

Name	Mnemonic	Op-code	Format	Operands
Store Facility List	STFL	B2B1	S	D2(B2)
Store Facility List Extended	STFLE	B2B0	S	D2(B2)
Store FPC	STFPC	B29C	S	D2(B2)
Store Halfword	STH	40	RX	R1,D2(X2,B2)
Store Halfword	STHY	E370	RXY	R1,D2(X2,B2)
Store Multiple (32)	STM	90	RS1	R1,R3,D2(B2)
Store Multiple (32)	STMY	EB90	RSY1	R1,R3,D2(B2)
Store Multiple (64)	STMG	EB24	RSY1	R1,R3,D2(B2)
Store Multiple High	STMH	EB26	RSY1	R1,R3,D2(B2)
Store Pair to Quadword	STPQ	E38E	RXY	R1,D2(X2,B2)
Store Prefix	STPX	B211	S	D2(B2)
Store Real Address	STRAG	E502	SSE	D1(B1),D2(B2)
Store Reversed (16)	STRVH	E33F	RXY	R1,D2(X2,B2)
Store Reversed (32)	STRV	E33E	RXY	R1,D2(X2,B2)
Store Reversed (64)	STRVG	E32F	RXY	R1,D2(X2,B2)
Store Sub Channel	STSCH	B234	S	D2(B2)
Store System Information	STSI	B27D	S	D2(B2)
Store Then And System Mask	STNSM	AC	SI	D1(B1),I2
Store Then Or System Mask	STOSM	AD	SI	D1(B1),I2
Store Using Real Address (32)	STURA	B246	RRE	R1,R2
Store Using Real Address (64)	STURG	B925	RRE	R1,R2
Subtract (EB)	SXBR	B34B	RRE	R1,D2
Subtract (SB)	SEBR	B30B	RRE	R1,R2
Subtract (32)	S	5B	RX	R1,D2(X2,B2)
Subtract (32)	SR	1B	RR	R1,R2
Subtract (32)	SY	E35B	RXY	R1,D2(X2,B2)
Subtract (64)	SG	E309	RXY	R1,D2(X2,B2)
Subtract (64)	SGR	B909	RRE	R1,R2
Subtract (64<32)	SGF	E319	RXY	R1,D2(X2,B2)
Subtract (64<32)	SGFR	B919	RRE	R1,R2
Subtract (LB)	SDB	ED1B	RXE	R1,D2(X2,B2)
Subtract (LB)	SDBR	B31B	RRE	R1,R2
Subtract (SB)	SEB	ED0B	RXE	R1,D2(X2,B2)
Subtract Decimal	SP	FB	SS2	D1(L1,B1),D2(L2,B2)
Subtract Halfword	SH	4B	RX	R1,D2(X2,B2)
Subtract Halfword	SHY	E37B	RXY	R1,D2(X2,B2)
Subtract Logical (64)	SLGR	B90B	RRE	R1,R2
Subtract Logical Immediate (64<32)	SLGFI	C24	RIL	R1,I2
Subtract Logical Immediate(32)	SLFI	C25	RIL	R1,I2
Subtract Logical (32)	SL	5F	RX	R1,D2(X2,B2)
Subtract Logical (32)	SLR	1F	RR	R1,R2
Subtract Logical (64)	SLG	E30B	RXY	R1,D2(X2,B2)
Subtract Logical (64<32)	SLGF	E31B	RXY	R1,D2(X2,B2)
Subtract Logical (64<32)	SLGFR	B91B	RRE	R1,R2
Subtract Logical with Borrow (32)	SLB	E399	RXY	R1,D2(X2,B2)
Subtract Logical with Borrow (32)	SLBR	B999	RRE	R1,R2
Subtract Logical with Borrow (64)	SLBG	E389	RXY	R1,D2(X2,B2)
Subtract Logical with Borrow (64)	SLBGR	B989	RRE	R1,R2
Subtract Logical(32)	SLY	E35F	RXY	R1,D2(X2,B2)
Subtract Normalized (EH)	SXR	37	RR	R1,D2
Subtract Normalized (LH)	SD	6B	RX	R1,D2(X2,B2)
Subtract Normalized (LH)	SDR	2B	RR	R1,R2
Subtract Normalized (SH)	SE	7B	RX	R1,D2(X2,B2)
Subtract Normalized (SH)	SER	3B	RR	R1,R2
Subtract Unnormalized (LH)	SW	6F	RX	R1,D2(X2,B2)
Subtract Unnormalized (LH)	SWR	2F	RR	R1,R2
Subtract Unnormalized (SH)	SU	7F	RX	R1,D2(X2,B2)
Subtract Unnormalized (SH)	SUR	3F	RR	R1,R2
Supervisor Call	SVC	0A	I	I
Test Access	TAR	B24C	RRE	R1,R2

Name	Mnemonic	Op-code	Format	Operands
Test Addressing Mode	TAM	010B	E	
Test and Set	TS	93	S	D2(B2)
Test Block	TB	B22C	RRE	R1,R2
Test Data Class (EB)	TCXB	ED12	RXE	R1,D2(X2,B2)
Test Data Class (LB)	TCDB	ED11	RXE	R1,D2(X2,B2)
Test Data Class (SB)	TCEB	ED10	RXE	R1,D2(X2,B2)
Test Decimal	TP	EBC0	RSL	D1(L1,B1)
Test Pending Interruption	TPI	B236	S	D2(B2)
Test Protection	TPROT	E501	SSE	D1(B1),D2(B2)
Test Sub Channel	TSCH	B235	S	D2(B2)
Test under Mask	TM	91	SI	D1(B1),I2
Test under Mask	TMY	EB51	SIY	D1(B1),I2
Test under Mask (high high)	TMHH	A72	RI ₁	R1,I2
Test under Mask (high low)	TMHL	A73	RI ₁	R1,I2
Test under Mask (low high)	TMLH	A70	RI ₁	R1,I2
Test under Mask (low low)	TMLL	A71	RI ₁	R1,I2
Test under Mask High	TMH	A70	RI ₁	R1,I2
Test under Mask Low	TML	A71	RI ₁	R1,I2
Trace (32)	Trace	99	RS1	R1,R3,D2(B2)
Trace (64)	TRACG	EB0F	RSY1	R1,R3,D2(B2)
Translate	TR	DC	SS1	D1(L,B1),D2(B2)
Translate and Test	TRT	DD	SS1	D1(L,B1),D2(B2)
Translate and Test Reverse	TRTR	D0	SS1	D1(L,B1),D2(B2)
Translate Extended	TRE	B2A5	RRE	R1,R2
Translate One to One	TROO	B993	RRF2	R1,R2[,M3]
Translate One to Two	TROT	B992	RRF2	R1,R2[,M3]
Translate Two to One	TRTO	B991	RRF2	R1,R2[,M3]
Translate Two to Two	TRTT	B990	RRF2	R1,R2[,M3]
Trap	Trap2	1FF	E	
Trap	Trap4	B2FF	S	D2(B2)
Unpack	UNPK	F3	SS2	D1(L1,B1),D2(L2,B2)
Unpack ASCII	UNPKA	EA	SS1	D1(L1,B1),D2(B2)
Unpack Unicode	UNPKU	E2	SS1	D1(L1,B1),D2(B2)
Update Tree	UPT	102	E	
Zero and Add	ZAP	F8	SS2	D1(L1,B1),D2(L2,B2)



Recovery Specialties

Enterprise Storage, Disaster Recovery and
Business Continuity Consulting

z/OS "Green Card" Machine Instructions Reference Summary

November 2006

The information contained in this document was derived from IBM's "z/Architecture Reference Summary" publication number SA22-7871-02. Please refer to that publication for more complete information.

