

java序列化benchmark

2014.10.20

1. 跑本地测试，对比kryo和java

测试代码: <https://gist.github.com/shijinkui/6ac07111db4a0ab98fd8>

1. 环境

序列化文件写入文件系统，ssd硬盘

```
java version "1.6.0_65"
Java(TM) SE Runtime Environment (build 1.6.0_65-b14-462-11M4609)
Java HotSpot(TM) 64-Bit Server VM (build 20.65-b04-462, mixed mode)

java version "1.7.0_60"
Java(TM) SE Runtime Environment (build 1.7.0_60-b19)
Java HotSpot(TM) 64-Bit Server VM (build 24.60-b09, mixed mode)

java version "1.8.0_25"
Java(TM) SE Runtime Environment (build 1.8.0_25-b17)
Java HotSpot(TM) 64-Bit Server VM (build 25.25-b02, mixed mode)
```

2. 采样

序列化和反序列化10000个对象，重复10次，计算每个对象的序列化和反序列化平均耗时

3. 对象中包含的字段: List和Map中放100个item

```
private int id = 0;
private Timestamp time = new Timestamp(System.currentTimeMillis());
;
private final long nanoTime = System.nanoTime();
private Map<Integer, Integer> map = new HashMap<Integer, Integer>();
;
private final List<String> list = new ArrayList<String>();
```

4. kryo版本

```
<dependency>
  <groupId>com.esotericsoftware.kryo</groupId>
  <artifactId>kryo</artifactId>
  <version>2.24.0</version>
</dependency>
```

5. java6_未压缩, 结果(单位:ns, byte)

create	ser	deser	total	size	+dfi
kryo	184722	46280	231002	902	-
java	1505104	1941654	3446758	2892	-
相差	8倍	41倍	14倍	3倍	

6. java6_压缩, 结果(单位:ns, byte)

create	ser	deser	total	size	+dfi
kryo	282415	83429	365844	685	-
java	1711871	1862910	3574781	2892	-
相差	6倍	22倍	9倍	4倍	

7. java7_未压缩, 结果(单位:ns, byte)

create	ser	deser	total	size	+dfi
kryo	196412	48155	244567	901	-
java	1521232	1950731	3471963	2892	-
相差	7倍	40倍	14倍	3倍	

8. java7_未压缩1M数组, 结果(单位:ns, byte)

在序列化的对象中加了1M大小的随机数组, 样本数100

create	ser	deser	total	size	+dfi
kryo	3270368	2069911	5340279	1073782	-
java	17396187	23661152	41057339	1055914	-
相差	5倍	11倍	7倍	0倍	

9. java7_压缩1M数组, 结果(单位:ns, byte)

在序列化的对象中加了1M大小的随机数组, 样本数100

create	ser	deser	total	size	+dfi
kryo	9681977	4386911	14068888	1941	-
java	17396187	23661152	41057339	1055424	-
相差	1倍	5倍	2倍	543倍	

10. java7_压缩, 结果(单位:ns, byte)

create	ser	deser	total	size	+dfi
kryo	236646	67441	304087	2892	-
java	1589695	1780974	3370669	685	-
相差	6倍	26倍	11倍	4倍	-

11. java8_压缩, 结果(单位:ns, byte)

create	ser	deser	total	size	+dfi
kryo	242280	64188	306468	2892	-
java	1469004	2014450	3483454	678	-
相差	6倍	31倍	11倍	4倍	-

12. java8_未压缩, 结果(单位:ns, byte)

create	ser	deser	total	size	+dfi
kryo	187915	42097	230012	900	-
java	1642427	1871676	3514103	2892	-
相差	8倍	44倍	15倍	3倍	-

2. 跑jvm-serializers的结果 (java 6)

