

4 Migración y conexión al cluster Atlas

COPE
networks

 **mongoDB**®

Cluster MongoDB Atlas

<https://www.mongodb.com/docs/database-tools/mongorestore/>

Migración mediante backup y restore

```
mongorestore <string-uri-cluster> --username <nombre-usuario> <ruta-archivos-backup>
```



Cluster MongoDB Atlas

<https://www.mongodb.com/docs/database-tools/mongoimport/>

Migración mediante import

```
mongorestore <string-uri-cluster> --username <nombre-usuario> --db="<base-de-datos>" --collection="<colección>" --file="<archivo>" --type=<json|csv|tsv>
```



Cluster MongoDB Atlas

Migración mediante Compass

MongoDB Compass - clustertest.77in0.mongodb.net/gimnasio.sales

Connect View Collection Help

clustertest.77in0.mongodb.net

14 DBS 29 COLLECTIONS

☆ FAVORITE

HOSTS

- clustertest-shard-00-01.77i...
- clustertest-shard-00-02.77i...
- clustertest-shard-00-00.77i...

CLUSTER

Replica Set (atlas-g74adm...)

3 Nodes

EDITION

MongoDB 5.0.9 Enterprise

My Queries

Databases

Filter your data

- admin
- clinica
- gimnasio
 - clientes
 - cps
 - sales

> MONGOSH

Documents gimnasio.sales

0 DOCUMENTS 1 INDEXES

OPTIONS FIND RESET REFRESH

Displaying documents 0 - 0 of 0

Import To Collection gimnasio.sales

Select File

500000 Sales Records.csv

Select Input File Type

JSON CSV

Options

Select delimiter COMMA

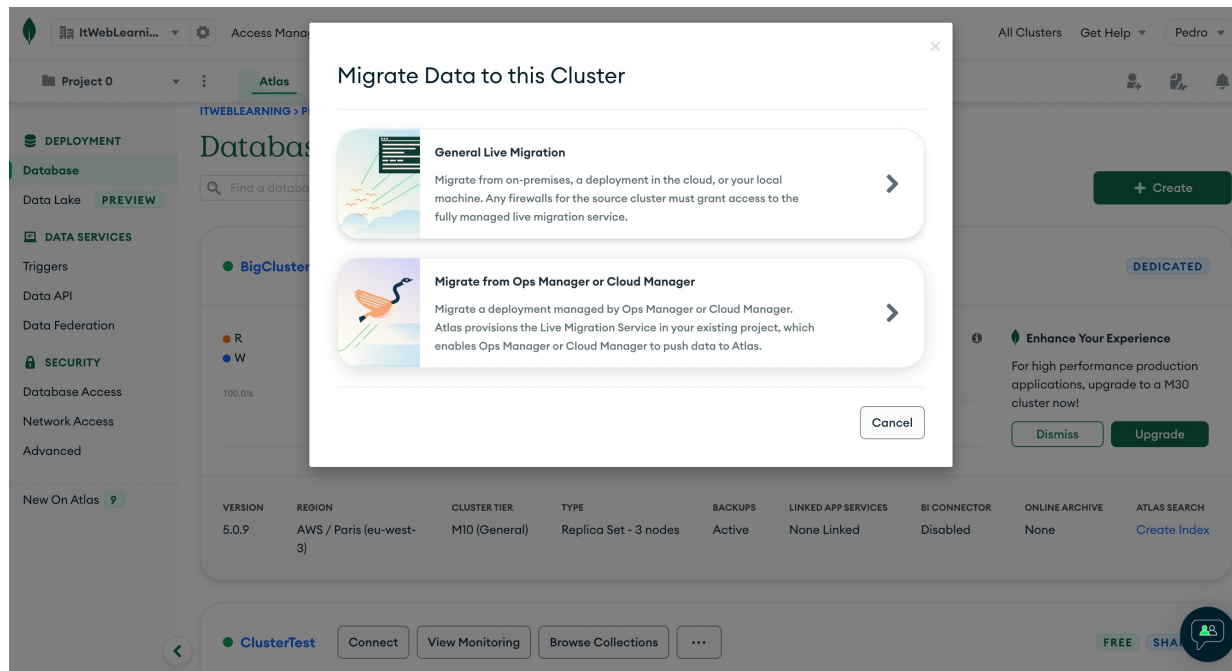
☒ Ignore empty strings

☐ Stop on errors

<input checked="" type="checkbox"/> Unit Price Number	<input checked="" type="checkbox"/> Unit Cost Number	<input checked="" type="checkbox"/> Total Revenue Number	<input checked="" type="checkbox"/> Total Cost Number	<input checked="" type="checkbox"/> Total Profit Number
9.33	6.92	14862.69	11023.56	3839.13
109.28	35.84	503890.08	165258.24	338631.84
421.89	364.69	151880.40	131288.40	20592.00
109.28	35.84	61415.36	20142.08	41273.28
47.45	31.79	188518.85	126301.67	62217.18
9.33	6.92	12866.07	9542.68	3323.39
47.45	31.79	28327.65	18978.63	9349.02
47.45	31.79	70036.20	46922.04	23114.16
651.21	524.96	583484.16	470364.16	113120.00
437.20	263.33	3396169.60	2045547.44	1350622.16

