PolePosition

the open source database benchmark

http://www.polepos.org

Participating teams

db4o

the open source object database for Java and .NET

http://www.db4o.com

Hibernate

relational persistence for idiomatic Java

http://www.hibernate.org

MySQL

the world's most popular open source database

http://www.mysql.com

Mckoi

an open source Java SQL database system

http://mckoi.com/database/

JavaDB

Sun's supported distribution of Apache Derby

http://developers.sun.com/javadb/

HSQLDB

lightweight 100% Java SQL database engine

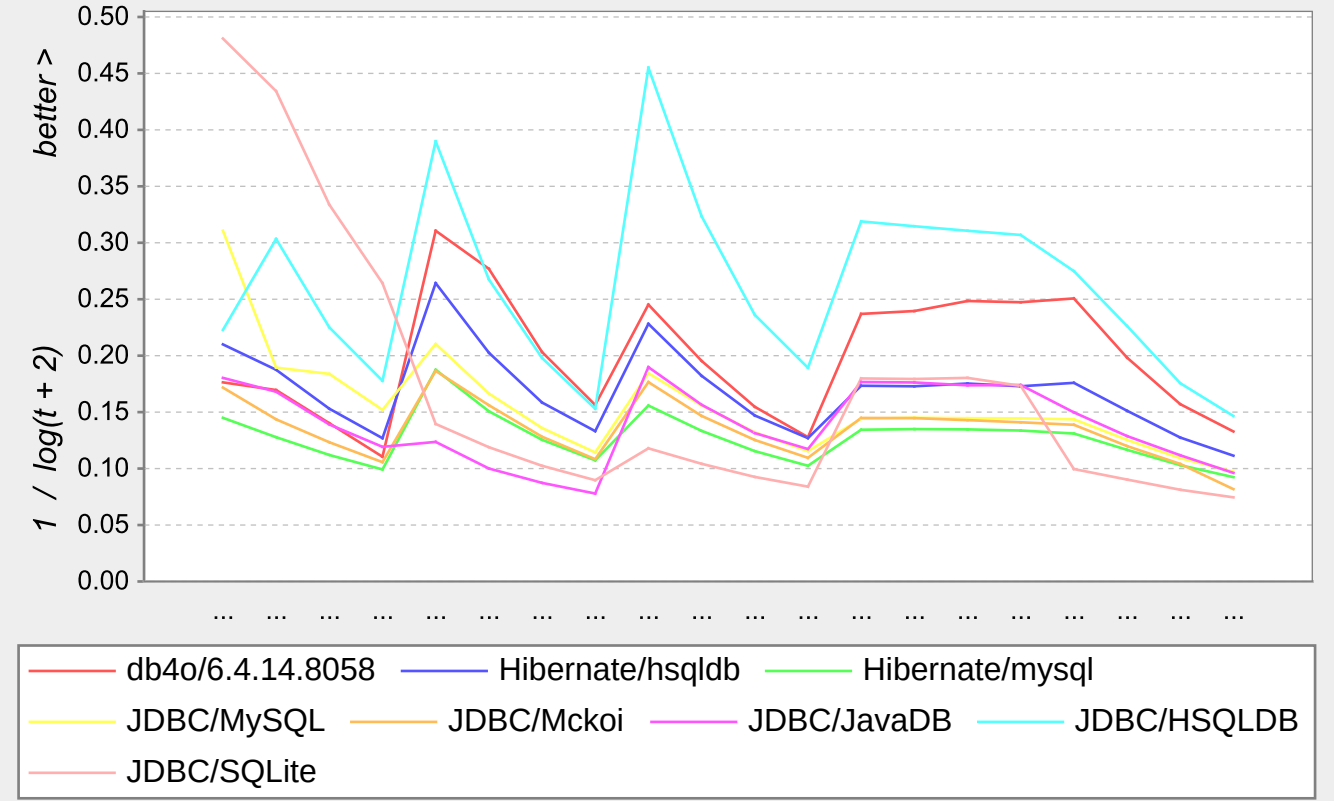
http://hsqldb.sourceforge.net/

SQLite

a small C library that implements a self-contained, embeddable, zero-configuration SQL database engine.

www.sqlite.org

Time Overview

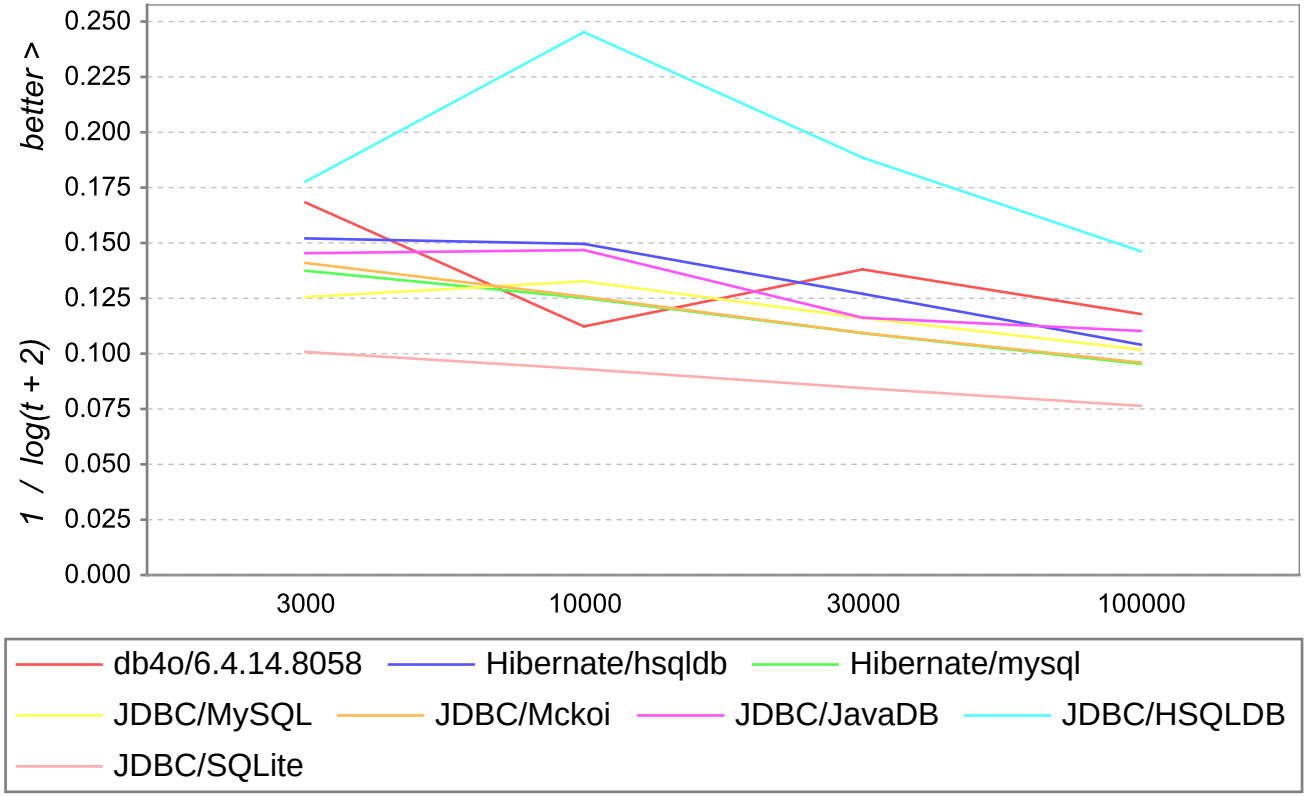


Circuit: Melbourne

writes, reads and deletes unstructured flat objects of one kind in bulk mode

Lap: write

t [time in ms]	**objects:3000**	**objects:10000**	**objects:30000**	**objects:100000**
db4o/6.4.14.8058	379	7365	1398	4820
Hibernate/hsqldb	716	799	2617	14916
Hibernate/mysql	1442	2948	9437	35853
JDBC/MySQL	2881	1872	5470	18422
JDBC/Mckoi	1202	2842	9371	33530
JDBC/JavaDB	970	907	5454	8676
JDBC/HSQLDB	276	57	199	931
JDBC/SQLite	20381	46545	138990	483594

