

## **PolePosition**

the open source database benchmark

<http://www.polepos.org>

## **Participating teams**

### **GNA-JORM**

the Jorm Team

<http://www.marochow.de/gna-jorm/index.html>

### **db4o**

the open source object database for Java and .NET

<http://www.db4o.com>

### **Hibernate**

relational persistence for idiomatic Java

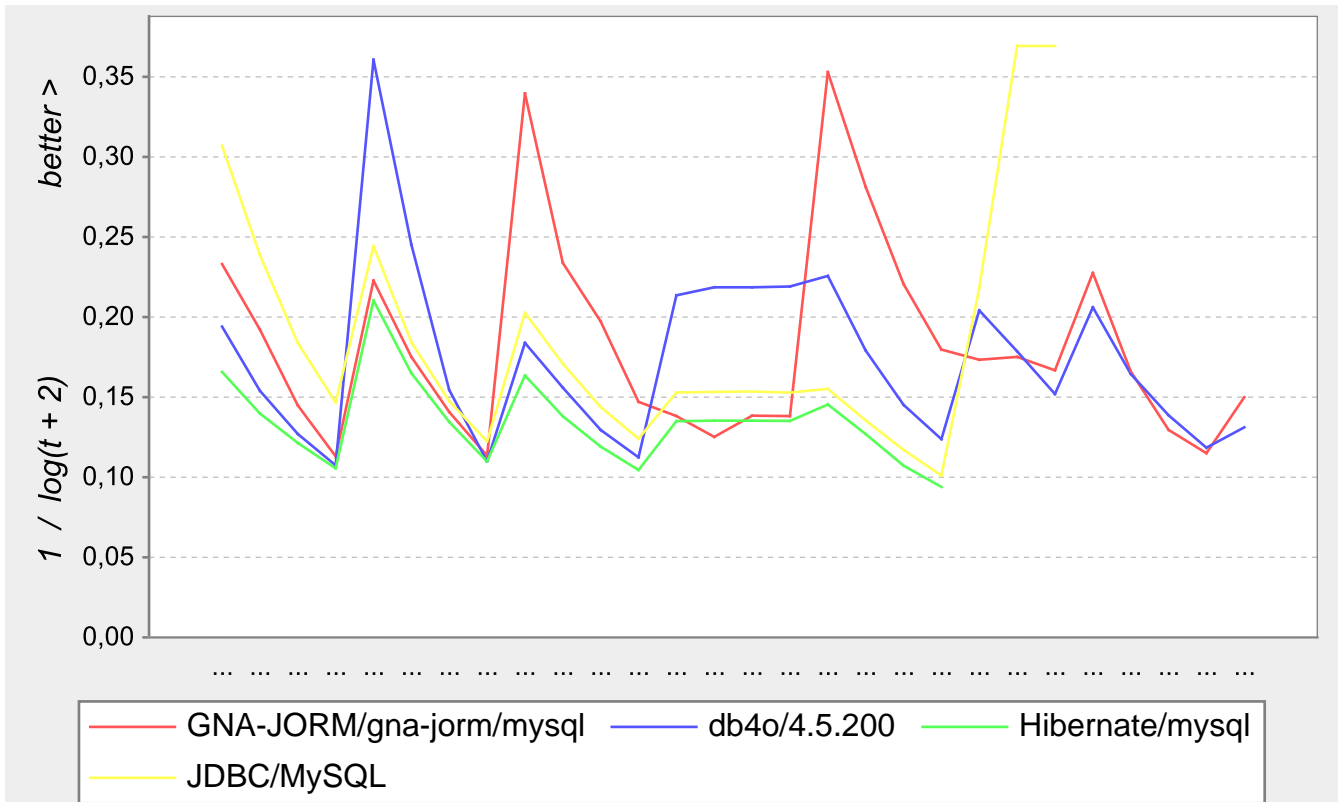
<http://www.hibernate.org>

### **MySQL**

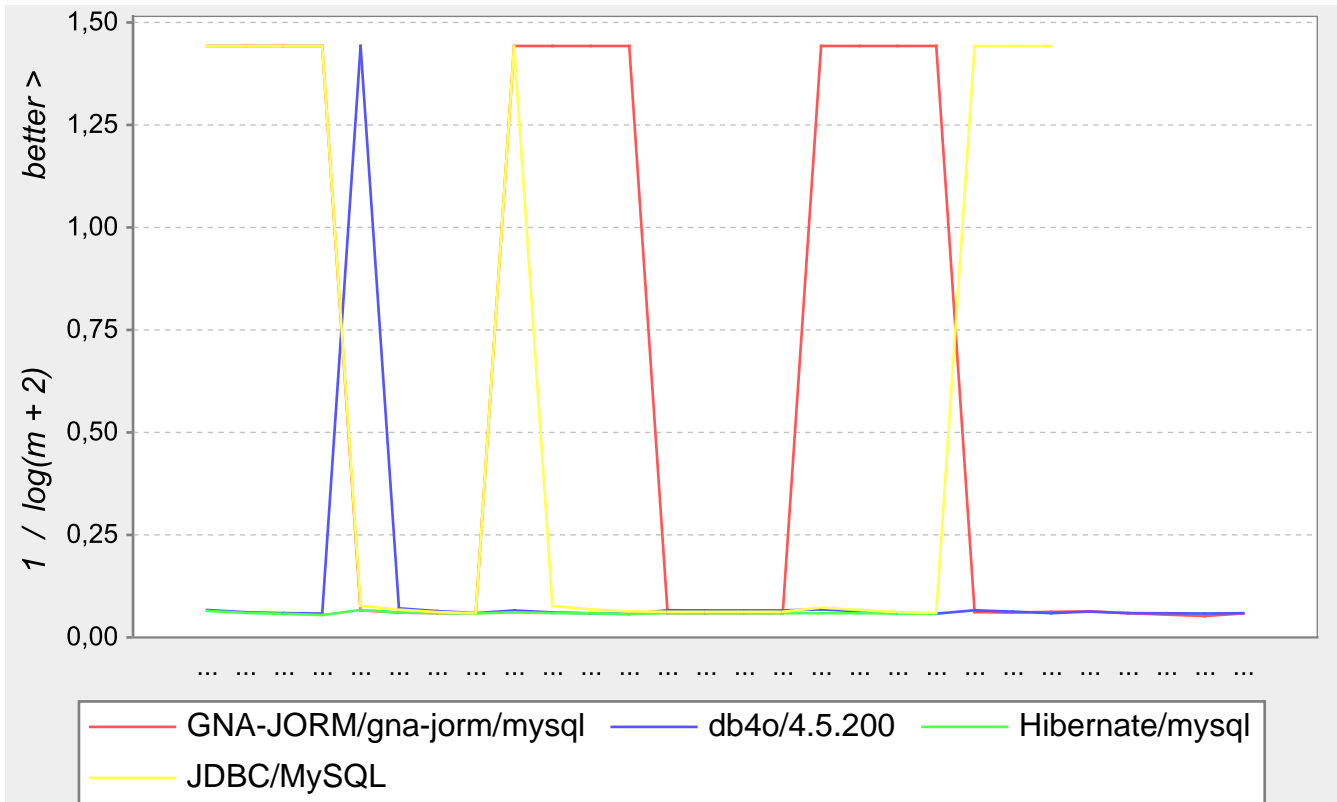
the world's most popular open source database

