354 for Flash (Alert) in eSupport Knowledge Base for more details and z/OS 1.10 info.

- SIT option FCQROONLY=NO and program(s) defined with CONCURRENCY(THREADSAFE) to enable
Recent Experiences – Local VSAM Threadsafe (cont.)

CICS TS 3.2 Local VSAM Threadsafe:

- IBM Redbook “Threadsafe Considerations for CICS”, SG24-6351 recommended (in addition to the CICS Information Center and IBM and User Experience SHARE presentations)

- Waited on local CICS application developers until Dec. 2008, and started with 3 selected assembler VSAM/DB2/CICS Socket Interface programs – more about sockets to follow

- We've seen an increase in concurrent transaction throughput and a reduction in CICS reported CPU time

- This new VSAM threadsafe capability has been rock solid and a nice addition to our CICS environment
Recent Experiences – CICS Socket Interface (CSI) OTE=YES

CICS TS 3.2 CSI and OTE=YES:

- The CICS Socket Interface is part of the z/OS Communications Server - The CICS Sockets Domain is a part of CICS TS
- Starting with z/OS 1.7, IBM allowed the CSI (aka IP Sockets) to exploit CICS OTE (Open Transaction Environment)
- Starting in Sept. 2008, we changed our CSI config. from OTE=NO to OTE=YES (EZAC,ALTER,CICS)
- Required minor code changes to local CSI Security Exit program EZACICSE to make it threadsafe, and program definition change to CONCURRENCY(THREADSAFE) instead of CONCURRENCY(QUASIRENT)
Recent Experiences – CICS Socket Interface (CSI) OTE=YES (cont.)

CICS TS 3.2 CSI and OTE=YES:

• We tackled CSI OTE=YES before Local VSAM Threadsafe

• In Omegamon for CICS, the listener task(s) now show OPEN_TCB for the Resource Type, and L8### for the Resource Name, instead of USERWAIT for the Resource Type, and TCPIPP (STC name) for the Resource Name

• EZY1224I mm/dd/yy hh:mm:ss CICS/SOCKETS INITIALIZATION SUCCESSFUL USING OPEN TRANSACTION ENVIRONMENT vs USING REUSABLE MVS SUBTASKS

• We've seen an increase in concurrent transaction throughput and a reduction in CICS reported CPU time

• This new CSI OTE=YES capability has been rock solid and a nice addition to our CICS environment
Recent Experiences – Java 5

CICS TS 3.2 and Java 5:

- IBM APAR PK59577 added support for Java 5 (31-bit) in March, 2008. (J2RE 1.5.0)
- CICS TS 3.2 supported Java 1.4.2 (31-bit) at GA. (J2RE 1.4.2)
- Multiple Java versions can be installed into a single z/OS HFS/zFS file system (a running CICS region only supports one version of Java)
  - We have /usr/lpp/java/J1.4 and /usr/lpp/java/J5.0
  - Use SIT JVMPROFILEDIR= option to manage CICS Java runtime environment version and specify the correct JAVA_HOME environment variable in your JVM profile(s).
  - Our very limited CICS Java 5 testing looks promising
Recent Experiences – CICS Web Services

CICS TS 3.2 and Additional CICS Web Services support:

- IBM APAR PK69738 added “ENHANCED CAPABILITY (MAPPING LEVEL 2.2) FOR CICS WEBSERVICES.”
- Provides a refresh of the CICS Web services assistants DFHLS2WS and DFHWS2LS
- Includes both new capability and bug fixes
- See APAR text for details
- Locally installed at our site after last production CICS Web service was enabled - runtime changes have been transparent - will exercise CICS Web services assistants changes in the near future
Summary

- DFHSI1517 - Control is being given to CICS!
- Participation in CICS TS 3.2 "Closed 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 3.2 from 3.1 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 3.2 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."

• 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 3.2 Information Center (use the above link and select Library, or):
  http://publib.boulder.ibm.com/infocenter/cicsts/v3r2/index.jsp

- IBM CICS Beta and Early Test Programs:

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

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

- UF CNS:
  [http://www.cns.ufl.edu/](http://www.cns.ufl.edu/)

- CICS at UF:
  [http://cics.ufl.edu/](http://cics.ufl.edu/)
Appendix and Additional Information

- OMEGAMON toleration support for CICS TS 3.2:  
  http://www-1.ibm.com/support/docview.wss?uid=swg21264968

- CA-InterTest for CICS support information:  
  https://support.ca.com/irj/portal/anonymous/prddtlshome?productID=1636
Presentation Information

- **The Slackware Linux Project:**

- **OpenOffice.org 3.0.0 "Impress":**
  (File -> Export as PDF)
  (Used SHARE supplied PowerPoint template.)

- **Dell Latitude D630:**