

LOC	OBJECT CODE	ADDR1	ADDR2	STMT
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```
2 *****
3 *
4 *           CUSE Performance instruction tests
5 *
6 *****
7 *
8 *   This program ONLY tests the performance of the CUSE instructions.
9 *
10 *
11 *           *****
12 *           **   IMPORTANT!   **
13 *           *****
14 *
15 *           This test uses the Hercules Diagnose X'008' interface
16 *           to display messages and thus your .tst runtest script
17 *           MUST contain a "DIAG8CMD ENABLE" statement within it!
18 *
19 *
20 *   NOTE: This test is based on the CLCL-et-al Test but modified to
21 *           only test the CUSE instruction. -- James Wekel November 2022
22 *
23 *****
24 *
25 *   Example Hercules Testcase:
26 *
27 *
28 *           *Testcase CUSE-02-performance (Test CUSE instructions)
29 *
30 *           mainsize      16
31 *           numcpu        1
32 *           sysclear
33 *           archlvl       z/Arch
34 *           loadcore      "$(testpath)/CUSE-02-performance.core" 0x0
35 *           diag8cmd      enable   # (needed for messages to Hercules console)
36 *           #r            408=ff   # (enable timing tests)
37 *           runtest       500      # (test duration, depends on host)
38 *           diag8cmd      disable  # (reset back to default)
39 *           *Done
40 *
41 *
42 *****
```


LOC	OBJECT CODE	ADDR1	ADDR2	STMT	
				73 *****	
				74 *	The actual "CUSE2TST" program itself...
				75 *****	
				76 *	
				77 *	Architecture Mode: z/Arch
				78 *	Register Usage:
				79 *	
				80 *	R0 (work)
				81 *	R1 (work)
				82 *	R2 (work) or MSG subroutine call
				83 *	R3 (work)
				84 *	R4 (work)
				85 *	R6 CUSETEST Base (of current test)
				86 *	R7 (work)
				87 *	R8 First base register
				88 *	R9 Second base register
				89 *	R10-R13 (work)
				90 *	R14 Subroutine call
				91 *	R15 Secondary Subroutine call or work
				92 *	
				93 *****	
00000200		00000200		95	USING BEGIN,R8 FIRST Base Register
00000200		00001200		96	USING BEGIN+4096,R9 SECOND Base Register
00000200	0580			98	BEGIN BALR R8,0 Initialize FIRST base register
00000202	0680			99	BCTR R8,0 Initialize FIRST base register
00000204	0680			100	BCTR R8,0 Initialize FIRST base register
00000206	4190 8800		00000800	102	LA R9,2048(,R8) Initialize SECOND base register
0000020A	4190 9800		00000800	103	LA R9,2048(,R9) Initialize SECOND base register
				105 *****	
				106 *	Run the performance test(s)...
				107 *****	
0000020E	45E0 8328		00000528	109	BAL R14,TEST91 Time CUSE instruction (speed test)
				111 *****	
				112 *	Test for normal or unexpected test completion...
				113 *****	
00000212	95FF 8208		00000408	115	CLI TIMEOPT,X'FF' Was this a timing run?
00000216	4770 8D80		00000F80	116	BNE EOJ No, timing run; just go end normally
0000021A	95F4 8200		00000400	118	CLI TESTNUM,X'F4' Did we end on expected test?
0000021E	4770 8D98		00000F98	119	BNE FAILTEST No?! Then FAIL the test!
00000222	9599 8201		00000401	121	CLI SUBTEST,X'99' Did we end on expected SUB-test?
00000226	4770 8D98		00000F98	122	BNE FAILTEST No?! Then FAIL the test!
0000022A	47F0 8D80		00000F80	124	B EOJ Yes, then normal completion!

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LOC	OBJECT	CODE	ADDR1	ADDR2	STMT						
					146	*****					
					147	*	TEST91	Time CUSE instruction (speed test)			
					148	*****					
00000528	91FF	8208		00000408	150	TEST91	TM	TIMEOPT,X'FF'	Is timing tests option enabled?		
