



IBM Software Group

I Have a System Dump - Where do I Start

Jim Grauel

CICS Support Center, RTP. N.C

© 2004 IBM Corporation

Trademarks

The following are trademarks of the International Business Machines Corporation in the United States and/or other countries.

CICS*	PR/SM
DB2*	Processor Resource/Systems Manager
e-business logo*	RACF*
e-business on demand	RMF
IBM*	WebSphere*
IBM eServer	z/Architecture
IBM logo*	z/OS*
IMS	zSeries*
InfoPrint*	
OS/390*	
Parallel Sysplex*	

* Registered trademarks of IBM Corporation

The following are trademarks or registered trademarks of other companies.

Java and all Java-related trademarks and logos are trademarks of Sun Microsystems, Inc., in the United States and other countries.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Microsoft is a registered trademarks of Microsoft Corporation in the United States, other countries or both.

SET and Secure Electronic Transaction are trademarks owned by SET Secure Electronic Transaction LLC.

* All other products may be trademarks or registered trademarks of their respective companies.



Agenda

- **CICS IPCS Verb exits**
- **What gets dumped**
- **How do I find CICS**
 - SLIP Dumps
 - Console Dumps
 - CICS Dumps
- **MTRACE**
- **CICS Verb exit samples**

CICS Verbexit

- **DFHPDxxx**

- ▶ must reside in a TSO STEPLIB dataset, LINKLIST, or IPCS TASKLIB
- ▶ DFHPDxxx - formats CICS control blocks
 - DFHPD530
 - DFHPD620
 - DFHPD630

- **DFHTG530/DFHTG620 /DFHTG630**

- formats CICS GTF trace records
- alias AMDUSREF

- **DFHIPCSP**

- ▶ reserved member in SYS1.PARMLIB
- ▶ VERB and EXIT names for supported CICS releases
 - CICS530 DFHPD530
 - CICS620 DFHPD620
 - CICS630 DFHPD630

- **Refer to the CICS/ESA Operations Guide**

- ▶ SC33-1685 - version 5 (CICS Transaction Server)
- ▶ Included in the Information center (CICS Transaction Server for z/OS - R2.x)

Verbexit Options

Keyword Functional area

AI	= 0|2	Autoinstall Model Manager	(321)
AP	= 0|1|2|3	Application Domain	(410)
APS	= <TASKID= >		(520)
AU	= 0|2	CICS affinities utility	
BA	= 0|1|2|3	CICS business application manager	(530)
BR	= 0|1|2|3	The 3270 bridge	(520)
CC	= 0|2	CICS catalog domain	
CP	= 0|2	Common Programming Interface	(321)
CQ	= 0|1|2	Auto install model manager	
CSA	= 0|2	CICS Common System Area	
DB2	= 0|1|2|3	The CICS DB2 interface	(520)
DD	= 0|1|2|3	Directory Domain	(410)
DH	= 0|1|2|3	Document handling domain	(530)
DLI	= 0|2	CICS DL/I Interface	
DM	= 0|1|2|3	Domain Manager	
DP	= 0|1|2|3	Debug Profiles manager	(630)
DS	= 0|1|2|3	Dispatcher Domain	
DU	= 0|2	Dump Domain	
EJ	= 0|1	Enterprise JAVA	(610)
EM	= 0|1|2|3	Event manager domain for BTS	(530)
FCP	= 0|2	File Control Program	
FT	= 0|1|2|3	CICS WEB Interface	(410/510)
ICP	= 0|2	Interval Control Program	
IE	= 0|1|2|3	IP ECI Domain	(620)
II	= 0|1|2|3	IIOP	
IND	= 0|1|2|3	Page number indexes for output	
JCP	= 0|2	Journal Control Program (use LG in 510)	
KE	= 0|1|2|3	CICS Kernel	
LD	= 0|1|2|3	Loader Domain	
LG	= 0|1|2|3	Logger Domain	(510)
LM	= 0|1|2|3	Lock Manager domain	
ME	= 0|2	Message domain	
MN	= 0|1|2|3	Monitoring domain	
MRO	= 0|2	CICS Multi-Region Operation	

1 - Summary only

2 - Full Control Block formatting

3 - Both 1 and 2

Note: If you omit the level number, it defaults to level 3 for those components that have a summary, and level 2 for those that do not.

Keyword Functional area

NQ	= 0|2	Enqueue Manager	(510)
OT	= 0|1|2|3	Object Transaction Domain	(610)
PA	= 0|2	Parameter manager domain	
PCP	= 0|2	Program Control Program (use PG in 410)	
PCT	= 0|2	Program Control Table	
PG	= 0|1|2|3	Program Manager Domain	(410)
PR	= 0|2	Partner Resource management	(321)
PT	= 0|1|2|3	Partner Domain	(620)
RD	= 0|2	Resource definition manager	(510)
RM	= 0|2	Recovery Management	(321)/(510)
RX	= 0|1|2|3	Recoverable EXCI domain	(530)
RZ	= 0|1|2|3	Request Streams	(610)
SH	= 0|1	Scheduler services domain for BTS	(530)
SJ	= 0|1|2|3	JVM Domain	(610)
SM	= 0|1|2|3	Storage Manager domain	
SO	= 0|1|2|3	Sockets domain	(530)
SSA	= 0|2	Static Storage Areas	
ST	= 0|1|2|3	Statistics domain	
SZ	= 0|1	Front End Programming Interface	(330)
TCP	= 0|1|2|3	Terminal Control Program	*/(510)
TDP	= 0|1|2|3	Transient Data Program	*/(510)
TI	= 0|1|2|3	Timer domain	
TMP	= 0|2	Table Manager Program	
TR	= 0|1|2|3	Trace domain	
TRS	= <trace selection parameters>		(410)/(510)
TSP	= 0|1|2|3	Temporary Storage Program (use TS in 510)	
TS	= 0|1|2|3	Temporary Storage Program	(510)
UEH	= 0|2	User Exit Handler	
US	= 0|1|2|3	User Domain	(410)
WB	= 0|1|2|3	The web interface	(520)
XM	= 0|1|2|3	The transaction manager.	
XRF	= 0|2	The extended recovery facility.	
XS	= 0|1	Security Domain	(410)



Verbexit Options notes

CICS Transaction Server is based on domain architecture. Each domain encapsulates the code and control blocks for a given function. Access to the data belonging to a given domain is via the domain interface. Each domain, with the exception of the application domain (AP), is responsible for a given CICS function. All domains are contained in each CICS address space.

For example, the catalog domain is responsible for the data content and access to the CICS local and global catalogs. When other domains require access to information managed by the catalog domain, it is obtained using a catalog domain call.

The exception to the rule is the AP domain which defines the environment for application execution. The AP domain includes file control (FCP=), terminal control (TCP=), and Multi-region operation (MRO=) which are not yet full domains, but have separate formatting routines.

To format the control blocks and data, there are normally three (3) levels of detail available as noted in the chart on the prior page.

- 1 - Summary only
- 2 - Full Control Block formatting
- 3 - Both 1 and 2

Note: If you omit the level number, it defaults to level 3 for those components that have a summary, and level 2 for those that do not.

Also note, as new function is introduced, or significantly changed, the release is identified in the chart. For example the logger (LG) domain was introduced in R510 (CTS R1.1), and the JVM domain in R610 (CTS R2.1).

The CICS Problem determination Guide contains two cross references providing the control blocks formatted by IPCS keyword and the IPCS keyword used to format a given control block.

Parmlib support for dump commands

- Introduced in OS/390 R7
- Sample members shipped in z/OS R1.2
 - SYS1.SAMPLIB AS IEADMCxx members
 - **IEADMCLC** provided to dump CICS, Logger, and SMSVSAM

```
TITLE=(DUMP OF LOGGER, RLS AND CICS),           00400000
JOBNAME=(IXGLOGR, PCAUTH, SMSVSAM, IYOT*, XCFAS),    00410000
DSPNAME=(' SMSVSAM' . *, ' IXGLOGR' . *, ' XCFAS' . *), 00420000
SDATA=(COUPLE, ALLNUC, LPA, LSQA, PSA, RGN,           00430000
        SQA, TRT, CSA, GRSQ, XESDATA, WLM)           00440000
```

▸

- Members must be tailored and copied into SYS1.PARMLIB
- **DUMP TITLE=(TEST2),PARMLIB=LC**
- Multiple parmlib members can be specified
 - DUMP TITLE=(TEST3),PARMLIB=(**LC,RR**)
 - dump CICS, SMSVSAM, Logger, RRS

Parmlib support notes ...

```
BROWSE      SYS1.SAMPLIB(IEADMCLC)                Line 00000000 Col 001 080
Command ==>                                     Scroll ==> CSR
***** Top of Data *****
/* ** Start of Specifications for IEADMCLC ***** */ 00010000
/*                                                    */ 00020000
/* $MAC(IEADMCLC) COMP(SCDMP) PROD(HBB7705): Dump Logger, RLS, CICS */ 00030000
/*                                                    */ 00040000
/* PROPRIETARY STATEMENT:                            */ 00050000
/*   LICENSED MATERIALS - PROPERTY OF IBM             */ 00070000
/*   THIS MACRO IS "RESTRICTED MATERIALS OF IBM"      */ 00080000
/*   5694-A01 (C) COPYRIGHT IBM CORP. 2001           */ 00090000
/*                                                    */ 00100000
/* STATUS: HBB7705                                    */ 00110000
/* DUMP command Parmlib member                       */ 00160000
/*                                                    */ 00170000
/* Function: Provides DUMP command options to dump   */ 00180000
/*   Logger, RLS and CICS.                           */ 00190000
/*                                                    */ 00210000
/* To use: Copy this member to Parmlib.              */ 00220000
/*                                                    */ 00230000
/* To execute: Specify the following DUMP command:   */ 00240000
/*                                                    */ 00250000
/*   DUMP PARMLIB=xx                                  */ 00260000
/*   - or -                                           */ 00270000
/*   DUMP TITLE=(dump_title_text),PARMLIB=xx        */ 00280000
/*                                                    */ 00290000
/*   If a dump title is specified on the DUMP command using the */ 00300000
/*   TITLE option, the specified text will be used instead of the */ 00310000
/*   TITLE line in the parmlib member.               */ 00320000
/* ===== */ 00340000
/* Change activity:                                   */ 00360000
/* $L0= 64BIT,HBB7705,2000223,PD2L: Sample dump parmlib members */ 00370000
/* ** End of Specifications for IEADMCLC ***** */ 00390000
TITLE=(DUMP OF LOGGER, RLS AND CICS),                00400000
JOBNAME=(IXGLOGR,PCAUTH,SMSVSAM,IYOT*,XCFAS),        00410000
DSPNAME=('SMSVSAM'.*, 'IXGLOGR'.*, 'XCFAS'.*),        00420000
SDATA=(COUPLE,ALLNUC,LPA,LSQA,PSA,RGN,              00430000
SQA,TRT,CSA,GRSQ,XESDATA,WLM)                      00440000
```



Format clock fields

- **IPCS CBF xxxxxx STR(TODCLOCK)**

- DFHL2BLOCK contains a timestamp at offset x'24'

13F580A4		6EC4C6C8	D3F2C2D3	D6C3D240	| ....>DFHL2BLOCK |
13F580B0	00000000	000715DF	00000000	B562C5AF	| .....E. |
13F580C0	80800000	00000001	<u>B8918705</u>	<u>99DFCB40</u>	| .....jg.r.. |
13F580D0	13F88A00	0000FA00	13F88A34	C4C6C8D3	| .8.....8..DFHL |
13F580E0	D6C74040	0101000B	0000F9CC	00000000	| OG .....9..... |

- **cbf 13f580c8 str(todclock)** produces

TODCLOCK: 00000000

11/22/2002 14:06:40.958972

- Another option is to equate the address of the blocktime to a symbol

ASID(X'0018') ADDRESS(13F580C8.) STORAGE -----

Command ==> **eq blocktime**

13F580C8			<u>B8918705</u>	<u>99DFCB40</u>	| .....jg.r.. |
13F580D0	13F88A00	0000FA00	13F88A34	C4C6C8D3	| .8.....8..DFHL |
13F580E0	D6C74040	0101000B	0000F9CC	00000000	| OG .....9..... |

- **cbf blocktime str(todclock)** which produces the same results

TODCLOCK: 00000000

11/22/2002 14:06:40.958972



System Status (ST) command

- **ST SYS**

- Time of dump
- Dump requester

In a [SLIP dump](#) -

SYSTEM STATUS:

Nucleus member name: IEANUC01

I/O configuration data:

IODF data set name: SYS1.IODF00

IODF configuration ID: PLEXTSCF

Sysplex name: PLEX2

TIME OF DAY CLOCK: B19718FC FFDF2D00 01/01/1999 17:24:38.588914 local

TIME OF DAY CLOCK: B19718FC FFDF2D00 01/01/1999 17:24:38.588914 GMT

Program Producing Dump: [SLIPDUMP](#)

Program Requesting Dump: [IEAVTSDT](#)

In a [Console dump](#) -

SYSTEM STATUS:

Nucleus member name: IEANUC01

I/O configuration data:

IODF data set name: SYS1.IODF00

IODF configuration ID: PLEXTSCF

Sysplex name: PLEX2

TIME OF DAY CLOCK: B195CEF7 E58B5304 12/31/1998 16:48:09.537717 local

TIME OF DAY CLOCK: B195CEF7 E58B5304 12/31/1998 16:48:09.537717 GMT

Program Producing Dump: [SVCDUMP](#)

Program Requesting Dump: [IEAVTSDT](#)

[Incident token:](#) PLEX2 MV2C 12/31/1998 16:48:30.343519 GMT

The MVS image issuing the dump request is MV2C, a member of sysplex PLEX2

System Status (ST) command

- **ST SYS**

- Time of dump
- Dump requester

In a [CICS Initiated SDUMP](#) -

SYSTEM STATUS:

Nucleus member name: IEANUC01

I/O configuration data:

IODF data set name: SYS1.IODF00

IODF configuration ID: PLEXTSCF

EDT ID: H2

Sysplex name: PLEX2

TIME OF DAY CLOCK: B195B31B 56176802 12/31/1998 14:43:30.506102 local

TIME OF DAY CLOCK: B195B31B 56176802 12/31/1998 14:43:30.506102 GMT

Program Producing Dump: [SVCDUMP](#)

Program Requesting Dump: [DFHKETCB](#)

[Incident token: PLEX2](#) [MV2C](#) [12/31/1998 14:43:51.288763 GMT](#)

The MVS image issuing the dump request is MV2C, a member of sysplex PLEX2

NOTE: When the program requesting the dump is IEAVTSDT, the dump is taken asynchronously; otherwise it is a synchronous dump.

Which ASIDs were dumped?

- Using the IPCS SELECT command
- **Select all**

- ▶ Jobname to ASID XREF

ASID	JOBNAME	ASCBADDR	SELECTION CRITERIA
----	-----	-----	-----
0001	*MASTER*	00FD1580	ALL
0002	PCAUTH	00F7F380	ALL
0003	RASP	00F7F100	ALL
0004	TRACE	00F7EE00	ALL
0005	GRS	00F7EB80	ALL
0006	DUMPSRV	00F7E980	ALL
0008	CONSOLE	00F7D080	ALL
.			
001F	JES2	00F5A300	ALL
.			
0033	CICSFILE	00F4E680	ALL
0034	CICSL202	00F4E400	ALL
.			
008E	CICSJG03	00ED8100	ALL

- **Select current**

- ▶ Defines the current address space(s) in the dump

ASID	JOBNAME	ASCBADDR	SELECTION CRITERIA
----	-----	-----	-----
0033	CICSFILE	00F4E680	CURRENT
008E	CICSJG03	00ED8100	CURRENT

NOTE: this dump was taken while in cross memory mode

Which ASIDs were dumped? notes ...

The SELECT command may be used to list all jobs in the system, or to list the current job under which the SVC dump was initiated.

The SELECT ALL command lists, in address space order, all jobs in the system at the time the dump was taken. *It is important to note the dump does NOT contain all jobs listed.*

Select ALL

Jobname to ASID XREF

ASID	JOBNAME	ASCBADDR	SELECTION CRITERIA
0001	*MASTER*	00FD1580	ALL
0002	PCAUTH	00F7F380	ALL
0003	RASP	00F7F100	ALL

The SELECT CURRENT command lists the job which was executing at the point in time the dump was initiated. If the dump was issued via console dump command, the SELECT CURRENT command will display the Master scheduler address space.

If the dump was taken while in cross memory mode, both address spaces involved in the cross memory operation will be included in the dump.

Select current

ASID	JOBNAME	ASCBADDR	SELECTION CRITERIA
0033	CICSFILE	00F4E680	CURRENT
008E	CICSJG03	00ED8100	CURRENT

NOTE: this dump was taken while in cross memory mode

Which ASIDs were dumped?

SELECT CURRENT

ASID	JOBNAME	ASCBADDR	SELECTION CRITERIA
0005	<u>DUMPSRV</u>	00FAA400	CURRENT

SELECT ALL

ASID	JOBNAME	ASCBADDR	SELECTION CRITERIA
0001	*MASTER*	00FCDF00	ALL
0002	PCAUTH	00F48080	ALL
0003	RASP	00FAA700	ALL
0004	TRACE	00FAA580	ALL
0005	DUMPSRV	00FAA400	ALL
0006	XCFAS	00F49480	ALL
.....			
001A	IYAHZCES	00FB3600	ALL
001B	IYAHZCEA	00FB3480	ALL
001C	IYAHZCEB	00FA1880	ALL
001D	IYAHZCEE	00FA1700	ALL
001E	IYAHZCEF	00FA1580	ALL
001F	IYAHZCEG	00FA1400	ALL
0020	IYAHZCEH	00FA1280	ALL
0021	IYAHZCEI	00FA1100	ALL
0022	IYAHZCEJ	00F9BE80	ALL
0023	IYAHZCEK	00F9BD00	ALL
0024	IYAHZCEL	00F9BB80	ALL
0025	IYAHZCEM	00F9BA00	ALL
0026	IYAHZCEN	00F9B880	ALL

NOTE: This dump was taken via a remote request from a connected CICS region.



Which ASIDs were dumped?

To identify which address spaces are contained in the dump, format the CVT, then issue a FIND command for RTMCT to locate the address of the RTCT (Recovery Termination Control Table). Offset **+x'10C'** in the RTMCT begins a list of 1 word entries for the address spaces in the dump. The first half of the word contains the ASID.

