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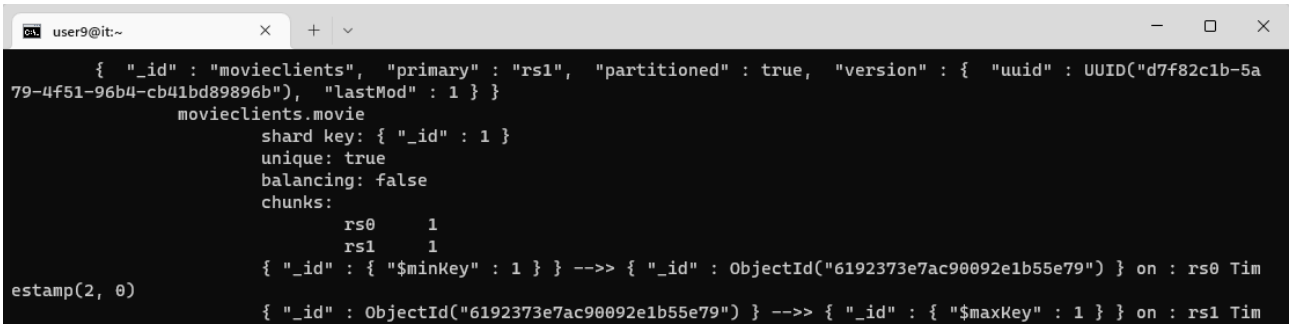
# LAB2: MONGODB

**EXERCISE 1**

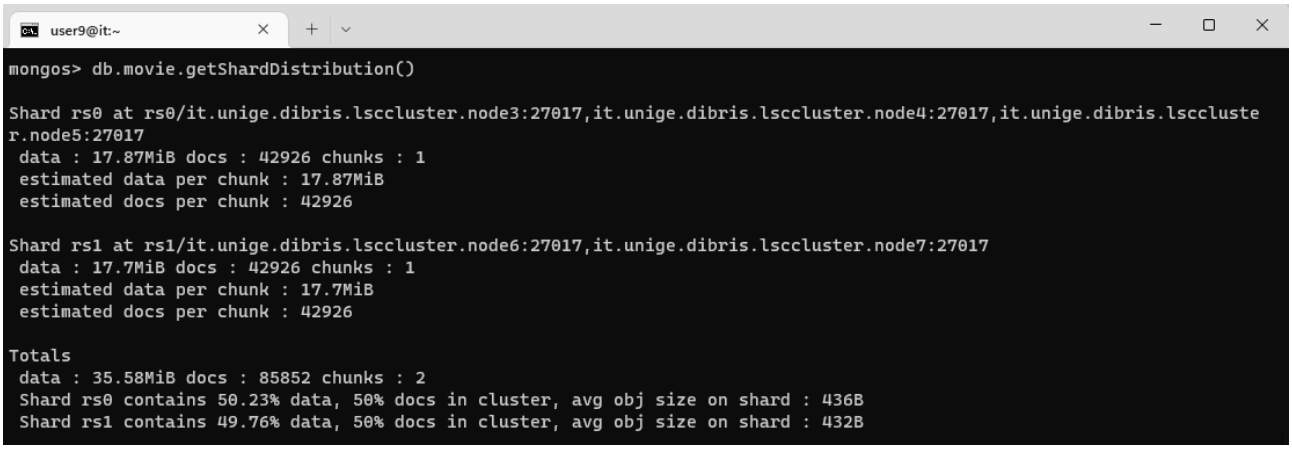
After the login in cluster and the selection of the movieClients database using the command *use movieClients*, the command *show collections* showed two collections: *client* and *movie*.