<http://www.mysql.com>

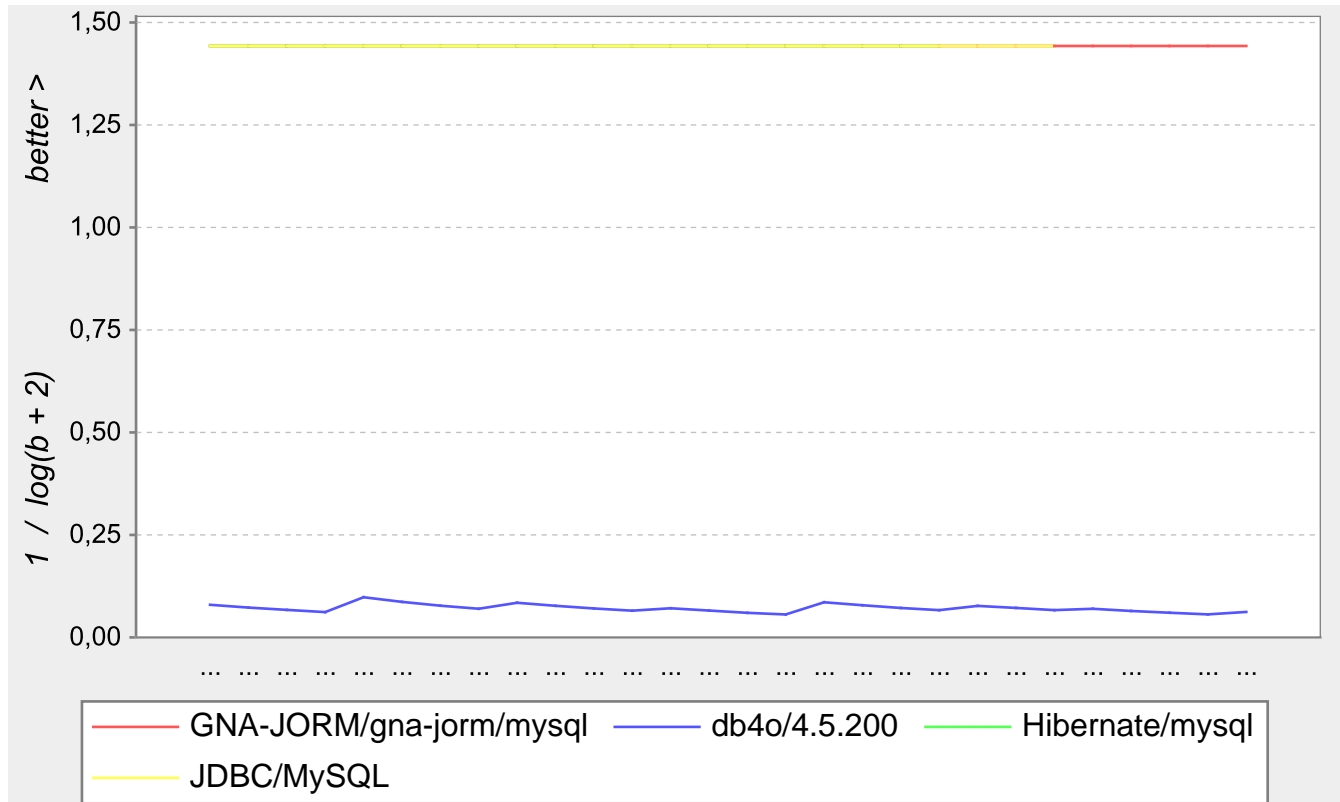
# Time Overview



# Memory Overview



# Database Size Overview

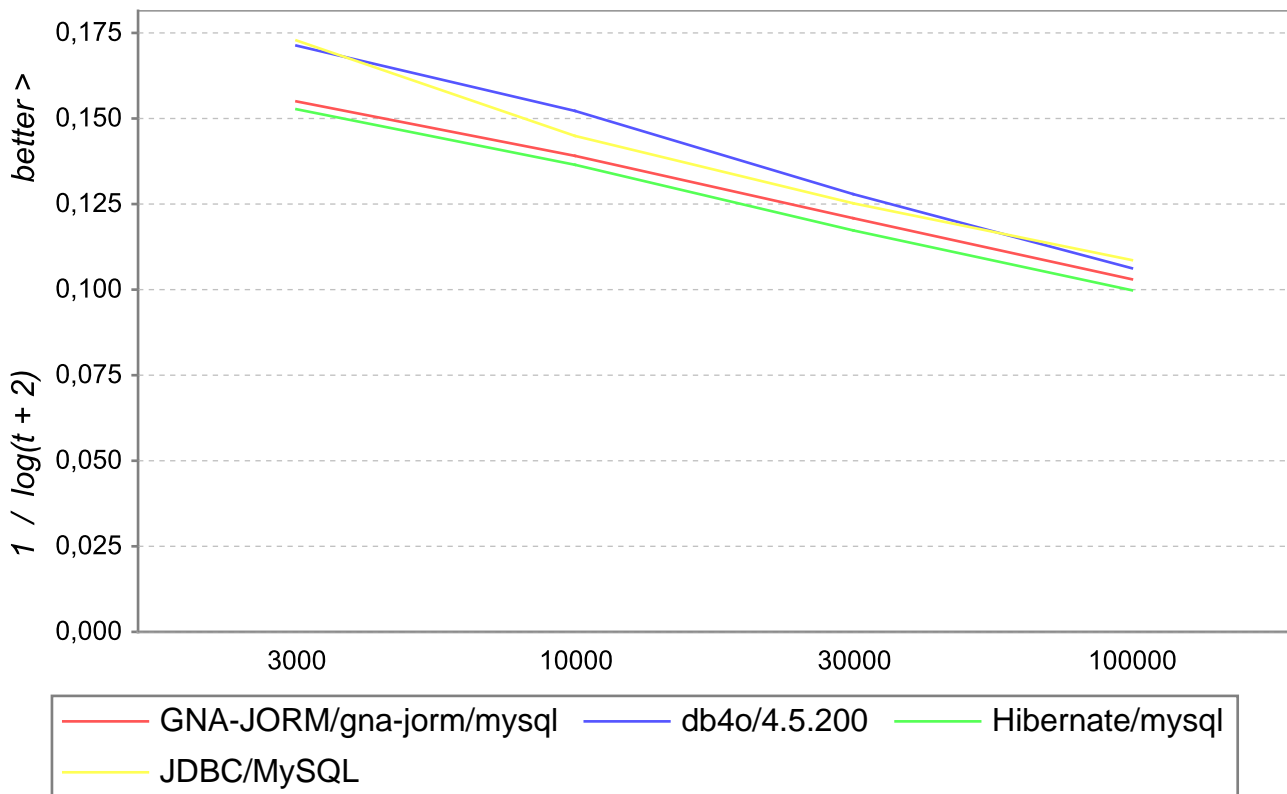


### Circuit: Melbourne

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
<b>GNA-JORM/gna-</b>	632	1324	3920	16421
<b>db4o/4.5.200</b>	341	711	2486	12224
<b>Hibernate/mysql</b>	696	1519	5043	22439
<b>JDBC/MySQL</b>	324	991	2939	9953

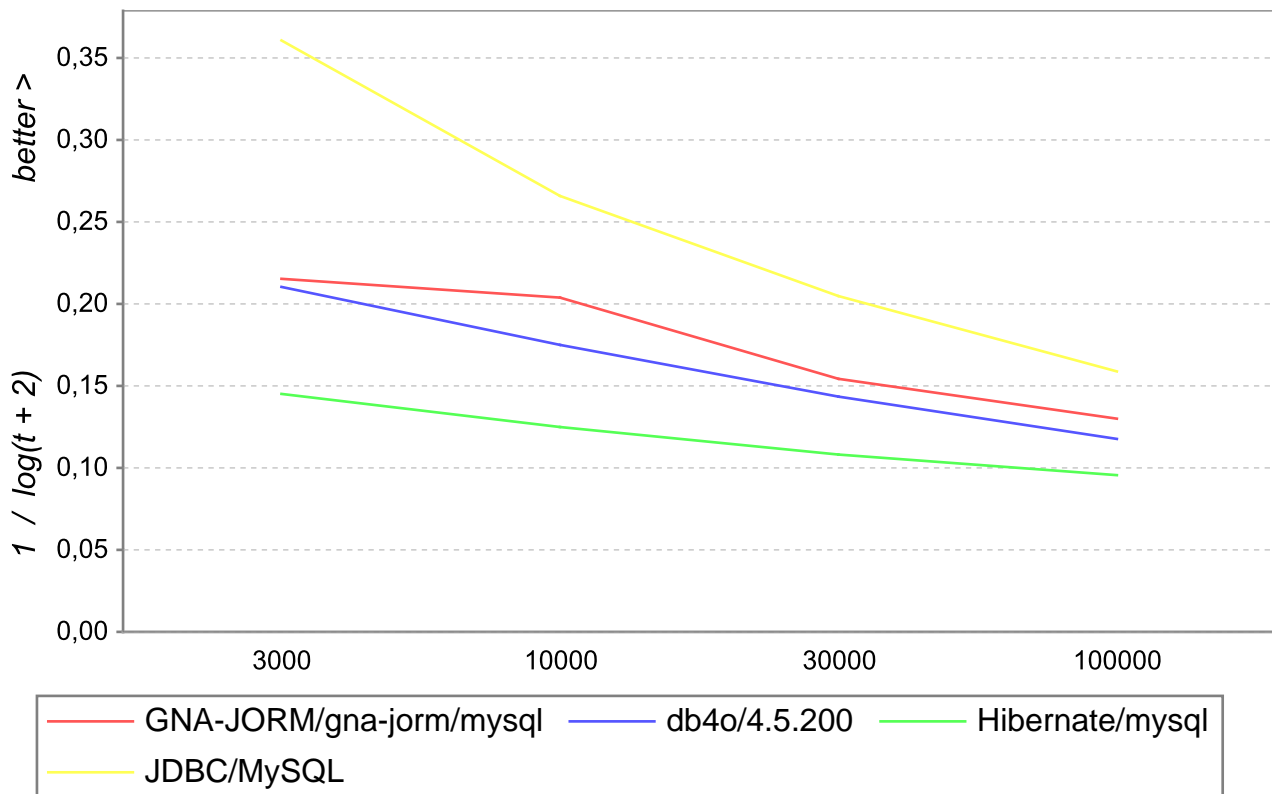


## Circuit: Melbourne

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
<b>GNA-JORM/gna-</b>	102	133	650	2187
<b>db4o/4.5.200</b>	114	301	1062	4903
<b>Hibernate/mysql</b>	981	2993	10363	34932
<b>JDBC/MySQL</b>	14	41	130	540

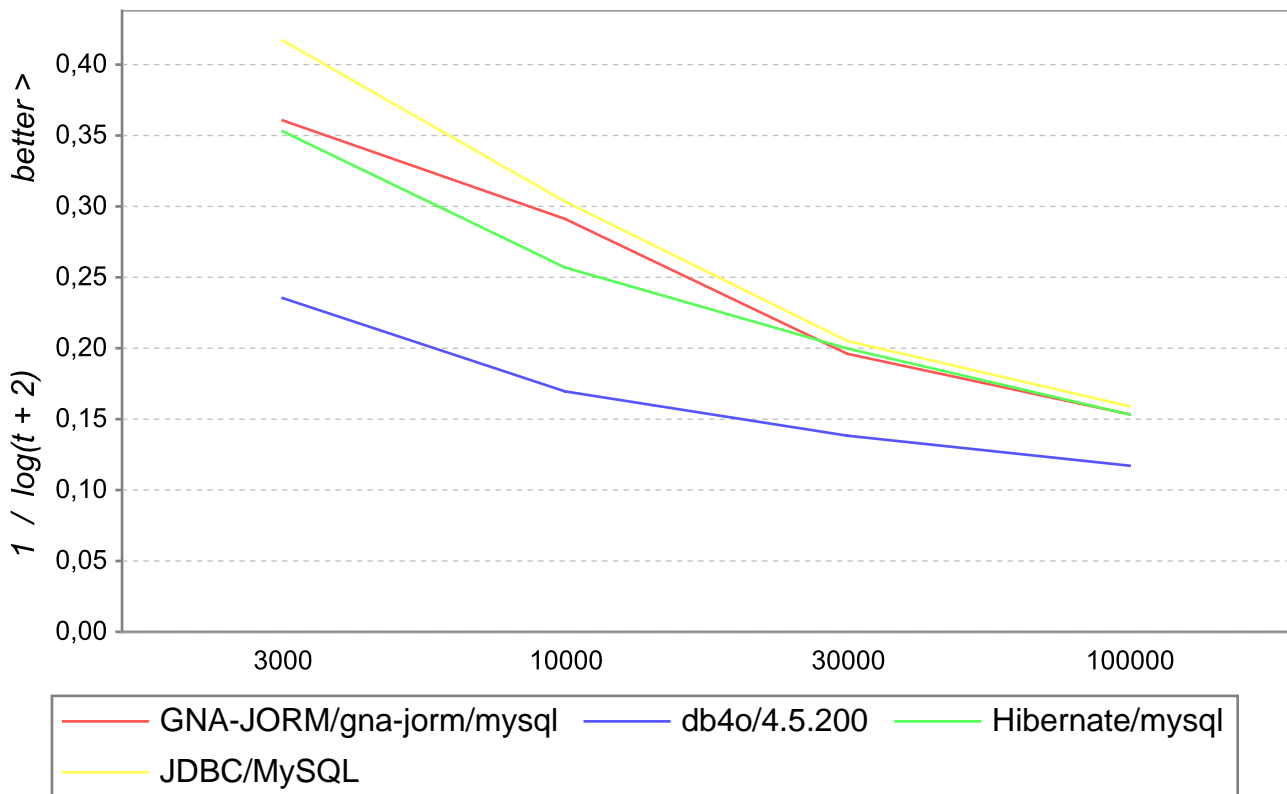


### Circuit: Melbourne

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
<b>GNA-JORM/gna-</b>	14	29	162	675
<b>db4o/4.5.200</b>	68	362	1376	5080
<b>Hibernate/mysql</b>	15	47	147	680
<b>JDBC/MySQL</b>	9	25	129	535

