

5 Gestionar el clúster Atlas: securizar datos, backup y monitorización

COPE
networks

 **mongoDB**®

Securización de datos

<https://www.mongodb.com/docs/atlas/security-kms-encryption/>

Encryption at Rest

Los datos son encriptados a nivel de proyecto para los nuevos cluster generados, se utiliza como clave el sistema de autenticación del proveedor cloud (AWS, Azure o Google Cloud)



Securización de datos

Encryption at Rest

ItWebLearn... Access Manager Billing All Clusters Get Help Pedro

Project 0 Atlas App Services Charts

DEPLOYMENT

- Database
- Data Lake **PREVIEW**

DATA SERVICES

- Triggers
- Data API
- Data Federation

SECURITY

- Quickstart
- Database Access
- Network Access
- Advanced**

New On Atlas 9

Encryption at Rest using your Key Management

Provide your AWS Key Management Service (AWS KMS), Azure Key Vault, or Google Cloud KMS encryption key details to enable [Encryption at Rest](#) with the WiredTiger™ Encrypted Storage Engine.

Newly deployed clusters will use your encryption key by default. Pre-existing clusters will not use your encryption key until you enable them individually. This feature will increase your daily cluster pricing. [Read more.](#)

Enable WiredTiger™ Encrypted Storage Engine

AWS KMS | AZURE KEY VAULT | GOOGLE CLOUD KMS

▼ Encryption Key

Provide credentials for your encryption key. The IAM user should have **permission to encrypt and decrypt data for this key**. Read how to [create an encryption key](#).

AWS IAM role

Choose an existing AWS IAM role

[Authorize a new role](#)

