

Mongo Atlas for Pymongo

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We will discuss following....

- ✓ What is Mongo Atlas
- ✓ Setting up Mongo Atlas for connecting with Pymongo

What is Mongo Atlas

- ✓ MongoDB Atlas is a fully-managed **cloud database** developed by the same people that build MongoDB.
- ✓ Atlas handles all the complexity of deploying, managing, and healing your deployments on the cloud service provider of your choice (AWS, Azure, and GCP).
- ✓ Similar to **Apache Ambari** if you are familiar with Hadoop ecosystem
- ✓ You can setting up Atlas easily by following instructions in [this](#) link

Mongo Atlas Dashboard

NA

Access Manager

Support

Billing

See Product Tour

All Clusters

vamsi.krishna.varma

Project 0

Atlas

Realm

Charts

DATA STORAGE

Clusters

Triggers

Data Lake

SECURITY

Database Access

Network Access

Advanced

NA > PROJECT 0 > CLUSTERS

ad2020

VERSION 4.2.6

REGION Belgium (eu-west-1)

Overview

Real Time

Metrics

Collections

Profiler

Performance Advisor

Online Archive BETA

Command Line Tools

DATABASES: 3

COLLECTIONS: 19

VISUALIZE YOUR DATA

REFRESH

+ Create Database

NAMESPACES

ad2020

memotef

resia

provinces

regions

test

total

resia.provinces

COLLECTION SIZE: 2.83MB

TOTAL DOCUMENTS: 11776

INDEXES TOTAL SIZE: 128KB

Find

Indexes

Schema Anti-Patterns 0

Aggregation

Search

INSERT DOCUMENT

FILTER {"filter": "example"}

Find

Reset

QUERY RESULTS 1-20 OF MANY

```
_id: ObjectId("5eccc0eaf814fd7d836ebf7ce")
date: 1582502400000
state: "ITA"
region code: 13
region name: "Abruzzo"
: 69
province name: "Chieti"
province abbreviation: "CH"
latitude: 42.35103167
longitude: 14.16754574
total cases: 0
notes in italian: null
notes in english: null
```

Feature Requests

Steps to setup Atlas

- **Part 1:** [Create an Atlas Account.](#)
- **Part 2:** [Deploy a Free Tier Cluster.](#)
- **Part 3:** [Whitelist Your Connection IP Address.](#)
- **Part 4:** [Create a Database User for Your Cluster.](#)
- **Part 5:** [Connect to Your Cluster.](#)
- **Part 6:** [Insert and View Data in Your Cluster.](#)

More details in [this](#) link

Create account

You can signup using your email address or your existing Gmail account from [this](#) link



Log in to your account



or

Email Address ⓘ

Next

Don't have an account? [Sign Up](#)

Create Organization

Once you login to your Mongo DB account after login, you will see something like this

Organizations



You don't belong to any Organizations

To get started, create an Organization. Within an Organization you can create projects, invite users, and setup a billing account.

Create an Organization

Learn more about what Organization can do in our docs.

[Organizations and Projects](#) [↗](#).

Click on Create an Organization

Create Organization

Give name of the organization, this can be any string. Ensure that MongoDB Atlas is selected and click on Next

[← Organizations](#)
Create Organization

Name and Service > Add Members Next

Name Your Organization

Resia

Select Cloud Service

Features	<input checked="" type="radio"/> MongoDB Atlas	<input type="radio"/> Cloud Manager
Automated database configuration	✓	✓
Continuous backup and point-in-time recovery	✓	✓
Queryable backup snapshots	✓	✓
Fine grained database monitoring & customizable alerts	✓	✓
Real-time performance panel	✓	✓

Click on Create an Organization

Create Cluster

Next up we create a cluster, Look for Create a new cluster button

RESIA > RESIA

Clusters

🔍 Find a cluster...



Create a cluster

Choose your cloud provider, region, and specs.