<https://github.com/eishay/jvm-serializers>

1. sort by ser asc

create	ser	deser	total	size	+dfi
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wobly-compact	73	1332	970	2302	225 139
wobly	90	1385	888	2274	251 151
cbor/jackson/manual	92	1165	1890	3056	386 238
jboss-marshalling-river-ct	92	4325	3134	7459	298 199
json/fastjson/databind	92	1701	1681	3382	486 262
json/gson/databind	92	6930	6586	13516	486 259
json/jsonij/manual-jpath	92	47879	18619	66498	478 255
json/svenson/databind	92	5407	14851	20258	495 269
kryo-flat	92	1123	1514	2637	268 177
xml/woodstox-manual	92	4182	6318	10500	653 304
bson/jackson/databind	93	7213	9328	16542	506 286
jboss-marshalling-river-ct-manual	93	2311	1829	4139	289 167
json/argo/manual-tree	93	94110	20129	114239	485 263
json/jackson+afterburner/databind	93	1777	2769	4546	485 261
json/jackson/manual	93	1502	2183	3686	468 253
json/json-smart/manual-tree	93	7602	5734	13336	495 269
json/json.simple/manual	93	7590	11135	18726	495 269
json/org.json/manual-tree	93	9669	13552	23220	485 259
kryo-manual	93	801	999	1801	211 131
xml/fastinfo-manual	93	9471	7394	16864	377 284
jboss-marshalling-river	94	6838	32056	38893	694 400
msgpack/databind	94	1306	2106	3412	233 146
protobuf/protostuff-runtime	94	939	1187	2126	241 150
protostuff-graph-runtime	94	1182	1273	2455	241 151
protostuff-manual	94	676	1154	1830	239 150
smile/jackson/databind	94	1869	2381	4250	338 241
smile/jackson/manual	94	1343	1723	3066	341 244

xml/aalto-manual	94	3010	4346	7356	653 304
xml/xstream+c	94	7122	16132	23254	487 244
bson/mongodb/manual	95	5645	11644	17289	495 278
fst-flat-pre	95	983	1140	2123	251 165
protostuff-runtime	95	846	1094	1939	241 151
fst	96	2351	2272	4623	316 203
java-manual	96	1157	1013	2170	255 147
jboss-serialization	96	10173	10517	20691	932 582
xml/xstream+c-fastinfo	96	9400	9627	19026	345 264
xml/xstream+c-woodstox	96	7489	14178	21666	525 273
yaml/jackson/databind	96	27753	37797	65551	505 260
cbor-col/jackson/databind	97	1089	1774	2863	251 165
cbor/jackson/databind	97	1559	2859	4418	397 246
smile-col/jackson/databind	97	1236	1750	2986	252 165
xml/xstream+c-aalto	97	5720	12395	18115	525 273
cbor/jackson+afterburner/databind	98	1378	2278	3656	397 246
java-built-in	98	8719	44769	53487	889 514
json/jackson/databind	98	2013	3122	5135	485 261
jboss-marshalling-serial	99	15052	39420	54472	856 498
json/javax-stream/glassfish	99	8521	18521	27042	468 253
json/protostuff-manual	99	1989	3068	5057	449 233
kryo-serializer	99	2485	2204	4689	286 188
fst-flat	100	1435	1836	3271	314 204
json/gson/manual	100	5044	5752	10796	468 253
json/json-lib/databind	100	35418	167492	202909	485 263
json/protostuff-runtime	100	2060	2977	5037	469 243

kryo-opt	100	888	1149	2037	209 129
smile/jackson+afterburner/databind	100	1560	1968	3528	352 252
msgpack/manual	101	1437	2065	3501	233 146
xml/javolution/manual	101	7689	11848	19538	504 263
java-built-in-serializer	102	8448	38966	47414	889 514
jboss-marshalling-river-manual	102	3027	7488	10515	483 240
json-col/jackson/databind	102	1508	2330	3839	293 178
json/flexjson/databind	102	27483	36408	63891	503 273
xml/jackson/databind	103	4096	7817	11914	683 286
json/jackson-jr/databind	105	2256	3789	6044	468 255
stephenerialization	105	9578	42198	51776	1093 515
xml/exi-manual	105	23324	20991	44315	337 327
hessian	106	5813	8410	14223	501 313
json/gson/manual-tree	106	7493	9547	17040	485 259
kryo-flat-pre	106	932	1125	2057	212 132
protostuff-graph	121	1046	1177	2223	239 150
avro-specific	125	2522	2184	4706	221 133
protobuf/protostuff	125	763	1094	1857	239 149
protostuff	132	772	1308	2080	239 150
protobuf	191	1876	1170	3046	239 149
thrift-compact	192	2166	1442	3607	240 148
thrift	193	2785	1546	4331	349 197
json/protobuf	201	11062	74938	86000	488 253
avro-generic	594	2747	1770	4517	221 133
scala/sbinary	702	2924	2026	4950	255 147
scala/java-built-in	704	14262	58944	73206	1293 698

