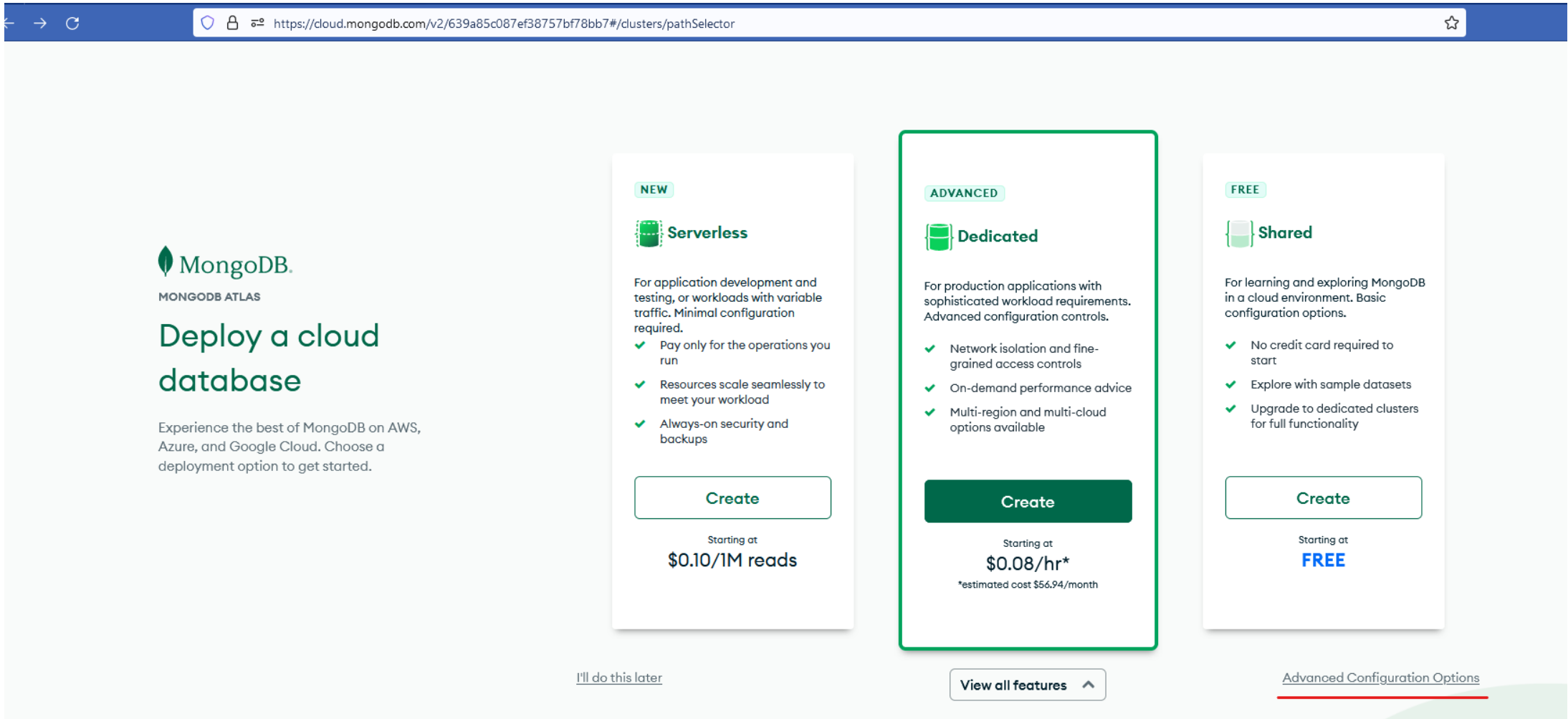


Observação: imagens meramente ilustrativas. o nome dos arquivos, opções podem mudar conforme a documentação é atualizada. Considerar as imagens apenas como base, considerar o texto em si como o passo a passo correto.

Passos após se cadastrar em <https://www.mongodb.com/cloud/atlas/register> (indicações em **vermelho** nas imagens)



[CLUSTERS](#) > CREATE A SHARED CLUSTER

Create a Shared 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

For learning and exploring MongoDB in a sandbox environment. Basic configuration controls.

No credit card required to start. Upgrade to dedicated clusters for full functionality. Explore with sample datasets. Limit of one free cluster per project.

Cloud Provider & Region

AWS, Sao Paulo (sa-east-1)

Cluster Tier

M0 Sandbox (Shared RAM, 512 MB Storage)
Encrypted

Additional Settings

MongoDB 5.0, No Backup

Cluster Name

Cluster0

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

- Além de criar um usuário e senha, adicionar o IP atual para permitir sua conexão ao banco de dados.

← → ↺

🔒 🔑 🔗 🔗 https://cloud.mongodb.com/v2/639a85c087ef38757bf78bb7#/setup/access?includeToast=true

Atlas

Alura's Org -...

⚙️

Access Manager ▾

Billing

Project 0 ▾

⋮

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App Services

Charts

DEPLOYMENT

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Quickstart

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Advanced

New On Atlas 4

Goto

Username and Password

Certificate

Create a database user using a username and password. Users will be given the *read and write to any database privilege* by default. You can update these permissions and/or create additional users later. Ensure these credentials are different to your MongoDB Cloud username and password.

Username

alura_challenge_back_end_4_user

Password 🔑

••••••••••

🔍 Autogenerate Secure Password

📋 Copy

Create User

The username "alura_challenge_back_end_4@mailinator.com" is invalid. Usernames can only contain ASCII letters, numbers, hyphens, and underscores, and should begin with a letter or number

✔️ Where would you like to connect from?

Enable access for any network(s) that need to read and write data to your cluster.

My Local Environment

Use this to add network IP addresses to the IP Access List. This can be modified at any time.

Cloud Environment

Use this to configure network access between Atlas and your cloud or on-premise environment. Specifically, set up IP Access Lists, Network Peering, and Private Endpoints.

