

MongoDB

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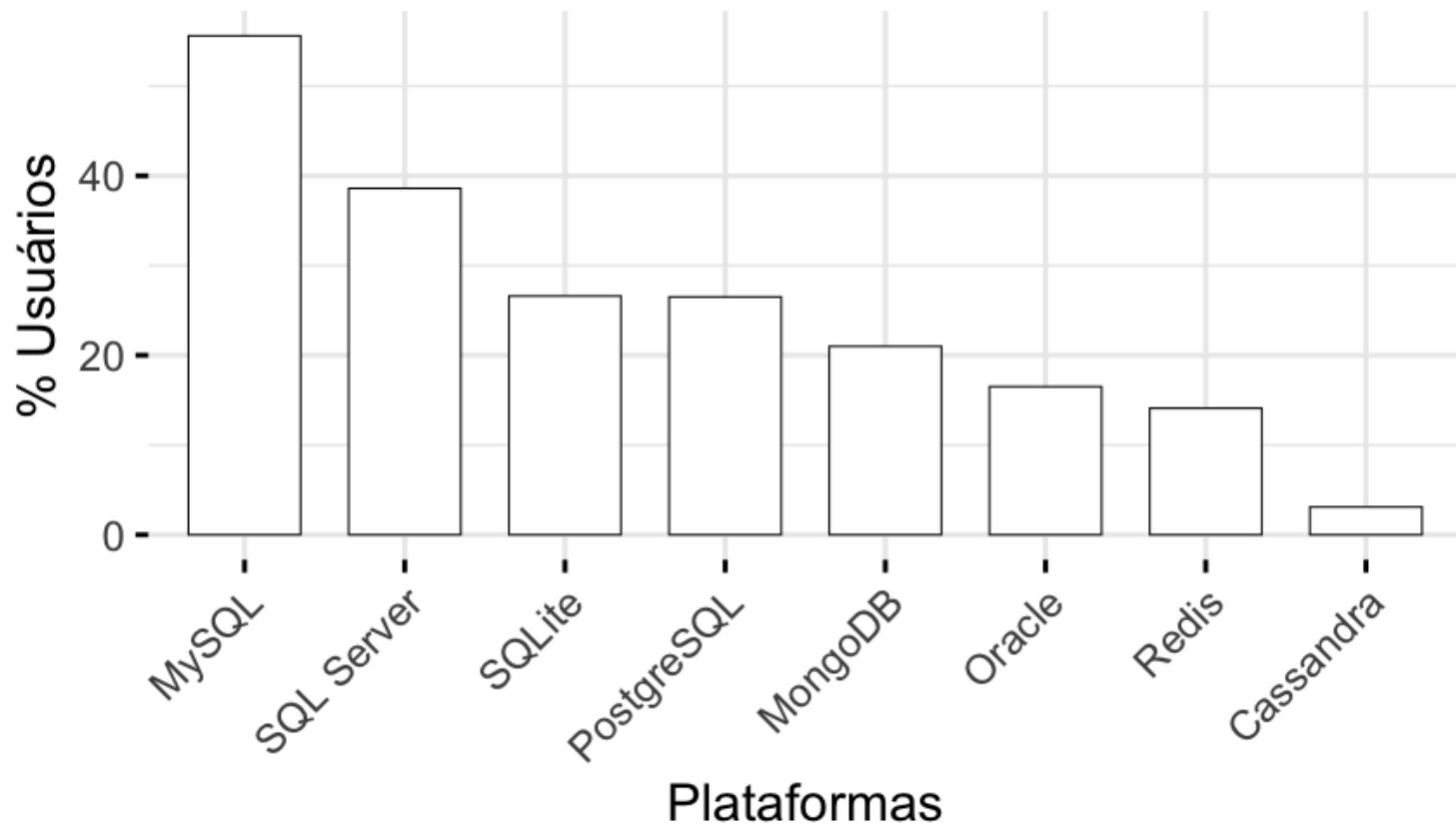
Introdução ao MongoDB

- Código aberto;
- Gratuito;
- Alta performance;
- Sem esquemas;
- Orientado a documentos;
- Implementado em C++;

Orientado a Documentos

- Orientado a documentos JSON;
- Lembrete:
 - documentos JSON possuem estrutura hierárquica;
 - podem ser facilmente utilizados pelo R ou outras ferramentas para realização de analítica;
 - suportam hierarquias complexas e mantêm índices;

Popularidade no StackOverflow em 2017



Efeitos Práticos

- Cada documento é autossuficiente;
- Cada documento possui todas as informações de que possa precisar;
- Lembrete:
 - em SQL, evitam-se repetições e combinam-se tabelas via chaves;
- Evitam-se JOINS;
- Desenha-se a base de dados de forma que as *queries* busquem apenas uma chave e retornem todas as informações necessárias;
- Preço: espaço em disco;

Utilização de MongoDB

- Foco em *big data*;
- Escalonamento horizontal (*sharding*) - desempenho;
- Escalonamento vertical (*replica sets*) - multicore;
- Se os dados não possuem formato fixo, MongoDB é uma boa opção;
- (J/B)SON não possuem esquemas;
- Opção natural para sistemas web. Exemplo: Comércio eletrônico - detalhes de produtos;

Quando não utilizar MongoDB?

