

MongoDB 分享 技術說明與實踐



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MongoDB 分享 議程

1. MongoDB 環境準備

1. 安裝 MongoDB
2. 安裝 MongoDB Tools



Lab 1

MongoDB Setup



MongoDB 常用工具準備

Run create, read, update, and delete (CRUD) documents in a collection

- MongoDB Compass (GUI)
 - <https://www.mongodb.com/try/download/compass>
 - 安裝完成後能開啟即可
- Mongo Shell Script (mongosh)
 - <https://docs.mongodb.com/mongodb-shell/install#mdb-shell-install>
 - 安裝完成後執行 mongosh 確認
- Mongo Tools (include in MongoDB Server Install)
 - <https://www.mongodb.com/try/download/database-tools>
 - 安裝完成後 執行 mongorestore 確認

MongoDB 環境準備

- 選項一：本機安裝MongoDB
 - 參考位置：
 - <https://docs.mongodb.com/manual/installation/>
 - 安裝完成後，運行 mongosh 登入
- 選項二：容器化運行MongoDB
 - 參考位置：
 - https://hub.docker.com/_/mongo
 - 安裝完成後，運行 mongosh ip:port 登入

```
[ec2-user@ip-172-31-20-214 ~]$ mongosh
Current Mongosh Log ID: 62287031b19d5a7839d5ab9b
Connecting to:      mongodb://127.0.0.1:27017/?directConnection=true&serverS
electionTimeoutMS=2000&appName=mongosh+1.1.9
Using MongoDB:      5.0.6
Using Mongosh:      1.1.9

For mongosh info see: https://docs.mongodb.com/mongosh-shell/

-----
The server generated these startup warnings when booting:
2022-03-09T09:15:25.105+00:00: Access control is not enabled for the database
. Read and write access to data and configuration is unrestricted
-----

test> █
```

```
[ec2-user@ip-172-31-20-214 ~]$ mongosh 172.17.0.2:27017
Current Mongosh Log ID: 622883ad947bf17f29586321
Connecting to:      mongodb://172.17.0.2:27017/test?directConnection=true&appName=
mongosh+1.2.2
Using MongoDB:      5.0.6
Using Mongosh:      1.2.2

For mongosh info see: https://docs.mongodb.com/mongosh-shell/

-----
The server generated these startup warnings when booting:
2022-03-09T10:23:27.293+00:00: Access control is not enabled for the database. Read
and write access to data and configuration is unrestricted
2022-03-09T10:23:27.293+00:00: Soft rlimits for open file descriptors too low
-----

test> █
```

容器化運行MongoDB 安裝與連線說明

- 下載 Mongo Image
 - `sudo docker pull mongo`
- 容器運行 Mongo
 - `sudo docker run --name mongod --net host -d mongo`
- 查看 Container name/id
 - `sudo docker ps`
- 從容器外連線 Mongo
 - `mongosh ip:port (mongosh 127.0.0.1:27017)`
- 容器關閉 mongo
 - `sudo docker stop mongod`

