

Measurement of the time to lookup an element

n is the number of elements in the container

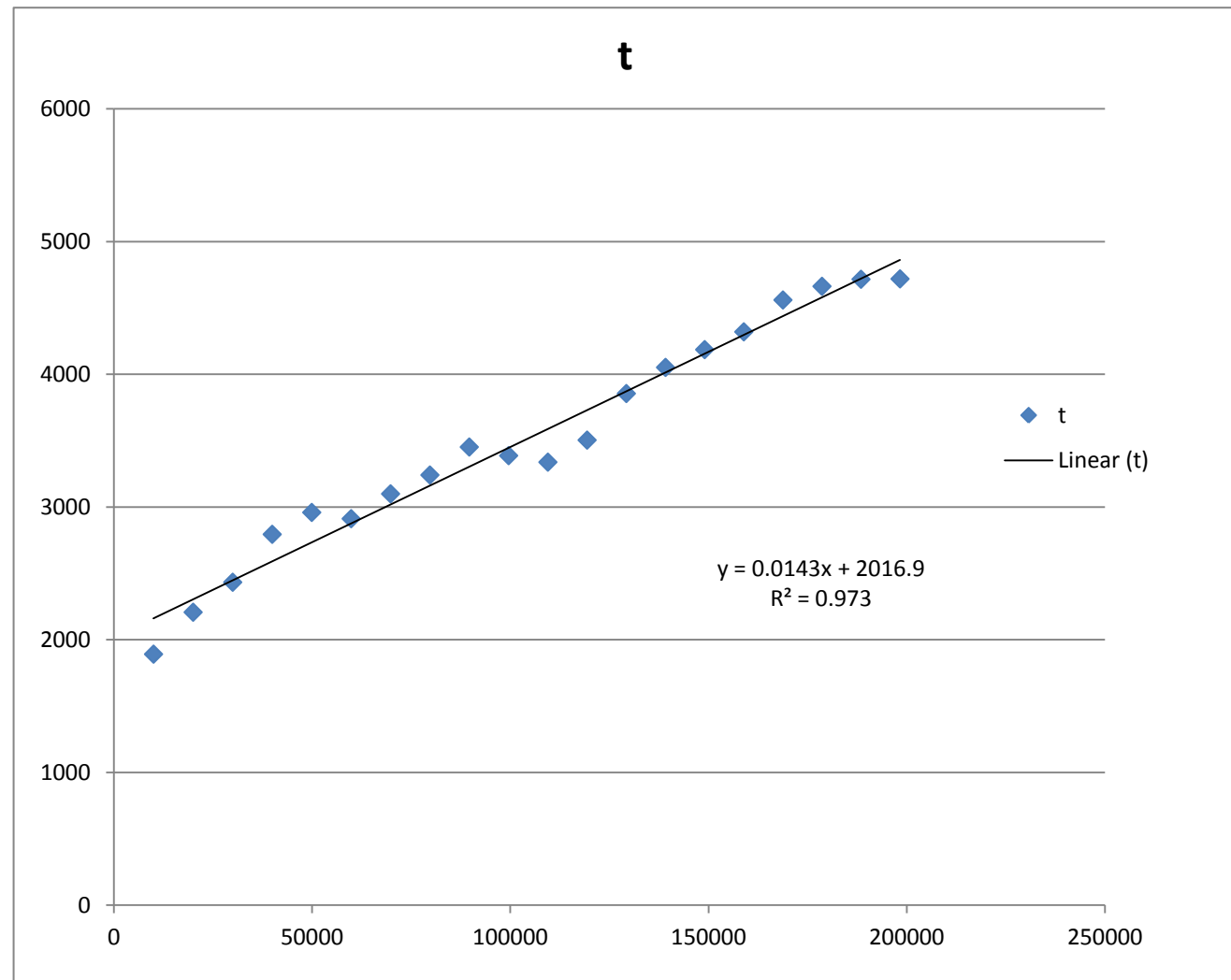
t is the time in ms to lookup 1'000'000 known elements + 1'000'000 unknown elements

QMap

n	t
9995	1891
19982	2207
29959	2433
39931	2794
49903	2959
59844	2912
69789	3099
79712	3241
89642	3452
99568	3387
109476	3338
119367	3504
129263	3855
139148	4052
149025	4186
158895	4320
168768	4560
178619	4663
188458	4716
198310	4719