- Quando relacionamentos entre múltiplas entidades for essencial;
- Quando existirem múltiplas chaves externas e JOINS;
- Expectativas em MongoDB:
 - Documentos autossuficientes;
 - Mínimo de chaves;
 - etc;

Disponibilidade

- MongoDB Atlas - Database as a Service (AWS, GCP, Azure);
- Linux;
- MacOS;
- RHEL;
- Windows;

Uso do pacote mongolite

- Sempre monta-se uma conexão via `mongo()`;
- O arquivo pode ser remoto ou local;
- Contagem de registros via `con$count()`;
- Remoção de coleção via `con$drop()`;
- Inserção de coleção via `con$insert()`;

```
library(tibble)
library(mongolite)
myurl = "mongodb://readwrite:test@mongo.opencpu.org:43942/jeroen_test"
con <- mongo("mtcars", url = myurl)
if(con$count() > 0) con$drop()
con$insert(mtcars)
```

```
## List of 5
## $ nInserted : num 32
## $ nMatched   : num 0
## $ nRemoved   : num 0
## $ nUpserted  : num 0
## $ writeErrors: list()
```

```
stopifnot(con$count() == nrow(mtcars))
```

Uso do pacote mongolite

- Seleção de dados presentes no banco de dados fia `con$find()`;
- No pacote `mongolite`, remover o objeto de conexão, `con`, já desconecta a sua sessão do banco de dados;
- Mas também existe o método `disconnect()` para realizar a desconexão;

```
mydata <- con$find()  
stopifnot(all.equal(mydata, mtcars))  
con$drop()  
rm(con)
```

Coleções Maiores e Seleções mais Complexas

- Inserção de um conjunto de dados mais volumoso;

```
library(nycflights13)
## subconjunto pq o servidor eh publico
flights = flights[sample(nrow(flights), 10000), ]
m <- mongo(collection = "nycflights", url=myurl)
m$drop()
m$insert(flights)
```

```
## List of 5
## $ nInserted   : num 10000
## $ nMatched    : num 0
## $ nRemoved    : num 0
## $ nUpserted   : num 0
## $ writeErrors: list()
```

Seleções mais Complexas

- `find()` é análogo ao `SELECT * FROM tabela;`
- É possível ordenar os dados já na seleção;
- As chamadas devem acontecer usando formato JSON;

```
m$count('{"month":1, "day":1}')
```

```
## [1] 19
```

```
jan1 <- m$find('{"month":1,"day":1}', sort='{"distance":-1}')  
head(jan1) %>% as_tibble()
```

```
## # A tibble: 6 x 19
```

	year	month	day	dep_time	sched_dep_time	dep_delay	arr_time
	<int>	<int>	<int>	<int>	<int>	<dbl>	<int>
## 1	2013	1	1	1720	1725	-5	2121
## 2	2013	1	1	1937	1905	32	2250
## 3	2013	1	1	628	630	-2	1016
## 4	2013	1	1	1059	1053	6	1342
## 5	2013	1	1	1730	1730	0	2126
## 6	2013	1	1	1959	2000	-1	2310

```
## # ... with 12 more variables: sched_arr_time <int>, arr_delay <dbl>, 12 / 32
```

Ordenação em Grandes Bases

- Bases volumosas exigem a existência de um índice para permitir a ordenação;
- O índice pode ser adicionado via `index()`;
- `find()` aceita o argumento `sort=`.

```
# criacao de indice eh essencial para grandes volumes de dados  
m$index(add = "distance")
```

```
##   v key._id key.distance      name      ns  
## 1 2      1          NA    _id_ jeroen_test.nycflights  
## 2 2     NA          1 distance_1 jeroen_test.nycflights
```

```
allflights <- m$find(sort='{"distance":-1}')
```

Seleção de Colunas Específicas

- Utiliza-se `find()`;
- Adiciona-se o argumento `fields=`, que recebe a lista (em JSON) das variáveis de interesse;
- Ao especificar colunas de interesse, o MongoDB retorna uma coluna adicional, `_id`, que corresponde a um identificador interno do banco de dados;

```
# Select columns
jan1 <- m$find('{"month":1,"day":1}',
              fields = '{"_id":0, "distance":1, "carrier":1}')
head(jan1)
```

```
##   carrier distance
## 1      EV      266
## 2      UA     2227
## 3      DL     1096
## 4      UA      997
## 5      US      214
## 6      DL     1035
```

Identificação de Ocorrências Únicas

- O método `distinct()` retorna o que são valores únicos de um certo campo;
- Ele pode receber condições para serem avaliadas durante a execução;

```
# List unique values  
m$distinct("carrier")
```

```
## [1] "WN" "AA" "US" "9E" "EV" "MQ" "DL" "UA" "B6" "VX" "FL" "AS" "HA" "YV"  
## [15] "OO" "F9"
```

```
m$distinct("carrier", '{"distance":{">":3000}}')
```

```
## [1] "UA" "HA"
```