json/javax-tree/glassfish	2011	11697	19442	31139	4851263
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1. sort by deser asc

create	ser	deser	total	size	+dfi
protostuff-manual	94	676	1154	1830	2391150
protobuf/protostuff	125	763	1094	1857	2391149
protostuff	132	772	1308	2080	2391150
kryo-manual	93	801	999	1801	2111131
protostuff-runtime	95	846	1094	1939	2411151
kryo-opt	100	888	1149	2037	2091129
kryo-flat-pre	106	932	1125	2057	2121132
protobuf/protostuff-runtime	94	939	1187	2126	2411150
fst-flat-pre	95	983	1140	2123	2511165
protostuff-graph	121	1046	1177	2223	2391150
cbor-col/jackson/databind	97	1089	1774	2863	2511165
kryo-flat	92	1123	1514	2637	2681177
java-manual	96	1157	1013	2170	2551147
cbor/jackson/manual	92	1165	1890	3056	3861238
protostuff-graph-runtime	94	1182	1273	2455	2411151
smile-col/jackson/databind	97	1236	1750	2986	2521165
msgpack/databind	94	1306	2106	3412	2331146
wobly-compact	73	1332	970	2302	2251139
smile/jackson/manual	94	1343	1723	3066	3411244
cbor/jackson+afterburner/databind	98	1378	2278	3656	3971246
wobly	90	1385	888	2274	2511151
fst-flat	100	1435	1836	3271	3141204
msgpack/manual	101	1437	2065	3501	2331146

json/jackson/manual	93	1502	2183	3686	468 253
json-col/jackson/databind	102	1508	2330	3839	293 178
cbor/jackson/databind	97	1559	2859	4418	397 246
smile/jackson+afterburner/databind	100	1560	1968	3528	352 252
json/fastjson/databind	92	1701	1681	3382	486 262
json/jackson+afterburner/databind	93	1777	2769	4546	485 261
smile/jackson/databind	94	1869	2381	4250	338 241
protobuf	191	1876	1170	3046	239 149
json/protostuff-manual	99	1989	3068	5057	449 233
json/jackson/databind	98	2013	3122	5135	485 261
json/protostuff-runtime	100	2060	2977	5037	469 243
thrift-compact	192	2166	1442	3607	240 148
json/jackson-jr/databind	105	2256	3789	6044	468 255
jboss-marshalling-river-ct-manual	93	2311	1829	4139	289 167
fst	96	2351	2272	4623	316 203
kryo-serializer	99	2485	2204	4689	286 188
avro-specific	125	2522	2184	4706	221 133
avro-generic	594	2747	1770	4517	221 133
thrift	193	2785	1546	4331	349 197
scala/sbinary	702	2924	2026	4950	255 147
xml/aalto-manual	94	3010	4346	7356	653 304
jboss-marshalling-river-manual	102	3027	7488	10515	483 240
xml/jackson/databind	103	4096	7817	11914	683 286
xml/woodstox-manual	92	4182	6318	10500	653 304
jboss-marshalling-river-ct	92	4325	3134	7459	298 199
json/gson/manual	100	5044	5752	10796	468 253