0000052C	078E				151		BZR	R14	No, skip timing tests		
0000052E	4160	8E40		00001040	153		LA	R6,CUSEPERF	Point R5 --> testing control table		
00000532			00000000		154		USING	CUSETEST,R6	What each table entry looks like		
					00000532	00000001	156	TST91LOP	EQU	*	
00000532	5060	8224		00000424	157		ST	R6,SAVER6	Save current pref table base		
00000536	4370	6000		00000000	159		IC	R7,TNUM	Set test number		
0000053A	4270	8200		00000400	160		STC	R7,TESTNUM			
					161	*					
					162	**	Initialize operand data (move data to testing address)				
					163	*					
					164	*	Build Operand-1				
0000053E	5820	6018		00000018	166		L	R2,OP1WHERE	Where to move operand-1 data to		
00000542	5830	601C		0000001C	167		L	R3,OP1LEN	Get operand-1 length		
00000546	58A0	6008		00000008	168		L	R10,SS1ADDR	Calculate OP 1 starting		
0000054A	1BA3				169		SR	R10,R3	address		
0000054C	5AA0	600C		0000000C	170		A	R10,SS1LEN			
00000550	58B0	601C		0000001C	171		L	R11,OP1LEN			
00000554	0E2A				172		MVCL	R2,R10			
00000556	0620				174		BCTR	R2,0	less one for last char addr		
00000558	D200	2000 6006	00000000	00000006	175		MVC	0(0,R2),SS1LAST	set last char		
					177	*	Build Operand-2				
0000055E	5840	6020		00000020	179		L	R4,OP2WHERE	Where to move operand-1 data to		
00000562	5850	6024		00000024	180		L	R5,OP2LEN	Get operand-1 length		
00000566	58A0	6010		00000010	181		L	R10,SS2ADDR	Calculate OP 2 starting		
0000056A	1BA5				182		SR	R10,R5	address		
0000056C	5AA0	6014		00000014	183		A	R10,SS2LEN			
00000570	58B0	6024		00000024	184		L	R11,OP2LEN			
00000574	0E4A				185		MVCL	R4,R10			
00000576	0640				187		BCTR	R4,0	less one for last char addr		
00000578	D200	4000 6007	00000000	00000007	188		MVC	0(0,R4),SS2LAST	set last char		
					190	*	Set Substring length and pad byte				
0000057E	4300	6004		00000004	192		IC	R0,SSLEN	Set SS length		
00000582	4310	6005		00000005	193		IC	R1,PAD	Set SS Pad byte		

LOC	OBJECT CODE	ADDR1	ADDR2	STMT
195				*****
196	*			Define come helpful macros to ensure our counts are correct
197				*****
199				MACRO
200				OVERONLY &NUM &NUM = number of sets
201				LCLA &CTR
202	&CTR			SETA &NUM
203	.LOOP			ANOP
204	.*			
205	*			
206				LM R2,R5,OPSWHERE
207				BC B'0001',*+4
208	.*			
209	&CTR			SETA &CTR-1
210				AIF (&CTR GT 0).LOOP
211				MEND
213				MACRO
214				DOINSTR &NUM &NUM = number of sets
215				LCLA &CTR
216	&CTR			SETA &NUM
217	.LOOP			ANOP
218	.*			
219	*			
220				LM R2,R5,OPSWHERE
221				CUSE R2,R4
222				BC B'0001',*-4
223	.*			
224	&CTR			SETA &CTR-1
225				AIF (&CTR GT 0).LOOP
226				MEND

LOC	OBJECT	CODE	ADDR1	ADDR2	STMT		
					552	*****	
					553	* Now do the actual timing run...	
					554	*****	
000008C4	5870	8DB4		00000FB4	556	L R7,NUMLOOPS	
000008C8	B205	8DB8		00000FB8	557	STCK BEGCLOCK	
000008CC	05A0				558	BALR R10,0	
					559	* 100 sets of instructions	
					560	DOINSTR 2 (first 2)	
					561+	*	
000008CE	9825	6018		00000018	562+	LM R2,R5,OPSWHERE	
000008D2	B257	0024			563+	CUSE R2,R4	
000008D6	4710	86D2		000008D2	564+	BC B'0001',*-4	
					565+	*	
000008DA	9825	6018		00000018	566+	LM R2,R5,OPSWHERE	
000008DE	B257	0024			567+	CUSE R2,R4	
000008E2	4710	86DE		000008DE	568+	BC B'0001',*-4	
					570	*ETC.....	
					572	PRINT OFF	
					958	PRINT ON	
					960	DOINSTR 2 (last 2)	
					961+	*	
00000D66	9825	6018		00000018	962+	LM R2,R5,OPSWHERE	
00000D6A	B257	0024			963+	CUSE R2,R4	
00000D6E	4710	8B6A		00000D6A	964+	BC B'0001',*-4	
					965+	*	
00000D72	9825	6018		00000018	966+	LM R2,R5,OPSWHERE	
00000D76	B257	0024			967+	CUSE R2,R4	
00000D7A	4710	8B76		00000D76	968+	BC B'0001',*-4	
					970	BCTR R7,R10	
00000D7E	067A				971	STCK ENDCLOCK	
00000D80	B205	8DC0		00000FC0			
00000D84	9825	8210		00000410	973	LM R2,R5,SAVE2T5	
00000D88	D204	8E11	8DA8	00000FA8	974	MVC PRTLINE+33(5),=CL5'CUSE'	
00000D8E	45F0	8BA6		00000DA6	975	BAL R15,RPTSPEED	
					976	* More performance tests?	
					977	**	
					978	*	
00000D92	5860	8224		00000424	979	L R6,SAVER6	Restore perf table base
00000D96	4160	603C		0000003C	980	LA R6,CUSENEXT	Go on to next table entry
00000D9A	D503	8D9C	6000	00000000	981	CLC =F'0',0(R6)	End of table?