Average: 3514.4

Memory: 60.6 MB

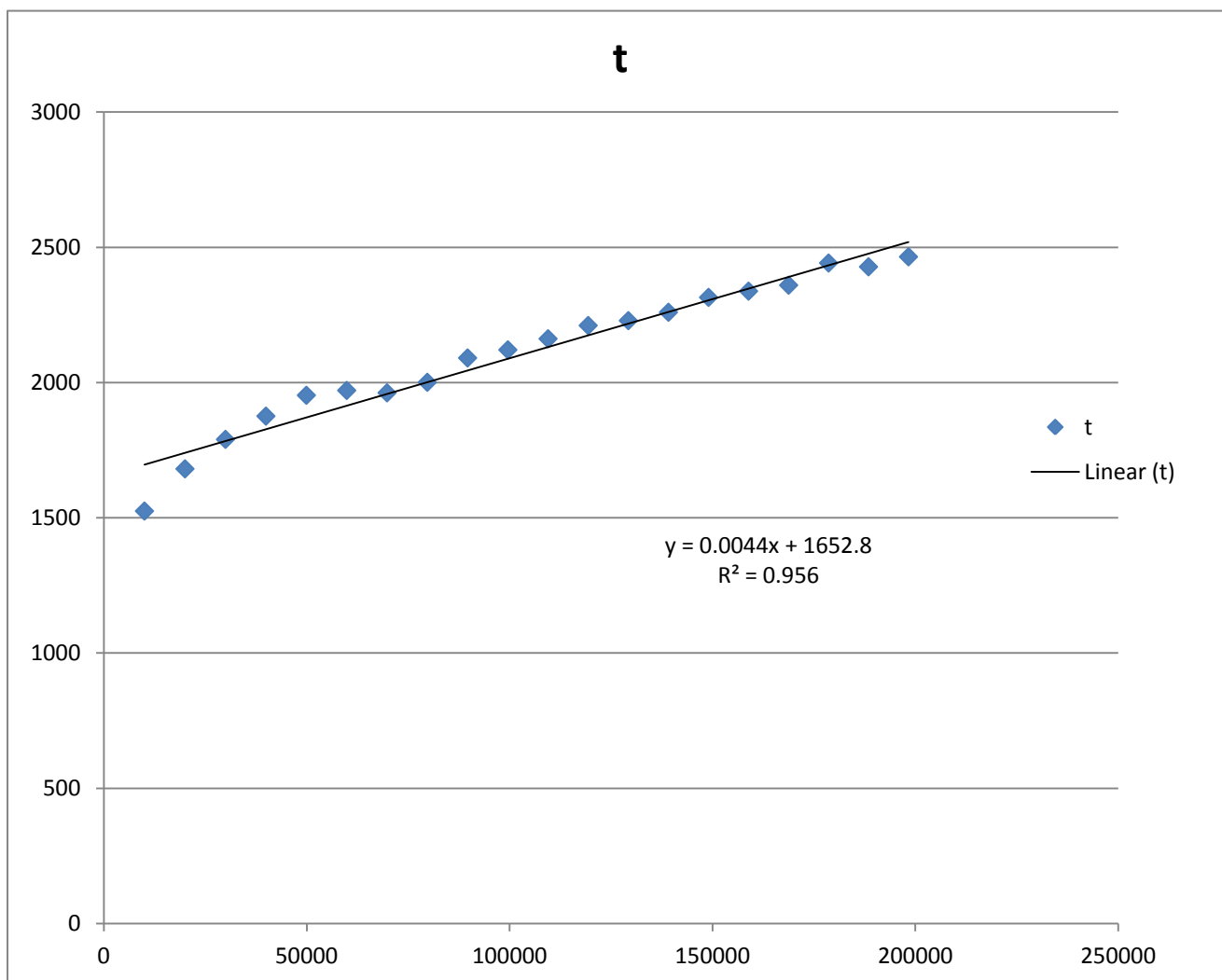


SortedArray, M = 3

Memory: 70.1 MB

n	t
9995	1525
19982	1681
29959	1790
39931	1876
49903	1953
59844	1971
69789	1962
79712	2001
89642	2091
99568	2121
109476	2162
119367	2211
129263	2229
139148	2260
149025	2315
158895	2338
168768	2360
178619	2442
188458	2428
198310	2465