Customer Master Key ID

e.g. 123a4b56-12a3-12a3-1234-12345example

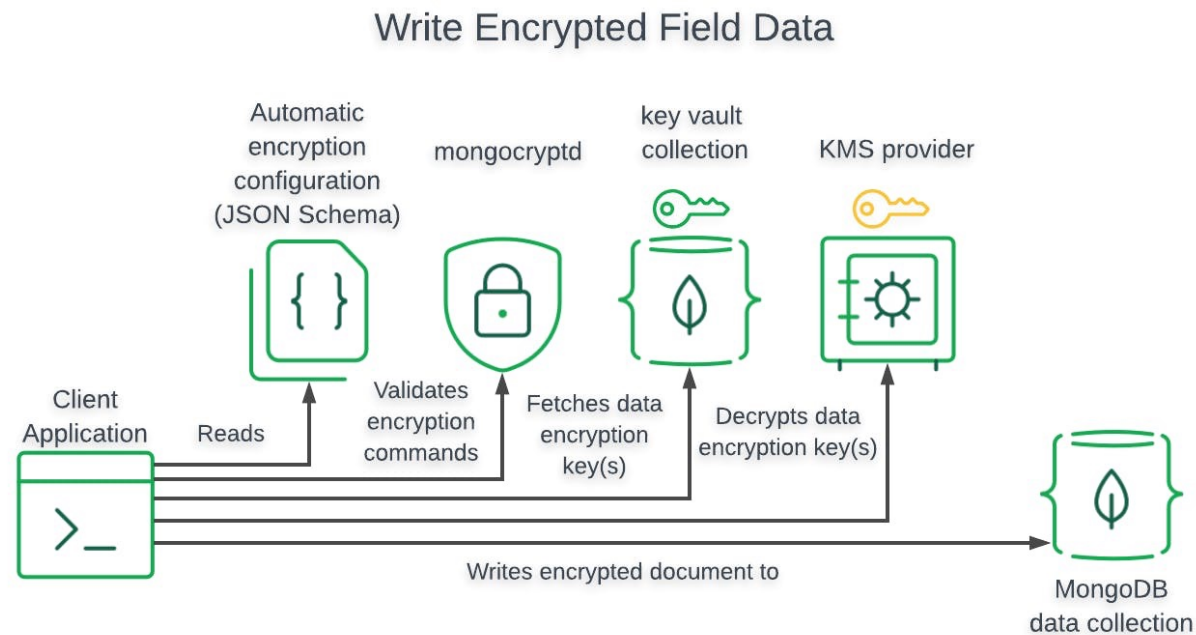
Customer Master Key Region

N. Virginia (us-east-1)

Save Cancel

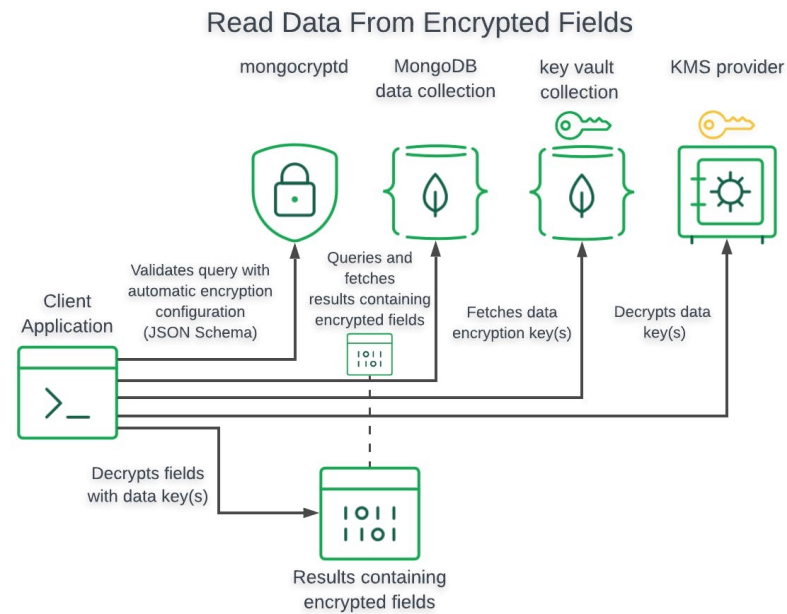
Securización de datos

Client-Side Field Level Encryption



Securización de datos

Client-Side Field Level Encryption



Autenticación y RBAC

<https://www.mongodb.com/docs/manual/tutorial/enable-authentication/>

Autenticación

```
use admin
db.createUser(
  {
    user: "myUserAdmin",
    pwd: passwordPrompt(), // or cleartext password
    roles: [
      { role: "userAdminAnyDatabase", db: "admin" },
      { role: "readWriteAnyDatabase", db: "admin" }
    ]
  }
)
```

Autenticación y RBAC

Autenticación

Aunque el usuario se establece a nivel de base de datos, los datos de este usuario se gestionan de manera centralizada en la colección `system.users` de la base de datos `admin`.



Autenticación y RBAC

<https://www.mongodb.com/docs/manual/core/authorization/>

RBAC

- Roles. Agrupación lógica del conjunto de privilegios que son asignados a los usuarios.
- Privilegios. Especificación del permiso para realizar operaciones sobre los recursos.
- Recursos. Los componentes del sistema sobre los que podemos operar, bases de datos, colecciones, índices, etc.
- Acciones. Operaciones que podemos llevar a cabo en MongoDB sobre los recursos, lectura, escritura, borrado, backup, etc...

Autenticación y RBAC

Custom roles

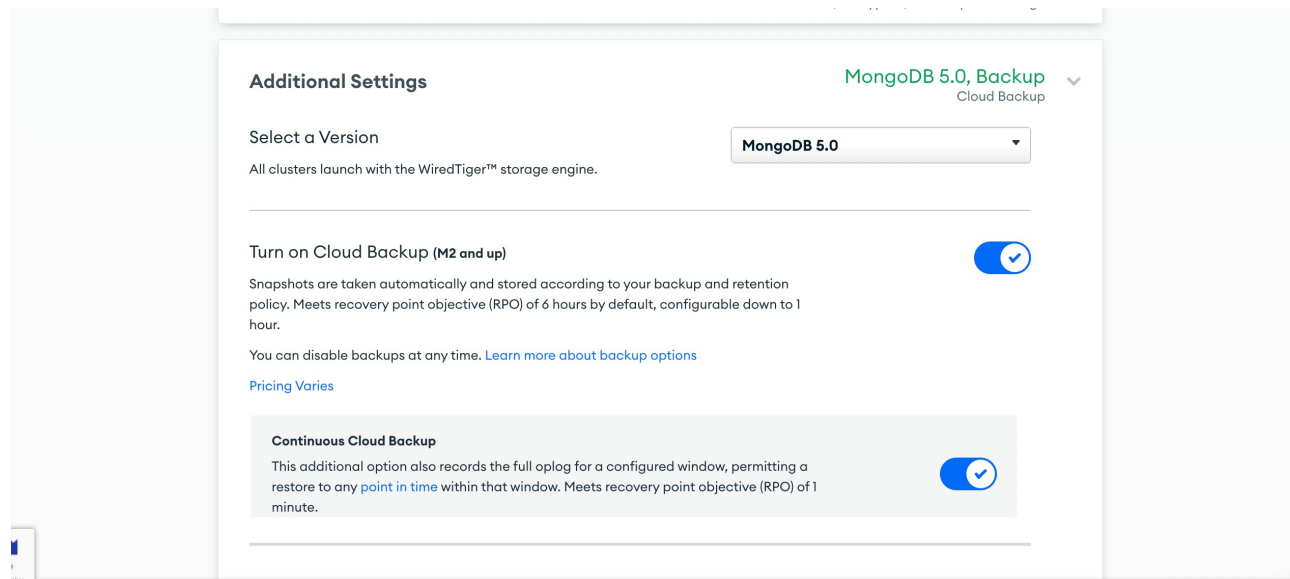
```
db.createRole(documento) // También es especificado a nivel de base de datos
{
  role: <nombre>,
  privileges: [
    {resource: <recurso>, actions: [<accion1>, <accion2>, ...]}
  ],
  roles: [
    <otros-roles>
  ]
}
```

