

## *Exercise 10 – Review of Batch Threadsafe Report*

This final exercise is a review of the Batch Threadsafe report. Excerpts from the Batch Threadsafe report follow. The first section is from the report for the transaction flow defined as Quasirent. The second is the same programs with the ENQ/DEQ added, a modification for local access and the programs defined as threadsafe.

Take a few minutes to review the difference in the number of threadsafe commands. Some of the workflow change is due to the programs running local versus remote with commands that moved from EHDRIVER to EHWWORKP and EHWWORKR. Also during our testing we experienced an abend which you will see as call to IDIXCCEE.

### *Section 1 – Commands with programs defined as Quasirent*

CICS INTERDEPENDENCY ANALYZER VERSION 2.2.0

2008/07/14:20.30.23

PAGE

1

Program Dynamic Analysis - THREADSAFE DETAIL LISTING FOR CICS TS

Report options:

PROGRAMNAME=\* REGIONNAME=\* CICSLEVEL= REPORT=DETAIL LINESPERPAGE=60

Definitions of Terms:

'Threadsafe' calls are EXEC CALLS commands that do not cause a TCB swap.

'Non-Threadsafe' calls are EXEC CALLS commands that cause a TCB swap.

'Indeterminate Threadsafe' calls are EXEC CALLS commands where it cannot be determined if the call causes a TCB swap.

'Dynamic calls' are calls to modules at execution time. Programs that are called dynamically take on the same environment as the calling program.

'Threadsafe Inhibitor calls' are EXEC CICS commands that need to be investigated further because they may prevent you from defining your program as threadsafe. These commands are: ADDRESS CWA, EXTRACT EXIT, GETMAIN SHARED, and LOAD.



CICS LINK	PROGRAM	EHWWORKR	5DE	1500	500	I	
CICS LINK	PROGRAM	EHWWORKR	5D2	1460	10	I	
CICS WRITEQ	TD	CESE	FFFFFFFF	1460	4740	N	
CICS ADDRESS		CWA	4D8	1460	10	Y	*
CICS ADDRESS		CWA	4D8	1500	20	Y	*
CICS CALL	PROGRAM	IDINDFUE	FFFFFFFF	1460	9	N	
CICS CALL	PROGRAM	IDIXCCEE	FFFFFFFF	1460	10	N	
CICS DELETEDQ	TSAUX	OUTPUTQ	4B4	1460	10	Y	
CICS DELETEDQ	TSAUX	OUTPUTQ	4B4	1500	20	Y	
CICS LINK	PROGRAM	EHWWORKP	56E	1460	50	I	
CICS LINK	PROGRAM	EHWWORKP	56E	1500	500	I	
CICS LINK	PROGRAM	EHWWORKR	5DE	1500	500	I	
CICS LINK	PROGRAM	EHWWORKR	5D2	1460	10	I	
CICS WRITEQ	TD	CESE	FFFFFFFF	1460	4738	N	
CICS ADDRESS		CWA	4D8	1460	10	Y	*
CICS ADDRESS		CWA	4D8	1500	20	Y	*
CICS CALL	PROGRAM	IDINDFUE	FFFFFFFF	1460	9	N	
CICS CALL	PROGRAM	IDIXCCEE	FFFFFFFF	1460	10	N	
CICS DELETEDQ	TSAUX	OUTPUTQ	4B4	1460	10	Y	
CICS DELETEDQ	TSAUX	OUTPUTQ	4B4	1500	20	Y	
CICS LINK	PROGRAM	EHWWORKP	56E	1460	50	I	
CICS LINK	PROGRAM	EHWWORKP	56E	1500	500	I	
CICS LINK	PROGRAM	EHWWORKR	5DE	1500	500	I	
CICS LINK	PROGRAM	EHWWORKR	5D2	1460	10	I	
CICS WRITEQ	TD	CESE	FFFFFFFF	1460	4742	N	
CICS ADDRESS		CWA	4D8	1460	10	Y	*
CICS ADDRESS		CWA	4D8	1500	20	Y	*
CICS CALL	PROGRAM	IDINDFUE	FFFFFFFF	1460	9	N	
CICS CALL	PROGRAM	IDIXCCEE	FFFFFFFF	1460	10	N	
CICS DELETEDQ	TSAUX	OUTPUTQ	4B4	1460	10	Y	
CICS DELETEDQ	TSAUX	OUTPUTQ	4B4	1500	20	Y	
CICS LINK	PROGRAM	EHWWORKP	56E	1460	50	I	
CICS LINK	PROGRAM	EHWWORKP	56E	1500	500	I	
CICS LINK	PROGRAM	EHWWORKR	5DE	1500	500	I	
CICS LINK	PROGRAM	EHWWORKR	5D2	1460	10	I	
CICS WRITEQ	TD	CESE	FFFFFFFF	1460	4742	N	