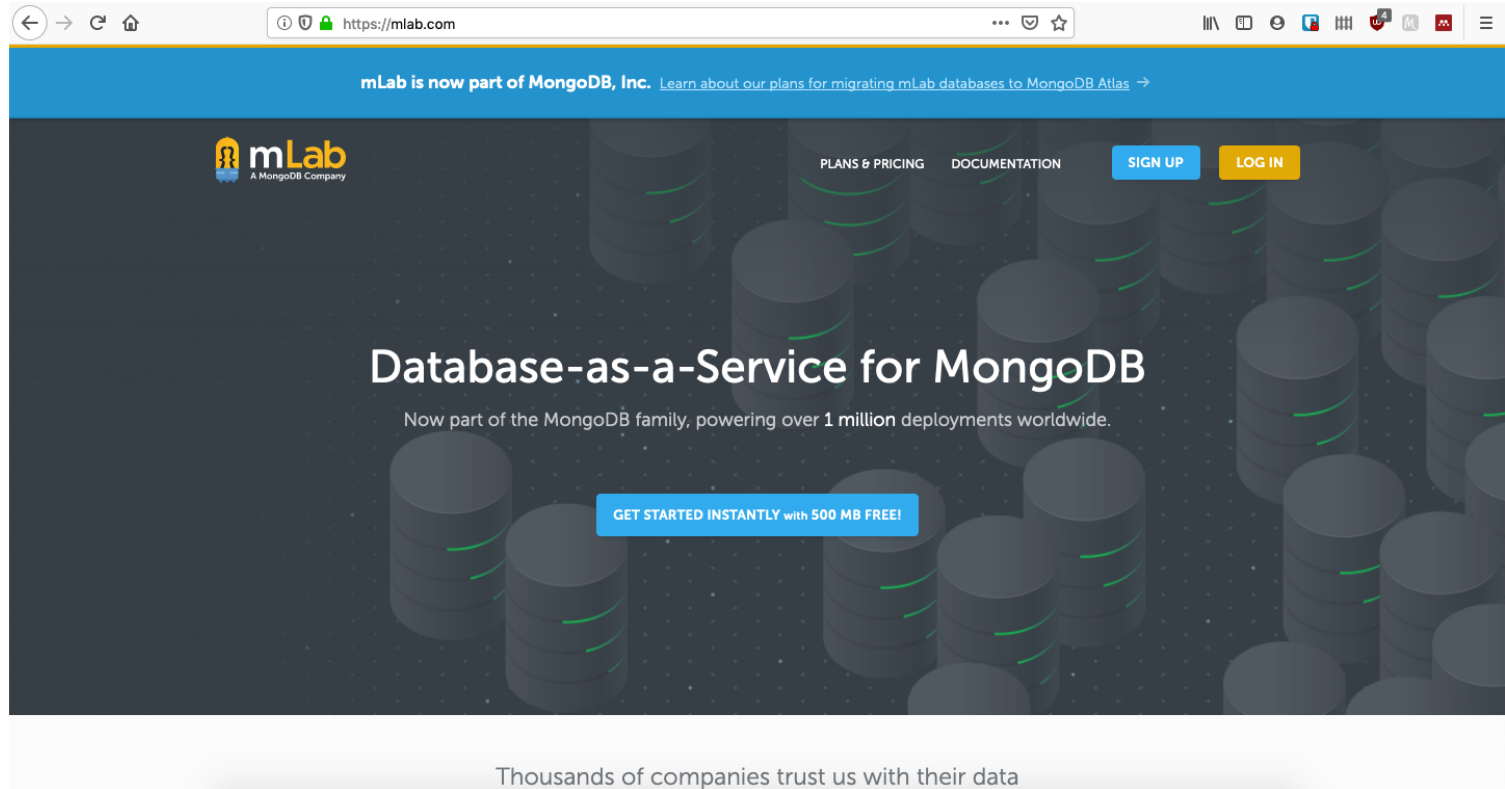
Tabulação de Dados em MongoDB

- O método `aggregate()` permite a tabulação de dados;
- Ele exige, em seu primeiro argumento, a apresentação de um *pipeline* para cálculos desejados;

```
# Tabulate
m$aggregate(['{"$group": {"_id": "$carrier",
                        "count": {"$sum": 1},
                        "average": {"$avg": "$distance"}}}'])
```

##	_id	count	average
## 1	F9	14	1620.0000
## 2	00	2	453.5000
## 3	AS	10	2402.0000
## 4	9E	536	551.2071
## 5	US	632	572.6487
## 6	HA	9	4983.0000
## 7	AA	1024	1362.7559
## 8	WN	359	995.4624
## 9	VX	149	2507.6510
## 10	YV	11	343.5455
## 11	FL	103	672.7087