Backup MongoDB Atlas

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

Cloud backup

Se establece automáticamente para clusters M2 en adelante



Backup MongoDB Atlas

Cloud backup

ITWEBLEARNING > PROJECT 0 > DATABASES

BigClusterTest

BACKUP TYPE
Cloud Backup

OverviewReal TimeMetricsCollectionsSearchProfilerPerformance AdvisorBackupOnline Archive


SnapshotsRestores & DownloadsBackup Policy

LAST SNAPSHOT 07/01/22 - 08:39 AMNEXT ESTIMATED SNAPSHOT 07/01/22 - 02:13 PMTOTAL SNAPSHOT COUNT 1

TAKE SNAPSHOT NOWPOINT IN TIME RESTORE

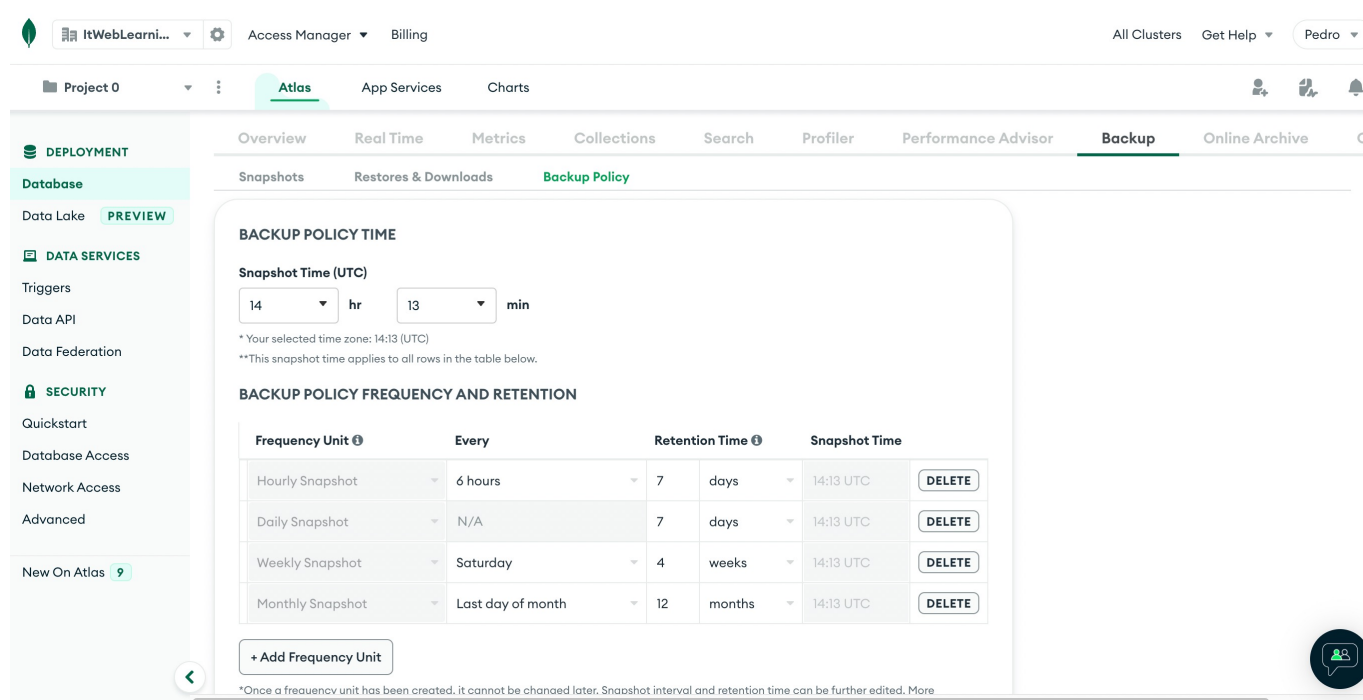
View Snapshots by:

ALLON-DEMANDPOLICY

Time Created ↕	Retention ↕	Frequency ↕	Cluster Type ↕	Provider & Regions ↕	Used Size ↕	MongoDB Version ↕	Encryption Key ID ↕	Actions
07/01/22 - 08:39 AM	7 days Edit	Hourly	Replica Set	AWS, eu-west-3	1.54 GB	5.0.9	Not enabled	RESTORE  DOWNLOAD

Backup MongoDB Atlas

Backup policy



The screenshot shows the MongoDB Atlas interface for configuring a backup policy. The left sidebar contains navigation links for Deployment, Database, Data Services, and Security. The main content area is titled 'Backup Policy' and includes sections for 'Backup Policy Time' and 'Backup Policy Frequency and Retention'.

Backup Policy Time

Snapshot Time (UTC): 14 hr 13 min

* Your selected time zone: 14:13 (UTC)
** This snapshot time applies to all rows in the table below.

Backup Policy Frequency and Retention

Frequency Unit	Every	Retention Time	Snapshot Time	
Hourly Snapshot	6 hours	7 days	14:13 UTC	DELETE
Daily Snapshot	N/A	7 days	14:13 UTC	DELETE
Weekly Snapshot	Saturday	4 weeks	14:13 UTC	DELETE
Monthly Snapshot	Last day of month	12 months	14:13 UTC	DELETE

+ Add Frequency Unit

*Once a frequency unit has been created, it cannot be changed later. Snapshot interval and retention time can be further edited. More

Backup MongoDB Atlas

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

Restore

We are deploying your changes: 0 of 3 servers complete (current action: restoring data on 3 servers, waiting for backup snapshots to be ready)

ITWEBLEARNING > PROJECT 0 > DATABASES

BigClusterTest

BACKUP TYPE
Cloud Backup

Overview

Real Time

Metrics

Collections

Search

Profiler

Performance Advisor

Backup

Online Archive

Cloud

Snapshots

Restores & Downloads

Backup Policy

Start Time	Delivery Type	Snapshot Completed Time	Status	Expiration Date
07/01/22 - 09:29 AM	Automated Restore	07/01/22 - 08:39 AM	Preparing restore...	

Notes:

* Automated restore can sometimes restart on its own due to various reasons. This is natural. If this persists, however, please contact support for assistance.

** For multiple manual downloads of the same snapshot, all in-progress downloads will be shut down automatically after 1 successful download attempt

