

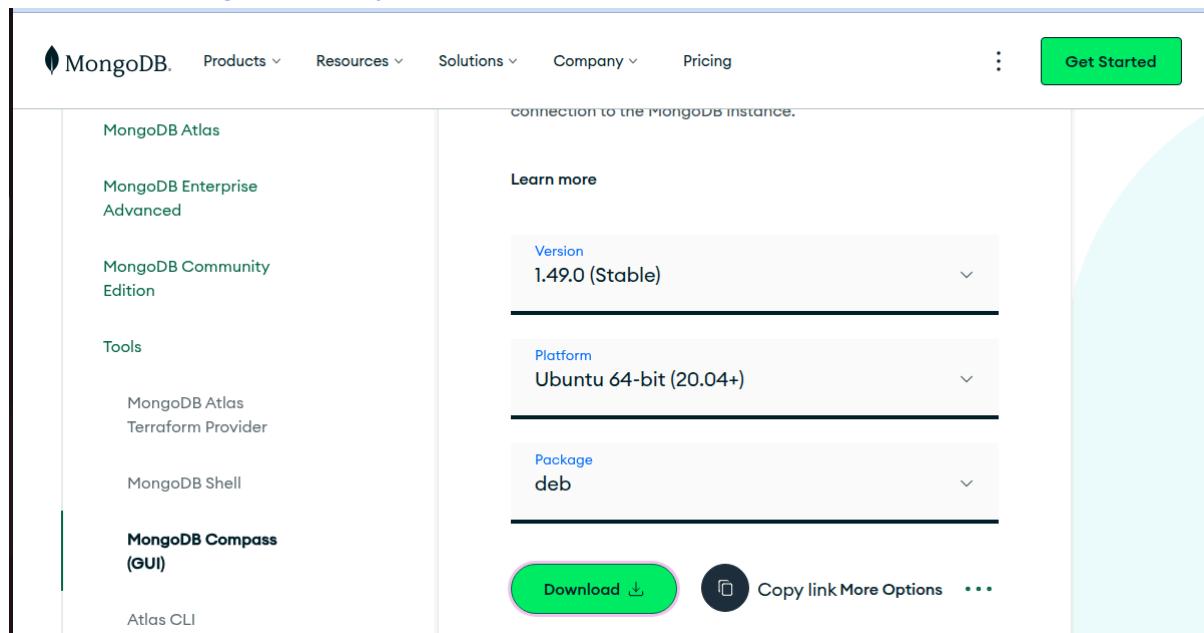
16. [MongoDB] Exploración Visual de Datos con MongoDB Compass

Exploración Visual de Datos con MongoDB Compass

FASE 1 — Preparar la Conexión desde Compass

Descargar MongoDB Compass:

<https://www.mongodb.com/try/download/compass>



Asegúrate de que MongoDB está activo en el servidor de la nave:

- sudo systemctl status mongod

```
ub@forense-ai:~$ sudo systemctl status mongod
[sudo] contraseña para ub:
● mongod.service - MongoDB Database Server
    Loaded: loaded (/usr/lib/systemd/system/mongod.service; enabled; preset: enabled)
    Active: active (running) since Wed 2026-01-21 12:12:13 CET; 1h 22min ago
      Docs: https://docs.mongodb.org/manual/
     Main PID: 9101 (mongod)
        Tasks: 1 (since 21 Jan 2026)
       Memory: 10.3M
          CPU: 262.2M (0.2% avg)
             CPU: 50.3M (0.2% avg)
```

Abre MongoDB Compass y en el campo de conexión escribe:

Para conexión local:

- mongodb://localhost:27017

The image shows two screenshots of the MongoDB Compass application. The top screenshot is a 'New Connection' dialog box. It contains fields for 'URI' (set to 'mongodb://localhost:27017/'), 'Name' (set to 'ub'), 'Color' (set to 'Purple'), and a checked 'Favorite this connection' checkbox. There are also 'Edit Connection String' and 'Advanced Connection Options' buttons. The bottom screenshot shows the main Compass interface with a sidebar for 'Compass' features like 'My Queries' and 'Data Modeling', and a 'CONNECTIONS' list containing 'ub', 'admin', 'andoria_sector', 'config', and 'local'. A central area displays a 3D model of a fishing hook and the text 'Welcome to MongoDB Compass'.

Para conexión remota en la red de aula:

- `mongodb://IP_DEL_SERVIDOR:27017`

This screenshot of the 'New Connection' dialog shows a different URI ('mongodb://192.168.18.142:27017/'). It includes a 'TLS/SSL is disabled. If possible, enable TLS/SSL to avoid security vulnerabilities.' message in a yellow bar at the bottom. The rest of the dialog is identical to the one in the first screenshot, with 'ub' as the connection name and 'Green' as the color.

