

Politécnico Internacional de Occidente PIO

Curso Gestión de Bases de Datos II

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Grupo 6

Diciembre 2024

## Actividad 1: Bases de datos en MongoDB

```
mongosh mongodb+srv://<credentials>@cluster0.lmxhv.mongodb.net/
Microsoft Windows [Versión 10.0.19045.5131]
(c) Microsoft Corporation. Todos los derechos reservados.

C:\Users\Iarum>mongosh "mongodb+srv://cluster0.lmxhv.mongodb.net/" --apiVersion 1 --username laurabarona
Enter password: *****
Current Mongosh Log ID: 67530c9d359dfc35f586b01c
Connecting to:      mongodb+srv://<credentials>@cluster0.lmxhv.mongodb.net/?appName=mongosh+2.3.2
Using MongoDB:      8.0.3 (API Version 1)
Using Mongosh:       2.3.2
Mongosh 2.3.4 is available for download: https://www.mongodb.com/try/download/shell

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

Warning: Found ~/.mongorc.js, but not ~/.mongoshrc.js. ~/.mongorc.js will not be loaded.
You may want to copy or rename ~/.mongorc.js to ~/.mongoshrc.js.
Atlas atlas-eyolxw-shard-0 [primary] test>
```

```
Ca\ mongosh mongodb+srv://<credentials>@cluster0.lmxhv.mongodb.net/
Atlas atlas-eyolxw-shard-0 [primary] db_Pio> db.estudiante.insertOne({
...   "primer_nombre" : "",
...   "segundo_nombre" : "",
...   "primer_apellido" : "",
...   "segundo_apellido" : "",
...   "ubicacion" : {
...     "direccion" : "",
...     "telefono" : "",
...     "ciudad" : "",
...     "pais" : ""
...   },
...   "habilidades" : ["desarrollador de software"],
...   "intereses" : [""]
... })
{
  acknowledged: true,
  insertedId: ObjectId('6753104f359dfc35f586b01d')
}
Atlas atlas-eyolxw-shard-0 [primary] db_Pio> show dbs
cinema                184.00 KiB
db_Pio                 40.00 KiB
db_ecommerce          256.00 KiB
sample_airbnb         52.76 MiB
sample_analytics       9.60 MiB
sample_geospatial     1.27 MiB
sample_guides         40.00 KiB
sample_mflix          122.49 MiB
sample_restaurants     7.08 MiB
sample_supplies        1.07 MiB
sample_training        50.61 MiB
sample_weatherdata     2.79 MiB
admin                 348.00 KiB
local                 24.22 GiB
Atlas atlas-eyolxw-shard-0 [primary] db_Pio>
```

Atlas

All Organiza...

Access Manager

Billing

All Clusters

Get Help

LAURA

Select Project

Data Services

Charts

DATABASE

Clusters

SERVICES

Atlas Search

Stream Processing

Triggers

Migration

Data Federation

SECURITY

Backup

Database Access

Network Access

Advanced

Goto

LAURA'S ORG - 2022-04-21 > PROJECT 0 > DATABASES

ClusterO

VERSION 8.0.3

REGION AWS N. Virginia (us-east-1)

OverviewReal TimeMetricsCollectionsAtlas SearchPerformance AdvisorOnline ArchiveCmd Line Tools

