

CICS USER Experience

CICS/VSE 2.3 to CICS/TS

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Agenda

- Lake County
- Lake County Environment
- Why did we stay with CICS/VSE 2.3 so long ?
- What prompted the move to CICS/TS
- CICS/VSE 2.3 to CICS/TS migration
- Suggestions
- Other
- References

Lake County

Demographics

- Population 644,356 (2000)
 - 710,241 (2007 - up 10%)
- White persons not Hispanic 67.2%
- Hispanic or Latino 19.2%
- African American 7.0%
- Other 7.0%
- Asian 5.7%
- Two or more races 1.4%
- Median household income:
 - Lake County \$77,904 (2007)
 - Illinois \$54,141 (2007)
- Median home value:
 - Lake County \$198,200 (2000)
 - Illinois \$130,800 (2000)



2006 - Lake County migration environment

Hardware: z/890 – 220 SHARK Array

Software: z/VM 5.1

z/VSE 3.1.1 +

z/VSE 3.1.1 Guests:

Prod1 VSE: 1 CICS/TS partition - DB2 Guest sharing and VSAM

Prod2 VSE: 2 CICS/VSE 2.3 - DL/1 databases

Test1 VSE: 3 CICS/TS partitions - 3 DB2 Guest sharing

Lake County Environment

Some of the things that make us different:

NO IUI on any of the systems

NO DOSRES or SYSWK1

NO VSE libraries in VSAM SPACE

DB2 Guesting sharing -1993

External CICS Security Manager for 20+ years

Flavors of Cobol over the years:

DOS/VS COBOL 1.3.1 - ????

VS COBOL II – 1.3.2 – (24 bit) - VSE/ESA 1.2.x – 1991

VS COBOL II – 1.4.0 – (31 bit) - VSE/ESA 1.3.x – 1993

COBOL/VSE 1.1.0 and LE/VSE 1.4.1 – VSE/ESA 2.3.x – 1998

COBOL/VSE 1.1.1 and LE/VSE 1.4.4 – z/VSE 3.1.1 - 2006

Why did we stay with CICS/VSE 2.3 so long?

After Y2K and prior to 2003:

The mainframe was perceived as being antiquated

Development was continuing with our Integrated Justice System (DB2), but it was just “Green Screen”

The other mainframe applications outside of the Integrated Justice System were DL/1, and would be “going away”.

Assigned other responsibilities, lack of time, complacency, the unknowns, lots of excuses...

What prompted the move to CICS/TS?

The success (or lack thereof) of other major systems that formerly resided on the mainframe, which were moved to alternate platforms with dismal results

The consistent reliability of the mainframe

The need for CICS/TS WEB services:

- To support inquiry/update capabilities from off platform systems to the Integrated Justice System (DB2)

- To query and update data (systems) on foreign platforms from the Integrated Justice System (CICS/TS)

- Information consolidation

CICS/VSE 2.3 to CICS/TS migration

Brought up CICS/TS out of the box

Backed up the shipped CSD

Still exists and has never been accessed by any of the CICS systems

Copied the shipped CSD to a unique CSD in each VSE machine

CICS/VSE 2.3 to CICS/TS migration

Reviewed DFHSIT under CICS/TS

Used the new CICS/TS default SIT as a model and reviewed the list of obsolete parameters under CICS/TS

Reviewed these parameters under CICS/TS for Lake County (System Definition Guide - Chapter 22)

CSDACC= (READWRITE/READONLY)

CSDRECOV

CWAKEY

DFLTUSER

DSALIM

EDSALIM

CICS/VSE 2.3 to CICS/TS migration

Reviewed DFHSIT under CICS/TS

GRPLIST

ICV

ICVR

ISC (for DB2)

LEVSE

OPERTIM

PRGDLAY

PRTYAGE

RAPOOL

CICS/VSE 2.3 to CICS/TS migration

Reviewed DFHSIT under CICS/TS

RENTPGM

RMTRAN

SEC

SECPRFX

STGPROT

STGRCVY

SVA (caution: if a CICS/VSE 2.3 is also in the same VSE system)

TCPIP

CICS/VSE 2.3 to CICS/TS migration

Reviewed DFHSIT under CICS/TS

TCTUALOC (can stuff TCTUA above the line)