Cluster MongoDB Atlas

Migración mediante General Live Migration | Ops/Cloud Manager



Replication

<https://www.mongodb.com/docs/manual/replication/>

Un replica set o cluster es un grupo de servidores que mantienen el mismo set de datos, para:

- ALTA DISPONIBILIDAD
- Incremento en la capacidad de lectura
- Copias adicionales de los datos para propósitos dedicados
- Reporting
- Recuperación de desastres
- Backup

Replication

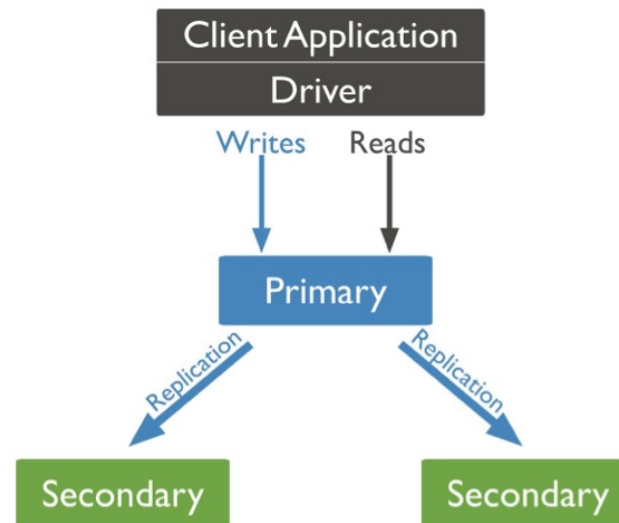
¿Es el replica set un sistema de escalado horizontal?

En principio no, porque las operaciones de escritura solo se producen en uno de los miembros, con lo cual el escalado horizontal solo podría llevarse a cabo con la arquitectura sharding.

Pero, en operaciones de lectura si que podemos aprovechar la distribución del cluster para descargar al primario de lecturas repartiendo de esta forma la capacidad de procesamiento, lo que se podría considerar como un escalado horizontal.

