



# CICS TS 2.3 Early User Experiences

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<http://nersp.nerdc.ufl.edu/~sftware/share102/s1028.pdf>



## Abstract

The speaker, a participant in the recently completed CICS TS 2.3 "Managed Beta" Program, will discuss his experiences with this newest release of CICS Transaction Server for z/OS.

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# Topics

- Introduction.
- Why participate?
- "Managed Beta" Overview from a Customer Perspective.
- ISV Program Products and Early Support Issues.
- CICS Requirements/Changes/Enhancements.
- Summary and Q&A.
- Appendix and Additional Information.



The powerful IBM  
zSeries 800

## 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 a zSeries z800 2066-002 with 16GB, running z/OS 1.4, CICS TS ~~2.2~~ and 2.3, DB2 7.1, RACF, etc.
- 3 LPARs – 1 internal "sysprog sandbox", 1 test "alternate", and 1 production or "primary".
- We have 14 CICS regions configured, and run ~1.2M transactions/weekday, and ~2.4M on peak load days.



# Introduction

- UF is a member of the AAU, Association of American Universities.
- One of largest universities in the U.S., public or private.
- 48,750 enrolled at the start of Fall 2003 semester.
- Just celebrated 150<sup>th</sup> anniversary.
- 16 colleges, 5 schools, 100 service, research, and education centers.





On demand IBM Webcast:

→ CICS Transaction  
Server V2.3  
- the next generation

# Introduction

- 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.
- More than ~60% of local CICS tasks utilize sockets.
- All locally developed CICS applications are Assembler and/or COBOL. We have ~8K CICS application load modules.
- Several internal CICS application programs written in C/C++ and REXX.

# Introduction

We've experienced lots of change in the past year.

"The only constant is change!"

- New State of Florida university governing structure – "Board of Trustees" – was "Board of Regents".
- New CNS Director, and new UF President.
- CNS (NERDC) used to be a "State Auxiliary". Now a UF "Department".
- Why important? New "mission", new "politics", new "budget structure", new "opportunities", etc.



# Introduction

More changes (We'd rather be busy than bored ;-):

- CICS TS 2.2 -> 2.3. (CICS/ESA 4.1 -> CICS TS 2.2 in 2002.)
- z/OS 1.2 -> 1.4.
- Compatability mode -> WLM.
- S/390 crypto processors enabled, for telnet (tn3270), FTP, HTTP, CICS SSL, etc.
- IBM COBOL for MVS -> Enterprise COBOL, and elimination of OS/VS COBOL.
- IBM 9672-R36/R46 -> zSeries z800 2066-002.



# Why Participate?

Interested in some new CICS TS 2.3 features:

- End-to-End Debug and Debug Tool Integration.
- Display TN3270 IP Address.
- SOAP for CICS (also available for CICS TS 2.2).
- MRO Timeout.
- Threadsafe enhancements: ASKTIME, FORMATTIME  
Verified by modifying local COBOL/DB2 program and reviewing AUX traces.
- DB2 Restart-Light Support (requires DB2 V8) and JDBC support.



# Why Participate?

Interested in some new CICS TS 2.3 features:

- CCI (Common Client Interface) Connector.
- Java, JVM, and EJB enhancements.
- JCICS for Web/DOCUMENT/EXTRACT APIs.
- CPSM Enhancements.
- Other?



Available now: IBM CICS  
Transaction Server V2.3

→ advancing towards  
on demand e-business

## Why Participate? "CICS Rocks!"

- Great opportunity! Once in a lifetime opportunity?
- Excellent learning opportunity for me personally, for UF CNS, and for IBM. But yes, **lots** of work.
- Opportunity to influence IBM? Some examples: Beta participants helped make the case with IBM that SOAP for CICS should be a "no charge" CICS TS V2 feature. "Classic CICS" is still important and heavily utilized by many CICS customers. Linux is important and should be a part of the future of CICS and the CICS Info. Center. 64-bit CICS needs to be "addressed".