Add entries to your IP Access List

Only an IP address you add to your Access List will be able to connect to your project's clusters. You can manage existing IP entries via the [Network Access Page](#).

IP Address

Description

Enter IP Address

Enter description

Add My Current IP Address

- anotar username e password do banco de dados (será utilizado posteriormente)
 - clicar no botão Finish and Close
-
- anotar o nome do cluster (será utilizado posteriormente, ex: Cluster0)

Atlas

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Database Deployments

+ Create

Load sample datasets to Cluster0.

Atlas provides sample data you can load into your Atlas clusters. You can use this data to quickly get started exploring with data in MongoDB.

Load sample datasetDismiss

Cluster0

Connect

View Monitoring

Browse Collections

...

FREE

SHARED

Enhance Your Experience

For production throughput and richer metrics, upgrade to a dedicated cluster now!

UpgradeLearn More

R 0

W 0

Last 6 minutes

100.0/s

Connections 0

Last 6 minutes

100.0

In 0.0 B/s

Out 0.0 B/s

Last 6 minutes

100.0 B/s

Data Size 0.0 B

Last 6 minutes

512.0 MB

VERSION	REGION	CLUSTER TIER	TYPE	BACKUPS	LINKED APP SERVICES	ATLAS SEARCH
5.0.14	AWS / Sao Paulo (sa-east-1)	M0 Sandbox (General)	Replica Set - 3 nodes	Inactive	None Linked	Create Index

- clicar nas opções “Browse Collections” + “Add my own data”

Atlas

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Billing

All Clusters

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5

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Database Deployments

Find a database deployment...

Cluster0

Connect

View Monitoring

Browse Collections

...

Enhance Your Experience

For production throughput and richer metrics, upgrade to a dedicated cluster now!

Upgrade

Learn More

R 0

W 0

Last 6 minutes

100.0/s

Connections

5.0

Last 6 minutes

6.0

In 36.4 B/s

Out 369.4 B/s

Last 6 minutes

434.6 B/s

Data Size

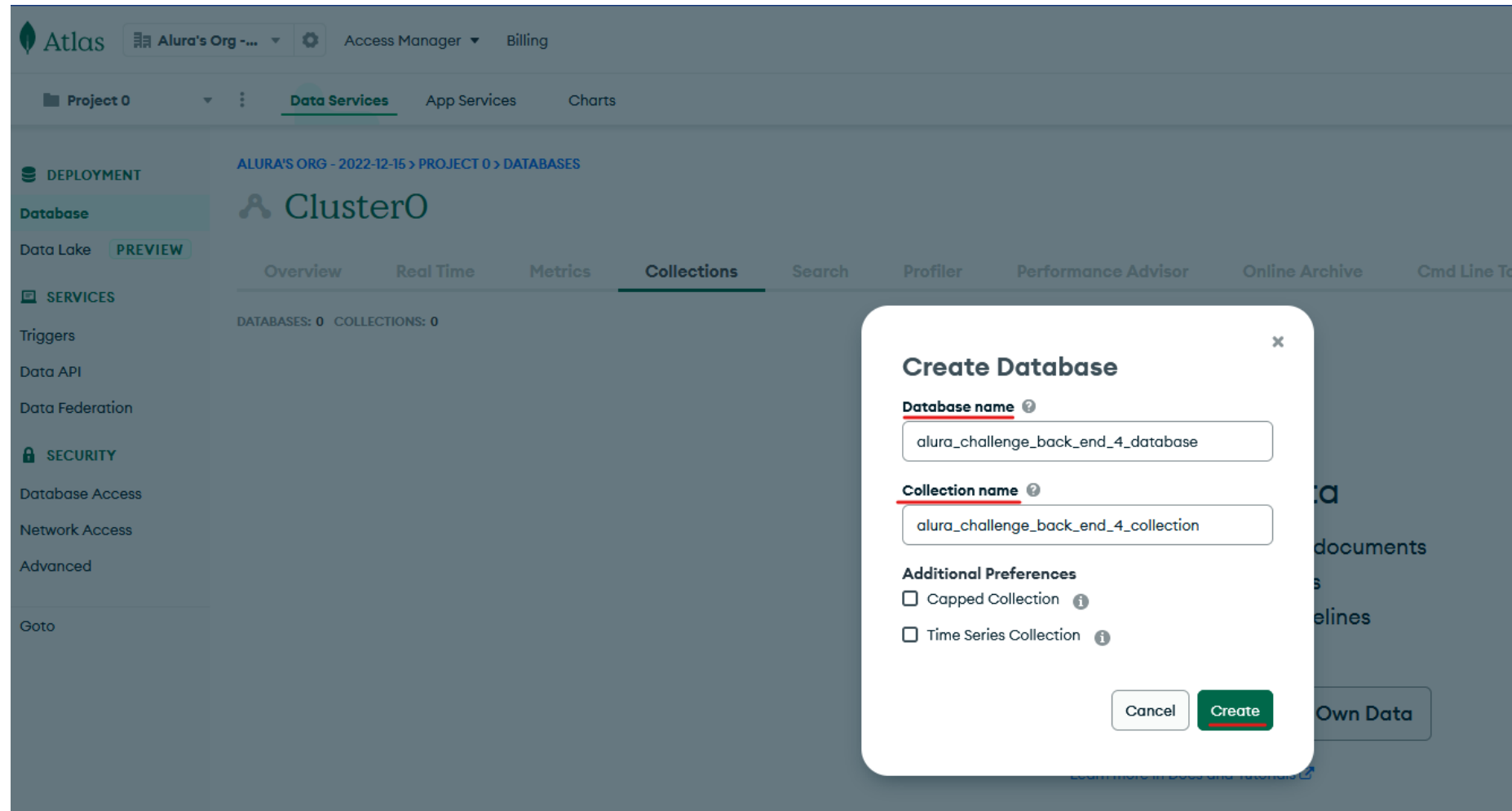
0.0 B

Last 7 days

512.0 MB

VERSION	REGION	CLUSTER TIER	TYPE	BACKUPS	LINKED APP SERVICES	ATLAS SEARCH
5.0.14	AWS / Sao Paulo (sa-east-1)	M0 Sandbox (General)	Replica Set - 3 nodes	Inactive	None Linked	Create Index