CBF CVT

CVT: 00FCFE48

-0028	PRODN..	SP5.1.0	PRODI...	HBB5510	VERID..		MDL...	3090	RELNO..	038		
+0000	TCBP...	00000218	0EF00...	00FE5718	LINK...	00FCFDC4	AUSCB...	00FD0430	BUF...	00000000	XAPG...	00FE24F8
+0018	0VL00..	00FF803E	PCNVT...	00FE8B7E	PRLTV..	00FE8A08	LLCB....	01470798	LLTRM.	81224418	XTLER..	00FF3928
+0030	SYSAD..	00F20188	BTERM...	00FF1900	DATE...	0094161F	MSLT....	00FD0458	ZDTAB.	00F02000	XITP...	00FFA040
+0048	0EF01..	00FE593C	VSS.....	0000	VPSM...	0000	EXIT....	0A03	BRET..	07FE	SVDCB..	00FCFDCC
+0058	TPC....	00FC9EF0	ICPID...	0000	CUCB...	00FD0AA0	QTE00...	00FE8DFA	QTD00.	00FE8E1A	STB....	00F47C78
+0074	DCB....	9B	DCBA....	FD3E58	SV76M..	00000000	IXAVL...	00FE65A0	NUCB..	00000000	FBOSV..	811D86D8
+0204	FRAS...	81361ADA	S1EE....	00FF4CEC	PARS...	80DB038C	QUIS....	0102A040	STXU..	8232DF38	OPTE...	00FD4846
+021C	SDRM...	82363000	CSRT....	0146E4D8	AQTOP..	014777C0	VVMDI...	00000833	ASVT..	00FAB9C8	GDA....	01CF4170
+0234	ASCBH..	00FCDF00	ASCBL...	00F9B200	<u>RTMCT..</u>	<u>00FBFBB8</u>	SV60....	00FF2B08	SDMP..	00FF2B30	SCBP...	81362D98

LIST 00FBFBB8 ASID(X'0005') LENGTH(500) AREA
ASID(X'0005') ADDRESS(00FBFBB8) KEY(00) COMMON

00FBFBB8.								D9E3C3E3	2FD0BE00	|		RTCT.}...|
00FBFBC0.	2FD0BE00	FC800000	00000000	808CE0A0	00000000	0000000F	01E98750	01AF7110	|.	}.}	.....\.....	Zg&....|
00FBFBE0.	00040000	00BB6DD8	00000000	00DE8348	00DE8366	00DE836C	00DE8372	00DE8378	|	.....	c...c...c%..c...c.	|
00FBFC00.	00DE8F0E	00D5F9C0	00D5F9DE	00D5FA32	00F8EF28	014FC720	01DF62A8	01DF6678	|	.....	N9..N...8...|G....y....|	|

 00FBFBB8 + 10C = 00FBFCC4

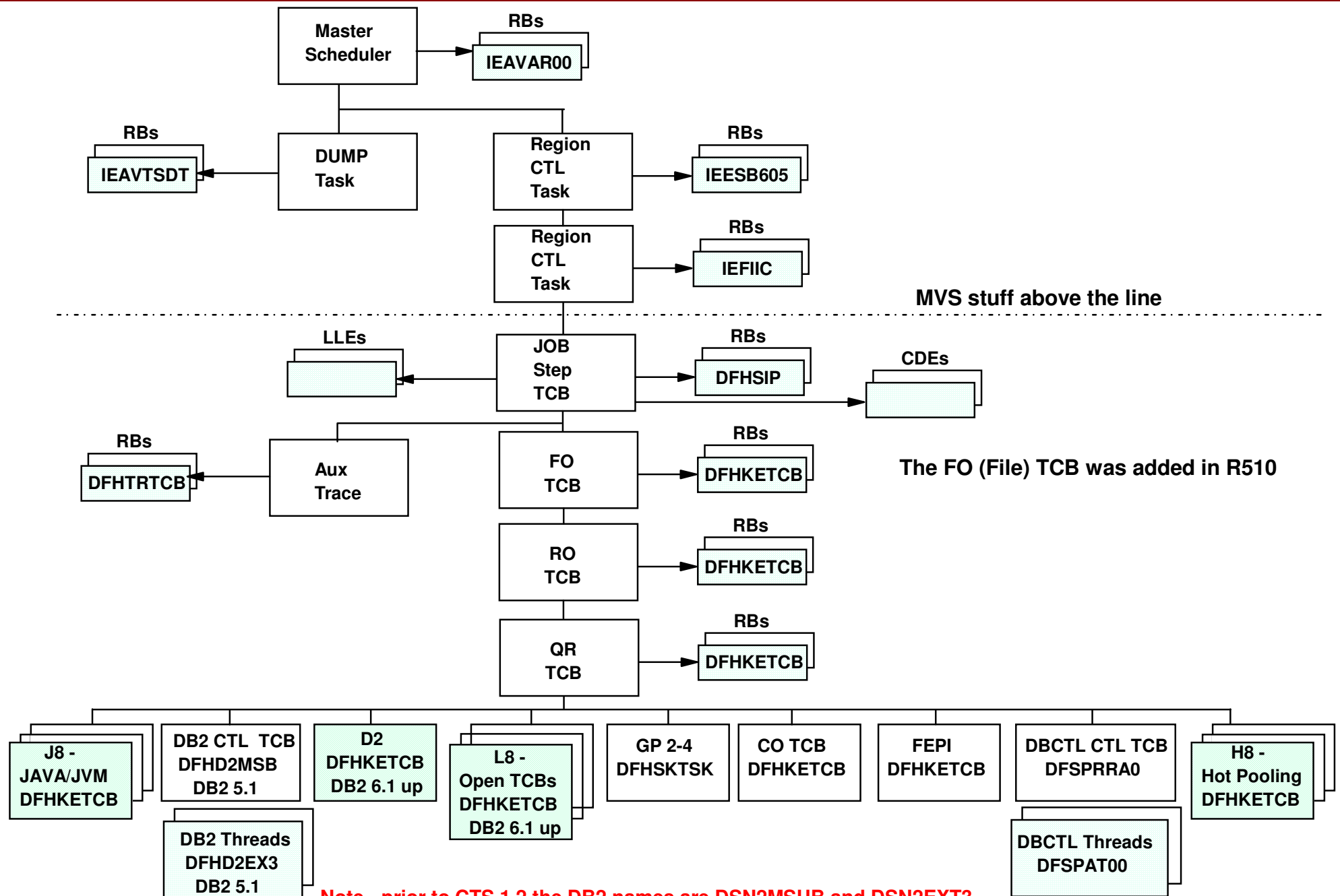
00FBFCC0.	<u>001A</u> 8000	<u>001C</u> 8000	<u>001B</u> 8000	<u>001E</u> 8000	<u>001F</u> 8000	<u>0020</u> 8000	<u>001D</u> 8000			
00FBFCE0.	<u>0022</u> 8000	<u>0024</u> 8000	<u>0021</u> 8000	<u>0023</u> 8000	<u>0028</u> 8000	<u>0025</u> 8000	<u>0029</u> 8000	<u>0026</u> 8000		

The address spaces contained in this dump are: 1A,1C,1B,1E,1F,20,1D,22,24,21,23,28,25,29,and 26.

NOTE: For SLIP dumps the address spaces dumped include the master scheduler (ASID 1) and the address space which triggered the SLIP.



MVS TCB Structure CICS Transaction Server R220



Note - prior to CTS 1.2 the DB2 names are DSN2MSUB and DSN2EXT3

© IBM Corporation 2004

CICS Support Center



CICS Environment - SLIP Dump

- Slip dumps have title 'SLIP ID=xxxx'
- SLIP Buffer
 - CVT+x'24C'
 - formatted with ST REGS
 - registers when the SLIP triggered

CPU STATUS:

PSW=470C8000 00E8321E (RUNNING IN SECONDARY, KEY 0, AMODE 24, DAT ON)
ENABLED FOR PER I/O EXT MCH
ASID(X'008E') 00E8321E. DFHIRP+521E IN PLPA
ASCB142 at ED8100, JOB(CICSJG03) , for the home ASID
ASXB142 at 9FDEF0 for the home ASID. No block is dispatched
HOME ASID: 008E PRIMARY ASID: 008E SECONDARY ASID: 0033

GPR VALUES

0-3	20000000	40014000	00007080	00C0FD00
4-7	00000004	00BFB188	00E82DE6	00000038
8-11	001805B8	00000C60	0000185B	00761600
12-15	801805B8	00C0ED90	78000000	00760158

ACCESS REGISTER VALUES

0-3	009FB01F	00000000	00000000	00000000
4-7	00000000	00000000	00000000	00000000
8-11	00000000	00000000	00000000	00000000
12-15	00000000	00000000	0101001E	00000000

NOTE:

The buffer may be listed as hex data using:
`LIST 0 DOMAIN(SDUMPBUFFER) LENGTH(4096)`

The buffer format is described in
'MVS/ESA Problem Determination Guide LY28-1667'



List SLIPTRAP

----- IPCS Subcommand Entry -----
Enter a free-form IPCS subcommand or a CLIST or REXX exec invocation below: .

====> 1 sliptrap

----- IPCS Subcommands and Abbreviations -----
ADDUMP í DROPDUMP, DROPD í LISTMAP, LMAP í RUNCHAIN, RUNC .
ANALYZE í DROPMAP, DROPM í LISTSYM, LSYM í SCAN .
ARCHECK í DROPSYM, DROPS í LISTUCB, LISTU í SELECT .
ASCBEXIT, ASCBX í EQUATE, EQU, EQ í LITERAL í SETDEF, SETD .
ASMCHECK, ASMK í FIND, F í LPAMAP í STACK .
CBFORMAT, CBF í FINDMOD, FMOD í MERGE í STATUS, ST .
CBSTAT í FINDUCB, FINDU í NAME í SUMMARY, SUMM .
CLOSE í GTFTRACE, GTF í NAMETOKN í SYSTRACE .

Example 1 -- capture CICS, DBCTL, SMSVSAM, DB2, and XCF

SLIPTRAP

LIST 00000000 LITERAL LENGTH(239) CHARACTER

LITERAL ADDRESS(00000000)

```
00000000 | SLIP SET, IF, N=(IEAVEDS0,00,FF), ID=JIM4, ACTION=SVCD, JOBLIST=(XCF* |
00000040 | ,RM*, IYOT*, SMSVS*, DC26*, DC27*, DC28*), DSPNAME=('SMSVSAM' .*, 'XCFAS |
00000080 | ' .*), SDATA=(RGN, XESDATA, ALLNUC, CSA, LSQA, PSA, SQA, SUM, SWA, TRT, COUP |
000000C0 | LE, WLM, GRSQ, LPA), REMOTE=(JOBLIST, DSPNAME, SDATA) |
```

Example 2 -- capture CICS and the MVS Logger

SLIPTRAP

LIST 00000000 LITERAL LENGTH(253) CHARACTER

LITERAL ADDRESS(00000000)

```
00000000 | SLIP SET, IF, LPAMOD=(IGC0003E,0), DATA=(1R?+4, EQ, C4C6C8D9, +8, EQ, D4 |
00000040 | F0F4), A=SVCD, JOBLIST=(IYOTS2, IXGLOGR, XCFAS), DSPNAME=('XCFAS' .*, ' |
00000080 | IXGLOGR' .*), STRLIST=(STRNAME=LOG_SYSTEST_001, LOCKENTRIES, ACC=NOL |
000000C0 | IM, (LISTNUM=ALL, ENTRYDATA=SERIALIZE, ADJUNCT=CAPTURE)), ID=LOGR |
```

CLICS Environment -- Console Dump

- Title supplied by the operator

```
TIME-11:58:56 PM. CPU-00:00:54 SERVICE-339695 SESSION-06:04:07 APRIL 20,2000
Initialization in progress for DSNAME('GRAUEL.CONSOLE.DUMP.D000420.T235214.S01249')
```

```
TITLE=SQLJ JBDC HANG
```

← The title can be viewed using the LIST TITLE command

```
May summary dump data be used by dump access? Enter Y to use, N to bypass.
```

```
n
```

```
61,470 blocks, 255,715,200 bytes, in DSNAME('GRAUEL.CONSOLE.DUMP.D000420.T235214.S01249')
```

```
TIME-00:00:01 AM. CPU-00:00:54 SERVICE-347779 SESSION-06:05:12 APRIL 21,2000
```

```
Warnings regarding STRUCTURE(PVT) at ASID(X'0001') 00FEE968:
```

```
Located via STRUCTURE(CVT) at ASID(X'0001') 00FCF640
```

```
Storage not in dump
```

```
***
```

- ST REGS produces registers for ASID 1

```
CPU STATUS:
```

```
PSW=070C1000 90A4F81C (RUNNING IN PRIMARY, KEY 0, AMODE 31, DAT ON) DISABLED FOR PER
```

```
ASID(X'0001') 10A4F81C. AREA(PRIVATEX)+04F81C IN EXTENDED PRIVATE
```

```
ASCB275 at F09E80, JOB(IYOT1), for the home ASID
```

```
ASXB275 at 8FDFA0 for the home ASID. No block is dispatched
```

```
HOME ASID: 0113 PRIMARY ASID: 0001 SECONDARY ASID: 0001
```

```
GPR VALUES
```

```
0-3 00000000 00000000 00000000 00000000
```

```
4-7 00000000 00000000 00000000 00000000
```

```
8-11 00000000 00000000 00000000 00000000
```

```
12-15 00000000 00000000 00000000 00000000
```

```
ACCESS REGISTER VALUES
```

```
0-3 00000000 10A02898 00000000 00000000
```

```
4-7 00000000 00000000 00000000 00000000
```

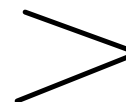
- CLICS environment is obtained from the TCB/RB structure



CICS Environment - Console Dump

VERBX CICS530 'KE=3'

KE_NUM	KE_TASK	STATUS	TCA_ADDR	TRAN_#	TRANSID	DS_TASK	KE_KTCB	ERROR
0001	10B36C80	KTCB Step	00000000			00000000	10B78080	
0002	10B36900	KTCB QR	00000000			11188000	10B7B020	
0003	10B36580	KTCB RO	00000000			1118A000	10B7A040	
0004	10B36200	KTCB FO	00000000			1118C000	10B79060	
0005	10B53C80	Not Running	00000000			11198080	10B7A040	
0006	10B53900	Not Running	11299080	00021	CSHQ	11198180	10B7B020	
0007	10B53580	KTCB SL	00000000			111CA000	111E2020	
0008	10B53200	Not Running	00000000			111FD080	10B7B020	
0009	10B70C80	KTCB SO	00000000			111E3000	111E5020	
000A	11234400	Unused						
000B	11A6B080	Not Running	0005A680	00006	CSSY	11198980	10B7B020	
000C	11234780	Unused						
000D	11A6B780	Not Running	0005C680	00047	CSSY	111E0680	10B7B020	
000E	11A6B400	Not Running	11298080	TCP	CSTP	11198D80	10B7B020	
000F	11AB3080	KTCB J8000	00000000			111AF000	111B1020	
0010	11234B00	Unused						
0011	11907080	Unused						
0012	11A6BB00	Not Running	11298680	00020	CEX2	111FD180	10B7B020	
0013	11183900	Not Running	0005A080	00005	CSSY	11198680	10B7B020	
0014	11907400	Unused						
0015	11907780	Unused						
0016	11AB3B00	KTCB J8001	00000000			111B5000	16245020	
001D	11188200	Not Running	11297680	00003	CSOL	11198780	111E2020	
0049	119FF780	***Running**	0005B680	00088	S4	111E9480	111B1020	(S4 is currently running on TCB J8000)
004A	119FFB00	***Running**	0005B080	00089	S3	111E9380	16245020	(S3 is currently running on TCB J8001)
004B	11A46080	***Running**	00059680	00098	CEMT	111E9180	10B7B020	(CEMT is running on the QR TCB)
004C	11A46400	Not Running	00059080	00046	STAT	111E9280	10B7B020	
004D	11A46780	Not Running	00048680	00091	S1	111E9080	10B7B020	
004E	11A46B00	Not Running	00048080	00090	S2	111E9580	10B7B020	
0050	11AB3400	Not Running	0005C080	00019	CSNC	111E0380	10B7B020	



These tasks will run on the QR TCB the next time they are dispatched



CICS Environment - Console Dump

VERBX CICS530 'KE=3'

==KE: KE Domain KTCB Table

KTCB 10B78080 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	10B36C80	10B36C80	10B37020	00000000	00000000	*KTCB	....%.....*	10B78080
0020	00000000	7D000000	00000000	00000000	80000001	00000000	00800000	E2000000	*....'	.....S...*	10B780A0
0040	00000000	00000000	10B78080	00000000	00000000	808FD040	00000000	00000000	*.....	.....*	10B780C0

KTCB 10B79060 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	10B36200	10B36200	10B4C020	00000000	0A4FD67A	*KTCB	.....{.....|O:*	10B79060
0020	00000000	7D000000	00000000	00000000	80000003	00000000	06800000	C6C6D600	*....'	.....FFO.*	10B79080
0040	00000000	00000000	10B79060	40000000	008CFBF8	00000000	00005380	00000000	*.....	.....8.....*	10B790A0

KTCB 10B7A040 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	10B36580	10B36580	10B45020	00000002	09EBA67A	*KTCB	.....w:*	10B7A040
0020	00000000	7D000000	00000000	00000000	80000003	00000000	06800000	D9D9D600	*....'	.....RRO.*	10B7A060
0040	00000000	00000000	10B7A040	40000000	008CF848	00000000	000052D8	00000000	*.....	.....Q....*	10B7A080

KTCB 10B7B020 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	10B36900	11A46080	10B3E020	00000003	743E4D04	*KTCB	.u-... \.....(.*	10B7B020
0020	00000000	7D000000	00000000	00000000	80000003	00000000	36800000	D8D8D900	*....'	.....QQR.*	10B7B040
0040	00000000	00000000	10B7B020	40000000	008CF498	00000000	00005230	00000000	*.....	.....4q.....*	10B7B060

KTCB 111E2020 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	10B53580	10B53580	10B62020	00000000	010ABE00	*KTCB	.....*	111E2020
0020	00000000	7D000000	00000000	00000000	80000003	00000000	06000000	D5E2D300	*....'	.....NSL.*	111E2040
0040	00000000	00000000	111E2020	40000000	008B5D80	00000000	00005010	00000000	*.....	.....&.....*	111E2060

KTCB 111E5020 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	10B70C80	10B70C80	10B71020	00000000	0133CA26	*KTCB	.....*	111E5020
0020	00000000	7D000000	00000000	00000000	80000003	00000000	06000000	D5E2D600	*....'	.....NSO.*	111E5040
0040	00000000	00000000	111E5020	40000000	008B59C0	00000000	00008FA0	00000000	*.....	.....&{.....*	111E5060