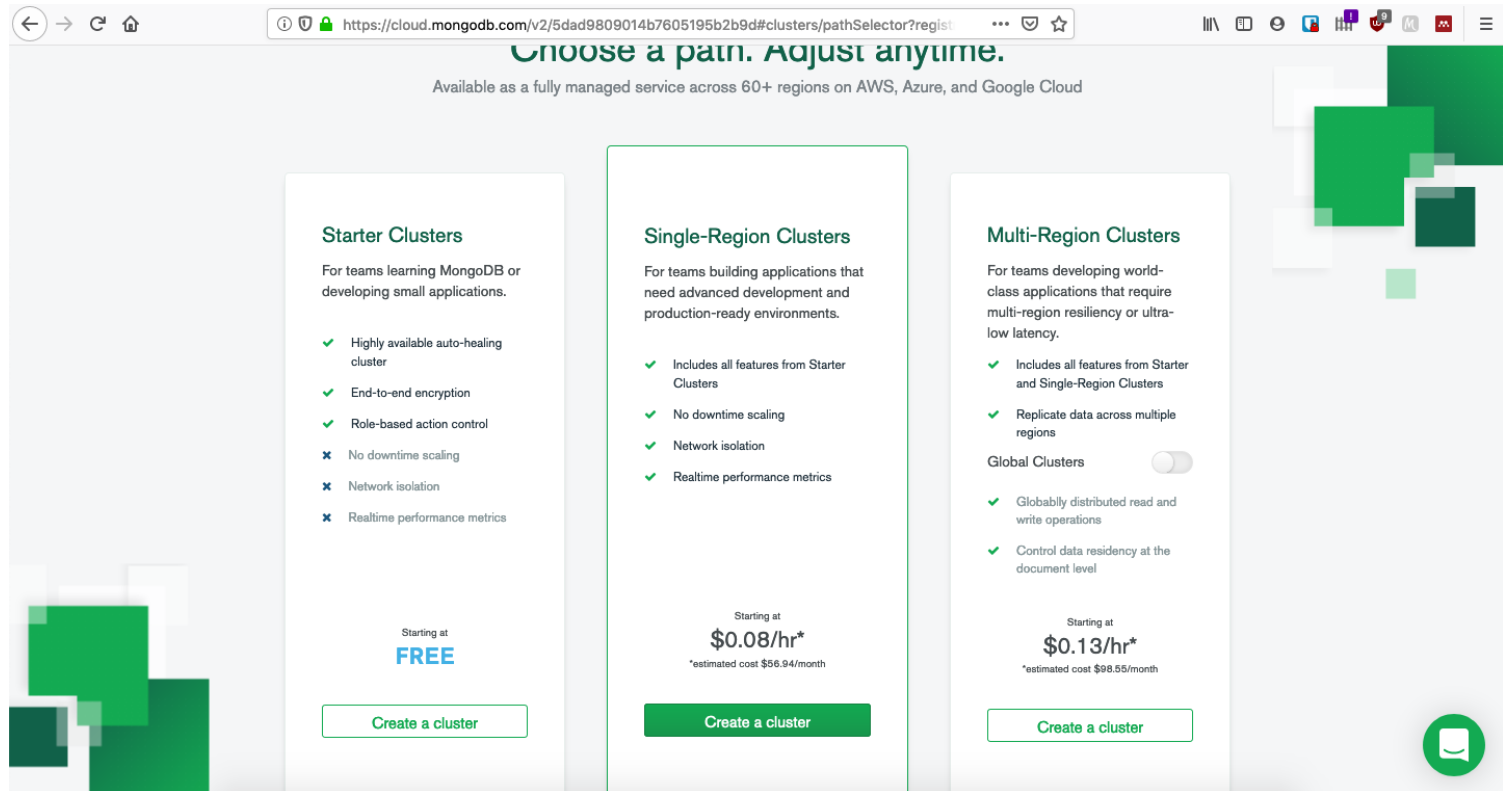
Criando sua instância para testes: mlab.com



Criando sua instância para testes: CREATE ACCOUNT

[illegible]

Criando sua instância para testes: FREE



Choose a path. Adjust anytime.

Available as a fully managed service across 60+ regions on AWS, Azure, and Google Cloud

Starter Clusters

For teams learning MongoDB or developing small applications.

- ✓ Highly available auto-healing cluster
- ✓ End-to-end encryption
- ✓ Role-based action control
- ✗ No downtime scaling
- ✗ Network isolation
- ✗ Realtime performance metrics

Starting at
FREE

Create a cluster

Single-Region Clusters

For teams building applications that need advanced development and production-ready environments.

- ✓ Includes all features from Starter Clusters
- ✓ No downtime scaling
- ✓ Network isolation
- ✓ Realtime performance metrics

Starting at
\$0.08/hr*
*estimated cost \$6.94/month

Create a cluster

Multi-Region Clusters

For teams developing world-class applications that require multi-region resiliency or ultra-low latency.

- ✓ Includes all features from Starter and Single-Region Clusters
- ✓ Replicate data across multiple regions

Global Clusters ☐

- ✓ Globally distributed read and write operations
- ✓ Control data residency at the document level

Starting at
\$0.13/hr*
*estimated cost \$98.55/month

Create a cluster

Criando sua instância para testes: CREATE

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](#).

Cloud Provider & Region AWS, N. Virginia (us-east-1) ▾

Create a **free tier cluster** by selecting a region with **FREE TIER AVAILABLE** and choosing the **M0** cluster tier below.

