


NoSQL DBMS Evaluation #30

Edit

New issue

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 ppyordanov opened this issue on Nov 1, 2014 · 7 comments




PY


ppyordanov commented on Nov 1, 2014

A NoSQL database management system is going to be evaluated based on a number of different criteria. Results will be compared to the performance of MySQL DBMS.


SQL Evaluation details: #29

DBMS choice information: #27


-  PY ppyordanov added the enhancement label on Nov 1, 2014
-  PY ppyordanov self-assigned this on Nov 1, 2014
-  PY ppyordanov added this to the **Sensor Data Set** milestone on Nov 1, 2014

Labels 

enhancement


Milestone 

Sensor Data Set

Assignee 

PY ppyordanov

Notifications

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ppyordanov commented on Nov 2, 2014



- MongoDB has been chosen for evaluation: <http://www.mongodb.org/downloads>
- manual: <http://docs.mongodb.org/manual/reference/command/>



1 participant


PY




 Lock issue

-  PY ppyordanov referenced this issue from a commit on Nov 3, 2014
-  PY [MONGODB] spring mvc connection and mapping in progress

c431db6
-  PY ppyordanov referenced this issue from a commit on Nov 3, 2014
-  PY [MONGODB] change

7e7bc6d
-  PY ppyordanov referenced this issue from a commit on Nov 3, 2014
-  PY [MONGO_DB] autowired device

810fd56
-  PY ppyordanov referenced this issue on Nov 3, 2014
- MySQL [SQL DB] Evaluation #29

 Closed
-  PY ppyordanov referenced this issue from a commit on Nov 4, 2014
-  PY [BENCHMARK] MongoDB

350dd9f

PY

ppyordanov commented on Nov 4, 2014

Benchmark Results
Four benchmarks were run with different data set sizes to assess the following factors:

- insertion
- selection
- deletion
- update

Each test was completed twice /no caching/ to improve accuracy.

TEST 1: 5000

first run:

Test MONGO_DB



DATA: skipped

RESULT:

Insert single record:

Single insert in collections: Execution time: 0 min, 0 sec, 11 millisec

Insert real data (SIM):

Execution time: 0 min, 1 sec, 518 millisec **Data size:**

1 * 5000

Update single record:

Execution time: 0 min, 0 sec, 6 millisec

Get single record:

Execution time: 0 min, 0 sec, 37 millisec

Delete single record:

Execution time: 0 min, 0 sec, 60 millisec

Get all records:

Execution time: 0 min, 0 sec, 649 millisec

TOTAL:

Execution time: 0 min, 2 sec, 281 millisec

second run:

Test MONGO_DB



DATA: skipped

RESULT:

Insert single record:

Single insert in collections: Execution time: 0 min, 0 sec, 10 millisec

Insert real data (SIM):

Execution time: 0 min, 1 sec, 656 millisec **Data size:**

1 * 5000

Update single record:

Execution time: 0 min, 0 sec, 9 millisec

Get single record:

Execution time: 0 min, 0 sec, 33 millisec

Delete single record:

Execution time: 0 min, 0 sec, 0 millisec

Get all records:

Execution time: 0 min, 0 sec, 518 millisec

TOTAL:

Execution time: 0 min, 2 sec, 226 millisec

Test MONGO_DB
MongoDB

DATA: skipped

RESULT:

Insert single record:

Single insert in collections: Execution time: 0 min, 0 sec, 10 millisec

Insert real data (SIM):

Execution time: 0 min, 1 sec, 656 millisec Data size:

1 * 5000

Update single record:

Execution time: 0 min, 0 sec, 9 millisec

Get single record:

Execution time: 0 min, 0 sec, 33 millisec

Delete single record:

Execution time: 0 min, 0 sec, 0 millisec

Get all records:

Execution time: 0 min, 0 sec, 518 millisec

TOTAL:

Execution time: 0 min, 2 sec, 226 millisec

STATS:

```
> db.DataReadings.stats()
{
  "ns" : "ugmap.DataReadings",
  "count" : 4999,
  "size" : 1199760,
  "avgObjSize" : 240,
  "storageSize" : 2793472,
  "numExtents" : 5,
  "nindexes" : 1,
  "lastExtentSize" : 2097152,
  "paddingFactor" : 1,
  "systemFlags" : 1,
  "userFlags" : 1,
  "totalIndexSize" : 171696,
  "indexSizes" : {
    "_id_" : 171696
  },
  "ok" : 1
}
```

PY

ppyordanov commented on Nov 4, 2014



TEST 2: 60000

first run:

Test MONGO_DB

powered by



DATA: skipped

RESULT:

Insert single record:

Single insert in collections: Execution time: 0 min, 0 sec, 9 millisec

Insert real data (SIM):

Execution time: 0 min, 10 sec, 420 millisec **Data size:**

12 * 5000

Update single record:

Execution time: 0 min, 0 sec, 5 millisec

Get single record:

Execution time: 0 min, 0 sec, 25 millisec

Delete single record:

Execution time: 0 min, 0 sec, 7 millisec

Get all records:

Execution time: 0 min, 0 sec, 504 millisec

TOTAL:

Execution time: 0 min, 10 sec, 971 millisec

second run:

Test MONGO_DB

powered by



DATA: skipped

RESULT:

Insert single record:

Single insert in collections: Execution time: 0 min, 0 sec, 11 millisec

Insert real data (SIM):

Execution time: 0 min, 6 sec, 126 millisec **Data size:**

12 * 5000

Update single record:

Execution time: 0 min, 0 sec, 4 millisec

Get single record:

Execution time: 0 min, 0 sec, 19 millisec

Delete single record:

Execution time: 0 min, 0 sec, 5 millisec

Get all records:

Execution time: 0 min, 1 sec, 728 millisec

TOTAL:

Execution time: 0 min, 7 sec, 893 millisec

```
Test MONGO_DB
MongoDB

DATA: skipped

RESULT:

Insert single record:
Single insert in collections: Execution time: 0 min, 0 sec, 11 millisec

Insert real data (SIM):
Execution time: 0 min, 6 sec, 126 millisec Data size:
12 * 5000

Update single record:
Execution time: 0 min, 0 sec, 4 millisec

Get single record:
Execution time: 0 min, 0 sec, 19 millisec

Delete single record:
Execution time: 0 min, 0 sec, 5 millisec

Get all records:
Execution time: 0 min, 1 sec, 728 millisec

TOTAL:

Execution time: 0 min, 7 sec, 893 millisec
```

STATS:

```
> db.DataReadings.stats()
{
  "ns" : "ugmap.DataReadings",
  "count" : 59999,
  "size" : 14399760,
  "avgObjSize" : 240,
  "storageSize" : 22507520,
  "numExtents" : 7,
  "nindexes" : 1,
  "lastExtentSize" : 11325440,
  "paddingFactor" : 1,
  "systemFlags" : 1,
  "userFlags" : 1,
  "totalIndexSize" : 1954064,
  "indexSizes" : {
    "_id_" : 1954064
  },
  "ok" : 1
}
```

PY

ppyordanov commented on Nov 4, 2014



TEST 3: 200000

first run:

Test MONGO_DB

powered by

DATA: skipped

RESULT:

Insert single record:

Single insert in collections: Execution time: 0 min, 0 sec, 11 millisec

Insert real data (SIM):

Execution time: 0 min, 14 sec, 549 millisec **Data size:**
40 * 5000

Update single record:

Execution time: 0 min, 0 sec, 4 millisec

Get single record:

Execution time: 0 min, 0 sec, 21 millisec

Delete single record:

Execution time: 0 min, 0 sec, 5 millisec

Get all records:

Execution time: 0 min, 4 sec, 107 millisec

TOTAL:

Execution time: 0 min, 18 sec, 697 millisec

second run:

Test MONGO_DB

powered by

DATA: skipped

RESULT:

Insert single record:

Single insert in collections: Execution time: 0 min, 0 sec, 11 millisec

Insert real data (SIM):

Execution time: 0 min, 14 sec, 673 millisec **Data size:**
40 * 5000

Update single record:

Execution time: 0 min, 0 sec, 4 millisec

Get single record:

Execution time: 0 min, 0 sec, 19 millisec

Delete single record:

Execution time: 0 min, 0 sec, 3 millisec

Get all records:

Execution time: 0 min, 4 sec, 212 millisec

TOTAL:

Execution time: 0 min, 18 sec, 923 millisec

```
Test MONGO_DB
MongoDB

DATA: skipped

RESULT:

Insert single record:
Single insert in collections: Execution time: 0 min, 0 sec, 11 millisec

Insert real data (SIM):
Execution time: 0 min, 14 sec, 673 millisec Data size:
40 * 5000

Update single record:
Execution time: 0 min, 0 sec, 4 millisec

Get single record:
Execution time: 0 min, 0 sec, 19 millisec

Delete single record:
Execution time: 0 min, 0 sec, 3 millisec

Get all records:
Execution time: 0 min, 4 sec, 212 millisec

TOTAL:

Execution time: 0 min, 18 sec, 923 millisec
```

STATS:

```
> db.DataReadings.stats()
{
  "ns" : "ugmap.DataReadings",
  "count" : 199999,
  "size" : 47999760,
  "avgObjSize" : 240,
  "storageSize" : 58441728,
  "numExtents" : 9,
  "nindexes" : 1,
  "lastExtentSize" : 20643840,
  "paddingFactor" : 1,
  "systemFlags" : 1,
  "userFlags" : 1,
  "totalIndexSize" : 6508096,
  "indexSizes" : {
    "_id_" : 6508096
  },
  "ok" : 1
}
```

PY

ppyordanov commented on Nov 4, 2014



One more test was done, with 5m insertions:

TEST 4: 5m.

Test MONGO_DB

powered by



DATA: skipped

RESULT:

Insert single record:

Single insert in collections: Execution time: 0 min, 0 sec, 8 millisec

Insert real data (SIM):

Execution time: 5 min, 4 sec, 833 millisec **Data size:**
1000 * 5000

Update single record:

Execution time: 0 min, 0 sec, 4 millisec

Get single record:

Execution time: 0 min, 0 sec, 20 millisec

Delete single record:

Execution time: 0 min, 0 sec, 4 millisec

Get all records:

Execution time: 3 min, 24 sec, 669 millisec

TOTAL:

Execution time: 8 min, 29 sec, 538 millisec

Test MONGO_DB
MongoDB

DATA: skipped

RESULT:

Insert single record:

Single insert in collections: Execution time: 0 min, 0 sec, 8 millisec

Insert real data (SIM):

Execution time: 5 min, 4 sec, 833 millisec **Data size:**
1000 * 5000

Update single record:

Execution time: 0 min, 0 sec, 4 millisec

Get single record:

Execution time: 0 min, 0 sec, 20 millisec

Delete single record:

Execution time: 0 min, 0 sec, 4 millisec

Get all records:

Execution time: 3 min, 24 sec, 669 millisec

TOTAL:

Execution time: 8 min, 29 sec, 538 millisec

STATS:

```
> db.DataReadings.stats()
{
  "ns" : "ugmap.DataReadings",
  "count" : 4999999,
```



```
"size" : 1199999760,
"avgObjSize" : 240,
"storageSize" : 1580150784,
"numExtents" : 19,
"nindexes" : 1,
"lastExtentSize" : 415174656,
"paddingFactor" : 1,
"systemFlags" : 1,
"userFlags" : 1,
"totalIndexSize" : 162228192,
"indexSizes" : {
  "_id_" : 162228192
},
"ok" : 1
}
```

PY

ppyordanov commented on Nov 4, 2014



Comment moved #27



ppyordanov referenced this issue on Nov 4, 2014

DB System Choice #27

Closed



ppyordanov referenced this issue from a commit on Nov 4, 2014

[MONGO_DB_EVAL] benchmarks + results added

f84d9d3

PY

ppyordanov commented on Nov 4, 2014



Added Mongo DB benchmarks + results to repository: [350dd9f](#)



ppyordanov closed this on Nov 10, 2014

PY

Write

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