- informar um nome de banco de dados (database name) e um nome de coleção (collection name) + botão Create



- anotar o database name (será utilizado posteriormente, por ex: alura_challenge_back_end_4_database)

- acessar as opções Database + Connect + “Connect your application”

The screenshot shows the MongoDB Atlas console interface. On the left, the navigation menu includes 'Database', 'Data Lake', 'SERVICES', 'Triggers', 'Data API', 'Data Federation', 'SECURITY', 'Database Access', 'Network Access', 'Advanced', 'New On Atlas', and 'Goto'. The main panel displays 'Database Deployments' for 'ALURA'S ORG - 2022-12-15 > PROJECT 0'. A deployment named 'alura-challenge-back-end-4-cluster' is listed with a 'Connect' button. A modal dialog titled 'Connect to alura-challenge-back-end-4-cluster' is open, showing a progress bar with 'Setup connection security' completed and 'Choose a connection method' in progress. The dialog offers four connection methods: 'Connect with the MongoDB Shell', 'Connect your application' (highlighted with a red underline), 'Connect using MongoDB Compass', and 'Connect using VS Code'. The 'Connect your application' option is described as 'Connect your application to your cluster using MongoDB's native drivers'. The dialog also includes 'Go Back' and 'Close' buttons.

Atlas Alura's Org -... Access Manager Billing

Project 0 Data Services App Services Charts

DEPLOYMENT ALURA'S ORG - 2022-12-15 > PROJECT 0

Database Database Deployments

Data Lake PREVIEW Find a database deployment...

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alura-challenge-back-end-4-cluster Connect View

Enhance Your Experience

For production throughput and richer metrics, upgrade to a dedicated cluster now!

Upgrade Learn More

VERSION REGION CLUSTER TIER

5.0.14 AWS / Sao Paulo (sa-east-1) M0 Sandbox (General)

Connect to alura-challenge-back-end-4-cluster

✓ Setup connection security Choose a connection method Connect

Choose a connection method View documentation

Get your pre-formatted connection string by selecting your tool below.

Connect with the MongoDB Shell
Interact with your cluster using MongoDB's interactive Javascript interface

Connect your application
Connect your application to your cluster using MongoDB's native drivers

Connect using MongoDB Compass
Explore, modify, and visualize your data with MongoDB's GUI

Connect using VS Code
Connect to a MongoDB host in Visual Studio Code

Go Back Close

- na janela exibida, anotar o subdomínio (será utilizado posteriormente, ex: pcbycpe)

×

Connect to alura-challenge-back-end-4-cluster

✓ Setup connection security

✓ Choose a connection method

Connect

1

Select your driver and version

DRIVER

Node.js

▼

VERSION

4.1 or later

▼

2

Add your connection string into your application code

☐ Include full driver code example

mongodb+srv://alura_challenge_back_end_4_user:<password>@alura-challenge-back-end.pcbycpe.mongodb.net/?retryWrites=true&w=majority

Replace **<password>** with the password for the **alura_challenge_back_end_4_user** user. Ensure any option params are [URL encoded](#).