★ Recommended region ⓘ

NORTH AMERICA	EUROPE	ASIA
N. Virginia (us-east-1) ★ FREE TIER AVAILABLE	Ireland (eu-west-1) ★ FREE TIER AVAILABLE	Singapore (ap-southeast-1) ★ FREE TIER AVAILABLE
Oregon (us-west-2) ★ FREE TIER AVAILABLE	Frankfurt (eu-central-1) ★ FREE TIER AVAILABLE	Mumbai (ap-south-1) FREE TIER AVAILABLE
AUSTRALIA		
Sydney (ap-southeast-2) ★		

Cluster Tier M0 Sandbox (Shared RAM, 512 MB Storage) ▾

FREE Free forever! Your M0 cluster is ideal for experimenting in a limited sandbox. You can upgrade to a production cluster anytime.

[Back](#) [Create Cluster](#)

Criando sua instância para testes: Espere até criação

The screenshot shows the MongoDB Atlas web interface. At the top, a blue banner indicates deployment progress: "We are deploying your changes: 0 of 3 servers complete (current action: provisioning 3 servers)". The left sidebar contains navigation links for Context (Project 0), Atlas (Clusters, Data Lake BETA), Security (Database Access, Network Access, Advanced), Project (Access Management, Activity Feed, Alerts, Integrations, Settings), Services (Charts, Stitch, Triggers), and Help. The main content area is titled "Clusters" and includes a search bar. A "Sandbox" tab is active, showing details for "Cluster0" (Version 4.0.12). The cluster configuration includes: Cluster Tier (M0 Sandbox (General)), Region (AWS / N. Virginia (us-east-1)), Type (Replica Set - 3 nodes), and Linked Stitch App (None Linked). A large message states "Your cluster is being created." with a note that "New clusters take between 7-10 minutes to provision." Buttons for "CONNECT", "METRICS", and "COLLECTIONS" are visible. The footer shows "System Status: All Good", "Last Login: 177.87.78.110", and copyright information for MongoDB, Inc. (2019).

mongoDB Atlas All Clusters

Please set your time zone Usage This Month:\$0.00 details Benilton

CONTEXT
Project 0

ATLAS
Clusters
Data Lake BETA

SECURITY
Database Access
Network Access
Advanced

PROJECT
Access Management
Activity Feed
Alerts
Integrations
Settings

SERVICES
Charts
Stitch
Triggers

HELP

We are deploying your changes: 0 of 3 servers complete (current action: provisioning 3 servers)

BENILTON'S ORG - 2019-10-21 > PROJECT 0

Clusters

Build a New Cluster

Find a cluster...

SANDBOX

Cluster0
Version 4.0.12

CONNECT METRICS COLLECTIONS ...

CLUSTER TIER
M0 Sandbox (General)

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

TYPE
Replica Set - 3 nodes

LINKED STITCH APP
None Linked

Your cluster is being created.
New clusters take between 7-10 minutes to provision.

System Status: All Good Last Login: 177.87.78.110

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Criando sua instância para testes: Cluster pronto

The screenshot displays the MongoDB Atlas interface for a specific cluster. The browser address bar shows the URL: <https://cloud.mongodb.com/v2/5dad9809014b7605195b2b9d#clusters>. The page header includes the MongoDB Atlas logo, the text "All Clusters", and a notification to set the time zone. The main content area is titled "Clusters" and features a search bar. A sidebar on the left lists navigation options: CONTEXT (Project 0), ATLAS (Clusters, Data Lake BETA), SECURITY (Database Access, Network Access, Advanced), PROJECT (Access Management, Activity Feed, Alerts, Integrations, Settings), SERVICES (Charts, Stitch, Triggers), and HELP. The cluster details for "Cluster0" (Version 4.0.12) are shown, including buttons for CONNECT, METRICS, and COLLECTIONS. The cluster tier is "M0 Sandbox (General)", the region is "AWS / N. Virginia (us-east-1)", the type is "Replica Set - 3 nodes", and the linked stitch app is "None Linked". Performance metrics for Operations, Logical Size, and Connections are displayed, all showing "NO DATA AVAILABLE". A promotional banner for "Enhance Your Experience" with an "Upgrade" button is also present. The footer shows the system status as "All Good", the last login time, and copyright information for MongoDB, Inc.

mongoDB Atlas All Clusters

CONTEXT Project 0

ATLAS Clusters

SECURITY Database Access Network Access Advanced

PROJECT Access Management Activity Feed Alerts Integrations Settings

SERVICES Charts Stitch Triggers

HELP

BENILTON'S ORG - 2019-10-21 > PROJECT 0

Clusters

Find a cluster...

SANDBOX

Cluster0
Version 4.0.12

CONNECT METRICS COLLECTIONS ...

CLUSTER TIER
M0 Sandbox (General)

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

TYPE
Replica Set - 3 nodes

LINKED STITCH APP
None Linked

Operations 100.0/s
NO DATA AVAILABLE

Logical Size 512.0 MB max
0.0 B
NO DATA AVAILABLE

Connections 100 max
NO DATA AVAILABLE

Enhance Your Experience
For dedicated throughput, richer metrics and enterprise security options, upgrade your cluster now!