00000DA0	4770	8332		00000532	982	BNE TST91LOP	No, loop...
00000DA4	07FE				983	BR R14	Return to caller or FAILTEST

LOC	OBJECT CODE			ADDR1	ADDR2	STMT				
						985	*****			
						986	*	RPTSPEED	Report instruction speed	
						987	*****			
00000DA6	50F0	8C10			00000E10	989	RPTSPEED	ST	R15,RPTSAVE	Save return address
00000DAA	9057	8C14			00000E14	990		STM	R5,R7,RPTSVR5T7	Save R5-7
00000DAE	45F0	8C30			00000E30	992		BAL	R15,CALCDUR	Calculate duration
00000DB2	4150	8DD0			00000FD0	994		LA	R5,OVERHEAD	Subtract overhead
00000DB6	4160	8DC8			00000FC8	995		LA	R6,DURATION	From raw timing
00000DBA	4170	8DC8			00000FC8	996		LA	R7,DURATION	Yielding true instruction timing
00000DBE	45F0	8C84			00000E84	997		BAL	R15,SUBDWORD	Do it
00000DC2	98AB	8DC8			00000FC8	999		LM	R10,R11,DURATION	Convert to...
00000DC6	8CA0	000C			0000000C	1000		SRDL	R10,12	... microseconds
00000DCA	4EA0	8DD8			00000FD8	1002		CVD	R10,TICKSAAA	Convert HIGH part to decimal
00000DCE	4EB0	8DE0			00000FE0	1003		CVD	R11,TICKSBBB	Convert LOW part to decimal
00000DD2	F877	8DE8	8DD8	00000FE8	00000FD8	1005		ZAP	TICKSTOT,TICKSAAA	Calculate...
00000DD8	FC75	8DE8	8DAD	00000FE8	00000FAD	1006		MP	TICKSTOT,=P'4294967296'	...decimal...
00000DDE	FA77	8DE8	8DE0	00000FE8	00000FE0	1007		AP	TICKSTOT,TICKSBBB	...microseconds
00000DE4	D20B	8E1B	8E34	0000101B	00001034	1009		MVC	PRTLINE+43(L'EDIT),EDIT	(edit into...
00000DEA	DE0B	8E1B	8DEB	0000101B	00000FEB	1010		ED	PRTLINE+43(L'EDIT),TICKSTOT+3	...print line)
						1012	*			
						1013	*	Use Hercules Diagnose for Message to console		
						1014	*			
00000DF0	9002	8C20			00000E20	1015		STM	R0,R2,RPTDWSAV	Save regs used by MSG
00000DF4	4100	0044			00000044	1016		LA	R0,PRTLNG	Message length
00000DF8	4110	8DF0			00000FF0	1017		LA	R1,PRTLINE	Message address
00000DFC	4520	8CB8			00000EB8	1018		BAL	R2,MSG	Call Hercules console MSG display
00000E00	9802	8C20			00000E20	1019		LM	R0,R2,RPTDWSAV	Restore regs
00000E04	9857	8C14			00000E14	1021		LM	R5,R7,RPTSVR5T7	Restore R5-7
00000E08	58F0	8C10			00000E10	1022		L	R15,RPTSAVE	Restore return address
00000E0C	07FF					1023		BR	R15	Return to caller
00000E10	00000000					1025	RPTSAVE	DC	F'0'	R15 save area
00000E14	00000000	00000000				1026	RPTSVR5T7	DC	3F'0'	R5-R7 save area
00000E20	00000000	00000000				1028	RPTDWSAV	DC	2D'0'	R0-R2 save area for MSG call

LOC	OBJECT	CODE	ADDR1	ADDR2	STMT				
					1030	*****			
					1031	*	CALCDUR	Calculate	DURATION
					1032	*****			
00000E30	50F0	8C74		00000E74	1034	CALCDUR	ST	R15,CALCRET	Save return address
00000E34	9057	8C78		00000E78	1035		STM	R5,R7,CALCWORK	Save work registers
00000E38	9867	8DB8		00000FB8	1037		LM	R6,R7,BEGCLOCK	Remove CPU number from clock value
00000E3C	8C60	0006		00000006	1038		SRDL	R6,6	"
00000E40	8D60	0006		00000006	1039		SLDL	R6,6	"
00000E44	9067	8DB8		00000FB8	1040		STM	R6,R7,BEGCLOCK	"
00000E48	9867	8DC0		00000FC0	1042		LM	R6,R7,ENDCLOCK	Remove CPU number from clock value
00000E4C	8C60	0006		00000006	1043		SRDL	R6,6	"
00000E50	8D60	0006		00000006	1044		SLDL	R6,6	"
00000E54	9067	8DC0		00000FC0	1045		STM	R6,R7,ENDCLOCK	"
00000E58	4150	8DB8		00000FB8	1047		LA	R5,BEGCLOCK	Starting time
00000E5C	4160	8DC0		00000FC0	1048		LA	R6,ENDCLOCK	Ending time
00000E60	4170	8DC8		00000FC8	1049		LA	R7,DURATION	Difference