json/svenson/databind	92	5407	14851	20258	495 269
bson/mongodb/manual	95	5645	11644	17289	495 278
xml/xstream+c-aalto	97	5720	12395	18115	525 273
hessian	106	5813	8410	14223	501 313
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xml/xstream+c-woodstox	96	7489	14178	21666	525 273
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json/json-smart/manual-tree	93	7602	5734	13336	495 269
xml/javolution/manual	101	7689	11848	19538	504 263
java-built-in-serializer	102	8448	38966	47414	889 514
json/javax-stream/glassfish	99	8521	18521	27042	468 253
java-built-in	98	8719	44769	53487	889 514
xml/xstream+c-fastinfo	96	9400	9627	19026	345 264
xml/fastinfo-manual	93	9471	7394	16864	377 284
stephenerialization	105	9578	42198	51776	1093 515
json/org.json/manual-tree	93	9669	13552	23220	485 259
jboss-serialization	96	10173	10517	20691	932 582
json/protobuf	201	11062	74938	86000	488 253
json/javax-tree/glassfish	2011	11697	19442	31139	485 263
scala/java-built-in	704	14262	58944	73206	1293 698
jboss-marshalling-serial	99	15052	39420	54472	856 498
xml/exi-manual	105	23324	20991	44315	337 327

json/flexjson/databind	102	27483	36408	63891	503 273
yaml/jackson/databind	96	27753	37797	65551	505 260
json/json-lib/databind	100	35418	167492	202909	485 263
json/jsonij/manual-jpath	92	47879	18619	66498	478 255
json/argo/manual-tree	93	94110	20129	114239	485 263

1. sort by total asc

create	ser	deser	total	size	+dfi
wobly	90	1385	888	2274	251 151
wobly-compact	73	1332	970	2302	225 139
kryo-manual	93	801	999	1801	211 131
java-manual	96	1157	1013	2170	255 147
protobuf/protostuff	125	763	1094	1857	239 149
protostuff-runtime	95	846	1094	1939	241 151
kryo-flat-pre	106	932	1125	2057	212 132
fst-flat-pre	95	983	1140	2123	251 165
kryo-opt	100	888	1149	2037	209 129
protostuff-manual	94	676	1154	1830	239 150
protobuf	191	1876	1170	3046	239 149
protostuff-graph	121	1046	1177	2223	239 150
protobuf/protostuff-runtime	94	939	1187	2126	241 150
protostuff-graph-runtime	94	1182	1273	2455	241 151
protostuff	132	772	1308	2080	239 150
thrift-compact	192	2166	1442	3607	240 148
kryo-flat	92	1123	1514	2637	268 177
thrift	193	2785	1546	4331	349 197
json/fastjson/databind	92	1701	1681	3382	486 262

smile/jackson/manual	94	1343	1723	3066	341 244
smile-col/jackson/databind	97	1236	1750	2986	252 165
avro-generic	594	2747	1770	4517	221 133
cbor-col/jackson/databind	97	1089	1774	2863	251 165
jboss-marshalling-river-ct-manual	93	2311	1829	4139	289 167
fst-flat	100	1435	1836	3271	314 204
cbor/jackson/manual	92	1165	1890	3056	386 238
smile/jackson+afterburner/databind	100	1560	1968	3528	352 252
scala/sbinary	702	2924	2026	4950	255 147
msgpack/manual	101	1437	2065	3501	233 146
msgpack/databind	94	1306	2106	3412	233 146
json/jackson/manual	93	1502	2183	3686	468 253
avro-specific	125	2522	2184	4706	221 133
kryo-serializer	99	2485	2204	4689	286 188
fst	96	2351	2272	4623	316 203
cbor/jackson+afterburner/databind	98	1378	2278	3656	397 246
json-col/jackson/databind	102	1508	2330	3839	293 178
smile/jackson/databind	94	1869	2381	4250	338 241
json/jackson+afterburner/databind	93	1777	2769	4546	485 261
cbor/jackson/databind	97	1559	2859	4418	397 246
json/protostuff-runtime	100	2060	2977	5037	469 243
json/protostuff-manual	99	1989	3068	5057	449 233
json/jackson/databind	98	2013	3122	5135	485 261
jboss-marshalling-river-ct	92	4325	3134	7459	298 199
json/jackson-jr/databind	105	2256	3789	6044	468 255
xml/aalto-manual	94	3010	4346	7356	653 304