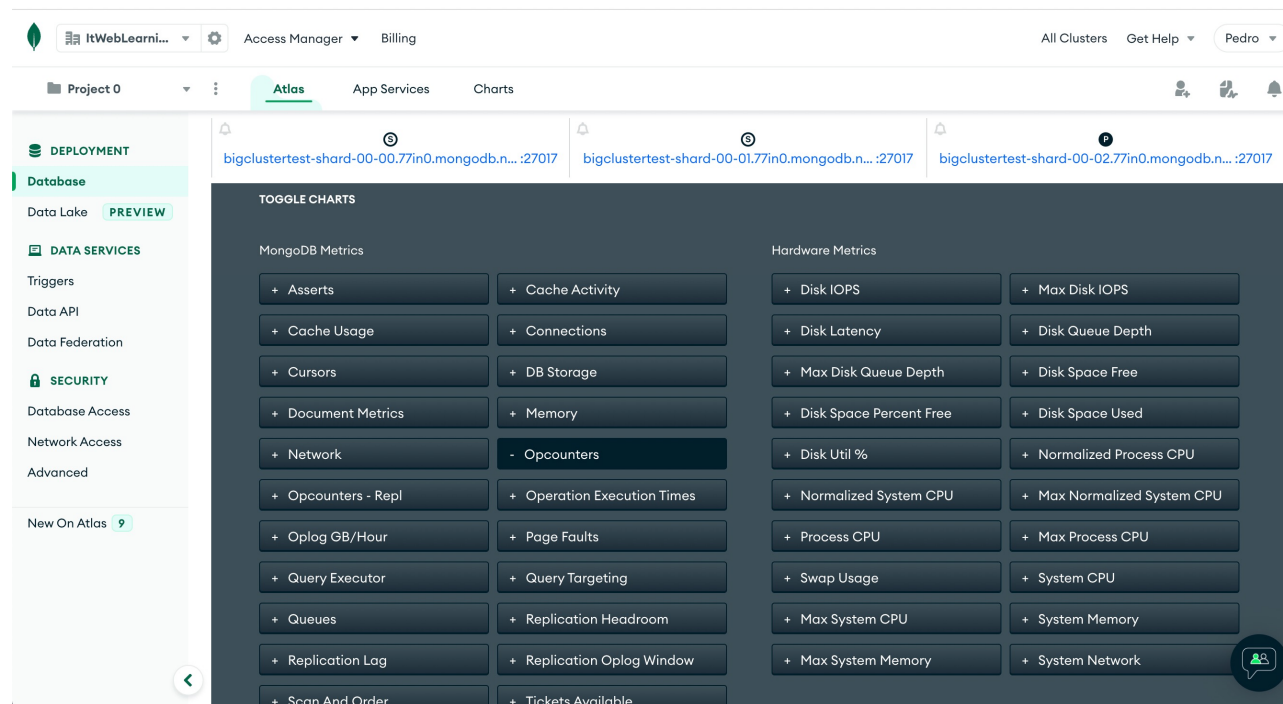
Replication on premise

Replica set puede y debe ser desplegado también on premise y está disponible para Community Server



Replication on Atlas

Los cluster MongoDB Atlas lo son por definición replica set



Replication on Atlas

Replica set "transparente"

En los Shared cluster: M0, M2 y M5

En los Dedicated cluster: M10, M20 y resto "sin configuración avanzada"

Replication on Atlas

Replica set "transparente"

[CLUSTERS](#) > CREATE A DEDICATED CLUSTER

Create a Dedicated Cluster

Welcome to MongoDB Atlas! We've recommended some of our most popular options, but feel free to customize your cluster to your needs. For more information, check our [documentation](#).

Serverless

Dedicated

FREE Shared

Cloud Provider & Region

AWS, Paris (eu-west-3) ▼

aws

Google Cloud

Azure

★ Recommended region ⓘ

NORTH AMERICA	EUROPE	AUSTRALIA
N. Virginia (us-east-1)	Stockholm (eu-north-1) ★	Sydney (ap-southeast-2) ★
Ohio (us-east-2) ★	Ireland (eu-west-1) ★	ASIA
N. California (us-west-1)	London (eu-west-2) ★	Hong Kong (ap-east-1) ★
Oregon (us-west-2) ★	Paris (eu-west-3) ★	Jakarta (ap-southeast-3) ★

Replication on Atlas

Replica set "configuración avanzada"

En los Dedicated
cluster: M30 en adelante




The screenshot shows the MongoDB Atlas deployment page. At the top, it says 'MongoDB. MONGODB ATLAS' and 'Deploy a cloud database'. Below this, a subtitle reads: 'Experience the best of MongoDB on AWS, Azure, and Google Cloud. Choose a deployment option to get started.' There are three main cards for deployment options:

- Serverless**: For application development and testing, or workloads with variable traffic. Minimal configuration required. Features include: Pay only for the operations you run, Resources scale seamlessly to meet your workload, and Always-on security and backups. A 'Create' button is at the bottom, with pricing 'Starting at \$0.10/1M reads'.
- Dedicated** (highlighted with a green border): For production applications with sophisticated workload requirements. Advanced configuration controls. Features include: Network isolation and fine-grained access controls, On-demand performance advice, and Multi-region and multi-cloud options available. A 'Create' button is at the bottom, with pricing 'Starting at \$0.08/hr*' and a note '*estimated cost \$56.94/month'.
- Shared** (labeled 'FREE'): For learning and exploring MongoDB in a cloud environment. Basic configuration options. Features include: No credit card required to start, Explore with sample datasets, and Upgrade to dedicated clusters for full functionality. A 'Create' button is at the bottom, with pricing 'Starting at FREE'.

At the bottom left, there is a link 'I'll do this later'. At the bottom right, there is a link 'Advanced Configuration Options'.

Replication on Atlas

Replica set "configuración avanzada"







**Multi-Cloud, Multi-Region & Workload Isolation** (M10+ clusters)
Distribute data across clouds   or regions for improved availability and local read performance, or introduce read-only and analytics nodes. [Learn more](#)

☒

As configured below, your cluster is:

✓ Available during partial region outage ✓ Available during full region outage ✓ Available during a cloud provider outage

Electable nodes for high availability
Configure 3, 5, or 7 nodes across multiple regions to better withstand data center outages
★ Recommended region ⓘ

Provider	Region	Priority	Nodes	Action
AWS ▼	 Paris (eu-west-3) ▼	HIGHEST	1	
Azure ▼	 Ireland (northeurope) ▼		1	
GCP ▼	 London (europe-west2) ▼		1	
+ Add a provider/region				
Total: 3 Electable Nodes				

Read-only nodes for optimal local reads
Add replicas in additional regions to optimize for local reads in any of your service areas

Provider	Region	Nodes	Action
+ Add a provider/region			
Total: 0			



Replication on Atlas

Replica set "configuración avanzada"