00000E64	45F0	8C84		00000E84	1050		BAL	R15,SUBDWORD	Calculate duration
00000E68	9857	8C78		00000E78	1052		LM	R5,R7,CALCWORK	Restore work registers
00000E6C	58F0	8C74		00000E74	1053		L	R15,CALCRET	Restore return address
00000E70	07FF				1054		BR	R15	Return to caller
00000E74	00000000				1056	CALCRET	DC	F'0'	R15 save area
00000E78	00000000	00000000			1057	CALCWORK	DC	3F'0'	R5-R7 save area
					1059	*****			
					1060	*	SUBDWORD	Subtract	two doublewords
					1061	*	R5 -->	subtrahend, R6 -->	minuend, R7 --> result
					1062	*****			
00000E84	9014	8CA8		00000EA8	1064	SUBDWORD	STM	R1,R4,SUBDWSAV	Save registers
00000E88	9812	5000		00000000	1066		LM	R1,R2,0(R5)	Subtrahend (value to subtract)
00000E8C	9834	6000		00000000	1067		LM	R3,R4,0(R6)	Minuend (what to subtract FROM)
00000E90	1F42				1068		SLR	R4,R2	Subtract LOW part
00000E92	47B0	8C9A		00000E9A	1069		BNM	++4+4	(branch if no borrow)
00000E96	5F30	8DA0		00000FA0	1070		SL	R3,=F'1'	(otherwise do borrow)
00000E9A	1F31				1071		SLR	R3,R1	Subtract HIGH part
00000E9C	9034	7000		00000000	1072		STM	R3,R4,0(R7)	Store results
00000EA0	9814	8CA8		00000EA8	1074		LM	R1,R4,SUBDWSAV	Restore registers
00000EA4	07FF				1075		BR	R15	Return to caller
00000EA8	00000000	00000000			1077	SUBDWSAV	DC	2D'0'	R1-R4 save area

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LOC	OBJECT	CODE	ADDR1	ADDR2	STMT							
					1113	*****						
					1114	* Normal completion or Abnormal termination PSWs						
					1115	*****						
00000F70	00020001	80000000			1117	EOJPSW	DC	0D'0',X'0002000180000000',AD(0)				
00000F80	B2B2	8D70		00000F70	1119	EOJ	LPSWE	EOJPSW	Normal completion			
00000F88	00020001	80000000			1121	FAILPSW	DC	0D'0',X'0002000180000000',AD(X'BAD')				
00000F98	B2B2	8D88		00000F88	1123	FAILTEST	LPSWE	FAILPSW	Abnormal termination			
					1125	*****						
					1126	* Working Storage						
					1127	*****						
00000F9C					1129	LTORG		,	Literals pool			
00000F9C	00000000				1130	=F'0'						
00000FA0	00000001				1131	=F'1'						
00000FA4	0000				1132	=H'0'						
00000FA6	005F				1133	=AL2(L'MSGMSG)						
00000FA8	C3E4E2C5	40			1134	=CL5'CUSE'						
00000FAD	04294967	296C			1135	=P'4294967296'						
			00000400	00000001	1137	K	EQU	1024	One KB			
			00001000	00000001	1138	PAGE	EQU	(4*K)	Size of one page			
			00008000	00000001	1139	K32	EQU	(32*K)	32 KB			
			00010000	00000001	1140	K64	EQU	(64*K)	64 KB			
			00100000	00000001	1141	MB	EQU	(K*K)	1 MB			
00000FB4	00002710				1143	NUMLOOPS	DC	F'10000'		10,000 * 100 = 1,000,000		
00000FB8	BBBBBBBB	BBBBBBBB			1145	BEGCLOCK	DC	0D'0',8X'BB'		Begin		
00000FC0	EEEEEEEE	EEEEEEEE			1146	ENDCLOCK	DC	0D'0',8X'EE'		End		
00000FC8	DDDDDDDD	DDDDDDDD			1147	DURATION	DC	0D'0',8X'DD'		Diff		
00000FD0	FFFFFFFF	FFFFFFFF			1148	OVERHEAD	DC	0D'0',8X'FF'		Overhead		
00000FD8	00000000	0000000C			1150	TICKSAAA	DC	PL8'0'		Clock ticks high part		
00000FE0	00000000	0000000C			1151	TICKSBBB	DC	PL8'0'		Clock ticks low part		
00000FE8	00000000	0000000C			1152	TICKSTOT	DC	PL8'0'		Total clock ticks		
00000FF0	40404040	40404040			1154	PRTLINE	DC	C' 1,000,000 iterations of XXXXX'				
00001016	40A39696	9240F9F9			1155		DC	C' took 999,999,999 microseconds'				
			00000044	00000001	1156	PRTLNG	EQU	*-PRTLINE				