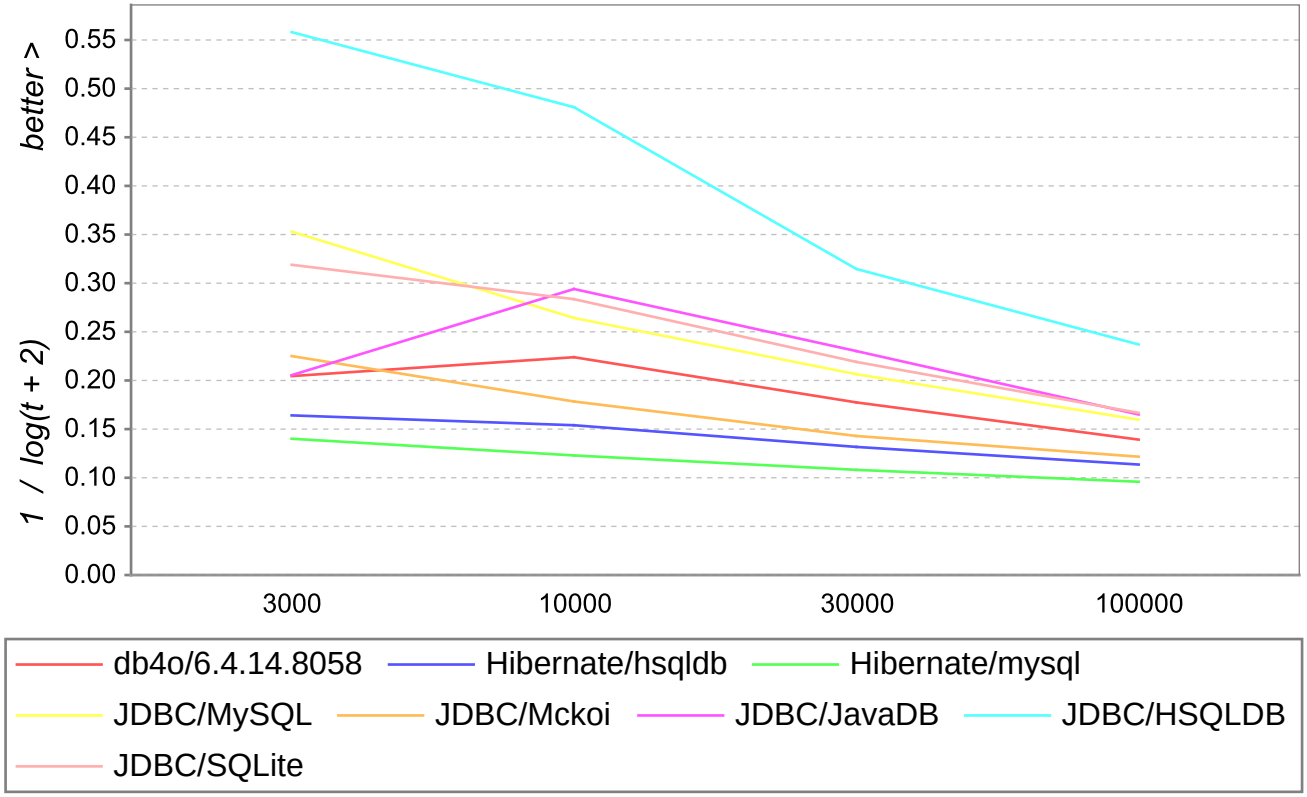


Circuit: Melbourne

writes, reads and deletes unstructured flat objects of one kind in bulk mode

Lap: read

t [time in ms]	**objects:3000**	**objects:10000**	**objects:30000**	**objects:100000**
db4o/6.4.14.8058	131	85	278	1316
Hibernate/hsqldb	441	659	1982	6668
Hibernate/mysql	1255	3403	10384	33794
JDBC/MySQL	15	42	125	523
JDBC/Mckoi	83	270	1090	3717
JDBC/JavaDB	128	28	75	426
JDBC/HSQLDB	4	6	22	66
JDBC/SQLite	21	32	94	401

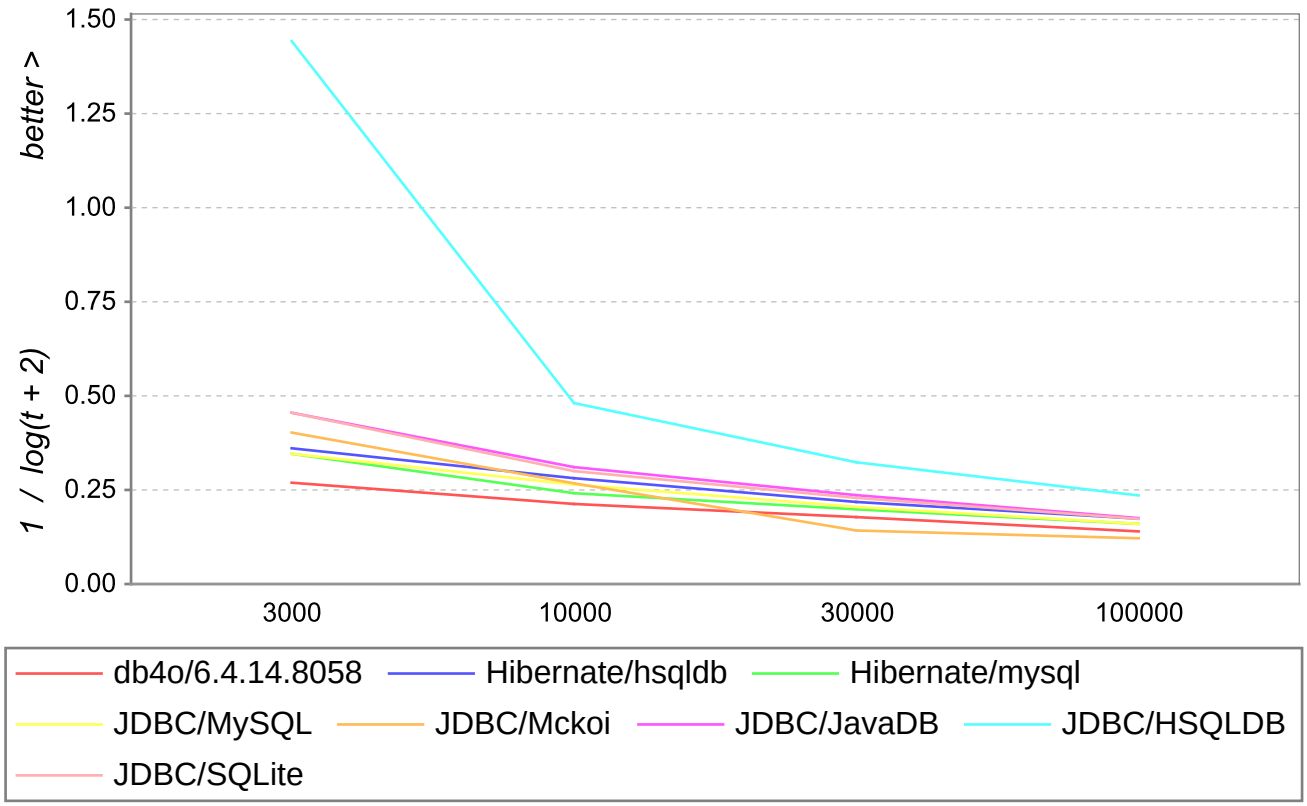


Circuit: Melbourne

writes, reads and deletes unstructured flat objects of one kind in bulk mode

Lap: read_hot

t [time in ms]	**objects:3000**	**objects:10000**	**objects:30000**	**objects:100000**
db4o/6.4.14.8058	39	108	274	1273
Hibernate/hsqldb	14	33	96	314
Hibernate/mysql	16	61	152	519
JDBC/MySQL	16	42	130	520
JDBC/Mckoi	10	40	1128	3722
JDBC/JavaDB	7	23	67	299
JDBC/HSQLDB	0	6	20	68
JDBC/SQLite	7	26	77	320

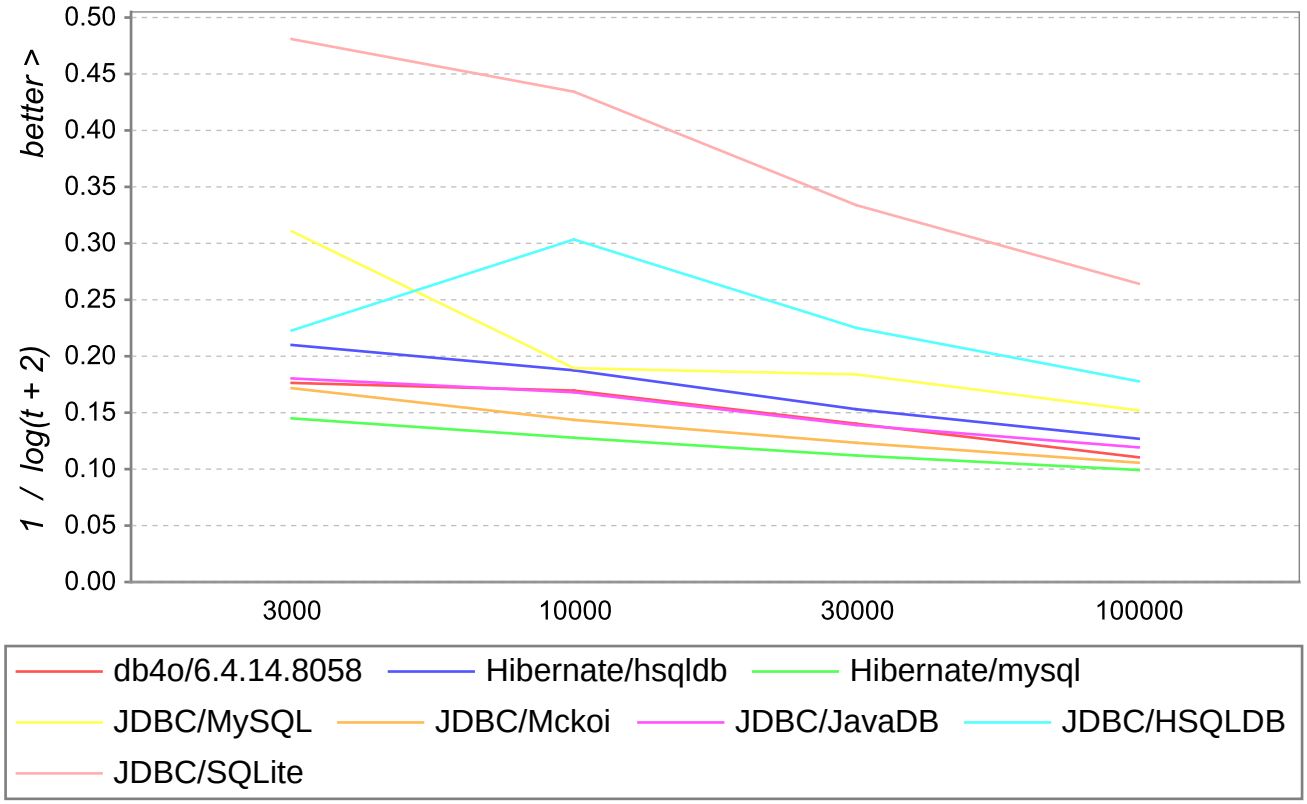


Circuit: Melbourne

writes, reads and deletes unstructured flat objects of one kind in bulk mode

Lap: delete

t [time in ms]	**objects:3000**	**objects:10000**	**objects:30000**	**objects:100000**
db4o/6.4.14.8058	288	362	1251	8530
Hibernate/hsqldb	115	205	686	2640
Hibernate/mysql	988	2500	7506	23779
JDBC/MySQL	23	194	228	717
JDBC/Mckoi	336	1054	3319	12861
JDBC/JavaDB	254	382	1323	4376
JDBC/HSQLDB	87	25	83	275
JDBC/SQLite	6	8	18	42