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

Go Back

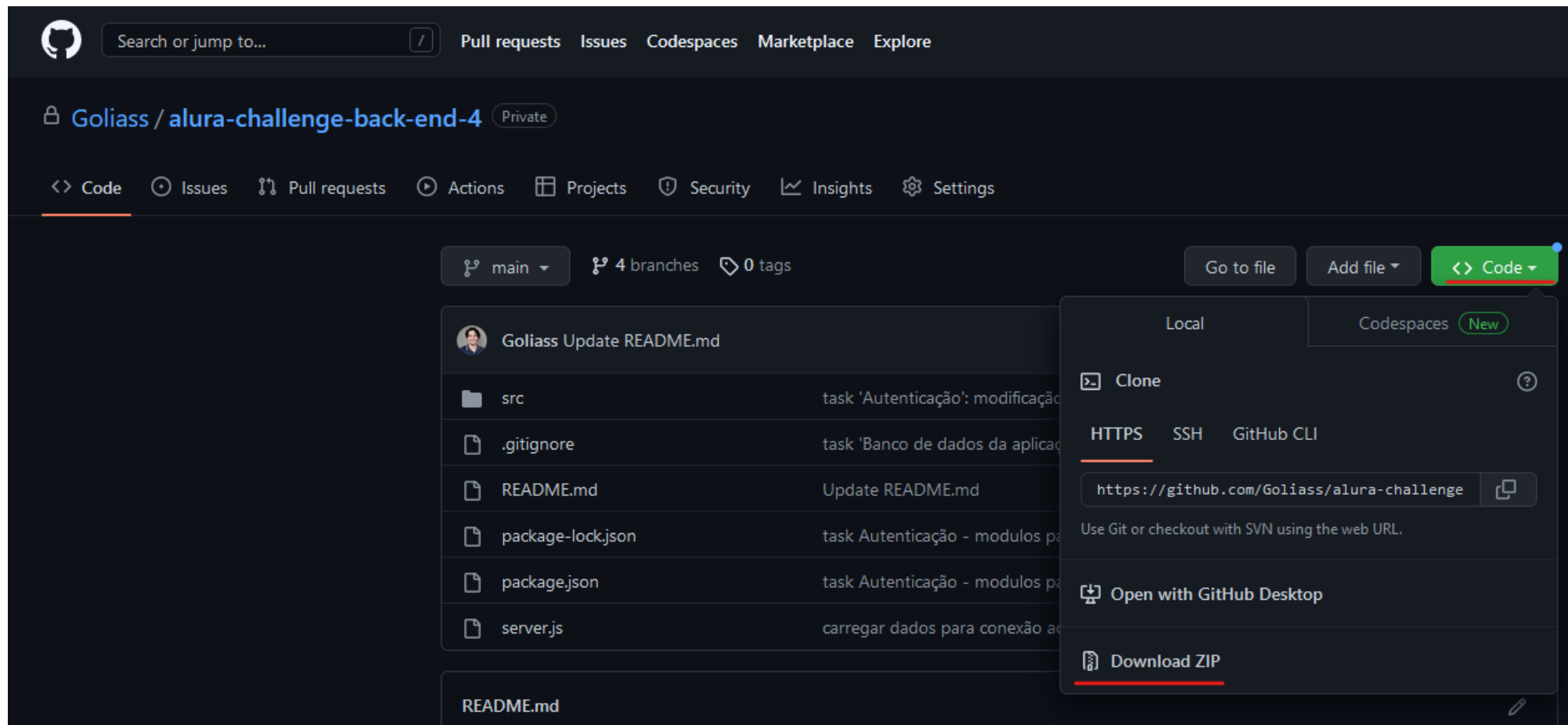
Close

nodejs / npm

- nodejs e npm
[instalar](#) a versão 6.14.11 do **npm** ou outra compatível
[instalar](#) a versão v14.16.0 do **nodejs** ou outra compatível

projeto

- baixar o projeto (repositório) e extraí-lo:



- abrir o terminal (cmd / bash), acessar a pasta raiz do repositório/projeto (ex: alura-challenge-back-end-4) e executar (comando a seguir + enter) **npm install**
- criar arquivo **.env** na raiz do [diretório do] projeto com as seguintes variáveis de ambiente, fazendo algumas substituições conforme indicado:

```
# application server (nodejs)
# local-server: http://localhost:3030

# database MongoDB
DBUSER="alura_challenge_back_end_4_user" # substituir pelo NOME/USERNAME do usuário do banco de dados (anotado anteriormente)
DBPASS="password" # substituir pela SENHA/PASSWORD do usuário do banco de dados (anotado anteriormente)
DBCLUSTER="Cluster0" # substituir pelo NOME do cluster (anotado anteriormente)
DBNAME="alura_challenge_back_end_4_database" # substituir pelo NOME do banco de dados (anotado anteriormente)
SUBDOMAIN="pcbycpe" # substituir pelo subdomínio (anotado anteriormente)

# authentication
saltRounds=12
jwtKey="str1ngAleatori@" # substituir por uma string aleatória
jwtExpirationTimeSpan="15m" # exs 15s 15m

# redis (In-memory database)
# redis - localhost (startar o db na linha de comando com "redis-server")
```

```
# redis - remote host
# REDIS_HOST="redis-xxxx.a73.sh-xxxx-2-5.ec8.cloud.redislabs.com" # substituir pelo host correspondente
# REDIS_PORT=1234 # substituir pela porta correspondente
# REDIS_USER="username" # substituir pelo username do banco de dados Redis, ex: default
# REDIS_PASS="password" # substituir pela password correspondente

REDIS_MAX_CONNECTION_ATTEMPTS=30 # quantidade máxima de tentativas de conexão do servidor de aplicação/Node (antes de encerrar-se) ao banco de dados redis
```

- em um novo terminal (cmd / bash), na pasta raiz do repositório/projeto (ex: alura-challenge-back-end-4), executar **redis-server**
 - se execução com sucesso, entre outras será exibida mensagem parecida com **“Ready to accept connections”**
 - (para parar a execução, pressionar Ctrl + C)
- info (opcional): o passo acima executa o servidor redis localmente, caso queira executá-lo remotamente:
 - se cadastrar em <https://app.redislabs.com>
 - descomentar as linhas do arquivo .env (acima) com vars de ambiente relacionadas ao **redis - remote host** (vars **“REDIS_”**), substituindo os valores pelos correspondentes ao database criado no site:

Subscriptions

Databases

Data Access Control

Access Management

Logs

Account Settings

Usage Report

Billing & Payments

New subscription

Databases

Status	Database name	Database ID	Subscription	Endpoint	Memory
<div></div>			#	<div>Connect</div>	2.4MB