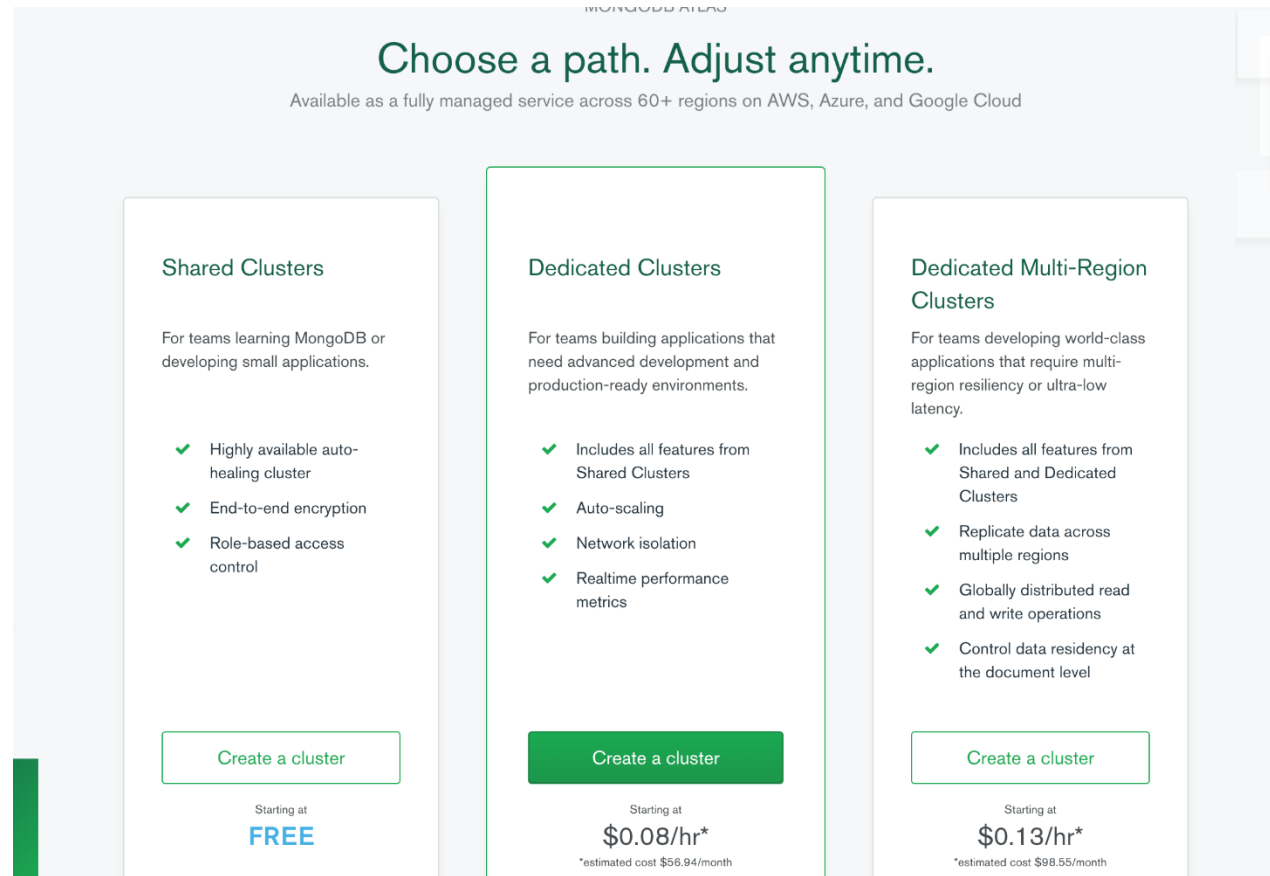
Build a Cluster

Once your cluster is up and running, live migrate an existing MongoDB database into Atlas with our [Live Migration Service](#).

Click on Create an Organization

Choose Cluster type

For our practice, Shared Cluster(it is free and provides 512 MB of database space) is enough



The image shows the MongoDB Atlas 'Choose a path. Adjust anytime.' selection screen. It features three main options: Shared Clusters, Dedicated Clusters, and Dedicated Multi-Region Clusters. Each option includes a description, a list of features, a 'Create a cluster' button, and pricing information. The Shared Clusters option is highlighted as the starting point for learning MongoDB.