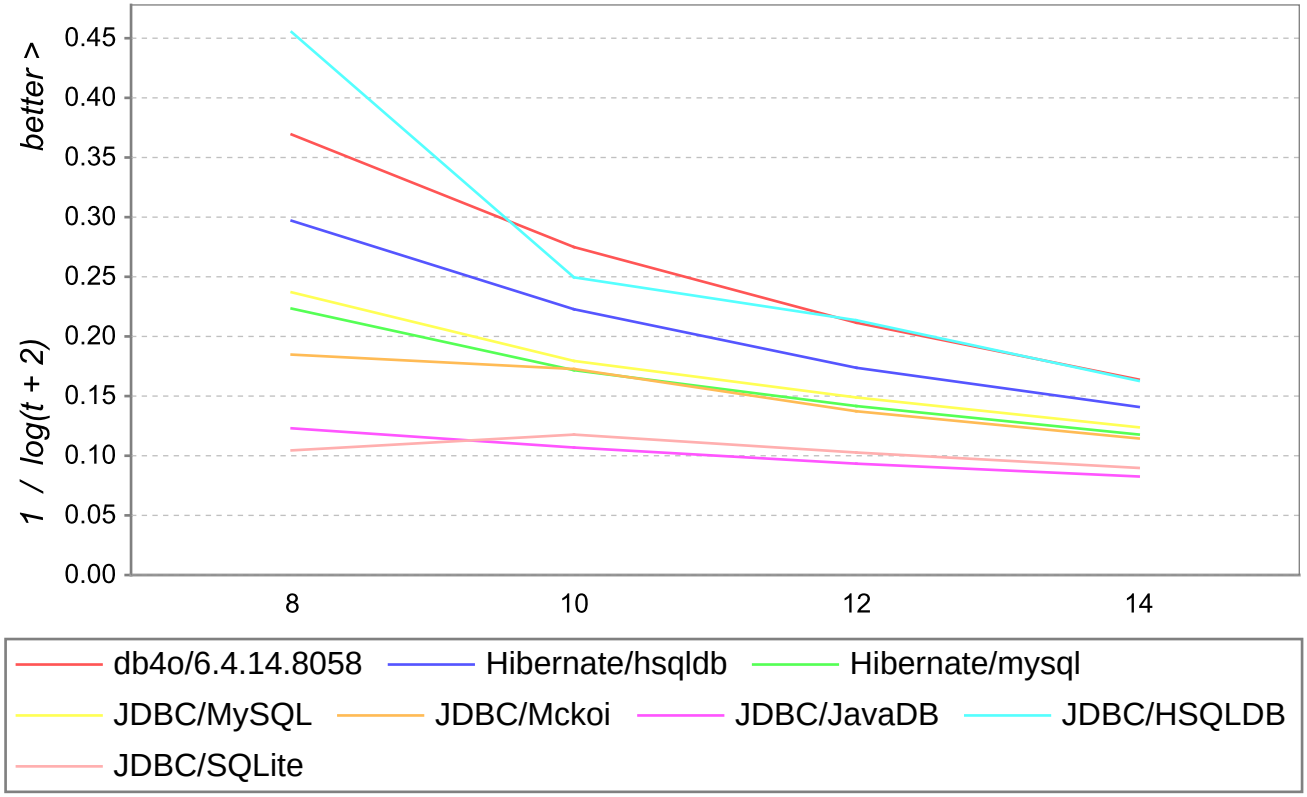


Circuit: Sepang

writes, reads and then deletes an object tree

Lap: write

t [time in ms]	**depth:8**	**depth:10**	**depth:12**	**depth:14**
db4o/6.4.14.8058	13	36	111	445
Hibernate/hsqldb	27	87	314	1206
Hibernate/mysql	86	336	1162	4865
JDBC/MySQL	66	261	825	3215
JDBC/Mckoi	222	325	1455	6220
JDBC/JavaDB	3393	11571	44918	181123
JDBC/HSQLDB	7	53	106	464
JDBC/SQLite	14325	4887	16935	68872

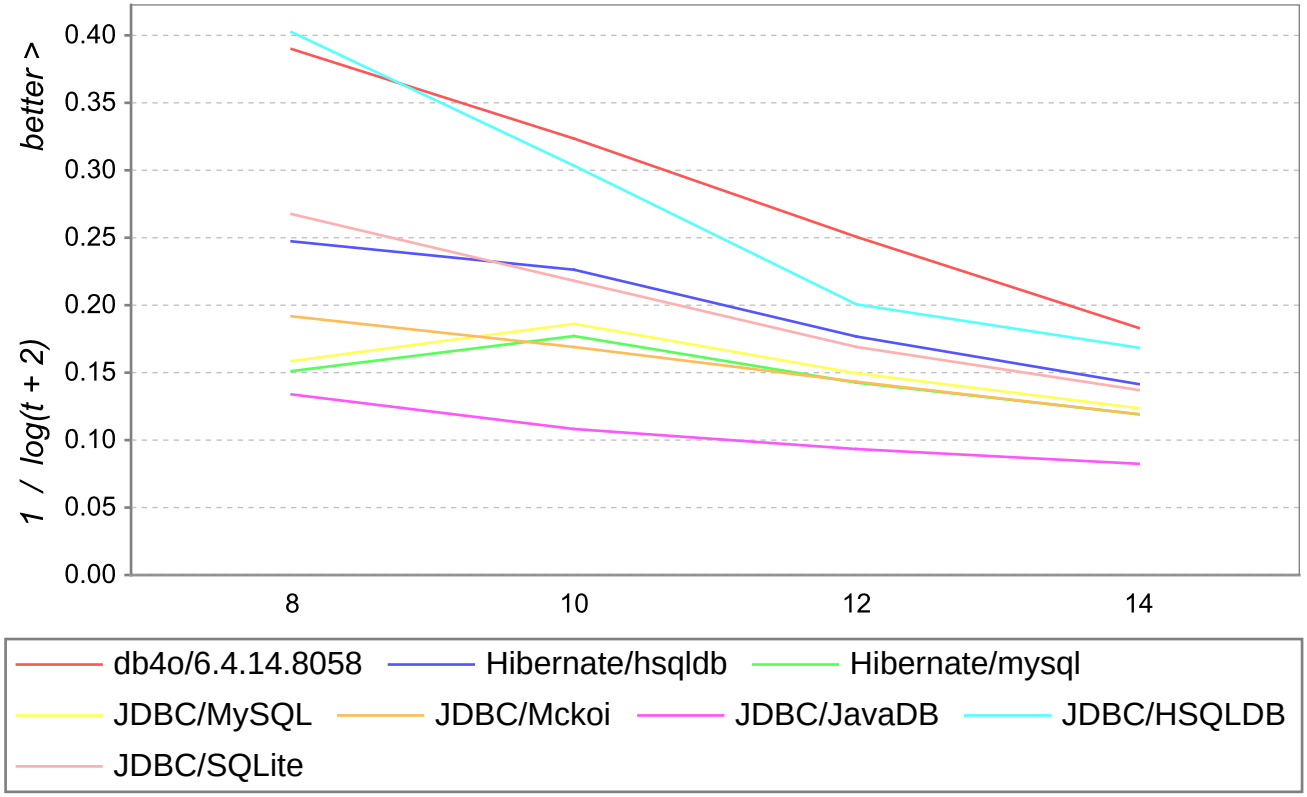


Circuit: Sepang

writes, reads and then deletes an object tree

Lap: read

t [time in ms]	**depth:8**	**depth:10**	**depth:12**	**depth:14**
db4o/6.4.14.8058	11	20	52	233
Hibernate/hsqldb	55	81	284	1169
Hibernate/mysql	744	281	1107	4385
JDBC/MySQL	545	213	799	3246
JDBC/Mckoi	182	369	1072	4414
JDBC/JavaDB	1751	10283	44685	185326
JDBC/HSQLDB	10	25	144	376
JDBC/SQLite	40	96	368	1465