Average: 2109.05

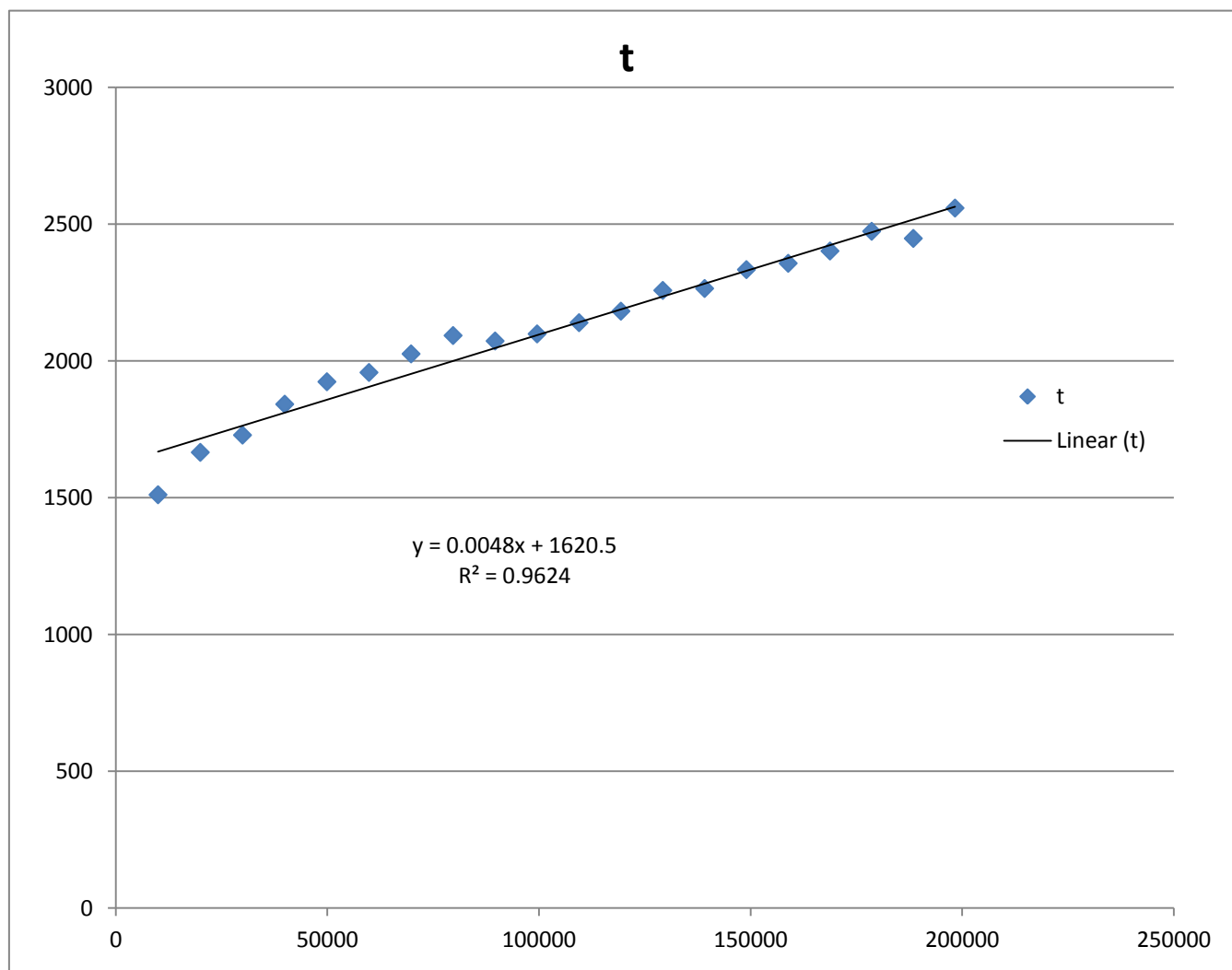


SortedArray, M = 5

Memory: 51.9 MB

n	t
9995	1511
19982	1666
29959	1729
39931	1842
49903	1924
59844	1958
69789	2026
79712	2093
89642	2073
99568	2099
109476	2140
119367	2182
129263	2258
139148	2265
149025	2334
158895	2357
168768	2402
178619	2474
188458	2448
198310	2559