00001034	40202020	6B202020			1157	EDIT	DC	X'402020206B2020206B202120'				

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	
				1159 *****	
				1160 * CUSETEST DSECT	
				1161 *****	
				1163 CUSETEST DSECT ,	
00000000	00			1164 TNUM DC X'00'	CUSE table number
00000001	000000			1165 DC XL3'00'	
				1167 SSLEN DC AL1(0)	CUSE - SS length
00000004	00			1168 PAD DC X'00'	CUSE - Pad byte
00000005	00			1169 SS1LAST DC X'00'	First-Operand SS last byte
00000006	00			1170 SS2LAST DC X'00'	Second-Operand SS last byte
00000007	00				
				1172 SS1ADDR DC A(0)	First-Operand SS Address
00000008	00000000			1173 SS1LEN DC A(0)	First-Operand SS length
0000000C	00000000			1174 SS2ADDR DC A(0)	Second-Operand SS Address
00000010	00000000			1175 SS2LEN DC A(0)	Second-Operand SS length
00000014	00000000				
		00000018	00000001	1177 OPSWHERE EQU *	
00000018	00000000			1178 OP1WHERE DC A(0)	Where Operand-1 data should be placed
0000001C	00000000			1179 OP1LEN DC F'0'	CUSE - First-Operand Length
00000020	00000000			1180 OP2WHERE DC A(0)	Where Operand-2 data should be placed
00000024	00000000			1181 OP2LEN DC F'0'	CUSE - Second-Operand Length
				1182	
				1184 FAILMASK DC A(0)	Failure Branch on Condition mask
				1186 *	Ending register values
0000002C	00000000			1187 ENDOP1 DC A(0)	Operand 1 address
00000030	00000000			1188 DC A(0)	Operand 1 length
00000034	00000000			1189 ENDOP2 DC A(0)	Operand 2 address
00000038	00000000			1190 DC A(0)	Operand 2 length
		0000003C	00000001	1192 CUSENEXT EQU *	Start of next table entry...
		AABBCCDD	00000001	1194 REG2PATT EQU X'AABBCCDD'	Polluted Register pattern
		000000DD	00000001	1195 REG2LOW EQU X'DD'	(last byte above)

LOC	OBJECT CODE	ADDR1	ADDR2	STMT	
				1197 *****	
				1198 * CUSE Performace Test data...	
				1199 *****	
00001040		00000000	0000E9AF	1201 CUSE2TST CSECT ,	
				1202 CUSEPERF DC 0A(0)	Start of table
				1204 *****	
				1205 * performance test data	
				1206 *****	
				1208 * Cross page bounday - operand-1 and operand-2	
00001040				1210 PTE6 DS 0F	
00001040	E6			1211 DC X'E6'	Test Num
00001041	000000			1212 DC XL3'00'	
				1213 *	
00001044	01			1214 DC AL1(1)	SS Length
00001045	00			1215 DC X'00'	Pad Byte
00001046	77			1216 DC X'77'	First-Operand SS last byte
00001047	77			1217 DC X'77'	Second-Operand SS last byte
				1218 *	Source
00001048	000031B0	00000020		1219 DC A(COP1A),A(032)	Op-1 SS & length
00001050	00009DB0	00000020		1220 DC A(COP2A),A(032)	OP-2 SS & length
				1221 *	Target
00001058	00B2FFA0	00000200		1222 DC A(11*MB+(6*K32)-96),A(512)	Op-1 & length
00001060	00C2FF80	00000200		1223 DC A(12*MB+(6*K32)-128),A(512)	Op-2 & length
				1224 *	
00001068	00000006			1225 DC A(6) not CC0 or CC3	Fail mask
				1226 *	Ending register values
0000106C	00B30180	00000020		1227 DC A(11*MB+(6*K32)+(512-32)-96),A(032)	OP-1
00001074	00C30160	00000020		1228 DC A(12*MB+(6*K32)+(512-32)-128),A(032)	OP-2
0000107C				1230 PTE1 DS 0F	
0000107C	E1			1231 DC X'E1'	Test Num
0000107D	000000			1232 DC XL3'00'	
				1233 *	
00001080	04			1234 DC AL1(4)	SS Length
00001081	00			1235 DC X'00'	Pad Byte
00001082	EE			1236 DC X'EE'	First-Operand SS last byte
00001083	EE			1237 DC X'EE'	Second-Operand SS last byte
				1238 *	Source
00001084	000031B0	00000004		1239 DC A(COP1A),A(004)	Op-1 SS & length