TRTABSZ

TS

USRDELAY

XPCT (for External Security Manager)

XTRAN (for External Security Manager)

CICS/VSE 2.3 to CICS/TS migration

Decide how you want to define groups of resources

PCT entries

PPT entries

PROFILES

TCT: TYPETERMs

Device types:

3270 LU2

LU3 SCS Printers (different definitions)

CICS/VSE 2.3 to CICS/TS migration

Decisions made:

Tried to keep “groups” small per recommendations

PCT & PPT Groups – based on application

FCT Groups – based on application

TCT – based on Departments and Branches

Attempted to keep Resources defined within a group to around 200 or less (some exceptions)

Defined Lake County standard *defaults* at the highest level possible

CICS/VSE 2.3 to CICS/TS migration

Decisions made:

Used the batch utility DFHCSDUP

Because all our CICS systems were not identical

Due to the number of CICS systems that were being converted

Because we had used a standardized pattern in coding our MACRO tables:

Wrote a series of VM REXX EXEC(s) to parse MACRO tables to facilitate and create standardized Lake County RDO entries

Self documenting (source) RDO entries for conversion

CICS/VSE 2.3 to CICS/TS migration

Decisions made:

Used the batch utility DFHCSDUP

Relied heavily on Appendix C in the Resource Definition Guide:

Macro operand to RDO keyword

RDO keyword to Macro operand

Attempted to try and put as many standardized Lake County requirements in the TYPETERM definitions, PROFILE definitions, etc...

Used standard IBM definitions as models whenever possible

CICS/VSE 2.3 to CICS/TS migration

Constructed my own CICS/TS without ICCF pointing to the unique CSD, basically using the recommendations in the Migration Guide for setting up a second CICS (unique datasets, etc...)

Eliminated the BSM totally

Implemented our External Security Manager

Brought up my own CICS/TS

CICS/VSE 2.3 to CICS/TS migration

Some problems encountered:

The DB2 Resource Adapter wouldn't enable (Storage)

Tried implementing TCPIP (for web services) in the SIT without defining a TCPIPSERVICE resource (web services)

Inactivity timeouts in CICS

Extended Attributes with Terminal definitions

Uppercase translation requirement for transactions (ultimately handled by creating unique PROFILES with UCTRANS specified)

CICS/VSE 2.3 to CICS/TS migration

Some problems encountered later:

Not specifying // OPTION, LOG,...,SYSPARM = '00'
for DB2 (UDB) Resource Adapter & TCPIP services

// LIBDEF SEARCH chain:

The sublibrary where TCPIP resides must precede
the LE Runtime sublibrary to prevent DFHSO0117
message and CICS/TS web initialization failure

CICS Monitor Checkpoints are in error for remote DB2
database (MCT)

CICS/VSE 2.3 to CICS/TS migration

Sharing the CSD

The Test z/VSE system supports 3 CICS/TS partitions

3 GRPLIST are specified in each CICS startup

VSELIST (IBM supplied – unmodified)

LCLSTCOM (Common Lake County)

LC.... (Unique Lake County per CICS)

CICS/VSE 2.3 to CICS/TS migration

Sharing the CSD – In the test z/VSE machine:

```
// EXEC DFHSIP,SIZE=DFHSIP,PARM='SIT=T5,APPLID=A05TCICS,START=AUTO,DSAL*  
IM=7M,EDSALIM=68M,SI',DSPACE=2M,OS390
```

```
GRPLIST=(VSELIST,LCLSTCOM,LCTST5), (CSD=READWRITE)
```

```
// EXEC DFHSIP,SIZE=DFHSIP,PARM='SIT=D3,APPLID=A03DCICS,START=AUTO,DSAL*  
IM=7M,EDSALIM=68M,SI',DSPACE=2M,OS390
```

```
GRPLIST=(VSELIST,LCLSTCOM,LCDEV3), (CSD=READONLY)
```

```
// EXEC DFHSIP,SIZE=DFHSIP,PARM='SIT=T6,APPLID=A06TCICS,START=AUTO,DSAL*  
IM=7M,EDSALIM=175M,SI',DSPACE=2M,OS390
```

```
GRPLIST=(VSELIST,LCLSTCOM,LCTST6), (CSD=READONLY)
```

GRPLIST SEARCH:

Left → to → Right Duplicate Resources – last entry found takes precedence!