KTCB 111B1020 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	11AB3080	119FF780	11CD8020	00000003	510EEFEC	*KTCB	..7.....*	111B1020
0020	00000000	7D000000	00000000	00000000	80000003	00000000	16000000	D5D1F800	*....'	.....NJ8.*	111B1040
0040	00000000	00000000	111B1020	40000000	008A0088	00000000	00017FA0	00000000	*.....	.....h.....".*.....*	111B1060

KTCB 16245020 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	11AB3B00	119FFB00	11CDF020	00000003	18BDE626	*KTCB	.....0.....W.*	16245020
0020	00000000	7D000000	00000000	00000000	80000003	00000000	16000000	D5D1F800	*....'	.....NJ8.*	16245040



+x'50' (R530, R610, R620) contains the address of the MVS TCB



+x'50' (R530, R610, R620) contains the address of the MVS TCB



CICS to MVS TCB information

This is the last page of a SUMM FORMAT TCBSUMMARY Display

* * * * T C B S U M M A R Y * * * *

JOB IYOT1 ASID 00F6 ASCB 00F14B00 FWDP 00ECA700 BWDP 00EC3280 PAGE 00000007

CICS	CICS	PRB								
NAME	KTCB	NAME	TCB	AT	CMP	NTC	OTC	LTC	TCB	BACK
		IEAVAR00	008FE1B8		00000000	00000000	00000000	008FDE28	008FF150	00000000
		IEAVTSDT	008FF150		00000000	00000000	008FE1B8	00000000	008FDE28	008FE1B8
		IEESB605	008FDE28		00000000	008FF150	008FE1B8	008F9680	008F9680	008FF150
		IEFIIC	008F9680		00000000	00000000	008FDE28	008D2E88	008D2E88	008FDE28
Step	10B78080	DFHSIP	008D2E88		00000000	00000000	008F9680	008CFBF8	008CFE88	008F9680
Trace		DFHTRTCB	008CFE88		00000000	00000000	008D2E88	00000000	008CFBF8	008D2E88
FO	10B79060	DFHKETCB	008CFBF8		00000000	008CFE88	008D2E88	008CF848	008CF848	008CFE88
RO	10B7A040	DFHKETCB	008CF848		00000000	00000000	008CFBF8	008CF498	008CF498	008CFBF8
QR	10B7B020	DFHKETCB	008CF498		00000000	00000000	008CF848	008A0B48	008B5D80	008CF848
SL	111E2020	DFHKETCB	008B5D80		00000000	00000000	008CF498	00000000	008B59C0	008CF498
SO	111E5020	DFHKETCB	008B59C0		00000000	008B5D80	008CF498	00000000	008A90A0	008B5D80
		DFHD2MSB	008A90A0		00000000	008B59C0	008CF498	008A9E88	008B5090	008B59C0
		DFHSKTSK	008B5090		00000000	008A90A0	008CF498	00000000	008A0088	008A90A0
J8000	111B1020	DFHKETCB	008A0088		00000000	008B5090	008CF498	008A0630	008A0B48	008B5090
J8001	16245020	DFHKETCB	008A0B48		00000000	008A0088	008CF498	008A7A78	008A9CF0	008A0088
		DFHD2EX3	008A9CF0		00000000	00000000	008A90A0	00000000	008A7190	008A0B48
		DFHD2EX3	008A7190		00000000	008A9CF0	008A90A0	00000000	008A9E88	008A9CF0
		DFHD2EX3	008A9E88		00000000	008A7190	008A90A0	00000000	008A7378	008A7190
		BPXPTATT	008A7378		00000000	00000000	008A0088	00000000	008A0630	008A9E88
		BPXPTATT	008A0630		00000000	008A7378	008A0088	00000000	008A0E88	008A7378
		BPXPTATT	008A0E88		00000000	00000000	008A0B48	00000000	008A7A78	008A0630
		BPXPTATT	008A7A78		00000000	008A0E88	008A0B48	00000000	00000000	008A0E88

Additional CICS managed TCB's

ID	PRB name	H8xxx	DFHKETCB	JAVA Hot pooling
SZ	DFHKETCB FEPI	SZ	DFHKETCB FEPI	
RP	DFHKETCB ONC-RPC	RP	DFHKETCB ONC-RPC	
CO	DFHKETCB Concurrent (SUBTSKS=1)			

Note: the columns CICS NAME, CICS KTCB, and PRB Name have been added to show the relationship to CICS control blocks



CICS Environment - CICS Dump

- **Title - CICS DUMP: SYSTEM= applid CODE=**
- **Exception Traces**
- **Kernel Error Data**
 - Information provided by MVS
 - SDWA (System Diagnostic Work Area)

CICS Environment - CICS Dump (KTCBs)

VERBX CICS630' KE=3'

===KE: Kernel Domain KE_TASK Summary

KE_NUM	KE_TASK	STATUS	TCA_ADDR	TRAN_#	TRANSID	DS_TASK	KE_KTCB	ERROR
0001	1B256C80	KTCB Step	00000000			00000000	1B299000	
0002	1B256900	KTCB QR	00000000			1BD03030	1B29C000	
0003	1B256580	KTCB RO	00000000			1BD03148	1B29B000	
0004	1B256200	KTCB FO	00000000			1BD03260	1B29A000	
0005	1B273C80	Not Running	00000000			1BC9B080	1B29B000	
0006	1B273900	Not Running	1BDB9680	00019	CSHQ	24150380	1B29C000	
0007	1B273580	KTCB SL	00000000			1BD03378	1BCD0000	

Issue a find for either KTCB or KTCH to locate the kernel KTCBs (F KTCB)

==KE: KE Domain KTCB Table

TCH 1B298FC8 KTCB TABLE HEADER

0000	00386EC4	C6C8D2C5	D2E3C3C8	40404040	1B299000	1BCD1000	10000000	00000000	*...>DFHKEKTCH	.....*	1B298FC8
0020	1B299000	1B29A000	1B29B000	1B29C000	00000000	00000004			*.....{.....	*	1B298FE8

KTCB 1B299000 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	1B256C80	1B256C80	1B257020	00000000	00000000	*KTCB	.....%...%.....*	1B299000
0020	00000000	7D000000	00000000	00000000	80000001	00000000	00800000	E2000000	*....'.....S...*		1B299020
0040	00000000	00000000	1B299000	00000000	00000000	806FF0D0	00000000	00000000	*.....?0}.....*		1B299040

KTCB 1B29A000 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	1B256200	1B256200	1B26C020	00000000	442D95B5	*KTCB	.....{.....n.*	1B29A000
0020	00000000	7D000000	00000000	00000000	80000003	00000000	06820000	C600C6D6	*....'.....b..F.FO*		1B29A020
0040	00000000	00000000	1B29A000	40000000	006DD3B8	00000000	000062E8	00000000	*....._L.....Y....*		1B29A040

KTCB 1B29B000 KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	1B256580	1B256580	1B265020	00000001	DE32352D	*KTCB	.....&.....*	1B29B000
0020	00000000	7D000000	00000000	00000000	80000003	00000000	06820000	D900D9D6	*....'.....b..R.RO*		1B29B020
0040	00000000	00000000	1B29B000	40000000	006C9E88	00000000	00006208	00000000	*.....%..h.....*		1B29B040

[KTCB 1B29C000](#) KTCB TABLE ENTRY

0000	D2E3C3C2	40404040	00000000	1B256900	1C676B00	1B25E020	00000003	6D9B8E77	*KTCB	.....,\....._...*	1B29C000
0020	00000000	7D000000	00000000	00000000	80000003	00000000	36820000	D800D8D9	*....'.....b..Q.QR*		1B29C020
0040	00000000	00000000	1B29C000	40000000	006C9C58	00000000	00006128	1C68841C	*.....%...../...d.*		1B29C040



+X'50' (R530, R620, and R630) points to the MVS TCB

© IBM Corporation 2004

CICS Support Center

CLICS Environment - CLICS Dump (TCBs)

SUMM FORMAT TCBSUMMARY

Issue a F 'TCB: 006C9C58'

TCB: 006C9C58

```
+0000 RBP.... 006FD8A8 PIE..... 034CD408 DEB.... 00000000 TIO.... 006B5FE8 CMP..... 940C1000 TRN.... 00000000
+0018 MSS.... 7F775478 PKF..... 80          FLGS... 01020000 00          LMP..... FF          DSP.... FF
+0024 LLS.... 006A9218 JLB..... 006FFDA8 JPQ.... 00000000
```

Register values

0-3 7F6E2000 1B080C40 037F6A84 037F6444

4-7 7F6E5000 00000000 037F58B8 037F6A84

8-11 00000001 00027000 00000001 00000000

12-15 097F7780 037F5AB8 001A8000 00000000

+0070 FSA.... 00006128 TCB..... 006C96A8 TME.... 7F6F46D0 JSTCB.... 006DDE88 NTC.... 00000000 OTC.... 006C9E88

+0088 LTC.... 006A4C68 IQE..... 006C9C20 ECB.... 1B29C054 TSFLG.... 20 STPCT.. 00 TSLP... 00

+00D0 EXT2... 006C9DB0 AECB..... 00000000 XSB.... 7FFFC350 BACK..... 006C9E88 RTWA... 00000000 NSSP... 00000000

Registers when the QR TCB gave up control

EXT2: 006C9DB0

```
+0000 GTF.... 00000000 RSV..... 00          RCMP... 000000  EVENT... 00000000 RTMCT.... 00000129 TQE... 7F6F46D0
+0014 CAUF... 006DD188 PERCP.... 00000000 PERCT.. 00000000
```

ACTIVE RBS

PRB: 006C9B38

-0020 XSB..... 7F7A8840 FLAGS2... 80 RTPSW1... 079D0000 9D67BC7A RTPSW2... 00020001 006C8000

-0008 FLAGS1... 02000009 WLIC..... 000400DB

+0000 RSV..... 00000000 00000000 SZSTAB... 00110082 CDE..... 006DDBA8 OPSW..... 078D2000 9B208602

+0018 SQE..... 00000000 LINK..... 006C9C58

+0020 GPR0-3... FFFFFFFC 1B29C048 1B298FC8 9B150D0E

+0030 GPR4-7... 1B265020 9B151D0E 9B152D0E 00000000

+0040 GPR8-11.. 1B29C054 1B153AE8 1B29B000 1B256580

+0050 GPR12-15. 00000000 00006128 00000000 1B26552C

+0060 RSV..... C4C6C8D2 C5E3C3C2

Registers from the MVS attach process

EP..... DFHKETCB MAJOR.... DFHSIP

ENTPT.... 9B150D08 RRB..... 006DD648 USE..... 0000 SP..... FC

Reenterable. Reusable. AC(1).



CLICS Environment - CLICS Dump (TCBs)

SVRB: 006FD6B8

```
-0020 XSB..... 7FFFC160  FLAGS2... 00          RTPSW1... 00000000  00000000          RTPSW2... 00000000  00000000
-0008 FLAGS1.. 02000000  WLIC..... 00020033
+0000 RSV..... 00000000  00000000          SZSTAB... 001ED022  CDE..... 00000000  OPSW..... 070C1000  A41BE988
+0018 Q..... 00000000  LINK..... 006C9B38
+0020 GPR0-3.. 000000B8  1C690E60  1B2D97D8  9B206D68
+0030 GPR4-7.. 1C690D60  1B207D67  1B208D66  1C6901F8  Registers when SVC DB (219) was issued
+0040 GPR8-11. 1B2D97D8  1C690EEC  00000001  1C690543
+0050 GPR12-15 0005B680  1C690D60  006F9008  00000000
+0060 RBEXSAVE 00000000  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
+008C          00000000  RBSCBB...006FD388 241BE2C0 12000000 836FD6B8 0400DB00 RBSXPTR..006FD778 RBFEPARM.7F787000
+00AC          000006F0  A41A2172 241A3171 241A4170 7F77C570 RBSCBX...00000000 00000000 00000000 006FD760
```

SVRB: 006FD8A8

```
-0020 XSB..... 7FFFC350  FLAGS2... 80          RTPSW1... 00000000  00000000          RTPSW2... 00000000  7F82A000
-0008 FLAGS1.. 02000009  WLIC..... 0002003C
+0000 RSV..... 00000000  00000000          SZSTAB... 001ED022  CDE..... 00000000  OPSW..... 070C4000  897F3308
+0018 Q..... 00000000  LINK..... 006FD6B8
+0020 GPR0-3.. 000006F0  7F787240  7F7872C0  006F9008
+0030 GPR4-7.. 006C9C58  006FD6B8  A41BDF92  00F70B80  Registers when SVC 33 was issued
+0040 GPR8-11. 1C690E60  00000080  00FD4980  00000000
+0050 GPR12-15 00000004  7F787000  A41BE230  00000000
+0060 RBEXSAVE 00000000  00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
+008C          00000000  RBSCBB...00000000 00000000 15000000 836FD8A8 2400DB00 RBSXPTR..006FD968 RBFEPARM.00000000
+00AC          00000000  00000000 00000000 00000000 00000000 00000000 RBSCBX...00000000 00000000 00000000 006FD8A8
```

verbx dfhpd630 'KE=3' (Kernel TAS Summary)

===KE: Kernel Domain KE_TASK Summary

KE_NUM	KE_TASK	STATUS	TCA_ADDR	TRAN_#	TRANSID	DS_TASK	KE_KTCB	ERROR
0001	1B256C80	KTCB Step	00000000			00000000	1B299000	
0002	1B256900	KTCB QR	00000000			1BD03030	1B29C000	
0003	1B256580	KTCB RO	00000000			1BD03148	1B29B000	
0004	1B256200	KTCB FO	00000000			1BD03260	1B29A000	
0005	1B273C80	Not Running	00000000			1BC9B080	1B29B000	
0006	1B273900	Not Running	1BDB9680	00019	CSHQ	24150380	1B29C000	
0007	1B273580	KTCB SL	00000000			1BD03378	1BCD0000	
0008	1B273200	Not Running	00000000			1BC9B500	1B29C000	
0009	1B290C80	KTCB SO	00000000			1BD03490	1BCD1000	
000A	1BDFD080	Unused						
000B	1BDFD400	Unused						
000C	1C693780	Unused						
000E	1C693400	Not Running	0005C680	00006	CSSY	1BCC0B00	1B29C000	
0011	1BDFD780	Unused						
0012	1BDFDB00	Unused						
0014	1C61F080	Unused						
0015	1C693B00	Not Running	1BDB9080	TCP	CSTP	24107680	1B29C000	
0016	1BC8D900	Not Running	0005C080	00005	CSSY	1BCC0200	1B29C000	
0017	1C61F400	Unused						
0018	1C61F780	Unused						
001C	24116900	Not Running	00000000			1BC9B800	1B29C000	
001E	1C61FB00	Unused						
0020	24133900	Not Running	1BDB8680	00003	CSOL	1BC9B380	1BCD0000	
.								
0037	1C676780	Not Running	0005B080	00066	ZT01	1BCEA380	1B29C000	
0038	1C676B00	***Running**	0005B680	00046	ZT01	1BCEA080	1B29C000	*YES*
0039	1C693080	Not Running	0005E080	00074	ZT01	1BCEA200	1B29C000	
003F	1C6FD400	Not Running	1BD8A080	00020	CSNE	1BC9B200	1B29C000	

verbx dfhpd630 'KE=3' (Stack entries for KE 0038)

KE_NUM	@STACK	LEN	TYPE	ADDRESS	LINK	REG	OFFS	ERROR	NAME
0038	1C68C020	0130	Bot	9B101600	9B1018A4	02A4			DFHKETA
0038	1C68C150	0310	Dom	9B117410	9B117520	0110			DFHDSKE
0038	1C68C460	04D0	Dom	9B13AA50	9B13B8EA	0E9A			DFHXMTA
0038	1C68C930	05F0	Dom	9BF80698	9BF81678	0FE0			DFHPGPG
			Int	+01EE	9BF80734	009C			INITIAL_LINK
0038	1C68CF20	0BC0	Dom	9C0A9C10	9C0A6678	0000			DFHAPLI1
			Int	+2C6E	9C0AA610	0A00			LE370_INTERFACE
			Int	+2A56	9C0ADB3E	3F2E			INVOKE_FOR_RECURSION
0038	1C68DAE0	0CB0	Lifo	1C0A6530	9C0A77D0	12A0			DFHEPC
0038	1C68E790	06C0	Dom	9BF754B0	9BF767B4	1304			DFHPGLE
			Int	+0446	9BF7557A	00CA			LINK_EXEC
0038	1C68EE50	0BC0	Dom	9C0A9C10	9BD8BE4E	0000	*YES*		DFHAPLI1
			Int	+2C6E	9C0AA610	0A00			LE370_INTERFACE
			Int	+2A56	9C0ADB3E	3F2E			INVOKE_FOR_RECURSION
0038	1C68FA10	03C0	Sub	9BD8A138	9BD8AFA0	0E68			DFHSRP
0038	1C68FDD0	0F90	Dom	9B17A528	9B17DE9A	3972			DFHMEME
			Int	+2EE8	9B17A6AA	0182			SEND
			Int	+153C	9B17D4FE	2FD6			CONTINUE_SEND
			Int	+389A	9B17BAFE	15D6			TAKE_A_DUMP_FOR_CALLER
0038	1C690D60	04F0	Dom	9B206D68	9B2078E4	0B7C			DFHDUDU
			Int	+0A1E	9B206E5C	00F4			SYSTEM_DUMP
			Int	+1742	9B207BB4	0E4C			TAKE_SYSTEM_DUMP

verbx dfhpd630 'KE=3' (Kernel error data)

=KE: Error Number: 0000000E
Issue F 'NUMBER:' to locate the first entry or F 'NUMBER:' last --- to locate the last entry.
KERRD 1C676CD8 KERNEL ERROR DATA
0000 F0C3F161 C1D2C5C1 018400C1 0000FFFF C4C6C8C1 D7D3C9F1 1C0A9C10 1BCEA080 *0C1/AKEA.d.A..DFHAPLI1.* 1C676CD8

CICS Error Data (RB level PSW and REGS) PSW

0020	0005B680	1C676B00	<u>0000000E</u>	00000001	FF950001	00000000	<u>079D0000</u>	<u>9D67BC7A</u>	*.....,*	1C676CF8
0040	<u>00020001</u>	<u>006C8000</u>	9D67BC7A	<u>9</u> 0000000						
	<u>REGS 0-15</u> —————▶				00F84B3E	1C846088	00000000	FFFFFFFF	*.....%.....d-h.....*	1C676D18
0060	000000B4	1C8159CC	00200480	FFFFFFFF	1D62FDD5	00000000	1D67CB07	1D67BB08	*.....a....N.....*	1C676D38
0080	1C80FA40	1C846680	1C845F00	1D67BB08	80A8CC28	00000000	00000001	00000000	*... .d...d.....*	1C676D58
00A0	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	*.....*	1C676D78

System Error Data (PSW and REGS) PSW

00C0	00000000	00000000	00000000	00000000	FF950001	00000000	<u>079D0000</u>	<u>9D67BC7A</u>	*.....,*	1C676D98
00E0	<u>00020001</u>	<u>006C8000</u>	9D67BC7A	90000000						
	<u>REGS 0-15</u> —————▶				00F84B3E	1C846088	00000000	FFFFFFFF	*.....%.....d-h.....*	1C676DB8
0100	000000B4	1C8159CC	00200480	FFFFFFFF	1D62FDD5	00000000	1D67CB07	1D67BB08	*.....a....N.....*	1C676DD8
0120	1C80FA40	1C846680	1C845F00	1D67BB08	80A8CC28	00000000	00000001	00000000	*... .d...d...y.....*	1C676DF8
0140	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	*.....*	1C676E18
0160	00000000	00000000	00000000	00000000	BB0F02EF	68C4C180	49318CEC	A0000000	*.....DA.....*	1C676E38
0180	4E000000	02557680	4E000000	0002595C	00000000	00000000	41F96848	00000001	*+.....9.....*	1C676E58
01A0	00020003	80000000							*.....*	1C676E78

Error Code: 0C1/AKEA Error Type: PROGRAM_CHECK Timestamp: BB0F02EF68C4C180

Date (GMT) : 12/04/04 Time (GMT) : 14:52:50.366540
Date (LOCAL) : 12/04/04 Time (LOCAL) : 10:52:50.366540

KE_NUM: 0038 KE_TASK: 1C676B00 TCA_ADDR: 0005B680 DS_TASK: 1BCEA080

Error happened in program -noheda- at offset 0007BC7A

Error happened under the CICS RB.
CICS Registers and PSW.



verbx dfhpd630 'KE=3' notes

Task 46 has abended 0C9. There are a number of domains which have knowledge of task 46, but the kernel is always a good place to begin. The summary information indicates task 46 was running at the point of the abend. It's associated with kernel tas entry 0038 and the transaction ID is ZT01.