Edita el archivo de configuración de MongoDB

- `sudo nano /etc/mongod.conf`

```
ub@forense-ai:~$ sudo nano /etc/mongod.conf
```

Busque bindIp

```
# network interfaces
net:
  port: 27017
  bindIp: 127.0.0.1
```

Cambie 127.0.0.1 por 0.0.0.0

```
# network interfaces
net:
  port: 27017
  bindIp: 0.0.0.0
```

Reinicie el servicio MongoDB

- sudo systemctl restart mongod

```
ub@forense-ai:~$ sudo systemctl restart mongod
```

Confirma que MongoDB está escuchando en el puerto 27017

- ss -tulnp | grep 27017

```
ub@forense-ai:~$ ss -tulnp | grep 27017
tcp    LISTEN  0          4096                  0.0.0.0:27017                0.0.0.0:*
```

Permitir los puertos de MongoDB:

- sudo ufw allow 27017/tcp
- sudo ufw reload

```
ub@forense-ai:~$ sudo ufw allow 27017/tcp
Regla añadida
Regla añadida (v6)
ub@forense-ai:~$ sudo ufw reload
El cortafuegos se ha recargado
```

Acceda a MongoDB Compass para establecer una nueva conexión, sustituyendo localhost por la dirección IP del equipo que aloja MongoDB

New Connection

Manage your connection settings

URI 

Edit Connection String 

mongodb://192.168.118.142:27017/

Welcome to MongoDB Compass

Connected to 192.168.118.142:27017

FASE 2 — Exploración de la Biblioteca de Datos

1. Dirígete al botón de Create database

A screenshot of the MongoDB Compass interface. On the left, there's a sidebar with a dark purple header containing the text 'Modeling' and 'CONNECTIONS (1)'. Below this are buttons for 'connections', 'admin', 'andoria_sector', 'config', and 'local'. The main area shows a list of databases under a purple header labeled 'ub'. The databases listed are 'admin', 'andoria_sector', 'config', and 'local'. A red arrow points to the '+' button at the top right of the database list.

2. Nombre de la base de datos: fed_records
3. Nombre de la colección inicial: planets
4. Clic en Create

A screenshot of the 'Create Database' dialog box. It has a title bar 'Create Database'. Under 'Database Name', the value 'fed_records' is entered. Under 'Collection Name', the value 'planets' is entered. There is a checkbox for 'Time-Series' which is unchecked. Below it, a note says: 'Time-series collections efficiently store sequences of measurements over a period of time. [Learn More](#)'. At the bottom, there are 'Cancel' and 'Create Database' buttons. The background shows the MongoDB Compass interface with the 'local' database selected in the sidebar.

FASE 3 — Inserción de Datos Científicos

Abre la colección y pulsa Insert Document.planets

A screenshot of the MongoDB Compass collection view for the 'planets' collection. At the top, there are several icons: a plus sign for inserting, a pencil for editing, a trash can for deleting, and other navigation controls. To the right of these are the numbers '25' and '1-1 of 1'. Below the icons, there are two main options: 'Import JSON or CSV file' and 'Insert document'. The 'Insert document' option is highlighted with a dark gray background. The background of the entire interface shows the 'planets' collection with one document listed.

Inserta Documento

```
{  
  "name": "Vulcan",  
  "species": "Vulcans",  
  "affiliation": "Federation",  
  "warp_capable": true  
}
```

The screenshot shows the MongoDB Compass interface. On the left, there's a sidebar titled 'Data Modeling' with a 'CONNECTIONS' section containing a tree view of connections: 'ub', 'admin', 'andoria_sector', 'config', 'fed_records' (which has a child node 'planets'), and 'local'. The main area is titled 'Insert Document' and says 'To collection fed_records.planets'. It contains a code editor with the following JSON:

```
1  {  
2    "name": "Vulcan",  
3    "species": "Vulcans",  
4    "affiliation": "Federation",  
5    "warp_capable": true  
6  }
```

At the bottom right of the dialog are two buttons: 'Cancel' and 'Insert'.

Agrega un segundo

```
{  
  "name": "Qo'noS",  
  "species": "Klingons",  
  "affiliation": "Klingon Empire",  
  "warp_capable": true  
}
```

Insert Document

To collection fed_records.planets

This screenshot shows the 'Insert Document' dialog again, this time for adding a second document. The JSON content is the same as the first one:

```
1  {  
2    "name": "Qo'noS",  
3    "species": "Klingons",  
4    "affiliation": "Klingon Empire",  
5    "warp_capable": true  
6  }  
7
```

The interface includes a 'VIEW' button at the top right and standard MongoDB Compass navigation icons (refresh, search, etc.) on the far right.

Inserta un tercero:

```
{  
  "name": "Ferenginar",  
  "species": "Ferengi",  
  "affiliation": "Ferengi Alliance",  
}
```

```
        "warp_capable": true  
    }
```

Insert Document

To collection fed_records.planets

VIEW

{}

≡



```
1 ▾ {  
2   "name": "Ferenginar",  
3   "species": "Ferengi",  
4   "affiliation": "Ferengi Alliance",  
5   "warp_capable": true  
6 }  
7 |
```

FASE 4 — Visualización y Edición de Documentos

1. Editar documento

- Haga clic en Edit Document a la derecha de un registro

```
_id: ObjectId('6971de031d1dd9cd3d29257c')  
name : "Vulcan"  
species : "Vulcans"  
affiliation : "Federation"  
warp_capable : true
```

- Cambiar un planeta: `warp_capable`: `true` a: `warp_capable`: `false`

```
_id: ObjectId('6971de031d1dd9cd3d29257c')  
name : "Vulcan"  
species : "Vulcans"  
affiliation : "Federation"  
warp_capable : false
```

Document modified.