0000108C	00009DB0	00000004		1240 DC A(COP2A),A(004)	OP-2 SS & length
				1241 *	Target
00001094	00B07FC1	00000200		1242 DC A(11*MB+(1*K32)-63),A(512)	Op-1 & length
0000109C	00C07FC8	00000200		1243 DC A(12*MB+(1*K32)-56),A(512)	Op-2 & length
				1244 *	
000010A4	00000007			1245 DC A(7) CC0	Fail mask
				1246 *	Ending register values
000010A8	00B081BD	00000004		1247 DC A(11*MB+(1*K32)-63+(512-4)),A(004)	OP-1
000010B0	00C081C4	00000004		1248 DC A(12*MB+(1*K32)-56+(512-4)),A(004)	OP-2
000010B8				1250 PTE2 DS 0F	

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LOC	OBJECT	CODE	ADDR1	ADDR2	STMT				
000010B8	E2				1251	DC	X'E2'	Test Num	
000010B9	000000				1252	DC	XL3'00'		
					1253 *				
000010BC	08				1254	DC	AL1(8)	SS Length	
000010BD	00				1255	DC	X'00'	Pad Byte	
000010BE	77				1256	DC	X'77'	First-Operand SS last byte	
000010BF	77				1257	DC	X'77'	Second-Operand SS last byte	
					1258 *			Source	
000010C0	000031B0	00000008			1259	DC	A(COP1A),A(008)	Op-1 SS & length	
000010C8	00009DB0	00000008			1260	DC	A(COP2A),A(008)	OP-2 SS & length	
					1261 *			Target	
000010D0	00B0FFA0	00000200			1262	DC	A(11*MB+(2*K32)-96),A(512)	Op-1 & length	
000010D8	00C0FF80	00000200			1263	DC	A(12*MB+(2*K32)-128),A(512)	Op-2 & length	
					1264 *				
000010E0	00000007				1265	DC	A(7) CC0	Fail mask	
					1266 *			Ending register values	
000010E4	00B10198	00000008			1267	DC	A(11*MB+(2*K32)+(512-8)-96),A(008)	OP-1	
000010EC	00C10178	00000008			1268	DC	A(12*MB+(2*K32)+(512-8)-128),A(008)	OP-2	
000010F4					1270 PTF2	DS	0F		
000010F4	F2				1271	DC	X'F2'	Test Num	
000010F5	000000				1272	DC	XL3'00'		
					1273 *				
000010F8	20				1274	DC	AL1(32)	SS Length	
000010F9	00				1275	DC	X'00'	Pad Byte	
000010FA	77				1276	DC	X'77'	First-Operand SS last byte	
000010FB	77				1277	DC	X'77'	Second-Operand SS last byte	
					1278 *			Source	
000010FC	000031B0	00000020			1279	DC	A(COP1A),A(032)	Op-1 SS & length	
00001104	00009DB0	00000020			1280	DC	A(COP2A),A(032)	OP-2 SS & length	
					1281 *			Target	
0000110C	00D0FFA0	00000200			1282	DC	A(13*MB+(2*K32)-96),A(512)	Op-1 & length	
00001114	00E0FF80	00000200			1283	DC	A(14*MB+(2*K32)-128),A(512)	Op-2 & length	
					1284 *				
0000111C	00000007				1285	DC	A(7) CC0	Fail mask	
					1286 *			Ending register values	
00001120	00D10180	00000020			1287	DC	A(13*MB+(2*K32)+(512-32)-96),A(032)	OP-1	
00001128	00E10160	00000020			1288	DC	A(14*MB+(2*K32)+(512-32)-128),A(032)	OP-2	
00001130					1290 PTE7	DS	0F		
00001130	E7				1291	DC	X'E7'	Test Num	
00001131	000000				1292	DC	XL3'00'		
					1293 *				
00001134	04				1294	DC	AL1(4)	SS Length	
00001135	00				1295	DC	X'00'	Pad Byte	
00001136	77				1296	DC	X'77'	First-Operand SS last byte	
00001137	77				1297	DC	X'77'	Second-Operand SS last byte	
					1298 *			Source	
00001138	000079B0	00000020			1299	DC	A(COP1C),A(032)	Op-1 SS & length	
00001140	0000E5B0	00000020			1300	DC	A(COP2C),A(032)	OP-2 SS & length	
					1301 *			Target	
00001148	00B37FA0	00000200			1302	DC	A(11*MB+(7*K32)-96),A(512)	Op-1 & length	
00001150	00C37F80	00000200			1303	DC	A(12*MB+(7*K32)-128),A(512)	Op-2 & length	
					1304 *				

LOC	OBJECT	CODE	ADDR1	ADDR2	STMT			
					1333	*****		
					1334	* CUSE Operand-1 scan data..		