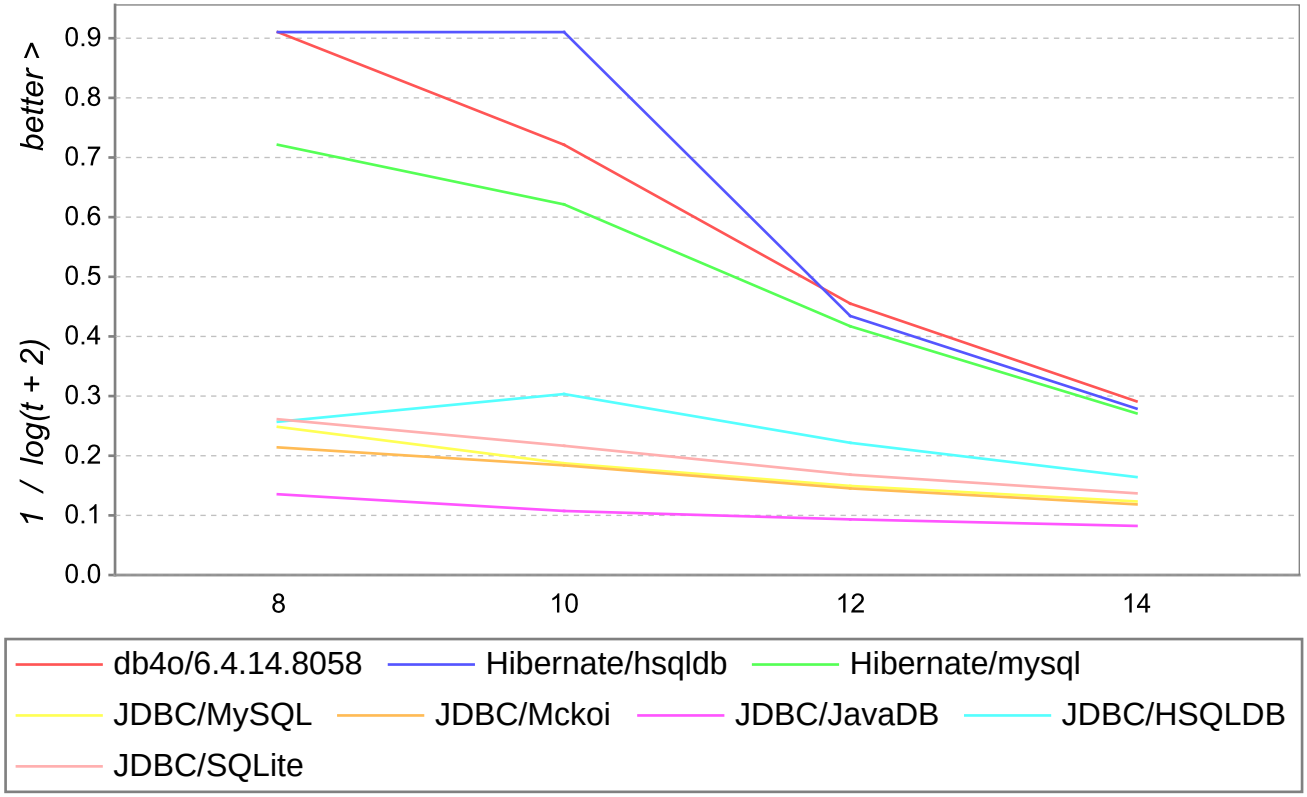


Circuit: Sepang

writes, reads and then deletes an object tree

Lap: read_hot

t [time in ms]	**depth:8**	**depth:10**	**depth:12**	**depth:14**
db4o/6.4.14.8058	1	2	7	29
Hibernate/hsqldb	1	1	8	34
Hibernate/mysql	2	3	9	38
JDBC/MySQL	54	206	807	3309
JDBC/Mckoi	105	228	976	4630
JDBC/JavaDB	1606	11036	44958	188842
JDBC/HSQLDB	47	25	89	439
JDBC/SQLite	44	99	379	1479

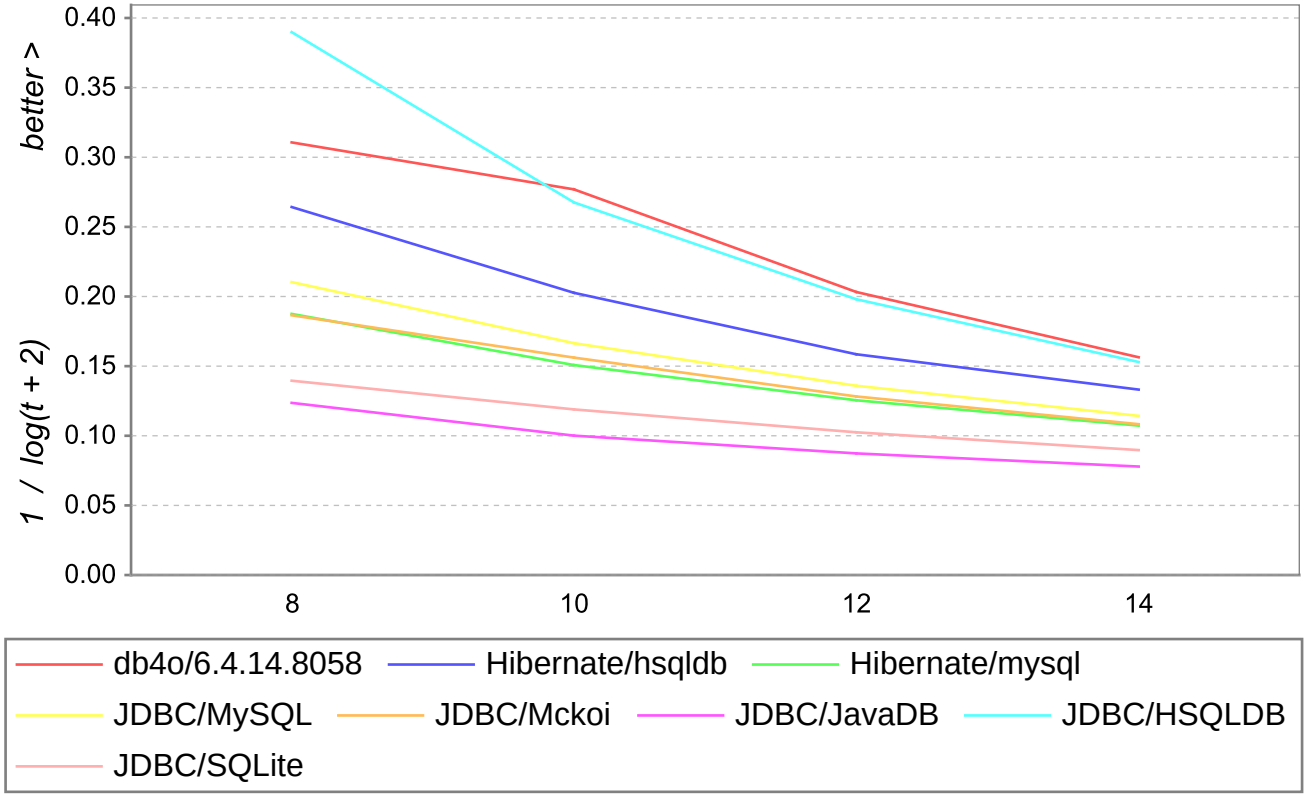


Circuit: Sepang

writes, reads and then deletes an object tree

Lap: delete

t [time in ms]	**depth:8**	**depth:10**	**depth:12**	**depth:14**
db4o/6.4.14.8058	23	35	135	597
Hibernate/hsqldb	42	137	547	1824
Hibernate/mysql	205	757	2886	11158
JDBC/MySQL	114	404	1566	6300
JDBC/Mckoi	211	603	2437	10220
JDBC/JavaDB	3256	21827	93875	375786
JDBC/HSQLDB	11	40	154	688
JDBC/SQLite	1293	4481	17261	69301