Issuing a find for '0038' positions the cursor at the same line, issue a repeat find to locate the kernel stack entries for kernel tas 0038 (note there may be additional hits before the stack entries are reached).

```
0038  1C68EE50 0BC0 Dom  9C0A9C10 9BD8BE4E 0000 *YES* DFHAPLI1
                                Int    +2C6E 9C0AA610 0A00      LE370_INTERFACE
                                Int    +2A56 9C0ADB3E 3F2E      INVOKE_FOR_RECURSION
0038  1C68FA10 03C0 Sub  9BD8A138 9BD8AFA0 0E68      DFHSRP
0038  1C68FDD0 0F90 Dom  9B17A528 9B17DE9A 3972      DFHMEME
```

Kernel stack entries are used for internal CICS modules, they're a combination register save area and working storage for the module. When control passes to another CICS module, a new stack entry is built and the registers are saved 14-D starting at offset x'C' into the stack of the module making the call.

In the case of tas 0038, the stack labeled in error is for module DFHAPLI1. DFHAPLI1 is the module which causes the user application to be given control, it indicates control has been given to the user application program.

Examine the kernel error data -- there are a number of methods which can be used to locate the kernel error entries. I like to issue a 'f number:' command. The fact error number: 0000000E was found indicates there have been 13 (x'D') other errors during this run of CICS.

verbx dfhpd630 'KE=3' notes

The kernel error entry contains the kernel number and TCA address under which the error happened. In this case it was KE number 0038 with a TCA at 0005B680. It's also helpful to cross check the DS_TASK: 1BCEA080 using the dispatcher domain summary (DS=1).

KERRD 1C676CD8 KERNEL ERROR DATA

0000	F0C3F161	C1D2C5C1	018400C1	0000FFFF	C4C6C8C1	D7D3C9F1	1C0A9C10	1BCEA080	*0C1/AKEA.d.A..DFHAPLI1.*	1C676CD8
0020	0005B680	1C676B00	0000000E	00000001	FF950001	00000000	079D0000	9D67BC7A	*.....,.....*	1C676CF8
0040	00020001	006C8000	9D67BC7A	90000000	00F84B3E	1C846088	00000000	FFFFFFFF	*.....%.....d-h.....*	1C676D18
0060	000000B4	1C8159CC	00200480	FFFFFFFF	1D62FDD5	00000000	1D67CB07	1D67BB08	*.....a.....N.....*	1C676D38
0080	1C80FA40	1C846680	1C845F00	1D67BB08	80A8CC28	00000000	00000001	00000000	*... .d...d.....*	1C676D58
00A0	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	*.....*	1C676D78
00C0	00000000	00000000	00000000	00000000	FF950001	00000000	079D0000	9D67BC7A	*.....*	1C676D98
00E0	00020001	006C8000	9D67BC7A	90000000	00F84B3E	1C846088	00000000	FFFFFFFF	*.....%.....d-h.....*	1C676DB8
0100	000000B4	1C8159CC	00200480	FFFFFFFF	1D62FDD5	00000000	1D67CB07	1D67BB08	*.....a.....N.....*	1C676DD8
0120	1C80FA40	1C846680	1C845F00	1D67BB08	80A8CC28	00000000	00000001	00000000	*... .d...d...y.....*	1C676DF8
0140	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	*.....*	1C676E18
0160	00000000	00000000	00000000	00000000	BB0F02EF	68C4C180	49318CEC	A0000000	*.....DA.....*	1C676E38
0180	4E000000	02557680	4E000000	0002595C	00000000	00000000	41F96848	00000001	*+.....9.....*	1C676E58
01A0	00020003	80000000								

The kernel error data is mapped by DSECT KERRD, which is found in the CICS Data Areas. The KERRD is a copy of the SDWA (System Diagnostic Work Area) passed by MVS at the time of the error.

It's extremely important to understand there are two (2) sets of PSWs and registers.

The first PSW at offset x'38' (the registers start at offset x'50' are stored 0-15) reflects the environment under the CICS RB. The second PSW (offset x'D8') and registers (starting at offset x'F0') describe the environment outside of CICS -- this is commonly referred to as the MVS PSW and registers.

If the 2 PSWs are not the same ALWAYS use the MVS PSW and registers (the second set). In the case where the two are different the problem happened in an MVS function or service, for example VSAM, MVS VSM, or Logger, etc. Often times the error may happen asynchronously while the CICS RB is in a wait (SVC 1).

In the example shown the PSWs match so we know the error happened under the CICS RB.



verbx dfhpd630 'KE=3' (Kernel error data) -- PSW and REGs

PSW: 079D0000 9D67BC7A Instruction Length: 2 Interrupt Code: 01 Exception Address: 006C8000

Execution key at Program Check/Abend: 9

Storage protection is active

Space at Program Check/Abend: Subspace

Transaction Isolation is active

REGISTERS 0-15

REGS 1C676D28

0000 00F84B3E 1C846088 00000000 FFFFFFFF 000000B4 1C8159CC 00200480 FFFFFFFF *.8...d-h....a.....* 1C676D28
0020 1D62FDD5 00000000 1D67CB07 1D67BB08 1C80FA40 1C846680 1C845F00 1D67BB08 *...N..... .d...d~...* 1C676D48

Data at PSW: 9D67BC7A Module: -noheda- Offset: 0007BC7A

PSWDATA 1D600000

00000 F5F6F5F5 60D4F1F8 40C48582 A48740E3 96969340 86969940 A961D6E2 40F5F6F5 *5655-M18 Debug Tool z/OS 565* 1D600000
00020 F560D4F1 F940C485 82A48740 E3969693 40E4A389 9389A389 85A24081 958440C1 *5-M19 Debug Tool Utilities A* 1D600020
00040 84A58195 83858440 40404040 40404040 40C6A495 83A38996 95A24086 969940A9 *dvanced Functions for z* 1D600040
00060 61D6E240 4DC35D40 C3D6D7E8 D9C9C7C8 E340C9C2 D440C3D6 D9D74B40 F1F9F9F2 */OS COPYRIGHT IBM CORP. 1992* 1D600060
00080 6B40F2F0 F0F440C1 D3D340D9 C9C7C8E3 E240D9C5 E2C5D9E5 C5C44B40 E4E240C7 *2004 ALL RIGHTS RESERVED USG* 1D600080

7BAC0 F0F0F0F0 10CEB000 1D67BAE0 00000000 00000000 0008C5D8 C1F0F0D9 C5C70000 *0000...\.....EQA00REG..* 1D67BAC0
7BAE0 06000001 00000000 00000000 00000014 1D67ACB8 F2F0F0F4 F0F3F2F7 F0F4F4F2 *.....200403270442* 1D67BAE0
7BB00 F0F0F0F1 F0F8F0F0 47F0F014 00C3C5C5 000002B0 00001588 47F0F001 90ECD00C *00010800.00..CEE...h.00...}* 1D67BB00
7BB20 18BF41A0 BFFF5800 A1195810 D04C1E01 5500C00C 47D0B038 58F0C2BC 05EF181F *.....}<....{...}...0B.....* 1D67BB20
7BB40 5000104C D7011000 100050D0 10045010 D00818D1 05E012EE 47B0B0A6 5810C2F4 *<P...}&...}..J.\.....w..B4* 1D67BB40
7BB60 BF1F1010 4780B0A6 BFEF1008 47D0B0A6 98E1E030 87F0B074 41F0E060 50F0E034 *.....}.wq.\.g0...0\-&0\.* 1D67BB60
7BB80 D207F000 A23958E0 D004D203 F008E044 50E0F00C D207F010 E00C5810 E0185010 *K.0.}.K.0.\.&\0.K.0.\... \.&.* 1D67BB80
7BBA0 F0185810 10005810 10005010 F01C181D 58D01004 18FD18D1 50F0D004 50D0F008 *0....&.0....}.....J&0}.&}0.* 1D67BBA0
7BBC0 98F1F010 D203D080 10001F33 06301873 5850D080 58205000 18925840 C2F45860 *q10.K.}.....&}...&..k. B4.-* 1D67BBC0
7BBE0 40109140 61FE4780 B164D207 D100A129 4180D148 5080D108 58F0661C 4110D100 * .j /...J.....J.&.J..0....J.* 1D67BBE0
7BC00 05EF5820 D1485840 C2F45860 40109180 61FE4770 B1266000 20006020 20106040 *....J.. B4.- .j./.-...-...- * 1D67BC00
7BC20 20206060 20305850 D08047F0 B1445800 A2014110 A1A15010 D1004140 D1485040 *..-...&}..0.....&.J.. J.& * 1D67BC20
7BC40 D10458F0 67EC4110 D10005EF 5840C2F4 58604010 5840602C 5880D148 50408080 *J..0....J.... B4.--...J.& ..* 1D67BC40
7BC60 5020602C 94BF61FE 58205000 910262D5 4770B75A 00D100B4 00000000 00000000 *&.-.m./...&.j..N...!..J.....* 1D67BC60
7BC80 00B81928 4770B226 19244770 B1984040 6174D203 D0F4A131 4DE0BAA2 47F0B2D2 *.....q /.K.}4..(\.s.0.K* 1D67BC80



verbx dfhpd630 'KE=3' (Kernel error data) -- PSW and REGs)....

Data at Registers

REG 0 00F84B3E

31-bit data follows:

REGDATA 00F84B3E

```
-0080  00000000 00000000 00000000 00000000  00000000 00000000 00000000 00000000  *.....*      00F84ABE
-0060  -      00FF LINES SAME AS ABOVE                                00F84ADE
```

24-bit data the same.

REG 1 1C846088

31-bit data follows:

REGDATA 1C846088

```
-0080  1C80FA40 00000000 9D62D9C8 1D60D508  000C4B03 1C846088 00000000 00200480  *. . . . .RH.-N. . . . .*      1C846008
-0060  1C8159CC 00200480 1D631DD3 1D630DD4  1D62FDD5 1D62EDD6 1D62DDD7 1D62CDD8  *.a. . . . .L. . . . .P. . . .Q*  1C846028
-0040  1C80FA40 9D62E0D6 1C825EF8 012C004B  1C815910 1C80E5B8 9D6852A8 1D685018  *. . . . .\O.b;8. . . . .y. . .&.*  1C846048
-0020  00640019 1D685280 1C815B00 1C825F74  1C825F04 1C825F3C 00200480 1C8159A4  *. . . . .a$. .b. . . . .a.u*      1C846068

0000  1C8159CC 1D6317DC 1C8159CC 1C8159E4  1C80FA40 1C825F3C 1C825F04 1C825F74  *.a. . . . .a. . . . .b. . . .b.*  1C846088
0020  1C815B00 9D6868EE 1C827798 00000002  00000001 00000001 00200480 1C8289C8  *.a$. . . . .b.q. . . . .biH*      1C8460A8
0040  1C825F04 1C8280CB 1D688015 1D687016  1D686017 1D685018 1C80FA40 1C846148  *.b. . . .b. . . . . .d/. . . .*  1C8460C8
0060  1C846218 1C846144 1C846218 1D68836C  1D68834C 1C846188 1CAB0E90 1CACEE40  *.d. . . .d/. .d. . . .c. . . . .*  1C8460E8
0080  1C80FA40 14151617 18191A1B 1C1D1E1F  1C828D90 24252627 1C8113CC 1C856898  *. . . . .b. . . . .a. . . .e.q*  1C846108
00A0  00000000 00000004 38393A3B 00000009  00000000 44454647 9D257290 00000001  *. . . . . . . . . . . . . . . .*  1C846128
00C0  1C8289E6 54555657 58595A5B 1C828A20  60616263 64656667 68696A6B 6C6D6E6F *.biW. . . . .!$.b. . . .-/%_>?*  1C846148
00E0  70717273 74757677 00000000 7C7D7E7F  1D62C758 1C825EFC 1C825F04 1D501DF8  *. .@'=" . .G. .b; . .b. . .&.8*  1C846168
```



verbx dfhpd630 'KE=3' notes

PSW: [079D0000 9D67BC7A](#) Instruction Length: 2 Interrupt Code: 01 Exception Address: 006C8000
Execution key at Program Check/Abend: [9](#)
Space at Program Check/Abend: [Subspace](#)

CICS will also provide important information about the environment taken from the SDWA. In this case the program was executing in key 9 and a unique subspace is used for task lifetime storage.

When STGPROT=YES is specified in the SIT and the program is defined with EXECKey(USER) the program is given control in key 9.

When TRANISO(yes) is specified in the SIT and the transaction is defined with ISOLATE(YES), the transaction's user-key task lifetime storage is protected from both reading and writing by the user-key programs of other transactions which are defined with EXECKEY(USER). The storage is allocated within a unique subspace.

Storage around the PSW and each register is formatted.

However, it must be remembered this is the storage at the time the dump is formatted. If the program check happened 2 hours before the dump was taken, the probability is very high the storage printed around each register does not represent the way it was at the point of failure.

verbx dfhpd630 'LD=3'

==LD: PROGRAM REPERTOIRE

PGM NAME	USE	CNT.	USERS	LOADS	COPIES	LENGTH	USE	TYP	ATTRIBUTE	EXEC	R/A	MODE	DEFINITION	DATE/TIME	CPE	ADDR	STATUS
KEY OVERRIDE																	
AABBCC	0		0	0	0	00000000	APP	RPL	REUSABLE	USER	-	-	12/04/04	14:43:05	1C7750E8	UNUSED	
ABC1	0		0	0	0	00000000	APP	RPL	REUSABLE	USER	-	-	12/04/04	14:43:07	1C7BF258	UNUSED	
ASMAEND	0		0	0	0	00000000	APP	RPL	REUSABLE	USER	-	-	12/04/04	14:43:05	1C705C68	UNUSED	
CEEEVDBG	2		2	1	1	00113458	APP	RPL	REUSABLE	USER	-	-	12/04/04	14:43:07	1C7AE6A8	LOADED	
CEEEV003	1		1	1	1	003246E8	APP	RPL	REUSABLE	USER	-	-	12/04/04	14:43:08	1CA283C8	LOADED	
CEEEV005	1		1	1	1	00004390	APP	RPL	REUSABLE	USER	-	-	12/04/04	14:43:08	1CA28480	LOADED	
CEEEV006	3		1	1	1	00004B10	APP	RPL	REUSABLE	USER	-	-	12/04/04	14:43:07	1C7AE760	LOADED	
CEEEV010	1		1	1	1	00039758	APP	RPL	REUSABLE	USER	-	-	12/04/04	14:43:08	1CA28538	LOADED	
CEEEV011	1		1	1	1	00157150	APP	RPL	REUSABLE	USER	-	-	12/04/04	14:43:08	1CA285F0	LOADED	
CEEFMDA	0		0	0	0	00000000	APP	RPL	REUSABLE	USER	-	-	12/04/04	14:43:08	1CA286A8	UNUSED	

==LD: PROGRAM STORAGE MAP

PGM NAME	ENTRY	PT	CSECT	LOAD	PT.	REL.	PTF	LVL.	LAST COMPILED	COPY	NO.	USERS	LOCN	TYP	ATTRIBUTE	R/A	MODE	APE	ADDR
OVERRIDE																			
ZTEST01	00047000	-noheda-	00047000							2		3	CDSA	RPL	REUSABLE	-	-	1C6EB030	
DFHCSA	8004EF70	DFHKELCL	0004E000	630		HCI6300	07/02/03	10.18		1		1	CDSA	RPL	RESIDENT	-	-	1BD19F10	
		-noheda-	0004E3F8																
		DFHKELRT	0004E400	630		HCI6300	07/02/03	10.19											
		-noheda-	0004E6F8																
		DFHCSAOF	0004E700	0630		HCI6300	I	02/07	13.48										
		DFHCSA	0004ED28	0630		HCI6300	I	02/07	13.48										
		DFHKERCD	0004F220	630		HCI6300	07/02/03	10.19											
DFHCCNV	9D300028	DFHYA630	1D300000	630						1		0	ERDSA	RPL	RESIDENT	-	-	1C6F91C8	
		DFHCCNV	1D3000B8	0630		HCI6300	I	02/07	09.36										
ZTESTCOB	9D500000	-noheda-	1D500000							2		3	ESDSA	RPL	REUSABLE	-	-	1C6EB1C8	
ZTESTLK1	9D501950	-noheda-	1D501950							1		3	ESDSA	RPL	REUSABLE	-	-	1C6EB3E8	
CEEEVDBG	9D600140	-noheda-	1D600000							1		2	ERDSA	RPL	REUSABLE	-	-	1C6EB718	
EQA50CTL	9D7135A0	-noheda-	1D713460							1		2	ERDSA	RPL	REUSABLE	-	-	1C6EBBE0	
EQA14SYC	9D73DB50	-noheda-	1D73DA10							1		2	ERDSA	RPL	REUSABLE	-	-	1C6CE030	

verbx dfhpd630 'LD=3' notes

The loader domain is responsible for loading and tracking all program usage, including exit modules.