Upgrade

System Status: All Good Last Login: 177.87.78.110
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Criando sua instância para testes: Acesso

The screenshot displays the MongoDB Atlas web interface. In the foreground, a modal window titled "Connect to Cluster0" is open. The modal has three tabs: "Setup connection security", "Choose a connection method", and "Connect". The "Setup connection security" tab is active, showing instructions to secure the cluster and a warning: "You can't connect yet. Set up your firewall access and user security permission below." Below this, there are two main steps:

- 1 Whitelist your connection IP address**: This step includes two buttons: "Add Your Current IP Address" (highlighted in green) and "Add a Different IP Address".
- 2 Create a MongoDB User**: This step includes a text box for the username (containing "ex. dbUser") and a password field (containing "ex. dbUserPassword"). There is an "Autogenerate Secure Password" button and a "SHOW" button. A "Create MongoDB User" button is at the bottom right of this section.

The background interface shows the "Clusters" page for "Cluster0" (Version 4.0.12). The sidebar on the left contains navigation links for Context, Atlas, Security, Project, and Services. The top of the page shows the URL: <https://cloud.mongodb.com/v2/5dad9809014b7605195b2b9d#clusters/connect?clusterId=...>

Criando sua instância para testes: Conexão

The screenshot shows the MongoDB Atlas web interface with a modal dialog titled "Connect to Cluster0" open. The dialog has three tabs: "Setup connection security", "Choose a connection method", and "Connect". The "Setup connection security" tab is active, showing a green success message: "You're ready to connect. Choose how you want to connect in the next step." Below this, there are two numbered steps:

- 1 Whitelist your connection IP address**
✓ An IP address has been whitelisted. Add another whitelist entry in the [IP Whitelist tab](#).
- 2 Create a MongoDB User**
✓ A MongoDB user has been added to this project. Not yours? Create one in the [MongoDB Users tab](#).
You'll need your MongoDB user's username and password in the next step.

At the bottom of the dialog are "Close" and "Choose a connection method" buttons. The background shows the MongoDB Atlas dashboard for "Project 0" with a sidebar menu and a cluster overview for "Cluster0".

Criando sua instância para testes: Application

The screenshot shows the MongoDB Atlas web interface with a modal dialog titled "Connect to Cluster0" open. The dialog has a close button (X) in the top right corner. It features a progress bar with three steps: "Setup connection security" (completed, green checkmark), "Choose a connection method" (current step), and "Connect". Below the progress bar, there is a link to "View documentation". The main content area lists three connection methods, each with a right-pointing arrow:

- Connect with the Mongo Shell**: Mongo Shell with TLS/SSL support is required.
- Connect Your Application**: Get a connection string and view driver connection examples.
- Connect with MongoDB Compass**: Download Compass to explore, visualize, and manipulate your data.

At the bottom of the dialog are "Go Back" and "Close" buttons. The background interface shows the "Clusters" page for "Cluster0" (Version 4.0.12) with tabs for "CONNECT" and "METRICS". The left sidebar contains navigation links for Context, Atlas, Security, Project, and Services. The bottom status bar indicates "System Status: All Good" and "Last Login: 177.8778.110".

Criando sua instância para testes: Info para conexão

mongoDB Atlas All Clusters

CONTEXT Project 0

ATLAS Clusters

Cluster0 Version 4.0.12

CONNECT METRICS

CLUSTER TIER M0 Sandbox (General)

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

TYPE Replica Set - 3 nodes

LINKED STITCH APP None Linked

PROJECT Access Management Activity Feed Alerts Integrations Settings

SERVICES Charts Stitch Triggers

HELP

System Status: All Good Last updated: 10/21/2019 10:21 AM ©2019 MongoDB, Inc. Status: Stable

Connect to Cluster0

✓ Setup connection security ✓ Choose a connection method Connect

1 Choose your driver version

DRIVER	VERSION
Perl	2.0.x or later

2 Add your connection string into your application code

Connection String Only Full Driver Example

```
mongodb+srv://benilton:<password>@cluster0-s8gg0.mongodb.net/test
```

Copy

Replace **<password>** with the password for the **benilton** user.
When entering your password, make sure that any special characters are [URL encoded](#).