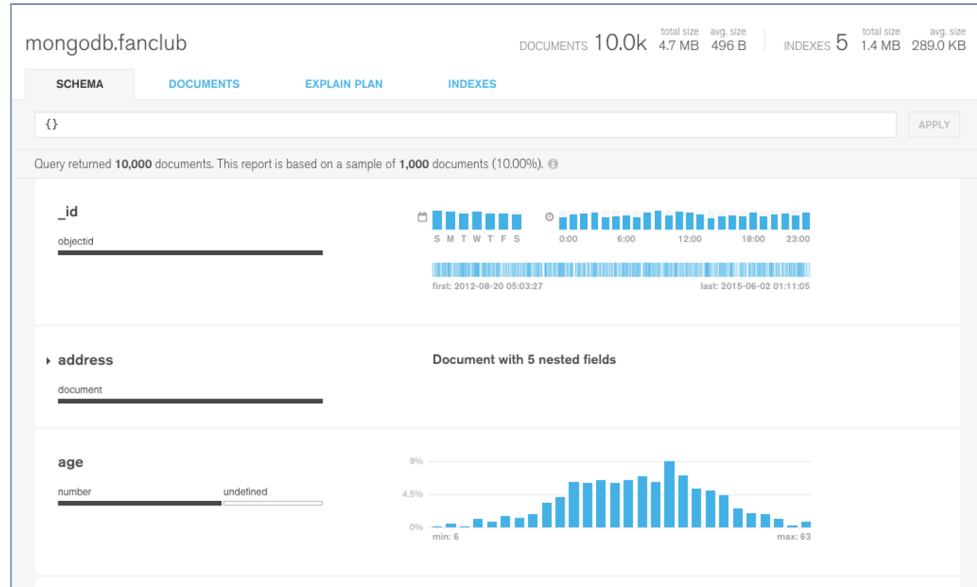
匯入 Sample 資料集

- 下載 Sample 資料集 mflix
 - <https://atlas-education.s3.amazonaws.com/sampledatab.archive>
- 下載 mongo tools (mongorestore)
 - <https://www.mongodb.com/try/download/database-tools>
- 匯入資料
 - `mongorestore --host=<host> --port=<port> --archive=sampledatab.archive`
- 登入mongo確認
 - `mongosh <host>:<port>`
 - `show dbs`

```
[test> show dbs
admin                41 kB
config               49.2 kB
local                41 kB
sample_airbnb        54.7 MB
sample_analytics     9.9 MB
sample_geospatial  1.03 MB
sample_mflix         47.4 MB
sample_restaurants  7.24 MB
sample_supplies      991 kB
sample_training      43.5 MB
sample_weatherdata  2.49 MB
test>
```

MongoDB Compass

The GUI for MongoDB



Visualize & Explore

- Visualize & explore your schema with an intuitive GUI
- Gain quick insights about your data with easy-to-read histograms
- Build queries with a few clicks
- Drill down to view individual documents in your collection

Insert, Modify, & Delete

- Insert new documents or clone existing documents
- Modify documents in place using the powerful visual editor
- Delete documents in just a few clicks

Debug & Optimize

- Understand and resolve performance issues with visual explain plans
- Check index utilization

使用 MongoDB Compass

The screenshot displays the MongoDB Compass web interface. The left sidebar shows the 'Local' environment with 11 databases and 28 collections. The 'sample_mflix' database is selected, and the 'movies' collection is highlighted. The main panel shows the 'sample_mflix.movies' collection with 23.5k documents, a total size of 35.9MB, and an average size of 1.6KB. There are 2 indexes with a total size of 13.4MB and an average size of 6.7MB. The 'Documents' tab is active, showing a list of documents. The first document is expanded, showing its JSON structure:

```
{
  "_id": ObjectId("573a1390f29313caabcd4135"),
  "plot": "Three men hammer on an anvil and pass a bottle of beer around.",
  "genres": Array,
  "runtime": 1,
  "cast": Array,
  "num_mflix_comments": 1,
  "title": "Blacksmith Scene",
  "fullplot": "A stationary camera looks at a large anvil with a blacksmith behind it...",
  "countries": Array,
  "released": 1893-05-09T00:00:00.000+00:00,
  "directors": Array,
  "rated": "UNRATED",
  "awards": Object,
  "lastupdated": "2015-08-26 00:03:50.133000000",
  "year": 1893,
  "imdb": Object,
  "type": "movie",
  "tomatoes": Object
}
```

The second document is also partially visible:

```
{
  "_id": ObjectId("573a1390f29313caabcd42e8"),
  "plot": "A group of bandits stage a brazen train hold-up, only to find a determ...",
  "genres": Array,
  "runtime": 11,
  "cast": Array,
  "poster": "https://m.media-amazon.com/images/M/MV5BMTU3NjE5NzYtYTYyNS00MDVmLWIwYj...",
  "title": "The Great Train Robbery",
  "fullplot": "Among the earliest existing films in American cinema - notable as the ...",
  "languages": Array
}
```

使用Shell (Mongosh)

<https://www.mongodb.com/blog/post/introducing-the-new-shell>

```
[casparc@CaspardeMacBook-Pro ~ % mongosh "mongodb+srv://demo.plgfd.mongodb.net/<dbname>" --username <username>
Current sessionID: 45ff75e5498a6d07776490f2
[Enter password: *
```

連線至Atlas

```
Connecting to:      mongodb+srv://demo.plgfd.mongodb.net/<dbname>
Using MongoDB:      4.2.8
Using Mongosh Beta: 0.0.5
```

For more information about mongosh, please see the wiki: github.com/mongodb-js/mongosh/wiki

```
> use sample_mflix
switched to db sample_mflix
> db.movies.findOne()
```

選擇資料庫
查詢movies一筆資料

```
{
  _id: 573a1390f29313caabcd4135,
  plot: 'Three men hammer on an anvil and pass a bottle of beer around.',
  genres: [ 'Short' ],
  runtime: 1,
  cast: [ 'Charles Kayser', 'John Ott' ],
  num_mflix_comments: 1,
  title: 'Blacksmith Scene',
  fullplot: 'A stationary camera looks at a large anvil with a blacksmith behind it and one on either side. The smith in the middle draws a heated metal rod from the fire, places it on the anvil, and all three begin a rhythmic hammering. After several blows, the metal goes back in the fire. One smith pulls out a bottle of beer, and they each take a swig. Then, out comes the glowing metal and the hammering resumes.',
  countries: [ 'USA' ],
  released: 1893-05-09T00:00:00.000Z,
  directors: [ 'William K.L. Dickson' ],
  rated: 'UNRATED',
  awards: { wins: 1, nominations: 0, text: '1 win.' },
  lastupdated: '2015-08-26 00:03:50.133000000',
  year: 1893,
```

Questions?