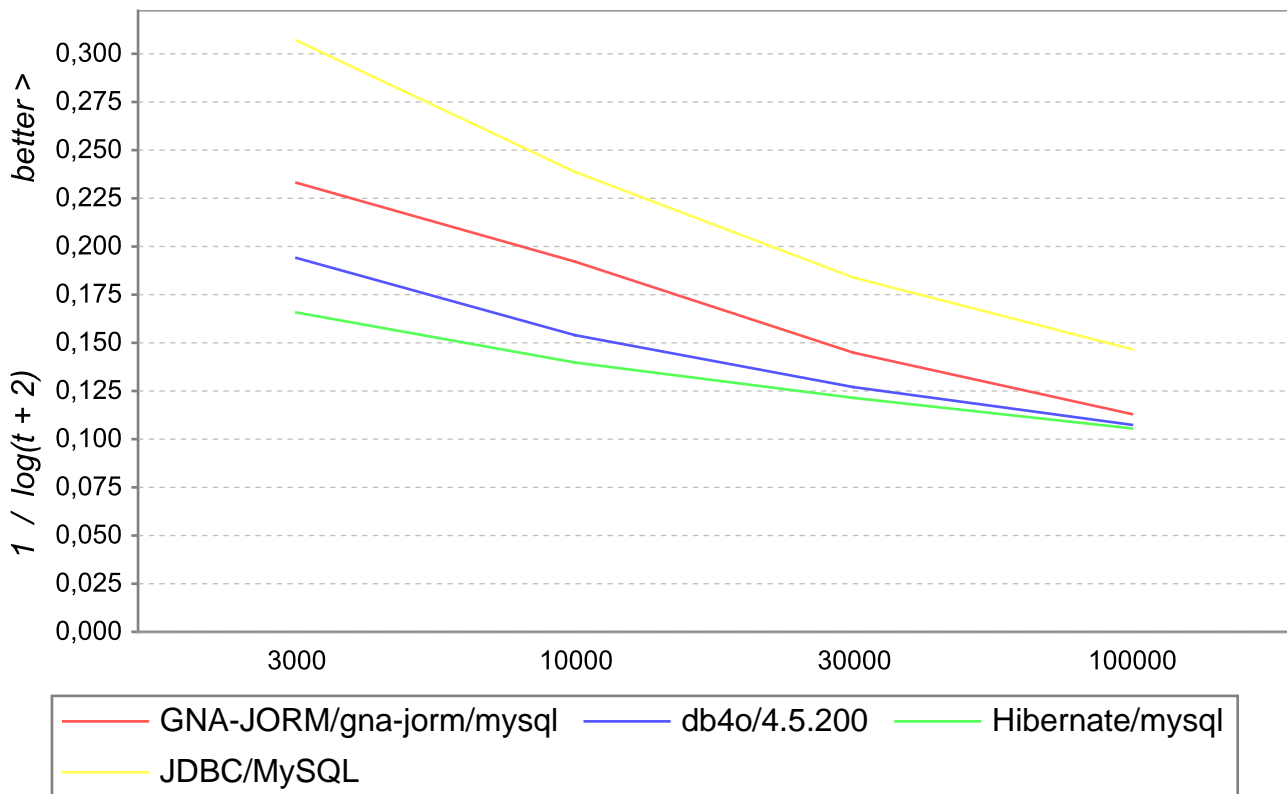


### Circuit: Melbourne

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
<b>GNA-JORM/gna-</b>	71	180	992	6951
<b>db4o/4.5.200</b>	171	659	2621	11012
<b>Hibernate/mysql</b>	415	1277	3768	13000
<b>JDBC/MySQL</b>	24	64	228	910



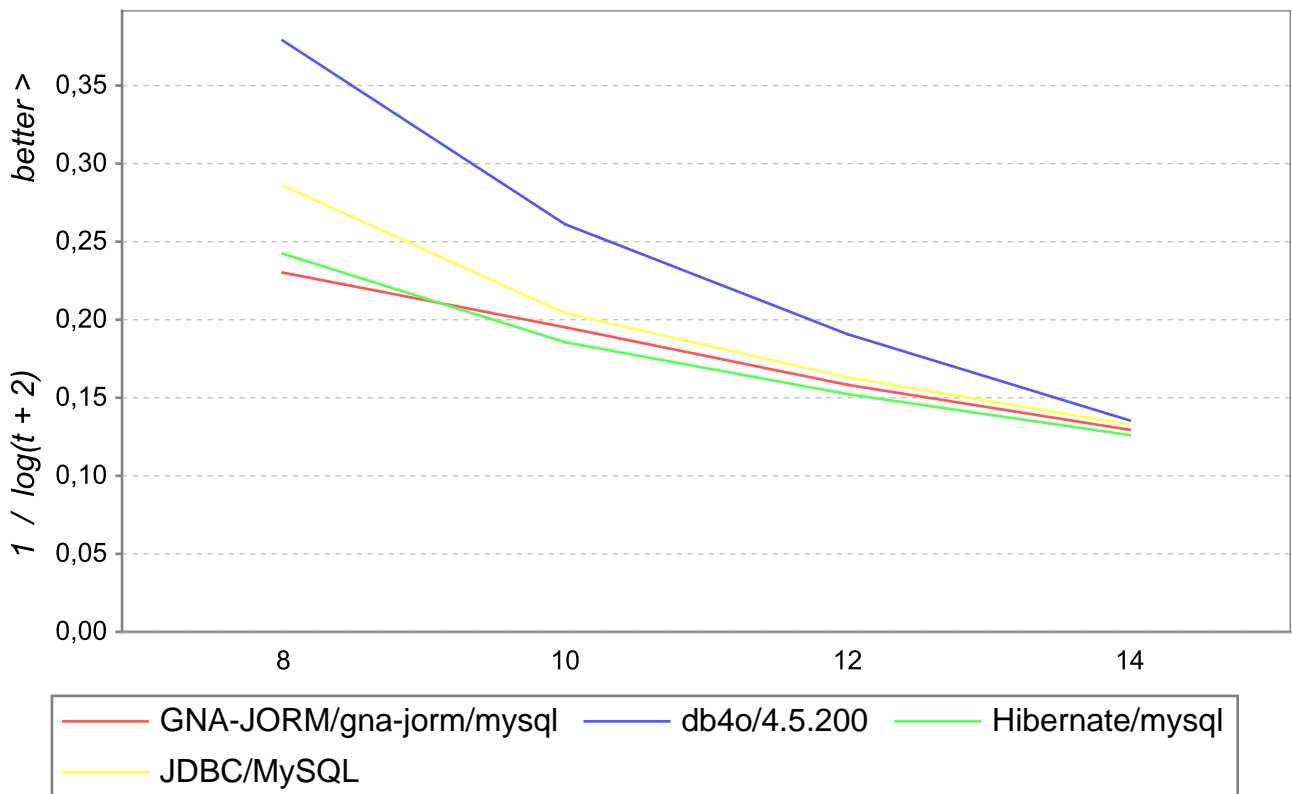


### Circuit: Sepang

writes, reads and then deletes an object tree

Lap: write

t [time in ms]	depth:8	depth:10	depth:12	depth:14
<b>GNA-JORM/gna-</b>	75	166	552	2263
<b>db4o/4.5.200</b>	12	44	187	1604
<b>Hibernate/mysql</b>	60	217	707	2781
<b>JDBC/MySQL</b>	31	132	460	1862

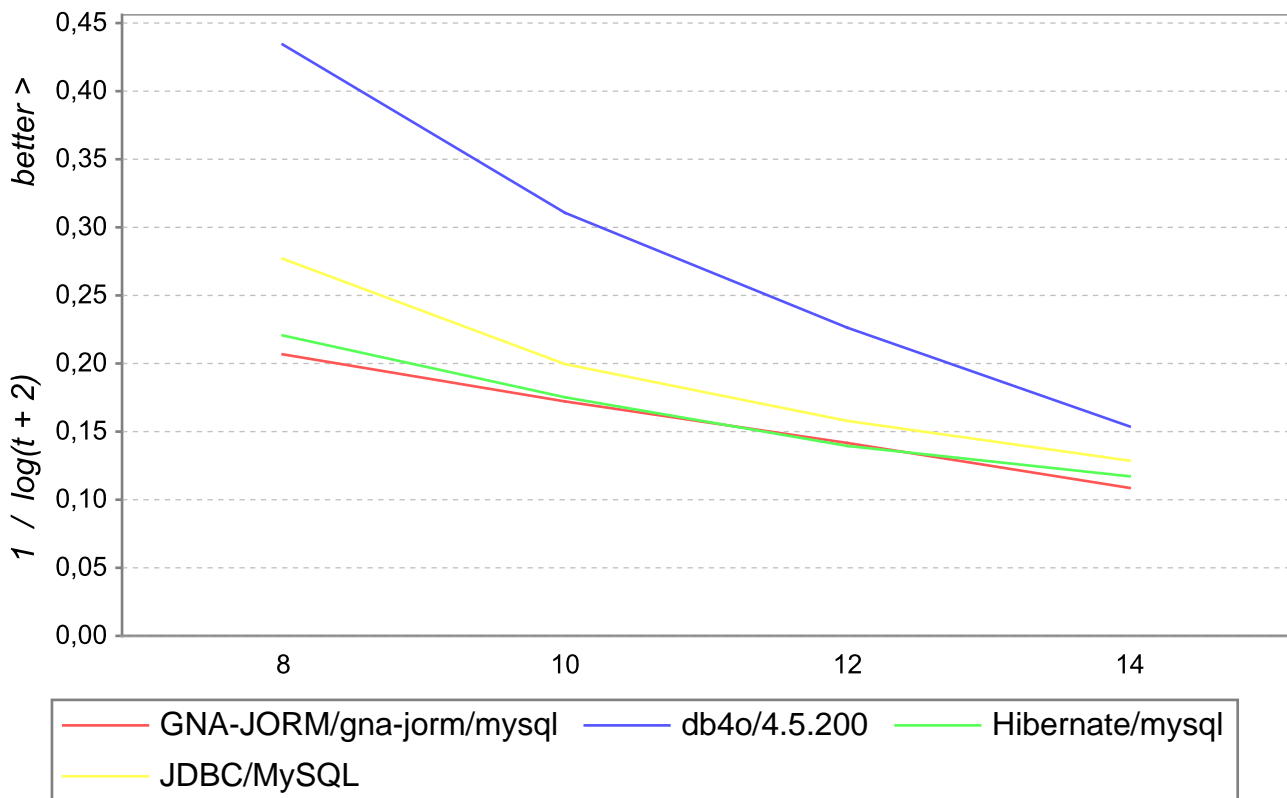


### Circuit: Sepang

writes, reads and then deletes an object tree

Lap: read

t [time in ms]	depth:8	depth:10	depth:12	depth:14
<b>GNA-JORM/gna-</b>	124	331	1162	9944
<b>db4o/4.5.200</b>	8	23	81	665
<b>Hibernate/mysql</b>	91	299	1297	5083
<b>JDBC/MySQL</b>	35	148	562	2374