Items per page 10

Connect to

Redis CLI

Copy the following command to your command line

redis-cli -u redis://:cloud.redislabs.com:18070

Replace <username> and <password>

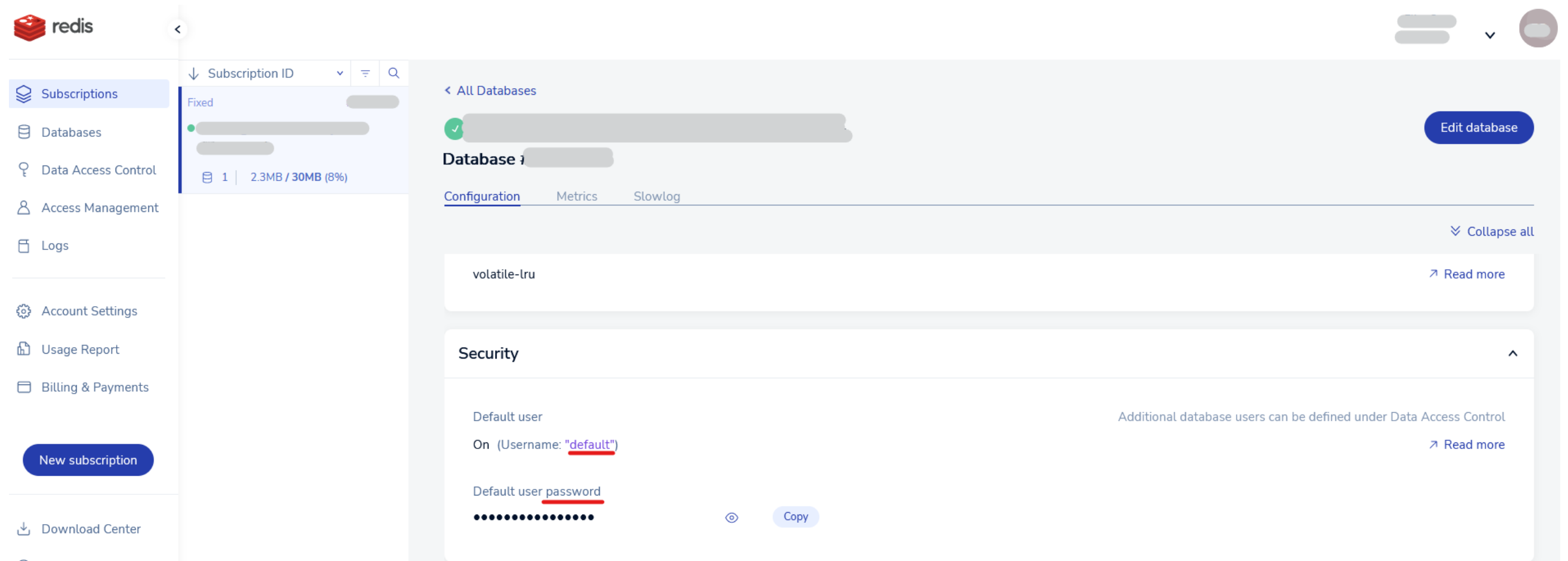
Copy

Install Redis CLI

Redis Client

RedisInsight Desktop

Recommended



- em um novo terminal (cmd / bash), na pasta raiz do repositório/projeto (ex: alura-challenge-back-end-4), executar **npm run start**
 - se execução com sucesso, será exibida informação parecida com a seguinte:

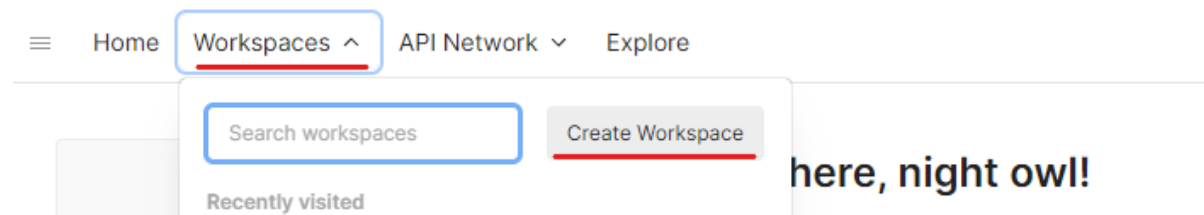
```
> nodemon server.js

[nodemon] 2.0.19
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,json
[nodemon] starting `node server.js`
Servidor escutando em http://localhost:3001
Database connection succeed
```

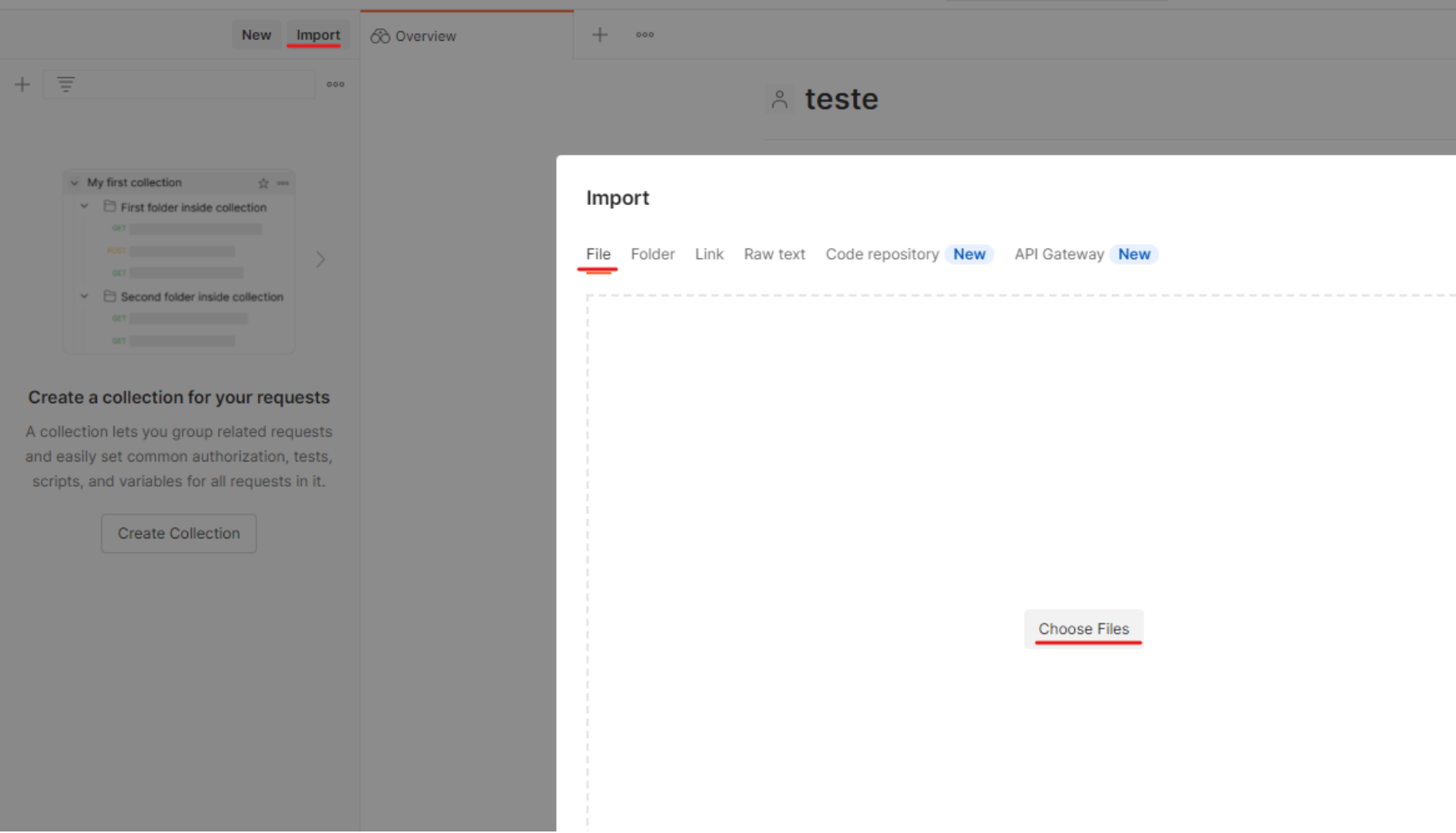
- Se erro, atualizar o IP na interface (pode ter expirado), para permitir/considerar o IP atual do computador (ver mais acima o tópico “*Além de criar um usuário e senha, adicionar o IP atual para permitir sua conexão ao banco de dados*”) e seguir o passo anterior novamente.