Choose a path. Adjust anytime.
Available as a fully managed service across 60+ regions on AWS, Azure, and Google Cloud

Cluster Type	Description	Features	Starting Price	Estimated Monthly Cost
Shared Clusters	For teams learning MongoDB or developing small applications.	<ul style="list-style-type: none">Highly available auto-healing clusterEnd-to-end encryptionRole-based access control	Starting at FREE	
Dedicated Clusters	For teams building applications that need advanced development and production-ready environments.	<ul style="list-style-type: none">Includes all features from Shared ClustersAuto-scalingNetwork isolationRealtime performance metrics	Starting at \$0.08/hr*	*estimated cost \$56.94/month
Dedicated Multi-Region Clusters	For teams developing world-class applications that require multi-region resiliency or ultra-low latency.	<ul style="list-style-type: none">Includes all features from Shared and Dedicated ClustersReplicate data across multiple regionsGlobally distributed read and write operationsControl data residency at the document level	Starting at \$0.13/hr*	*estimated cost \$98.55/month

Click on Create a Cluster

Configure Cluster

This step is important when you are deploying your applications based on MongoDB on other cloud providers like GCP, AWS and Azure etc.,

[CLUSTERS](#) > [CREATE A STARTER CLUSTER](#)

Create a Starter 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](#).

Cloud Provider & Region

GCP, Belgium (europe-west1) ▾



★ Recommended region ⓘ

NORTH AMERICA / SOUTH AMERICA

🇺🇸 Iowa (us-central1) ★

🇧🇷 Sao Paulo (southamerica-east1) ★

EUROPE / MIDDLE EAST / AFRICA

🇧🇪 Belgium (europe-west1) ★

ASIA PACIFIC

🇹🇼 Taiwan (asia-east1) ★

🇯🇵 Tokyo (asia-northeast1) ★

🇸🇬 Singapore (asia-southeast1) ★

🇮🇳 Mumbai (asia-south1) ★

Click on Create a Cluster

Cluster Dashboard

Once you are done with above steps you will be directed to Cluster dashboard page. In this page there are many options for configuring your cluster

The screenshot displays the MongoDB Atlas Cluster Dashboard. At the top, a navigation bar includes 'Resia', 'Atlas', 'Realm', and 'Charts'. A blue banner at the top of the main content area states: 'We are deploying your changes: 3 of 3 servers complete (current action: configuring MongoDB)'. The left sidebar lists navigation options under 'DATA STORAGE' (Clusters, Triggers, Data Lake) and 'SECURITY' (Database Access, Network Access, Advanced). The 'Clusters' section is active. The main content area shows a search bar 'Find a cluster...' and a 'Create a New Cluster' button. A cluster named 'Cluster0' (Version 4.2.6) is highlighted with a 'SANDBOX' tag. It has buttons for 'CONNECT', 'METRICS', 'COLLECTIONS', and a menu icon. Below these, details are listed: 'CLUSTER TIER: M0 Sandbox (General)', 'REGION: GCP / Belgium (europe-west1)', 'TYPE: Replica Set - 3 nodes', and 'LINKED REALM APP: None Linked'. A large light blue box on the right contains the text 'Your cluster is being created...' and 'New clusters take between 1-3 minutes to provision.' The footer includes 'Feature Requests', 'System Status: All Good', and copyright information for MongoDB, Inc. (©2020), along with links for Status, Terms, Privacy, Atlas Blog, and Contact Sales. A green chat icon is in the bottom right corner.

Resia

Atlas

Realm

Charts

DATA STORAGE

Clusters

Triggers

Data Lake

SECURITY

Database Access

Network Access

Advanced

We are deploying your changes: 3 of 3 servers complete (current action: configuring MongoDB)

RESIA > RESIA

Clusters

Find a cluster...

Create a New Cluster

SANDBOX

Cluster0

Version 4.2.6

CONNECT METRICS COLLECTIONS ...

CLUSTER TIER

M0 Sandbox (General)

REGION

GCP / Belgium (europe-west1)

TYPE

Replica Set - 3 nodes

LINKED REALM APP

None Linked

Your cluster is being created...

New clusters take between 1-3 minutes to provision.