The Program repertoire is a listing of all programs known to the loader at the point the dump was taken. It contains information showing the count, number of users, number of times the program has been loaded, when it was defined to CICS and the program attributes.

The program storage map is a sequential by storage address listing of all programs managed by the loader domain in the CICS address space. Information in the kernel error data gives the failing PSW address as [9D67BC7A](#).

Also notice in the kernel error data the statement "[Error happened in program -noheda- at offset 0007BC7A](#)"

Subtracting 7BC7A from the PSW address of 9D67BC7A provides the address of the start of the program - 9D600000.

In the loader domain program storage map, CEEEVDBG resides at 1D600000 and has an entry point at offset +x'140'. It resides in the ERDSA, there is one copy of the module which currently has a use count of 2.

==LD: PROGRAM STORAGE MAP

PGM NAME	ENTRY PT	CSECT	LOAD PT.	REL.	PTF	LVL.	LAST COMPILED	COPY NO.	USERS	LOCN	TYP	ATTRIBUTE	R/A	MODE	APE	ADDR
													OVERRIDE			
DFHCCNV	9D300028	DFHYA630	1D300000	630				1	0	ERDSA	RPL	RESIDENT	-	-	1C6F91C8	
		DFHCCNV	1D3000B8	0630	HCI6300	I	02/07 09.36									
ZTESTCOB	9D500000	-noheda-	1D500000					2	3	ESDSA	RPL	REUSABLE	-	-	1C6EB1C8	
ZTESTLK1	9D501950	-noheda-	1D501950					1	3	ESDSA	RPL	REUSABLE	-	-	1C6EB3E8	
CEEEVDBG	9D600140	-noheda-	1D600000					1	2	ERDSA	RPL	REUSABLE	-	-	1C6EB718	
EQA50CTL	9D7135A0	-noheda-	1D713460					1	2	ERDSA	RPL	REUSABLE	-	-	1C6EBBE0	
EQA14SYC	9D73DB50	-noheda-	1D73DA10					1	2	ERDSA	RPL	REUSABLE	-	-	1C6CE030	

MTRACE

VERBX MTRACE

*** MASTER TRACE TABLE ***

```
0001 06BF520 N D1A0000 SA07 2004103 10:50:07.56 JOB04339 000010 +DFHTR0113 S07CICPG Auxiliary trace is being started on
data set DFHAUXT.
0001 06BF520 N D1A0000 SA07 2004103 10:50:10.82 JOB04339 000010 +DFHTR0117 S07CICPG Auxiliary trace on data set DFHAUXT
has been stopped.

0001 06D6B34 E                                001 000001 800200000000000000000000000000000000
000051000F000000040E2000000000
0001 06BF520 M 5040000 SA07 2004103 10:52:00.31 STC04117 000001 IOS000I 352A,49,WRI,05,0200,,00000006,SMS006,IASECUR,
002
0001 06BF520 M 5040000 SA07 2004103 10:52:01.20 STC04117 000001 IOS000I 3100,39,WRI,05,0200,,00000001,ADT000,IASECUR,
019
0001 06D6B34 E                                019 000001 800200000000000000000000000000000000
000031000F000000040E2000000000
0001 06BF520 N D1A0000 SA07 2004103 10:52:50.36 JOB04339 000010 +DFHSR0001 S07CICPG An abend \(code 0C1/AKEA\) has
occurred at offset X'FFFFFFFF' in program ZTESTLK1.
0001 06D6B34 M D1A0000 SA07 2004103 10:52:50.36 JOB04339 000010 +DFHME0116 S07CICPG 021
0001 06D8B30 D                                021 000010 (Module:DFHMEME) CICS symptom string for message
DFHSR0001 is
0001 06D8B90 D                                021 000010 PIDS/5697E9300 LVLS/630 MS/DFHSR0001 RIDS/DFHSRP
PTFS/HCI6300
0001 06D94EC E                                021 000010 AB/S00C1 AB/UAKEA RIDS/ZTESTLK1 ADRS/FFFFFFFF
0001 06DB4E8 N FFFF000 SA07 2004103 10:52:50.37 JOB04339 000010 +DFHDU0201 S07CICPG ABOUT TO TAKE SDUMP. DUMPCODE:
SR0001 , DUMPID: 1/0002
***** END OF DATA *****
```



VERBX SYSTRACE TIME (LOCAL) '
<----- Format the MVS trace table

----- SYSTEM TRACE TABLE -----														
PR	ASID	TCB-ADDR	IDENT	CD/D	PSW-----	ADDRESS-	UNIQUE-1	UNIQUE-2	UNIQUE-3	PSACLHS-	PSALOCAL	PASD	SASD	TIMESTAMP-LOCAL
							UNIQUE-4	UNIQUE-5	UNIQUE-6	PSACLHSE				DATE-06/10/94
02	0001	00000000	SIGA	00FE	00 01	195E9E00	00010002	80000000	00000200					10:52:50.361958
							00FCC298							
00	0046	006C9C58	DSP		079D0000	80A2D596	00000000	00F84B3E	1C846088	00000000	00000000	0046	0046	10:52:50.364577
00	0046	006C9C58	<u>*PGM</u>	<u>001</u>	<u>079D0000</u>	<u>9D67BC7A</u>	00020001	006C8000		00000000	00000000	0046	0046	10:52:50.364618
										00000000				
00	0046	03408BC8	SRB		070C0000	81392598	00000046	034CD620	034CD410	00		0046	0046	10:52:50.364628
							006C9C58	A0						
00	0046	00000000	SSRV	12D		8139290C	006C9C58	000B8000	00000000					10:52:50.364632
							00000000							
00	0046	006C9C58	DSP		040C0000	81392954	00000000	00F84B3E	1C846088	00000000	00000000	0046	0046	10:52:50.364639
00	0046	006C9C58	*RCVY	PROG			940C1000	00000001	00000000	00000000	00000000	0046	0046	10:52:50.364706
										00000000				
00	0046	006C9C58	SSRV	12D		814C7AE8	006C9C58	000C8000	FF3A0000					10:52:50.364740
							00000000							
00	0046	006C9C58	SSRV	12D		814C7B04	006C9C58	000B8000	00000000					10:52:50.364745
							00000000							
00	0046	006C9C58	DSP		079D0000	8105DB52	00000000	00F84B3E	1C846088	00000000	00000000	0046	0046	10:52:50.364753
00	0046	006C9C58	EMS		079D0000	8105DB52	00021201	40800000	00FAEB20	00000000	00000000	0046	0046	10:52:50.364767
							812EAA4A			00000000				
00	0046	006C9C58	SVC	D	079D0000	8105DB54	1D67BB08	00F84B3E	1C846088					10:52:50.364773
00	0046	006C9C58	SSRV	78		899074AE	0000FF50	000000C8	006A4AF8					10:52:50.364790
00	0046	006C9C58	SSRV	78		899074E4	0000FF70	00001210	7F66DDF0					10:52:50.364832
							00460000							
00	0046	006C9C58	BSG	...	00000000	099082FC								
00	0046	006C9C58	SSRV	78		813A38B2	0000E540	00000138	7F6F6EC8					10:52:50.364917
							00460000							
00	0046	006C9C58	PC	...	0	013A3A64		00506						
00	0046	006C9C58	SSRV	78		9B105BAE	0000FF70	000001C0	7F897BE8					10:52:50.364933
							00040000							
00	0046	006C9C58	SSRV	78		9B105FBA	1000E574	00031000	7F83E000					10:52:50.364962
							00040000							



CICS Dump - KE Error Data (R620)

VERBX CICS620 'KE=3'

Issue F 'NUMBER:' to locate the first entry or F 'NUMBER:' last --- to locate the last entry.

=KE: Error Number: 00000001

KERRD 1BD47D30 KERNEL ERROR DATA

0000 F4F2F261 C1D2C5C2 02340422 0000FFFF C4C6C8C1 D7D3D1F1 1C388C30 1BF9E380 *422/AKEB..DFHAPLJ19T.* 1BD47D30

CICS Error Data (RB level PSW and REGS)

SDWA Reason Code (SDWACRC)

PSW

0020 0005B080 1C9FE400 00000001 000001A0 FF85002F 00000000 078D0400 BB899D64 *.U.e.i. . . * 1BD47D50

0040 0002002F 00F03701 BB899D64 80000000 04000000

REGS 0-15

0060 00000000 07D00000 00000020 00000002 04000000 3BAE11D4 3B428980 BB899CE0 *.M. . i.i. \ * 1BD47D70

0080 005489B8 3BAE1158 BC2BB418 00000000 3BB60D70 3BB61224 00000001 00000010 *. * 1BD47D90

00A0 00000000 00000000 00000000 00000000 00000000 00000000 00000000 *. . i. * 1BD47DB0

00C0 00000000 00000000 00000001 00000000 00000000 00000000 00000000 *. * 1BD47DD0

SYSTEM Error Data (PSW and REGS)

PSW

00E0 00000000 1D511400 9BD2795A 00000000 FF040000 00000000 070C4000 9BD2795A *.K. ! * 1BD47DF0

REGS 0-15

0100 7F69FE58 1CB95A40 7F688DC0 00000040 00000000 00000000 1CB95C7C 828D07E8 *. . .K. ! * @ b. . Y * 1BD47E10

0120 007A78E8 00FB95B8 9BD2795A 00FFAC4C 00FEE0D8 1C119800 00FCDE18 000010E0 *". " . { \ Q. . . . \ * 1BD47E30

0140 00000000 00000002 00000000 01FF0005 00000000 00000000 00000000 00000000 *. . . . K. ! . . . < * 1BD47E50

0160 00000000 00000000 00000000 00000000 00000000 00000002 00000002 00000000 *. * 1BD47E70

0180 4E800001 05E38DC9 4F080000 00000000 B71249F8 C3206400 483C4C5F 24000000 *.8C. * 1BD47E90

01A0 00000000 00000000 4E800000 00000063 00000000 00000000 00000000 *+.+ * 1BD47EB0

*. * 1BD47ED0

Error Code: 422/AKEB Error Type: ABEND

Timestamp: B71249F8C3206400

Date (GMT) : 21/01/02 Time (GMT) : 18:34:13.343750

Date (LOCAL) : 21/01/02 Time (LOCAL) : 19:34:13.343734

KE_NUM: 0050 KE_TASK: 1C9FE400 TCA_ADDR: 0005B080 DS_TASK: 1BF9E380

Program DFHAPLJ1 was in control, but the PSW was elsewhere.

Error did not happen under the CICS RB.

CICS and then MVS Registers and PSW follow.

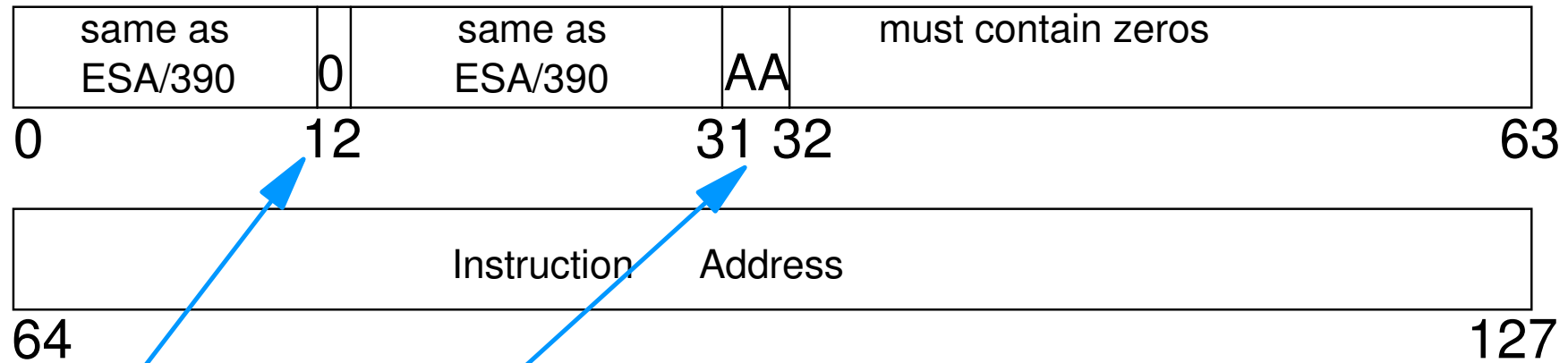


Support of z/Architecture

- **z/Architecture (64-bit)**
 - 128-bit PSW
 - 64-bit General Purpose Registers (GPRs)
 - 64-bit Control Registers (CRs)
 - 32-bit Access Registers (same as before)
 - 64-bit, 31-bit or 24-bit addressing mode
 - New instructions
 - 8K PSA
 - New format Dynamic Address Translation structures
 - New format Linkage Stack and PC Linkage structures
 - New System Trace Table entries
 - New format IDAWs (InDirect Address Word)
 - **Limitations with OS/390 R10 and z/OS R1.1**
 - Central storage limited to 128 GB (X'20_00000000')
 - Storage above 2GB is commonly described as '**Above the Bar**'
 - Support for 64-bit Real only
 - **z/OS R1.2 supports 64-bit virtual addressing**
 - **up to 16,000,000,000,000,000,000 bytes, or 16 exabytes.**
- **per address space**



z/Architecture Mode PSW



Bit 12 - EC Mode bit in ESA/390 Mode

Must be zero in z/Architecture Mode, else Specification Exception

Bits 31 and 32 - Addressing Mode

when 0 0 24-bit

0 1 31-bit

1 1 64-bit

1 0 Specification Exception (PGM 6)

Remapping the PSW

The 128-bit PSW is converted by MVS to a 64-bit, ESA/390 like PSW to be stored in control blocks

z/Architecture PSW

Amode 24

07850000 00000000 00000000 00065788

Amode 31

04041000 80000000 00000000 00FE5768

Dummy Wait

07060000 00000000 00000000 00000000

Amode 64

04045001 80000000 00000000 01685B28

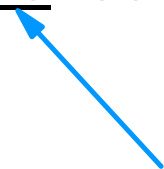
ESA/390 PSW

078D0000 00065788

040C1000 80FE5768

070E0000 00000000

040C5001 81685B28



In z/Architecture mode,

- LPSWE uses a 128-bit PSW operand
- LPSW uses a 64-bit ESA/390 PSW operand, but will accept bits 31/32 on (Amode 64) and will convert the 64-bit PSW to 128-bit

How do I know the machine is in 64 bit mode?

CBF CVT

CVT: 00FCF7B8

-0028	<u>PROD...</u>	<u>SP7.0.1</u>	<u>PRODI...</u>	<u>JBB7713</u>	VERID...		<u>MDL...</u>	<u>2064</u>	RELNO...	038
+0000	TCBP...	00000218	0EF00...	00FF1AE4	LINK...	00FD62F4	AUSCB...	00FCFDA0	BUF...	00000000
+0018	OVL00...	00FF5DCE	PCNVT...	00FDF370	PRLTV...	00FDF1A4	LLCB...	0171F958	LLTRM...	81126038
+0030	SYSAD...	01F6E300	BTERM...	00FDE5A8	DATE...	0101085F	MSLT...	00FCFDC8	ZDTAB...	00EAB000
+0048	0EF01...	00FF1B08	VSS.....	0000	VPSM...	0000	EXIT...	0A03	BRET...	07FE
+0058	TPC.....	00FCFEA0	ICPID...	0000	CVT...	40C3E5E3	CUCB...	00FD0FD0	QTE00...	00FEFC02
+0070	STB.....	00F4A828	DCB.....	9B	DCBA...	FD8508	SV76M...	00000000	IXAVL...	00FDB130
+0084	FBOSV...	813A6338	ODS.....	00FF19B8	ECVT...	016F9F50	DAIRX...	8695A000	MSER...	00FCFDC8
+009C	TVT.....	00B4E948	040ID...	00000000	MZ00...	7FFFFFFF	1EF00...	00000000	QOCR...	00000000
+00B4	SNCTR...	0000	OPTA....	A3	OPTB...	20	QCDSR...	00FEE2D8	QLPAQ...	00FD6330
+00C4	SMCA....	80F99300	ABEND...	00FD00D8	USER...	00000000	MDLDS...	00000000	QABST...	0A0D
+00D8	TSCE....	00000000	PATCH...	00FD01D0	RMS...	01126BD0	SPDME...	023B2F44	OSCR1...	00FDE7F8
+00ED	GTFA....	FD5F98	TCMFG...	00	AQAVB...	000000	SAF....	00F990F0	EXT1...	00FCFD08
+0105	PURGA...	000000	AMFF....	80000000	QMSG...	016ED3D0	DMSRF...	00	DMSRA...	DA7000
+0118	GXL.....	8112B8D0	REAL....	00026000	PTRV...	00FFA020	IHVP...	00000000	JESCT...	00FD02A8
+0134	MCHPR...	00000000	EORM....	7FFFFFFF	PTRV3..	00FFA020	LKRM...	81126C28	APFA...	FF629A
+014D	HJESA...	000000	RSTW2...	00000000	SNAME..	J90	GETL...	80C3DA48	LPDSR...	00FEE37C
+0168	DIRST...	80	LPDIR...	BFF000	RBCB...	023CAA00	SYLK...	00	SLID...	000000
+0179	FLAG2...	F8	<u>FLAG3...</u>	<u>80</u>	FLAG4..	00	RT03...	00FDF5F0	VLDWT...	00000000