CANCEL UPDATE

- Guardar cambios

```
_id: ObjectId('6971de031d1dd9cd3d29257c')  
name : "Vulcan"  
species : "Vulcans"  
affiliation : "Federation"  
warp_capable : false
```

2. Eliminar documento

Haga clic en Delete y, a continuación, confirme la eliminación

The screenshot shows the MongoDB Compass interface. At the top, there are various toolbar icons and a status bar indicating "25" documents, "1-3 of 3", and navigation arrows. A context menu is open with the option "Remove document". Below the toolbar, a document is displayed with the following fields:

```
_id: ObjectId('6971de031d1dd9cd3d29257c')
name : "Vulcan"
species : "Vulcans"
affiliation : "Federation"
warp_capable : false
```

Below the document, a message says "Document flagged for deletion." with "CANCEL" and "DELETE" buttons.

FASE 5 — Consultas Visuales con Filtros

Pulsa el filtro visual y escribe:

- { "affiliation": "Federation" }

Pulsa Apply.

The screenshot shows the MongoDB Compass interface after applying the filter. The search bar now contains the query: {"affiliation": "Federation"}. The results pane displays one document:

```
_id: ObjectId('6971e2341d1dd9cd3d292585')
name : "Vulcan"
species : "Vulcans"
affiliation : "Federation"
warp_capable : true
```

FASE 6 — Agregaciones en la Sala de Análisis

1. Acceda a la pestaña Aggregations

The screenshot shows the MongoDB interface with the "Aggregations" tab selected. The tabs include "Documents" (3), "Aggregations" (selected), "Schema", "Indexes" (1), and "Validation".

2. Añadir una etapa \$group:

```
{  
  "_id": "$affiliation",  
  "total": { "$sum": 1 }  
}
```

3. Haga clic en Run

The screenshot shows the MongoDB Aggregation Pipeline interface. At the top, there is a toolbar with buttons for Explain, Run, Options, and a red arrow pointing to the Run button. Below the toolbar, the pipeline stages are listed under the heading "Untitled - modified". The first stage is "Stage 1 \$group". A red arrow points to the "Stage 1 \$group" section. To the right of the stage, the "Output preview after \$group stage (Sample of 3 documents)" is shown, displaying the following document:

```
_id: "Klingon Empire"
total: 1
```

Below the pipeline, the results are displayed under the heading "ALL RESULTS". It shows three documents with the following data:

- _id: "Klingon Empire"
- total: 1
- _id: "Federation"
- total: 1
- _id: "Ferengi Alliance"
- total: 1

FASE 7 — Inferir Esquemas

Entra en la pestaña Schema dentro de la colección

The screenshot shows the MongoDB Schema tab. At the top, there are tabs for Documents (3), Aggregations, Schema (selected), Indexes (1), and Validation. Below the tabs, there is a search bar with the placeholder "Type a query: { field: 'value' } or [Generate query](#)". There are also buttons for Reset, Analyze, and Options.

Under the Schema tab, there is a section titled "EXPORT SCHEMA" with a link to "This report is based on a sample of 3 documents. [Learn more](#)".

The schema is displayed for three fields:

- _id**: objectid. This field has a timestamp histogram showing data from 2026-01-22 08:27:15 to 2026-01-22 08:39:16. The histogram shows activity primarily between 0:00 and 12:00.
- affiliation**: string. This field has three possible values: Federation, Klingon Empire, and Ferengi Alliance.
- name**: string. This field has three possible values: Qo'nos, Vulcan, and Ferenginar.

FASE 8 — Crear Índices

1. Entra Indexes

The screenshot shows the MongoDB Compass interface with the 'Indexes' tab selected. There is one index listed:

Name & Definition	Type	Size	Usage	Properties	Status
id	REGULAR <small>i</small>	36.9 kB	1 (since Thu Jan 22 2026)	UNIQUE <small>i</small>	READY

2. Haga clic en Create Index

3. Configure:

Field: name

Sort: Ascending

Create Index

fed_records.planets

Index fields

name	▼	1(asc)	▼	+
------	---	--------	---	---

» Options

Cancel **Create Index**

4. Haga clic en Create

The screenshot shows the 'Create Index' dialog. It lists the index configuration:

- Field: name
- Sort: 1(asc)

Below the dialog, a list of existing indexes is shown:

name_1	REGULAR <small>i</small>	20.5 kB	0 (since Thu Jan 22 2026)	READY
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FASE 9 — Desconexión y Cierre de Misión

Cierra Compass.

Detén el servicio MongoDB solo si el servidor necesita entrar en modo sigilo:

- sudo systemctl stop mongod

```
ub@forense-ai:~$ sudo systemctl stop mongod
```