Name	Mnemonic	Op-code	Format	Operands
Add (32)	A	5A	RX	R1,D2(X2,B2)
Add (32)	AR	1A	RR	R1,R2
Add (32)	AY	E35A	RXY	R1,D2(X2,B2)
Add (64)	AG	E308	RXY	R1,D2(X2,B2)
Add (64)	AGR	B908	RRE	R1,R2
Add (64<32)	AGF	E318	RXY	R1,D2(X2,B2)
Add (64<32)	AGFR	B918	RRE	R1,R2
Add (EB)	AXBR	B34A	RRE	R1,R2
Add (LB)	ADB	ED1A	RXE	R1,D2(X2,B2)
Add (LB)	ADBR	B31A	RRE	R1,R2
Add (SB)	AEB	ED0A	RXE	R1,D2(X2,B2)
Add (SB)	AEBR	B30A	RRE	R1,R2
Add Decimal	AP	FA	SS2	D1(L1,B1),D2(L2,B2)
Add Halfword	AH	4A	RX	R1,D2(X2,B2)
Add Halfword	AHY	E37A	RXY	R1,D2(X2,B2)
Add Halfword Immediate	AGHI	A7B	R11	R1,I2
Add Halfword Immediate(32)	AHI	A7A	R11	R1,I2
Add Immediate(32)	AFI	C29	RIL	R1,I2
Add Immediate(64<32)	AGFI	C28	RIL	R1,I2
Add Logical (32)	AL	5E	RX	R1,D2(X2,B2)
Add Logical (32)	ALR	1E	RR	R1,R2
Add Logical (32)	ALY	E35E	RXY	R1,D2(X2,B2)
Add Logical (64)	ALG	E30A	RXY	R1,D2(X2,B2)
Add Logical (64)	ALGR	B90A	RRE	R1,R2
Add Logical (64<32)	ALGF	E31A	RXY	R1,D2(X2,B2)
Add Logical (64<32)	ALGFR	B91A	RRE	R1,R2
Add Logical Immediate(32)	ALFI	0C2B	RIL	R1,I2
Add Logical Immediate(64<32)	ALGFI	0C2A	RIL	R1,I2
Add Logical with Carry (32)	ALC	E398	RXY	R1,D2(X2,B2)
Add Logical with Carry (32)	ALCR	B998	RRE	R1,R2
Add Logical with Carry (64)	ALCG	E388	RXY	R1,D2(X2,B2)
Add Logical with Carry (64)	ALCGR	B988	RRE	R1,R2
Add Normalized (EH)	AXR	36	RR	R1,R2
Add Normalized (LH)	ADR	2A	RR	R1,R2
Add Normalized (SH)	AE	7A	RX	R1,D2(X2,B2)
Add Normalized (SH)	AER	3A	RR	R1,R2
Add Normalized(LH)	AD	6A	RX	R1,D2(X2,B2)
Add Unnormalized (LH)	AW	6E	RX	R1,D2(X2,B2)
Add Unnormalized (LH)	AWR	2E	RR	R1,R2
Add Unnormalized (SH)	AU	7E	RX	R1,D2(X2,B2)
Add Unnormalized (SH)	AUR	3E	RR	R1,R2
And (32)	N	54	RX	R1,D2(X2,B2)
And (32)	NR	14	RR	R1,R2
And (32)	NY	E354	RXY	R1,D2(X2,B2)
And (64)	NG	E380	RXY	R1,D2(X2,B2)
And (64)	NGR	B980	RRE	R1,R2
And (Character)	NC	D4	SS1	D1(L,B1),D2(B2)
And (Immediate)	NI	94	SI	D1(B1),I2
And (Immediate)	NIY	EB54	SIY	D1(B1),I2
And Immediate (high high)	NIHH	A54	R11	R1,I2
And Immediate (high low)	NIHL	A55	R11	R1,I2
And Immediate (high)	NIHF	C0A	RIL	R1,I2
And Immediate (low low)	NILL	A57	R11	R1,I2
And Immediate (low high)	NILH	A56	R11	R1,I2
And Immediate (low)	NILF	C0B	RIL	R1,I2
Branch and Link	BAL	45	RX	R1,D2(X2,B2)
Branch and Save	BAS	4D	RX	R1,D2(X2,B2)
Branch and Save	BASR	0D	RR	R1,R2
Branch and Save And Set Mode	BASSM	0C	RR	R1,R2
Branch and Set Authority	BSA	B25A	RRE	R1,R2

Recovery Specialties provides Storage Solutions for the z/OS and large systems environments.

Our storage consultants specialize in the design and implementation of Enterprise Storage Solutions customized to satisfy your Disaster Recovery and Business Continuity requirements in the most cost-effective way possible

