

# CICS Transaction Server V4.2 – User Experience Panel

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Session 11454, SHARE 119

06AUG2012 (Mon.), 4:30pm

Anaheim Marriott Hotel

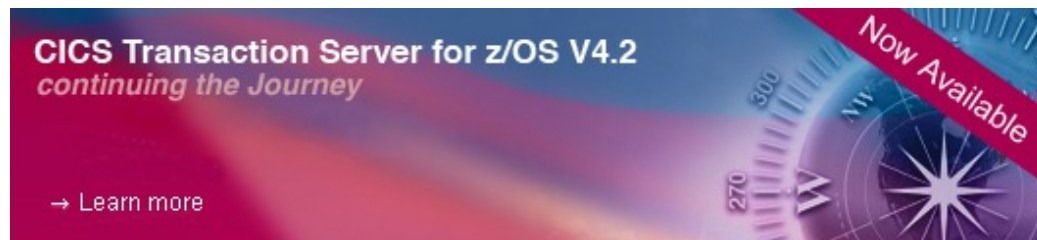
Platinum Ballroom Salon 2



<http://steveware.net/share119/s11454sfw.pdf> (Updated: 06AUG2012)

# 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 DS8800 and z114 2818-M05 Q02/S02 with 32GB and a zIIP, running **z/OS** 1.13 (with zAAP on zIIP enabled), **CICS** TS 4.2, **DB2** 10, **RACF**, **JES2**, etc.
- 3 LPARs - 1 internal "sysprog sandbox", 1 test "alternate", and 1 production or "primary"
- IBM z114 + DS8800:



## Introduction (cont.)

- We have 9 CICS regions configured and run ~400K production transactions/weekday and ~1.1M on peak load days (start of academic semester term)
- 2 internal test/sandbox, 2 development/test, 3 test/QA/staging, and 2 production CICS regions currently configured
- By July 14, 2011, 8 out of our 9 configured CICS regions were running the CICS TS 4.2 GA code (a few weeks after CICS TS 4.2 went GA on June 24, 2011)
- Due to the UF academic schedule, the remaining primary production region was converted to CICS TS 4.2 on September 14, 2011

## Introduction (cont.)

- We've enjoyed near 100% scheduled availability with CICS TS 4.2, and exceptional performance, especially coupled with our new z114 and DS8800!
- z9 BC to z114 performance improvement for our workload is averaging about 1.4 times faster. For our CICS workload, the average z114 CICS CPU consumption is approximately 70% of what it was on the z9 BC
- Load testing we did with LoadRunner and CICS TS V4.1 vs V4.2 indicated about a 4% reduction in CPU with CICS TS V4.2 for the UF Mobile Web CICS load being tested
  - A CICS test QA (Quality Assurance) region was COLD started with CICS TS V4.1 and CICS V4.2 with the exact same load testing scripts run - this scenario was done multiple times to confirm performance results

## 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**.

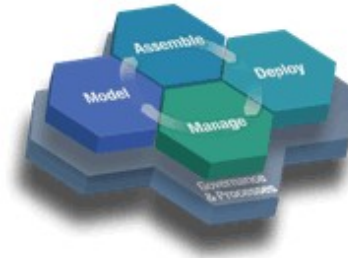




## Introduction (cont.)



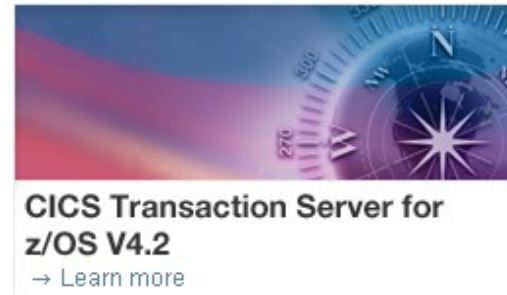
- We're considered a "**Classic**" CICS site. ("**Legacy = It Works!**")
- Web access to CICS is via the **CICS Socket Interface**, in use at our site since ~1997.
- Currently, up to **~90%** of local CICS tasks utilize **sockets**.
- All locally developed CICS applications are **Assembler** and/or **COBOL**. 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 z114 and z/OS zAAP on zIIP, we're looking at exploiting Java, and/or PHP, and/or Groovy and/or ??? in CICS in the future.