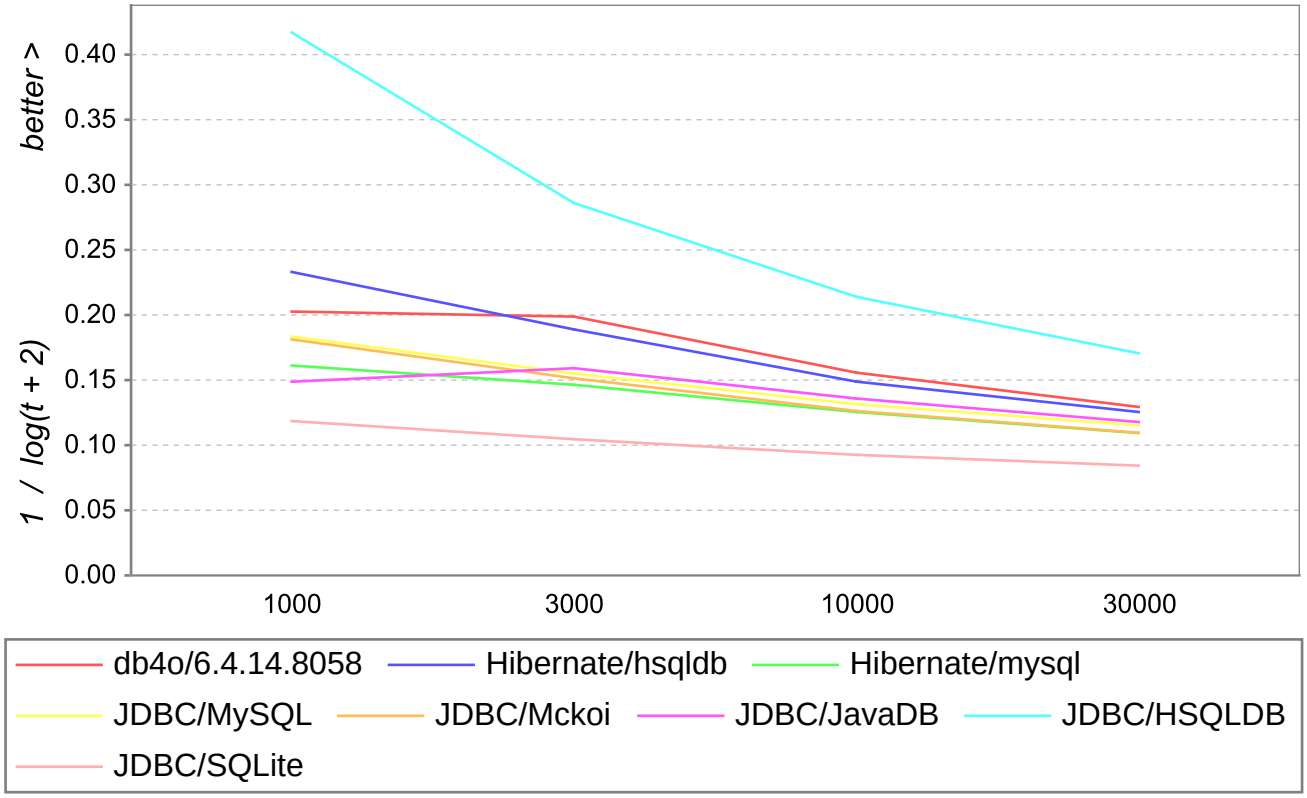


Circuit: Bahrain

write, query, update and delete simple flat objects individually

Lap: write

t [time in ms]	**selects:900 objects:1000 updates:100**	**selects:900 objects:3000 updates:100**	**selects:900 objects:10000 updates:100**	**selects:900 objects:30000 updates:100**
db4o/6.4.14.8058	137	151	613	2271
Hibernate/hsqldb	71	197	825	2882
Hibernate/mysql	492	923	2884	9396
JDBC/MySQL	231	632	2004	5853
JDBC/Mckoi	247	738	2744	9195
JDBC/JavaDB	829	534	1573	4862
JDBC/HSQLDB	9	31	105	349
JDBC/SQLite	4603	14188	49016	141886

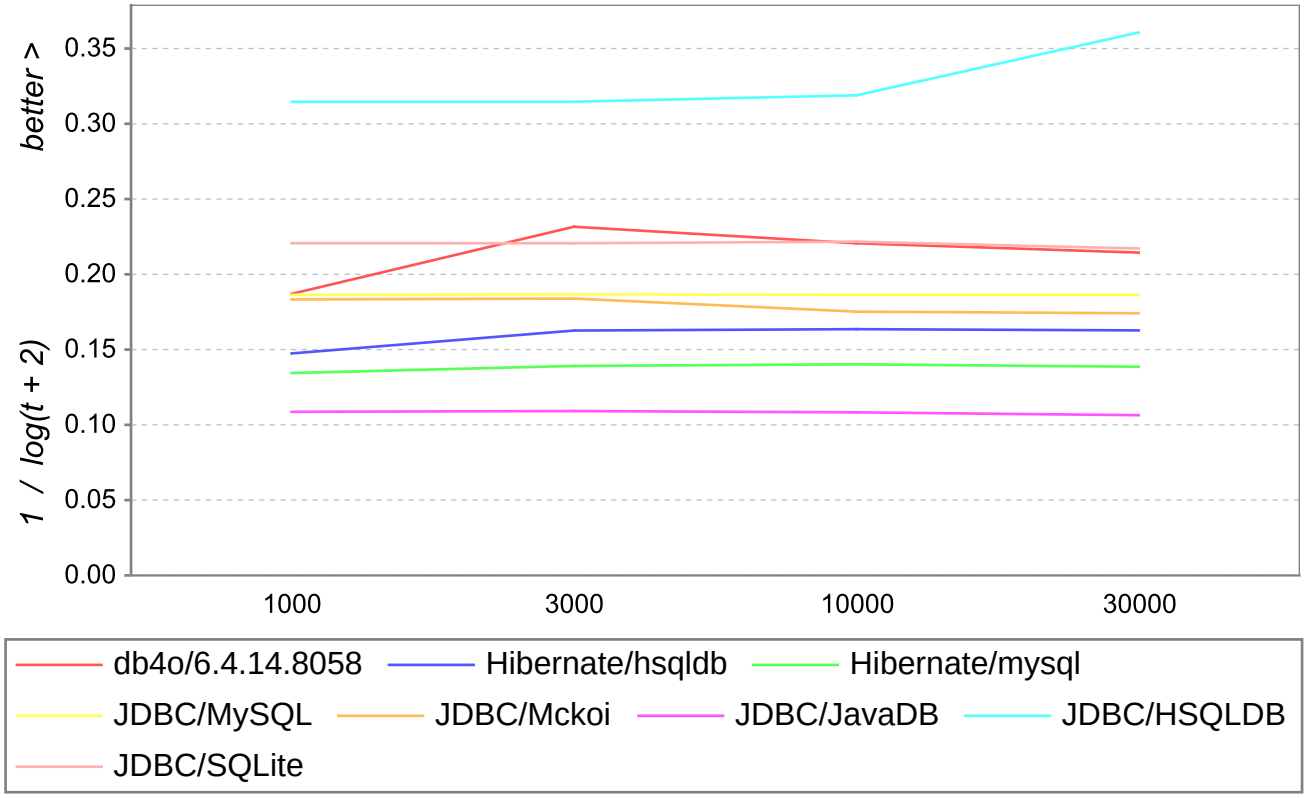


Circuit: Bahrain

write, query, update and delete simple flat objects individually

Lap: query_indexed_string

t [time in ms]	**selects:900 objects:1000 updates:100**	**selects:900 objects:3000 updates:100**	**selects:900 objects:10000 updates:100**	**selects:900 objects:30000 updates:100**
db4o/6.4.14.8058	208	73	91	104
Hibernate/hsqldb	880	466	450	464
Hibernate/mysql	1700	1319	1250	1356
JDBC/MySQL	212	210	212	212
JDBC/Mckoi	232	228	299	310
JDBC/JavaDB	9906	9498	10229	12043
JDBC/HSQLDB	22	22	21	14
JDBC/SQLite	91	91	89	98

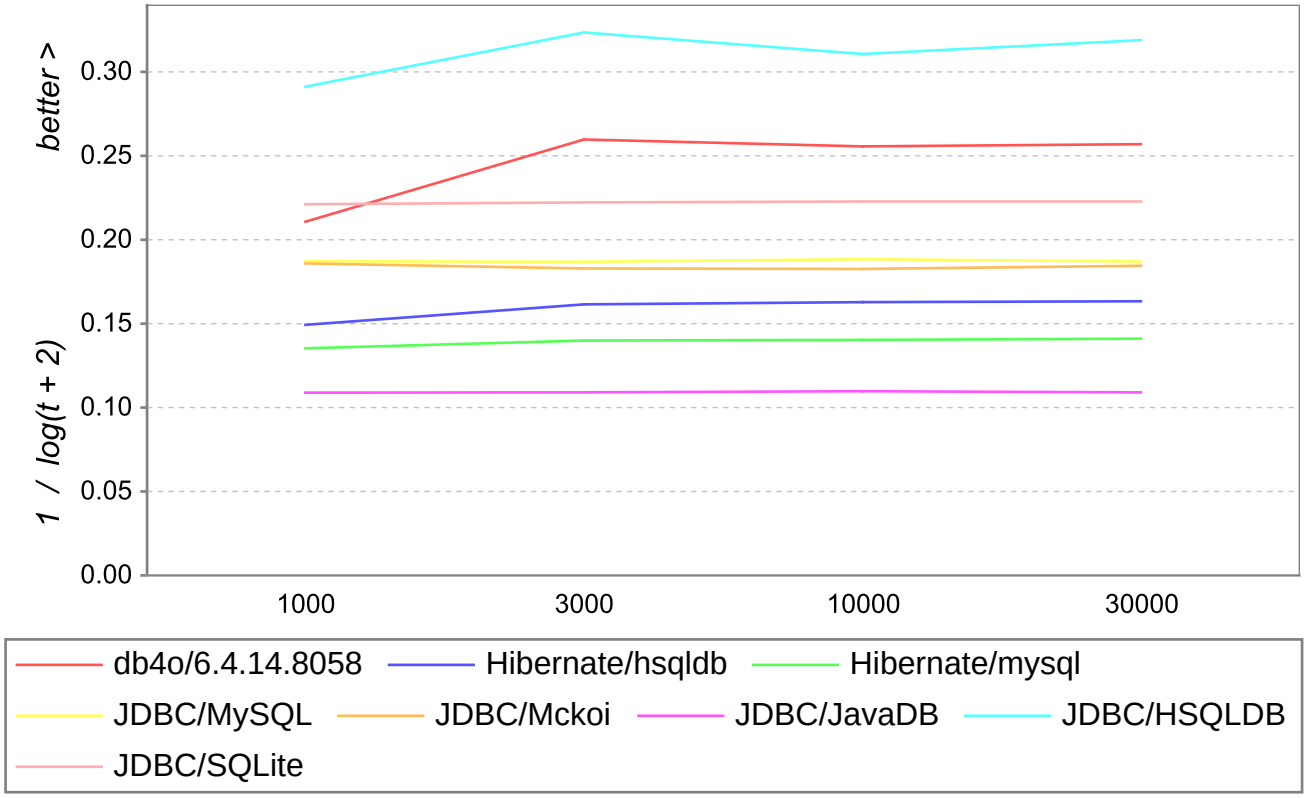


Circuit: Bahrain

write, query, update and delete simple flat objects individually

Lap: query_indexed_int

t [time in ms]	**selects:900 objects:1000 updates:100**	**selects:900 objects:3000 updates:100**	**selects:900 objects:10000 updates:100**	**selects:900 objects:30000 updates:100**
db4o/6.4.14.8058	113	45	48	47
Hibernate/hsqldb	809	487	463	454
Hibernate/mysql	1619	1267	1243	1198
JDBC/MySQL	207	209	200	208
JDBC/Mckoi	215	235	237	224
JDBC/JavaDB	9732	9590	9072	9608
JDBC/HSQLDB	29	20	23	21
JDBC/SQLite	90	88	87	87