## Why Participate?

- Help prioritize future CICS release features.
- Opportunity to meet and work with the CICS developers.
- Attempt to make case that ease of service and support is **very** important (we tried, Jim G., we really did ;-).
- Attempt to be able to "never say never" to local CICS developers. Java? JVMs? EJBs? SSL? CCI? Sure – we can do that and more, and do it **very** well in CICS!
- "With CICS, our experience is that we can do things better, faster, and cheaper."



# Why Participate?

Why advocate CICS and Linux? To paraphrase:

- "...efficient and effective environment for applications...", "...strengthens application development capabilities, ...", "...industrial strength...", "...mission-critical...", etc.
- "...is an advanced...", "...designed with the twin goals of ease of use and stability as top priorities...", "...retaining a sense of tradition...", "...providing simplicity and ease of use alongside flexibility and power...", "...brings the best of all worlds to the table...", "...have always considered simplicity and stability paramount...", etc.



## Why Participate?

- Support UF in best way possible – locally written CICS applications (with source code), sub-second response time, on z/OS (the "zero downtime" OS), vs "purchased" (expensive) proprietary non-CICS alternatives, where many second response time is deemed "ok".
- Goal for all involved: Make CICS even better.  
(See "IBM Product Introduction Center" in Appendix.)
- Bottom line: Why not participate and why not now?



## "Managed Beta" Overview

CICS TS 2.3 "Managed Beta" class was held in Hursley, UK, in May of 2003.

Q. What is the difference between United Kingdom (UK), Great Britain, and England?

A. Hint - see the Appendix of this presentation.

Also, visit <http://www.hursley.ibm.com/> and Bob Yelavich's "A Touring Guide for Visitors to Hursley, England" at <http://www.yelavich.com/hursley/hurbook.htm>.



# "Managed Beta" Overview – Hursley House





# "Managed Beta" Overview – The Kings Head





## "Managed Beta" Overview

- Customer provided international transportation, lodging, meals, etc.
- IBM provided local Hursley transportation, instruction (4 day CICS TS 2.3 class), handouts, tapes, CD-Rs, etc.
- Diverse, international collection of IBM CICS customers.
- New CICS "drivers" about every 6 weeks. "Driver" includes tapes for CICS, Java, CPSM, SOAP for CICS, Program Directory, and CICS Information Center CD-R.
- CICS TS 2.3 was installed 6 times. 4 Beta "Drivers", "Gold Master", and GA.





## "Managed Beta" Overview

- Personally surprised how much was already "carved in stone" for feature list in CICS TS 2.3 – we heard a lot of "that's being considered for the next release, or the one after that". Simply a customer "expectation" issue?
- Personally would like IBM to get comment from **many** more customers regarding CICS new and enhanced features, new functionality, requirements, documentation, etc. How? Good Question!
- Fragile – What does it mean from a CICS perspective? MVS Logger? LE? Java? USS? Not Applicable?



## "Managed Beta" Overview

- IBM Collaboration Center (CCENTER) "discussion forum" utilized. Web based, uses your IBM "shared" (aka "common registration") id, but MS and IE "centric" which "requires" Windows, IE, Java, Javascript, popups, ActiveX – yikes!
- Circumvented all except ActiveX with Konqueror for Linux web browser using Tools -> Change Browser Identification -> Internet Explorer 5.5 on Windows 2000.



## "Managed Beta" Overview

- CCENTER "Communities", and "Meeting Rooms". For CICS TS 2.3, there was one meeting room for CICS customers and one for CICS ISVs. Adrian Thomson of IBM Hursley was moderator for both, assisted by Jim Coolbaugh of IBM Raleigh, Senior Program Manager, CICS for z/OS Early Programs WebSphere Beta and Customer Care Team.
- Questions posted on CCENTER were answered fairly quickly by moderators, IBM CICS developers, and other beta participants.



## "Managed Beta" Overview

- CCENTER topics included announcements, hints and clarifications, bug reports, questions, files to download (pdfs, documents, fix loadlibs, etc.), ISV issues, success stories, documentation corrections and/or questions, etc.
- Very useful, but usage requirements too stringent, initially very hard to use (until enhanced), outages due to fixes and enhancements, etc.
- Individual CICS site status conference calls every 2 weeks. Call IBM supplied "800" number and "press the # key" – "pound" or "hash" key.