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Name	Mnemonic	Op-code	Format	Operands
Set Prefix	SPX	B210	S	D2(B2)
Set Program Mask	SPM	04	RR	R1
Set PSW Key from Address	SPKA	B20A	S	D2(B2)
Set Rounding Mode	SRNM	B299	S	D2(B2)
Set Secondary ASN	SSAR	B225	RRE	R1
Set Secondary ASN with Instance	SSAIR	B99F	RRE	R1
Set Storage Key Extended	SSKE	B22B	RRE	R1,R2
Set System Mask	SSM	80	S	D2(B2)
Shift and Round Decimal	SRP	F0	SS3	D1(L1,B1),D2(B2),I3
Shift Left Double	SLDA	8F	RS1	R1,D2(B2)
Shift Left Double Logical	SLDL	8D	RS1	R1,D2(B2)
Shift Left Single (32)	SLA	8B	RS1	R1,D2(B2)
Shift Left Single (64)	SLAG	EB0B	RSY1	R1,R3,D2(B2)
Shift Left Single Logical (32)	SLL	89	RS1	R1,D2(B2)
Shift Left Single Logical (64)	SLLG	EB0D	RSY1	R1,R3,D2(B2)
Shift Right Double	SRDA	8E	RS1	R1,D2(B2)
Shift Right Double Logical	SRDL	8C	RS1	R1,D2(B2)
Shift Right Single (32)	SRA	8A	RS1	R1,D2(B2)
Shift Right Single (64)	SRAG	EB0A	RSY1	R1,R3,D2(B2)
Shift Right Single Logical (32)	SRL	88	RS1	R1,D2(B2)
Shift Right Single Logical (64)	SRLG	EB0C	RSY1	R1,R3,D2(B2)
Signal Processor	SIGP	AE	RS1	R1,R3,D2(B2)
Square Root (EB)	SQXBR	B316	RRE	R1,R2
Square Root (EH)	SQXR	B336	RRE	R1,R2
Square Root (LB)	SQDB	ED15	RXE	R1,D2(X2,B2)
Square Root (LB)	SQDBR	B315	RRE	R1,R2
Square Root (LH)	SQD	ED35	RXE	R1,D2(X2,B2)
Square Root (LH)	SQDR	B244	RRE	R1,R2
Square Root (SB)	SQEB	ED14	RXE	R1,D2(X2,B2)
Square Root (SB)	SQEBR	B314	RRE	R1,R2
Square Root (SH)	SQE	ED34	RXE	R1,D2(X2,B2)
Square Root (SH)	SQER	B245	RRE	R1,R2
Start Interpretive Execution	SIE	B214	S	D2(B2)
Start Sub Channel	SSCH	B233	S	D2(B2)
Store (32)	ST	50	RX	R1,D2(X2,B2)
Store (32)	STY	E350	RXY	R1,D2(X2,B2)
Store (64)	STG	E324	RXY	R1,D2(X2,B2)
Store (L)	STD	60	RX	R1,D2(X2,B2)
Store (L)	STDY	ED67	RXY	R1,D2(X2,B2)
Store (S)	STE	70	RX	R1,D2(X2,B2)
Store (S)	STEY	ED66	RXY	R1,D2(X2,B2)
Store Access Multiple	STAM	9B	RS1	R1,R3,D2(B2)
Store Access Multiple	STAMY	EB9B	RSY1	R1,R3,D2(B2)
Store Channel Path Status	STCPS	B23A	S	D2(B2)
Store Channel Report Word	STCRW	B239	S	D2(B2)
Store Character	STC	42	RX	R1,D2(X2,B2)
Store Character	STCY	E372	RXY	R1,D2(X2,B2)
Store Characters under Mask (high)	STCMH	EB2C	RSY1	R1,M3,D2(B2)
Store Characters under Mask (low)	STCM	BE	RS2	R1,M3,D2(B2)
Store Characters under Mask (low)	STCMY	EB2D	RSY2	R1,M3,D2(B2)
Store Clock	STCK	B205	S	D2(B2)
Store Clock Comparator	STCKC	B207	S	D2(B2)
Store Clock Extended	STCKE	B278	S	D2(B2)
Store Clock Fast	STCKF	B27C	S	D2(B2)
Store Control (32)	STCTL	B6	RS1	R1,R3,D2(B2)
Store Control (64)	STCTG	EB25	RSY1	R1,R3,D2(B2)
Store CPU Address	STAP	B212	S	D2(B2)
Store CPU ID	STIDP	B202	S	D2(B2)
Store CPU Timer	STPT	B209	S	D2(B2)

Name	Mnemonic	Op-code	Format	Operands
Multiply Single (64)	MSG	E30C	RXY	R1,D2(X2,B2)
Multiply Single (64)	MSGR	B90C	RRE	R1,R2
Multiply Single (64<32)	MSGF	E31C	RXY	R1,D2(X2,B2)
Multiply Single (64<32)	MSGFR	B91C	RRE	R1,R2
Multiply Unnormalized (EH<LH)	MY	ED3B	RXF	R1,R3,D2(X2,B2)
Multiply Unnormalized (EH<LH)	MYR	B33B	RRF1	R1,R3,R2
Multiply Unnormalized (EHL<LH)	MYH	ED3D	RXF	R1,R3,D2(X2,B2)
Multiply Unnormalized (EHL<LH)	MYHR	B33D	RRF1	R1,R3,R2
Multiply Unnormalized (EHL<LH)	MYL	ED39	RXF	R1,R3,D2(X2,B2)
Multiply Unnormalized (EHL<LH)	MYLR	B339	RRF1	R1,R3,R2
Or (32)	O	56	RX	R1,D2(X2,B2)
Or (32)	OR	16	RR	R1R2
Or (32)	OY	E356	RXY	R1,D2(X2,B2)
Or (64)	OG	E381	RXY	R1,D2(X2,B2)
Or (64)	OGR	B981	RRE	R1,R2
Or (Character)	OC	D6	SS1	D1(L,B1),D2(B2)
Or (Immediate)	OI	96	SI	D1(B1),I2
Or (Immediate)	OIY	EB56	SIY	D1(B1),I2
Or Immediate (high high)	OIHH	A58	RI1	R1,I2
Or Immediate (high low)	OIHL	A59	RI1	R1,I2
Or Immediate (high)	OIHF	C0C	RIL	R1,I2
Or Immediate (low high)	OILH	A5A	RI1	R1,I2
Or Immediate (low low)	OILL	A5B	RI1	R1,I2
Or Immediate (low)	OILF	C0D	RIL	R1,I2
Pack	Pack	F2	SS2	D1(L1,B1),D2(L2,B2)
Pack ASCII	PKA	E9	SS1	D1(B1),D2(L2,B2)
Pack Unicode	PKU	E1	SS1	D1(B1),D2(L2,B2)
Page In	PGIN	B22E	RRE	R1,R2
Page Out	PGOUT	B22F	RRE	R1,R2
Perform Locked Operation	PLO	EE	SS5	R1,D2(B2),R3,D4(B4)
Perform Timing-Facility Function	PTFF	104	RRE	
Program Call	PC	B218	S	D2(B2)
Program Return	PR	101	E	
Program Transfer	PT	B228	RRE	R1,R2
Program Transfer with Instance	PTI	B99E	RRE	R1,R2
Purge TLB	PTLB	B20D	S	
Purge ALB	PALB	B248	RRE	
Reset Channel Path	RCHP	B23B	S	
Reset Reference Bit Extended	RRBE	B22A	RRE	R1,R2
Resume Program	RP	B277	S	D2(B2)
Resume Sub Channel	RSCH	B238	S	
Rotate Left Single Logical (32)	RLL	EB1D	RSY1	R1,R3,D2(B2)
Rotate Left Single Logical (64)	RLLG	EB1C	RSY1	R1,R3,D2(B2)
Search String	SRST	B25E	RRE	R1,R2
Search String Unicode	SRSTU	B2BE	RRE	R1,R2
Set Access	SAR	B24E	RRE	R1,R2
Set Address Limit	SAL	B237	S	
Set Address Space Control	SAC	B219	S	D2(B2)
Set Address Space Control Fast	SACF	B279	S	D2(B2)
Set Addressing Mode (24)	SAM24	10C	E	
Set Addressing Mode (31)	SAM31	10D	E	
Set Addressing Mode (64)	SAM64	10E	E	
Set Channel Monitor	SCHM	B23C	S	
Set Clock	SCK	B204	S	D2(B2)
Set Clock Comparator	SCKC	B206	S	D2(B2)
Set Clock Programmable Field	SCKPF	107	E	
Set CPU Timer	SPT	B208	S	D2(B2)
Set FPC	SFPC	B384	RRE	R1

Printing and Assembly Instructions

Step 1: Print the document double-sided using the best print resolution.