DATABASES: 12 COLLECTIONS: 30

VISUALIZE YOUR DATAREFRESH

+ Create Database

Search Namespaces

cinema

db\_Pio

db\_ecommerce

sample\_airbnb

sample\_analytics

sample\_geospatial

sample\_guides

db\_Pio

LOGICAL DATA SIZE: 254B STORAGE SIZE: 20KB INDEX SIZE: 20KB TOTAL COLLECTIONS: 1

CREATE COLLECTION

Collection Name	Documents	Logical Data Size	Avg Document Size	Storage Size	Indexes	Index Size	Avg Index Size
estudiante	1	254B	254B	20KB	1	20KB	20KB

```

C:\ mongosh mongodb+srv://<credentials>@cluster0.lmxhv.mongodb.net/
sample_guides      40.00 KiB
sample_mflix       122.49 MiB
sample_restaurants  7.08 MiB
sample_supplies     1.07 MiB
sample_training     50.61 MiB
sample_weatherdata  2.79 MiB
admin               348.00 KiB
local               24.22 GiB
Atlas atlas-eyolxw-shard-0 [primary] db_Pio> db.estudiante.insertMany([
... {
...   "primer_nombre" : "Juan",
...   "segundo_nombre" : "Carlos",
...   "primer_apellido" : "Pérez",
...   "segundo_apellido" : "López",
...   "ubicacion" : {
...     "direccion" : "Calle 123",
...     "telefono" : "555-1234",
...     "ciudad" : "Bogotá",
...     "pais" : "Colombia"
...   },
...   "habilidades" : ["desarrollador de software"],
...   "intereses" : ["programación", "cine"]
... },
... {
...   "primer_nombre" : "Ana",
...   "segundo_nombre" : "María",
...   "primer_apellido" : "García",
...   "segundo_apellido" : "Torres",
...   "ubicacion" : {
...     "direccion" : "Avenida Siempreviva",
...     "telefono" : "555-5678",
...     "ciudad" : "Madrid",
...     "pais" : "España"
...   },
...   "habilidades": ["administrador de sistemas teleinformáticos"],
...   "intereses" : ["seguridad informática", "tecnología"]
... }
... ])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('6753156d359dfc35f586b01e'),
    '1': ObjectId('6753156d359dfc35f586b01f')
  }
}
Atlas atlas-eyolxw-shard-0 [primary] db_Pio>

```

Atlas All Organizations Access Manager Billing All Clusters Get Help LAURA

Select Project Data Services Charts

LAURA'S ORG - 2022-04-21 > PROJECT 0 > DATABASES

ClusterO

VERSION 8.0.3 REGION AWS N. Virginia (us-east-1)

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

DATABASES: 12 COLLECTIONS: 30

+ Create Database

Search Namespaces

cinema db\_Pio users db\_Pio db\_ecommerce sample\_airbnb sample\_analytics

db\_Pio

LOGICAL DATA SIZE: 963B STORAGE SIZE: 36KB INDEX SIZE: 36KB TOTAL COLLECTIONS: 1

CREATE COLLECTION

Collection Name	Documents	Logical Data Size	Avg Document Size	Storage Size	Indexes	Index Size	Avg Index Size
estudiante	3	963B	321B	36KB	1	36KB	36KB

Atlas All Organizations Access Manager Billing All Clusters Get Help LAURA

Select Project Data Services Charts

cinema db\_Pio users db\_Pio db\_ecommerce sample\_airbnb sample\_analytics sample\_geospatial sample\_guides sample\_mflix sample\_restaurants

Find Indexes Schema Anti-Patterns Aggregation Search Indexes

Generate queries from natural language in Compass

INSERT DOCUMENT

Filter Type a query: { field: 'value' } Reset Apply Options

```
{
  "_id": ObjectId("6753156d359dfc35f586b01e"),
  "primer_nombre": "Juan",
  "segundo_nombre": "Carlos",
  "primer_apellido": "Pérez",
  "segundo_apellido": "López",
  "ubicacion": Object,
  "habilidades": Array (1),
  "intereses": Array (2)
}
```

```
{
  "_id": ObjectId("6753156d359dfc35f586b01f"),
  "primer_nombre": "Ana",
  "segundo_nombre": "María",
  "primer_apellido": "García",
  "segundo_apellido": "Torres"
}
```