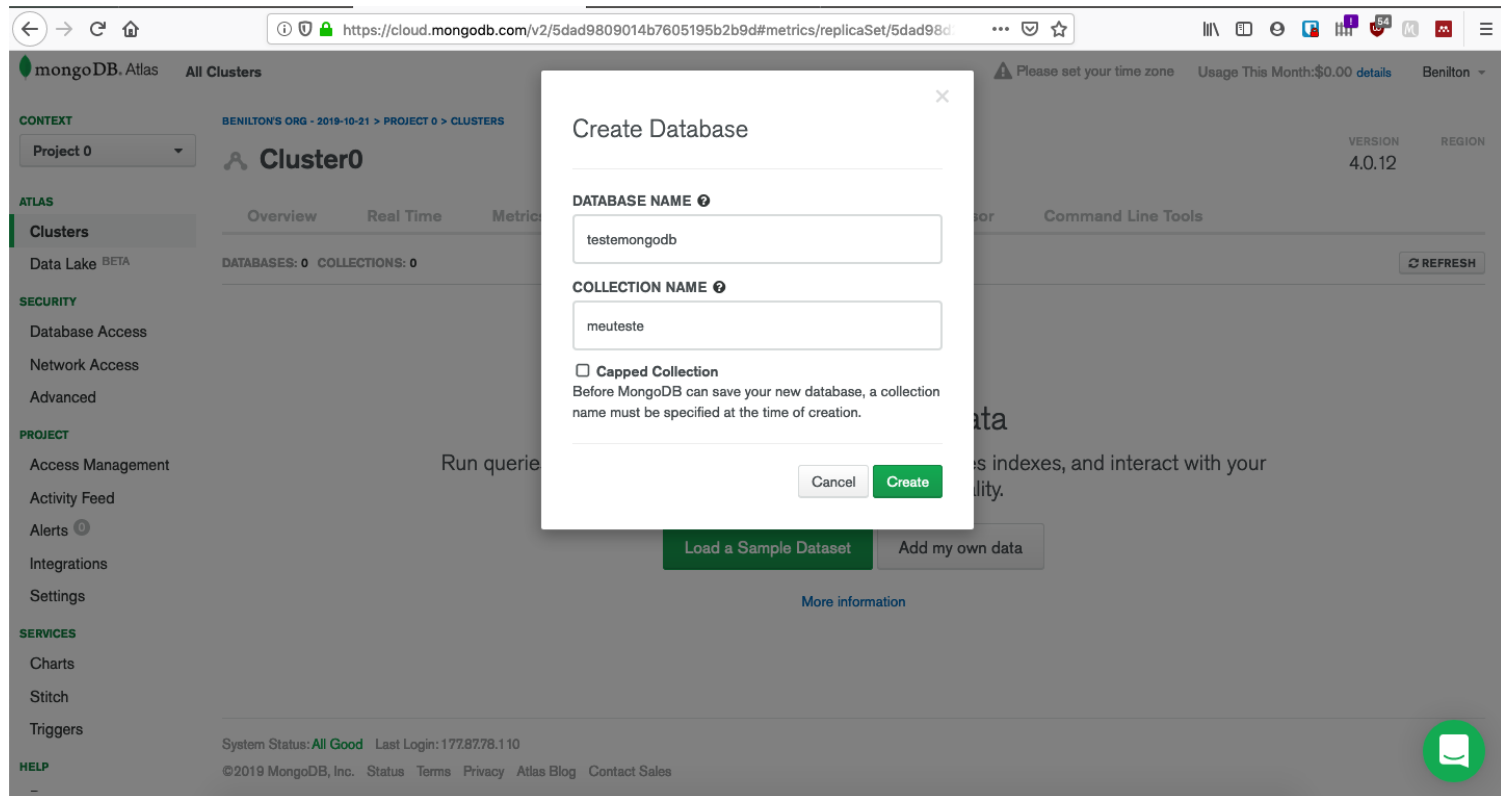
Having trouble connecting? [View our troubleshooting documentation](#)

Go Back Close

Criando sua instância para testes: ADD

The screenshot shows the MongoDB Atlas web interface. The browser address bar displays the URL: `https://cloud.mongodb.com/v2/5dad9809014b7605195b2b9d#metrics/replicaSet/5dad98d`. The page header includes the MongoDB Atlas logo, 'All Clusters', and a notification to 'Please set your time zone'. The main navigation sidebar on the left is organized into sections: 'CONTEXT' (Project 0), 'ATLAS' (Clusters, Data Lake BETA), 'SECURITY' (Database Access, Network Access, Advanced), 'PROJECT' (Access Management, Activity Feed, Alerts 0, Integrations, Settings), 'SERVICES' (Charts, Stitch, Triggers), and 'HELP'. The main content area is titled 'Cluster0' and shows 'VERSION 4.0.12' and 'REGION'. The 'Collections' tab is selected, displaying 'DATABASES: 0' and 'COLLECTIONS: 0'. A central message reads 'Interact with your data' with a subtext: 'Run queries, view metadata about your collections, manages indexes, and interact with your data with full CRUD functionality.' Below this are two buttons: 'Load a Sample Dataset' (green) and 'Add my own data' (grey). A 'More information' link is also present. The footer shows 'System Status: All Good', 'Last Login: 177.8778.110', and copyright information for MongoDB, Inc. with links to Status, Terms, Privacy, Atlas Blog, and Contact Sales. A chat icon is visible in the bottom right corner.

Criando sua instância para testes: Banco e coleção



Criando sua instância para testes: Estrutura

The screenshot shows the MongoDB Atlas web interface. The browser address bar displays the URL: <https://cloud.mongodb.com/v2/5dad9809014b7605195b2b9d#metrics/replicaSet/5dad98d>. The page header includes the MongoDB Atlas logo, 'All Clusters', and a warning to set the time zone. The main navigation sidebar on the left is organized into sections: ATLAS (Clusters, Data Lake BETA), SECURITY (Database Access, Network Access, Advanced), PROJECT (Access Management, Activity Feed, Alerts 0, Integrations, Settings), SERVICES (Charts, Stitch, Triggers), and HELP.