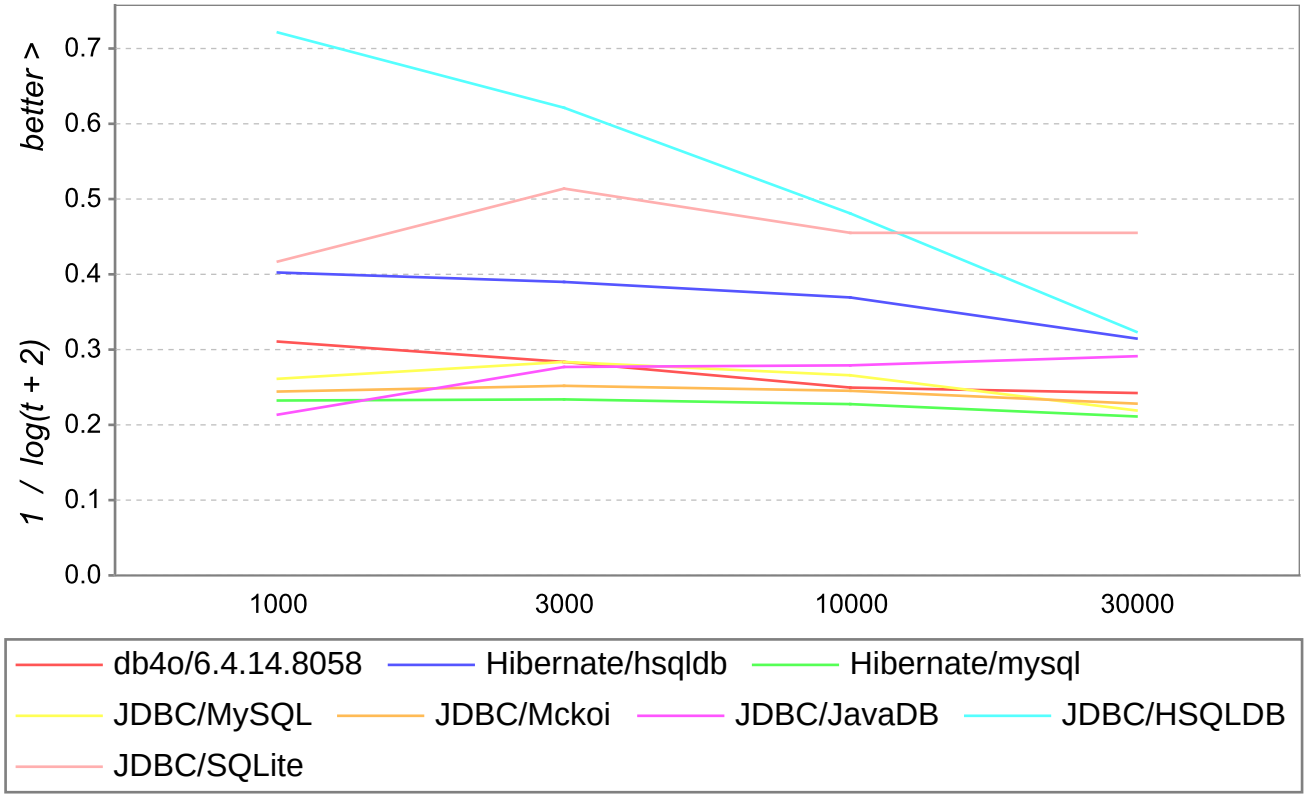


Circuit: Bahrain

write, query, update and delete simple flat objects individually

Lap: update

t [time in ms]	**selects:900 objects:1000 updates:100**	**selects:900 objects:3000 updates:100**	**selects:900 objects:10000 updates:100**	**selects:900 objects:30000 updates:100**
db4o/6.4.14.8058	23	32	53	60
Hibernate/hsqldb	10	11	13	22
Hibernate/mysql	72	70	79	112
JDBC/MySQL	44	32	41	94
JDBC/Mckoi	58	51	57	78
JDBC/JavaDB	106	35	34	29
JDBC/HSQLDB	2	3	6	20
JDBC/SQLite	9	5	7	7

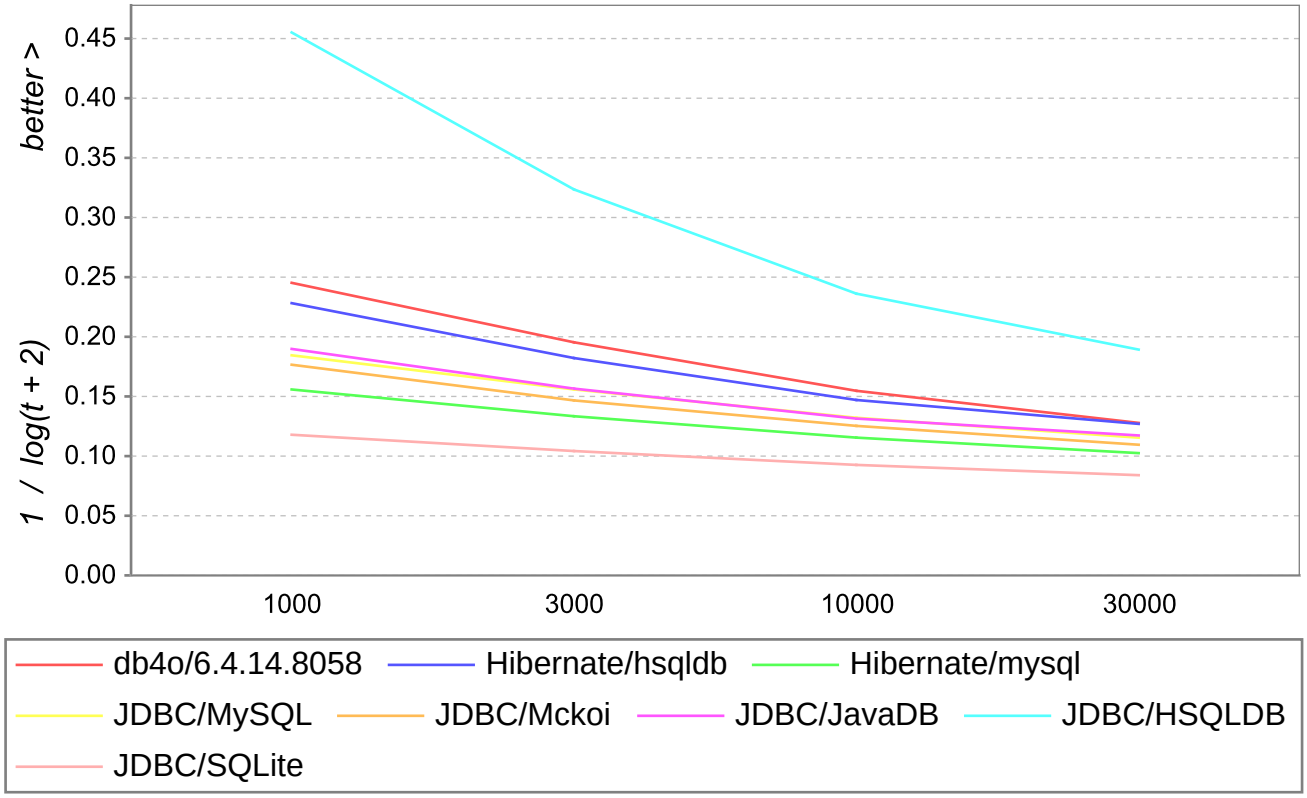


Circuit: Bahrain

write, query, update and delete simple flat objects individually

Lap: delete

t [time in ms]	**selects:900 objects:1000 updates:100**	**selects:900 objects:3000 updates:100**	**selects:900 objects:10000 updates:100**	**selects:900 objects:30000 updates:100**
db4o/6.4.14.8058	57	165	639	2494
Hibernate/hsqldb	78	240	897	2627
Hibernate/mysql	610	1798	5762	17262
JDBC/MySQL	224	609	1931	5778
JDBC/Mckoi	286	912	2917	9234
JDBC/JavaDB	192	593	2010	5042
JDBC/HSQLDB	7	20	67	195
JDBC/SQLite	4821	14665	48925	147762