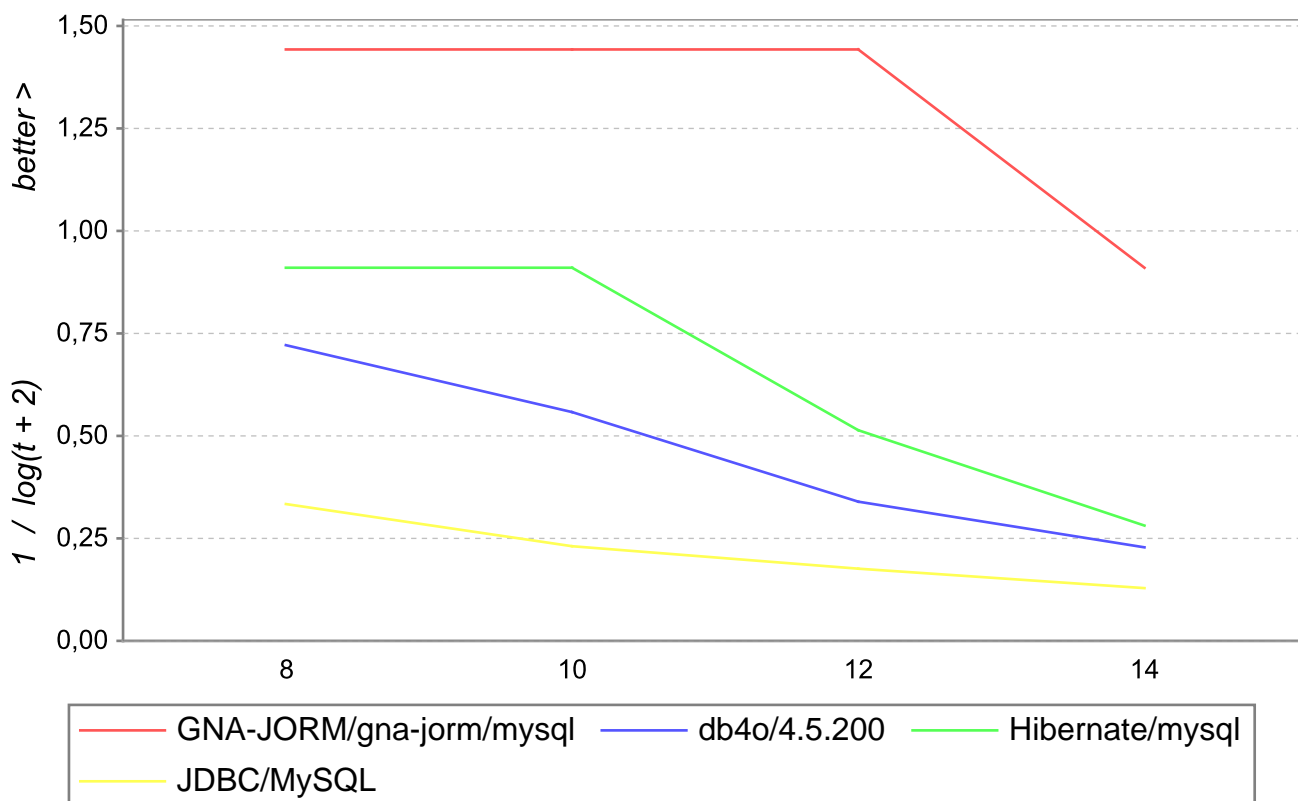


**Circuit: Sepang**

writes, reads and then deletes an object tree

**Lap: read\_hot**

t [time in ms]	depth:8	depth:10	depth:12	depth:14
<b>GNA-JORM/gna-</b>	0	0	0	1
<b>db4o/4.5.200</b>	2	4	17	78
<b>Hibernate/mysql</b>	1	1	5	33
<b>JDBC/MySQL</b>	18	74	290	2363

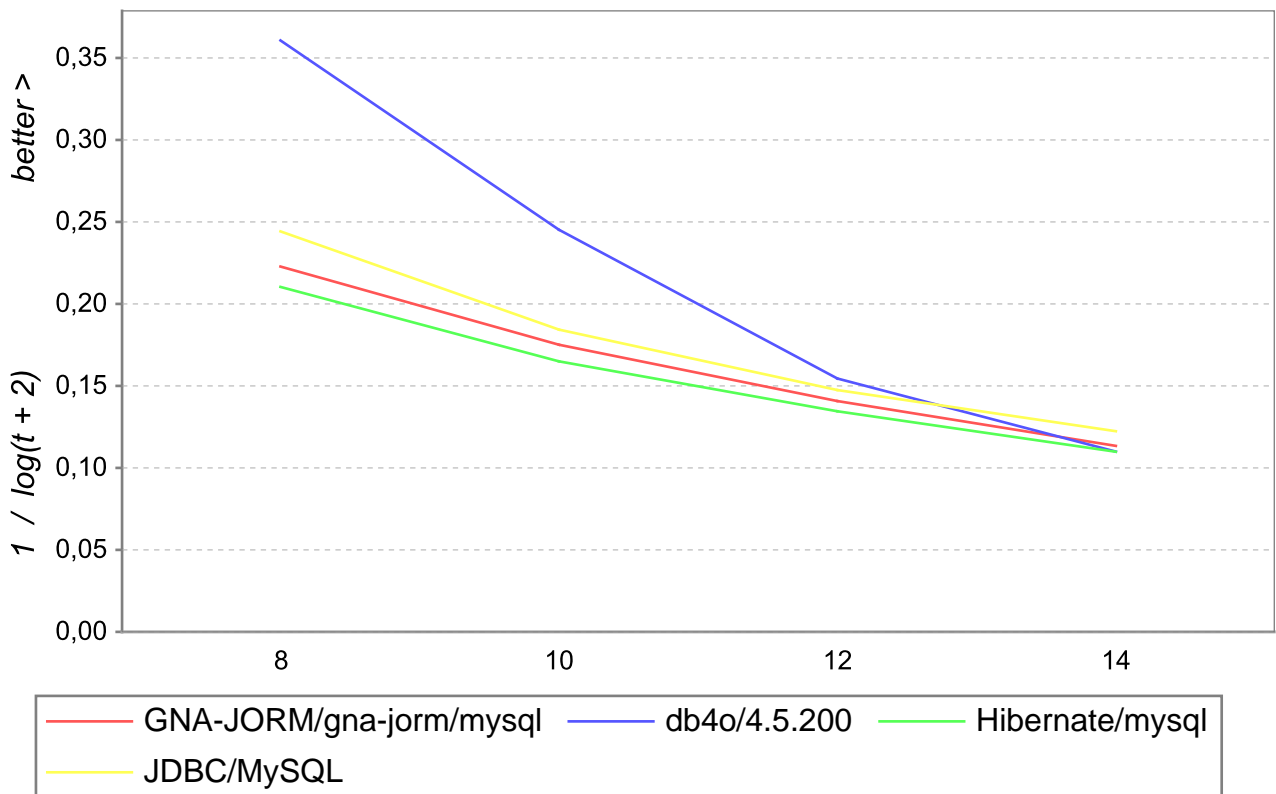


### Circuit: Sepang

writes, reads and then deletes an object tree

Lap: delete

t [time in ms]	depth:8	depth:10	depth:12	depth:14
<b>GNA-JORM/gna-</b>	87	300	1215	6742
<b>db4o/4.5.200</b>	14	57	645	8923
<b>Hibernate/mysql</b>	114	427	1689	8983
<b>JDBC/MySQL</b>	58	225	879	3538

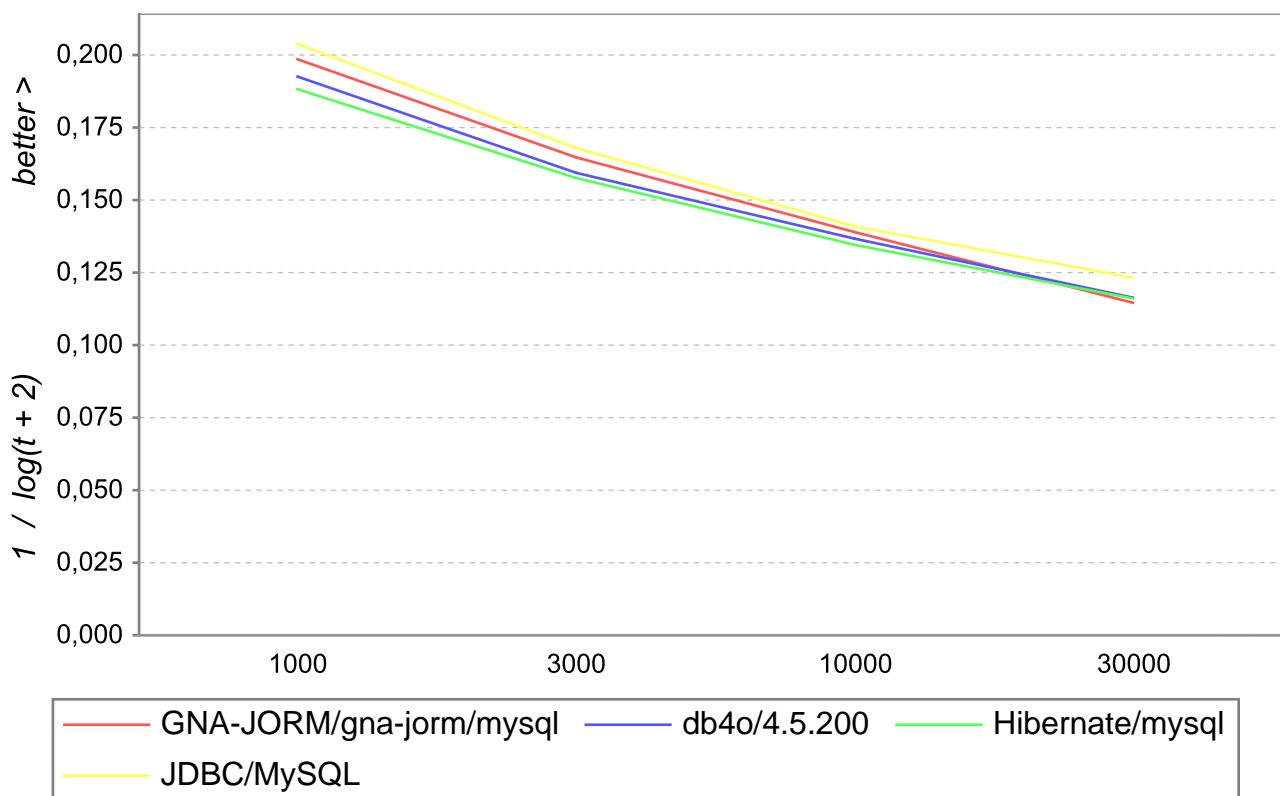


### Circuit: Bahrain

write, query, update and delete simple flat objects individually

Lap: write

t [time in ms]	<b>selects:900 objects:1000 updates:100</b>	<b>selects:900 objects:3000 updates:100</b>	<b>selects:900 objects:10000 updates:100</b>	<b>selects:900 objects:30000 updates:100</b>
<b>GNA-JORM/gna-</b>	152	431	1331	6146
<b>db4o/4.5.200</b>	178	528	1500	5392
<b>Hibernate/mysql</b>	201	567	1686	5515
<b>JDBC/MySQL</b>	133	383	1205	3336