APPLID Program Linkedit Execution Concurrency APIST Storage CICS LIB Dataset Name  
 Date Key Protect Rel

CMD	Function	Type	Resource	Offset	Program Length	Use Count	Threadsafe
-----							
Total CICS calls:	55	Threadsafe:	20	Non-Threadsafe:	15	Indeterminate	Threadsafe: 20
		DB2 calls:	0	MQ calls:	0	IMS calls:	0
		Dynamic Calls:	10	Threadsafe Inhibitor calls:	10		
CICSACB6 EHSTARTP ----- USER QUASIRENT CICSAPI INACTIVE 0650							
CICS START		TRANSID	TXDA	3F0	1448	30	N
CICS START		TRANSID	TXDB	44A	1448	30	N
CICS START		TRANSID	TXDC	4A0	1448	30	N
CICS START		TRANSID	TXDD	4F6	1448	30	N
CICS START		TRANSID	TXDE	54C	1448	30	N
Total CICS calls:	5	Threadsafe:	0	Non-Threadsafe:	5	Indeterminate	Threadsafe: 0
		DB2 calls:	0	MQ calls:	0	IMS calls:	0
		Dynamic Calls:	0	Threadsafe Inhibitor calls:	0		
CICSACB6 EHWOR KP ----- USER QUASIRENT CICSAPI INACTIVE 0650							
CICS WRITEQ		TS	OUTPUTQ	5CA	1808	550	Y
CICS WRITEQ		TS	OUTPUTQ	5CA	1808	550	Y
CICS WRITEQ		TS	OUTPUTQ	5CA	1808	550	Y
CICS WRITEQ		TS	OUTPUTQ	5CA	1808	550	Y
CICS WRITEQ		TS	OUTPUTQ	5CA	1808	550	Y
DB2 SELECT		TABLE		68E	1808	50500	Y
DB2 SELECT		TABLE		68E	1808	50500	Y
DB2 SELECT		TABLE		68E	1808	50500	Y
DB2 SELECT		TABLE		68E	1808	50500	Y
DB2 SELECT		TABLE		68E	1808	50500	Y
Total CICS calls:	5	Threadsafe:	5	Non-Threadsafe:	0	Indeterminate	Threadsafe: 0
		DB2 calls:	5	MQ calls:	0	IMS calls:	0
		Dynamic Calls:	0	Threadsafe Inhibitor calls:	0		

Section 2 – Commands with programs defined as Threadsafe

The following report is for the threadsafe execution of the workflow with the ENQ/DEQ added.

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CICSACB7 EHDRIVER ----- USER          THREADSAFE CICSAPI INACTIVE 0650 USER.CICSAOR7.LOADLIB
CICS ADDRESS                CWA                4D2          1458          90          Y          *
CICS CALL                   PROGRAM IDIXCCEE          FFFFFFFF     1458          40          N
CICS DELETEQ                TSAUX  OUTPUTQ          4AE          1458          90          Y
CICS WRITEQ                 TD      CESE          FFFFFFFF     1458          19000         N
CICS XCTL                   PROGRAM EHWORPK          544          1458          90          Y
CICS ADDRESS                CWA                4D2          1458          90          Y          *
CICS CALL                   PROGRAM IDIXCCEE          FFFFFFFF     1458          40          N
CICS DELETEQ                TSAUX  OUTPUTQ          4AE          1458          90          Y
CICS WRITEQ                 TD      CESE          FFFFFFFF     1458          19000         N
CICS XCTL                   PROGRAM EHWORPK          544          1458          90          Y
CICS ADDRESS                CWA                4D2          1458          90          Y          *
CICS CALL                   PROGRAM IDIXCCEE          FFFFFFFF     1458          40          N
CICS DELETEQ                TSAUX  OUTPUTQ          4AE          1458          90          Y
CICS WRITEQ                 TD      CESE          FFFFFFFF     1458          19000         N
CICS XCTL                   PROGRAM EHWORPK          544          1458          90          Y
CICS ADDRESS                CWA                4D2          1458          90          Y          *
CICS INTERDEPENDENCY ANALYZER VERSION 2.2.0                2008/07/14:20.30.23      PAGE      6
Program Dynamic Analysis - THREADSAFE DETAIL LISTING FOR CICS TS 3.2
  