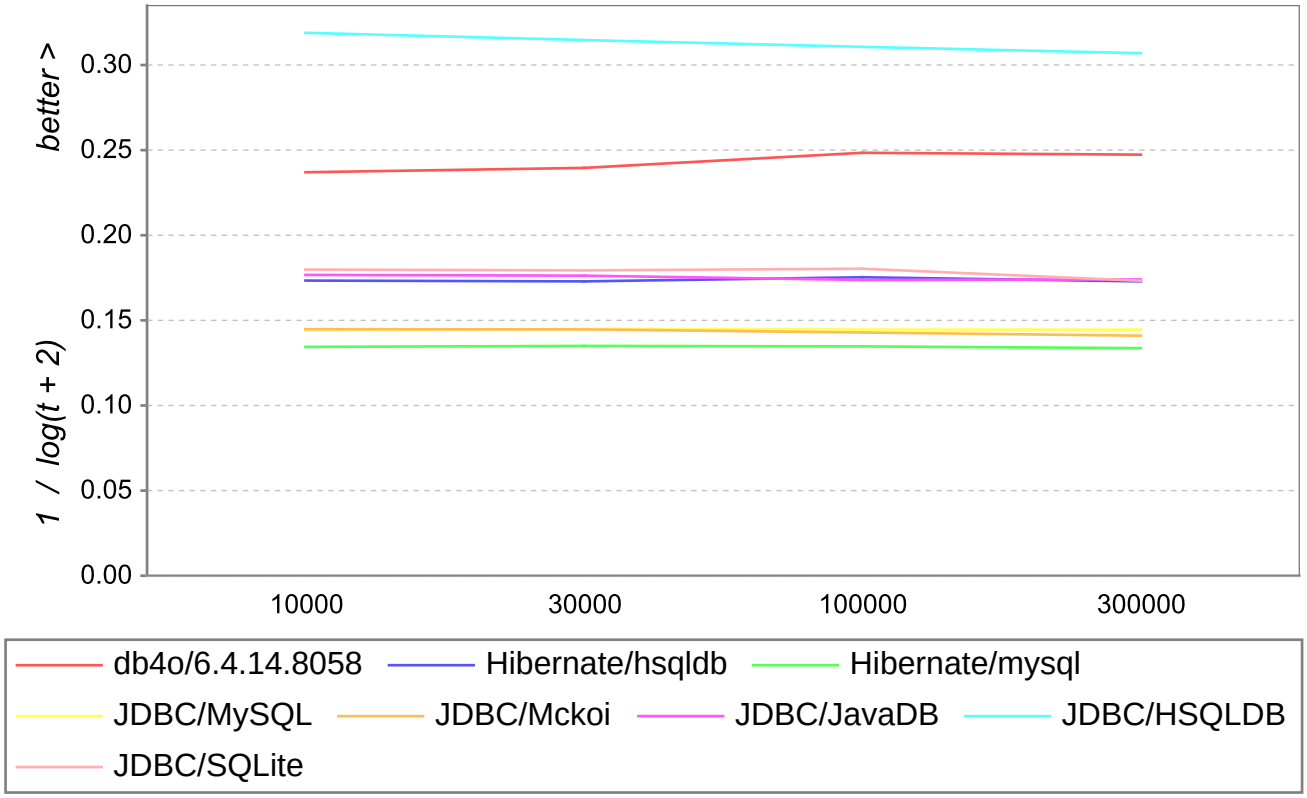


Circuit: Imola

retrieves objects by native id

Lap: retrieve

t [time in ms]	**selects:5000 objects:10000**	**selects:5000 objects:30000**	**selects:5000 objects:100000**	**selects:5000 objects:300000**
db4o/6.4.14.8058	66	63	54	55
Hibernate/hsqldb	318	323	298	323
Hibernate/mysql	1700	1648	1673	1770
JDBC/MySQL	1029	986	1005	1009
JDBC/Mckoi	995	1001	1093	1201
JDBC/JavaDB	285	289	314	311
JDBC/HSQLDB	21	22	23	24
JDBC/SQLite	258	262	254	319

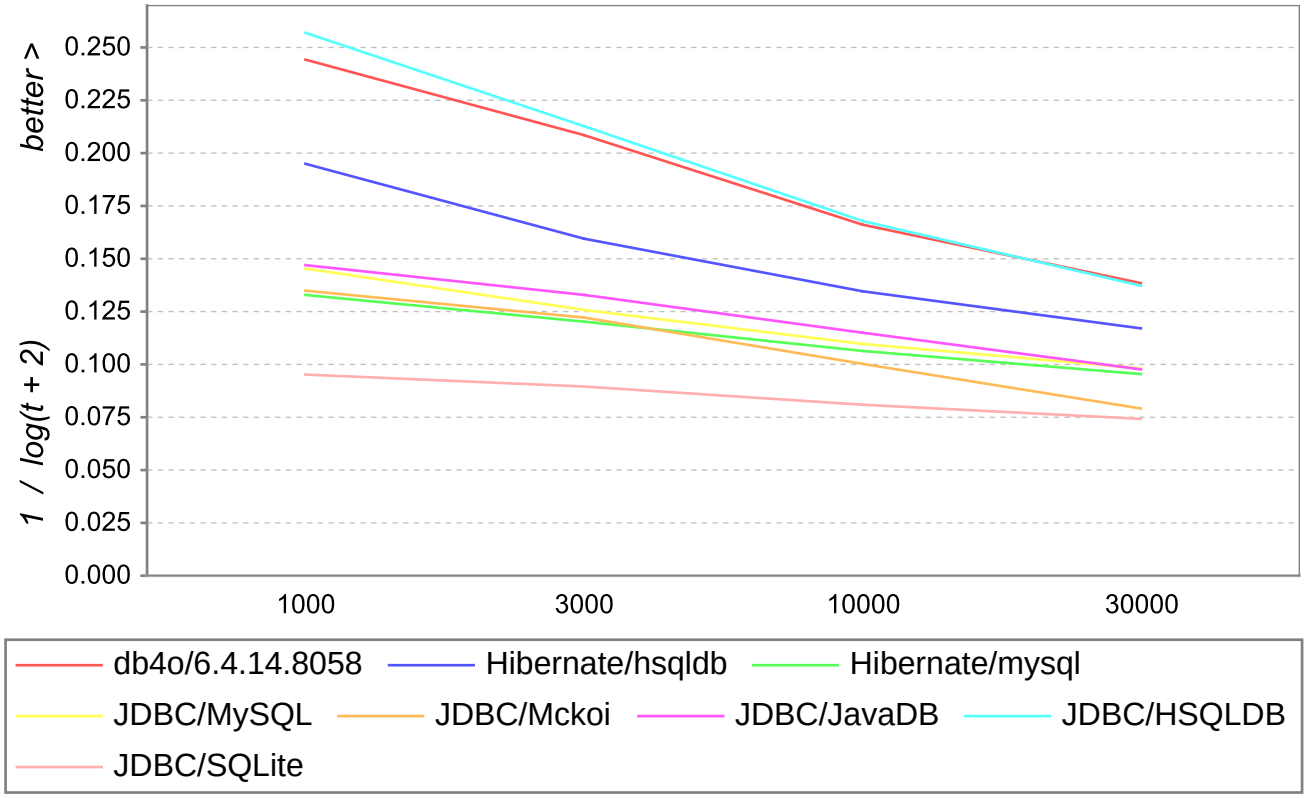


Circuit: Barcelona

writes, reads, queries and deletes objects with a 5 level inheritance structure

Lap: write

t [time in ms]	**selects:100 objects:1000**	**selects:100 objects:3000**	**selects:100 objects:10000**	**selects:100 objects:30000**
db4o/6.4.14.8058	58	119	409	1368
Hibernate/hsqldb	167	526	1681	5125
Hibernate/mysql	1854	4088	12096	35646
JDBC/MySQL	970	2829	9097	26675
JDBC/Mckoi	1655	3584	21435	307723
JDBC/JavaDB	899	1850	5968	28003
JDBC/HSQLDB	47	108	384	1459
JDBC/SQLite	36509	70887	232511	710126

