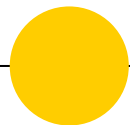


CS4220 Node.js & Vue.js

Cydney Auman
Albert Cervantes
CSULA



Node.js + Socket.io + Vue.js + Mongo DB



SQL (Relational) Databases

Individual records in tables as rows and each column stores a specific piece of data about that record. Related data is stored in separate tables, and then joined together with complex queries.

The data stored in SQL databases have a defined structure. This structure is referred to as a schema, the formal definition of how data inserted into the database will be stored.

Examples:

- MySQL
- Postgres
- MS SQL Server
- Oracle Database



NoSQL (Non-Relational) Databases

Document Databases

Data is inserted in the form of JSON structures or “documents”. Documents can contain many different key-value pairs or even nested documents.

The data stored in NoSQL databases is dynamic, with some enforcing data validation rules. Applications can add new fields on the fly, and unlike SQL table rows, dissimilar data can be stored together as necessary.

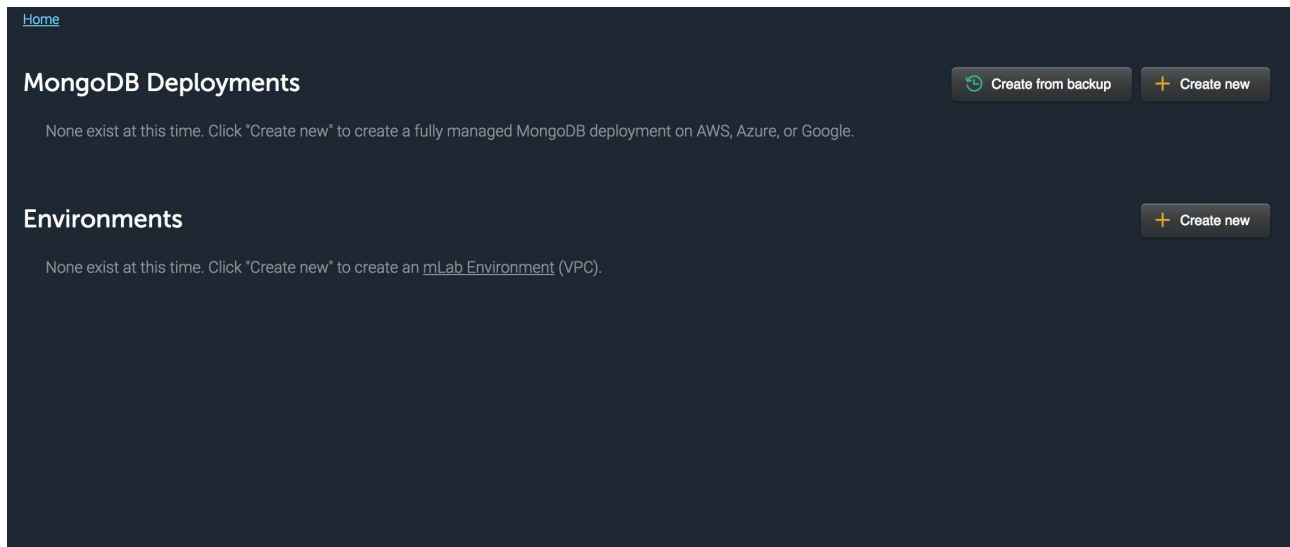
Examples:

- MongoDB
- Cassandra
- Redis
- ArangoDB



Setting Up Cloud Instance of Mongo DB

- Go to <https://mlab.com>
- Sign up for a Free Account





Setting Up Cloud Instance of Mongo DB

- Click Create New

The screenshot shows the MongoDB Cloud console interface. At the top left is a [Home](#) link. The main section is titled "MongoDB Deployments" and contains the text: "None exist at this time. Click 'Create new' to create a fully managed MongoDB deployment on AWS, Azure, or Google." To the right of this text are two buttons: "Create from backup" (with a refresh icon) and "Create new" (with a plus icon). The "Create new" button is highlighted with a yellow border. Below this section is another titled "Environments" with the text: "None exist at this time. Click 'Create new' to create an [mLab Environment](#) (VPC)." To the right of this text is a single button: "Create new" (with a plus icon).



Setting Up Cloud Instance of Mongo DB

- Click SANDBOX (free) and the Continue

The screenshot shows the MongoDB Cloud Instance deployment wizard. At the top, there's a 'Home' link. Below it, the 'Cloud Provider' section has three options: Amazon Web Services (selected), Google Cloud Platform, and Microsoft Azure. A checkbox labeled 'USE AZURE 2 FOR DEDICATED PLANS' is present. To the right, a 'New Deployment Creator' sidebar shows 'PLAN TYPE' as 'Sandbox' and 'PROVIDER' as 'Amazon Web Services'. The 'Plan Type' section has three options: 'SANDBOX' (FREE), 'SHARED' (\$15 / GB), and 'DEDICATED' (\$180 & UP). The 'SANDBOX' option is highlighted. Below it, 'AVAILABLE AWS REGIONS' lists 'US East (Virginia) (us-east-1)' and 'Europe (Ireland) (eu-west-1)'. At the bottom, there's a footer with copyright information, terms of service, and privacy policy, along with 'cancel' and 'CONTINUE' buttons.