					1335	*****		
000011B0					1337	DS	0F	
000011B0	98765432	98765432			1338	DC	2048XL4 '98765432 '	
000031B0	111111F0	111111F0			1339	COP1A	DC	256XL4 '111111F0 '
000035B0					1341	DS	0F	
000035B0	98765432	98765432			1342	DC	2048XL4 '98765432 '	
000055B0	40404040	40404040			1343	COP1B	DC	256XL4 '40404040 '
000059B0					1345	DS	0F	
000059B0	11223344	11223344			1346	DC	2048XL4 '11223344 '	
000079B0	40404040	40404040			1347	COP1C	DC	256XL4 '40404040 '
					1349	*****		
					1350	* CUSE Operand-2 scan data		
					1351	*****		
00007DB0					1353	DS	0F	
00007DB0	89ABCDEF	89ABCDEF			1354	DC	2048XL4 '89ABCDEF '	
00009DB0	111111F0	111111F0			1355	COP2A	DC	256XL4 '111111F0 '
0000A1B0					1357	DS	0F	
0000A1B0	89ABCDEF	89ABCDEF			1358	DC	2048XL4 '89ABCDEF '	
0000C1B0	40404040	40404040			1359	COP2B	DC	256XL4 '40404040 '
0000C5B0					1361	DS	0F	
0000C5B0	FF223344	FF223344			1362	DC	2048XL4 'FF223344 '	
0000E5B0	40404040	40404040			1363	COP2C	DC	256XL4 '40404040 '
					1365	*****		
					1366	* Register equates		
					1367	*****		
	00000000	00000001			1369	R0	EQU	0
	00000001	00000001			1370	R1	EQU	1
	00000002	00000001			1371	R2	EQU	2
	00000003	00000001			1372	R3	EQU	3
	00000004	00000001			1373	R4	EQU	4
	00000005	00000001			1374	R5	EQU	5
	00000006	00000001			1375	R6	EQU	6
	00000007	00000001			1376	R7	EQU	7
	00000008	00000001			1377	R8	EQU	8
	00000009	00000001			1378	R9	EQU	9
	0000000A	00000001			1379	R10	EQU	10
	0000000B	00000001			1380	R11	EQU	11
	0000000C	00000001			1381	R12	EQU	12

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SYMBOL	TYPE	VALUE	LENGTH	DEFN	REFERENCES														
BEGCLOCK	D	00000FB8	8	1145	233	557	1037	1040	1047										
BEGIN	I	00000200	2	98	65	95	96												
CALCDUR	I	00000E30	4	1034	549	992													
CALCRET	F	00000E74	4	1056	1034	1053													
CALCWORK	F	00000E78	4	1057	1035	1052													
COP1A	X	000031B0	4	1339	1219	1239	1259	1279	1319										
COP1B	X	000055B0	4	1343															
COP1C	X	000079B0	4	1347	1299														
COP2A	X	00009DB0	4	1355	1220	1240	1260	1280	1320										
COP2B	X	0000C1B0	4	1359															
COP2C	X	0000E5B0	4	1363	1300														
CUSE2TST	J	00000000	59824	60	63	67	71	130	61										
CUSENEXT	U	0000003C	1	1192	980														
CUSEPERF	A	00001040	4	1202	153														
CUSETEST	4	00000000	60	1163	154														
DURATION	D	00000FC8	8	1147	550													995	996
EDIT	X	00001034	12	1157	1009	1010													
ENDCLOCK	D	00000FC0	8	1146	548	971												1042	1045
ENDOP1	A	0000002C	4	1187															
ENDOP2	A	00000034	4	1189															
EOJ	I	00000F80	4	1119	116	124													
EOJPSW	D	00000F70	8	1117	1119														
FAILMASK	A	00000028	4	1184															
FAILPSW	D	00000F88	8	1121	1123														
FAILTEST	I	00000F98	4	1123	119													122	
IMAGE	1	00000000	59824	0															
K	U	00000400	1	1137														1138	1139
K32	U	00008000	1	1139	1222	1223	1227	1228	1242	1243	1247	1248	1262	1263	1267	1268	1282		
					1283	1287	1288	1302	1303	1307	1308	1322	1323	1327	1328				
K64	U	00010000	1	1140															
MB	U	00100000	1	1141														1222	1223
					1283	1287	1288	1302	1303	1307	1308	1322	1323	1327	1328				
MSG	I	00000EB8	4	1084	1018														
MSGCMD	C	00000F02	9	1110	1097													1098	
MSGMSG	C	00000F0B	95	1111	1091	1108	1089												
MSGMVC	I	00000EFC	6	1108	1095														
MSGOK	I	00000ECE	2	1093	1090														
MSGRET	I	00000EE8	4	1104	1101														
MSGSAVE	F	00000EF0	4	1107	1087	1104													
NUMLOOPS	F	00000FB4	4	1143	232	556													
OP1LEN	F	0000001C	4	1179	167	171													
OP1WHERE	A	00000018	4	1178	166														
OP2LEN	F	00000024	4	1181	180	184													
OP2WHERE	A	00000020	4	1180	179														
OPSWHERE	U	00000018	1	1177	239	242	250	253	256	259	262	265	268	271	274	277	280		
					283	286	289	292	295	298	301	304	307	310	313	316	319		
					322	325	328	331	334	337	340	343	346	349	352	355	358		
					361	364	367	370	373	376	379	382	385	388	391	394	397		
					400	403	406	409	412	415	418	421	424	427	430	433	436		
					439	442	445	448	451	454	457	460	463	466	469	472	475		