Average: 2117

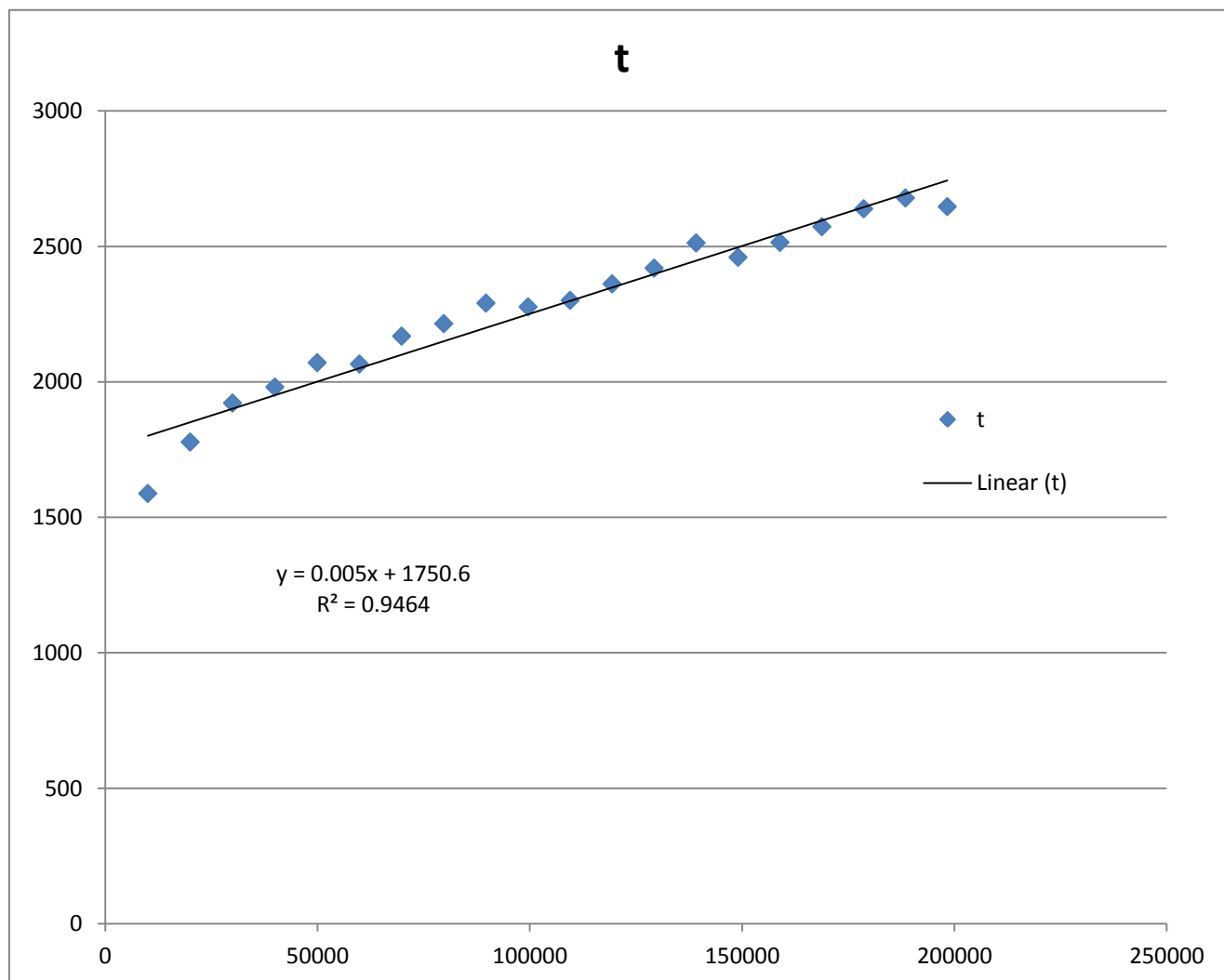


SortedArray, M = 7

Memory: 45.7 MB

n	t
9995	1588
19982	1778
29959	1922
39931	1981
49903	2071
59844	2066
69789	2169
79712	2215
89642	2291
99568	2277
109476	2301
119367	2362
129263	2420
139148	2513
149025	2460
158895	2515
168768	2573
178619	2639
188458	2679
198310	2647