Home

Cloud Provider

Amazon Web Services

Google Cloud Platform

Microsoft Azure

USE AZURE 2 FOR DEDICATED PLANS ⓘ

New Deployment Creator

PLAN TYPE
Sandbox

PROVIDER
Amazon Web Services

Plan Type

SANDBOX **FREE**
For learning, developing, or prototyping. Up to 0.5 GB storage.

SHARED **\$15 / GB**
For small datasets and light production workloads. Up to 8 GB storage.

DEDICATED **\$180 & UP**
For demanding production workloads. Supports unlimited vertical and horizontal scaling (via sharding).

AVAILABLE AWS REGIONS

- US East (Virginia) (us-east-1)
- Europe (Ireland) (eu-west-1)

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cancel CONTINUE



Setting Up Cloud Instance of Mongo DB

- Click US East and the Continue

The screenshot displays the 'New Deployment Creator' interface. On the left, under 'AWS Region', there is a search bar and two region options: 'US East (Virginia) (us-east-1)' and 'Europe (Ireland) (eu-west-1)'. The 'US East (Virginia) (us-east-1)' option is highlighted in blue. In the center, a world map shows a location marker over the US East region, also labeled 'US East (Virginia) (us-east-1)'. On the right, the 'New Deployment Creator' panel shows the following configuration:

- PLAN TYPE**: Sandbox
- PROVIDER**: Amazon Web Services
- REGION**: US East (Virginia) (us-east-1)

At the bottom of the interface, there is a footer with copyright information and links, and a navigation bar with 'cancel', 'BACK', and 'CONTINUE' buttons. The 'CONTINUE' button is highlighted in blue.

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cancel BACK CONTINUE



Setting Up Cloud Instance of Mongo DB

- Enter a DB Name (needs to be unique)

[Home](#)

Final Details

MONGODB VERSION	3.4.14 (MMAPv1)
DATABASE NAME	<input type="text" value="something-unique-without-spaces"/>

New Deployment Creator

PLAN TYPE [✎](#)
Sandbox

PROVIDER [✎](#)
Amazon Web Services

REGION [✎](#)
US East (Virginia) (us-east-1)

PLAN LINE & SIZE [✎](#)
- 0.5 GB

MONGODB VERSION
3.4.14 (MMAPv1)

DATABASE NAME
something-unique-without-spaces

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Setting Up Cloud Instance of Mongo DB

- Submit FREE Order

Order Confirmation

PLAN TYPE	Sandbox	
CLOUD PROVIDER	Amazon Web Services	
REGION	US East (Virginia) (us-east-1)	
PLAN LINE & SIZE	Sandbox	FREE
	<div> STORAGE 0.5 GB</div>	
MONGODB VERSION	3.4.14 (MMAPv1)	
DATABASE NAME	something-unique-without-spaces	
Total Price		FREE

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cancel

BACK


SUBMIT ORDER




Setting Up Cloud Instance of Mongo DB

- Now your account has a DB Deployment


MongoDB Deployments

 Create from backup

 Create new

Development and Utility

Single-node deployments intended for environments that do not require high availability.

>	DEPLOYMENT	PLAN TYPE	RAM	SIZE ⓘ	SIZE ON DISK ⓘ
>	 ds253889/cs4220-chat-app	Sandbox	shared	0.00 KB	0.00 KB



Setting Up Cloud Instance of Mongo DB

- Click on Your Deployment Name

MongoDB Deployments

Create from backup>Create new

Development and UtilitySingle-node deployments intended for environments that do not require high availability.

> DEPLOYMENT	PLAN TYPE	RAM	SIZE ⓘ	SIZE ON DISK ⓘ
> ds253889/cs4220-chat-app	Sandbox	shared	0.00 KB	0.00 KB



Setting Up Cloud Instance of Mongo DB

- Add a database user

[Home](#)

Database: cs4220-chat-app

Delete database

To connect using the mongo shell:

```
% mongo ds253889.mlab.com:53889/cs4220-chat-app -u <dbuser> -p <dbpassword>
```

To connect using a driver via the standard MongoDB URI ([what's this?](#)):

```
mongodb://<dbuser>:<dbpassword>@ds253889.mlab.com:53889/cs4220-chat-app
```

mongod version: 3.4.14 (MMAPv1)

Sandbox databases do not have redundancy and therefore [are not suitable for production](#). Read our documentation on [how to upgrade](#).

A database user is required to connect to this database. To create one now, visit the 'Users' tab and click the 'Add database user' button.

Collections

Users

Stats

Backups

Tools

Database Users

Add database user

[None at this time]



Setting Up Cloud Instance of Mongo DB

- Add a database user and note the connection URI

[Home](#)

Database: cs4220-chat-app

Delete database

To connect using the mongo shell:

```
% mongo ds253889.mlab.com:53889/cs4220-chat-app -u <dbuser> -p <dbpassword>
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Collections

Users

Stats

Backups

Tools

Database Users

Add database user

[None at this time]



References and Reading

NoSQL Explained

-- <https://www.mongodb.com/nosql-explained>

mLab

-- <https://mlab.com>