json/json-smart/manual-tree	93	7602	5734	13336	495 269
json/gson/manual	100	5044	5752	10796	468 253
xml/woodstox-manual	92	4182	6318	10500	653 304
json/gson/databind	92	6930	6586	13516	486 259
xml/fastinfo-manual	93	9471	7394	16864	377 284
jboss-marshalling-river-manual	102	3027	7488	10515	483 240
xml/jackson/databind	103	4096	7817	11914	683 286
hessian	106	5813	8410	14223	501 313
bson/jackson/databind	93	7213	9328	16542	506 286
json/gson/manual-tree	106	7493	9547	17040	485 259
xml/xstream+c-fastinfo	96	9400	9627	19026	345 264
jboss-serialization	96	10173	10517	20691	932 582
json/json.simple/manual	93	7590	11135	18726	495 269
bson/mongodb/manual	95	5645	11644	17289	495 278
xml/javolution/manual	101	7689	11848	19538	504 263
xml/xstream+c-aalto	97	5720	12395	18115	525 273
json/org.json/manual-tree	93	9669	13552	23220	485 259
xml/xstream+c-woodstox	96	7489	14178	21666	525 273
json/svenson/databind	92	5407	14851	20258	495 269
xml/xstream+c	94	7122	16132	23254	487 244
json/javax-stream/glassfish	99	8521	18521	27042	468 253
json/jsonij/manual-jpath	92	47879	18619	66498	478 255
json/javax-tree/glassfish	2011	11697	19442	31139	485 263
json/argo/manual-tree	93	94110	20129	114239	485 263
xml/exi-manual	105	23324	20991	44315	337 327
jboss-marshalling-river	94	6838	32056	38893	694 400

json/flexjson/databind	102	27483	36408	63891	503 273
yaml/jackson/databind	96	27753	37797	65551	505 260
java-built-in-serializer	102	8448	38966	47414	889 514
jboss-marshalling-serial	99	15052	39420	54472	856 498
stephenerialization	105	9578	42198	51776	1093 515
java-built-in	98	8719	44769	53487	889 514
scala/java-built-in	704	14262	58944	73206	1293 698
json/protobuf	201	11062	74938	86000	488 253
json/json-lib/databind	100	35418	167492	202909	485 263

1. sort by size asc

create	ser	deser	total	size	+dfi
kryo-manual	93	801	999	1801	211 131
protostuff-manual	94	676	1154	1830	239 150
protobuf/protostuff	125	763	1094	1857	239 149
protostuff-runtime	95	846	1094	1939	241 151
kryo-opt	100	888	1149	2037	209 129
kryo-flat-pre	106	932	1125	2057	212 132
protostuff	132	772	1308	2080	239 150
fst-flat-pre	95	983	1140	2123	251 165
protobuf/protostuff-runtime	94	939	1187	2126	241 150
java-manual	96	1157	1013	2170	255 147
protostuff-graph	121	1046	1177	2223	239 150
wobly	90	1385	888	2274	251 151
wobly-compact	73	1332	970	2302	225 139
protostuff-graph-runtime	94	1182	1273	2455	241 151
kryo-flat	92	1123	1514	2637	268 177

cbor-col/jackson/databind	97	1089	1774	2863	251 165
smile-col/jackson/databind	97	1236	1750	2986	252 165
protobuf	191	1876	1170	3046	239 149
cbor/jackson/manual	92	1165	1890	3056	386 238
smile/jackson/manual	94	1343	1723	3066	341 244
fst-flat	100	1435	1836	3271	314 204
json/fastjson/databind	92	1701	1681	3382	486 262
msgpack/databind	94	1306	2106	3412	233 146
msgpack/manual	101	1437	2065	3501	233 146
smile/jackson+afterburner/databind	100	1560	1968	3528	352 252
thrift-compact	192	2166	1442	3607	240 148
cbor/jackson+afterburner/databind	98	1378	2278	3656	397 246
json/jackson/manual	93	1502	2183	3686	468 253
json-col/jackson/databind	102	1508	2330	3839	293 178
jboss-marshalling-river-ct-manual	93	2311	1829	4139	289 167
smile/jackson/databind	94	1869	2381	4250	338 241
thrift	193	2785	1546	4331	349 197
cbor/jackson/databind	97	1559	2859	4418	397 246
avro-generic	594	2747	1770	4517	221 133
json/jackson+afterburner/databind	93	1777	2769	4546	485 261
fst	96	2351	2272	4623	316 203
kryo-serializer	99	2485	2204	4689	286 188
avro-specific	125	2522	2184	4706	221 133
scala/sbinary	702	2924	2026	4950	255 147
json/protostuff-runtime	100	2060	2977	5037	469 243
json/protostuff-manual	99	1989	3068	5057	449 233