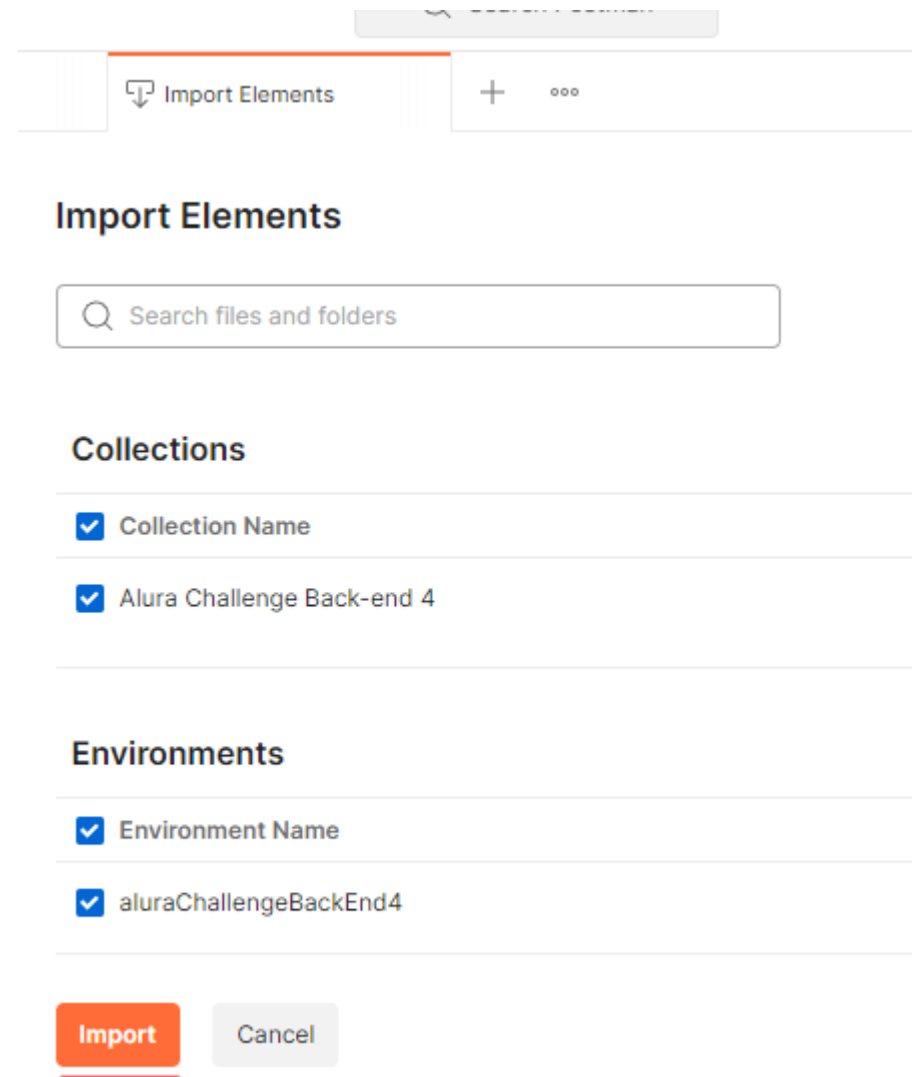
Postman (requisições)

- instalar/abrir o [Postman](#)
- se não existir nenhum workspace, criar

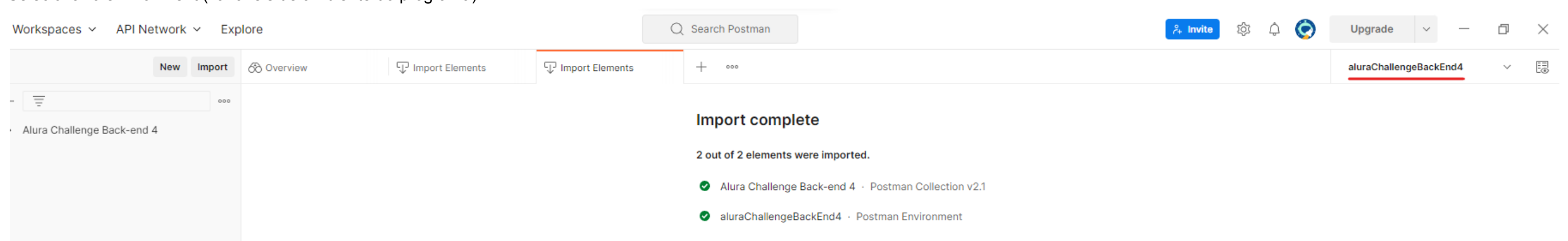


- importar os arquivos “Alura Challenge Back-end 4-doc.postman_collection.json” e “aluraChallengeBackEnd4-doc.postman_environment.json” (pasta postman do projeto)





- Selecionar o environment (variáveis de ambiente do programa)



- Editar o environment, informando uma senha no respectivo campo + botão Salvar

The screenshot shows the environment editor for 'aluraChallengeBackEnd4'. On the left, there's a sidebar with a tree view showing 'Alura Challenge Back-end 4'. The main area displays a table of variables:

VARIABLE	TYPE ⓘ	INITIAL VALUE ⓘ
<input checked="" type="checkbox"/> jsonWebToken	default ▾	
<input checked="" type="checkbox"/> userPassword	default ▾	
Add a new variable		

On the right, a detailed view of the 'aluraChallengeBackEnd4' environment is shown, including an 'Edit' button and a table of variables:

VARIABLE	INITIAL VALUE	CURRENT VALUE
jsonWebToken		
userPassword		<u>informe uma senha</u>

At the bottom, there's a 'Globals' section with an 'Add' button.