CICS/VSE 2.3 to CICS/TS migration

CICS startups:

We could start CICS by clearing the Local, Global and Restart datasets

You will lose entries placed into the Local or Global datasets such as:

```
CEMT SET SYDUMPCODE(SR0001) NOSYSDUMP MAX(0) ADD
```

Nice things:

CETR

Auxtrace capabilities and printing

Suggestions

Virtual Storage is cheap – roughly triple the size of your existing

CICS/VSE 2.3 to start:

CICS/VSE 2.3 ran in a 80Meg partition

CICS/TS runs in a 210Meg partition

Review *all* the SIT parameters

Review *all* MACRO definitions and new RDO keywords

Figure out the defaults and what's required

Code requirements at the highest level possible

Standardize your RDO entries

Look at the shipped IBM entries and use as models

A CICS monitoring product helps and/or DFH0STAT

Become familiar with the additional facilities/transactions in CICS/TS

Suggestions

DFHCSDUP utility:

Simple to use

Can build templates for manipulating resources

Allows users exits

Can “extract” resource information to a user program

Developed VM REXX EXECs to parse CSD listing (LIST ALL OBJECTS) to build entries for DFHCSDUP

Schedule regular backups of the CSD

Suggestions

Exploit 31 bit addressing:

RMODE/AMODE residency:

COBOL/VSE application programs & LE Runtime

Check your compile and runtime parameters

Move “working storage areas” above the line

HLASM

Assemble maps and let them live in 31 bit

Suggestions

Exploit 31 bit addressing:

Double check RDO Program definitions:

DATALOCATION(ANY)

Make use of Data Tables:

DB2 Users – Put the SQLGLOB file in a data table

CEDA View File(SQLGLOB)

+ INITIAL STATUS

..... STatus : Enabled Enabled | Disabled | Unenabled

.....

DATATABLE PARAMETERS

Table : **Cics** No | Cics | User

Parameters and combinations across different resources

Typeterm:

DEFINE TYPETERM(LC3270) GROUP(LCTYPTRM)
DESCRIPTION(DEFINE TYPE FOR 3270 TERMINALS)
DEVICE(3270) TERMMODEL(2) SHIPPABLE(NO)
PAGESIZE(24,80) AUTOPAGE(NO) COLOR(YES)
DUALCASEKYBD(YES) EXTENDEDDES(YES) HIGHLIGHT(YES)
QUERY(ALL) SENDSIZE(0) RECEIVESIZE(2560)
BRACKET(YES) ATI(YES) TTI(YES)
CREATESESS(YES) RELREQ(YES) DISCREQ(YES)
SIGNOFF(NO) LOGONMSG(YES) BUILDCHAIN(NO)
USERAREALEN(204) IOAREALEN(1024,4096) **UCTRAN(YES)**

Profile:

DEFINE PROFILE(UCTRANS) GROUP(LCUCTRAN)
DESCRIPTION(FORCE UPPER CASE FOR LAKE COUNTY TRANS)
SCRNSIZE(DEFAULT) **UCTRAN(YES)** DVSUPRT(ALL) INBFMH(NO)

Parameters and combinations across different resources

Transaction:

DEFINE TRANS(CRIM) GROUP (LCCRIMS) PROG(AAX01) TASKDATALOC(ANY)
TWASIZE(0) TPURGE(YES) SPURGE(YES) PRIORITY(100)
INDOUBT(BACKOUT) PROFILE(UCTRANS)
DESCRIPTION(CRIM - SDSC - SYSTEM DRIVER TRANSACTION)

Effects:

Profile (PROFILE)	Terminal (TYPETERM)		
	UCTRAN (YES)	UCTRAN (NO)	UCTRAN (TRANID)
UCTRAN (YES)	Tranid: Yes Data: yes	Tranid: No Data: Yes	Tranid: Yes Data: Yes
UCTRAN (NO)	Tranid: Yes Data: Yes	Tranid: No Data: No	Tranid: Yes Data: No

Resource Definition Guide

Appendix C. Keyword cross-reference tables

This appendix contains two cross-reference tables relating macro operands (past and present) to RDO keywords.