Feature Requests

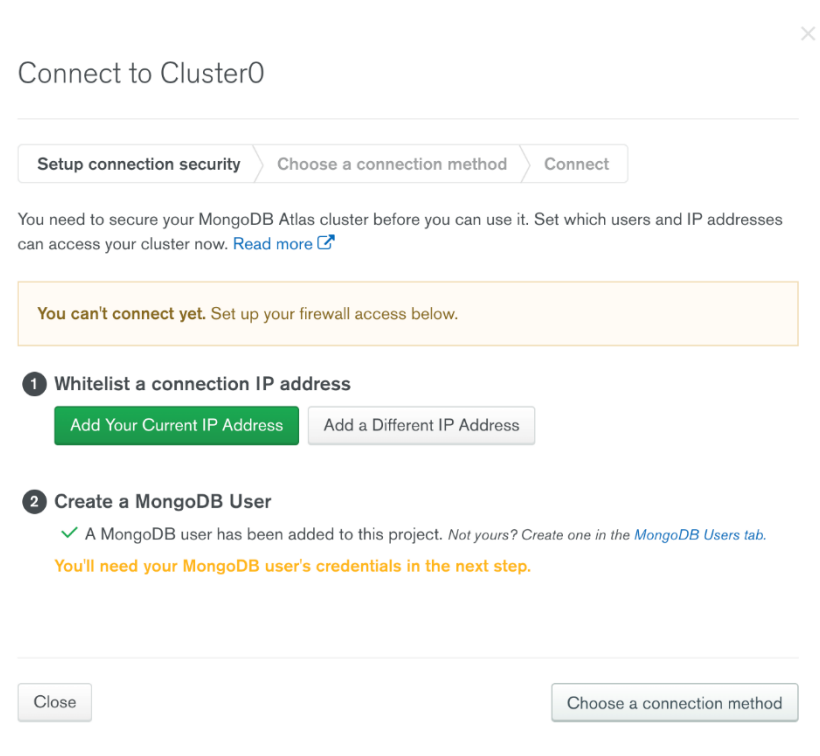
System Status: All Good

©2020 MongoDB, Inc. Status Terms Privacy Atlas Blog Contact Sales

Connect to Cluster

Here we configure our cluster so that we can access our Mongo DB from outside that is from PyMongo