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APPLID	Program	Linkedit Date	Execution Key	Concurrency	APIST	Storage Protect	CICS Rel	LIB Dataset Name
	CMD Type	Function	Type	Resource	Offset	Program Length	Use Count	Threadsafe
	CICS CALL		PROGRAM	IDIXCCEE	FFFFFFF	1458	40	N
	CICS DELETEQ		TSAUX	OUTPUTQ	4AE	1458	90	Y
	CICS WRITEQ		TD	CESE	FFFFFFF	1458	19000	N

CICS XCTL		PROGRAM	EHWWORKP	544	1458	90	Y	
Total CICS calls:	25	Threadsafe:	15	Non-Threadsafe:	10	Indeterminate	Threadsafe:	0
		DB2 calls:	0	MQ calls:	0	IMS calls:		0
		Dynamic Calls:	5	Threadsafe Inhibitor calls:	5			

CICSACB7	EHSTARTP	-----	USER	THREADSAFE	CICSAPI	INACTIVE	0650	USER.CICSAOR7.LOADLIB				
	CICS START			TRANSID	TXDA			538	1618	90	N	
	CICS START			TRANSID	TXDB			592	1618	90	N	
	CICS START			TRANSID	TXDC			5E8	1618	90	N	
	CICS START			TRANSID	TXDD			63E	1618	90	N	
	CICS START			TRANSID	TXDE			694	1618	90	N	
Total CICS calls:	5	Threadsafe:	0	Non-Threadsafe:	5	Indeterminate	Threadsafe:	0				0
		DB2 calls:	0	MQ calls:	0	IMS calls:		0				0
		Dynamic Calls:	0	Threadsafe Inhibitor calls:	0			0				

CICSACB7	EHWWORKP	-----	USER	THREADSAFE	CICSAPI	INACTIVE	0650	USER.CICSAOR7.LOADLIB				
	CICS CALL			PROGRAM	IDIXCCEE			FFFFFFFF	1908	20	N	
	CICS CALL			PROGRAM	IDIXCCEE			FFFFFFFF	1938	20	N	
	CICS DEQ			ENQNAME	ADDR			782	1810	100	I	
	CICS ENQ			ENQNAME	ADDR			6EA	1810	100	I	
	CICS WRITEQ			TD	CESE			FFFFFFFF	1908	11903	N	
	CICS WRITEQ			TD	CESE			FFFFFFFF	1938	11300	N	
	CICS WRITEQ			TS	OUTPUTQ			5EA	1810	10	Y	
	CICS CALL			PROGRAM	IDIXCCEE			FFFFFFFF	1908	20	N	
	CICS CALL			PROGRAM	IDIXCCEE			FFFFFFFF	1938	20	N	
	CICS DEQ			ENQNAME	ADDR			782	1810	100	I	
	CICS ENQ			ENQNAME	ADDR			6EA	1810	100	I	
	CICS WRITEQ			TD	CESE			FFFFFFFF	1908	11340	N	
	CICS WRITEQ			TD	CESE			FFFFFFFF	1938	11300	N	
	CICS WRITEQ			TS	OUTPUTQ			5EA	1810	10	Y	
	CICS CALL			PROGRAM	IDIXCCEE			FFFFFFFF	1908	20	N	
	CICS CALL			PROGRAM	IDIXCCEE			FFFFFFFF	1938	20	N	
	CICS DEQ			ENQNAME	ADDR			782	1810	100	I	
	CICS ENQ			ENQNAME	ADDR			6EA	1810	100	I	
	CICS WRITEQ			TD	CESE			FFFFFFFF	1908	11340	N	
	CICS WRITEQ			TD	CESE			FFFFFFFF	1938	11300	N	
	CICS WRITEQ			TS	OUTPUTQ			5EA	1810	10	Y	
	CICS CALL			PROGRAM	IDIXCCEE			FFFFFFFF	1908	20	N	
	CICS CALL			PROGRAM	IDIXCCEE			FFFFFFFF	1938	20	N	
	CICS DEQ			ENQNAME	ADDR			782	1810	100	I	
	CICS ENQ			ENQNAME	ADDR			6EA	1810	100	I	
	CICS WRITEQ			TD	CESE			FFFFFFFF	1908	11340	N	