System Status: Fetching System Status

©2024 MongoDB, Inc. Status Terms Privacy Atlas Blog Contact Sales

```

mongosh mongodb+srv://<credentials>@cluster0.lmxhv.mongodb.net/
...   "intereses": ["fútbol", "series de TV"]
...   },
...   {
...     "primer_nombre": "Valeria",
...     "segundo_nombre": "Cristina",
...     "primer_apellido": "Medina",
...     "segundo_apellido": "Pérez",
...     "ubicacion": {
...       "direccion": "Calle Nueva",
...       "telefono": "555-9012",
...       "ciudad": "Montevideo",
...       "pais": "Uruguay"
...     },
...     "habilidades": ["desarrollador de software", "administrador de sistemas tel
einformáticos"],
...     "intereses": ["música", "cine"]
...   },
...   {
...     "primer_nombre": "Ricardo",
...     "segundo_nombre": "Antonio",
...     "primer_apellido": "Gómez",
...     "segundo_apellido": "López",
...     "ubicacion": {
...       "direccion": "Calle Real",
...       "telefono": "555-5678",
...       "ciudad": "San Salvador",
...       "pais": "El Salvador"
...     },
...     "habilidades": ["desarrollador de software", "UI/UX designer"],
...     "intereses": ["videojuegos", "arte digital"]
...   }
... ]
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('6753172a359dfc35f586b020'),
    '1': ObjectId('6753172a359dfc35f586b021'),
    '2': ObjectId('6753172a359dfc35f586b022'),
    '3': ObjectId('6753172a359dfc35f586b023'),
    '4': ObjectId('6753172a359dfc35f586b024'),
    '5': ObjectId('6753172a359dfc35f586b025'),
    '6': ObjectId('6753172a359dfc35f586b026'),
    '7': ObjectId('6753172a359dfc35f586b027')
  }
}
Atlas atlas-eyolxw-shard-0 [primary] db_Pio>

```

Atlas

All Organiza...

Access Manager

Billing

All Clusters

Get Help

LAURA

Select Project

Data Services

Charts

DATABASE

Clusters

SERVICES

Atlas Search

Stream Processing

Triggers

Migration

Data Federation

SECURITY

Backup

Database Access

Network Access

Advanced

Goto

+ Create Database

Search Namespaces

cinema

db\_Pio

estudiante

db\_ecommerce

sample\_airbnb

sample\_analytics

sample\_geospatial

sample\_guides

sample\_mffix

sample\_restaurants

sample\_supplies

db\_Pio

LOGICAL DATA SIZE: 3.76KB   STORAGE SIZE: 36KB   INDEX SIZE: 36KB   TOTAL COLLECTIONS: 1

CREATE COLLECTION

Collection Name	Documents	Logical Data Size	Avg Document Size	Storage Size	Indexes	Index Size	Avg Index Size
estudiante	11	3.76KB	351B	36KB	1	36KB	36KB



```
mongosh mongodb+srv://<credentials>@cluster0.lmxhv.mongodb.net/

Atlas atlas-eyolxw-shard-0 [primary] db_Pio> db.estudiante.updateOne(
...   { "primer_nombre": "Juan" },
...   { $addToSet: { "habilidades": { $each: ["testing", "devops"] }, "intereses":
{ $each: ["lectura", "viajes"] } } }
... );
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
Atlas atlas-eyolxw-shard-0 [primary] db_Pio>
```

Atlas All Organiza... Access Manager Billing All Clusters Get Help LAURA

Select Project Data Services Charts

DATABASE Clusters SERVICES Atlas Search Stream Processing Triggers Migration Data Federation SECURITY Backup Database Access Network Access Advanced Goto

+ Create Database

Search Namespaces

- cinema
- db\_Pio
  - estudiante
- db\_ecommerce
- sample\_airbnb
- sample\_analytics
- sample\_geospatial
- sample\_guides
- sample\_mflix
- sample\_restaurants
- sample\_supplies