					478	481	484	487	490	493	496	499	502	505	508	511	514		
					517	520	523	526	529	532	535	541	544	562	566	575	579		
					583	587	591	595	599	603	607	611	615	619	623	627	631		
					635	639	643	647	651	655	659	663	667	671	675	679	683		
					687	691	695	699	703	707	711	715	719	723	727	731	735		
					739	743	747	751	755	759	763	767	771	775	779	783	787		

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SYMBOL	TYPE	VALUE	LENGTH	DEFN	REFERENCES														
					791	795	799	803	807	811	815	819	823	827	831	835	839		
					843	847	851	855	859	863	867	871	875	879	883	887	891		
					895	899	903	907	911	915	919	923	927	931	935	939	943		
					947	951	955	962	966										
OVERHEAD	D	00000FD0	8	1148	550	994													
PAD	X	00000005	1	1168	193														
PAGE	U	00001000	1	1138															
PRTLNE	C	00000FF0	38	1154	1156	974	1009	1010	1017										
PRTLNG	U	00000044	1	1156	1016														
PTE1	F	0000107C	4	1230															
PTE2	F	000010B8	4	1250															
PTE6	F	00001040	4	1210															
PTE7	F	00001130	4	1290															
PTF2	F	000010F4	4	1270															
PTF4	F	0000116C	4	1310															
R0	U	00000000	1	1369	61	192	1015	1016	1019	1084	1087	1089	1091	1093	1104				
R1	U	00000001	1	1370	193	1017	1064	1066	1071	1074	1098	1108							
R10	U	0000000A	1	1379	168	169	170	172	181	182	183	185	235	547	558	970	999		
					1000	1002													
R11	U	0000000B	1	1380	171	184	999	1003											
R12	U	0000000C	1	1381															
R13	U	0000000D	1	1382															
R14	U	0000000E	1	1383	109	151	983												
R15	U	0000000F	1	1384	549	975	989	992	997	1022	1023	1034	1050	1053	1054	1075			
R2	U	00000002	1	1371	166	172	174	175	234	239	242	250	253	256	259	262	265		
					268	271	274	277	280	283	286	289	292	295	298	301	304		
					307	310	313	316	319	322	325	328	331	334	337	340	343		
					346	349	352	355	358	361	364	367	370	373	376	379	382		
					385	388	391	394	397	400	403	406	409	412	415	418	421		
					424	427	430	433	436	439	442	445	448	451	454	457	460		
					463	466	469	472	475	478	481	484	487	490	493	496	499		
					502	505	508	511	514	517	520	523	526	529	532	535	541		
					544	562	563	566	567	575	576	579	580	583	584	587	588		
					591	592	595	596	599	600	603	604	607	608	611	612	615		
					616	619	620	623	624	627	628	631	632	635	636	639	640		
					643	644	647	648	651	652	655	656	659	660	663	664	667		
					668	671	672	675	676	679	680	683	684	687	688	691	692		
					695	696	699	700	703	704	707	708	711	712	715	716	719		
					720	723	724	727	728	731	732	735	736	739	740	743	744		
					747	748	751	752	755	756	759	760	763	764	767	768	771		
					772	775	776	779	780	783	784	787	788	791	792	795	796		
					799	800	803	804	807	808	811	812	815	816	819	820	823		
					824	827	828	831	832	835	836	839	840	843	844	847	848		
					851	852	855	856	859	860	863	864	867	868	871	872	875		
					876	879	880	883	884	887	888	891	892	895	896	899	900		
					903	904	907	908	911	912	915	916	919	920	923	924	927		
					928	931	932	935	936	939	940	943	944	947	948	951	952		
					955	956	962	963	966	967	973	1015	1018	1019	1066	1068	1085		
					1087	1093	1094	1095	1097	1104	1105								
R3	U	00000003	1	1372	167	169	1067	1070	1071	1072									
R4	U	00000004	1	1373	179	185	187	188	563	567	576	580	584	588	592	596	600		
					604	608	612	616	620	624	628	632	636	640	644	648	652		
					656	660	664	668	672	676	680	684	688	692	696	700	704		
					708	712	716	720	724	728	732	736	740	744	748	752	756		
					760	764	768	772	776	780	784	788	792	796	800	804	808		
					812	816	820	824	828	832	836	840	844	848	852	856	860		

SYMBOL	TYPE	VALUE	LENGTH	DEFN	REFERENCES
=F'0'	F	00000F9C	4	1130	981
=F'1'	F	00000FA0	4	1131	1070
=H'0'	H	00000FA4	2	1132	1084
=P'4294967296'	P	00000FAD	6	1135	1006

DESC	SYMBOL	SIZE	POS	ADDR
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Entry: 0

Image	IMAGE	59824	0000-E9AF	0000-E9AF
Region		59824	0000-E9AF	0000-E9AF
CSECT	CUSE2TST	59824	0000-E9AF	0000-E9AF

STMT	FILE NAME
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1 /devstor/dev/tests/CUSE-02-performance.asm
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**** NO ERRORS FOUND ****