**EXERCISE 2**

1. One shard key (*id=1*) and two chunks with two shards *rs0: 1* and *rs1: 1*.

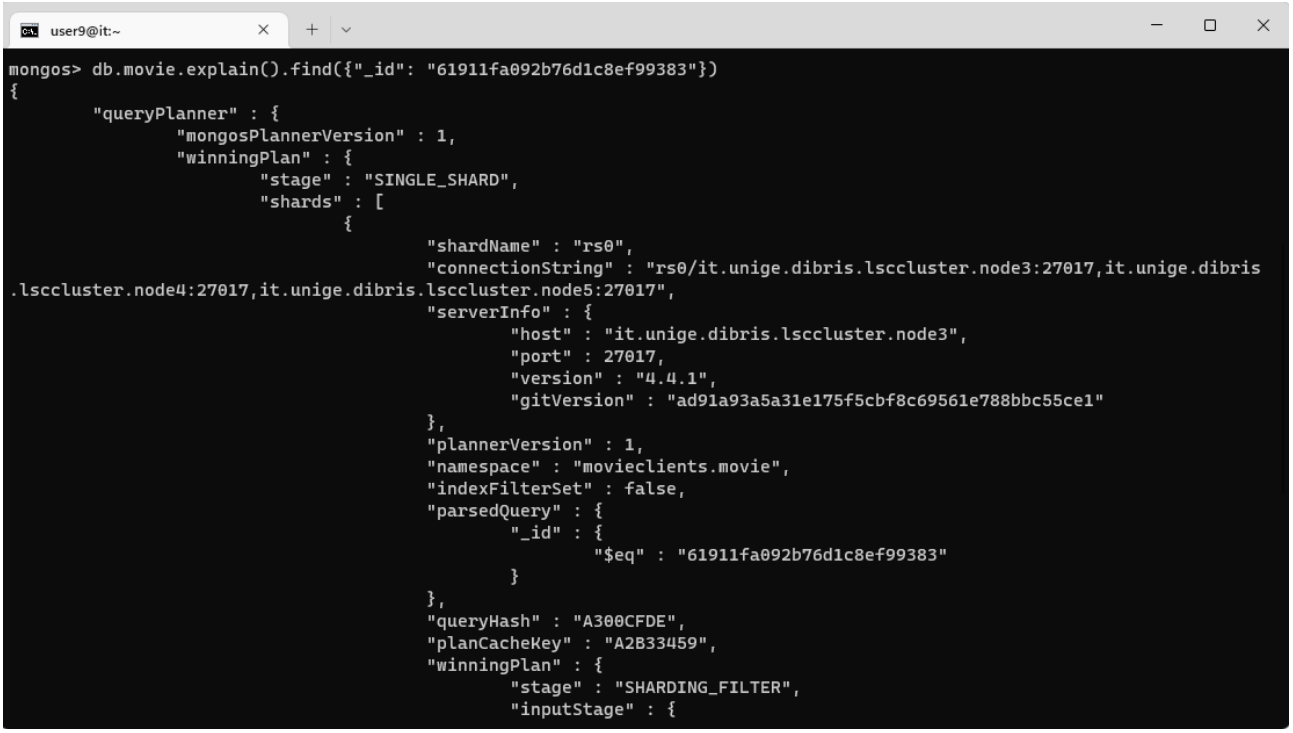



2. The *movie* collection has two shards *rs0* e *rs1*, two chunks and 42926 documents for each chunk.




3. The *client* collection is not sharded, but it's replicated: the primary set is *rs1*.

4. The shard containing the document is *rs0*.




**EXERCISE 3**

- Q1: *db.movie.find({"director":"Robert Altman"},{title:1})*
- Q2: *db.movie.find({$or: [{"director":"Robert Altman", "director": "Ken Loach"}]})*
- Q3: *db.movie.find({"title":"Atlantis"},{actors:1}).* The actors field is an aggregate.
- Q4: *db.movie.find({"director":"Robert Altman", "year": {$gt:1990}})*
- Q5: *db.movie.find({"director":"Robert Altman", "title": {$in: ["Gang", "Aria"]}}, {year:1})*
- Q6: *db.movie.find({"year": {$gte: 1990}, "year": {$lte: 1999}}, {director:1})*
- Q7: *db.client.find({"birthdate": {$gt: "2000-01-01"}}, {name:1, surname:1, birthdate:1})*
- Q8: *db.movie.find({"director":"Ken Loach"},{title:1, year:1}).sort({"title":1}).limit(4)*
- Q9: *db.movie.aggregate([{$group: {_id:"$director", count: {$sum:1}}}])*
- Q10: *db.movie.aggregate([{$group: {_id:"$director", avgEvaluation: {$avg: "$eval"}}}])*
- Q11a: *db.movie.find({"title": "Atlantis", "director": "August Blom"}, {recommeded_by:1})* or
- Q11b: *db.client.distinct("client_id", {"recommends.title": "Atlantis", "recommends.director": "August Blom"})*
- Q12: *db.movie.aggregate([{$match: {$and: [{title:"Atlantis"}, {director:"August Blom"}]}}, {$lookup: {from:"client", localField:"recommeded_by", foreignField:"client_id", as:"client_information"}}])*

**EXERCISE 4**

- Q1: *db.movie.find({"title": "Dracula"})*
- Q2: *db.movie.find({"director": "Ken Loach", genre: "Comedy"}, {title: 1})*
- Q3: *db.movie.find({"director":"Ken Loach"},{title:1, year:1}).sort({"year":1}).limit(4)*
- Q4: *db.client.aggregate([{$match: {birthdate: {$gt: "2000-01-01"}}}, {$group: {_id: "client_id", count: {$sum:1}}}])*
- Q5: *db.client.find({"recommends.title": "Atlantis"}, {name:1, surname:1})*
- Q6: db.movie.aggregate([{$match: {$and: [{title:"Atlantis"}, {director:"August Blom"}]}}, {$lookup: {from:"client", localField:"recommeded_by", foreignField:"client_id", as:"client_information"}}, {$match: {birthdate: {$gt: "2000-01-01"}}}])

(Q6 of Exercise 4 seems to not work poperly, the one written in this report is our actual best attempt)