# ISV Program Products and Early Support Issues

- Under the heading "Some things never seem to change", there are ISVs that are/were "migration contributors", and those that are/were "migration inhibitors".
- Initially zapped several ISV modules to allow CICS TS 2.3 to initialize with existing (but zapped) ISV code.
- !Candle had fixes (early July, 2003) for Omegamon II for CICS V520 within several weeks of first CICS TS 2.3 "driver" shipment (mid June, 2003).



# ISV Program Products and Early Support Issues

- CA supplied CA-InterTest for CICS 6.1 with CICS TS 2.3 support around mid-October 2003 (GENLEVEL 0309).
- !Candle Omegamon II for CICS V520 and CA-InterTest for CICS 6.1 were our only ISV products requiring fixes for CICS TS 2.3.
- Both !Candle and CA provided CICS TS 2.3 support "refreshes". !Candle refresh was before GA date, CA refresh was several days after GA (GENLEVEL 0312).
- No CICS TS 2.3 code defect issues raised with !Candle, but 3 with CA, one of moderately high severity.



# ISV Program Products and Early Support Issues

- We're RACF, and had no ESM related issues ;-).
- Other local ISV products include Group 1 Software "Code-1 Plus", and GT Software "Assist TS". No issues with either product and CICS TS 2.3.
- As usual, check with all of your CICS ISVs for their latest CICS TS 2.3 support (or lack thereof ;-).



## CICS TS 2.3 Requirements

- z/OS 1.4 (or higher) required to initialize CICS TS 2.3, or message "DFHKE0105 DBDCCICS CICS INITIALIZATION IS NOT SUPPORTED ON THIS LEVEL OF OPERATING SYSTEM." is issued. This was confirmed with z/OS 1.2 ;-).
- Today, you can still order CICS TS 2.2, due to this requirement. Note that the Beta participants argued extensively that this minimum OS requirement was too stringent, especially after JDK 1.4.1 was retrofitted by IBM to z/OS 1.2.



## CICS TS 2.3 Requirements

- LE (Language Requirement) **required** - potential OS/VS COBOL and/or VS COBOL II issues.
- Our site converted to CICS LE runtime with CICS/ESA 4.1 in 1997.
- IBM added LE RDO GR(CEE) to LI(DFHLIST). Note that this RDO GR(CEE) is empty – you build this group with the LE supplied CICS definitions in the LE samplib.
- Our site added PROG(IBMDUMMY) to GR(CEE), as we utilize "self documenting" LE RDO GR(CEEZOS14), for z/OS 1.4, or GR(CEEZOS12), for z/OS 1.2, etc.



## CICS TS 2.3 Requirements

- The CICS LE definitions must be in sync with z/OS.  
Note that this makes z/OS upgrades "more interesting".
- We run with LI(DFHLIST) and local RDO LISTs in the CICS SIT GRPLIST= override. Our local LI(BASELIST) has GR(CEEZOS14). Recall that current CICS limitation is max. 4 lists in GRPLIST.
- Some Beta participants tried to convince IBM to **not** make this change, GR(CEE) in LI(DFHLIST), to CICS TS 2.3. The next release of CICS may revert back to not including GR(CEE) in LI(DFHLIST)... but we'll see.



## CICS TS 2.3 Requirements

- IBM Software Developer Kit for z/OS, Java 2 Technology Edition, Version 1.4.1 at APAR PQ79281 or later, if using Java (aka JDK 1.4.1).
- Beta participants were supplied "early" JDK 1.4.1 code, then our site did a standard download from IBM z/OS site (see Appendix for URL).
- Our site has only run Java IVPs – no locally written Java CICS code at our site (yet).
- Note that the JVM introduced in CICS TS 1.3 is not supported.