json/jackson/databind	98	2013	3122	5135	485 261
json/jackson-jr/databind	105	2256	3789	6044	468 255
xml/aalto-manual	94	3010	4346	7356	653 304
jboss-marshalling-river-ct	92	4325	3134	7459	298 199
xml/woodstox-manual	92	4182	6318	10500	653 304
jboss-marshalling-river-manual	102	3027	7488	10515	483 240
json/gson/manual	100	5044	5752	10796	468 253
xml/jackson/databind	103	4096	7817	11914	683 286
json/json-smart/manual-tree	93	7602	5734	13336	495 269
json/gson/databind	92	6930	6586	13516	486 259
hessian	106	5813	8410	14223	501 313
bson/jackson/databind	93	7213	9328	16542	506 286
xml/fastinfo-manual	93	9471	7394	16864	377 284
json/gson/manual-tree	106	7493	9547	17040	485 259
bson/mongodb/manual	95	5645	11644	17289	495 278
xml/xstream+c-aalto	97	5720	12395	18115	525 273
json/json.simple/manual	93	7590	11135	18726	495 269
xml/xstream+c-fastinfo	96	9400	9627	19026	345 264
xml/javolution/manual	101	7689	11848	19538	504 263
json/svenson/databind	92	5407	14851	20258	495 269
jboss-serialization	96	10173	10517	20691	932 582
xml/xstream+c-woodstox	96	7489	14178	21666	525 273
json/org.json/manual-tree	93	9669	13552	23220	485 259
xml/xstream+c	94	7122	16132	23254	487 244
json/javax-stream/glassfish	99	8521	18521	27042	468 253
json/javax-tree/glassfish	2011	11697	19442	31139	485 263

jboss-marshalling-river	94	6838	32056	38893	6941400
xml/exi-manual	105	23324	20991	44315	3371327
java-built-in-serializer	102	8448	38966	47414	8891514
stephenerialization	105	9578	42198	51776	10931515
java-built-in	98	8719	44769	53487	8891514
jboss-marshalling-serial	99	15052	39420	54472	8561498
json/flexjson/databind	102	27483	36408	63891	5031273
yaml/jackson/databind	96	27753	37797	65551	5051260
json/jsonij/manual-jpath	92	47879	18619	66498	4781255
scala/java-built-in	704	14262	58944	73206	12931698
json/protobuf	201	11062	74938	86000	4881253
json/argo/manual-tree	93	94110	20129	114239	4851263
json/json-lib/databind	100	35418	167492	202909	4851263

1. sort by +dfi asc

create	ser	deser	total	size	+dfi
kryo-opt	100	888	1149	2037	2091129
kryo-manual	93	801	999	1801	2111131
kryo-flat-pre	106	932	1125	2057	2121132
avro-generic	594	2747	1770	4517	2211133
avro-specific	125	2522	2184	4706	2211133
wobly-compact	73	1332	970	2302	2251139
msgpack/databind	94	1306	2106	3412	2331146
msgpack/manual	101	1437	2065	3501	2331146
protostuff-manual	94	676	1154	1830	2391150
protobuf/protostuff	125	763	1094	1857	2391149
protostuff	132	772	1308	2080	2391150