- Executar a rota de cadastro de usuário (se execução com sucesso, o status/resposta será “201 Created”)

The screenshot shows the REST client interface. The left sidebar displays the API structure, with 'POST Add user' selected under the 'users' folder. The main area shows the request details:

- Method:** POST
- URL:** http://localhost:3001/users
- Body:**

```

1 {
2   "name": "nome",
3   "email": "email@domain.com",
4   "password": "{{userPassword}}"
5 }

```

The response is displayed on the right, showing a successful status:

- Status:** 201 Created
- Time:** 257 ms
- Size:** 426 B
- Body:**

```

1 {
2   "name": "nome",
3   "email": "email@domain.com",
4   "passwordHash": "$2b$12$kITxY865mx82JNRZHeyqp0RHpZht/N8x1A0b5/7/
5     RPHf9edyh7i7u",
6   "loginAuthorized": false,
7   "_id": "63aa4e8785304ae2a9498602",
8   "__v": 0

```

- Após a criação do usuário com sucesso, na página (site) do MongoDB, acessar as opções Database + “Browse Collections”:

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Database Deployments

Find a database deployment...

alura-challenge-back-end-4-cluster

Connect

View Monitoring

Browse Collections

...

Enhance Your Experience

For production throughput and richer metrics, upgrade to a dedicated cluster now!

Upgrade

Learn More

R 0.003

W 0.007

Last 3 hours

0.08/s

Connections 8.0

Last 3 hours

13.0

VERSION	REGION	CLUSTER TIER	TYPE	BACKUPS	LINKED AP
5.0.14	AWS / Sao Paulo (sa-east-1)	M0 Sandbox (General)	Replica Set - 3 nodes	Inactive	None Lir

- Clicar na coleção users + botão editar + alterar o valor do campo loginAuthorized para “true” + botão UPDATE

The screenshot shows the MongoDB Compass interface. The left sidebar displays the database structure with the 'users' collection selected. The main panel shows the 'alura_challenge_back_end_4_database.users' collection. The 'Find' tab is active, showing a filter bar with the query `{ field: 'value' }`. Below the filter bar, the 'QUERY RESULTS: 1-1 OF 1' section displays a single document:

```

{
  "_id": ObjectId('63aa4e8785304ae2a9498602'),
  "name": "nome",
  "email": "email@domain.com",
  "passwordHash": "$2b$12$kITxY865mx82JNRZHeyqpORHpZht/N8rLA0b5/7/RPHf9edyh7i7u",
  "loginAuthorized": true,
  "__v": 0
}

```

The 'loginAuthorized' field is highlighted in red. On the right side of the document, there are icons for editing, saving, and deleting, along with an 'Edit document' button.

- **atenção:** sem essa configuração não será possível executar com sucesso a maioria das demais rotas/requisições do Postman.
- De volta ao programa Postman, executar a rota “Login with VALID pass” (se execução com sucesso, o status/resposta será “204 No Content”)

The screenshot shows the Postman interface. The left sidebar displays the collection 'Alura Challenge Back-end 4' with the 'login' folder expanded. The 'POST Login with VALID pass' request is selected. The main panel shows the request details:

- Method: POST
- URL: `http://localhost:3001/login`
- Body: JSON

The JSON body is:

```

{
  "email": "email@domain.com",
  "password": "{{userPassword}}"
}

```

The response is shown on the right:

```

204 No Content

```

The response status is 204 No Content, with a response time of 276 ms and a response size of 322 B.

- Executar as demais requisições (essas não tem ordem / obrigatoriedade de execução):

The screenshot displays the Postman interface for the 'Alura Challenge Back-end 4' collection. The left sidebar shows a tree view of the collection's folders and endpoints. The 'expenses' folder is currently selected and highlighted. The right pane shows the 'Authorization' tab for this folder, which is set to 'Inherit auth from parent'. Below this, a message states: 'This folder is using No Auth from collection [Alura Challenge Back-end 4](#).'

Alura Challenge Back-end 4 / expenses

Authorization Pre-request Script Tests

This authorization method will be used for every request in this folder. You can override this by specifying one in the request.

Type Inherit auth from parent

The authorization header will be automatically generated when you send the request. Learn more about [authorization](#)

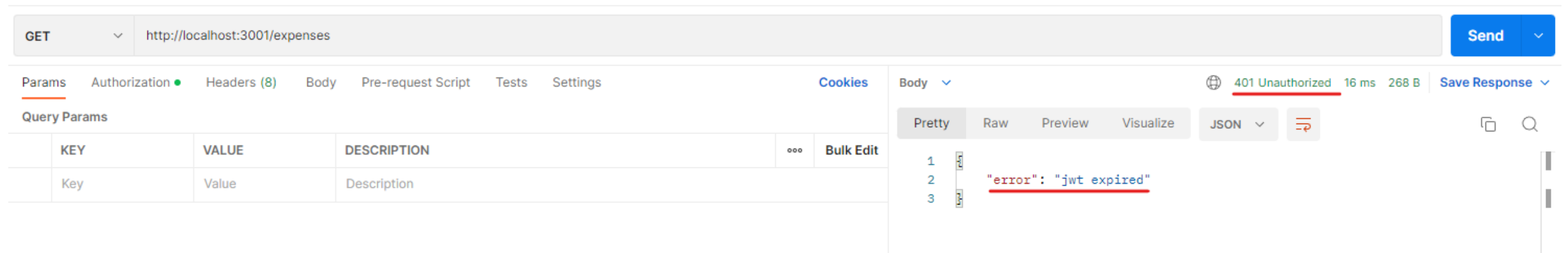
This folder is using No Auth from collection [Alura Challenge Back-end 4](#).