The main content area is titled 'Cluster0' and shows the 'Collections' tab. It displays 'DATABASES: 1' and 'COLLECTIONS: 1'. A '+ Create Database' button is visible. The selected database is 'testmongodb', and the selected collection is 'meuteste'. The collection details show 'COLLECTION SIZE: 0B', 'TOTAL DOCUMENTS: 0', and 'INDEXES TOTAL SIZE: 4KB'. There are tabs for 'Find', 'Indexes', and 'Aggregation'. A filter bar contains the text 'FILTER: {"filter":"example"}'. Below the filter bar, it says 'QUERY RESULTS 0'. A 'REFRESH' button is located in the top right corner of the main content area.

The bottom of the page shows the system status: 'System Status: All Good' and 'Last Login: 172.87.78.110'. It also includes copyright information: '©2019 MongoDB, Inc.' and links to 'Status', 'Terms', 'Privacy', 'Atlas Blog', and 'Contact Sales'. A green chat bubble icon is in the bottom right corner.

Acesso via R

```
library(mongolite)
myurl = "mongodb+srv://benilton:minhasenha123@cluster0-s8gg0.mongodb.
myconn = mongo(collection="meuteste",
                db="testemongodb",
                url=myurl)
library(ggplot2)
myconn$insert(diamonds)
```

Criando sua instância para testes: Dados

The screenshot displays the MongoDB Atlas web interface. The browser address bar shows the URL: `https://cloud.mongodb.com/v2/5dad9809014b7605195b2b9d#metrics/replicaSet/5dad98d`. The page header includes the MongoDB Atlas logo, 'All Clusters', a time zone warning, usage information ('Usage This Month: \$0.00'), and the user 'Benilton'. The left sidebar contains navigation menus for 'CONTEXT' (Project 0), 'ATLAS' (Clusters, Data Lake, SECURITY, PROJECT, SERVICES, HELP), and 'Cluster0'. The main content area is titled 'Cluster0' and shows 'DATABASES: 1' and 'COLLECTIONS: 1'. A 'Create Database' button is visible. The 'testmongodb' namespace is expanded, showing the 'meuteste' collection. The 'testmongodb.meuteste' collection details are shown, including 'COLLECTION SIZE: 8.1MB', 'TOTAL DOCUMENTS: 53940', and 'INDEXES TOTAL SIZE: 4KB'. The 'Find' tab is active, displaying a filter bar with the query `{\"filter\": \"example\"}` and buttons for 'Find' and 'Reset'. Below the filter bar, the 'QUERY RESULTS 1-20 OF MANY' are shown, displaying a single document with the following fields: `_id`, `carat`, `cut`, `color`, `clarity`, `depth`, `table`, `price`, `x`, `y`, and `z`. A green chat bubble icon is located in the bottom right corner.

mongoDB Atlas All Clusters

CONTEXT Project 0

BENILTON'S ORG - 2019-10-21 > PROJECT 0 > CLUSTERS

Cluster0

VERSION 4.0.12 REGION

ATLAS Clusters Data Lake BETA SECURITY Database Access Network Access Advanced PROJECT Access Management Activity Feed Alerts 0 Integrations Settings SERVICES Charts Stitch Triggers HELP

Overview Real Time Metrics Collections Profiler Performance Advisor Command Line Tools

DATABASES: 1 COLLECTIONS: 1

+ Create Database

NAMESPACES

testmongodb

meuteste

testmongodb.meuteste

COLLECTION SIZE: 8.1MB TOTAL DOCUMENTS: 53940 INDEXES TOTAL SIZE: 4KB

Find Indexes Aggregation

INSERT DOCUMENT

FILTER {\"filter\": \"example\"}

Find Reset

QUERY RESULTS 1-20 OF MANY

```
{
  "_id": ObjectId("5dad9c07dc1d937a2d668a95"),
  "carat": 0.23,
  "cut": "Ideal",
  "color": "E",
  "clarity": "SI2",
  "depth": 61.5,
  "table": 55,
  "price": 326,
  "x": 3.95,
  "y": 3.98,
  "z": 2.43
}
```

Criando sua instância para testes: Manipulação Extra

The screenshot displays the MongoDB Atlas web interface. The top navigation bar includes the MongoDB Atlas logo, 'All Clusters', and a warning to set the time zone. The left sidebar contains a 'CONTEXT' menu with 'Project 0' selected, and a 'CLUSTERS' section with 'Data Lake BETA' and 'testmongodb.meuteste' listed. The main content area is titled 'testmongodb.meuteste' and shows collection statistics: 8.1MB size, 53940 documents, and 4KB index size. The 'Aggregation' tab is active, showing a 'Preview of Documents in the Collection' with two sample documents. A green chat bubble icon is visible in the bottom right corner.

mongoDB Atlas All Clusters Please set your time zone Usage This Month:\$0.00 details Benilton

CONTEXT Project 0

Overview Real Time Metrics Collections Profiler Performance Advisor Command Line Tools

DATABASES: 1 COLLECTIONS: 1 REFRESH

+ Create Database

NAMESPACES

testmongodb meuteste

testmongodb.meuteste

COLLECTION SIZE: 8.1MB TOTAL DOCUMENTS: 53940 INDEXES TOTAL SIZE: 4KB

Find Indexes Aggregation

53940 Documents in the Collection

Preview of Documents in the Collection

Select an operator to construct expressions used in the aggregation pipeline stages. [Learn more](#)

Preview of Documents in the Collection

1

No Preview Documents