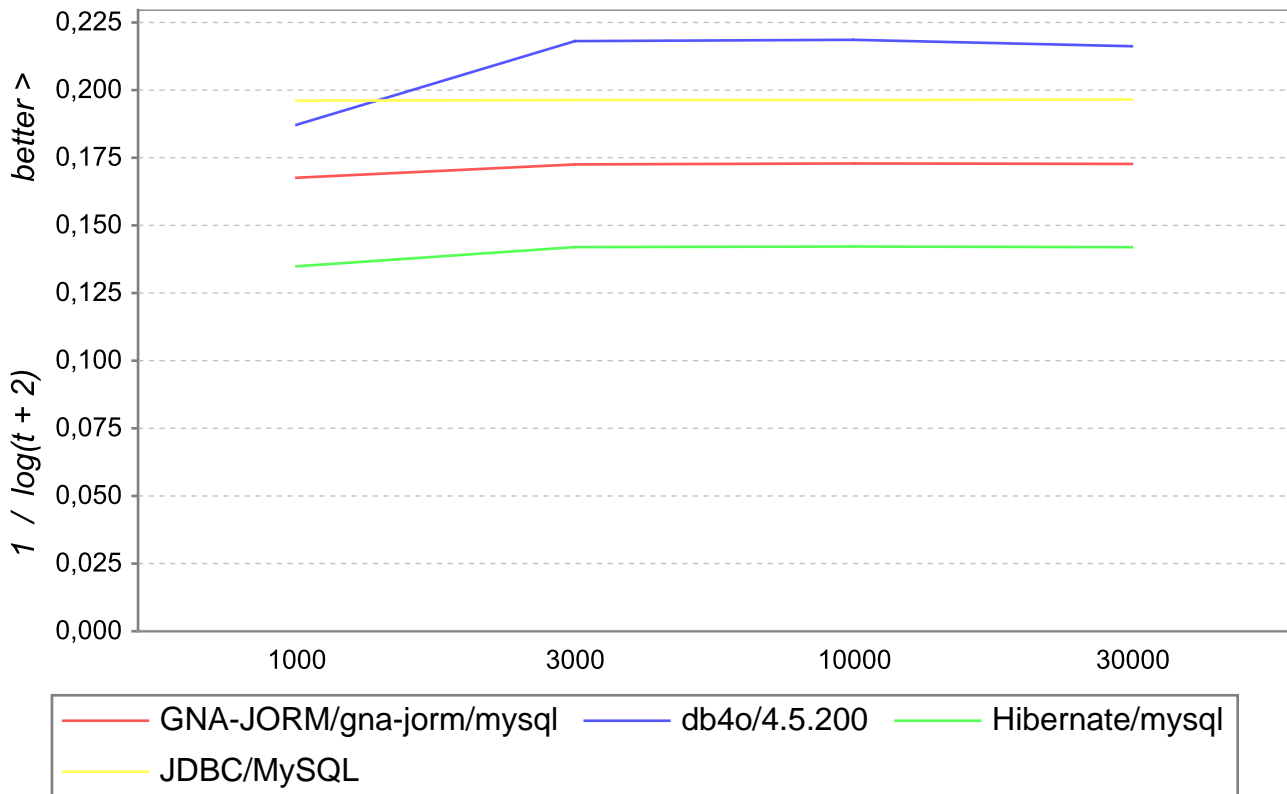


### Circuit: Bahrain

write, query, update and delete simple flat objects individually

Lap: query\_indexed\_string

t [time in ms]	<b>selects:900 objects:1000 updates:100</b>	<b>selects:900 objects:3000 updates:100</b>	<b>selects:900 objects:10000 updates:100</b>	<b>selects:900 objects:30000 updates:100</b>
<b>GNA-JORM/gna-</b>	388	327	323	325
<b>db4o/4.5.200</b>	207	96	95	100
<b>Hibernate/mysql</b>	1658	1143	1131	1145
<b>JDBC/MySQL</b>	162	161	161	160

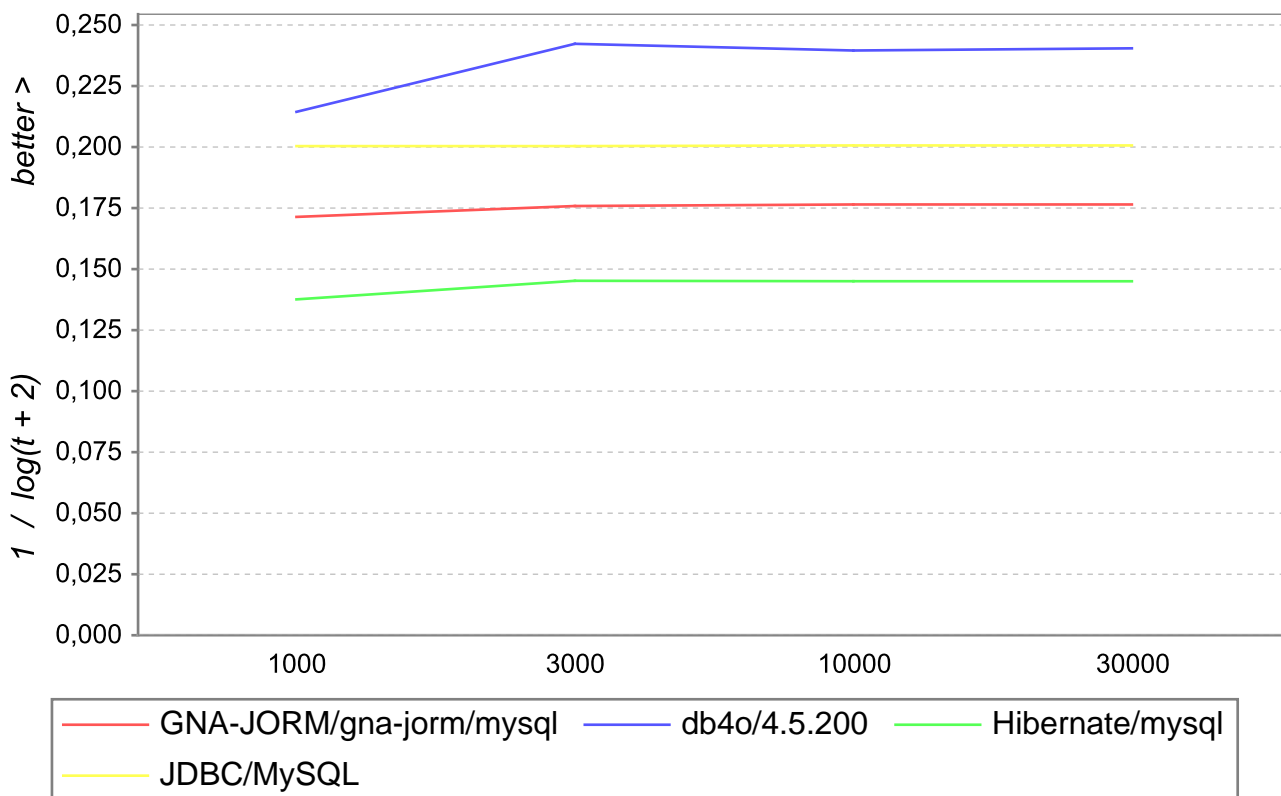


**Circuit: Bahrain**

write, query, update and delete simple flat objects individually

**Lap: query\_indexed\_int**

t [time in ms]	<b>selects:900 objects:1000 updates:100</b>	<b>selects:900 objects:3000 updates:100</b>	<b>selects:900 objects:10000 updates:100</b>	<b>selects:900 objects:30000 updates:100</b>
<b>GNA-JORM/gna-</b>	340	293	287	287
<b>db4o/4.5.200</b>	104	60	63	62
<b>Hibernate/mysql</b>	1431	977	985	986
<b>JDBC/MySQL</b>	145	145	144	144

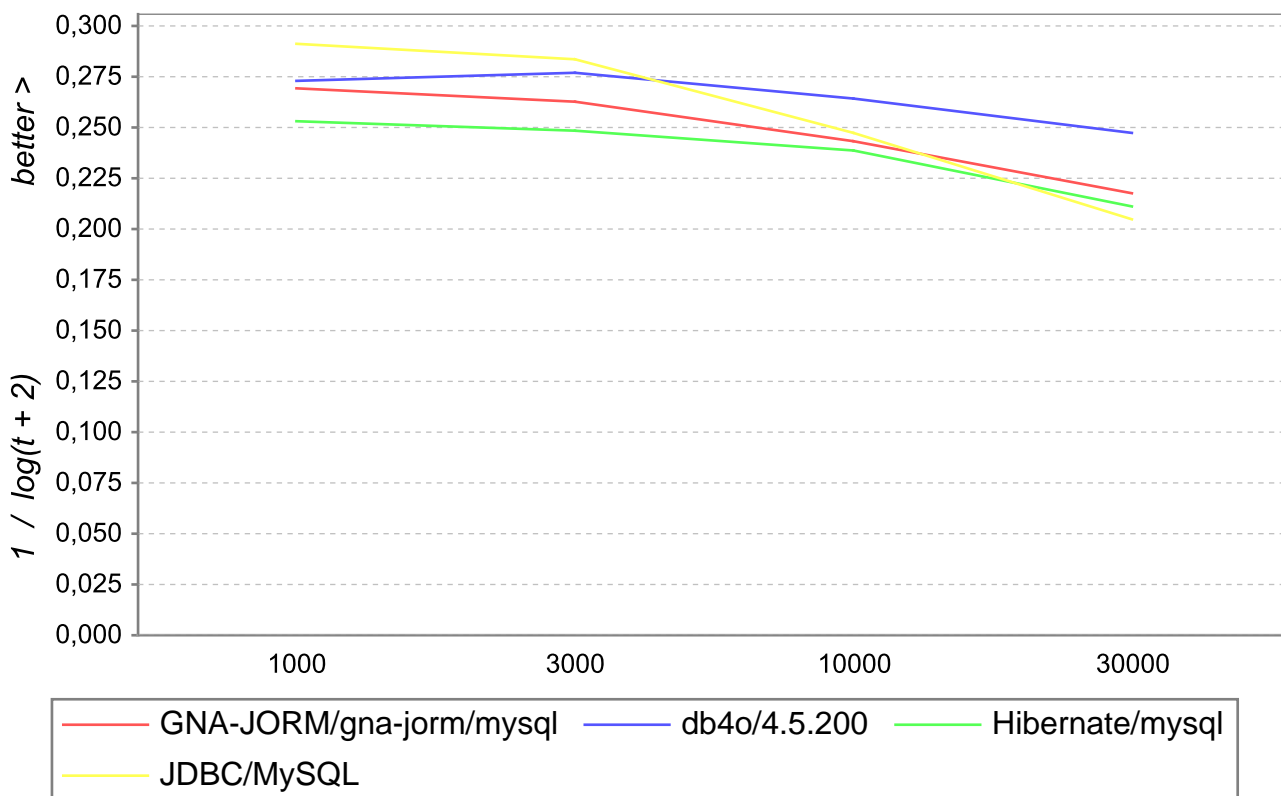


**Circuit: Bahrain**

write, query, update and delete simple flat objects individually

**Lap: update**

t [time in ms]	<b>selects:900 objects:1000 updates:100</b>	<b>selects:900 objects:3000 updates:100</b>	<b>selects:900 objects:10000 updates:100</b>	<b>selects:900 objects:30000 updates:100</b>
<b>GNA-JORM/gna-</b>	39	43	59	97
<b>db4o/4.5.200</b>	37	35	42	55
<b>Hibernate/mysql</b>	50	54	64	112
<b>JDBC/MySQL</b>	29	32	55	130