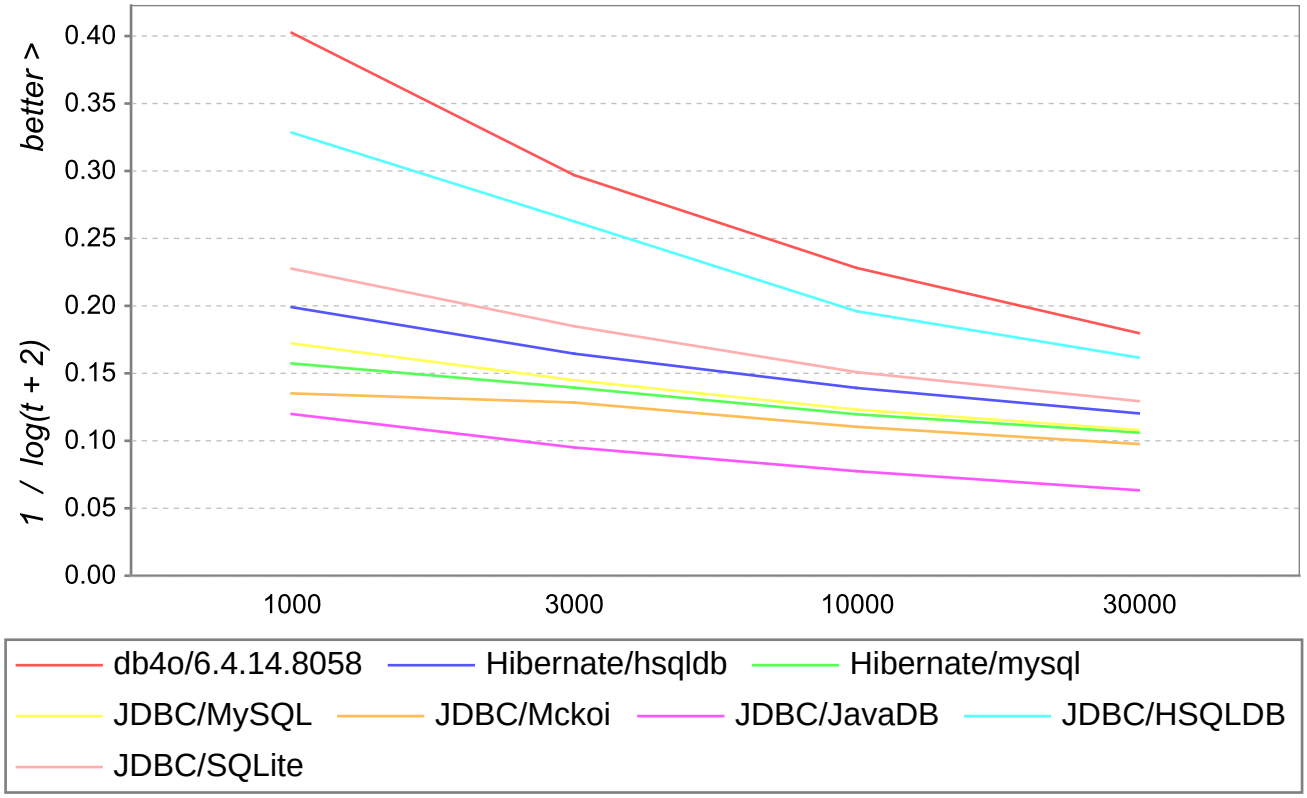


Circuit: Barcelona

writes, reads, queries and deletes objects with a 5 level inheritance structure

Lap: read

t [time in ms]	**selects:100 objects:1000**	**selects:100 objects:3000**	**selects:100 objects:10000**	**selects:100 objects:30000**
db4o/6.4.14.8058	10	27	78	258
Hibernate/hsqldb	150	433	1317	4068
Hibernate/mysql	574	1300	4255	12377
JDBC/MySQL	331	990	3368	10530
JDBC/Mckoi	1634	2413	8599	28181
JDBC/JavaDB	4200	36869	401224	7183675
JDBC/HSQLDB	19	43	162	483
JDBC/SQLite	79	221	753	2269

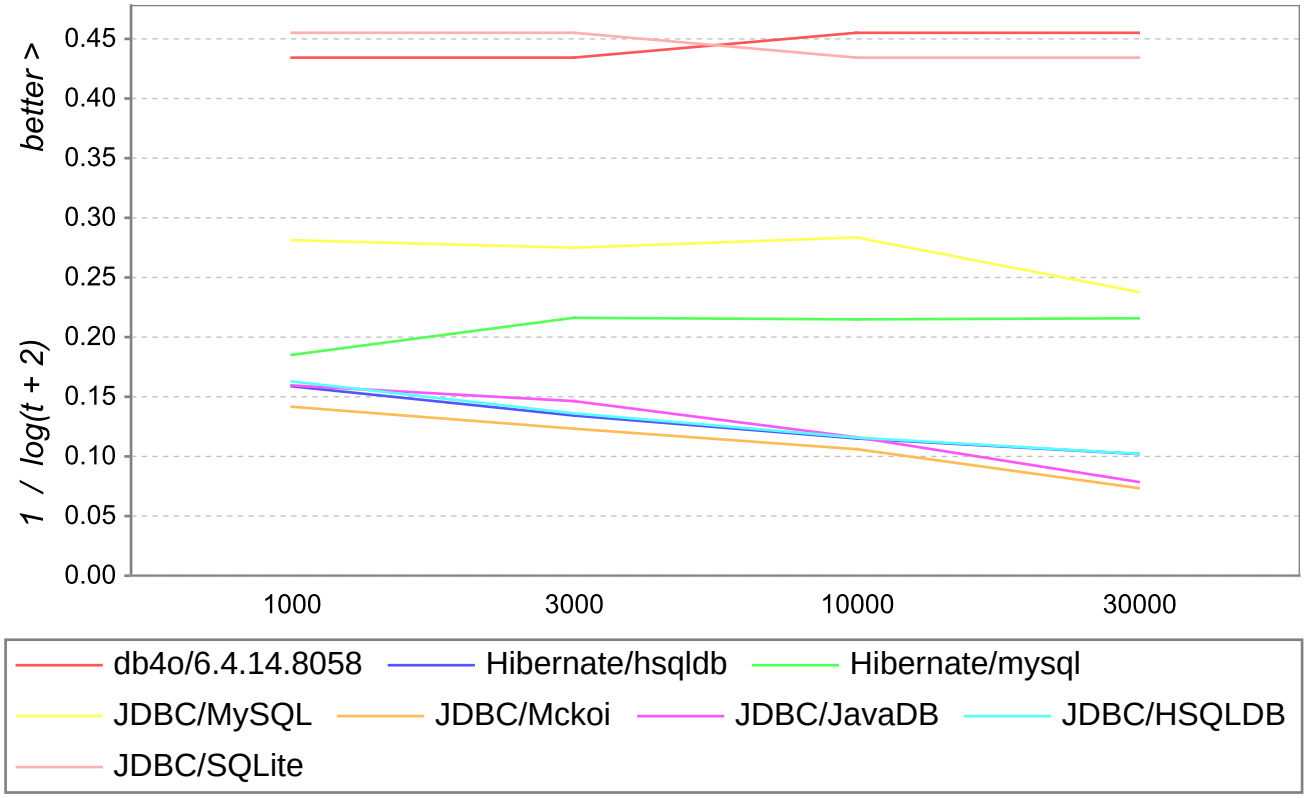


Circuit: Barcelona

writes, reads, queries and deletes objects with a 5 level inheritance structure

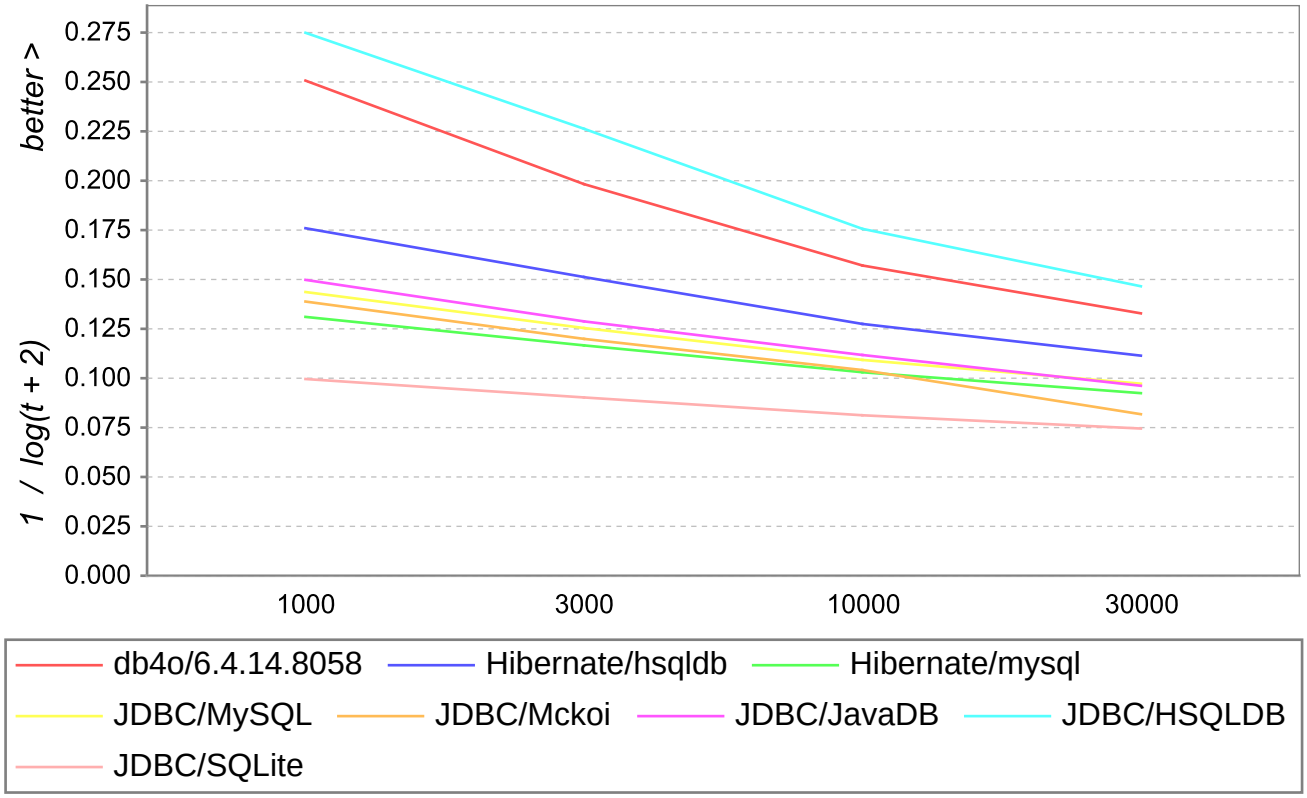
Lap: query

t [time in ms]	**selects:100 objects:1000**	**selects:100 objects:3000**	**selects:100 objects:10000**	**selects:100 objects:30000**
db4o/6.4.14.8058	8	8	7	7
Hibernate/hsqldb	541	1716	5945	18082
Hibernate/mysql	220	100	103	101
JDBC/MySQL	33	36	32	65
JDBC/Mckoi	1164	3338	12391	820029
JDBC/JavaDB	526	925	5511	335952
JDBC/HSQLDB	463	1550	5618	17881
JDBC/SQLite	7	7	8	8



Circuit: Barcelona

writes, reads, queries and deletes objects with a 5 level inheritance structure

Lap: delete

t [time in ms]	**selects:100 objects:1000**	**selects:100 objects:3000**	**selects:100 objects:10000**	**selects:100 objects:30000**
db4o/6.4.14.8058	52	153	580	1856
Hibernate/hsqldb	292	742	2548	7897
Hibernate/mysql	2059	5295	16431	49934
JDBC/MySQL	1053	2900	9431	29278
JDBC/Mckoi	1343	4181	14806	204564
JDBC/JavaDB	791	2355	7685	32850
JDBC/HSQLDB	36	81	295	917
JDBC/SQLite	22940	64773	221720	672093