CBF PSA9

PSA: 00000000

+0010	CVT....	00FCF7B8	CVT2.....	00FCF7B8	EPARM...	00000000	CPUAD...	0000	EICODE..	1004	SDATA..	00020001
+008C	<u>PDATA...</u>	<u>00060011</u>	PINFO....	00000000	MCNUM...	0000	PERCODE.	0000	PER.....	00000000	00000000	
+00A0	AID....	0C	PERAID...	00	OPACID..	00	<u>AMDID...</u>	<u>01</u>	MPL.....	01374708		
+00A8	TEID...	00000000	00002001		MONCODE.	00000000	00000000		SSID....	00010828	IOINTP.	00EE9028
+00C0	IOINTID	18000000	PCFETO...	00000000	FACLIST.	E0000000	MCIC....	00000000	00000000		MCICE..	00000000
+00F4	EDCODE.	00000000	FSA.....	00000000	00000000		<u>ROPSW...</u>	<u>00000000</u>	<u>00000000</u>	<u>00000000</u>	<u>00000000</u>	
+0130	<u>EOPSW..</u>	<u>47040000</u>	<u>80000000</u>	<u>00000000</u>	<u>00FF3D5E</u>		<u>SOPSW...</u>	<u>07851000</u>	<u>80000000</u>	<u>00000000</u>	<u>27110DF2</u>	
+0150	<u>POPSW..</u>	<u>47044000</u>	<u>80000000</u>	<u>00000000</u>	<u>06C98E9A</u>		<u>MOPSW...</u>	<u>0404C000</u>	<u>80000000</u>	<u>00000000</u>	<u>00FE5D4A</u>	
+0170	<u>IOPSW..</u>	<u>07060000</u>	<u>00000000</u>	<u>00000000</u>	<u>00000000</u>		<u>RNPSW...</u>	<u>04040000</u>	<u>80000000</u>	<u>00000000</u>	<u>01378810</u>	
+01B0	<u>ENPSW..</u>	<u>04040000</u>	<u>80000000</u>	<u>00000000</u>	<u>013662F0</u>		<u>SNPSW...</u>	<u>04040000</u>	<u>80000000</u>	<u>00000000</u>	<u>00FFEA80</u>	
+01D0	<u>PNPSW..</u>	<u>00000000</u>	<u>80000000</u>	<u>00000000</u>	<u>7EF667D0</u>		<u>MNPSW...</u>	<u>00000000</u>	<u>80000000</u>	<u>00000000</u>	<u>7EF67BC8</u>	



Dispatcher Summary R620

Verbx DFHPD620 'ds=1'

===DS: DISPATCHER DOMAIN - SUMMARY

DATA FOR TCB POOL CONTROLLED BY [MAXOPENTCBS](#)

MODES IN POOL ARE: L8		
MAX POOL SIZE =	30	AT POOL LIMIT = NO
NUMBER OF TASKS SUSPENDED AWAITING POOL TCBS =	0	
NUMBER OF TCBS IN POOL	CURRENT HIGH WATER	
IN EXISTENCE	3	3
ALLOCATED TO TASKS	3	3

DATA FOR TCB POOL CONTROLLED BY [MAXJVMTCBS](#)

MODES IN POOL ARE: J8		
MAX POOL SIZE =	15	AT POOL LIMIT = NO
NUMBER OF TASKS SUSPENDED AWAITING POOL TCBS =	0	
NUMBER OF TCBS IN POOL	CURRENT HIGH WATER	
IN EXISTENCE	1	1
ALLOCATED TO TASKS	1	1

DATA FOR TCB POOL CONTROLLED BY [MAXHPTCBS](#)

MODES IN POOL ARE: H8		
MAX POOL SIZE =	5	AT POOL LIMIT = NO
NUMBER OF TASKS SUSPENDED AWAITING POOL TCBS =	0	
NUMBER OF TCBS IN POOL	CURRENT HIGH WATER	
IN EXISTENCE	0	0
ALLOCATED TO TASKS	0	0

SUBTSKS	=	0
ICVTSD	=	500 = 00:00:00.500
ICV	=	3000 = 00:00:03.000
PRTYAGING (ms)	=	32768
MROBTCH	=	1



Dispatcher Summary R620 (page 2)

KEY FOR SUMMARY

T = TYPE OF TASK S=SYSTEM N=NON-SYSTEM
 S = STATE OF TASK D=DISPATCHABLE S=SUSPENDED R=RUNNING J=RUNNING IN JVM E=RESUMED EARLY
 F = PURGEABILITY FLAG P=PURGEABLE N=NOT PURGEABLE
 P = PURGE STATUS N=NO PURGE X=PURGED P=PURGE PENDING A=ABTERM PENDING
 TT = TIMEOUT TYPE IN=INTERVAL DD=DEADLOCK DELAYED DI=DEADLOCK IMMEDIATE
 W = WAIT/SUSPEND TYPE M=WAIT_MVS S=SUSPEND C=WAIT_OLDC W=WAIT_OLDW

DS_TOKEN	KE_TASK	T	S	F	P	TT	RESOURCE	RESORC_NAM	W	TIME OF	TIMEOUT	DTA	AD	ATTACHER	M	SUSPAREA	XM	TXN_TOKEN
							TYPE			SUSPEND	DUE	(DSTSK)		TOKEN				
00000001	1EB6AC80	S	S	N	N	-	ENF	NOTIFY	M	11:21:40.63	-	1ED55080	DM	1EE44950	RO	1EE44968		
00020003	1EB6A900	S	S	N	N	IN	SHSYSTEM		S	11:24:52.04	11:25:52.0	1ED55180	XM	1EE09340	QR	1ED568C0	1EE09340000023C	
00100003	1EDED80	S	S	N	N	-	SODOMAIN	SO_NOWORK	M	11:23:07.45	-	1ED55880	XM	1EE091B8	SL	1EE4C048	1EE091B80000003C	
00140003	1EDD0C80	S	S	N	N	IN	LGHARTBT	LG_MGRST	S	11:23:47.03	11:25:07.0	1ED55A80		D3C7C8C2	QR	1ED55A80		
001A0003	1EDED200	S	S	P	N	-	USERWAIT	CDB2TIME	M	11:21:51.52	-	1ED55D80	XM	1EE09030	QR	2B60896B	1EE090300000021C	
00800003	1F7D9780	S	S	N	N	-	ICEXPIRY	DFHAPTIX	S	11:21:52.96	-	1ED9D080	XM	1EE09650	QR	1ED56BC0	1EE096500000007C	
00820003	1ED48900	S	S	N	N	-	ICMIDNTE	DFHAPTIX	S	11:21:46.54	-	1ED9D180	XM	1EE094C8	QR	1ED9D180	1EE094C80000006C	
00880003	1F8FB080	S	S	N	N	-	TCP_NORM	DFHZDSP	W	11:24:55.22	-	1ED9D480	XM	1EE09960	QR	00058DD0	1EE099600000009C	
00900003	1F93B080	S	S	N	N	-	CSNC	MROQUEUE	M	11:21:49.25	-	1ED9D880	XM	1EE09C70	QR	1EE6603C	1EE09C700000020C	
009C0003	1EDB3200	S	S	N	N	-	ZC	DFHZNAC1	S	11:24:49.13	-	1ED9DE80	XM	1EE09AE8	QR	1ED9DE80	1EE09AE80000025C	
010C0003	1EB6A200	S	S	N	N	-	TIEXPIRY	DS_NUDGE	S	11:21:52.96	-	1EDFC680	TI	004D0003	QR	1ED567A0		
01140001	1EE4D080	S	S	N	N	IN	SMSYSTEM		S	11:21:40.65	11:26:40.6	1EDFCA80	SM	00000002	QR	1ED56860		
01160001	1EDFDC80	S	S	N	N	-	RRMSEXIT	NOTIFICATN	M	11:21:40.80	-	1EDFCB80		1EFD8CF8	QR	1EE590D0		
01180001	1EE4D400	S	S	N	N	-	RRMSEXIT	RESYNC	M	11:21:40.80	-	1EDFCC80		1EFD8D74	QR	1EE59100		
02800029	1F7D9400	N	S	P	N	-	ZCOWAIT	DFHZARQ1	S	11:23:31.38	-	1ED87080	XM	1EE0A340	QR	1ED87080	1EE0A3400000076C	
02820035	1F7BC400	N	S	P	N	-	ZCOWAIT	DFHZARQ1	S	11:24:29.68	-	1ED87180	XM	1EE0A1B8	QR	1ED87180	1EE0A1B80000084C	
02840007	1F7D9080	N	S	P	N	-	ZCOWAIT	DFHZARQ1	S	11:24:26.38	-	1ED87280	XM	1EE0A030	QR	1ED87280	1EE0A0300000081C	
02860007	1F7BC780	N	S	P	N	-	EDF	DEBUGUSER	S	11:23:31.38	-	1ED87380	XM	1EE09DF8	QR	1ED87380	1EE09DF80000036C	
028A0005	1F7BCB00	N	R									1ED87580	XM	1EE0A7D8	QR		1EE0A7D80000088C	

XM Summary

VERBX CICS620 'XM=3'

==XM: GLOBAL STATE SUMMARY

XM domain status:	Initialised
<u>Maximum user tasks (MXT):</u>	<u>30</u>
System currently at MXT:	No
XXMATT user exit currently:	Inactive
XM state lock currently held:	No
XM trandef state lock currently held:	No
System attaches delayed for SOS:	No
Force-purge has been issued:	No

==XM: TRANSACTION SUMMARY

Tran id	Tran num	TxnAddr TxdAddr	Start code	Sys Tran	Stat	DS token	Facility type	Facility token	AP token	PG token	XS token	US token	RM token	SM token	MN token
CSOL	00003	1EE091B8 1F850C60	C	Yes	ACT	00100003	None		1EEB2680 00000000	00000000 1EEDA0C0	00000000 00000000	00000000 1F821030	1F821158 1ED84054	00000000 1F822030	FF724D00
CSSY	00006	1EE094C8 1EED3030	C	Yes	ACT	00820003	None		0005C080 01050000	00000000 1EEDA108	00000000 00000000	00000000 1F821648	1F821770 1ED84088	00000000 1F822768	FF724E00
DSDB	00036	1EE09DF8 1F841ED0	T	No	ACT	02860007	None		0005B080 00000000	00000000 1EEDA3D8	00000000 1EE4809F	1EE4A0B0 1F8EF648	1F8EF770 1ED84290	00000000 1F88B030	FF726A00
XP05	00081	1EE0A030 1F850850	T	No	ACT	02840007	Terminal	1F932030	1EEB5680 00000000	00000000 1EEDA228	00000000 1EE4809F	1EE4A070 1F9CE030	1F9CE158 1ED84158	00000000 1F9B7030	FF726700
XP05	00084	1EE0A1B8 1F850850	T	No	ACT	02820035	Terminal	1F920DB0	1EEB6080 00000000	00000000 1EEDA348	00000000 1EE4809F	1EE4A090 1F955648	1F955770 1ED84228	00000000 1F9B7768	FF726500
CEMT	00088	1EE0A7D8 1F80F440	T	No	ACT	028A0005	Terminal	1F932270	0005B680 00000000	00000000 1EEDA2B8	00000000 1EE4809F	1EE4A0D0 1F90D030	1F90D158 1ED841C0	00000000 1F9D7030	FF726900



AP Domain Summary

VERBX CICS620 'AP=3'

===AP: AP DOMAIN TRANSACTION SUMMARY

Tran No	Tran Id	Orig Tran	TCA Addr	TWA Addr	EIB Addr	SEIB Addr	EIS Addr	EIUS Addr	Facility Type	Facilit Id
00003	CSOL	CSOL	1EEB2680	007AC000	1F8200D0	1EEB2A94	1EEB2988	1F820008		
TCP	CSTP	CSTP	1EEB3080	1F8FC430	1F8FC0D0	1EEB3494	1EEB3388	1F8FC008		
00020	CSNC	CSNC	0005D680	007AC000	000660D0	0005DA94	0005D988	00066008		
00036	DSDB	DSDB	0005B080	007AC000	001400D0	0005B494	0005B388	00140008		
00076	CEDF	CEDF	1EEB5080	007AC000	1F9C20D0	1EEB5494	1EEB5388	1F9C2008	TC	TC14
00081	XP05	XP05	1EEB5680	1FA10430	1FA100D0	1EEB5A94	1EEB5988	1FA10008	TC	TC12
<u>00084</u>	<u>XP05</u>	<u>XP05</u>	<u>1EEB6080</u>	<u>1FA20430</u>	<u>1FA200D0</u>	<u>1EEB6494</u>	<u>1EEB6388</u>	<u>1FA20008</u>	<u>TC</u>	<u>TC03</u>
00088	CEMT	CEMT	0005B680	007AC000	0007B0D0	0005BA94	0005B988	0007B008	TC	TC11

To locate the TCA for a given task, enter a Find command for TCA.xxxxx -- F 'TCA.00084'

TCA.00084 1EEB6080 Task Control Area (User Area)

```

0000 1EEB6180 00000001 1F920DB0 0004E748 1F7C5B78 00000000 00000000 00000000 *.. /....@$.....* 1EEB6080
0020 00000000 0000084C 00000000 00000000 80800000 9F1E732A 1F9D7000 00000B43 *.....<.....* 1EEB60A0
0040 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 *.....* 1EEB60C0
0060 00000014 00004000 00000000 000000D5 D4C1D7D7 F0F5F140 E3E2E3D7 F0F5D440 *.....NMAPP051 TSTP05M * 1EEB60E0

```

SYS_TCA.00084 1EEB6180 Task Control Area (System Area)

```

0000 00000000 00000000 00000000 00000000 0000084C 2B662CC8 0000006B 00000000 *.....<...H...,....* 1EEB6180
0020 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 *.....* 1EEB61A0
0040 1FA2CCE0 00000000 00000000 00000000 00000000 00000000 00000000 00000000 *.s.\.....* 1EEB61C0
0060 00000000 00000000 00C00000 00000000 00000000 00000000 00000000 00000000 *.....* 1EEB61E0
0080 00000000 1EEB64EC 00000000 00000000 1EEB6388 1FA27610 1FA20128 1FA203E0 *.....h.s...s...s.\* 1EEB6200
00A0 00000000 8004E100 00000000 00000000 E7D7F0F5 1F920DB0 00000000 00000000 *.....XP05.k.....* 1EEB6220

```

EIUS.00084 1FA20008 EXEC Interface User Structure

```

0000 00B46EC4 C6C8C5C9 E4E24040 40404040 1FA204A8 00000000 1FA23C50 00000000 *..>DFHEIUS      .&....* 1FA20008
0020 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 *.....* 1FA20028
0040 00000000 00000000 1FA200D0 00000000 1FA2CCE0 00000000 00000000 00000000 *.....s.}.....* 1FA20048

```



Application Reg Save area pointer (for the last EXEC cmd)



AP Domain Summary

VERBX CICS620 'AP=3'

EIUS +x'50' points to 1FA2CCE0 -- Application Reg Save Area

Registers are stored at +C (14-12) <----- Note error in handout

NOTE: If EIUS +x'50' does not contain a valid RSA pointer, use the pointer found in the System TCA +x'40' (TCAPCHS)

1FA2CCE0	8021CDF0	1FA2B840	1FA2B840	<u>A0308BA8</u>	← Register 14 |
1FA2CCF0	00000000	1FA2CE48	<u>1FA2CDB8</u>	←	Register 1 points to the EXEC command parmlist
				A0308A0A	| .....s...s..... |
1FA2CD00	2030C9E8	1FA2BC7A	00000000	2030D9E8	| ..IY.s:.....RY |
1FA2CD10	1FA2B974	1FA2B840	1FA2CDE0	00000080	| .s...s. .s.\.... |
1FA2CD20	1FA2B974	1FA27610	1FA29438	1FA2CE48	| .s...s...sm..s.. |
1FA2CD30	1FA2CE48	91E091E0	1FA2B840	00000000	| .s..j\j\s. .... |
1FA2CD40	00280000	0032E3C5	004C0003	F5401663	| .....TE.<..5 .. |
1FA2CD50	004B4040	40400240	40404040	40404040	| .. . |
1FA2CD60	40404040	40404040	001C4040	40404040	| .. .. |
1FA2CD70	00000000	0000001C	40404040	40404040	| ..... |
1FA2CD80.:1FA2CD8F. LENGTH(X'10')--All bytes contain X'40', C' '					
1FA2CD90	40404040	40404040	004C004E	401EE3C5	| .<.+ .TE |
1FA2CDA0	1FA2B840	9FA2C85C	1FA2CDBC	1FA2CDD3	| .s. .sH*.s...s.L |
1FA2CDB0	1FA2BC7A	1FA2CDE2			

<u>EXEC parmlist ARG pointer</u>	→	<u>1FA2CDCC</u>	1FA2CDE3	| .s.:.s.S.s...s.T |	
1FA2CDC0	1FA2BC7A	2030E564	9FA2CDEA		
<u>ARG 0 (1802 -- RECEIVE MAP)</u>	→	<u>1802D000</u>		| .s:...V..s....}. |	
1FA2CDD0	03000000	00050900	000020F0	F0F0F0F2	| .....00002 |
1FA2CDE0	F3F1F7D4	C1D7D7F0	F5F1E3E2	E3D7F0F5	| 317MAP051TSTP05 |
1FA2CDF0	D4404040	40404040	40404040	40404040	| M |
1FA2CE00.:1FA2CE2F. LENGTH(X'30')--All bytes contain X'40', C' '					
1FA2CE30	40404040	40404040	40404040	40C1C2E2	| ABS |
1FA2CE40	00000015	E260E2E8	D5C3D7D6	C9D5E340	| ....S-SYNCPOINT |
1FA2CE50	C5C9C2D9	C5E2D77E	F0000000	00000000	| EIBRESP=0..... |
1FA2CE60.:1FA2CE6F. LENGTH(X'10')--All bytes contain X'00'					



PG Domain Summary

VERBX CICS620 'PG=3'

===PG: PROGRAM MANAGER DOMAIN - SUMMARY

==PG: GLOBAL STATE SUMMARY

PG domain status:	Initialised	System LLE chain head:	1F937070
		Exit LLE chain head:	1F937160
Autoinstall status:	Inactive	PGWE chain head:	00000000
Autoinstall catlg status:	Modify	Stats last - 1st word:	B715AEE2
Autoinstall exit name:	DFHPGADX	reset time - 2nd word:	CB81E14A
Attempted autoinstalls:	7	SM access token:	1ED30DE0
Failed autoinstalls:	0	SM isolation token:	1EC23780
Rejected autoinstalls:	0	Storage protect:	No
XRSINDI active:	No	Cold start:	No
EXEC calls allowed:	Yes	Recovery complete:	Yes

==PG: PTA SUMMARY FOR TRAN NUM : 00084, PTA ADDRESS : 1EEDA348

LOG-LVL : 1 SYS-LVL : 0 TASK-LLE : 1F937130 PLCB : 1F7C4B10

=PG: TASK LLE SUMMARY

LLE-ADDR	PROGRAM	PPTE-ADD
1F937130	TSTP05M	1F9AB030

=PG: TASK PLCB SUMMARY

PLCB-ADD	PROGRAM	LOG-LVL	LOAD	ENTRY	LENGTH	CA-CURR	CLEN	INVK-PRG	STG	EXIT-NME	ENV	PPTE-ADD
1F7C4B10	<u>TESTP05</u>	1	20300000	A03000E0	0114E0	00000000	0000	<u>CICS</u>				<u>EXEC</u> 1F9A8870