Average: 2273.35

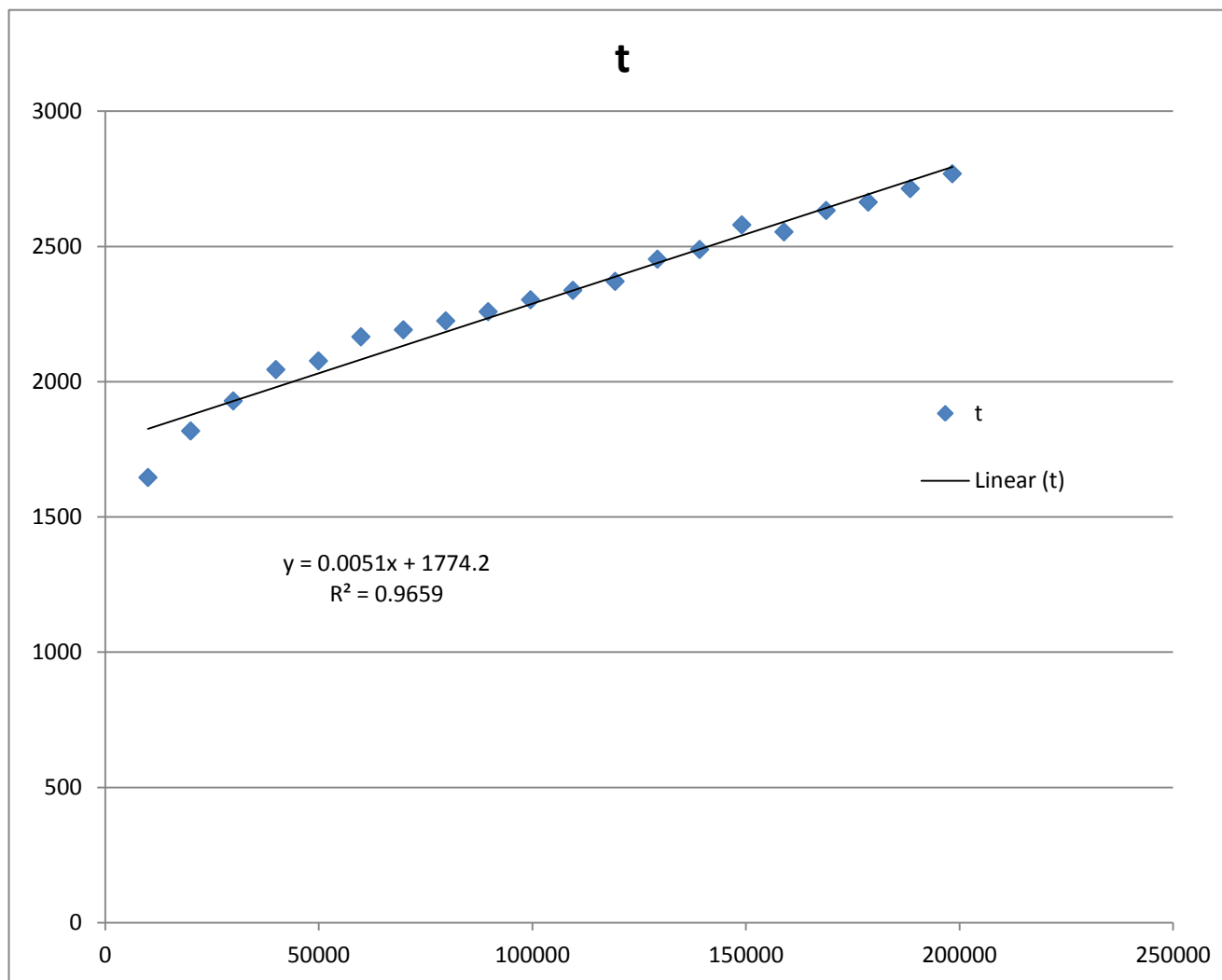


SortedArray, M = 13

Memory: 39.6 Mo

n	t
9995	1646
19982	1818
29959	1929
39931	2045
49903	2077
59844	2166
69789	2192
79712	2225
89642	2259
99568	2303
109476	2338
119367	2371
129263	2453
139148	2489
149025	2580
158895	2554
168768	2633
178619	2664
188458	2714
198310	2769

Average: 2311.25



Height of the tree depending the order (M) and the number of elements

$$h = \log_M(n+1) - 1$$

Order (M) : 3

n	h
1000	5.288619607
2000	5.919094582
4000	6.549796861
8000	7.180612856
16000	7.811485725
32000	8.442387035
64000	9.073302567
128000	9.704225209
256000	10.33515141
512000	10.96607938
1024000	11.59700825
2048000	12.22793756

Order (M) : 5

n	h
1000	3.292651
2000	3.723017
4000	4.153538
8000	4.584137
16000	5.014775
32000	5.445432
64000	5.876099
128000	6.30677
256000	6.737445
512000	7.16812
1024000	7.598796
2048000	8.029472

Order (M) : 7

n	h
1000	2.550398
2000	2.906348
4000	3.262427
8000	3.61857
16000	3.974745
32000	4.330936
64000	4.687135
128000	5.043338
256000	5.399543
512000	5.75575
1024000	6.111956
2048000	6.468163

Order (M) : 13

n	h
1000	1.693525
2000	1.963568
4000	2.233709
8000	2.503898
16000	2.774112
32000	3.044338
64000	3.31457
128000	3.584805
256000	3.855042
512000	4.125279
1024000	4.395517
2048000	4.665755