- Electable nodes
- Read-only nodes
- Analytics nodes

Autoscaling on Atlas

<https://www.mongodb.com/docs/atlas/cluster-autoscaling/>

Con autoscaling activado, Atlas escala al siguiente tier si se cumple para cualquier nodo del cluster uno de los siguientes criterios:

- Uso medio de CPU > 75% en la última hora
- Uso de memoria > 75% en la última hora


Autoscaling on Atlas

Atlas escala al menor tier si se cumple para cualquier nodo del cluster uno de los siguientes criterios:

- Uso medio de CPU y memoria < 50% en las últimas 24 horas
- El cluster no ha sido escalado hacia abajo manual o automáticamente durante las últimas 24 horas

Autoscaling on Atlas

Atlas escala también el storage cuando el espacio de disco usado supera el 90%.

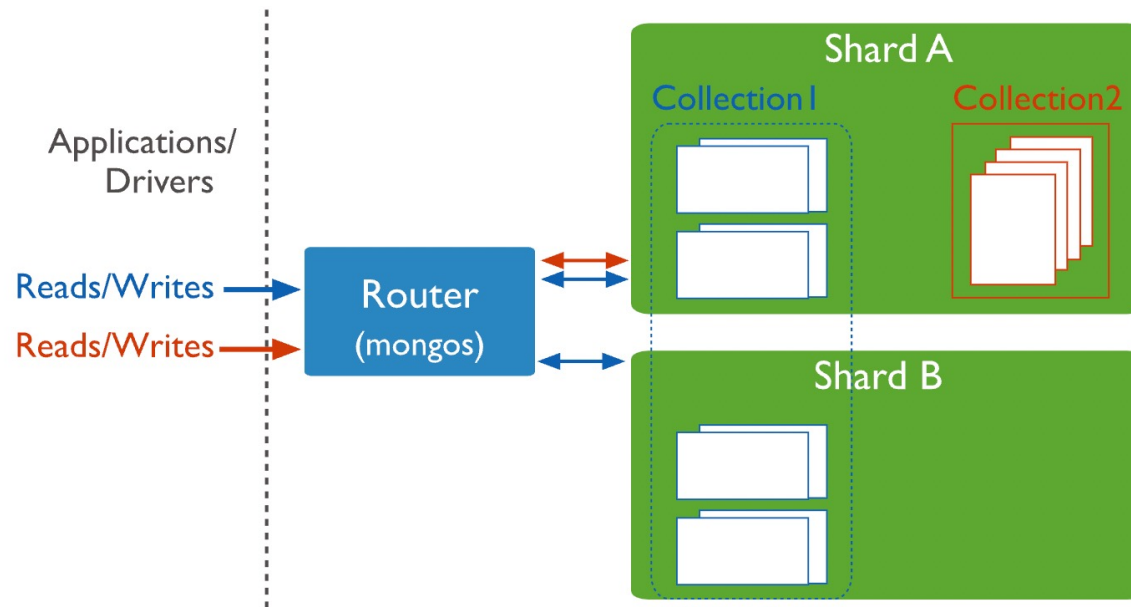
	tier	RAM	storage	vCPU	price
	✓ M30	8 GB	40 GB	2 vCPUs	from \$0.59/hr
Class	General				
Storage	40 GB is included in the base price.				
	10 GB  512 GB				40 GB
Auto-scale	<input checked="" type="checkbox"/> Cluster Tier Scaling View docs				
	Minimum cluster size M30		Maximum cluster size M40		
	<input checked="" type="checkbox"/> Allow cluster to be scaled down				
	<input checked="" type="checkbox"/> Storage Scaling ⓘ				
IOPS	<input type="checkbox"/> Provision IOPS ⓘ				
	3000 IOPS				
Additional Info	3000 max connections Up to 10 Gigabit network performance				
	M40	16 GB	80 GB	4 vCPUs	from \$1.15/hr

Sharding

<https://www.mongodb.com/docs/manual/sharding/>

Arquitectura distribuida de los clusters de servidores de base de datos MongoDB en la que los datos de una colección se reparten entre los diferentes shards (partición) para escalar horizontalmente nuestros sistemas.

Sharding on premise



Sharding on Atlas

Consideraciones en Atlas

Cluster M30 o superiores

Advanced Settings

Shard your cluster (M30 and up)

[Sharding](#) supports high throughput and large datasets, and can be increased as data requirements grow. Sharded clusters cannot be converted to [replica sets](#).



2 Shards

Looking for more than 50 shards? [Contact MongoDB](#)

Sharding on Atlas

Consideraciones en Atlas

Monitorización del estado

`sh.status()`

Gracias por tu atención

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