

Benchmark	Time	Instructions	Rel to start	Rel to Prev	Improvement
Midmark	14.037 s	7.06 x 10 ¹⁰	1.0000	1.0000	No improvement (starting point)
Adventure	112.058 s	-----	1.0000	1.0000	
Sandmark	351.219 s	-----	1.0000	1.0000	
Midmark	10.028 s	5.49 x 10 ¹⁰	0.714	.714	Compiled and linked with -lcii-01
Adventure	73.727 s	-----	0.658	0.658	
Sandmark	246.364 s	-----	0.701	0.701	
Midmark	9.693 s	5.74 x 10 ¹⁰	0.691	0.967	Compiled and linked with -lcii-02
Adventure	76.421 s	-----	0.682	1.037	
Sandmark	241.000 s	-----	0.686	0.978	
Midmark	8.875 s	5.25 x 10 ¹⁰	0.632	0.916	Changed register array from UArray_T to regular uint32_t array and updated function calls accordingly. This reduced the number of calls to UArray_at.
Adventure	69.349 s	-----	0.619	0.907	
Sandmark	230.705 s	-----	0.657	0.957	
Midmark	8.859 s	5.25 x 10 ¹⁰	0.631	0.998	Edited all static functions to be static inline
Adventure	71.129	-----	0.635	1.026	
Sandmark	230.602 s	-----	0.657	0.999	
Midmark	7.717 s	3.79 x 10 ¹⁰	0.545	0.871	Removed calls to bitpack functions and replaced them with bitwise operators.
Adventure	59.816 s	-----	0.534	0.841	
Sandmark	201.823 s	-----	0.575	0.875	

Midmark	2.268 s	2.03×10^{10}	0.162	0.294	Replaced Seq_T for segmented memory with c arrays.
Adventure	20.667 s	-----	0.184	0.346	
Sandmark	56.399 s	-----	0.161	0.279	
Midmark	2.214 s	2.03×10^{10}	0.158	0.976	Checked for the loadval command first
Adventure	19.947 s	-----	0.178	0.965	
Sandmark	55.546 s	-----	0.158	0.985	
Midmark	2.060 s	1.74×10^{10}	0.147	0.930	Put everything into one file and put one line functions directly in switch statement
Adventure	18.056 s	-----	0.161	0.905	
Sandmark	51.955 s	-----	0.148	0.935	
Midmark	1.936 s	1.63×10^{10}	0.138	0.940	Put everything into one function
Adventure	17.338 s	-----	0.155	0.960	
Sandmark	48.481 s	-----	0.138	0.933	
Midmark	0.378 s	3.18×10^{10}	0.027	0.195	Removed structs
Adventure	2.818 s	-----	0.025	0.163	
Sandmark	9.933 s	-----	0.028	0.205	
Midmark	0.290 s	2.83×10^{10}	0.021	0.769	Changed ID sequence to ID array
Adventure	2.460 s	-----	0.022	0.873	
Sandmark	7.381 s	-----	0.021	0.743	