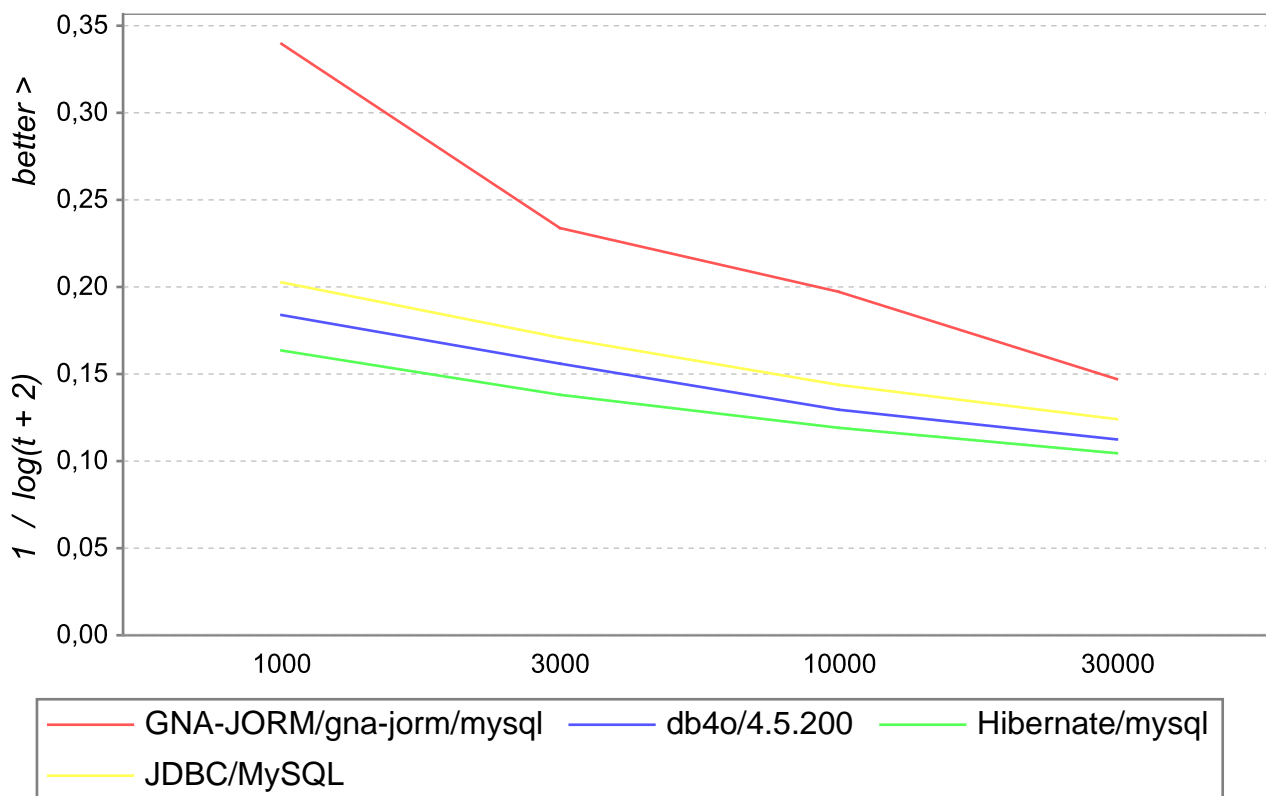


### Circuit: Bahrain

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
GNA-JORM/gna-	17	70	157	895
db4o/4.5.200	228	607	2251	7282
Hibernate/mysql	451	1396	4422	14310
JDBC/MySQL	137	346	1045	3158

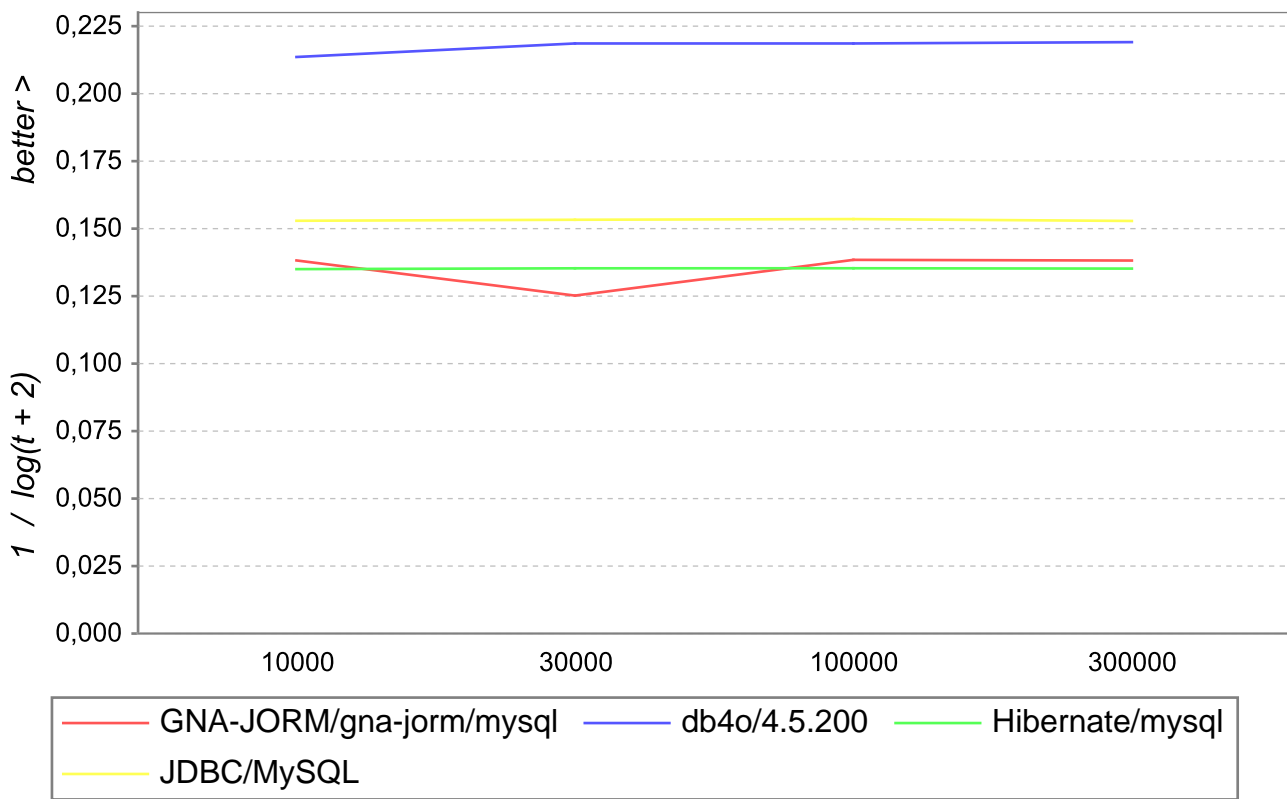


### Circuit: Imola

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
<b>GNA-JORM/gna-</b>	1385	2941	1369	1388
<b>db4o/4.5.200</b>	106	95	95	94
<b>Hibernate/mysql</b>	1646	1619	1617	1629
<b>JDBC/MySQL</b>	690	679	672	692

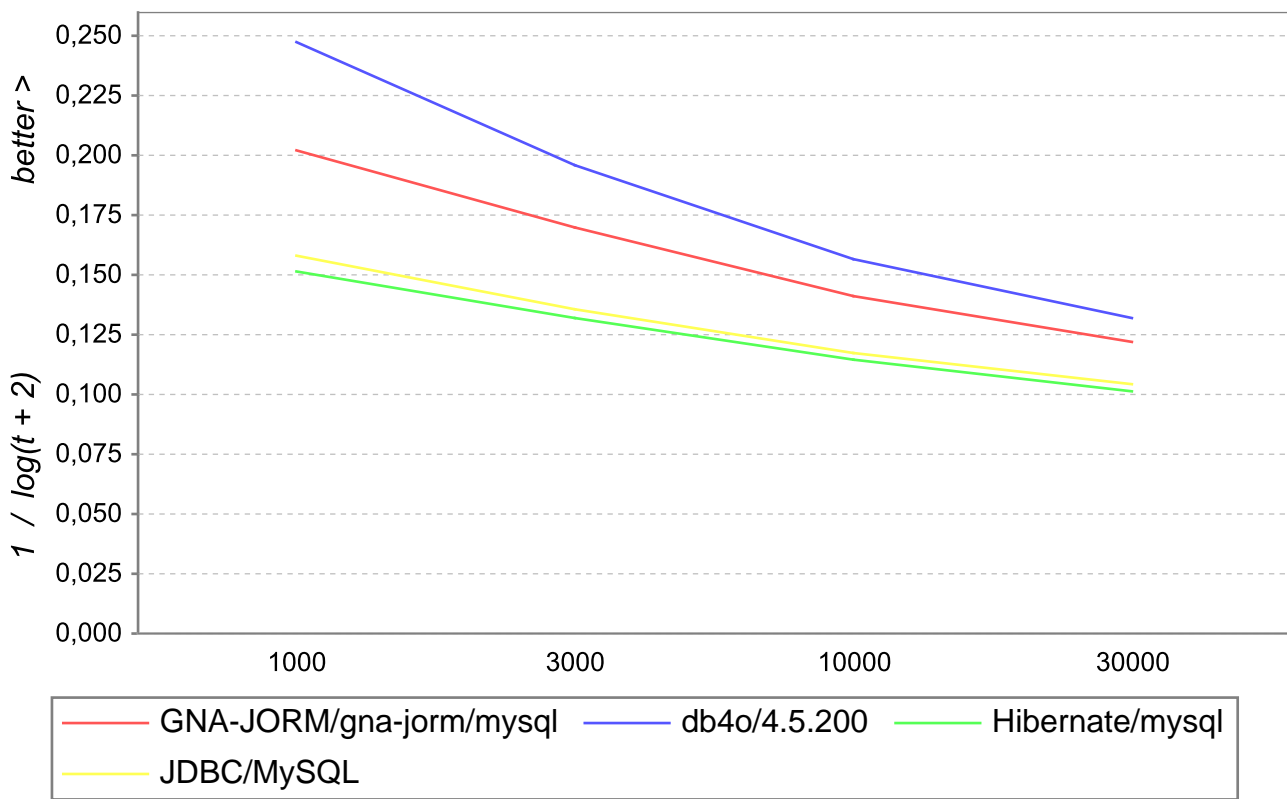


### Circuit: Barcelona

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
<b>GNA-JORM/gna-</b>	139	359	1193	3633
<b>db4o/4.5.200</b>	55	163	592	1953
<b>Hibernate/mysql</b>	736	1954	6188	19372
<b>JDBC/MySQL</b>	558	1593	5032	14593

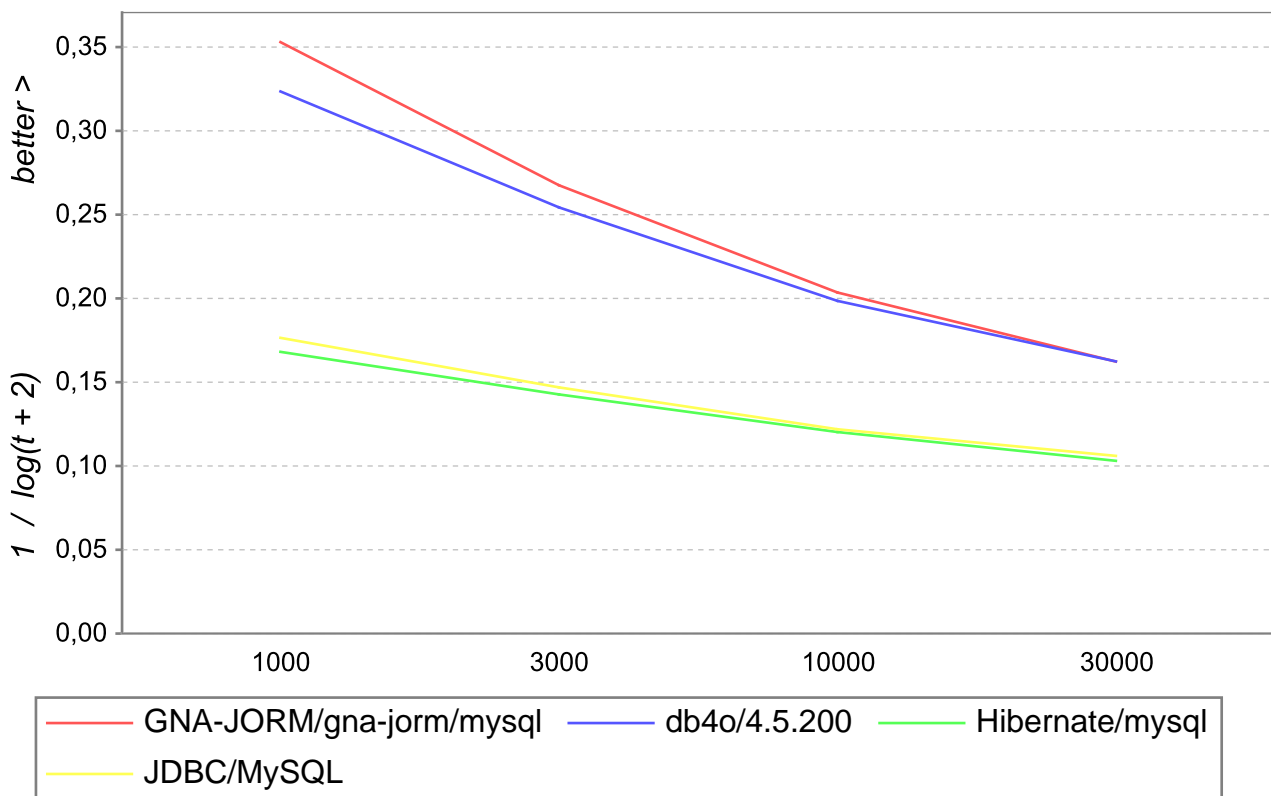


## Circuit: Barcelona

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
<b>GNA-JORM/gna-</b>	15	40	134	472
<b>db4o/4.5.200</b>	20	49	152	470
<b>Hibernate/mysql</b>	381	1102	4081	16309
<b>JDBC/MySQL</b>	287	902	3646	12457