protostuff-graph	121	1046	1177	2223	2391150
protobuf	191	1876	1170	3046	2391149
thrift-compact	192	2166	1442	3607	2401148
protostuff-runtime	95	846	1094	1939	2411151
protobuf/protostuff-runtime	94	939	1187	2126	2411150
protostuff-graph-runtime	94	1182	1273	2455	2411151
fst-flat-pre	95	983	1140	2123	2511165
wobly	90	1385	888	2274	2511151
cbor-col/jackson/databind	97	1089	1774	2863	2511165
smile-col/jackson/databind	97	1236	1750	2986	2521165
java-manual	96	1157	1013	2170	2551147
scala/sbinary	702	2924	2026	4950	2551147
kryo-flat	92	1123	1514	2637	2681177
kryo-serializer	99	2485	2204	4689	2861188
jboss-marshalling-river-ct-manual	93	2311	1829	4139	2891167
json-col/jackson/databind	102	1508	2330	3839	2931178
jboss-marshalling-river-ct	92	4325	3134	7459	2981199
fst-flat	100	1435	1836	3271	3141204
fst	96	2351	2272	4623	3161203
xml/exi-manual	105	23324	20991	44315	3371327
smile/jackson/databind	94	1869	2381	4250	3381241
smile/jackson/manual	94	1343	1723	3066	3411244
xml/xstream+c-fastinfo	96	9400	9627	19026	3451264
thrift	193	2785	1546	4331	3491197
smile/jackson+afterburner/databind	100	1560	1968	3528	3521252
xml/fastinfo-manual	93	9471	7394	16864	3771284

cbor/jackson/manual	92	1165	1890	3056	386 238
cbor/jackson+afterburner/databind	98	1378	2278	3656	397 246
cbor/jackson/databind	97	1559	2859	4418	397 246
json/protostuff-manual	99	1989	3068	5057	449 233
json/jackson/manual	93	1502	2183	3686	468 253
json/jackson-jr/databind	105	2256	3789	6044	468 255
json/gson/manual	100	5044	5752	10796	468 253
json/javax-stream/glassfish	99	8521	18521	27042	468 253
json/protostuff-runtime	100	2060	2977	5037	469 243
json/jsonij/manual-jpath	92	47879	18619	66498	478 255
jboss-marshalling-river-manual	102	3027	7488	10515	483 240
json/jackson+afterburner/databind	93	1777	2769	4546	485 261
json/jackson/databind	98	2013	3122	5135	485 261
json/gson/manual-tree	106	7493	9547	17040	485 259
json/org.json/manual-tree	93	9669	13552	23220	485 259
json/javax-tree/glassfish	2011	11697	19442	31139	485 263
json/argo/manual-tree	93	94110	20129	114239	485 263
json/json-lib/databind	100	35418	167492	202909	485 263
json/fastjson/databind	92	1701	1681	3382	486 262
json/gson/databind	92	6930	6586	13516	486 259
xml/xstream+c	94	7122	16132	23254	487 244
json/protobuf	201	11062	74938	86000	488 253
json/json-smart/manual-tree	93	7602	5734	13336	495 269
bson/mongodb/manual	95	5645	11644	17289	495 278
json/json.simple/manual	93	7590	11135	18726	495 269
json/svenson/databind	92	5407	14851	20258	495 269

hessian	106	5813	8410	14223	501 313
json/flexjson/databind	102	27483	36408	63891	503 273
xml/javolution/manual	101	7689	11848	19538	504 263
yaml/jackson/databind	96	27753	37797	65551	505 260
bson/jackson/databind	93	7213	9328	16542	506 286
xml/xstream+c-aalto	97	5720	12395	18115	525 273
xml/xstream+c-woodstox	96	7489	14178	21666	525 273
xml/aalto-manual	94	3010	4346	7356	653 304
xml/woodstox-manual	92	4182	6318	10500	653 304
xml/jackson/databind	103	4096	7817	11914	683 286
jboss-marshalling-river	94	6838	32056	38893	694 400
jboss-marshalling-serial	99	15052	39420	54472	856 498
java-built-in-serializer	102	8448	38966	47414	889 514
java-built-in	98	8719	44769	53487	889 514
jboss-serialization	96	10173	10517	20691	932 582
stephenerialization	105	9578	42198	51776	1093 515
scala/java-built-in	704	14262	58944	73206	1293 698