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Model Name: Intel(R) Xeon(R) Silver 4214Y CPU @ 2.20GHz						
RedHat Release: Red Hat Enterprise Linux release 8.8 (Ootpa)						
Stage/Version	**Benchmark**	**Time (s)**	**Instructions**	**Rel to Start**	**Rel to Prev**	**Improvement**
1	Sandmark	184.28	—	1.000	1.000	Starting point
	Advent	64.8	—	1.000	1.000	
	Midmark	7.32	38,460,255,330	1.000	1.000	
2	Sandmark	144.49	—	0.784	0.784	Compiled with -O1 turned on and linked against -lcii-O1
	Advent	51.56	—	0.796	0.796	
	Midmark	5.73	30,901,595,280	0.783	0.783	
3	Sandmark	132.78	—	0.721	0.919	Compiled with -O2 turned on and linked against -lcii-O2
	Advent	46.64	—	0.720	0.905	
	Midmark	5.15	30,411,159,427	0.704	0.899	
4	Sandmark	124.8	—	0.677	0.940	Removed check for opcode 13 (loadv) in regA function, and instead moved it to be within the switch case
	Advent	42.92	—	0.662	0.920	
	Midmark	4.92	26,832,840,087	0.672	0.955	
5	Sandmark	114.15	—	0.619	0.915	Moved global variables into main and removed any unnecessary assertions from segments.c and instructions.c
	Advent	40.26	—	0.621	0.938	
	Midmark	4.48	22,932,336,789	0.612	0.911	
6	Sandmark	82.65	—	0.449	0.724	Removed unnecessary assertions from Bitpack_getu (by copying it over and modifying it)
	Advent	30.01	—	0.463	0.745	
	Midmark	3.25	12,302,277,904	0.444	0.725	
7	Sandmark	64.55	—	0.350	0.781	Moved everything in the segments and instructions modules into um.c, so that everything is in one main file.
	Advent	21.39	—	0.330	0.713	
	Midmark	2.53	9,479,613,611	0.346	0.778	
8	Sandmark	62.04	—	0.337	0.961	Compiled with -0fast, made short (1-3 line) functions "inline", reordered the swich cases so that the more common instructions are closer to the top, removed Bitpack and used masks instead.
	Advent	20.9	—	0.323	0.977	
	Midmark	2.45	9,200,840,279	0.335	0.968	
9	Sandmark	9.61	—	0.052	0.155	Complete overhaul of the architecture/data structures, changed all sequences to arrays and modified respective functions
	Advent	2.63	—	0.041	0.126	
	Midmark	0.35	2,481,668,408	0.048	0.143	

Final um: