

Introducción a MongoDB

Qué es MongoDB

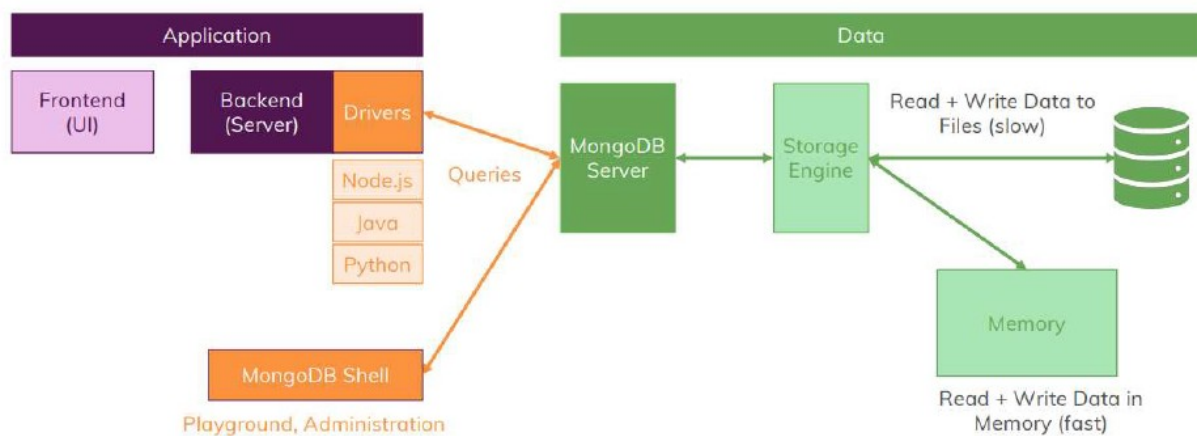
MongoDB es un motor de bases de datos no SQL basado en documentos, desarrollado por **MongoDB Inc.**

MongoDB Inc, además de MongoDB, dispone del servicio de base de datos en la nube (**MongoDB Atlas**), ofrece una GUI (**MongoDB Compass**) y desarrolla los drivers para los principales lenguajes de programación.

Características de MongoDB

- Alta flexibilidad.
- Alto rendimiento.
- Escalado horizontal.
- Lenguaje de consultas rico.
- Soporte para múltiples motores de almacenamiento.

Arquitectura de MongoDB



Bases de datos, colecciones y documentos

Documentos

MongoDB almacena los datos en formato de documento JSON.

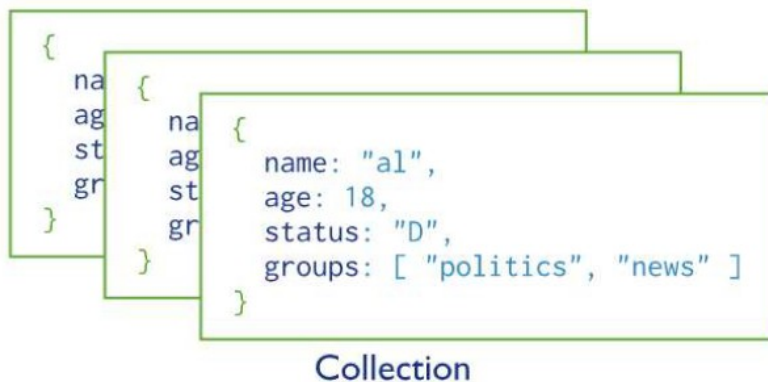
```
{
  name: "sue",
  age: 26,
  status: "A",
  groups: [ "news", "sports" ]
}
```

← field: value
← field: value
← field: value
← field: value



Colecciones

Los documentos se almacenan en colecciones.



Bases de datos

Una base de datos es un almacén de colecciones.

Una instancia de MongoDB puede contener múltiples bases de datos.

Documentos JSON y BSON

Un documento JSON es una colección de pares de clave-valor, donde el valor puede ser un valor simple, un array de valores, otro documento JSON e incluso un array de documentos JSON. JSON significa JavaScript Object Notation.

MongoDB almacena los documentos en formato BSON. BSON viene de Binary JSON y es el equivalente binario de un documento JSON.

Tipos de datos BSON

- String
- Integer
- Long integer
- Double
- Date
- Boolean
- Array
- Object
- ObjectId

Entorno de pruebas

MongoDB Atlas

MongoDB Atlas es una infraestructura de base de datos en la nube, completamente administrada.

Actualmente se puede contratar un servidor dedicado o uno compartido. También facilita un cluster de base de datos gratuito en un servidor compartido para pequeños proyectos o destinado al aprendizaje.



Inscribirse

Vea de qué es capaz Atlas de forma gratuita

 Regístrate con Google

First Name*Nombre De Pila*

Apellido*

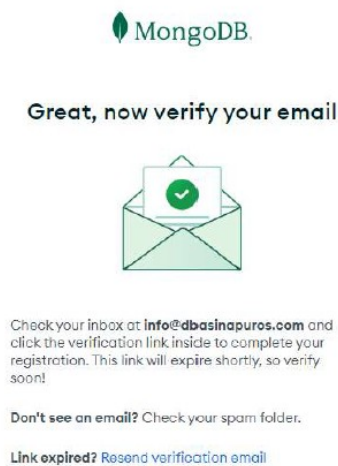
Compañía

Correo Electrónico*

Contraseña* 

☐ Acepto los [Términos de servicio](#) y la [Política de privacidad](#).

[Crea tu cuenta Atlas](#)



Paso 3. Creamos una cuenta y verificamos el email




trail

Nos conectamos:

<https://www.mongodb.com/>

Email Address

Y respondemos a algunas preguntas:



Welcome to Atlas. Let's build something great.

Help us tailor your experience by taking a minute to answer the questions below.

GETTING TO KNOW YOU

What is your primary goal?

Learn MongoDB

How long have you been developing software with MongoDB?

I've never developed software with MongoDB before

GETTING TO KNOW YOUR PROJECT

What programming language are you primarily building on MongoDB with?

Python

What type(s) of data will your project use?

You can choose as many as you want

Customer... Sales / t... Catalog /...

Will your application include any of the following architectural models?

You can choose as many as you want

Not sure...

Finish

Paso 4.

Deploy your database

Use a template below or set up advanced configuration options. You can also edit these configuration options once the cluster is created.

M10

\$0.09/hour

For production applications with sophisticated workload requirements.

STORAGE	RAM	vCPU
10 GB	2 GB	2 vCPUs

Serverless

For application development and testing, or workloads with variable traffic.

STORAGE	RAM	vCPU
Up to 1 TB	Auto-scale	Auto-scale

M0

Free

For learning and exploring MongoDB in a cloud environment.

STORAGE	RAM	vCPU
512 MB	Shared	Shared

Paso 5. Elegimos el cluster M0

Paso 6. Elegimos un nombre para el cluster

Name

You cannot change the name once the cluster is created.

cursomongodb

☒ Automate security setup

☐ Add sample dataset

Provider

aws

Google Cloud

Azure

Region

Paris (eu-west-3)

★ Recommended

Low carbon emissions

Tag (optional)

Create your first tag to categorize and label your resources; more tags can be added later. [Learn more.](#)

Select or enter key

:

Select or enter value

I'll do this later

Go to Advanced Configuration

Create Deployment

Paso 7. Elegimos un proveedor de nube

Paso 8.

Al crear el usuario debemos recordar el password.

Connect to cursomongodb

1

2

3

Set up connection security

Choose a connection method

Connect

You need to secure your MongoDB Atlas cluster before you can use it. Set which users and IP addresses can access your cluster now. [Read more](#)

1. Add a connection IP address

✓ Your current IP address (192.168.1.1) has been added to enable local connectivity.

2. Create a database user

This first user will have [atlasAdmin](#) permissions for this project. You'll need your database user's credentials in the next step.

We autogenerated a username and password. You can use this or create your own.

Username

dba

Password

oK6.RQC-\$F_Tp#D

HIDE

Copy

Create Database User

Paso 9. Crear usuario

Cancel

Choose a connection method

Connect to cursomongodb



You need to secure your MongoDB Atlas cluster before you can use it. Set which users and IP addresses can access your cluster now. [Read more](#)

1. Add a connection IP address

✓ Your current IP address (192.168.1.100) has been added to enable local connectivity.

2. Create a database user

✓ A database user has been added to this project.

You'll need your database user's credentials in the next step.

Paso 10. Hacemos clic aquí

Cancel

Choose a connection method

Atlas dbasinapuros Access Manager Billing All Clusters Get Help Loes

Project 0 Data Services App Services Charts

Overview DBASINAPUROS > PROJECT 0

Overview

Database Deployments Create deployment

cursomongodb

Connect View info Edit configuration

Add Data →

Load Sample Data →

Data Modeling Templates →

+ Add Tag

Cargamos bases de datos de ejemplo

DBASINAPUROS > PROJECT 0

Overview

Database Deployments Create deployment

cursomongodb

✓ Sample Dataset successfully loaded! [Browse this collection.](#)

Connect View info Edit configuration

Browse collections →

View monitoring →

+ Add Tag

Vamos a explorar los datos

DBASINAPUROS > PROJECT 0 > DATABASES

cursormongodb VERSION 7.0.7 REGION AWS Paris (eu-west-3)

Overview Real Time Metrics **Collections** Atlas Search Profiler Performance Advisor Online Archive Cmd Line Tools

DATABASES: 9 COLLECTIONS: 23 [VISUALIZE YOUR DATA](#) [REFRESH](#)

[+ Create Database](#)

Q Search Namespaces

- sample_airbnb
 - listingsAndReviews**
 - sample_analytics
 - sample_geospatial
 - sample_guides
 - sample_mflix
 - sample_restaurants
 - sample_supplies
 - sample_training
 - sample_weatherdata

sample_airbnb.listingsAndReviews

STORAGE SIZE: 614MB LOGICAL DATA SIZE: 882PMB TOTAL DOCUMENTS: 6556 INDEXES TOTAL SIZE: 604KB

Find Indexes Schema Anti-Patterns Aggregation Search Indexes

[INSERT DOCUMENT](#)

Filter Type a query: { field: 'value' } [Reset](#) [Apply](#) [Options](#)

QUERY RESULTS: 1-20 OF MANY

```

{
  "_id": "10066546",
  "listing_url": "https://www.airbnb.com/rooms/10066546",
  "name": "Ribeira Charming Duplex",
  "summary": "Fantastic duplex apartment with three bedrooms, located in the histori...",
  "space": "Privileged views of the Douro River and Ribeira Square, our apartment ...",
  "description": "Fantastic duplex apartment with three bedrooms, located in the histori...",
  "neighborhood_overview": "In the neighborhood of the river, you can find several restaurants as ...",
  "notes": "Lose yourself in the narrow streets and staircases zone, have lunch in...",
  "transit": "Transport: * Metro station and S. Bento railway 5min; * Bus stop a 50 ...",
  "access": "We are always available to help guests. The house is fully available t...",
  "interaction": "Cot - 10 € / night Dog - € 7,5 / night"
}
```

MongoDB Shell

MongoDB Shell es el intérprete de comandos en modo texto de MongoDB.

Está escrito en JavaScript y Node.js

Nos permite interactuar con las bases de datos, consultar colecciones y realizar operaciones administrativas.

Atlas dbasinapuros Access Manager Billing

Project 0 Data Services App Services Charts

Overview

DBASINAPUROS > PROJECT 0

Overview

Database Deployments [Create deployment](#)

cursormongodb

[Connect](#) [View Info](#) [Edit configuration](#) **Data Size: 401.83 MB**

[Browse collections](#) [View monitoring](#)

[+ Add Tag](#)

Hacemos clic en **Connect**

Connect to cursomongodb

1 Set up connection security 2 Choose a connection method 3 Connect

Connect to your application

Drivers
Access your Atlas data using MongoDB's native drivers (e.g. Node.js, Go, etc.)

Access your data through tools

Data Explorer
Browse your Atlas collections without leaving the UI

Compass
Explore, modify, and visualize your data with MongoDB's GUI

Shell
Quickly add & update data using MongoDB's Javascript command-line interface

MongoDB for VS Code
Work with your data in MongoDB directly from your VS Code environment

Atlas SQL
Easily connect SQL tools to Atlas for data analysis and visualization

Go Back Close

Elegimos la opción *Shell*

Connect to cursomongodb

1 Set up connection security 2 Choose a connection method 3 Connect

I don't have the MongoDB Shell installed I have the MongoDB Shell installed

1. Select your operating system and download the MongoDB Shell

Windows Install from MSI

Download mongosh (2.0.0) or Copy download URL

Mongosh(2.0.0) lets you connect to MongoDB to work with your data and configure your database. 2.0.0 or greater is required to work with Atlas Stream Processing

2. Run your connection string in your command line

Use this connection string in your application

```
mongosh "mongodb+srv://cursomongodb.hdnwa44.mongodb.net/" --apiVersion 1 --username dba
```

Copiamos la cadena de conexión

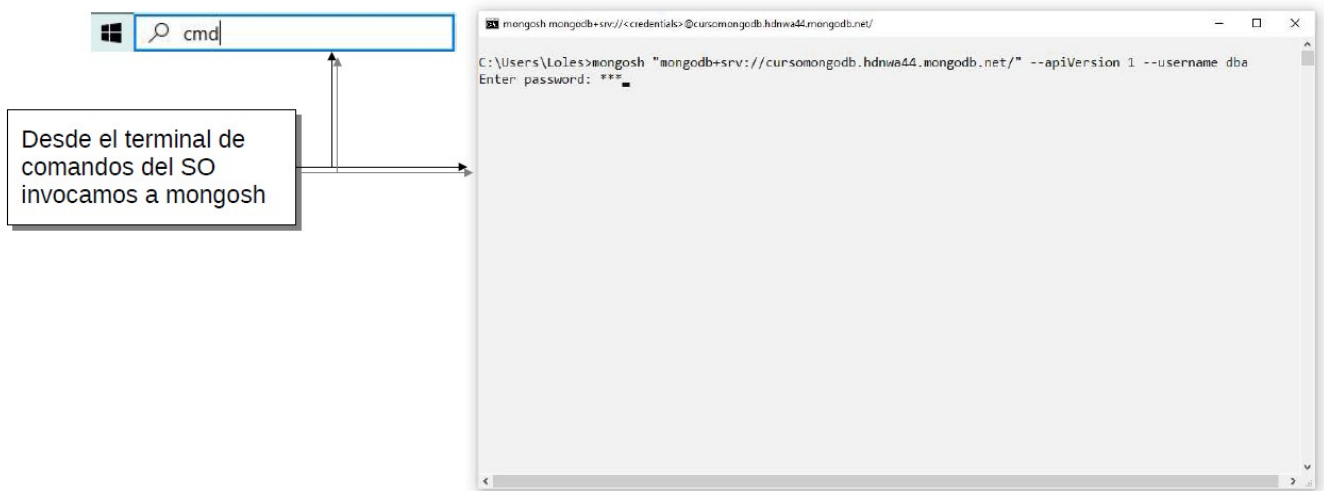
RESOURCES

Add Data in the Shell Access your Database Users Troubleshoot Connections

Go Back Close Review setup steps

Descargamos MongoDB Shell

Para conectarnos desde el terminal pegamos en el prompt la cadena de conexión copiada:



```
mongosh mongodb+srv://<credentials>@cursumongodb.hdnwa44.mongodb.net/

C:\Users\Loles>mongosh "mongodb+srv://cursumongodb.hdnwa44.mongodb.net/" --apiVersion 1 --username dba
Enter password: ***
Current Mongosh Log ID: 660bce031560731514eeec3
Connecting to:      mongodb+srv://<credentials>@cursumongodb.hdnwa44.mongodb.net/?appName=mongosh+2.0.0
Using MongoDB:      7.0.7 (API Version 1)
Using Mongosh:      2.0.0
mongosh 2.2.2 is available for download: https://www.mongodb.com/try/download/shell

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

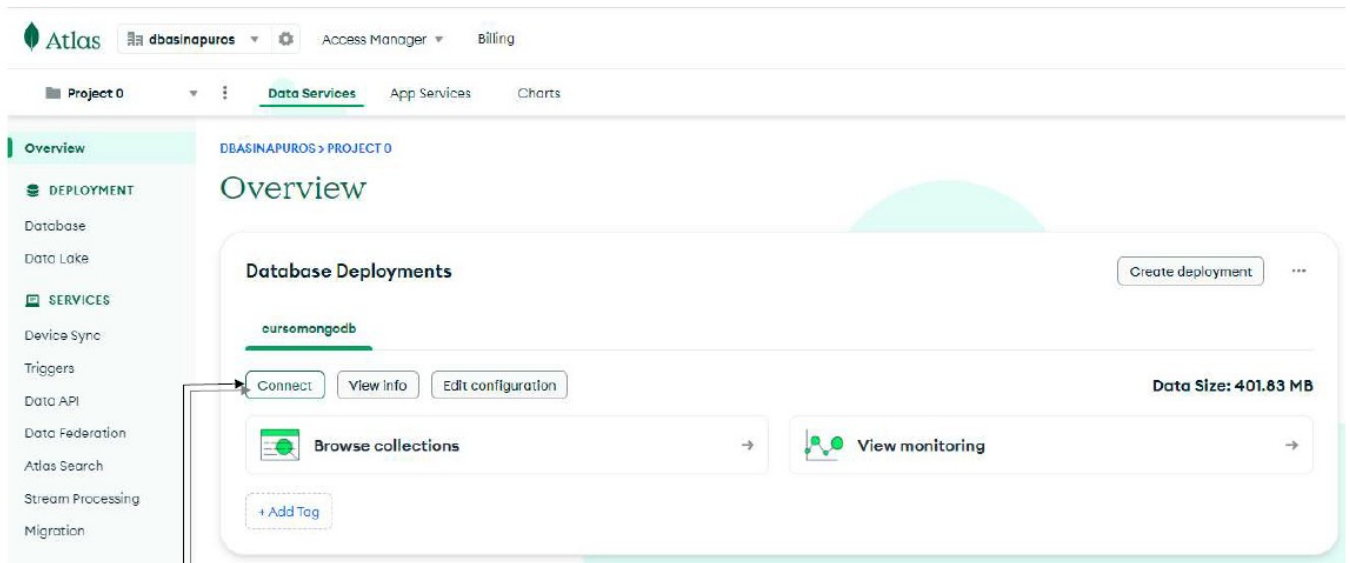
Atlas atlas-nibsvt-shard-0 [primary] test> show dbs
sample_airbnb      52.00 MiB
sample_analytics   8.98 MiB
sample_geospatial 1.23 MiB
sample_guides      40.00 KiB
sample_mflix       110.54 MiB
sample_restaurants 6.86 MiB
sample_supplies    1.05 MiB
sample_training    48.38 MiB
sample_weatherdata 2.59 MiB
admin              288.00 KiB
local              9.81 GiB
Atlas atlas-nibsvt-shard-0 [primary] test> _
```

Ya estamos conectados al cluster. Podemos ejecutar *show dbs* para ver las bases de datos existentes.

MongoDB Compass

MongoDB Compass es una interfaz gráfica de usuario para trabajar con bases de datos MongoDB.

Está desarrollada por la misma empresa y permite la realización de operaciones con la base de datos de forma intuitiva sin conocer la sintaxis de las mismas.



Hacemos clic en *Connect*

Connect to cursomongodb



Connect to your application

Drivers
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Work with your data in MongoDB directly from your VS Code environment

Atlas SQL
Easily connect SQL tools to Atlas for data analysis and visualization

Elegimos la opción
Compass

Go Back

Close

Connect to cursomongodb

Set up connection security Choose a connection method Connect

Connecting with MongoDB Compass

I don't have MongoDB Compass installed

I have MongoDB Compass installed

1. Select your operating system and download MongoDB Compass

Windows 64-bit (10+)

Download Compass (1.42.3)

Copy download URL

Compass is an interactive tool for querying, optimizing, and analyzing your MongoDB data.

2. Copy the connection string, then open MongoDB Compass

mongodb+srv://dba:<password>@cursomongodb.hdnwa44.mongodb.net/

Replace <password> with the password for the dba user. Ensure any options are URL encoded.

RESOURCES

Connect with Compass

Import and Export Data

Access your Database Users

Troubleshoot Connections

Go Back

Close

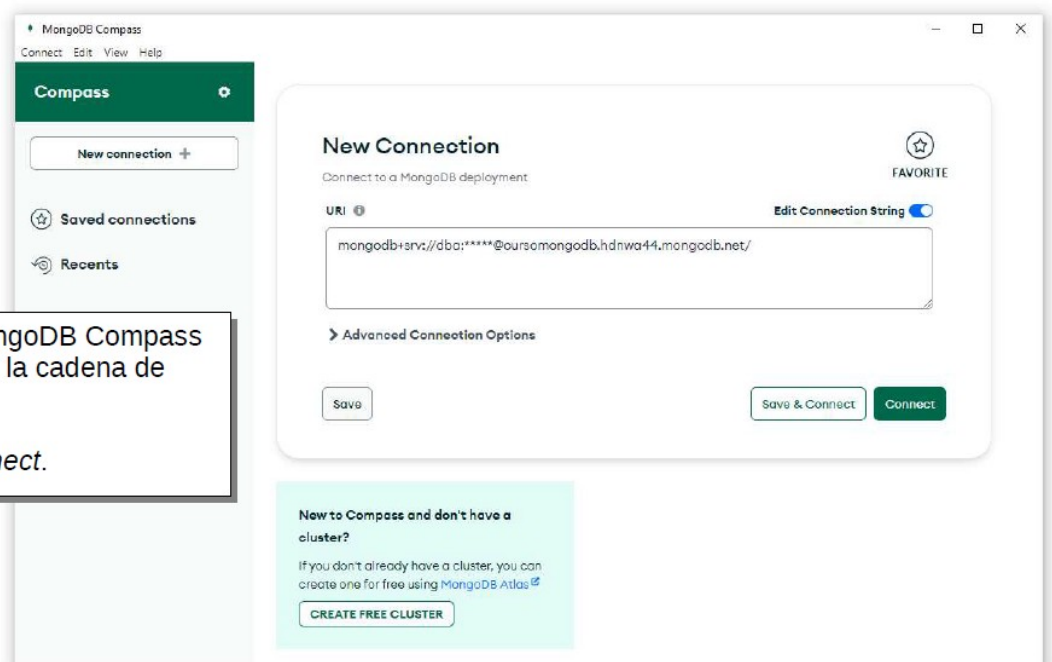
Review setup steps

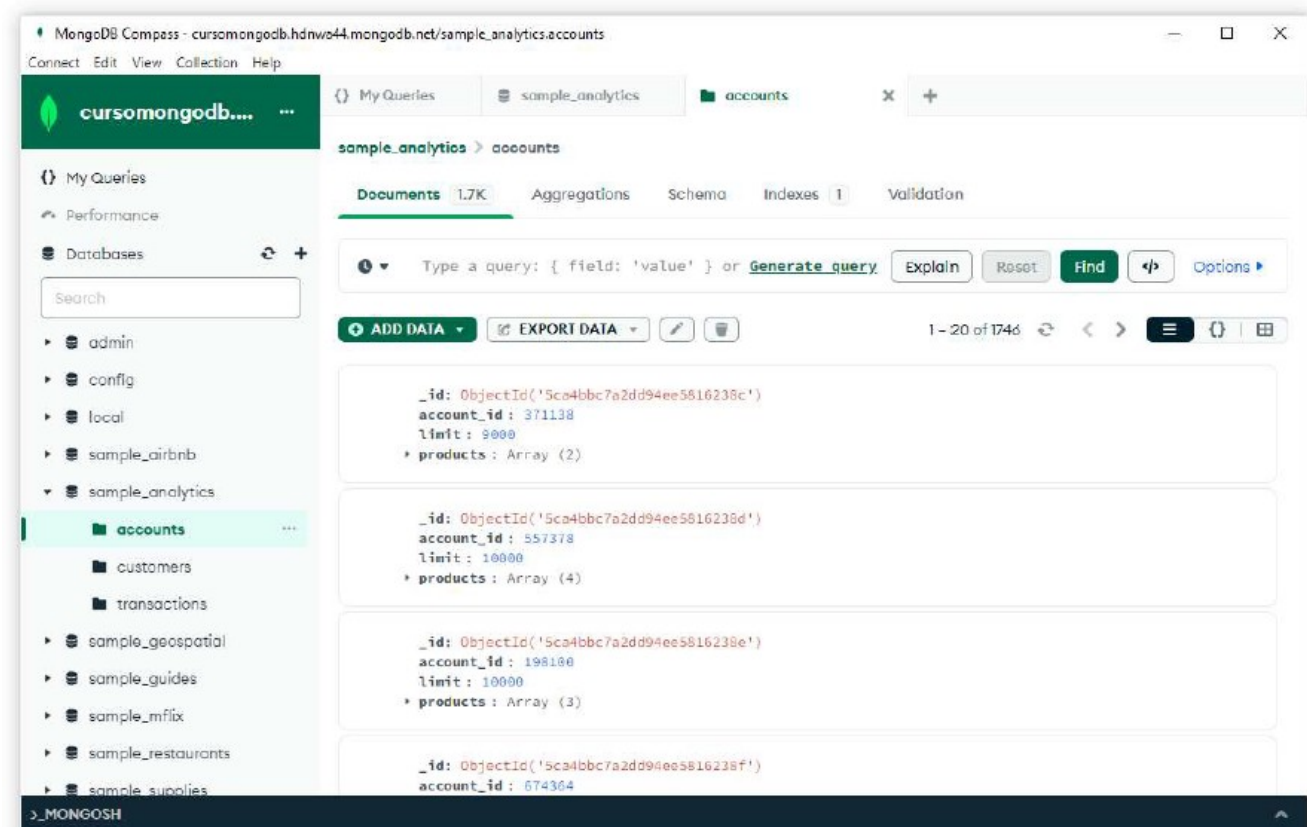
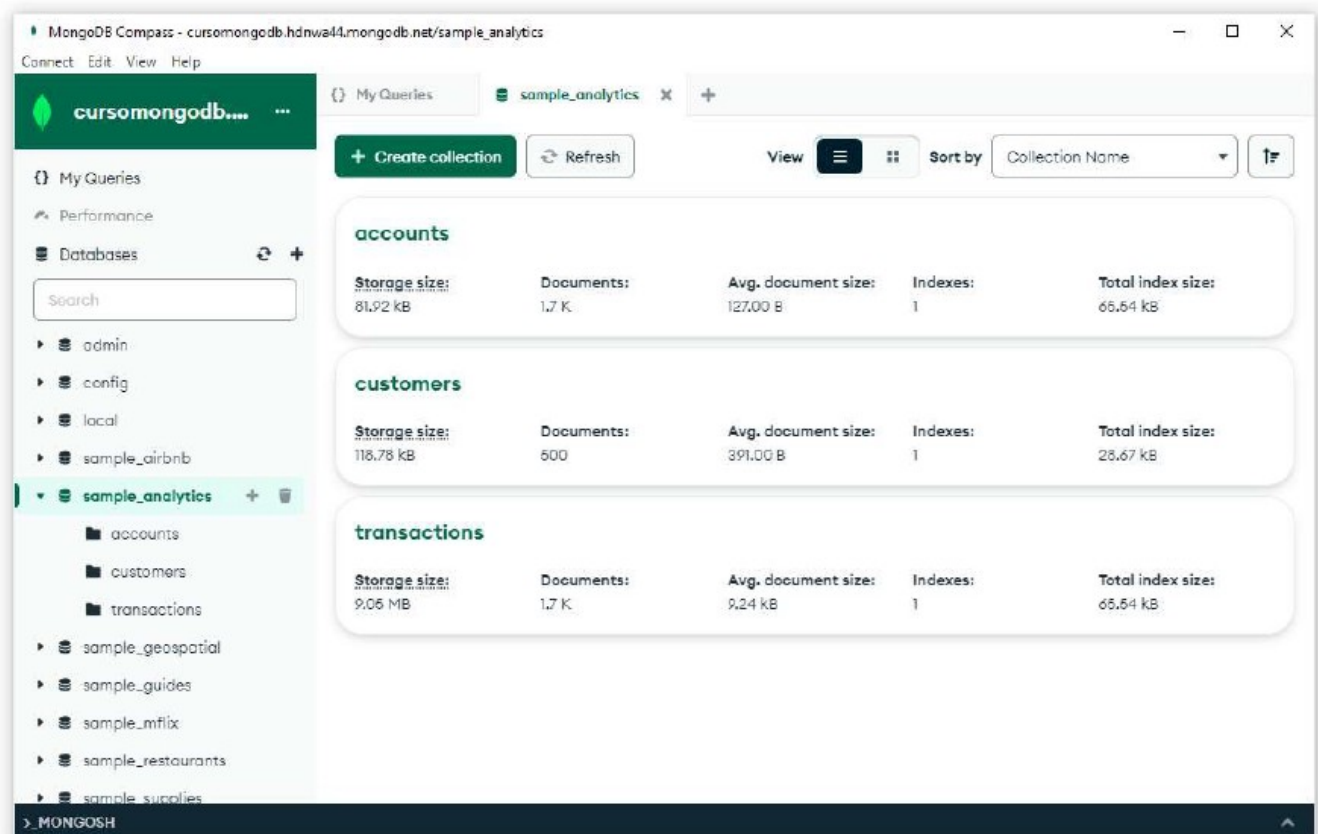
Descargamos
MongoDB Compass

Copiamos la cadena
de conexión

Abrimos MongoDB Compass
y escribimos la cadena de
conexión.

Clic en *Connect*.



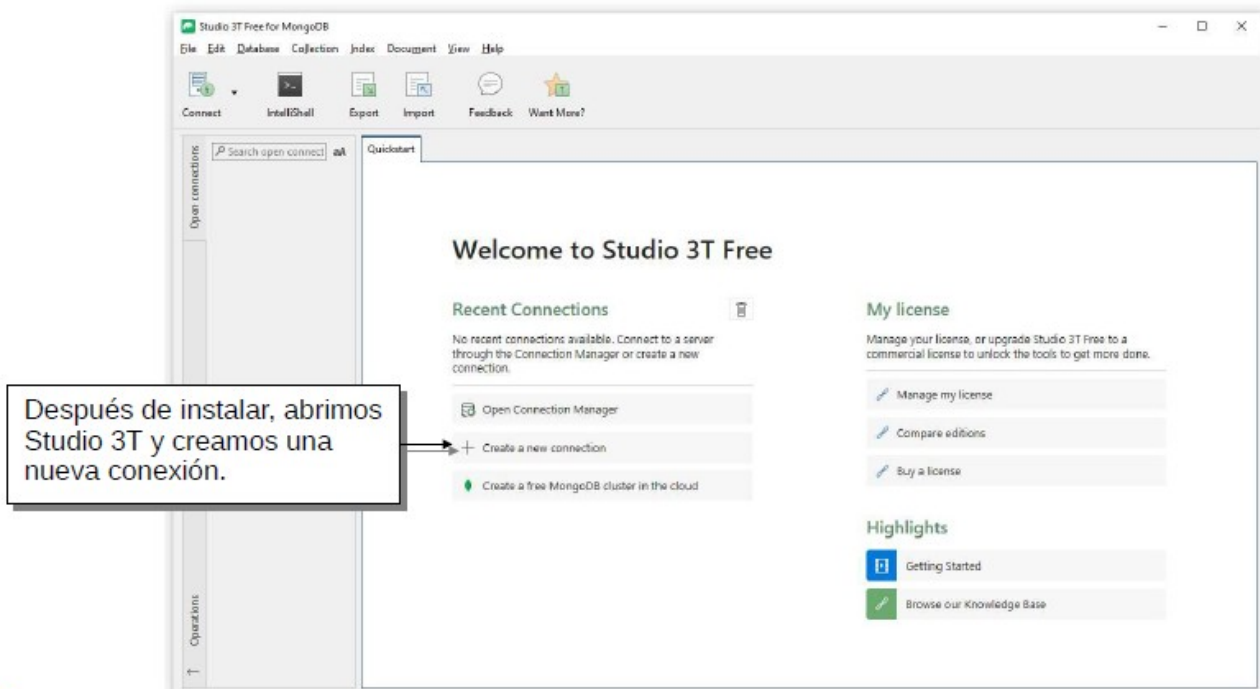


Studio 3T

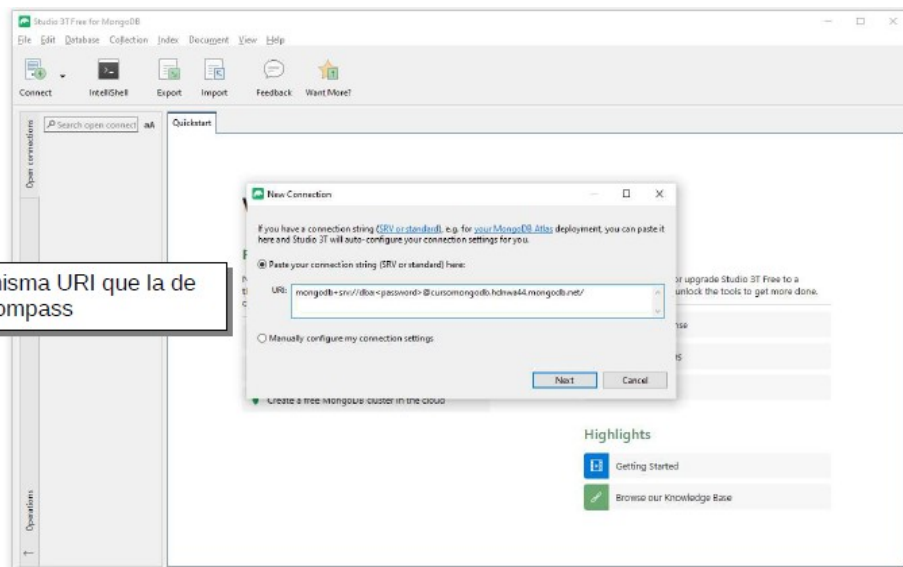
Studio 3T es una interfaz gráfica de usuario para MongoDB.

Tiene una licencia Free y una licencia Premium que podemos probar durante un mes.

Es similar a MongoDB Compass pero sus herramientas recuerdan a otros productos como DBeaver.



Usamos la misma URI que la de MongoDB Compass



Recuerda cambiar el password por el tuyo.