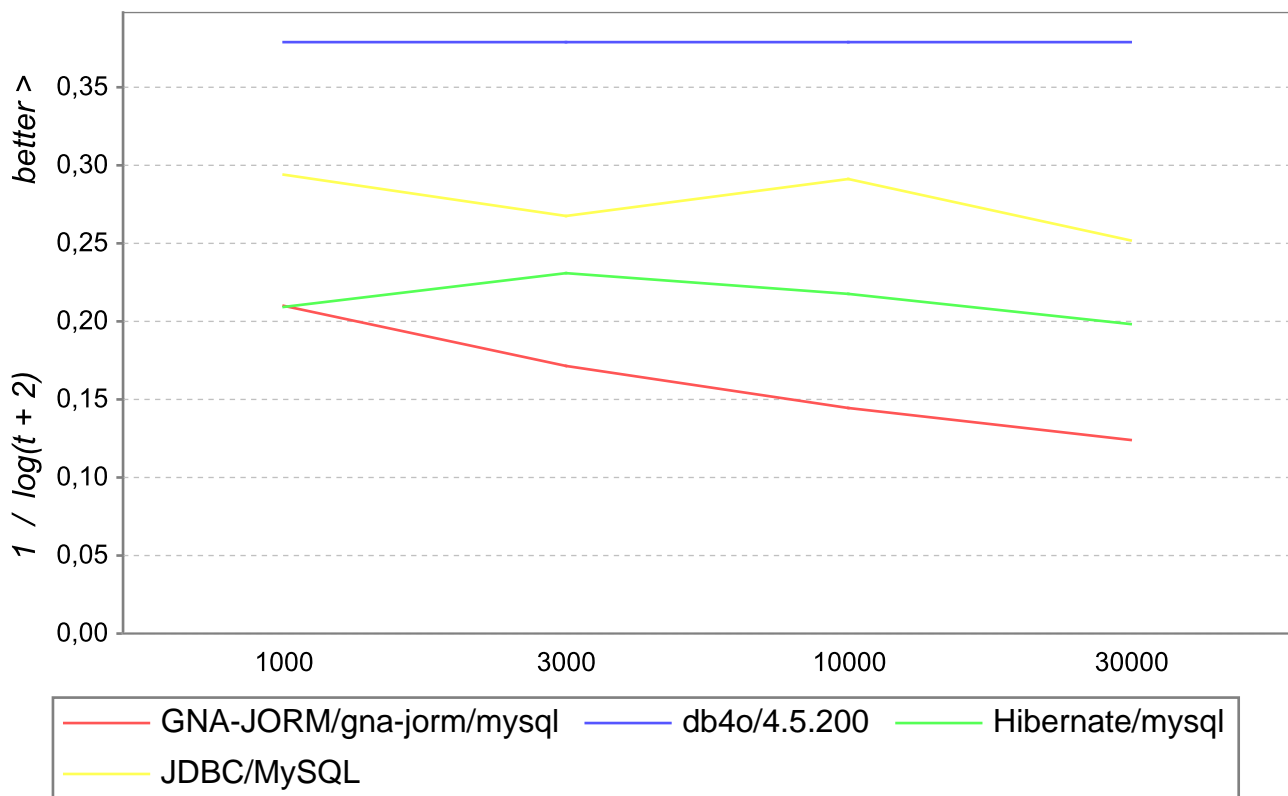


## Circuit: Barcelona

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
GNA-JORM/gna-	115	339	1010	3171
db4o/4.5.200	12	12	12	12
Hibernate/mysql	117	74	97	153
JDBC/MySQL	28	40	29	51

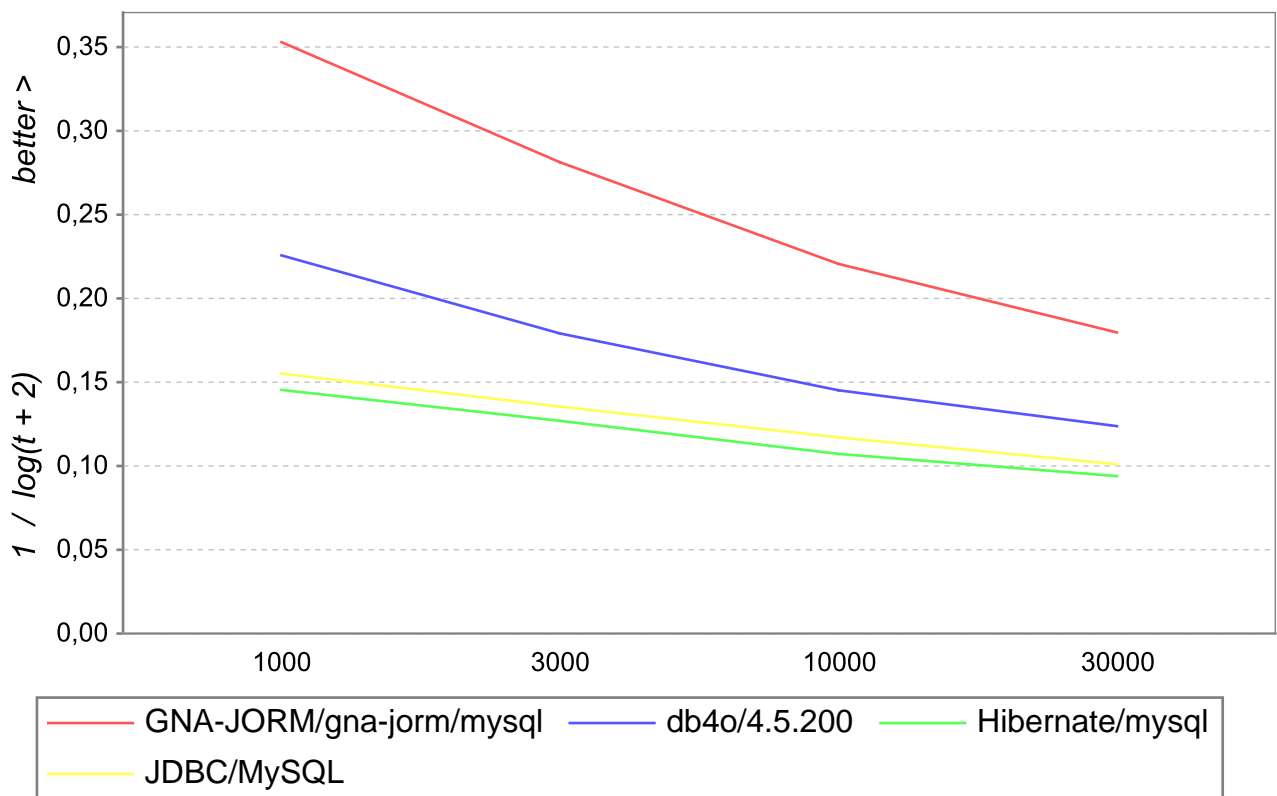


## Circuit: Barcelona

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
<b>GNA-JORM/gna-</b>	15	33	91	259
<b>db4o/4.5.200</b>	82	264	978	3221
<b>Hibernate/mysql</b>	968	2633	11215	41857
<b>JDBC/MySQL</b>	627	1606	5115	19815

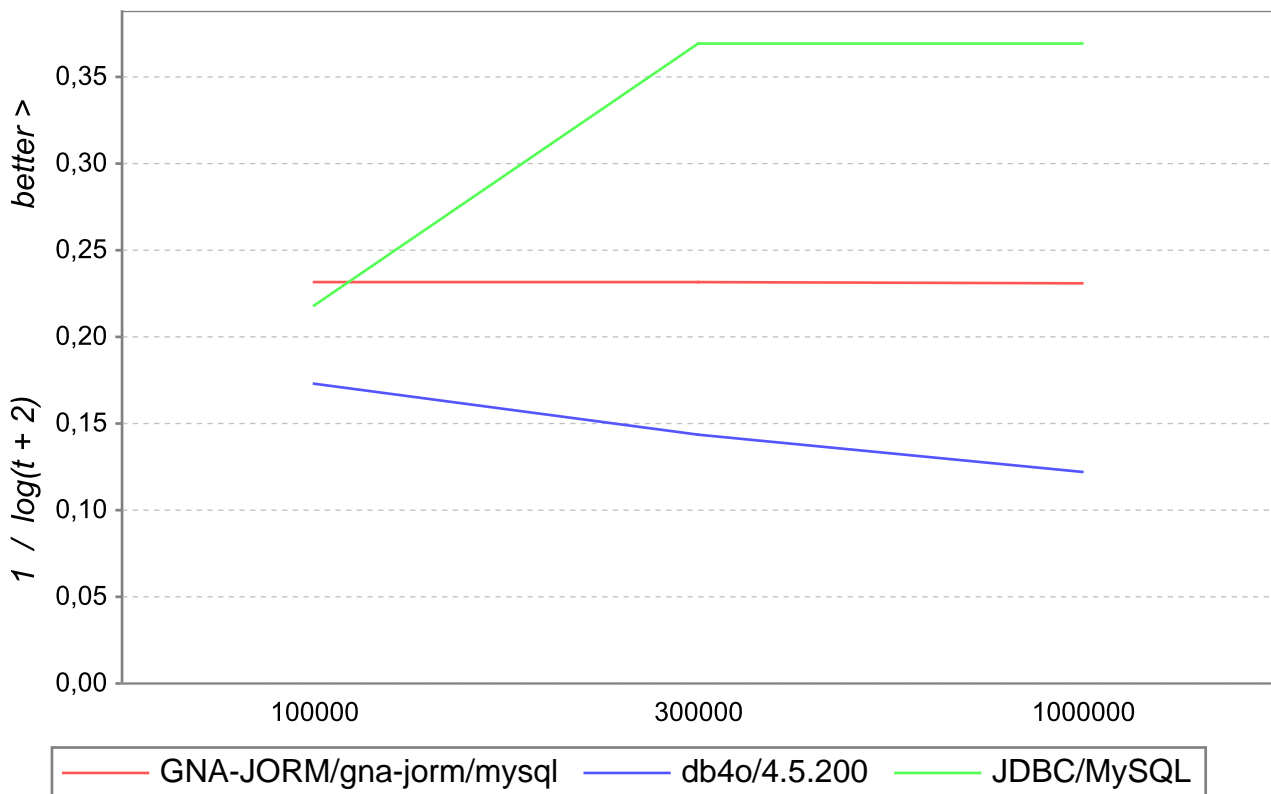


### Circuit: Monaco

tests the scalability of commit performance

Lap: commits

t [time in ms]	commits:30 objects:100000	commits:30 objects:300000	commits:30 objects:1000000
<b>GNA-JORM/gna-</b>	73	73	74
<b>db4o/4.5.200</b>	322	1057	3607
<b>JDBC/MySQL</b>	96	13	13