## CICS TS 2.3 Requirements

- DB2 "restart light" requires DB2 V8 – we have DB2 V7.
- CICS Information Center (CIC) requires Windoze or AIX. Some customers **might** find this unacceptable ;-). Windoze CIC requires NT or newer (for full search capabilities), and AIX CIC requires "DocSearch" which is not typically installed by our AIX staff. Good concept, good content, etc., but not a real "enterprise" solution. (Reminds me a bit of LE – good concept, but ...)
- We use the "Online Library Collection Kit" data and z/OS "BookMangler" for our enterprise softcopy solution.



## CICS TS 2.3 Requirements

- Debug Tool 3.1 requires "rollup" PTF #9, aka PTF UQ83023 for APAR PQ87022, if a COBOL or PL/1 shop. Note that the CICS TS 2.3 Announcement Letter mentions UQ77541 for APAR PQ73643.
- New CEMT INQ SYS Debugtool(Debug|Nodebug) command.
- Need non-LE support in Debug Tool for Assembler.



## CICS TS 2.3 Changes

- Hardcopy documentation – what hardcopy doc.?
- Hardcopy doc. received with CICS TS 2.3 order:
  - Installation Guide
  - Release Guide
  - Program Directory
- Softcopy documentation:
  - CICS Information Center for CICS TS 2.3
  - Licensed Online Library Collection Kit for CICS TS 2.3
  - Transaction Processing and Data Collection Kit from September 2003 (not very current for CICS TS 2.3)



# CICS TS 2.3 Changes - FMIDs

HCI6300 CICS Transaction Server 2.3  
HCAV100 SOAP for CICS  
JCI6301 'COBOL' feature  
JCI6302 'PL/1' feature  
JCI6303 'C' feature  
JCI630D 'JAVA/IIOP' feature  
HCP2300 CICSplex System Manager for CICS TS 2.3  
JCP2302 SAS 'C'  
HBDD110 CICS/AMA  
H0B5110 REXX Runtime Facility for CICS/ESA  
H0Z2110 REXX Common for CICS/ESA  
H0B7110 REXX Development System for CICS/ESA  
WASA500 WAS ASSE (WebSphere Application Server)



## CICS TS 2.3 Changes

SOAP for CICS "no charge" orderable feature:

- Simple Object Access Protocol – Open standards XML based connectivity solution.
- Enhances CICS, arguably already the premier application server, with complimentary media pack of WebSphere Studio Enterprise Developer V5.0, and much more.
- Orderable with both versions of CICS TS V2.
- Thanks, IBM!



# CICS TS 2.3 Changes

SOAP for CICS "no charge" orderable feature includes:

- IBM TXSeries for Multiplatforms V5.0 – 12 CDs.
- IBM CICS Transaction Gateway V5.0 – 1 CD.
- IBM VisualAge CICS Application Development V3.1 – 1 CD.
- IBM WebSphere Studio Enterprise Developer V5.0 and options for z/OS and FFS (Foreign File System) – 5 CDs.
- IBM WebSphere Application Server V5.0 (including WAS for Linux) – 28 CDs.



## CICS TS 2.3 Changes

SOAP for CICS "no charge" orderable feature includes:

- IBM WebSphere MQ V5.3 – 4 CDs.
- IBM Object REXX for Windows V2.10 – 1 CD.
- IBM VisualAge COBOL for Windows V3.0.7 – 2 CDs.
- IBM VisualAge PL/I for Windows V2.1.10 – 1 CD.
- IBM VisualAge Generator Developer V4.5.3 – 1 CD.
- IBM VisualAge Smalltalk Enterprise V5.0 – 2 CDs.
- IBM VisualAge for Java Enterprise Edition V4.0 – 3 CDs.
- IBM DB2 Connect and Universal Database Personal Edition V7.2 – 9 CDs.



## CICS TS 2.3 Changes

SOAP for CICS "no charge" orderable feature includes:

- Versata Logic Studio WebSphere Edition for IBM V5.5 – 1 CD.
- IBM WebSphere Application Server Advanced Single Server Edition for Windows V4.0.1 – 1 CD.
- SOAP for CICS functionality in the premier application server, **CICS**, and 72 CDs of application development tools! Incredible!
- Note: Be sure to review licenses, entitlements, and usage limitations for each of these products.