Step 2: Carefully arrange the sheets in landscape fashion such that page 7 is on the bottom followed by page 9 with page 11 on the top.

Step 3: Using a 2.5" piece of transparent tape, place 1/2 of the strip of tape onto the top of page 12 and fold over to page 6.

Step 4: Using a second 2.5" piece of tape, repeat step 3 at the bottom of page 12 and 6.

Step 5: Carefully fold the document into thirds using the registration marks as a guide.

Step 6: If desired, staple as indicated along the front and back cover pages.

Name	Mnemonic	Op-code	Format	Operands
Branch and Set Mode	BSM	0B	RR	R1,R2
Branch and Stack	BAKR	B240	RRE	R1,R2
Branch in Subspace Group	BSG	B258	RRE	R1,R2
Branch on Condition	BC	47	RX	M1,D2(X2,B2)
Branch on Condition	BCR	07	RR	M1,R2
Branch on Count (32)	BCT	46	RX	R1,D2(X2,B2)
Branch on Count (32)	BCTR	06	RR	R1,R2
Branch on Count (64)	BCTG	E346	RXY	R1,D2(X2,B2)
Branch on Count (64)	BCTGR	B946	RRE	R1,R2
Branch on Index High (32)	BXH	86	RS1	R1,R3,D2(B2)
Branch on Index High (64)	BXHG	EB44	RSY1	R1,R3,D2(B2)
Branch on Index Low or Equal (32)	BXLE	87	RS1	R1,R3,D2(B2)
Branch on Index Low or Equal (64)	BXLEG	EB45	RSY1	R1,R3,D2(B2)
Branch Relative And Save	BRAS	A75	R11	R1,I2
Branch Relative And Save Long	BRASL	C05	RIL1	R1,I2
Branch Relative on Condition	BRC	A74	R12	M1,I2
Branch Relative on Condition Long	BRCL	C04	RIL4	M1,I2
Branch Relative on Count (32)	BRCT	A76	R11	R1,I2
Branch Relative on Count (64) R11	BRCTG	N	A77	R1,I2
Branch Relative on Index High (32)	BRXH	84	RSI	R1,R3,I2
Branch Relative on Index High (64)	BRXHG	EC44	RIE	R1,R3,I2
Branch Relative on Index Low or Equal	BRXLE	85	RSI	R1,R3,I2
Branch Relative on Index Low or Equal (64)	BRXLG	EC45	RIE	R1,R3,I2
Cancel Sub Channel	XSCH	B276	S	
Checksum	CKSM	B241	RRE	R1,R2
Cipher Message	KM	B92E	RRE	R1,R2
Cipher Message with Chaining	KMC	B92F	RRE	R1,R2
Clear Sub Channel	CSCH	B230	S	
Compare (32)	C	59	RX	R1,D2(X2,B2)
Compare (32)	CR	19	RR	R1,R2
Compare (32)	CY	E359	RXY	R1,D2(X2,B2)
Compare (64)	CG	E320	RXY	R1,D2(X2,B2)
Compare (64)	CGR	B920	RRE	R1,R2
Compare (64<32)	CGF	E330	RXY	R1,D2(X2,B2)
Compare (64<32)	CGFR	B930	RRE	R1,R2
Compare (EB)	CXBR	B349	RRE	R1,R2
Compare (EH)	CXR	B369	RRE	R1,R2
Compare (LB)	CDB	ED19	RXE	R1,D2(X2,B2)
Compare (LB)	CDBR	B319	RRE	R1,R2
Compare (LH)	CD	69	RX	R1,D2(X2,B2)
Compare (LH)	CDR	29	RR	R1,R2
Compare (SB)	CEB	ED09	RXE	R1,D2(X2,B2)
Compare (SB)	CEBR	B309	RRE	R1,R2
Compare (SH)	CE	79	RX	R1,D2(X2,B2)
Compare (SH)	CER	39	RR	R1,R2
Compare and Form Codeword	CFC	B21A	S	D2(B2)
Compare and Signal (EB)	KXBR	B348	RRE	R1,R2
Compare and Signal (LB)	KDB	ED18	RXE	R1,D2(X2,B2)
Compare and Signal (LB)	KDBR	B318	RRE	R1,R2
Compare and Signal (SB)	KEB	ED08	RXE	R1,D2(X2,B2)
Compare and Signal (SB)	KEBR	B308	RRE	R1,R2
Compare and Swap (32)	CS	BA	RS1	R1,R3,D2(B2)
Compare and Swap (32)	CSY	EB14	RSY1	R1,R3,D2(B2)
Compare and Swap (64)	CSG	EB30	RSY1	R1,R3,D2(B2)
Compare and Swap And Purge(64)	CSP	B250	RRE	R1,R2
Compare and Swap And Purge(64)	CSPG	B98A	RRE	R1,R2
Compare Decimal	CP	F9	SS2	D1(L1,B1),D2(L2,B2)
Compare Double And Swap (64)	CDSG	EB3E	RSY1	R1,R3,D2(B2)

MACHINE INSTRUCTIONS

(3)