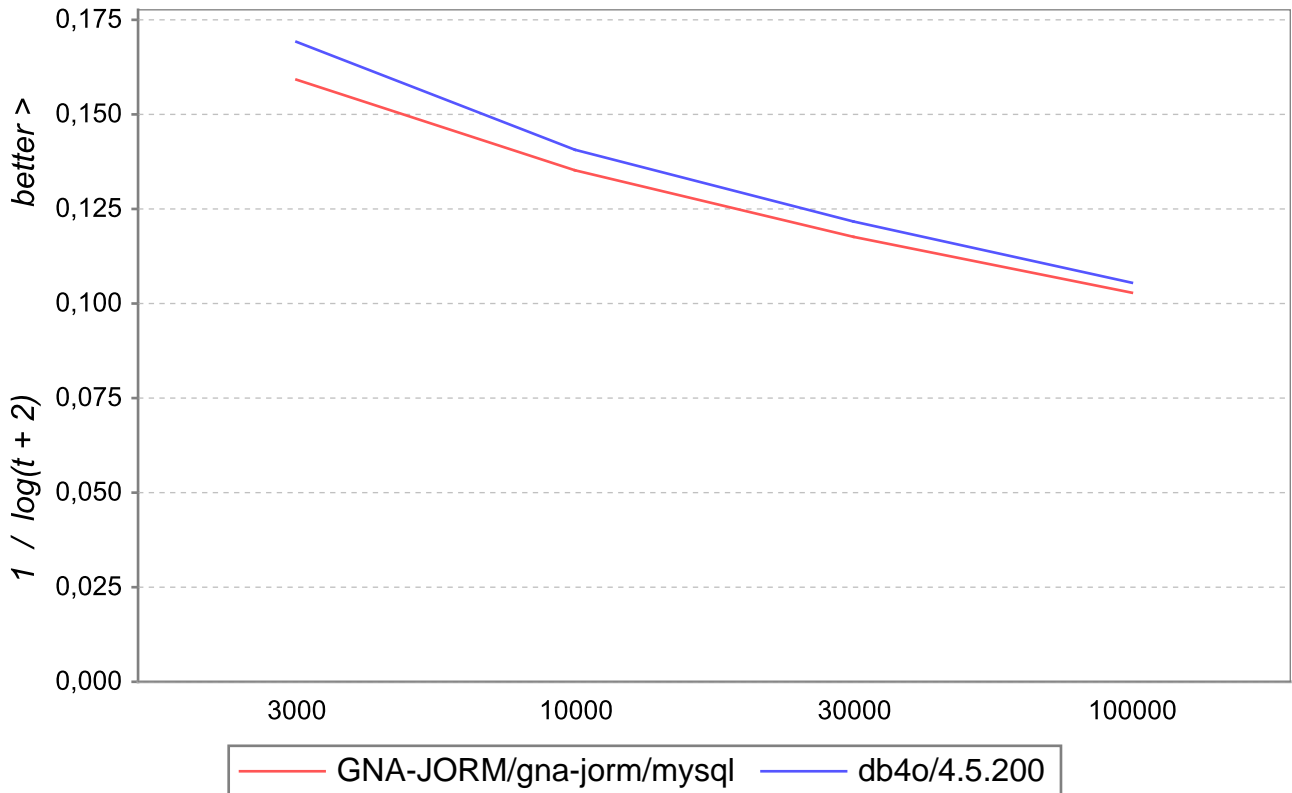


## Circuit: Nurburgring

tests String storing and loading efficiency

Lap: write

t [time in ms]	objects:3000	objects:10000	objects:30000	objects:100000
<b>GNA-JORM/gna-</b>	533	1626	4920	16685
<b>db4o/4.5.200</b>	367	1222	3705	13084



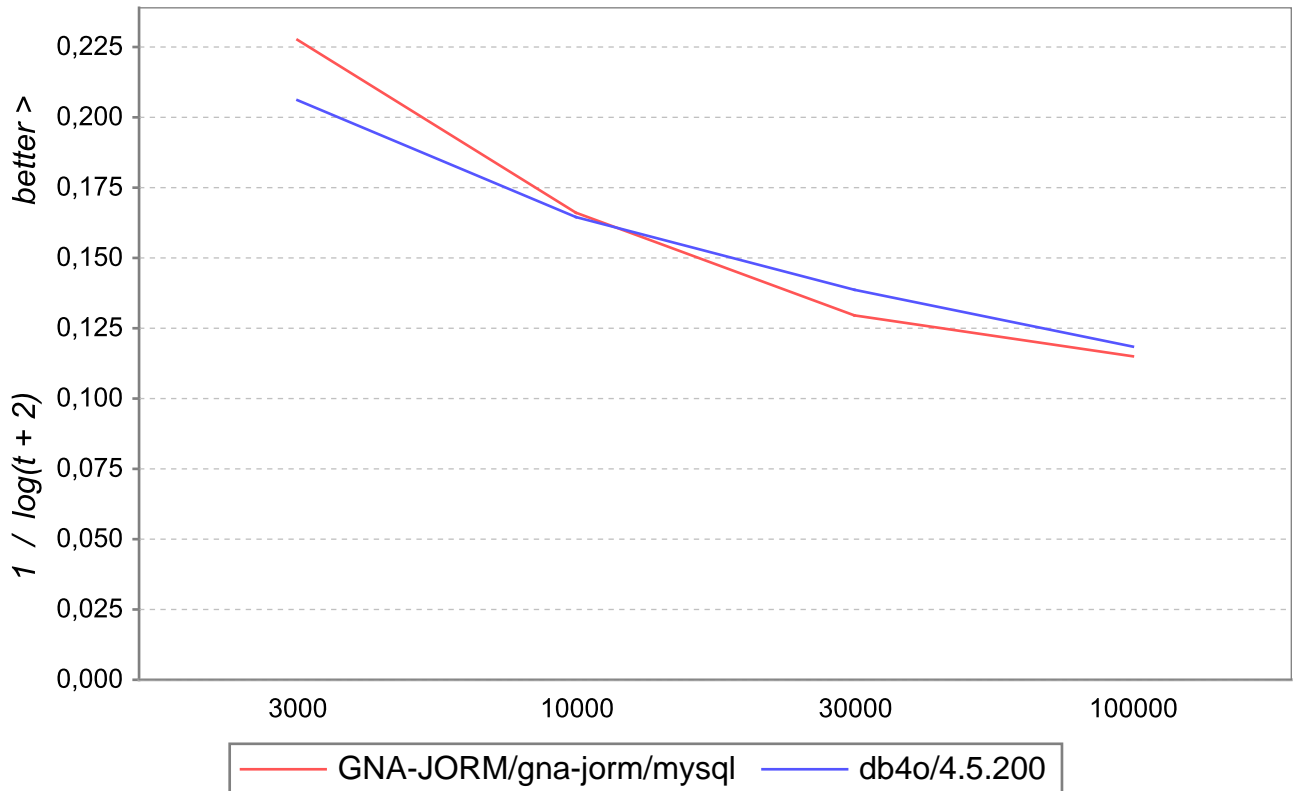


## Circuit: Nurburgring

tests String storing and loading efficiency

Lap: read

t [time in ms]	objects:3000	objects:10000	objects:30000	objects:100000
<b>GNA-JORM/gna-</b>	79	410	2245	5966
<b>db4o/4.5.200</b>	126	434	1352	4633

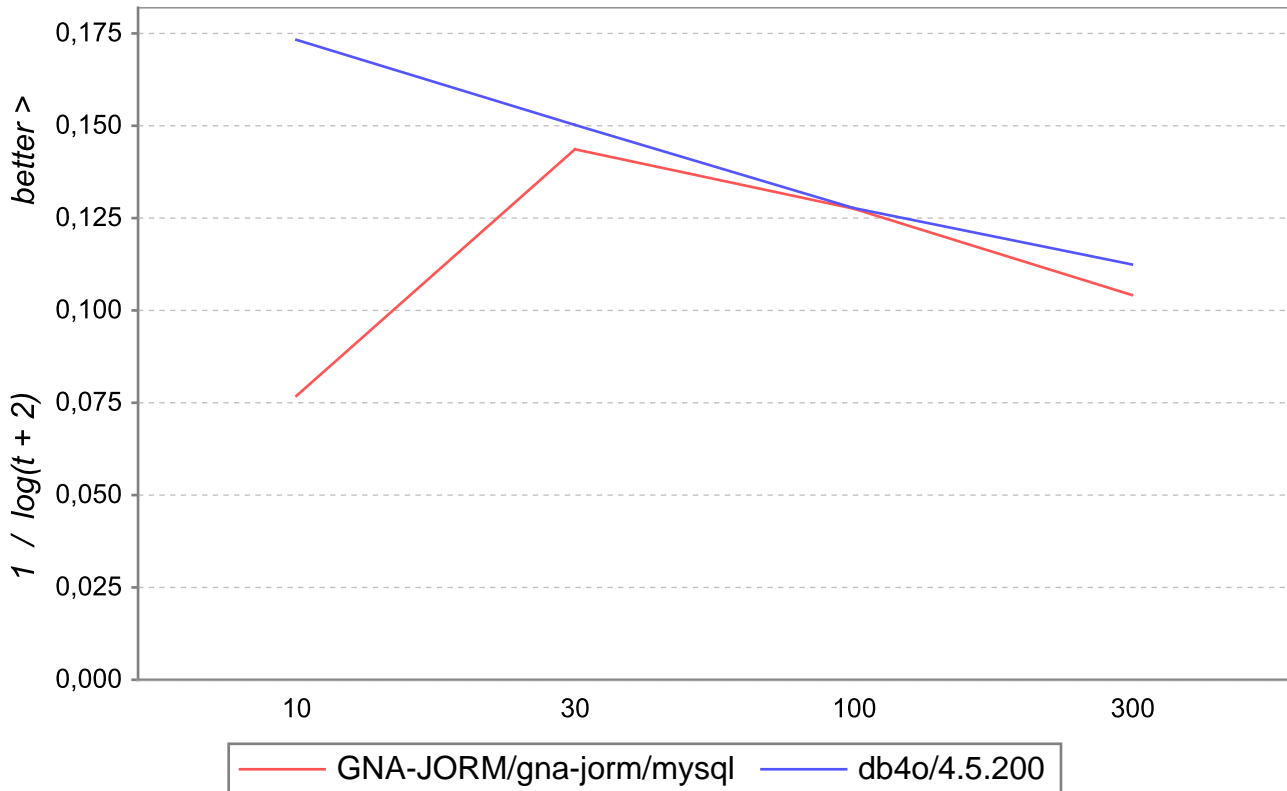


**Circuit: Montreal**

writes and reads 1000 ArrayLists

**Lap: write**

t [time in ms]	size:10	size:30	size:100	size:300
<b>GNA-JORM/gna-</b>	445382	1054	2535	14749
<b>db4o/4.5.200</b>	319	776	2508	7276



**Circuit: Montreal**

writes and reads 1000 ArrayLists

**Lap: read**

t [time in ms]	size:10	size:30	size:100	size:300
<b>GNA-JORM/gna-</b>	318	300	400	785
<b>db4o/4.5.200</b>	132	268	719	2045