Click on Connect button and create a DB user in the below pop up window

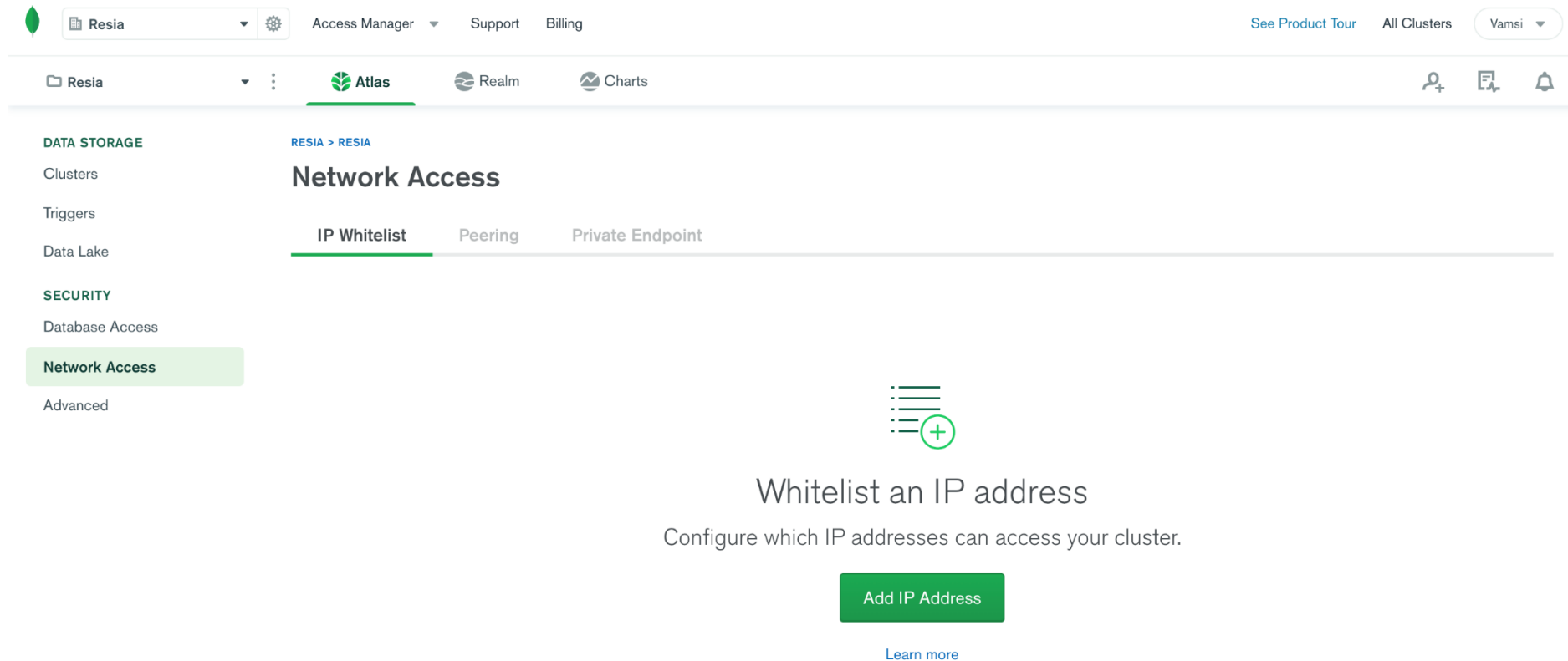


The screenshot shows a 'Connect to Cluster0' dialog box with a close button (X) in the top right corner. It features a progress bar with three steps: 'Setup connection security' (active), 'Choose a connection method', and 'Connect'. Below the progress bar, a message states: 'You need to secure your MongoDB Atlas cluster before you can use it. Set which users and IP addresses can access your cluster now. [Read more](#)'. An orange warning box follows, stating: 'You can't connect yet. Set up your firewall access below.' The first step, '1 Whitelist a connection IP address', has two buttons: 'Add Your Current IP Address' (green) and 'Add a Different IP Address' (grey). The second step, '2 Create a MongoDB User', shows a green checkmark and a message: '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 credentials in the next step.' At the bottom, there is a 'Close' button on the left and a 'Choose a connection method' button on the right.

You have to set up your firewall access to connect to your cluster from outside

Whitelist IP's

From Cluster dashboard click on Network access option and Click on Add IP Address button in the bottom



The screenshot displays the Resia user interface. At the top, there's a navigation bar with a 'Resia' dropdown, a settings gear, and links for 'Access Manager', 'Support', and 'Billing'. On the right, there are links for 'See Product Tour', 'All Clusters', and a user profile 'Vamsi'. Below this is a secondary navigation bar with 'Resia', 'Atlas' (selected), 'Realm', and 'Charts'. A left sidebar lists categories: 'DATA STORAGE' (Clusters, Triggers, Data Lake) and 'SECURITY' (Database Access, 'Network Access' (highlighted), Advanced). The main content area is titled 'Network Access' with a breadcrumb 'RESIA > RESIA'. It features three tabs: 'IP Whitelist' (active), 'Peering', and 'Private Endpoint'. The 'IP Whitelist' tab shows a large green icon of a list with a plus sign, the heading 'Whitelist an IP address', the instruction 'Configure which IP addresses can access your cluster.', a prominent green 'Add IP Address' button, and a 'Learn more' link.

Whitelist IP's

From Cluster dashboard click on Network access option and Click on Add IP Address button in the bottom

Add IP Whitelist Entry

Atlas only allows client connections to a cluster from entries in the project's whitelist. 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

Whitelist Entry:

Enter IP Address or CIDR Notation

Comment:

Optional comment describing this entry

☐ This entry is temporary and will be deleted in

6 hours

Cancel

Confirm

Add IP Whitelist Entry

Atlas only allows client connections to a cluster from entries in the project's whitelist. 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

Whitelist Entry:

0.0.0.0/0

Comment:

Optional comment describing this entry

☐ This entry is temporary and will be deleted in

6 hours

Cancel

Confirm

You can give the IP address manually or you can select access from Anywhere (which opens up our DB to the entire web) – we will use this for practice but It's a good practice to **limit** your DB access to a certain IP address when you are deploying your application.

Click on **Confirm** button. It takes some **time** to activate this option.