Backup MongoDB Atlas

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

Export Cloud backup

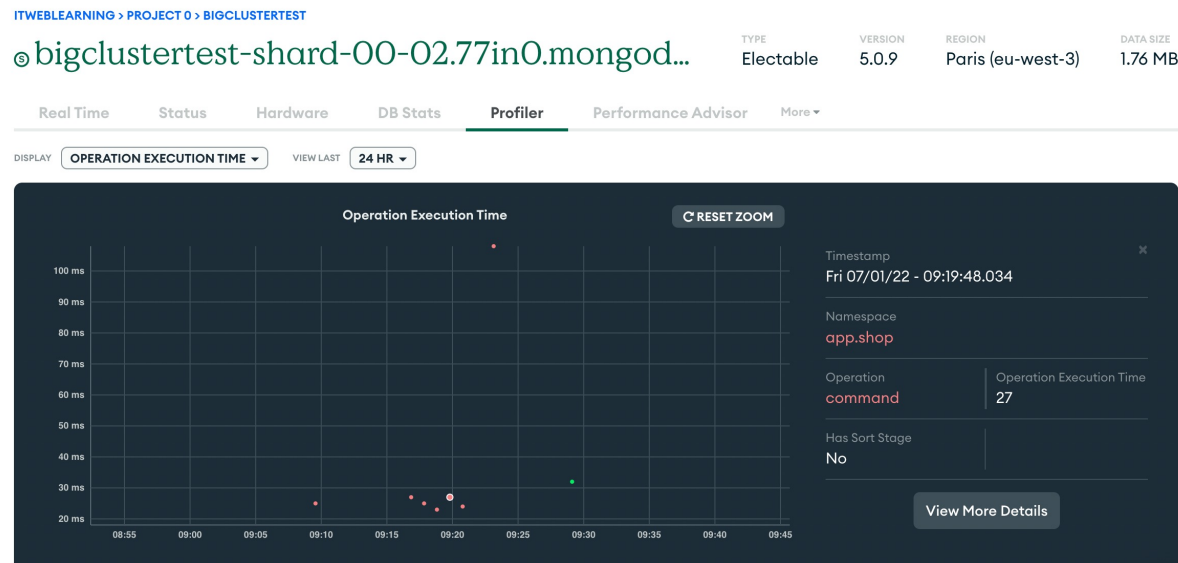
Limitado a exportación de las snapshots a buckets S3 de AWS



Monitoring MongoDB Atlas

<https://www.mongodb.com/docs/atlas/monitoring-alerts/>

Slow queries



Monitoring MongoDB Atlas

Slow queries

The screenshot displays the MongoDB Atlas Profiler interface. The left sidebar shows the navigation menu with sections for DEPLOYMENT, DATA SERVICES, and SECURITY. The main panel is titled 'Atlas' and shows the 'Profiler' tab. A table lists queries with columns for Timestamp, Operation Execution Time, and Keys Examined. The query at Fri 07/01/22 - 09:19:48.034 is highlighted. A detailed view of this query is shown on the right, displaying the parsed log document.

Query List:

Timestamp	Operation Execution Time	Keys Examined
Fri 07/01/22 - 09:23:08.249	108	
Fri 07/01/22 - 09:20:46.562	24	
Fri 07/01/22 - 09:19:48.034	27	
Fri 07/01/22 - 09:18:48.916	23	
Fri 07/01/22 - 09:17:50.193	25	
Fri 07/01/22 - 09:16:50.980	27	
Fri 07/01/22 - 09:09:33.606	25	

Query Details (Fri 07/01/22 - 09:19:48.034):

Operation Execution Time	Num Yields
27	0

Response Length	In Memory Sort
230	No

Parsed Log Document:

```
{
  "type": "command",
  "ns": "app.shop",
  "appName": "MongoDB Compass",
  "command": {
    "insert": "shop",
    "documents": 999,
    "ordered": false,
    "lsid": {
      "id": {
        "sbinary": {
          "base64": "CmE1F5510BKqqVQ24p9VCA==",
          "subType": "04"
        }
      }
    },
    "txnNumber": 7,
    "sclusterTime": {
      "clusterTime": {
        "$timestamp": {
          "t": 1656667128,
          "i": 1000
        }
      },
      "signature": {
        "hash": {
          "sbinary": {
            "base64": "10sRkEHRDgJNY0z2hKJfY",
            "subType": "00"
          }
        },
        "keyId": 7115035804577038000
      }
    }
  }
}
```


Monitoring MongoDB Atlas

El profiler recolecta las operaciones para ayudar a detectar las consultas y operaciones ineficientes.

Se puede establecer y configurar a nivel de base de datos.

Dispone de los siguiente niveles de profiling:

- Level 0. Desactivado (por defecto)
- Level 1. Las operaciones que superen el valor de slows (100ms por defecto)
- Level 2. Todas las operaciones.

Monitoring MongoDB Atlas

Dispone de los siguiente métodos:

- `db.getProfilingStatus()`
- `db.setProfilingLevel(<level>)`

Monitoring MongoDB Atlas

Se puede establecer a nivel de instancia:

```
mongod --profile <nivel>
```

Guarda la información en la base de datos admin y colección system.profile:

```
db.system.profile.find()
```

Gracias por tu atención

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