Interesting changes in Mongo 2.6

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Overview

- Custom Roles With An Example

- Index And Optimizer Improvements

- Operational Improvements

Custom Roles

Allow to provide access to specific functions and

resources.

Resources -   Cluster, DBs, and Collection being types

Privilege Actions - query, insert,update,remove,

createIndex, createUser, ServerStatus and more

Custom Roles - Resource Docs

Cluster Type:

> *{ resource: { cluster : true }, actions: ["collMod"] }*

DB Type:

> *{ resource: {db: "foo", collection:"" }, actions: ["collMod"] }*

Collection Type:

> *{ resource: {db: "", collection:"bar" }, actions: ["collMod"] }*

Custom Roles - Privilege Actions

Many types , far to many to cover today

http://docs.mongodb.org/manual/reference/privilege-actions/

Example user role might need:

*   readWrite (include query,update,remove,insert…)
*   collMod
*   planCacheRead

Custom Roles - Example Role

```
db.createRole(
  {
    role: "expanded_readWrite_appDB",
    privileges:
    [{
          resource: { db: "appDB",collection:"" },
          actions: [ "planCacheRead","collMod" ]}],
    roles:[{ role: "readWrite", db: "appDB" }],
    writeConcern: { w: "majority" , wtimeout: 5000 }
  });
```

Custom Roles - Add Role to User

```
use appDB;
db.createUser(
        { "user" : "appuser",
          "pwd": "Password123456",
          "roles" : [ {
                role: "expanded_readWrite_appDB",
                db: "appDB"
          }]
        },
        { w: "majority" , wtimeout: 5000 }
);
```

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Index & Optimizer

Many new things in both

Major items:

- Query Plan Caching

- Index Filtering

- Index Intersections and their limits

Index & Optimizer - Query Plans

Allows clearing per query.

Regularly re-calculated per specific rules

New grants required for non-admin users

Index & Optimizer - Index Filtering

Based on Query shapes

Shapes are a combination of query, sort, and projection specifications

Hint + Filter = Awesome!

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Index & Optimizer - Index Intersection

Allow using 2 indexes currently, but no more

Compound indexes are still faster

Main use case is "self-intersection" where you want to query based on multiple vectors in the same array.

All fields in union must be present in query for sort to use intersection.

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Index & Optimizer - Index Intersection

Intersection Limits:

- Less likely to use on in memory documents

- Predicates are constant entry point not ranges

- Neither index may be highly selective

- If estimated inspection size is larger it will not be used

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Operation Improvements

Secondary Index Build — HUGE WIN!

Orphan Cleanup Command

New Write Operation Protocol

Enforce Index max key limits

PowerOf2Sizes by default

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