==PG: PTA SUMMARY FOR TRAN NUM : 00088, PTA ADDRESS : 1EEDA2B8

LOG-LVL : 2 SYS-LVL : 0 TASK-LLE : 1F937180 PLCB : 1F7D43E0

=PG: TASK LLE SUMMARY

LLE-ADDR	PROGRAM	PPTE-ADD
1F937180	DFHEITMT	1F869138

=PG: TASK PLCB SUMMARY

PLCB-ADD	PROGRAM	LOG-LVL	LOAD	ENTRY	LENGTH	CA-CURR	CLEN	INVK-PRG	STG	EXIT-NME	ENV	PPTE-ADD
1F7D43E0	<u>DFHEMTD</u>	<u>2</u>	20033640	A0033668	019110	1F9D8158	43F8	<u>DFHEMTD</u>				EXEC 1F869450
1F7D2B10	<u>DFHEMTD</u>	<u>1</u>	1F650C10	9F650C38	000CE8	00000000	0000	<u>CICS</u>				EXEC 1F8694A8



verbx dfhpd630 'aps=<taskid=74>'

CICS630 OPERANDS:

APS=<TASKID=74>

=== SUMMARY OF ACTIVE ADDRESS SPACES

ASID(hex) :	JOBNAME :
0046	S07CICPG

-- DFHPD0121I FORMATTING CONTROL BLOCKS FOR JOB S07CICPG

ADDRESS SPACE ASID NUMBER (HEX) = 0046

===AP: AP DOMAIN TRANSACTION CONTROL BLOCKS AND LEDATA

TCA.00074 0005E080 Task Control Area (User Area)

0000	0005E180	00000001	1CA89930	0004E748	1C6987C0	00000000	00000000	00000000	*.....yr...X...g{.....*	0005E080
0020	00000000	0000074C	00000000	00000000	00000000	8004E2D6	00060008	05000033	*.....<.....*	0005E0A0
0040	1D907878	1D913BA0	9C5F914C	00085860	00000003	00000000	00000000	1D913DA0	*.....j...^j<...-.....j..*	0005E0C0
0060	20000000	00000000	C4C6F0F0	F0F0F0C5	0000020C	1CAF8008	00000000	00000000	*.....DF00000E.....*	0005E0E0
0080	40400000	00000000	0000FFFF	00000000	00500050	0000FF00	FF000000	FF000000	*.....&.&.....*	0005E100
00A0	00000000	00000000	00000000	00000012	00000000	00000000	00000000	00000000	*.....*	0005E120
00C0	00000000	00000000	00000000	E3F30200	00000000	00000000	00000000	8004EF70	*.....T3.....*	0005E140
00E0	1D910AE0	1BDD87F0	00000000	006AE000	00000000	00000000	00000000	1D9037D8	*.j.\..g0.....\.....Q*	0005E160

SYS_TCA.00074 0005E180 Task Control Area (System Area)

0000	00000000	00000000	00000000	00000000	00 <u>00074C</u>	1BCA42F0	00000073	00000000	*.....<.....*	0005E180
0020	00000000	00000000	00000000	00000000	1BD4D1C0	00000000	1C696A8F	00000000	*.....MJ{.....*	0005E1A0
0040	<u>1D9109E8</u>	00000000	00000000	00000000	00000000	00000000	1CAF8008	00000000	*.j.Y.....*	0005E1C0
0060	00000000	00000000	00400000	00000000	00000000	00000000	00000000	00000000	*.....*	0005E1E0
0080	00000000	0005E4EC	00000000	00000000	0005E388	<u>1D90FA40</u>	0020E128	0020E418	*.....U.....Th.....U.*	0005E200
00A0	00000000	8004E100	00000000	00000000	E9E3F0F1	1CA89930	00000000	00000000	*.....ZT01.....*	0005E220
00C0	00000000	E9E3F0F1	00000040	00000080	00000000	00000000	00000000	00000000	*....ZT01... ..*	0005E240
00E0	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	*.....*	0005E260
0100	00000000	00000000	E9E3C5E2	E3F0F140	00047000	5018FEFF	00000000	00000000	*.....ZTEST01&.....*	0005E280



verbx dfhpd630 'aps=<taskid=74>' notes

Using the APS option of the CICS verbexit produces information for a single task from both the CICS AP domain and the language environment. The CICS routines call the LE verbexit to produce the same output as shown earlier when the `verbx ceeerrip 'caa(1D90FA40) dsa(1D9109E8) all'` was entered. The information produced by both routines is combined into a single output. The sample shown is for task 74.

Messages are displayed showing the parms passed to the LE formatter

Invoking the Language Environment dump formatter

VERBEXIT CEEERRIP ASID(0046) CAA(1D90FA40) DSA(1D9109E8) ALL

WARNING LEDATA could not obtain the TCB address from location 0000021C

APS=<TASKID=74>

When CEEERRIP returns to CICS the following message is displayed:

Control returned successfully to CICS Verbexit

verbx dfhpd630 'aps=<taskid=74>' (EXEC interface blocks)

EIS.00074 0005E388 EXEC Interface Structure

0000	01046EC5	C9E24040	0020E0D0	00000000	1CA89930	00000000	1D9109E8	09001004	*..>EIS ..\}.....yr...Y...*	0005E388
0020	40404040	40404040	00040000	00000000	00000000	00000000	00008000	00000000	*	0005E3A8
0040	00000000	00000000	00000000	00000000	0005E494	00000000	00000000	00000018	*.....Um.....*	0005E3C8
0060	1D910AE0	0005E574	00000006	00000000	9C09647C	00000000	00000000	00000000	*.j.\..V.....@.....*	0005E3E8
0080	00000000	00000000	00000000	1D915F48	00000000	00000000	80082D94	00000000	*.....j~.....m....*	0005E408
00A0	00000000	00000000	1D90B9D0	00000000	00000000	1C7C90D0	1C69756C	00000000	*.....}.....@%....*	0005E428
00C0	D8D90008	00000000	01000006	08908000	00000000	00000000	00000000	00000000	*QR.....*	0005E448
00E0	00000000	00000000	00000000	00000000	00000000	00000000	00000000	1D910AE0	*.....j.\..*	0005E468
0100	FF000000								*....*	0005E488

SYSEIB.00074 0005E494 System EXEC Interface Block

-0008							5CE2E8E2	C5C9C240	*	*SYSEIB *	0005E48C
0000	0105233C	0104103F	E9E3F0F1	0000074C	F0F0F3F0	00000000	0000F810	04000000	*.....ZT01...<0030.....*	0005E494	
0020	00000000	00000000	00000000	00000000	00000040	40404040	40404000	00000000	*.....*	0005E4B4	
0040	00000000	00000000	00000000	00000000	00000000	00			*.....*	0005E4D4	

EIUS.00074 0020E008 EXEC Interface User Structure

0000	00B46EC4	C6C8C5C9	E4E24040	40404040	1D900008	00000000	1D90BA18	00000000	*..>DFHEIUS	0020E008
0020	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	*.....*	0020E028
0040	00000000	00000000	0020E0D0	00000000	1D9109E8	00000000	00000000	00000000	*.....\}.....j.Y.....*	0020E048
0060	9C0AC728	0001AEC0	1B2D9F30	1C697514	1C697610	9C0A9C10	1C696E50	1C0AAC0F	*..G...{.....>&.....*	0020E068
0080	1C0ABC0E	1C0ACC0D	1C0ADC0C	1C0AEC0B	0005E388	1C7C90D0	0005E080	00000000	*.....Th.@.}...*	0020E088
00A0	00000000	0020E050	0020E054	00000000	00000000				*.....\&..\.....*	0020E0A8

EIB.00074 0020E0D0 EXEC Interface Block

-0010					00656EC4	C6C8C1D7	6DC4C6C8	C5C9C25C	*	. ..>DFHAP_DFHEIB**	0020E0C0
0000	0105233C	0104103F	E9E3F0F1	0000074C	F0F0F3F0	00000000	0000F818	06000000	*.....ZT01...<0030.....*	0020E0D0	
0020	00000000	00000000	00000000	00000000	00000040	40404040	40404000	00000000	*.....*	0020E0F0	
0040	00000000	00000000	00000000	00000000	00000000	00			*.....*	0020E110	

USER31.00074 1D914B80 USER storage above 16MB

0000	E4F0F0F0	F0F0F7F4	000003A5	C4D7C3C3	6DE7E7E3	C1D9C5C1	00000000	00000000	* U0000074 ...vDPCC_XXTAREA...*	1D914B80
0020	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	*.....*	1D914BA0
0040	-	039F	LINES SAME AS ABOVE							1D914BC0
03A0	00000000	00000000	00000000	00000000	00000000	00000000	E4F0F0F0	F0F0F7F4	*..... U0000074 *	1D914F20



verbx dfhpd630 'aps=<taskid=74>' (Call LE)

Invoking the Language Environment dump formatter

VERBEXIT CEEERRIP ASID(0046) CAA(1D90FA40) DSA(1D9109E8) ALL

WARNING LEDATA could not obtain the TCB address from location 0000021C

APS=<TASKID=74>

LANGUAGE ENVIRONMENT DATA

Language Environment Product 04 V01 R04.00

TCB: 00000000

LE Level: 10

ASID: 0046

Active Members: COBOL

CEECA: 1D90FA40

+000000	FLAG0:00	LANGP:08	BOS:1D915F48	EOS:00000000
+000044	TORC:00000000	TOVF:80026690	ATTN:1D90C2D0	
+00015C	HLLEXIT:00000000	HOOK:50C0D064	ODC058C0	C0060DCC
+0001A4	DIMA:0001FFDC	ALLOC:0700C3C8	STATE:0700C3C8	
+0001B0	ENTRY:0700C3C8	EXIT:0700C3C8	MEXIT:0700C3C8	
+0001BC	LABEL:0700C3C8	BCALL:0700C3C8	ACALL:0700C3C8	
+0001C8	DO:0700C3C8	IFTRUE:0700C3C8	IFFALSE:0700C3C8	
+0001D4	WHEN:0700C3C8	OTHER:0700C3C8	CGOTO:0700C3C8	
+0001F0	CGENE:00000000	CRENT:00000000	CTHD:00000000	
+000210	EDCV:00000000	CEDB:00000000	EDCOV:00000000	
+000258	TCASRV_USERWORD:00000000	TCASRV_WORKAREA:1D90BBB0		
+000260	TCASRV_GETMAIN:00000000	TCASRV_FREEMAIN:00000000		
+000268	TCASRV_LOAD:80023C00	TCASRV_DELETE:80023B20		
+000270	TCASRV_EXCEPTION:00000000	TCASRV_ATTENTION:00000000		
+000278	TCASRV_MESSAGE:00000000	LWS:00000000	SAVR:00000000	
+0002AC	SYSTEM:03	HRDWR:03	SBSYS:05	FLAG2:90
+0002B1	PM:00	GETLS:800243D0	CELV:1CBCCE40	GETS:800244C8
+0002C0	LBOS:1D910588	LEOS:1D9105A8	LNAB:1D9105A0	
+0002CC	DMC:00000000	ABCODE:00000000	RSNCODE:00000000	
+0002D8	ERR:1D90F6E0	GETSX:80025D50	DDSA:1D9103B8	
+0002E4	SECTSIZE:00000000	PARTSUM:00000000		
+0002EC	SSEXPNT:00000000	EDB:1D90DA08	PCB:1D902CA0	



verbx dfhpd630 'aps=<taskid=74>' (CEEPCB)

CEEPCB: 1D902CA0

```
+000000 PCBEYE:CEEPCB      SYSTM:03      HRDWR:03      SBSYS:05      FLAG2:98
+00000C DBGEH:00000000    DMEMBR:1D902ED0    ZLOD:1CCC18E8
+000020 ZDEL:1CCBC1D8      ZGETST:00021658    ZFREEST:000210F8
+00002C LVTL:00074FB0      RCB:00078528      SYSEIB:0005E494
+000038 PSL:000000B0      PSA:1D9033F8      PSRA:1CCC0858
+000044 OMVS_LEVEL:7F800000    PCB_CHAIN:00000000
+00004C PCB_VSSFE:0001F1A4    PCB_PRFEH:00000000
+000084 LPKA_LODTYP:00000000    IMS:00000000      ABENDCODE:00000000
+000090 REASON:00000000    F3456:00008000    MEML:1D902EB8
+00009C MEMBR:1D902ED0    PCB_EYE:00000000    PCB_BKC:00069618
+0000A8 PCB_FWC:00001000    PCB_R14:00002B0C
+0000B0 PCB_R15:0001AEC0    PCB_R0:F0F00000    PCB_R1:1C6DC81C
+0000BC PCB_R2:7FFFFFFF    PCB_R3:00000000    PCB_R4:000268A8
+0000C8 PCB_R5:0001AEC0    PCB_R6:00023060    PCB_R7:000212E8
+0000D4 PCB_R8:0000D381    PCB_R9:9587A481    PCB_R10:878540C5
+0000E0 PCB_R11:95A58999    PCB_R12:96959485    CELV24:00078758
+0000EC CELV31:1CBCCE40    SLDR:80023CF0      SECTSIZ:00000000
+0000F8 PARTSUM:00000000    SSEXPNT:00000000    BMPS:1CB010F0
+000104 BMPE:1CB79838    BLEHL:00074A88      BCMXB:1D902FF8      BSTV:02
+000111 PM_BYTE:00    INI_AMODE:00    FLAGS1:08    ISA:00000000
+000118 ISA_SIZ:00000000    SRV_CNT:00000000
+000120 SRV_UWORD:00000000    WORKAR:00000000    LOAD:00021980
+00012C DELETE:00020CA8    GETSTOR:00000000    FREESTOR:00000000
```

verbx dfhpd630 'aps=<taskid=74>' (Runtime Options)

Language Environment Run-Time Options in effect.

LAST WHERE SET	Override	OPTIONS

INSTALLATION DEFAULT	OVR	ABPERC (NONE)
INSTALLATION DEFAULT	OVR	ABTERMENC (ABEND)
INSTALLATION DEFAULT	OVR	NOAIXBLD
INSTALLATION DEFAULT	OVR	ALL31 (ON)
INSTALLATION DEFAULT	OVR	ANYHEAP (00004096, 00004080, ANY , FREE)
INSTALLATION DEFAULT	OVR	NOAUTOTASK
INSTALLATION DEFAULT	OVR	BELOWHEAP (00004096, 00004080, FREE)
INSTALLATION DEFAULT	OVR	CBLOPTS (ON)
INSTALLATION DEFAULT	OVR	CBLP SHPOP (ON)
INSTALLATION DEFAULT	OVR	CBLQDA (OFF)
INSTALLATION DEFAULT	OVR	CHECK (ON)
INSTALLATION DEFAULT	OVR	COUNTRY (US)
INSTALLATION DEFAULT	OVR	NODEBUG
INSTALLATION DEFAULT	OVR	HEAP (00004096, 00004080, ANY , KEEP, 00004096, 00004080)
INSTALLATION DEFAULT	OVR	HEAPCHK (OFF, 00000001, 00000000, 00000000)
INSTALLATION DEFAULT	OVR	<u>STORAGE (NONE, NONE, NONE, 00000000)</u> --> <u>STORAGE (00, NONE, NONE, 00000000)</u>
INSTALLATION DEFAULT	OVR	<u>TERMTHDACT (TRACE, CESE, 00000096)</u> --> <u>TERMTHDACT (MSG)</u>
INSTALLATION DEFAULT	OVR	NOTEST (ALL, *, PROMPT, INSPREF)
INSTALLATION DEFAULT	OVR	THREADHEAP (00004096, 00004080, ANY , KEEP)
INSTALLATION DEFAULT	OVR	THREADSTACK (OFF, 00004096, 00004080, ANY , KEEP, 00004096, 00004080)
INSTALLATION DEFAULT	OVR	TRACE (OFF, 00004096, DUMP, LE=00000000)
INSTALLATION DEFAULT	OVR	<u>TRAP (ON, SPIE)</u>
INSTALLATION DEFAULT	OVR	UPSI (00000000)
INSTALLATION DEFAULT	OVR	NOUSRHDLR ()
INSTALLATION DEFAULT	OVR	VCTRSAVE (OFF)
INSTALLATION DEFAULT	OVR	VERSION ()
INSTALLATION DEFAULT	OVR	XPLINK (OFF)
INSTALLATION DEFAULT	OVR	XUFLOW (AUTO)



verbx dfhpd630 'aps=<taskid=74>' (Traceback)

Information for enclave ZTESTLK1

Information for thread 8000000000000000

PCB Address: 1D902CA0

Traceback:

DSA Addr	Program Unit	PU Addr	PU Offset	Entry	E Addr	E Offset	Statement	Load Mod	Service	Status
1D9109E8	ZTESTLK1	1D501950	+00000542	ZTESTLK1	1D501950	+00000542		SUBPOOL1	.....%\	Call
1D9107F0	IGZCEV5	1C5E7000	+0000065E	IGZCEV5	1C5E7000	+0000065E		SUBPOOL2	UQ84067	Call
1D910640	CEECRINV	1CBBF218	+0000068E	CEECRINV	1CBBF218	+0000068E		SUBPOOL2	UQ76741	Call
1D9105C0	CEECRINI	1CBAB5E0	+00000B2A	CEECRINI	1CBAB5E0	+00000B2A		SUBPOOL2	UQ78072	Call

Control Blocks Associated with the Thread:

Thread Synchronization Queue Element (SQEL): 1D90F920

+000000 1D90F920 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 |.....