# CICS TS 2.3 Changes

## Miscellaneous Changes :

- EXEC CICS INQUIRE SYSTEM RELEASE returns "0630".
- New Debug Tool transid "CADP" replaces "DTCN".  
Note potential RACF/ESM transaction profile changes.
- APAR PQ60311 was marked "FIN" (and was verified that is really was "Fixed If Next"):  
EXEC CICS SIGNON WITH NEWPASSWORD DOES  
NOT RECOGNIZE NEWPASSWORD



# CICS TS 2.3 Changes

SIT (System Initialization Table) Changes:

- CPSMCONN=YES|NO,  
(Note: Added to CICS TS 2.2 via PTF UQ71534.)
- DEBUGTOOL=YES|NO,
- INFOCENTER=*infocenter\_url*,  
(Used by Web interface to application debugging profile manager.)
- JVMCCPROFILE=profile|DFHJVMCC,
- JVMCCSIZE=24M|number,
- JVMCCSTART=AUTO|YES|NO,



## CICS TS 2.3 Changes

CSD Compatability Groups (reference the Migration Guides):

- GROUP(DFHCOMPA) with PROGRAM(DFHJIIRP) for sharing DFHCSD with CICS TS 2.2.
- See "Required Compatability Groups" table.
- We copied all required local CSD groups and lists from CICS TS 2.2 CSD to 2.3 CSD, run all 2.2 and 2.3 regions with a single 2.3 CSD, and maintain the CSD from a 2.3 region.



# CICS TS 2.3 Changes

## JCL changes:

- New SDFJAUTH STEPLIB authorized PDSE dataset.
- New SDFJLOAD DFHRPL PDSE dataset.
- Removed DFHJVM DD card image.

## PARMLIB changes:

- EXIT EP(DFHPD630) VERB(CICS630) added to member DFHIPCSP.



# CICS TS 2.3 Changes

CICS datasets:

- Reused CICS TS 2.2 DFHAUXT, DFHDMP, DFHTEMP, and DFHINTRA datasets.
- Built new DFHGCD, DFHLCD, DFHLRQ, DFHHTML, DFHEJOS, DFHEJIR, DFHADEM, DFHBRNSF, DFHDPFMB, and DFHDPFMP datasets.



# CICS TS 2.3 Changes

Macro tables:

- Updated SIT with local and CICS TS 2.3 changes.
- Reused all other CICS TS 2.2 macro table source, which includes FCT (for BDAM datasets), MCT, PLT, SRT, TCT (for sequential terminal), TLT, and XLT. No source code changes were required. Note that DCT and RCT tables were migrated to RDO for our CICS TS 2.2 conversion from CICS/ESA 4.1.



# CICS TS 2.3 Changes

## Local Exits:

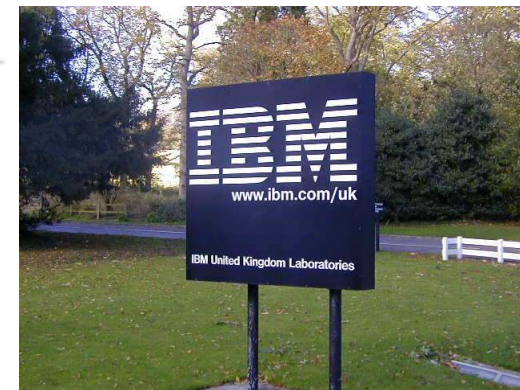
- DFHZNEP, XTSEREQ – no local exit source code changes required. Re-assembled/linkedited.
- DFHPEP and AIEXIT=NERZATDX – reusing CICS TS 2.2 modules.
- EZACICSE - reusing CICS TS 2.2 module for this CICS Socket Interface security exit, which is a TCP/IP for MVS component.
- Others? Reusing Omegamon II for CICS V520 RACF security exit.