Endpoints listed in the sidebar:

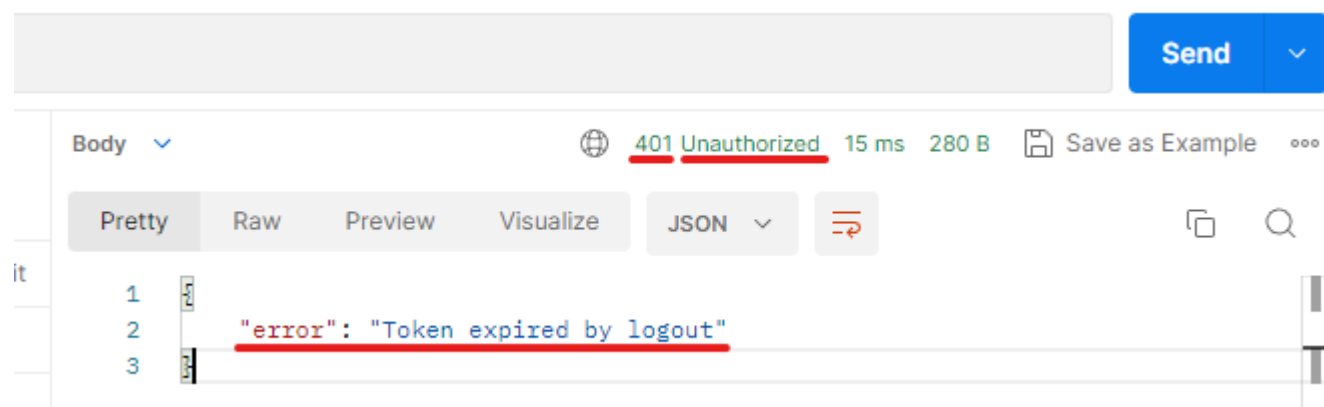
- login**
 - POST Login with VALID pass
 - POST Login with INVALID pass
- expenses**
 - GET List expenses
 - GET Find expense by Id
 - GET Find expenses by description
 - GET Find expenses by year and ...
 - POST Add expense
 - PUT Update expense
 - DEL Delete expense by Id
- expensesCategories**
 - GET List expenses categories
 - POST Add expense category
- receipts**
 - GET List receipts
 - GET Find receipt by Id
 - GET Find receipts by description
 - GET Find receipts by year and m...
 - POST Add receipt
 - PUT Update receipt
 - DEL Delete receipt by Id
- users**
 - GET List users
 - GET Find a user by Email
 - GET Find a user by Id
 - POST Add user
 - DEL Delete user by id
- extracts**
 - GET Extract by year and month

- **Observações:**

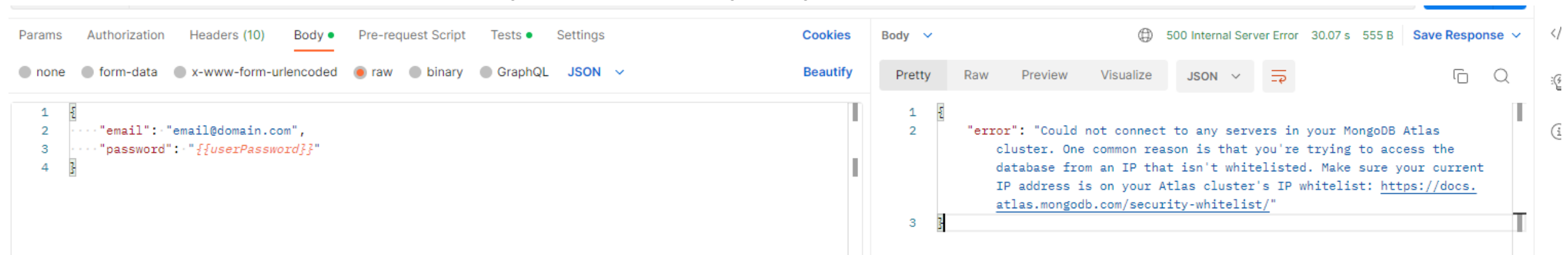
- Após `jwtExpirationTimeSpan` minutos (`jwtExpirationTimeSpan` = valor configurado no arquivo `.env`, ex.: 15m) o usuário deixa de ter permissão de execução da maioria das requisições (o status/resposta da requisição será 401 Unauthorized). Para ser possível executá-las novamente, executar a rota "Login with VALID pass" (ver acima)



- após a execução da rota de logout "Logout with VALID token" (e execução com sucesso, ou seja, status-resposta igual a "204 No Content"), a execução da maioria das demais rotas retornará o status/resposta "401 Unauthorized". Para ser possível executá-las novamente, executar a rota "Login with VALID pass" (ver acima).



- Caso ocorra o erro "500 Internal Server Error", com uma mensagem parecida com a da imagem a seguir,



- na página do MongoDB, adicionar o IP atual para permitir sua conexão ao banco de dados ("Network Access" + "Add IP Address")

Atlas Alura's Org -... Access Manager Billing

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Network Access

IP Access List Peering Private Endpoint

Add IP Access List Entry

Atlas only allows client connections to a cluster from entries in the project's IP Access List. Each entry should either be a single IP address or a CIDR-notated range of addresses. [Learn more.](#)

ADD CURRENT IP ADDRESS ALLOW ACCESS FROM ANYWHERE

Access List Entry:

Comment: Optional comment describing this entry

☐ This entry is temporary and will be deleted in 6 hours

Cancel **Confirm**

Add an IP address

Configure which IP addresses can access your cluster.

Add IP Address

[Learn more](#)

- pelo terminal (cmd / bash), na pasta raiz do repositório/projeto (ex: alura-challenge-back-end-4):
 - desativar o servidor de aplicação/Node (teclas Ctrl + C)
 - ativar o servidor novamente (**npm run start**)