Macro operand to RDO keyword

This list is in alphabetic order of macro operands, giving the equivalent RDO keyword. "RDO keyword to macro operand" on page 352 gives the same list in order of RDO keyword.

MACRO OPERAND	RESOURCE TYPE	RDO ATTRIBUTE
ACCMETH=INDIRECT	Connection	ACCESSMETHOD(INDIRECT)
ACCMETH=IRC	Connection	ACCESSMETHOD(IRC)
ACCMETH=VTAM	Connection	ACCESSMETHOD(VTAM)
ACCMETH=(KEY ADR)	File	SHR4ACCESS(KEY RBA)
ALTPGE	Typeterm	ALTPAGE
ALTPRT(,COPY)	Terminal	ALTPRINTCOPY
ALTPRT(label,)	Terminal	ALTPRINTER
ALTSCRN	Typeterm	ALTSCREEN
ALTSFX	Typeterm	ALTSUFFIX
ANTICPG	See note 2.	
BASE	File	NSRGROUP
BMSFEAT (see note 5)	Typeterm	ROUTEDMSG(S)(ALL)
BMSFEAT=FMHPARM	Typeterm	FMHPARM(YES)
BMSFEAT=NOROUTE	Typeterm	ROUTEDMSG(S)(NONE)
BMSFEAT=NOROUTEALL	Typeterm	ROUTEDMSG(S)(SPECIFIC)
BMSFEAT=OBFMT	Typeterm	OBFORMAT(YES)
BMSFEAT=OBOPID	Typeterm	OBOPERID(YES)
BRACKET	Typeterm	BRACKET

Resource Definition Guide

RDO to Macro

RDO keyword to macro operand

This list is in alphabetic order of RDO keyword, giving the equivalent macro operand. "Macro operand to RDO keyword" on page 347 gives the same list in order of macro operand.

RDO ATTRIBUTE	RESOURCE TYPE	MACRO OPERAND
ACCESSMETHOD	Connection	ACCMETH
ADD	File	SERVREQ=ADD
ALIAS	Transaction	See note 1.
ALTPAGE	Typeterm	ALTPGE
ALTPRINTCOPY	Terminal	ALTPRT(,COPY)
ALTPRINTER	Terminal	ALTPRT(label,)
ALTSCREEN	Typeterm	ALTSCRN
ALTSUFFIX	Typeterm	ALTSFX
APLKYBD	Typeterm	FEATURE=APLKYBD
APLTEXT	Typeterm	FEATURE=APLTEXT
ASCII(7)	Typeterm	FEATURE=ASCII-7
ASCII(8)	Typeterm	FEATURE=ASCII-8
ATI(NO) and TTI(YES)	Typeterm	TRMSTAT=TRANSACTION
ATI(YES) and TTI(NO)	Typeterm	TRMSTAT=RECEIVE
ATI(YES) and TTI(YES)	Typeterm	TRMSTAT=TRANSCEIVE
ATTACHSEC	Connection	USERSEC=IDENTIFY
ATTACHSEC	Connection	USERSEC=LOCAL
ATTACHSEC	Connection	USERSEC=MIXIDPE
ATTACHSEC	Connection	USERSEC=PERSISTENT
ATTACHSEC	Connection	USERSEC=VERIFY
ATTACHSEC	Terminal	USERSEC=IDENTIFY

Recommended reading and additional references

CICS TS Release Guide - GC33-1645-03

CICS TS Migration Guide – GC33-1646-02

CICS TS Resource Definition Guide – SC33-1653-06

CICS TS System Definition Guide – SC33-1651-05

CICS TS Customization Guide - SC33-1652-10

CICS TS Operations and Utilities Guide - SC33-1654-09

CICS TS Supplied Transactions - SC33-1655-04

**Redbook: Migration to VSE/ESA 2.4 and CICS Transaction Server for VSE/ESA
1.1 – SG24-5595-00**

***New Redbook*: Security on IBM z/VSE – SG24-7691-00**

Presentations from prior WAVV and IBM Tech Conferences