Connect to cluster

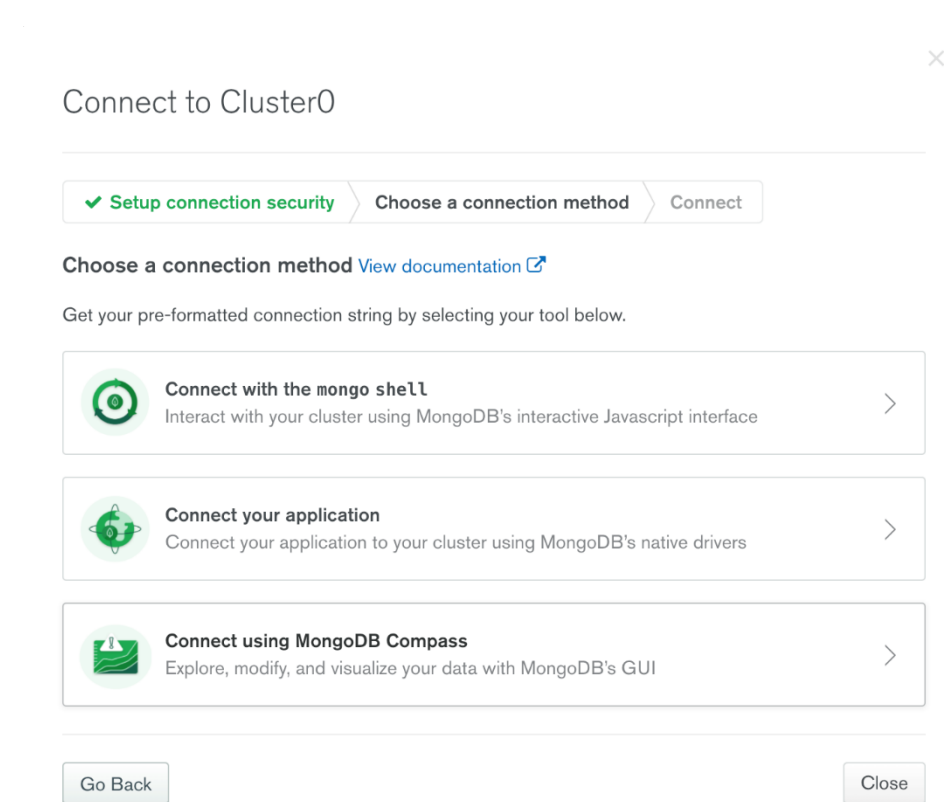
Once the IP whitelisting is active, Click on Clusters button on left and click on Connect button

The screenshot displays the MongoDB Atlas interface. At the top, a navigation bar includes 'Resia', 'Atlas', 'Realm', and 'Charts'. A blue banner at the top of the main content area states: 'We are deploying your changes: 3 of 3 servers complete (current action: configuring MongoDB)'. On the left sidebar, under 'DATA STORAGE', the 'Clusters' button is highlighted. Below it are 'Triggers' and 'Data Lake'. Under 'SECURITY', there are 'Database Access', 'Network Access', and 'Advanced'. The main content area is titled 'Clusters' with a breadcrumb 'RESIA > RESIA'. A search bar 'Find a cluster...' is present. A green button 'Create a New Cluster' is in the top right. A cluster card for 'Cluster0' (Version 4.2.6) is shown with tabs for 'CONNECT', 'METRICS', and 'COLLECTIONS'. The card details include: 'CLUSTER TIER: M0 Sandbox (General)', 'REGION: GCP / Belgium (europe-west1)', 'TYPE: Replica Set - 3 nodes', and 'LINKED REALM APP: None Linked'. The right side of the card displays 'Your cluster is being created...' with a note: 'New clusters take between 1-3 minutes to provision.' At the bottom, the footer shows 'Feature Requests', 'System Status: All Good', and copyright information for MongoDB, Inc. (©2020) along with links for Status, Terms, Privacy, Atlas Blog, and Contact Sales. A green chat icon is in the bottom right corner.

Connect to cluster

Once the IP whitelisting is active, Click on Clusters button on left and click on Connect button

We can connect to our DB from Mongo shell, from other applications (PyMongo for Python or from other programming languages), from MongoDB compass.



Click on Connect your application option

Connection string for Python

Select Python and version, then you can see a connection string generated, copy that connection string and use it in our PyMongo code.