Name	Mnemonic	Op-code	Format	Operands
Compare Double And Swap (32)	CDS	BB	RS1	R1,R3,D2(B2)
Compare Double And Swap (32)	CDSY	EB31	RSY1	R1,R3,D2(B2)
Compare Halfword	CH	49	RX	R1,D2(X2,B2)
Compare Halfword	CHY	E379	RXY	R1,D2(X2,B2)
Compare Halfword Immediate(32)	CHI	A7E	RI1	R1,I2
Compare Halfword Immediate(64)	CGHI	A7F	RI1	R1,I2
Compare Immediate(32)	CFI	C2D	RIL	R1,I2
Compare Immediate(64<32)	CGFI	C2C	RIL	R1,I2
Compare Logical (32)	CL	55	RX	R1,D2(X2,B2)
Compare Logical (32)	CLR	15	RR	R1,R2
Compare Logical (32)	CLY	E355	RXY	R1,D2(X2,B2)
Compare Logical (64)	CLG	E321	RXY	R1,D2(X2,B2)
Compare Logical (64)	CLGR	B921	RRE	R1,R2
Compare Logical (64<32)	CLGF	E331	RXY	R1,D2(X2,B2)
Compare Logical (64<32)	CLGFR	B931	RRE	R1,R2
Compare Logical (Immediate)	CLI	95	SI	D1(B1),I2
Compare Logical (Immediate)	CLY	EB55	SIY	D1(B1),I2
Compare Logical Character	CLC	D5	SS1	D1(L,B1),D2(B2)
Compare Logical Characters under Mask	CLM	BD	RS2	R1,M3,D2(B2)
Compare Logical Characters under Mask	CLMH	EB20	RSY2	R1,M3,D2(B2)
Compare Logical Characters under Mask	CLMY	RSY2	RSY2	R1,M3,D2(B2)
Compare Logical Immediate(32)	CLFI	C2F	RIL	R1,I2
Compare Logical Immediate (64<32)	CLGFI	C2E	RIL	R1,I2
Compare Logical Long	CLCL	0F	RR	R1,R2
Compare Logical Long Extended	CLCLE	A9	RS1	R1,R3,D2(B2)
Compare Logical Long Uni-code	CLCLU	EB8F	RSY1	R1,R3,D2(B2)
Compare Logical String	CLST	B25D	RRE	R1,R2
Compare until Substring Equal	CUSE	B257	RRE	R1,R2
Compression Call	CMPSC	B263	RRE	R1,R2
Compute Intermediate Message Digest	KIMD	B93E	RRE	R1,R2
Compute Last Message Digest	KLMD	B93F	RRE	R1,R2
Compute Message Authentication Code	KMAC	B91E	RRE	R1,R2
Convert BFP to HFP (LH<LB)	THDR	B359	RRE	R1,R2
Convert BFP to HFP (LH<SB)	THDER	B358	RRE	R1,R2
Convert from Fixed (EB<32)	CXFBR	B396	RRE	R1,R2
Convert from Fixed (EB<64)	CXGBR	B3A6	RRE	R1,R2
Convert from Fixed (EH<32)	CXFR	B3B6	RRE	R1,R2
Convert from Fixed (EH<64)	CXGR	B3C6	RRE	R1,R2
Convert from Fixed (LB<32)	CDFBR	B395	RRE	R1,R2
Convert from Fixed (LB<64)	CDGBR	B3A5	RRE	R1,R2
Convert from Fixed (LB<64)	CDGR	B3C5	RRE	R1,R2
Convert from Fixed (LH<32)	CDFR	B3B5	RRE	R1,R2
Convert from Fixed (SB<32)	CEFBR	B394	RRE	R1,R2
Convert from Fixed (SB<64)	CEGBR	B3A4	RRE	R1,R2
Convert from Fixed (SH<32)	CEFR	B3B4	RRE	R1,R2
Convert from Fixed (SH<64)	CEGR	B3C4	RRE	R1,R2
Convert HFP to BFP (LB<LH)	TBDR	B351	RRF2	R1,M3,R2
Convert HFP to BFP (SB<LH)	TBEDR	B350	RRF2	R1,M3,R2
Convert to Binary (32)	CVB	4F	RX	R1,D2(X2,B2)
Convert to Binary (32)	CVBY	EB06	RXY	R1,D2(X2,B2)
Convert to Binary (64)	CVBG	E30E	RXY	R1,D2(X2,B2)
Convert to Decimal (32)	CVD	4E	RX	R1,D2(X2,B2)
Convert to Decimal (32)	CVDY	E326	RXY	R1,D2(X2,B2)
Convert to Decimal (64)	CVDG	E32E	RXY	R1,D2(X2,B2)
Convert to Fixed (32<EB)	CFXBR	B39A	RRF2	R1,M3,R2
Convert to Fixed (32<EH)	CFXR	cB3BA	RRF2	R1,M3,R2
Convert to Fixed (32<LB)	CFDBR	B399	RRF2	R1,M3,R2
Convert to Fixed (32<LH)	CFDR	B3B9	RRF2	R1,M3,R2

MACHINE INSTRUCTIONS—continued

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Name	Mnemonic	Op-code	Format	Operands
Move with Offset	MVO	F1	SS2	D1(L1,B1),D2(L2,B2)
Move with Source Key	MVCSK	E50E	SSE	D1(B1),D2(B2)
Move Zones	MVZ	D3	SS1	D1(L,B1),D2(B2)
Multiply (64<32)	M	5C	RX	R1,D2(X2,B2)
Multiply (64<32)	MR	1C	RR	R1,R2
Multiply (EB)	MXBR	B34C	RRE	R1,R2
Multiply (EB<LB)	MXDB	ED07	RXE	R1,D2(X2,B2)
Multiply (EB<LB)	MXDBR	B307	RRE	R1,R2
Multiply (EH)	MXR	26	RR	R1,R2
Multiply (EH<LH)	MXD	67	RX	R1,D2(X2,B2)
Multiply (EH<LH)	MXDR	27	RR	R1,R2
Multiply (LB)	MDB	ED1C	RXE	R1,D2(X2,B2)
Multiply (LB)	MDBR	B31C	RRE	R1,R2
Multiply (LB<SB)	MDEB	ED0C	RXE	R1,D2(X2,B2)
Multiply (LB<SB)	MDEBR	B30C	RRE	R1,R2
Multiply (LH)	MD	6C	RX	R1,D2(X2,B2)
Multiply (LH)	MDR	2C	RR	R1,R2
Multiply (LH<SH)	MDE	7C	RX	R1,D2(X2,B2)
Multiply (LH<SH)	MDER	3C	RR	R1,R2
Multiply (LH<SH)	ME	7C	RX	R1,D2(X2,B2)
Multiply (LH<SH)	MER	3C	RR	R1,R2
Multiply (SB)	MEEB	ED17	RXE	R1,D2(X2,B2)
Multiply (SB)	MEEBR	B317	RRE	R1,R2
Multiply (SH)	MEE	ED37	RXE	R1,D2(X2,B2)
Multiply (SH)	MEER	B337	RRE	R1,R2
Multiply and Subtract (LB)	MSDB	ED1F	RXF	R1,R3,D2(X2,B2)
Multiply and Subtract (LB)	MSDBR	B31F	RRF1	R1,R3,R2
Multiply and Subtract (LH)	MSD	ED3F	RXF	R1,R3,D2(X2,B2)
Multiply and Subtract (LH)	MSDR	B33F	RRF1	R1,R3,R2
Multiply and Subtract (SB)	MSEB	ED0F	RXF	R1,R3,D2(X2,B2)
Multiply and Subtract (SB)	MSEBR	B30F	RRF1	R1,R3,R2
Multiply and Subtract (SH)	MSE	ED2F	RXF	R1,R3,D2(X2,B2)
Multiply and Subtract (SH)	MSEBR	B32F	RRF1	R1,R3,R2
Multiply and Add (LB)	MADB	ED1E	RXF	R1,R3,D2(X2,B2)
Multiply and Add (LB)	MADBR	B31E	RRF1	R1,R3,R2
Multiply and Add (LH)	MAD	ED3E	RXF	R1,R3,D2(X2,B2)
Multiply and Add (LH)	MADR	B33E	RRF1	R1,R3,R2
Multiply and Add (SB)	MAEB	ED0E	RXF	R1,R3,D2(X2,B2)
Multiply and Add (SB)	MAEBR	B30E	RRF1	R1,R3,R2
Multiply and Add (SH)	MAE	ED2E	RXF	R1,R3,D2(X2,B2)
Multiply and Add (SH)	MAER	B32E	RRF1	R1,R3,R2
Multiply and Add Unnormalized	MAYR	B33A	RRF1	R1,R3,R2
Multiply and Add Unnormalized (EH<LH)	MAY	ED3A	RXF	R1,R3,D2(X2,B2)
Multiply and Add Unnormalized (EH<LH)	MAYH	ED3C	RXF	R1,R3,D2(X2,B2)
Multiply and Add Unnormalized (EHH<LH)	MAYHR	B33C	RRF1	R1,R3,R2
Multiply and Add Unnormalized (EHH<LH)	MAYL	ED38	RXF	R1,R3,D2(X2,B2)
Multiply and Add Unnormalized (EHL<LH)	MAYLR	B338	RRF1	R1,R3,R2
Multiply Decimal	MP	FC	SS2	D1(L1,B1),D2(L2,B2)
Multiply Halfword (32)	MH	4C	RX	R1,D2(X2,B2)
Multiply Halfword Immediate(32)	MHI	A7C	RI1	R1,I2
Multiply Halfword Immediate(64)	MGHI	A7D	RI1	R1,I2
Multiply Logical (128<64)	MLG	E386	RXY	R1,D2(X2,B2)
Multiply Logical (128<64)	MLGR	B986	RRE	R1,R2
Multiply Logical (64<32)	ML	E386	RXY	R1,D2(X2,B2)
Multiply Logical (64<32)	MLR	B996	RRE	R1,R2
Multiply Single (32)	MSR	B252	RRE	R1,R2
Multiply Single (32)	MSY	E351	RXY	R1,D2(X2,B2)
Multiply Single (32)	MS	71	RX	R1,D2(X2,B2)