## CICS TS 2.3 Changes

CEKL, new "CICS Enhanced Kill" transaction:

- APAR PQ81514 for CICS TS 2.3 – not available at GA. Current target date is in April, 2004.
- APAR PQ79277 for CICS TS 2.2.
- We utilize !Candle Omegamon II for CICS V520, which has capabilities to kill transactions via the Omegamon "KILL" command, "Resource Limiting" feature, and "CMT" CICS Master Terminal command which uses long running Omegamon service tasks.



## Summary

DFHSI1517 Control is being given to CICS!

- Participation in CICS TS 2.3 "Managed Beta" a great experience. Lots of work, but very rewarding, and highly recommended.
- With both CICS TS 2.2 **and** 2.3, we've enjoyed 99.999% ("five nines") scheduled availability. Same for z/OS 1.2 **and** 1.4. More of the same for IBM 9672-R46 **and** z800 2066-002 – 99.999%.
- Migration to CICS TS 2.3 from 2.2 very quick and easy. Only migration inhibitors were typical ISV issues.



## Summary

- We completed our conversion from CICS TS 2.2 to 2.3 on 02/12/2004. So far, it has been "transparent".
- CICS TS 2.3 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're looking forward to experimenting with and exploiting some of the new CICS capabilities this year.
- Thanks, and have a great week at SHARE!





# Appendix

- IBM Announcement Letter for CICS TS 2.3 on October 28, 2003, 203-296:

[http://www.ibm.com/ishource/cgi-bin/goto?it=usa\\_annred&on=203-296](http://www.ibm.com/ishource/cgi-bin/goto?it=usa_annred&on=203-296)

- IBM Product Introduction Center:

<https://www.ibm.com/software/productintro/>

- IBM CICS family "Host Transaction Processing":

<http://www.ibm.com/cics> which recently resolved to:

<http://www-306.ibm.com/software/http/cics/>

- IBM CICS TS 2.3:

<http://www-306.ibm.com/software/http/cics/tserver/v23/>



# Appendix

- IBM Hursley:  
<http://www.hursley.ibm.com/>
- IBM LE Q&A Whitepaper by Robert Harris:  
[http://www306.ibm.com/software/htp/cics/library/whitepapers/LE\\_Q\\_and\\_A.pdf](http://www306.ibm.com/software/htp/cics/library/whitepapers/LE_Q_and_A.pdf)
- IBM Java and z/OS:  
<http://www-1.ibm.com/servers/eserver/zseries/software/java/>
- IBM and Linux:  
<http://www.ibm.com/linux>



# Appendix

- SHARE CICS Project:  
<http://www.share.org/cics>
- University of Florida:  
<http://www.ufl.edu/>
- UF Computing & Networking Services:  
<http://www.nerdc.ufl.edu/> soon to be  
<http://www.cns.ufl.edu/>
- UF CNS CICS:  
<http://cics.ufl.edu/>





# Appendix

Some fun and interesting links:

- "Re-boot Hill":  
<http://actscorp.com/reboothill.htm>
- The "Free Transaction Processing Monitor":  
<http://www.ftpm.org/>



# Appendix

- The United Kingdom is a country that consists of Great Britain and Northern Ireland. In fact, the official name of the country is "United Kingdom of Great Britain and Northern Ireland."
- Great Britain is the name of the island northwest of France and east of Ireland that consists of three somewhat autonomous regions: England, Wales and Scotland.



# Appendix

- England is part of Great Britain, which is part of the United Kingdom. The U.K. includes England, Wales, Scotland, and Northern Ireland.
- England, Wales, Scotland, and Northern Ireland are not countries but the United Kingdom is. The remaining portion of the island of Ireland (that which is not the U.K.'s Northern Ireland) is an independent country called the Republic of Ireland (Eire).



## Presentation Information

- Slackware Linux 9.1:  
<http://www.slackware.com/>
- OpenOffice 1.1.0 "Impress":  
<http://www.openoffice.org/>  
(File -> Export as PDF)
- IBM ThinkPad T40 2379-D5U:  
<http://www.pc.ibm.com/thinkpad>