×

Connect to Cluster0

✓ Setup connection security

✓ Choose a connection method

Connect

1

Select your driver and version

DRIVER

Python

VERSION

3.6 or later

2

Add your connection string into your application code

☐ Include full driver code example

mongodb+srv://resiadb:<password>@cluster0-adqns.gcp.mongodb.net/<

Copy

Replace <password> with the password for the resiadb user. Replace <dbname> with the name of the database that connections will use by default. Ensure any option params are [URL encoded](#).

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

Go Back

Close

That's it, we have configured Mongo Atlas for PyMongo

Create a sample database

From Cluster dashboard click on Collections button

The screenshot shows the Resia Atlas Clusters dashboard for a cluster named 'Cluster0'. The interface includes a top navigation bar with 'Resia', 'Access Manager', 'Support', and 'Billing'. A left sidebar lists 'DATA STORAGE' (Clusters, Triggers, Data Lake) and 'SECURITY' (Database Access, Network Access, Advanced). The main content area displays cluster details for 'Cluster0' (Version 4.2.6) under the 'Sandbox' tab. It includes buttons for 'CONNECT', 'METRICS', and 'COLLECTIONS'. The 'COLLECTIONS' button is highlighted. To the right, there are four charts: 'Operations' (R: 0, W: 0), 'Logical Size' (0.0 B), 'Connections' (1), and 'Linked Realm App' (None Linked). Each chart has a 'Last 6 Hours' label. A green 'Create a New Cluster' button is in the top right. An 'Upgrade' button is in a dashed box at the bottom right, with text: 'Enhance Your Experience For dedicated throughput, richer metrics and enterprise security options, upgrade your cluster now!'.

Resia

Access Manager Support Billing

See Product Tour All Clusters Vamsi

Resia Atlas Realm Charts

DATA STORAGE

Clusters

Triggers

Data Lake

SECURITY

Database Access

Network Access

Advanced

RESIA > RESIA

Clusters

Create a New Cluster

Find a cluster...

SANDBOX

Cluster0

Version 4.2.6

CONNECT METRICS COLLECTIONS ...

CLUSTER TIER

M0 Sandbox (General)

REGION

GCP / Belgium (europe-west1)

TYPE

Replica Set - 3 nodes

LINKED REALM APP

None Linked

Operations R: 0 W: 0 100.0/s

Logical Size 0.0 B 512.0 MB max

Connections 1 500 max

Enhance Your Experience


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

Upgrade

Create a sample database

Click on Add My Own Data button (as Sample Dataset is around 350 MB and with a free account we have only 512 MB space.)



RESIA > RESIA > CLUSTERS


 **Cluster0**

VERSION: 4.2.6 REGION: Belgium (europe-west1)

Overview Real Time Metrics **Collections** Profiler Performance Advisor Online Archive BETA Command Line Tools

DATABASES: 0 COLLECTIONS: 0


 VISUALIZE YOUR DATA  REFRESH




Explore Your Data

- **Find:** run queries and interact with documents
- **Indexes:** build and manage indexes
- **Aggregation:** test aggregation pipelines
- **Search:** build search indexes

[Load a Sample Dataset](#) [Add My Own Data](#)

[Learn more in Docs and Tutorials](#) 



Create a sample database

Give some name to Database and Collection and click on Create.
That's it we have configured our cluster and database for accessing from PyMongo

×

Create Database

DATABASE NAME ?

COLLECTION NAME ?

☐ Capped Collection
Before MongoDB can save your new database, a collection name must be specified at the time of creation.

Cancel

Create

RESIA > RESIA > CLUSTERS

Cluster0

VERSION 4.2.6 REGION Belgium (europe-west1)

Overview Real Time Metrics Collections Profiler Performance Advisor Online Archive BETA Command Line Tools

DATABASES: 1 COLLECTIONS: 1

+ Create Database

Q NAMESPACES

▼ resia
| resia

resia.resia

COLLECTION SIZE: 0B TOTAL DOCUMENTS: 0 INDEXES TOTAL SIZE: 4KB

Find Indexes Schema Anti-Patterns ? Aggregation Search

INSERT DOCUMENT

FILTER {"filter":"example"} Find Reset

QUERY RESULTS 0

This is our Mongo DB dashboard with information of all databases and collections

References:

- ✓ <https://docs.atlas.mongodb.com/>

Francesco Pugliese