Name	Mnemonic	Op-code	Format	Operands
Load Negative (32)	LNR	11	RR	R1,R2
Load Negative (64)	LNGR	B901	RRE	R1,R2
Load Negative (64<32)	LNGFR	B911	RRE	R1,R2
Load Negative (EB)	LNGBR	B341	RRE	R1,R2
Load Negative (EH)	LNXR	B361	RRE	R1,R2
Load Negative (LB)	LNDBR	B311	RRE	R1,R2
Load Negative (LH)	LNDR	21	RR	R1,R2
Load Negative (SB)	LNEBR	B301	RRE	R1,R2
Load Negative (SH)	LNER	31	RR	R1,R2
Load Page-Table-Entry Address	LPTEA	B9AA	RRF3	R1,R3,R2,M4
Load Pair from Quadword	LPQ	E38F	RXY	R1,D2(X2,B2)
Load Positive (32)	LPR	10	RR	R1,R2
Load Positive (64)	LPGR	B900	RRE	R1,R2
Load Positive (64<32)	LPGFR	B910	RRE	R1,R2
Load Positive (EB)	LPXBR	B340	RRE	R1,R2
Load Positive (EH)	LPXR	B360	RRE	R1,R2
Load Positive (LB)	LPDBR	B310	RRE	R1,R2
Load Positive (LH)	LPDR	20	RR	R1,R2
Load Positive (SB)	LPEBR	B300	RRE	R1,R2
Load Positive (SH)	LPER	30	RR	R1,R2
Load PSW	LPSW	82	S	D2(B2)
Load PSW Extended	LPSWE	B2B2	S	D2(B2)
Load Real Address (32)	LRA	B1	RX	R1,D2(X2,B2)
Load Real Address (32)	LRAY	E313	RXY	R1,D2(X2,B2)
Load Real Address (64)	LRAG	E303	RXY	R1,D2(X2,B2)
Load Reversed (16)	LRVH	E31F	RXY	R1,D2(X2,B2)
Load Reversed (32)	LRV	E31E	RXY	R1,D2(X2,B2)
Load Reversed (32)	LRVR	B91F	RRE	R1,R2
Load Reversed (64)	LRVG	E30F	RXY	R1,D2(X2,B2)
Load Reversed (64)	LRVGR	B90F	RRE	R1,R2
Load Rounded (LB<EB)	LDXBR	B345	RRE	R1,R2
Load Rounded (LH<EH)	LDXR	25	RR	R1,R2
Load Rounded (LH<EH)	LRDR	25	RR	R1,R2
Load Rounded (SB<EB)	LEXBR	B346	RRE	R1,R2
Load Rounded (SB<LB)	LEDBR	B344	RRE	R1,R2
Load Rounded (SH<EH)	LEXR	B366	RRE	R1,R2
Load Rounded (SH<LH)	LEDR	35	RR	R1,R2
Load Rounded (SH<LH)	LRER	35	RR	R1,R2
Load Using RealAddress(32)	LURA	B24B	RRE	R1,R2
Load Using RealAddress(64)	LURAG	B905	RRE	R1,R2
Load Zero (E)	LZXR	B376	RRE	R1
Load Zero (L)	LZDR	B375	RRE	R1
Load Zero (S)	LZER	B374	RRE	R1
Modify Stacked State	MSTA	B247	RRE	R1
Modify Sub Channel	MSCH	B232	S	D2(B2)
Monitor Call	MC	AF	SI	D1(B1),I2
Move (Character)	MVC	D2	SS1	D1(L,B1),D2(B2)
Move (Immediate)	MVI	92	SI	D1(B1),I2
Move (Immediate)	MVIY	EB52	SIY	D1(B1),I2
Move Inverse	MVCIN	E8	SS1	D1(L,B1),D2(B2)
Move Long	MVCL	0E	RR	R1,R2
Move Long Extended	MVCLE	A8	RS1	R1,R3,D2(B2)
Move Long Unicode	MVCLU	EB8E	RSY1	R1,R3,D2(B2)
Move Numerics	MVN	D1	SS1	D1(L,B1),D2(B2)
Move Page	MVPG	B254	RRE	R1,R2
Move String	MVST	B255	RRE	R1,R2
Move to Primary	MVCP	DA	SS4	D1(R1,B1),D2(B2),R3
Move to Secondary	MVCS	DB	SS4	D1(R1,B1),D2(B2),R3
Move with Destination key	MVCDK	E50F	SSE	D1(B1),D2(B2)
Move with Key	MVCK	D9	SS4	D1(R1,B1),D2(B2),R3

