

# Desenvolvimento para a Web e Dispositivos Móveis

## Modelação e Base de Dados

1.º Ano – 1.º Semestre

### Base de Dados NoSQL



# Sumário

- MongoDB
  - Serviço Online (Cloud): MongoDB Atlas
  - MongoDB Server
  - MongoDB Compass Community

# MongoDB mongoDB.Atlas

- <https://www.mongodb.com/cloud/atlas>

The screenshot displays the MongoDB Atlas website. The top navigation bar includes links for Products, Solutions, Customers, Resources, Learn, What is MongoDB?, Contact, Search, Sign In, and a Try Free button. The main content area features the MongoDB Atlas logo and a description: "Move faster with a cloud MongoDB service. Built for agile teams who'd rather spend time building apps than managing databases. Available on AWS, Azure, and GCP." Below this is a "Start free" button and a link for existing users: "Already have an account? Log in here →".

The "Cloud Provider & Region" section is highlighted, showing the process of selecting a cloud provider and region. It includes a "Select a cloud provider to see its region availability" section with buttons for AWS, Google Cloud Platform, and Azure. Below this, it instructs users to "Configure a free tier cluster by first selecting a region labeled with FREE TIER AVAILABLE, then choose the M0 option in the Cluster Tier below." A "recommended region" is indicated by a star icon.

| NORTH AMERICA   | EUROPE  | ASIA   |
|---|---|--|
| <ul style="list-style-type: none"><li>★ N. Virginia (us-east-1) ★<br/>FREE TIER AVAILABLE</li><li>★ Ohio (us-west-1) ★</li><li>★ N. California (us-west-1)</li><li>★ Oregon (us-west-2) ★</li><li>★ Montreal (ca-central-1)</li></ul> | <ul style="list-style-type: none"><li>★ Ireland (eu-west-1) ★</li><li>★ London (eu-west-2)</li><li>★ Frankfurt (eu-central-1) ★<br/>FREE TIER AVAILABLE</li><li>★ São Paulo (sa-east-1)</li></ul> | <ul style="list-style-type: none"><li>★ Tokyo (ap-northeast-1)</li><li>★ Seoul (ap-northeast-2)</li><li>★ Singapore (ap-southeast-1)</li><li>★ Mumbai (ap-south-1)</li></ul> |

The bottom navigation bar contains links for Pricing, Getting Started, Migrate to MongoDB Atlas, and Frequently Asked Questions.


# MongoDB **mongoDB**.Atlas

- Criar conta grátis
- Aceder à conta em:

<https://cloud.mongodb.com/user?nds=true#/atlas/login>



We've launched a unified login experience that gives you access to MongoDB Cloud, Support, and Jira with a single identity.  
[LEARN MORE](#)

 Login

Usually, this is the email you used to register.

**Have an existing MongoDB deployment?**

Check out the Atlas Live Migration Service.

[See how it works](#)

[Register](#) for a new account

# MongoDB mongoDB.Atlas

- Criar grandes quantidades de dados para servir de exemplo.

The screenshot displays the MongoDB Atlas interface for a project named 'Project 0'. The left sidebar contains navigation links for Context, Atlas, Security, Project, Services, and Help. The main content area shows the 'Clusters' page for a cluster named 'ncostaestgv' (version 4.0.12). A dropdown menu is open, highlighting the 'Load Sample Dataset' option. The cluster configuration includes: Cluster Tier: M0 Sandbox (General), Region: GCP / Belgium (europe-west1), Type: Replica Set - 3 nodes, and Linked Stitch App: None Linked. Performance metrics for Operations (R: 0, W: 0) and Logical Size (344.3 MB) are shown. A 'Build a New Cluster' button is in the top right. The bottom status bar indicates 'System Status: All Good' and 'Last Login: 193.1377.16'.

mongoDB Atlas All Clusters

CONTEXT Project 0

ATLAS Clusters

Find a cluster...

SANDBOX

ncostaestgv Version 4.0.12

CONNECT METRICS COLLECTIONS ...

CLUSTER TIER M0 Sandbox (General)

REGION GCP / Belgium (europe-west1)

TYPE Replica Set - 3 nodes

LINKED STITCH APP None Linked

Operations R: 0 W: 0

Logical Size 344.3 MB

512.0 MB max

0.0 B

Last 30 Days

Enhance Your Experience

For dedicated throughput, richer metrics and enterprise security options, upgrade your cluster now!

Upgrade

System Status: All Good Last Login: 193.1377.16

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# MongoDB mongoDB.Atlas

- Base de Dados / Coleções / Documentos

The screenshot displays the MongoDB Atlas web interface. At the top, the header shows 'mongoDB Atlas', 'All Clusters', and a notification to set the time zone. The user 'Nuno' is logged in, with usage for this month at \$0.00. The left sidebar contains navigation menus for 'CONTEXT' (Project 0), 'ATLAS' (Clusters, Data Lake BETA), 'SECURITY' (Database Access, Network Access, Advanced), 'PROJECT' (Access Management, Activity Feed, Alerts, Settings), 'SERVICES' (Charts, Stitch, Triggers), and 'HELP' (Docs, Support). The main content area is titled 'ESTGV - IPV > PROJECT 0 > CLUSTERS' and shows the user 'ncostaestgv'. The 'Collections' tab is selected, displaying 'sample\_training.tweets'. Below the collection name, it shows 'COLLECTION SIZE: 39.39MB', 'TOTAL DOCUMENTS: 24833', and 'INDEXES TOTAL SIZE: 248KB'. A search bar with the filter '{\"filter\": \"example\"}' is present. The 'QUERY RESULTS 1-20 OF MANY' section shows a document with fields like '\_id', 'text', 'in\_reply\_to\_status\_id', 'retweet\_count', 'contributors', 'created\_at', 'geo', 'source', 'coordinates', 'in\_reply\_to\_screen\_name', 'truncated', 'entities', 'retweeted', 'place', 'user', 'favorited', 'in\_reply\_to\_user\_id', and 'id'. A green chat icon is visible in the bottom right corner.

mongoDB Atlas All Clusters Please set your time zone Usage This Month: \$0.00 details Nuno

CONTEXT Project 0

ATLAS Clusters Data Lake BETA

SECURITY Database Access Network Access Advanced

PROJECT Access Management Activity Feed Alerts Settings

SERVICES Charts Stitch Triggers

HELP Docs Support

ESTGV - IPV > PROJECT 0 > CLUSTERS ncostaestgv

VERSION 4.0.12 REGION Belgium (eu-west-1)

Overview Real Time Metrics Collections Profiler Performance Advisor Command Line Tools

DATABASES: 8 COLLECTIONS: 22 REFRESH

+ Create Database

NAMESPACES

- aulas
- neddiecapps
- sample\_airbnb
- sample\_geospatial
- sample\_mflix
- sample\_supplies
- sample\_training
  - companies
  - grades
  - inspections
  - posts
  - routes
  - stories
  - trips
  - trucks
  - trucks

sample\_training.tweets

COLLECTION SIZE: 39.39MB TOTAL DOCUMENTS: 24833 INDEXES TOTAL SIZE: 248KB

Find Indexes Aggregation

INSERT DOCUMENT

FILTER {\"filter\": \"example\"} Find Reset

QUERY RESULTS 1-20 OF MANY

```
{
  "_id": ObjectId("5c8ecb0caa187d17ca623f5"),
  "text": "eu preciso de terminar de fazer a minha tabela, está muito fixe **",
  "in_reply_to_status_id": null,
  "retweet_count": null,
  "contributors": null,
  "created_at": "Thu Sep 02 18:11:23 +0000 2010",
  "geo": null,
  "source": "web",
  "coordinates": null,
  "in_reply_to_screen_name": null,
  "truncated": false,
  "entities": {
    "retweeted": false
  },
  "place": null,
  "user": {
    "favorited": false,
    "in_reply_to_user_id": null,
    "id": 22819396900
  }
}
```

# MongoDB **mongoDB.Atlas**

- Trabalho Prático
  - Uso do Serviço Online (Cloud): **mongoDB.Atlas**
    - <https://www.mongodb.com/cloud/atlas>
  - A ver:
    - Criação de Base de Dados
    - Criação de Coleção
    - Criação de Documentos
    - **Operações CRUD**

# MongoDB Servidor

- Instalação no computador
  - <https://www.mongodb.com/download-center/community>

**MongoDB Community Server**  
FEATURE RICH. DEVELOPER READY.

**MongoDB Enterprise Server**  
ADVANCED FEATURES. PERFORMANCE GRADE.

**Version**  
4.2.0 (current release) ▼

**OS**  
Windows x64 x64 ▼

**Package**  
MSI ▼

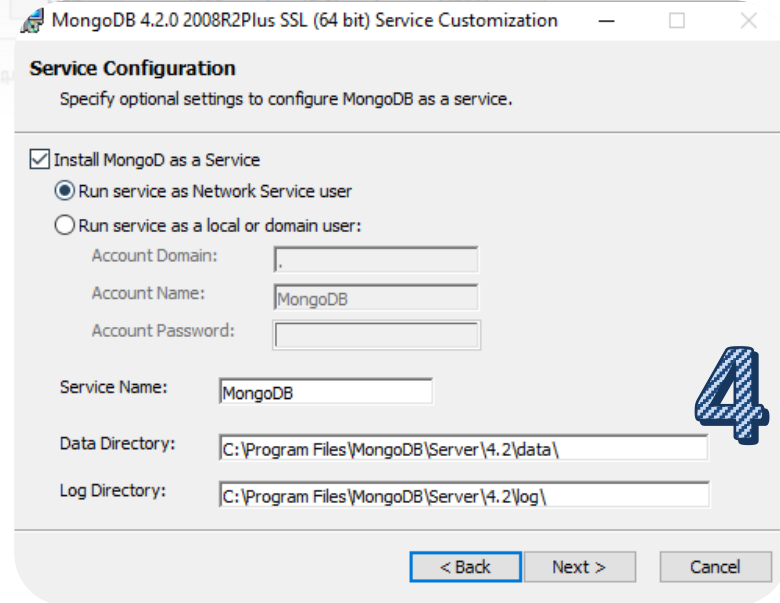
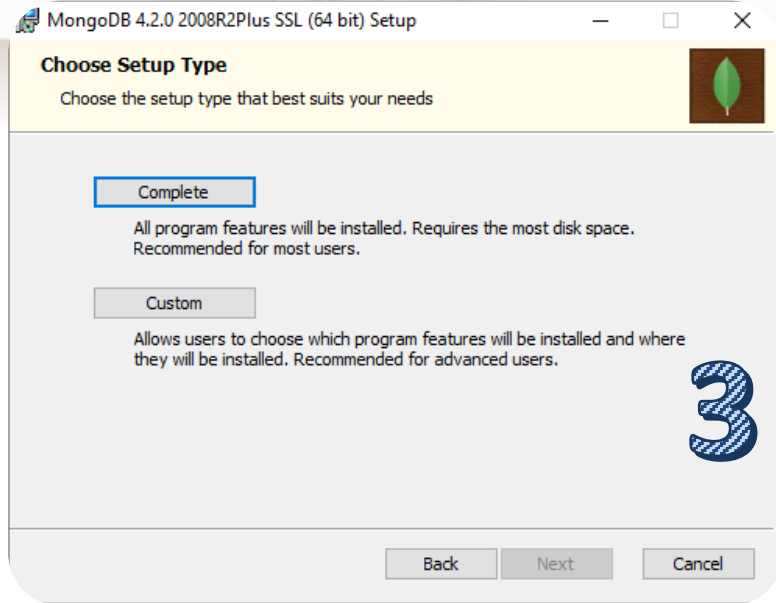
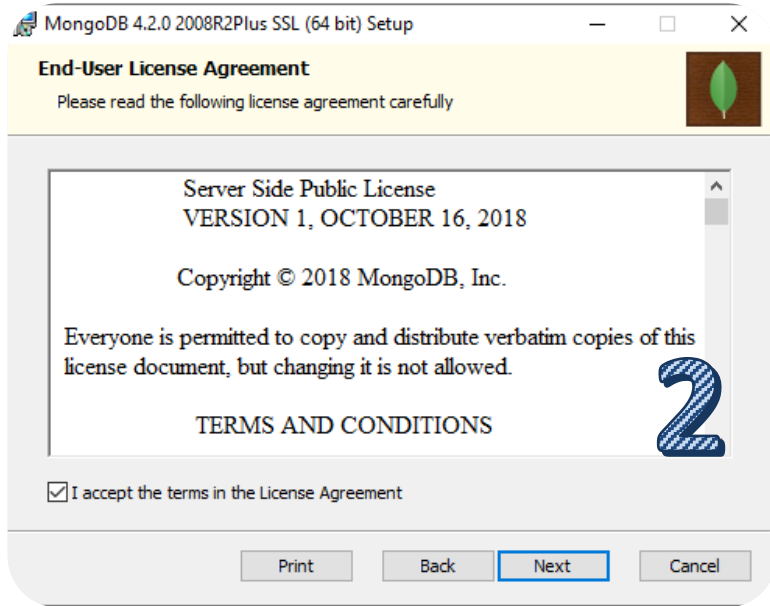
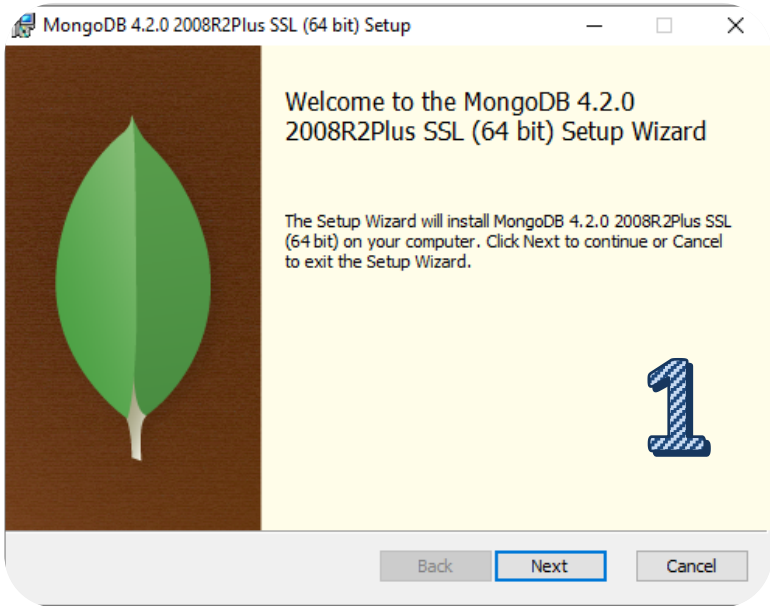
**Download**

[https://fastdl.mongodb.org/win32/mongodb-win32-x86\\_64-2012plus-4.2.0-signed.msi](https://fastdl.mongodb.org/win32/mongodb-win32-x86_64-2012plus-4.2.0-signed.msi)

- Release notes
- Changelog
- All version binaries
- Installation instructions
- Download source (tgz)
- Download source (zip)



# MongoDB Servidor



# MongoDB Servidor

MongoDB 4.2.0 2008R2Plus SSL (64 bit) Service Customization

**Service Configuration**  
Specify optional settings to configure MongoDB as a service.

☒ Install MongoDB as a Service

☐ Run service as Network Service user

☒ Run service as a local or domain user:

Account Domain:

Account Name:

Account Password:

Service Name:

Data Directory:

Log Directory:

< Back   Next >   Cancel

5

MongoDB Compass

**Install MongoDB Compass**  
MongoDB Compass is the official graphical user interface for MongoDB.

By checking below this installer will automatically download and install the latest version of MongoDB Compass on this machine. You can learn more about MongoDB Compass here: <https://www.mongodb.com/products/comp...>

☒ Install MongoDB Compass

Back   Next   Cancel

6

Importante seleccionar

MongoDB 4.2.0 2008R2Plus SSL (64 bit) Setup

**Installing MongoDB 4.2.0 2008R2Plus SSL (64 bit)**

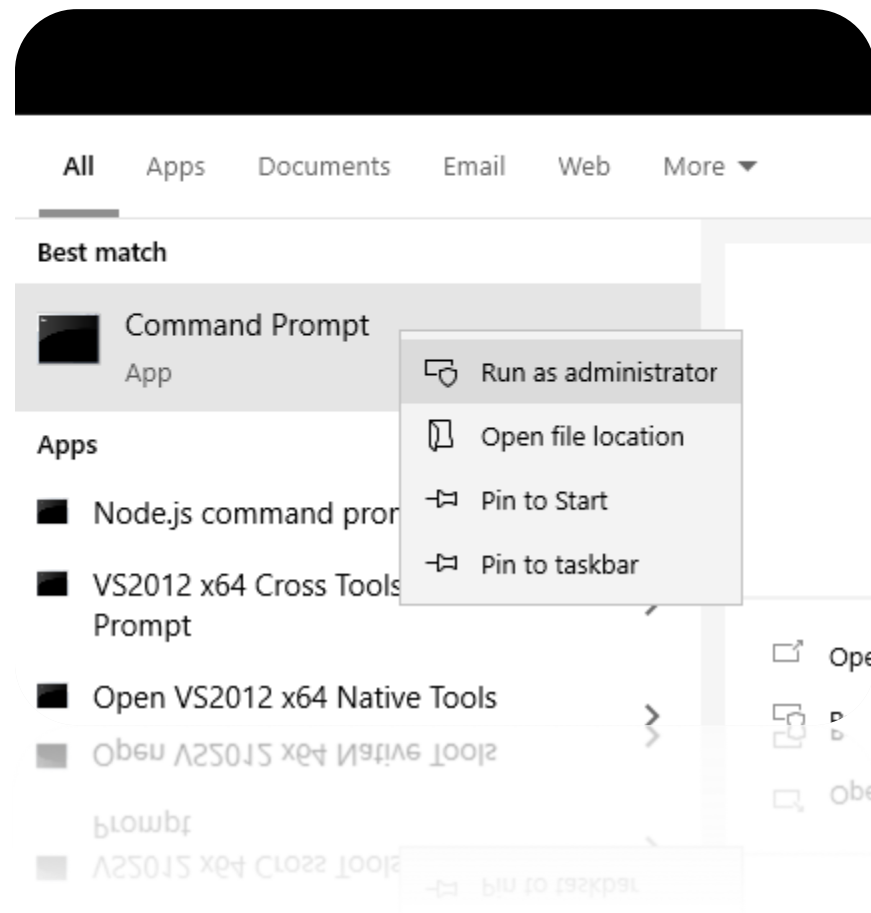
Please wait while the Setup Wizard installs MongoDB 4.2.0 2008R2Plus SSL (64 bit).

Status:

Back   Next   Cancel

# MongoDB Servidor

- Executar Linha de Comando com privilégios de Administrador



# MongoDB Servidor

- **mongo.exe**

Administrator: Command Prompt

```
C:\>cd "Program Files\MongoDB\Server\4.2\bin"
```

```
C:\Program Files\MongoDB\Server\4.2\bin>dir
Volume in drive C has no label.
Volume Serial Number is B874-C96C
```

Directory of C:\Program Files\MongoDB\Server\4.2\bin

| 27/09/2019 | 14:52 | <DIR>       | .                                  |
|------------|-------|-------------|------------------------------------|
| 27/09/2019 | 14:52 | <DIR>       | ..                                 |
| 09/08/2019 | 05:05 | 9 464 320   | bsondump.exe                       |
| 09/08/2019 | 05:31 | 1 568       | InstallCompass.ps1                 |
| 09/08/2019 | 05:30 | 21 357 568  | mongo.exe                          |
| 27/09/2019 | 15:18 | 616         | mongod.cfg                         |
| 09/08/2019 | 05:34 | 35 467 776  | mongod.exe                         |
| 09/08/2019 | 05:34 | 450 334 720 | mongod.pdb                         |
| 09/08/2019 | 05:05 | 14 312 448  | mongodump.exe                      |
| 09/08/2019 | 05:05 | 14 054 912  | mongoexport.exe                    |
| 09/08/2019 | 05:05 | 14 021 120  | mongofiles.exe                     |
| 09/08/2019 | 05:05 | 14 234 112  | mongoimport.exe                    |
| 09/08/2019 | 05:05 | 14 633 472  | mongorestore.exe                   |
| 09/08/2019 | 05:36 | 18 263 040  | mongos.exe                         |
| 09/08/2019 | 05:36 | 232 378 368 | mongos.pdb                         |
| 09/08/2019 | 05:05 | 13 754 880  | mongostat.exe                      |
| 09/08/2019 | 05:05 | 13 477 376  | mongotop.exe                       |
|            |       |             | 15 File(s) 865 756 296 bytes       |
|            |       |             | 2 Dir(s) 40 098 160 640 bytes free |

```
C:\Program Files\MongoDB\Server\4.2\bin>
```

```
C:\Program Files\MongoDB\Server\4.2\bin>
```

Administrator: Command Prompt - mongo

```
C:\Program Files\MongoDB\Server\4.2\bin>mongo
```

```
MongoDB shell version v4.2.0
```

```
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
```

```
Implicit session: session { "id" : UUID("699f21b7-7fb9-414f-8506-6d4903021b8f") }
```

```
MongoDB server version: 4.2.0
```

```
Welcome to the MongoDB shell.
```

```
For interactive help, type "help".
```

```
For more comprehensive documentation, see
```

```
http://docs.mongodb.org/
```

```
Questions? Try the support group
```

```
http://groups.google.com/group/mongodb-user
```

```
Server has startup warnings:
```

```
2019-09-27T15:19:11.684+0100 I CONTROL [initandlisten]
```

```
2019-09-27T15:19:11.684+0100 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
```

```
2019-09-27T15:19:11.684+0100 I CONTROL [initandlisten] ** Read and write access to data and configuration is
```

```
unrestricted.
```

```
2019-09-27T15:19:11.684+0100 I CONTROL [initandlisten]
```

```
---
```

```
Enable MongoDB's free cloud-based monitoring service, which will then receive and display metrics about your deployment (disk utilization, CPU, operation statistics, etc).
```

```
The monitoring data will be available on a MongoDB website with a unique URL accessible to you and anyone you share the URL with. MongoDB may use this information to make product improvements and to suggest MongoDB products and deployment options to you.
```

```
To enable free monitoring, run the following command: db.enableFreeMonitoring()
```

```
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
```

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# MongoDB Servidor

- **mongo.exe**

Administrator: Command Prompt - mongo

improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: `db.enableFreeMonitoring()`

To permanently disable this reminder, run the following command: `db.disableFreeMonitoring()`

---

> help

|   |   |
|---|---|
| <code>db.help()</code>                  | help on db methods  |
| <code>db.mycoll.help()</code>           | help on collection methods  |
| <code>sh.help()</code>                  | sharding helpers  |
| <code>rs.help()</code>                  | replica set helpers   |
| <code>help admin</code>                 | administrative help   |
| <code>help connect</code>               | connecting to a db help   |
| <code>help keys</code>                  | key shortcuts   |
| <code>help misc</code>                  | misc things to know   |
| <code>help mr</code>                    | mapreduce   |
| <br>                                    |   |
| <code>show dbs</code>                   | show database names   |
| <code>show collections</code>           | show collections in current database                              |
| <code>show users</code>                 | show users in current database                                    |
| <code>show profile</code>               | show most recent system.profile entries with time >= 1ms          |
| <code>show logs</code>                  | show the accessible logger names                                  |
| <code>show log [name]</code>            | prints out the last segment of log in memory, 'global' is default |
| <code>use &lt;db_name&gt;</code>        | set current database  |
| <code>db.foo.find()</code>              | list objects in collection foo                                    |
| <code>db.foo.find( { a : 1 } )</code>   | list objects in foo where a == 1                                  |
| <code>it</code>                         | result of the last line evaluated; use to further iterate         |
| <code>DBQuery.shellBatchSize = x</code> | set default number of items to display on shell                   |
| <code>exit</code>                       | quit the mongo shell  |

exit  
DBQuery.shellBatchSize = x  
if  
db.foo.find( { a : 1 } )  
db.foo.find()

quit the mongo shell  
set default number of items to display on shell  
result of the last line evaluated; use to further iterate  
list objects in foo where a == 1  
list objects in collection foo

# MongoDB servidor

- Trabalho Prático – Operações CRUD
  - Inserir documento
    - <https://docs.mongodb.com/manual/tutorial/insert-documents/>
  - Selecionar/pesquisar documento
    - <https://docs.mongodb.com/manual/tutorial/query-documents/>
  - Alterar documento
    - <https://docs.mongodb.com/manual/tutorial/update-documents/>
  - Eliminar documento
    - <https://docs.mongodb.com/manual/tutorial/remove-documents/>