+000020 1D90F940 - +00003F 1D90F95F same as above



verbx dfhpd630 'aps=<taskid=74>' (COBOL Environment)

COBOL ENVIRONMENT DATA

```
RUNCOM: 1D911620
+000000 IDENT:C3RUNCOM LENGTH:000002D8 FLAGS:20C60000
+000010 RU_ID:1D90DA08 INVK_RSA:1D9107F0
+000024 MAIN_PGM_ADDR:1D501950 MAIN_PGM_CLLE:1D9118F8
+000030 PARM_ADDR:0020E050 NEXT_RUNCOM:1D909458 THDCOM:1D903110
+000044 COBVEC:00062A2C SUBCOM:00000000 COBVEC2:0006306C
+000058 CAA:1D90FA40 UPSI_SWITCHES:00000000 DUM_CLLE:00000000
+000084 1ST_FREE_CLLE:00000000 HAT:00000000
+00008C 1ST_CLLE:1D9118F8 SORT_CONTROL_DCB:00000000
+000098 COBOL_ACTIVE:00000000 DDNAME_SORT_CONTROL:.....
+0001C8 MAIN_ID:ZTESTLK1
+000204 ----->:
+000240 ----->:

THC: 1D9115A8
+000000 IDENT:IGZTHC FLAGS:00000000 THCHSPL1:1D9115C4
+000010 THCHSPL2:1D9115C8 THCHSPL3:1D9115CC
+000018 THCHSPL4:00000000 THCHSHID:00000000
+000020 THCHSLEN:00000579 THCHSADD:1D911B98
+000028 R12_SAVE:00000000 UNSTR_WRK:00000000
+000030 INSP_WRK:00000000 OPEN_FCBS:00000000

THDCOM: 1D903110
+000000 IDENT:C3THDCOM LENGTH:000001E8 FLAGS:81000000 00001700
+000018 COBCOM:00062978 COBVEC:00062A2C 1ST_RUNCOM:1D911620
+000028 1ST_PROGRAM:ZTESTCOB SUBCOM:00000000
+000034 CEEINT_PLIST:00000000 00000000 00000000 00000000 00000000 00000000
+00004C ----->:00000000 00000000 00000000 00000000 00000000
+000084 COBVEC2:0006306C ITBLK:1D9032F8 STT_BST:00000000
+000098 CICS_EIB:0005E494 SIBLING:00000000
+0000AC SORT_RETURN:00000000 INFO_MSG_LIMIT:0000
+0000C8 R12_SAVE:00000000 STP_DUM_TGT:00000000
+000180 LRR_COBCOM:00000000 CAA:1D90FA40 DUM_THDCOM:00000000
```



verbx dfhpd630 'aps=<taskid=74>' (COBOL Blocks)

```
COBCOM: 00062978
+000000 IDENT:C3COBCOM LENGTH:00000974 VERSION:030400
+000058 FLAGS:906000 ESM_ID:C COBVEC:00062A2C
+000060 COBVEC2:0006306C
+000064 LOADFG:00000000 00000000 00000000 00000000 00000000
+000078 THDCOM:00000000 INSH:9D085CF0 LRR_THDCOM:00000000
+00009C LRR_ITBLK:00000000 LRR_SUBCOM:00000000
+0000A4 LRR_EPLF:00000000

CLLE: 1D9118F8
+000000 PGMNAME:ZTESTLK1 TGT_FLAGS:01 LANG_LST:00000000
+000010 INFO_FLAGS:9481 LOAD_ADDR:9D501950 TGT_ADDR:1D9119D8
+00001C LE_TOKEN:00000000 WSA_ADDR:00000000
+000030 THD_STAT:00000001 THD_CNT:00000000
+000038 OPEN_NON_EXT_FILES:00000000

TGT: 1D9119D8
+000048 IDENT:3TGT LVL:06 FLAGS:68030260 RUNCOM:1D911620
+00005C COBVEC:0006306C #FCBS:00000000 WS_LEN:000004DD
+000070 SMG_WRK:00000000 CAA:1D90FA40 LEN:00000184
+00008C EXT_FCBS:00000000 OUTDD:SYSOUT ABINF:1D501B60
+0000FC TESTINF:1D911B20 PGMADDR:1D501950 1STFCB:00000000
+000114 WS_ADDR:1D911C28 1STEXTFCB:00000000
```

Exiting COBOL Environment Data

Exiting Language Environment Data

[Control returned successfully to CICS Verbexit](#)



verbx dfhpd630 'tr=1,trs=<taskid=74>'

```
074 QR AP 059A APXM  EVENT TCA                                state                                =006356=
074 QR AP 0591 APXM  EXIT  RMI_START_OF_TASK/OK              =006357=
074 QR PG 0901 PPGG  ENTRY INITIAL_LINK                      ZTESTCOB                                =006358=
074 QR LD 0001 LDLD  ENTRY ACQUIRE_PROGRAM                  1C760D20                                =006359=
074 QR LD 0002 LDLD  EXIT  ACQUIRE_PROGRAM/OK              9D500000,1D500000,1948,0,REUSABLE,ESDSA,OLD_COPY =006360=
074 QR SM 0301 SMGF  ENTRY GETMAIN                          1,YES,COMMAREA,USER                     =006361=
074 QR SM 0302 SMGF  EXIT  GETMAIN/OK                       1D9037B8                                =006362=
074 QR AP 1940 APLI  ENTRY START_PROGRAM                     ZTESTCOB,CEDF,FULLAPI,EXEC,NO,1C6A6E40,1D9037B8 ,00000001,1,NO =006363=
074 QR SM 0301 SMGF  ENTRY GETMAIN                          103A0,YES,RUWAPOL, TASK31               =006364=
074 QR SM 0302 SMGF  EXIT  GETMAIN/OK                       1D9037D8                                =006365=
074 QR AP 1948 APLI  EVENT CALL-TO-LE/370                  Thread_Initialization ZTESTCOB           =006366=
074 QR AP 1949 APLI  EVENT RETURN-FROM-LE/370              Thread_Initialization OK ZTESTCOB        =006367=
074 QR AP 1948 APLI  EVENT CALL-TO-LE/370                  Rununit_Init_&_Begin_Invo ZTESTCOB      =006368=

074 QR FT 1014 Lang.Env.CEEZCREN EVENT CEEEVNT-ID (PRCINIT) R13(1D900DD0),4C6E00A0 =006369=
074 QR FT 1013 Lang.Env.CEEZCREN EVENT CEEEVNT-ID (OPTP)    R13(1D900DD0),1D500D48,1D90558C,1D90107C,4C6E0094 =006370=
074 QR FT 1101 Lang.Env.CEECRINI EVENT SET_ANCHOR           R13(1D900978),1D907878,00000002         =006371=
074 QR FT 1018 Lang.Env.CEEZINV  EVENT CEEEVNT-ID (ENCINIT) R13(1D908478),1D90558C,00000000,1D905708,00000000,0 =006372=
074 QR FT 1008 Lang.Env.CEECRINV EVENT CEEEVNT-ID (MAININV) R13(1D908478),00000001,00000000,0020E050,9D500000,4 =006373=

074 QR AP 00E1 EIP   ENTRY GETMAIN                          0004,1D900060 ..-,09000C02 .... =006374=
074 QR AP D500 UEH   EVENT LINK-TO-USER-EXIT-PROGRAM EQAXEIIN AT EXIT POINT XEIIN =006375=
074 QR AP D501 UEH   EVENT RETURN-FROM-USER-EXIT-PROGRAM EQAXEIIN WITH RETURN CODE 0 =006376=
```

verbx dfhpd630 'tr=2,trs=<taskid=74>'

AP 1948 APLI EVENT CALL-TO-LE/370 - Rununit_Init & Begin_Invo Program_name(ZTESTCOB)

```
TASK-00074 KE_NUM-0039 TCB-QR /006C9C58 RET-9BF81678 TIME-10:52:34.1372053610 INTERVAL-00.0000042812 =006368=
 1-0000 0000001E *....*
 2-0000 1C0AF530 0020E134 0005E494 0020E138 0004E814 0020E128 0020E01C 1C695594 *.5.....Um.....Y.....\..*
    0020 1C6A6E60 1C0AF716 9C6956C0 *..>-.7....{*
 3-0000 E9E3C5E2 E3C3D6C2 *ZTESTCOB*
 4-0000 00000038 20000000 1D500000 00001948 9D500000 00000000 1D903850 00000000 *.....&.....&.....&.*
    0020 0020E050 00000000 00000000 1C6A6E40 00000000 00000000 *.. \&.....> .....*
 5-0000 00000000 *....*
 6-0000 8195846D 82858789 95 *and_begin*
```

FT Lang.Env. 1014 CEEZCREN EVENT - CEEVNT-ID(PRCINIT) R13(1D900DD0), PARMS(4C6E00A0)

```
TASK-00074 KE_NUM-0039 TCB-QR /006C9C58 RET-1CBB6360 TIME-10:52:34.1372469704 INTERVAL-00.0000416093 =006369=
 0000 0000C9C2 D4404040 40404040 40404040 40404040 40404040 40404040 40404040 *..IBM*
 0020 D3819587 A4818785 40C595A5 89999695 948595A3 40404040 40404040 4040F0F0 *Language Environment*
 0040 F0F0F0F0 F0F0F0F1 C3C5D3F4 E3C6D4E3 D3819587 4BC595A5 4B000000 *00000001CEL4TFMTLang.Env....*
 1-0000 1D900DD0 00000011 00000000 *...}.....*
```

FT Lang.Env. 1013 CEEZCREN EVENT - CEEVNT-ID(OPTP) R13(1D900DD0), PARMS(1D500D48, 1D90558C, 1D90107C, 4C6E0094)

```
TASK-00074 KE_NUM-0039 TCB-QR /006C9C58 RET-1CBB734C TIME-10:52:34.1372679079 INTERVAL-00.0000209375 =006370=
 0000 0000C9C2 D4404040 40404040 40404040 40404040 40404040 40404040 40404040 *..IBM*
 0020 D3819587 A4818785 40C595A5 89999695 948595A3 40404040 40404040 4040F0F0 *Language Environment*
 0040 F0F0F0F0 F0F0F0F1 C3C5D3F4 E3C6D4E3 D3819587 4BC595A5 4B000000 *00000001CEL4TFMTLang.Env....*
 1-0000 1D900DD0 00000004 1D905F00 1D500D48 1D90558C 1D90107C *...}.....7..&.....@*
```

FT Lang.Env. 1101 CEECRINI EVENT - SET_ANCHOR R13(1D900978), PARMS(1D907878, 00000002)

```
TASK-00074 KE_NUM-0039 TCB-QR /006C9C58 RET-1CBABF92 TIME-10:52:34.1372917829 INTERVAL-00.0000238750 =006371=
 0000 0000C9C2 D4404040 40404040 40404040 40404040 40404040 40404040 40404040 *..IBM*
 0020 D3819587 A4818785 40C595A5 89999695 948595A3 40404040 40404040 4040F0F0 *Language Environment*
 0040 F0F0F0F0 F0F0F0F1 C3C5D3F4 E3C6D4E3 D3819587 4BC595A5 4B000000 *00000001CEL4TFMTLang.Env....*
 1-0000 1D900978 1D907878 00000002 *.....*
```

FT Lang.Env. 1018 CEEZINV EVENT - CEEVNT-ID(ENCINIT) R13(1D908478), PARMS(1D90558C, 00000000, 1D905708, 00000000, 01000000, 00000000, 00000000, 0030D8C3)

```
TASK-00074 KE_NUM-0039 TCB-QR /006C9C58 RET-1CBBAAEE TIME-10:52:34.1373008923 INTERVAL-00.0000091093 =006372=
 0000 0000C9C2 D4404040 40404040 40404040 40404040 40404040 40404040 40404040 *..IBM*
 0020 D3819587 A4818785 40C595A5 89999695 948595A3 40404040 40404040 4040F0F0 *Language Environment*
 0040 F0F0F0F0 F0F0F0F1 C3C5D3F4 E3C6D4E3 D3819587 4BC595A5 4B000000 *00000001CEL4TFMTLang.Env....*
 1-0000 1D908478 00000012 00000000 1D90558C 00000000 1D905708 00000000 01000000 *..d.....*
    0020 00000000 00000000 *.....*
 2-0000 D8C3C5E2 C9000000 00000000 00000000 D8C3C5E2 D6000000 00000000 00000000 *QCESI.....QCESO.....*
```



verbx dfhpd630 'tr=x,trs=<taskid=74>' notes

The prior pages show examples of formatting the CICS trace for a single CICS task. Using TR=1, results in the abbreviated trace being displayed, TR=2 produces the full trace. TR=3 produces both the abbreviated and full traces.

It's worth noting the FT (feature) trace entries. The FT trace entries shown are produced by the LE event handler when the application domain has been set to record level 2 traces (AP=1-2). The level of tracing is specified as either a SIT (System Initialization Table) override or set using the CETR transaction while CICS is active.

Feature trace entries contain a domain identifier of FT. The format of these entries is slightly different from standard trace points, the Module identifier contains the short name of the feature and a full module name. Feature trace point IDs are not globally defined. This means a feature can reuse the trace point IDs of another feature. The feature trace points for a given product are documented in that product's documentation. The LE event handler traces are documented in the z/OS R1.4 Language Environment Debugging Guide.

Language Environment APAR PQ69143 is required to activate the traces.

Locate the EXCI Threads

verb dfhpd530 'ke=3'

=== SUMMARY OF ACTIVE ADDRESS SPACES

ASID(hex) : JOBNAME:
0086 JIMSCTG <---this is the EXCI region

-- DFHPD0129 CICS Domain Anchor Blocks not found for AFCB. Scan will continue.

-- DFHPD0121I FORMATTING CONTROL BLOCKS FOR JOB JIMSCTG

===KE: EXCI CONTROL BLOCKS

AFCB 009B9790 EXCI AFCB

0000	C1C6C3E7	02F600D0	00000000	00000000	80000000	00000000	80000000	00000000	*AFCX.6.}	.....*	009B9790
0020	8ADDD1C4	<u>1FCB40B0</u>	80000000	00000000	80000000	00000000	80000000	00000000	*..JD..	.....*	009B97B0
0040	80000000	-> <u>SUDB</u>	80000000	00000000	80000000	00000000	80000000	00000000	*.....	.....*	009B97D0
0060	-	009F LINES SAME AS ABOVE									009B97F0
00A0	80000000	00000000	80000000	00000000	00000000	<u>40452928</u>	00000000	00000000	*.....	.....*	009B9830

XCG 40452928 XCGLOBAL BLOCK

0000	01906EE7	C36DC7D3	D6C2C1D3	40404040	C00CBE40	400D1578	00000000	400D3178	*..>XC_GLOBAL	{... ..*	40452928
0080	0000001E	00000000	009BD190	<u>404521C8</u>	00000000	00000000	0AF60000	00000000	*....J. ..H.....6.....*		404529A8

XCU.GRAUEL 404521C8 XCUSER_BLOCK

0000	01BC6EE7	C36DE4E2	C5D94040	40404040	C7D9C1E4	C5D3D1C7	40452928	00000000	*..>XC_USER	GRAUEL ...*	404521C8
0020	<u>41DE8E40</u>	<u>404864D0</u>	00000000	00000000	00000000	00000000	00000000	00000000	*... ..}	.....*	404521E8

XCPRH WS.DFHJVCJG 404864D0 DFHXCPRH WORKING STORAGE FOR USER

0000	0B2C6EE7	C3E6D6D9	D2C9D5C7	6DE2E3C7	00000000	00000000	00000000	00000000	*..>XCWORKING_STG.....*		404864D0
------	----------	----------	----------	----------	----------	----------	----------	----------	-------------------------	--	----------

XCP.IYOT1 41DE8E40 XCPPIPE_BLOCK

0000	01BA6EE7	C36DD7C9	D7C54040	40404040	<u>404C65F8</u>	C9E8D6E3	F1404040	C9E8D6E3	*..>XC_PIPE	<u>IYOT1</u> DFH*	41DE8E40
------	----------	----------	----------	----------	-----------------	----------	----------	----------	-------------	-------------------	----------

XCP.IYOT2 404C65F8 XCPPIPE_BLOCK

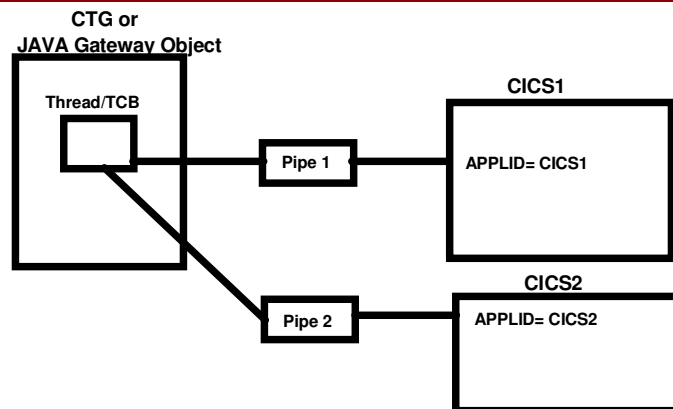
0000	01BA6EE7	C36DD7C9	D7C54040	40404040	<u>40452008</u>	C9E8D6E3	F2404040	C9E8D6E3	*..>XC_PIPE	<u>IYOT2</u> DFH*	404C65F8
------	----------	----------	----------	----------	-----------------	----------	----------	----------	-------------	-------------------	----------

XCP.IYOT3 40452008 XCPPIPE_BLOCK

0000	01BA6EE7	C36DD7C9	D7C54040	40404040	<u>00000000</u>	C9E8D6E3	F3404040	C9E8D6E3	*..>XC_PIPE	<u>IYOT3</u> DFH*	40452008
------	----------	----------	----------	----------	-----------------	----------	----------	----------	-------------	-------------------	----------



Identify Threads ... notes



When using EXCI connections to a backend CICS region there is a 100 pipe limited per EXCI address space. The most common usage today is the CICS Transaction Gateway (CTG) and/or Websphere Application Server (WAS) on 390. Each region may establish connections to a number of CICS regions.

Each EXCI application must manage its threads. In the CTG, the maximum worker threads (TCBs) is specified as `MAXWORKER=` in the `ctgstart` script. However if the EXCI region is a WebSphere address space, the directive `MaxActiveThreads` sets the maximum number of threads. WebSphere will build and manage a pool of threads equal to `MaxActiveThreads`.

A thread is simply an MVS TCB (Task Control Block) used for communication with back-end CICS regions. An EXCI (EXternal CICS Interface) application may have multiple threads. Each thread may have one or more pipes, (think of a pipe as a session). A pipe connects to a given CICS region. In a CICS region, there is only one thread which is associated with the QR (Quasi-Reentrant) TCB.

There are a number of methods which can be used to identify the threads and the connections (pipes) to the backend CICS regions. The simplest method is to take a dump of the EXCI region, for example the CTG region, and format the control blocks.

Because the EXCI function is supplied and supported by CICS, the CICS verbexit may be used to format the EXCI control blocks under IPCS. The MRO keyword may be used to format the MRO control blocks.

To define the thread connections, issue a `VERBX DFHPDxxx 'KE=3'` (xxx is the CICS release) against the EXCI region dump. Each AFEB and SUEB represents a thread, AFEB +x'24' points to the SUEB. In the SUEB at offset x'A' is the ASID of the EXCI region and offset +x'C' is the TCB address. The SUEBs are formatted using the MRO option.

Under each AFEB the pipes will be listed as `XCPIPE_BLOCK`. For example `XCP.IYOT1 41DE8E40 XCPIPE_BLOCK` represents a connect from this thread to a region called IYOT1.



Summary

- **CICS IPCS Verb exits**
- **What gets dumped**
- **How do I find CICS**
 - SLIP Dumps
 - Console Dumps
 - CICS Dumps
- **MTRACE**
- **CICS Verb exit samples**