Benchmark Test of DBM Brothers

This benchmark test is to calculate processing time (real time) and file size of database.
Writing test is to store 1,000,000 records. Reading test is to fetch all of its records.
Both of the key and the value of each record are such 8-byte strings as `00000001', `00000002', `00000003'...
Tuning parameters of each DBM are set to display its best performance.
Platform: Linux 2.6.16 kernel, EXT3 file system (writeback), Intel Xeon quad core 2.3GHz CPU, 8GB RAM
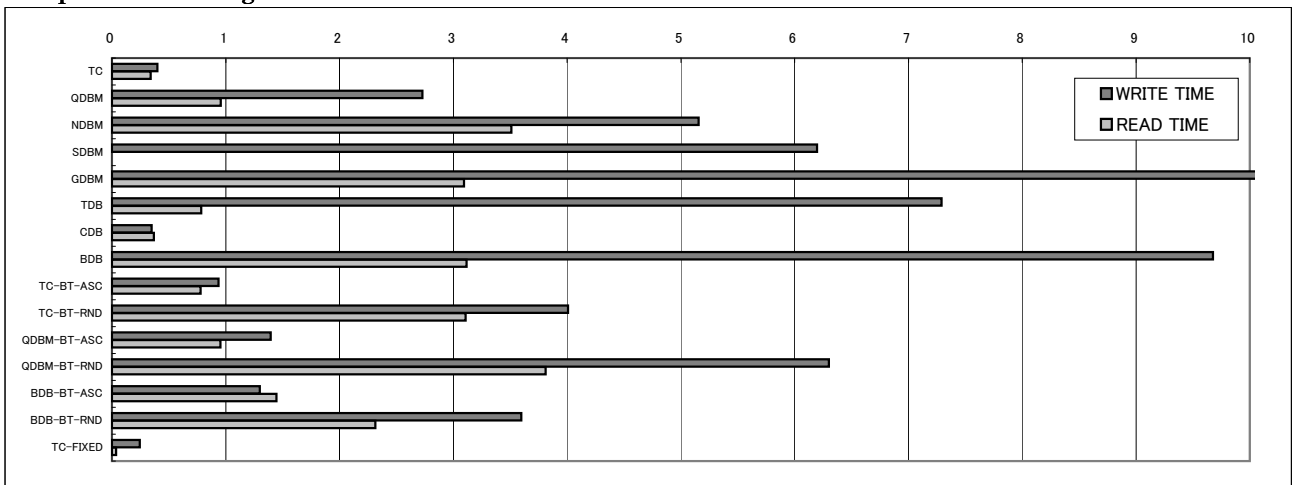Compilation: gcc 4.2.3 (using -O3), glibc 2.7

Result

NAME	DESCRIPTION	WRITE TIME	READ TIME	FILE SIZE
TC	Tokyo Cabinet 1.3.5	0.401	0.339	42,583,208
QDBM	Quick Database Manager 1.8.77	2.728	0.957	56,582,932
NDBM	New Database Manager 5.1	5.157	3.509	834,003,968
SDBM	Substitute Database Manager 1.0.2	6.198	0.000	621,281,280
GDBM	GNU Database Manager 1.8.3	19.536	3.093	88,137,728
TDB	Trivial Database 1.0.6	7.290	0.785	52,523,008
CDB	Tiny Constant Database 0.75	0.349	0.369	40,002,048
BDB	Berkeley DB 4.6.21	9.676	3.116	41,938,944
TC-BT-ASC	B+ tree API of TC (ascending order)	0.936	0.781	32,340,739
TC-BT-RND	B+ tree API of TC (at random)	4.008	3.109	12,532,397
QDBM-BT-ASC	B+ tree API of QDBM (ascending order)	1.396	0.953	40,620,715
QDBM-BT-RND	B+ tree API of QDBM (at random)	6.302	3.812	15,731,675
BDB-BT-ASC	B+ tree API of BDB (ascending order)	1.301	1.445	57,999,360
BDB-BT-RND	B+ tree API of BDB (at random)	3.597	2.315	29,818,880
TC-FIXED	Fixed-length API of TC	0.246	0.037	9,000,256

Unit of time is seconds. Unit of size is bytes.
Read time of SDBM can not be calculated because its database is broken when more than 100000 records.

Graph of Processing Time

Graph of File Size