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Name	Mnemonic	Op-code	Format	Operands
Convert to Fixed (32<SB)	CFEBR	B398	RRF2	R1,M3,R2
Convert to Fixed (32<SH)	CFER	B3B8	RRF2	R1,M3,R2
Convert to Fixed (64<EB)	CGXBR	B3AA	RRF2	R1,M3,R2
Convert to Fixed (64<EH)	CGXR	B3CA	RRF2	R1,M3,R2
Convert to Fixed (64<LB)	CGDBR	B3A9	RRF2	R1,M3,R2
Convert to Fixed (64<LH)	CGDR	B3C9	RRF2	R1,M3,R2
Convert to Fixed (64<SB)	CGEBR	B3A8	RRF2	R1,M3,R2
Convert to Fixed (64<SH)	CGER	B3C8	RRF2	R1,M3,R2
Convert Unicode to UTF-8	CUUTF	B2A6	RRF2	R1,R2[,M3]
Convert UTF-16 to UTF-32	CU24	B9B1	RRF2	R1,R2[,M3]
Convert UTF-16 to UTF-8	CU21	B2A6	RRF2	R1,R2[,M3]
Convert UTF-32 to UTF-32	CU42	B9B3	RRE	R1,R2
Convert UTF-32 to UTF-8	CU41	B9B2	RRE	R1,R2
Convert UTF-8 to Unicode	CUTFU	B2A7	RRF2	R1,R2[,M3]
Convert UTF-8 to UTF-16	CU12	B2A7	RRF2	R1,R2[,M3]
Convert UTF-8 to UTF-32	CU14	B9B0	RRF2	R1,R2[,M3]
Copy Access	CPYA	B24D	RRE	R1,R2
Divide	DR	1D	RR	R1,R2
Divide	DXBR	RRE	(EB)	R1,R2
Divide (32<64)	D	5D	RX	R1,D2(X2,B2)
Divide (EH)	DXR	B22D	RRE	R1,R2
Divide (LB)	DDB	ED1D	RXE	R1,D2(X2,B2)
Divide (LB)	DDBR	B31D	RRE	R1,R2
Divide (LH)	DD	6D	RX	R1,D2(X2,B2)
Divide (LH)	DDR	2D	RR	R1,R2
Divide (SB)	DEB	E00D	RXE	R1,D2(X2,B2)
Divide (SB)	DEBR	B30D	RRE	R1,R2
Divide (SH)	DE	7D	RX	R1,D2(X2,B2)
Divide (SH)	DER	3D	RR	R1,R2
Divide Decimal	DP	FD	SS2	D1(L1,B1),D2(L2,B2)
Divide Logical (32<64)	DL	E397	RXY	R1,D2(X2,B2)
Divide Logical (32<64)	DLR	B997	RRE	R1,R2
Divide Logical (64<128)	DLG	E387	RXY	R1,D2(X2,B2)
Divide Logical (64<128)	DLGR	B987	RRE	R1,R2
Divide Single (64)	DSG	E30D	RXY	R1,D2(X2,B2)
Divide Single (64)	DSGR	B90D	RRE	R1,R2
Divide Single (64<32)	DSGF	E31D	RXY	R1,D2(X2,B2)
Divide Single (64<32)	DSGFR	B91D	RRE	R1,R2
Divide to Integer (LB)	DIDBR	B35B	RRF3	R1,R3,R2,M4
Divide to Integer (SB)	DIEBR	B353	RRF3	R1,R3,R2,M4
Edit	ED	DE	SS1	D1(L,B1),D2(B2)
Edit and Mark	EDMK	DF	SS1	D1(L,B1),D2(B2)
Exclusive Or (32)	X	57	RX	R1,D2(X2,B2)
Exclusive Or (32)	XR	17	RR	R1,R2
Exclusive Or (32)	XY	E357	RXY	R1,D2(X2,B2)
Exclusive Or (64)	XG	E382	RXY	R1,D2(X2,B2)
Exclusive Or (64)	XGR	B982	RRE	R1,R2
Exclusive Or (Character)	XC	D7	SS1	D1(L,B1),D2(B2)
Exclusive Or (Immediate)	XI	97	SI	D1(B1),I2
Exclusive Or (Immediate)	XIY	EB57	SIY	D1(B1),I2
Execute	EX	44	RX	R1,D2(X2,B2)
Extract FPC	EFPC	B38C	RRE	R1
Extract Access	EAR	B24F	RRE	R1,R2
Extract and Set Extended Authority	ESEA	B99D	RRE	R1,R2
Extract Primary ASN	EPAR	B226	RRE	R1
Extract Primary ASN and Instance	EPAIR	B99A	RRE	R1
Extract PSW	EPSW	B98D	RRE	R1,R2
Extract Secondary ASN	ESAR	B227	RRE	R1
Extract Secondary ASN and Instance	ESAIR	B99B	RRE	R1
Extract Stacked Registers	EREG	B249	RRE	R1,R2

MACHINE INSTRUCTIONS

Name	Mne- monic	Op- code	Format	Operands
Extract Stacked Registers (64)	EREGG	B249	RRE	R1,R2
Extract Stacked State	ESTA	B24A	RRE	R1,R2
Find Leftmost One	FLOGR	B983	RRE	R1,R2
Halt Sub Channel	HSCH	B231	S	
Halve (LH)	HDR	24	RR	R1,R2
Halve (SH)	HER	34	RR	R1,R2
Insert Address Space Control	IAC	B224	RRE	R1
Insert Character	IC	43	RX	R1,D2(X2,B2)
Insert Character	ICY	E373	RXY	R1,D2(X2,B2)
Insert Characters under Mask	ICMY	EB81	RSY2	R1,M3,D2(B2)
Insert Characters under Mask (high)	ICMH	EB80	RSY2	R1,M3,D2(B2)
Insert Characters under Mask (low)	ICM	BF	RS2	R1,M3,D2(B2)
Insert Immediate (high high)	IIHH	A50	RI1	R1,I2
Insert Immediate (high low)	IIHL	A51	RI1	R1,I2
Insert Immediate (high)	IIHF	C08	RIL	R1,I2
Insert Immediate (low high)	IIHL	A52	RI1	R1,I2
Insert Immediate (low low)	II LL	A53	RI1	R1,I2
Insert Immediate (low)	II LF	C09	RIL	R1,I2
Insert PSW Key	IPK	B20B	S	
Insert Storage Key Extended	ISKE	B229	RRE	R1,R2
Insert Virtual Storage Key	IVSK	B223	RRE	R1,R2
Invalidate DAT Table Entry	IDTE	B98E	RRF3	R1,R3,R2
Invalidate Page Table Entry	IPTE	B221	RRE	R1,R2
Load (32)	L	58	RX	R1,D2(X2,B2)
Load (32)	LR	18	RR	R1,R2
Load (32)	LY	E358	RXY	R1,D2(X2,B2)
Load (64)	LG	E304	RXY	R1,D2(X2,B2)
Load (64)	LGR	B904	RRE	R1,R2
Load (64<32)	LGF	E314	RXY	R1,D2(X2,B2)
Load (64<32)	LGFR	B914	RRE	R1,R2
Load (E)	LXR	B365	RRE	R1,R2
Load (L)	LD	68	RX	R1,D2(X2,B2)
Load (L)	LDR	28	RR	R1,R2
Load (L)	LDY	ED65	RXY	R1,D2(X2,B2)
Load (S)	LE	78	RX	R1,D2(X2,B2)
Load (S)	LER	38	RR	R1,R2
Load (S)	LEY	ED64	RXY	R1,D2(X2,B2)
Load Access Multiple	LAM	9A	RS1	R1,R3,D2(B2)
Load Access Multiple	LAMY	EB9A	RSY1	R1,R3,D2(B2)
Load Address	LA	41	RX	R1,D2(X2,B2)
Load Address	LAY	E371	RXY	R1,D2(X2,B2)
Load Address Extended	LAE	51	RX	R1,D2(X2,B2)
Load Address Relative Long	LARL	C00	RIL1	R1,I2
Load Address Space Parameters	LASP	E500	SSE	D1(B1),D2(B2)
Load and Test (32)	LT	E312	RXY	R1,D2(X2,B2)
Load and Test (32)	LTR	B902	RRE	R1,R2
Load and Test (64)	LTG	E302	RXY	R1,D2(X2,B2)
Load and Test (64)	LTGR	B902	RRE	R1,R2
Load and Test (64<32)	LTGFR	B912	RRE	R1,R2
Load and Test (EB)	LTXBR	B342	RRE	R1,R2
Load and Test (EH)	LTXR	B362	RRE	R1,R2
Load and Test (LB)	LTDBR	B312	RRE	R1,R2
Load and Test (LH)	LTDR	22	RR	R1,R2
Load and Test (SB)	LTEBR	B302	RRE	R1,R2
Load and Test (SH)	LTER	32	RR	R1,R2
Load Byte (32)	LB	E376	RXY	R1,D2(X2,B2)
Load Byte (32)	LBR	B926	RRE	R1,R2
Load Byte (64)	LGB	E377	RXY	R1,D2(X2,B2)
Load Byte (64)	LGBR	B906	RRE	R1,R2
Load Complement (32)	LCR	13	RR	R1,R2