## Introduction (cont.)

- Are we now considered a **Nouveau** CICS site?
- CICS Web Services in production since Sept. 2006:  
<http://docweb.cns.ufl.edu/update/u0610cics/u0610cics.html>
- 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.)

- 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 (expire date 31JUL2011 - Open beta)
  - 8858 (Beta #7) May 2011 - Gold Master
  - 0670 (GA) June 2011

## 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

# 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? (cont.)

- 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 TS 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:

MVS Custom-Built PDO (CBPDO 5751CS3)  
Program: 5751-CS3

BOX: 0 of 0

Type	Program	Mat. ID	Title	Qty
Supply	5751CS3	5751CS3	MVS Custom-Built PDO (CBPDO)	1
Supply	5751CS3	5751CS3	MVS Custom-Built PDO (CBPDO)	1
Supply	5751CS3	S016SJS	CICS TS for z/OS V4 v4.2.0,ENU,CST3590-1	0200 1
Supply	5751CS3	S00WNBB	MVS CBPDO - CICS Subsystem v1.01.00,ENU,	0100 1

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 prior CICS TS 4.1 regions ran with Java 6 (31-bit) - requires 2 Java installs/paths in z/OS Unix
- 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
  - CSDLSRNO=
    - LSR pools increased from a max. of 8 to 255
  - EDSALIM=
    - Min. now 48M
  - FCQRONLY=
    - RTFM carefully due to IPIC considerations



# Migration Considerations (cont.)

Review SIT changes:

- Changed SIT parameters
  - CTRTABSZ=
    - 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 DFHCSDUP (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
  - DFHCSDUP 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)

# Migration Considerations (cont.)

## CICS TS 4.2 FMIDs, COMPIDs, and RETAIN Releases:

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

FMID	COMPID	Component Name	RETAIN Release
-----	-----	-----	-----
HCI6700	5655S9700	CICS TS Base	700
JCI6701	5655S9700	COBOL Language Parts	701
JCI6702	5655S9700	PL/I Language Parts	702
JCI6703	5655S9700	C Language Parts	703
JCI670D	5655S9700	IIOP/JAVA	70D
JCI670M	5655S9700	CICSplex System Manager	70M
JCI670W	5655S9700	WS-Security	70W
H0B5110	565508700	CICS REXX Runtime Facility	110
H0B7110	565508600	CICS REXX Development System	110
H0Z2110	565511200	CICS REXX Common for CICS/ESA	110
HCIZ300	5655M1500	Service Flow Runtime	300
	5655S9701	CICS Explorer Feature	100

# Migration Considerations (cont.)

## PSP (Preventive Service Planning) UPGRADE CICSTS42:

UPGRADE	SUBSET	Description
CICSTS42	HCI6700	CICS TS Base
	JCI6701	COBOL Language Parts
	JCI6702	PL/I Language Parts
	JCI6703	C Language Parts and XPLINK
	JCI670D	IIOP/JAVA
	JCI670M	CICSplex System Manager
	JCI670W	WS-Security
	H0B5110	CICS REXX Runtime Facility
	H0B7110	CICS REXX Development System
	H0Z2110	CICS REXX Common for CICS/ESA
	HCIZ300	CICS Service Flow Runtime
	N/A	CICS Explorer Feature

## Migration Considerations (cont.)

### Speaking of Preventive Service Planning:

APAR Identifier ..... PM43238      Last Changed ..... 11/12/02  
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 PTF UK72999, 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 (cont.)

- 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 (select Library from above, or):
  - <https://publib.boulder.ibm.com/infocenter/cicsts/v4r2/index.jsp>
- IBM CICS Beta and Early Test Programs:
  - <http://www-01.ibm.com/software/htp/cics/betas.html>  
*Note: For the most current plan, schedule, any questions or concerns, please contact the CICS ETP team at [cicsetp@us.ibm.com](mailto:cicsetp@us.ibm.com) for ISVs, or [cicsep@uk.ibm.com](mailto: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 (cont.)

- 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**:  
<http://www.slackware.com/>
- **OpenOffice.org "Impress"**:  
<http://www.openoffice.org/>  
(File -> Export as PDF)
- **Samsung N110-12PBK Netbook**:  
<http://www.samsung.com/>