CICS WRITEQ	TD	CESE	FFFFFFFF	1938	11300	N
CICS WRITEQ	TS	OUTPUTQ	5EA	1810	10	Y
CICS CALL	PROGRAM	IDIXCCEE	FFFFFFFF	1908	20	N
CICS CALL	PROGRAM	IDIXCCEE	FFFFFFFF	1938	20	N
CICS DEQ	ENQNAME	ADDR	782	1810	100	I
CICS ENQ	ENQNAME	ADDR	6EA	1810	100	I

1CICS INTERDEPENDENCY ANALYZER VERSION 2.2.0

2008/07/14:20.30.23 PAGE 7

Program Dynamic Analysis - THREADSAFE DETAIL LISTING FOR CICS TS 3.2

APPLID	Program	Linkedit Date	Execution Key	Concurrency	APIST	Storage Protect	CICS Rel	LIB Dataset Name
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CMD Type	Function	Type	Resource	Offset	Program Length	Use Count	Threadsafe
CICS	WRITEQ	TD	CESE	FFFFFFFF	1908	11340	N
CICS	WRITEQ	TD	CESE	FFFFFFFF	1938	11300	N
CICS	WRITEQ	TS	OUTPUTQ	5EA	1810	10	Y
DB2	SELECT	TABLE		6AE	1810	100	Y
DB2	SELECT	TABLE		6AE	1810	100	Y
DB2	SELECT	TABLE		6AE	1810	100	Y
DB2	SELECT	TABLE		6AE	1810	100	Y
DB2	SELECT	TABLE		6AE	1810	100	Y

Total CICS calls:	35	Threadsafe:	5	Non-Threadsafe:	20	Indeterminate	Threadsafe:	10
		DB2 calls:	5	MQ calls:	0	IMS calls:		0
		Dynamic Calls:	10	Threadsafe Inhibitor calls:	0			

CICSACB7 EHWWORKR ----- USER THREADSAFE CICSAPI INACTIVE 0650

CICS DELETEQ	TSAUX	OUTPUTQ	4B6	1548	500	Y
CICS READ	FILE	FILEA	55C	1548	500	Y
CICS READ UPD	FILE	FILEA	5F8	1548	500	N
CICS REWRITE	FILE	FILEA	68C	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	5A6	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	504	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	6D6	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	642	1548	500	Y
CICS DELETEQ	TSAUX	OUTPUTQ	4B6	1548	500	Y
CICS READ	FILE	FILEA	55C	1548	500	Y
CICS READ UPD	FILE	FILEA	5F8	1548	500	N
CICS REWRITE	FILE	FILEA	68C	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	5A6	1548	500	Y

CICS WRITEQ	TS	OUTPUTQ	504	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	6D6	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	642	1548	500	Y
CICS DELETEQ	TSAUX	OUTPUTQ	4B6	1548	500	Y
CICS READ	FILE	FILEA	55C	1548	500	Y
CICS READ UPD	FILE	FILEA	5F8	1548	500	N
CICS REWRITE	FILE	FILEA	68C	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	5A6	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	504	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	6D6	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	642	1548	500	Y
CICS DELETEQ	TSAUX	OUTPUTQ	4B6	1548	500	Y
CICS READ	FILE	FILEA	55C	1548	500	Y
CICS READ UPD	FILE	FILEA	5F8	1548	500	N
CICS REWRITE	FILE	FILEA	68C	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	5A6	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	504	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	6D6	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	642	1548	500	Y
CICS DELETEQ	TSAUX	OUTPUTQ	4B6	1548	500	Y
CICS READ	FILE	FILEA	55C	1548	500	Y
CICS READ UPD	FILE	FILEA	5F8	1548	500	N
CICS REWRITE	FILE	FILEA	68C	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	5A6	1548	500	Y
CICS WRITEQ	TS	OUTPUTQ	504	1548	500	Y

1CICS INTERDEPENDENCY ANALYZER VERSION 2.2.0

2008/07/14:20.30.23

PAGE

8

Program Dynamic Analysis - THREADSAFE DETAIL LISTING FOR CICS TS 3.2

APPLID	Program	Linkedit Date	Execution Key	Concurrency	APIST	Storage Protect	CICS Rel	LIB Dataset Name
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CMD Type	Function	Type	Resource	Offset	Program Length	Use Count	Threadsafe
CICS WRITEQ		TS	OUTPUTQ	6D6	1548	500	Y
CICS WRITEQ		TS	OUTPUTQ	642	1548	500	Y

Total CICS calls:	40	Threadsafe:	35	Non-Threadsafe:	5	Indeterminate	Threadsafe:	0
		DB2 calls:	0	MQ calls:	0	IMS calls:		0
		Dynamic Calls:	0	Threadsafe Inhibitor calls:	0			

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