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MACHINE INSTRUCTIONS

Name	Mne- monic	Op- code	Format	Operands
Load Complement (64)	LCGR	B903	RRE	R1,R2
Load Complement (64<32)	LCGFR	B913	RRE	R1,R2
Load Complement (EB)	LCXBR	B343	RRE	R1,R2
Load Complement (EH)	LCXR	B363	RRE	R1,R2
Load Complement (LB)	LCDBR	B313	RRE	R1,R2
Load Complement (LH)	LCDR	23	RR	R1,R2
Load Complement (S)	LCER	33	RR	R1,R2
Load Complement (SB)	LCEBR	B303	RRE	R1,R2
Load Control (32)	LCTL	B7	RS1	R1,R3,D2(B2)
Load Control (64)	LCTLG	EB2F	RSY1	R1,R3,D2(B2)
Load FP Integer (EB)	FIXBR	B347	RRF2	R1,M3,R2
Load FP Integer (EH)	FIXR	B367	RRE	R1,R2
Load FP Integer (LB)	FIDBR	B35F	RRF2	R1,M3,R2
Load FP Integer (LH)	FIDR	B37F	RRE	R1,R2
Load FP Integer (SB)	FIEBR	B357	RRF2	R1,M3,R2
Load FP Integer (SH)	FIER	B377	RRE	R1,R2
Load FPC	LFPC	B29D	S	D2(B2)
Load Halfword (32)	LH	48	RX	R1,D2(X2,B2)
Load Halfword (32)	LHR	B927	RRE	R1,R2
Load Halfword (32)	LHY	E378	RXY	R1,D2(X2,B2)
Load Halfword (64)	LGH	E315	RXY	R1,D2(X2,B2)
Load Halfword (64)	LGHR	B907	RRE	R1,R2
Load Halfword Immediate(32)	LHI	A78	RI1	R1,I2
Load Halfword Immediate(64)	LGHI	A79	RI1	R1,I2
Load Immediate(32<64)	LGFI	C01	RIL	R1,I2
Load Lengthened (EB<LB)	LXDB	ED05	RXE	R1,D2(X2,B2)
Load Lengthened (EB<LB)	LXDBR	B305	RRE	R1,R2
Load Lengthened (EB<SB)	LXEB	ED06	RXE	R1,D2(X2,B2)
Load Lengthened (EB<SB)	LXEBR	B306	RRE	R1,R2
Load Lengthened (EH<LH)	LXD	ED25	RXE	R1,D2(X2,B2)
Load Lengthened (EH<LH)	LXDR	B325	RRE	R1,R2
Load Lengthened (EH<SH)	LXE	ED26	RXE	R1,D2(X2,B2)
Load Lengthened (EH<SH)	LXER	B326	RRE	R1,R2
Load Lengthened (LB<SB)	LDEB	ED04	RXE	R1,D2(X2,B2)
Load Lengthened (LB<SB)	LDEBR	B304	RRE	R1,R2
Load Lengthened (LH<SH)	LDE	ED24	RXE	R1,D2(X2,B2)
Load Lengthened (LH<SH)	LDER	B324	RRE	R1,R2
Load Logical (64<32)	LLGF	E316	RXY	R1,D2(X2,B2)
Load Logical (64<32)	LLGFR	B916	RRE	R1,R2
Load Logical 31-bits	LLGT	E317	RXY	R1,D2(X2,B2)
Load Logical 31-bits	LLGTR	B917	RRE	R1,R2
Load Logical Character	LLGC	E390	RXY	R1,D2(X2,B2)
Load Logical Character (32)	LLC	E394	RXY	R1,D2(X2,B2)
Load Logical Character (32)	LLCR	B994	RRE	R1,R2
Load Logical Character (64)	LLGCR	B984	RRE	R1,R2
Load Logical Halfword	LLGH	E391	RXY	R1,D2(X2,B2)
Load Logical Halfword (64)	LLGHR	B985	RRE	R1,R2
Load Logical Halfword(32)	LLH	E395	RXY	R1,D2(X2,B2)
Load Logical Halfword(32)	LLHR	E395	RXY	R1,R2
Load Logical Immediate (high low)	LLIHL	A5D	RI1	R1,I2
Load Logical Immediate (high)	LLIHF	C0E	RIL	R1,I2
Load Logical Immediate (high)	LLIHH	A5C	RI1	R1,I2
Load Logical Immediate(low high)	LLILH	A5E	RI1	R1,I2
Load Logical Immediate (low high)	LLILL	A5F	RI1	R1,I2
Load Logical Immediate (low)	LLILF	C0F	RIL	R1,I2
Load Multiple (32)	LM	98	RS1	R1,R3,D2(B2)
Load Multiple (32)	LMY	EB98	RSY1	R1,R3,D2(B2)
Load Multiple (64)	LMG	EB04	RSY1	R1,R3,D2(B2)
Load Multiple Disjoint	LMD	EF	SS5	R1,R3,D2(B2),D4(B4)
Load Multiple High	LMH	EB96	RSY1	R1,R3,D2(B2)

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