## db\_Pio.estudiante

STORAGE SIZE: 36KB LOGICAL DATA SIZE: 3.76KB TOTAL DOCUMENTS: 11 INDEXES TOTAL SIZE: 36KB

Find Indexes Schema Anti-Patterns Aggregation Search Indexes

Generate queries from natural language in Compass

INSERT DOCUMENT

Filter Type a query: { field: 'value' }

Reset

Apply

Options

```
{
  "_id": ObjectId('6753156d359dfc3f5f586b01e'),
  "primer_nombre": "Juan",
  "segundo_nombre": "Carlos",
  "primer_apellido": "Pérez",
  "segundo_apellido": "López",
  "ubicacion": Object,
  "habilidades": Array (3)
    0: "desarrollador de software"
    1: "testing"
    2: "devops"
  "intereses": Array (4)
    0: "programación"
    1: "cine"
    2: "lectura"
    3: "viajes"
}
```

```
mongosh mongodb+srv://<credentials>@cluster0.lmxhv.mongodb.net/
upsertedCount: 0
}
Atlas atlas-eyolxw-shard-0 [primary] db_Pio> db.estudiante.find()
[
  {
    _id: ObjectId('6753104f359dfc35f586b01d'),
    primer_nombre: '',
    segundo_nombre: '',
    primer_apellido: '',
    segundo_apellido: '',
    ubicacion: { direccion: '', telefono: '', ciudad: '', pais: '' },
    habilidades: [ 'desarrollador de software' ],
    intereses: [ '' ]
  },
  {
    _id: ObjectId('6753156d359dfc35f586b01e'),
    primer_nombre: 'Juan',
    segundo_nombre: 'Carlos',
    primer_apellido: 'Pérez',
    segundo_apellido: 'López',
    ubicacion: {
      direccion: 'Calle 123',
      telefono: '555-1234',
      ciudad: 'Bogotá',
      pais: 'Colombia'
    },
    habilidades: [ 'desarrollador de software', 'testing', 'devops' ],
    intereses: [ 'programación', 'cine', 'lectura', 'viajes' ]
  },
  {
    _id: ObjectId('6753156d359dfc35f586b01f'),
    primer_nombre: 'Ana',
    segundo_nombre: 'María',
    primer_apellido: 'García',
    segundo_apellido: 'Torres',
    ubicacion: {
      direccion: 'Avenida Siempreviva',
      telefono: '555-5678',
      ciudad: 'Madrid',
      pais: 'España'
    },
    habilidades: [ 'administrador de sistemas teleinformáticos' ],
    intereses: [ 'seguridad informática', 'tecnología' ]
  },
  {
    _id: ObjectId('6753172a359dfc35f586b020'),
```

```
mongosh mongodb+srv://<credentials>@cluster0.lmxhv.mongodb.net/
}
]
Atlas atlas-eyolxw-shard-0 [primary] db_Pio> db.estudiante.find({ "primer_nombre":
"Ana", "primer_apellido": "García" })
[
  {
    _id: ObjectId('6753156d359dfc35f586b01f'),
    primer_nombre: 'Ana',
    segundo_nombre: 'María',
    primer_apellido: 'García',
    segundo_apellido: 'Torres',
    ubicacion: {
      direccion: 'Avenida Siempreviva',
      telefono: '555-5678',
      ciudad: 'Madrid',
      pais: 'España'
    },
    habilidades: [ 'administrador de sistemas teleinformáticos' ],
    intereses: [ 'seguridad informática', 'tecnología' ]
  }
]
Atlas atlas-eyolxw-shard-0 [primary] db_Pio>
```

```
mongosh mongodb+srv://<credentials>@cluster0.lmxhv.mongodb.net/
  habilidades: [ 'administrador de sistemas teleinformáticos' ],
  intereses: [ 'seguridad informática', 'tecnología' ]
}
]
Atlas atlas-eyolxw-shard-0 [primary] db_Pio> db.estudiante.deleteMany({ "habilidades": { $ne: "desarrollador de software" } })
{ acknowledged: true, deletedCount: 5 }
Atlas atlas-eyolxw-shard-0 [primary] db_Pio>
```

Cloud MongoDB Atlas interface showing the database explorer for **db\_Pio.estudiante**.

**Database Explorer:**

- Left sidebar: Clusters, SERVICES (Atlas Search, Stream Processing, Triggers, Migration, Data Federation), SECURITY (Backup, Database Access, Network Access, Advanced), Goto.
- Database: **db\_Pio**
- Collection: **estudiante**

**Database Details:**

- Database: **db\_Pio.estudiante**
- STORAGE SIZE: 36KB | LOGICAL DATA SIZE: 1.63KB | TOTAL DOCUMENTS: 5 | INDEXES TOTAL SIZE: 36KB
- Find | Indexes | Schema Anti-Patterns | Aggregation | Search Indexes

**Query Interface:**

- Filter: Type a query: { field: 'value' }
- Buttons: Reset, Apply, Options
- Generate queries from natural language in Compass
- INSERT DOCUMENT

**Query Results: 1-5 OF 5**

```
{
  "_id": ObjectId('675321c2359dfc35f586b03c'),
  "primer_nombre": "Juan",
  "segundo_nombre": "Carlos",
  "primer_apellido": "Pérez",
  "segundo_apellido": "López",
  "ubicacion": Object,
  "habilidades": Array (3),
  "intereses": Array (4)
}
```