MongoDB: Atlas

DataBase as a Service

Who is MongoDB? (Clients)

- Founded in 2007
- By the team who created DoubleClick
 - Internet ad serving services
 - Google acquired DoubleClick for \$3.1 billion
- Employees in 20 countries
- Clients:
 - SEGA
 - UPS
 - Verizon
 - GAP
 - Coinbase

What is MongoDB?

- Database Platform created by the company MongoDB
- NoSQL Database (Called MongoDB)
- Also provides:
 - Cloud based (MongoDB: Atlas) (Primary Focus)
 - Database as a service (DBaaS)
 - Stores data in JSON like objects
 - Serverless function platform (MongoDB: Stitch)
 - MongoDB Charts
 - Create, view, and share data visualizations
 - MongoDB Mobile
 - Create Databases for mobile devices

Why MongoDB?

- NoSQL database means more simple to interface
 - No Schemas
 - No Relational Algebra
 - More Automation
- JSON-like object store replaces complex SQL queries
- Cloud Solution
 - Horizontal scaling (Replication feature)
- High availability
- Free and open source

INTELLIGENT OPERATIONAL DATA PLATFORM

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Intelligently put data

where you need it



Best way to

work with data



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The Evolution of MongoDB

- 10 gen software company
- Started development in 2007
- Planned platform as a service (PaaS)
- 2009 Shifted to open source development model
- 2013 10th-Gen becomes MongoDB





MongoDB: Atlas

- Database as a service (DBaaS)
- Hosted on cloud provider solutions
 - Live Migration Service
- Managed Cloud Database
 - User focuses on development
 - Deploy, Manage, Restore with ease

MongoDB provides a free-tier (MO Instances)



Atlas: Cluster Storage

- Distributed workload
- Replication
- Increase redundancy and availability
- Sharded Cluster Components
 - MongoDB free-tier defaults to a 3 node, replica set
 - Replica sets: MongoDB servers
 - Redundancy and Data Availability



Advantages of MongoDB Atlas

Atlas Security: VPC, Teams and Users

- Automated Security Features
 - MongoDB Atlas makes sure you know who's got eyes on your data
- Authentication providers
 - Google Oauth
 - Facebook Oauth
 - API key
 - CLI Authentication through MongoDB credentials
- Access control
 - Create teams to allow for collaboration
 - Create Roles to restrict access
- Encryption
 - AWS Key Management Service

Atlas Monitoring: Alerts, Monitoring, Live Analysis

- Web GUI Interface
 - Monitor a cluster's performance
 - Performance metrics:
 - Database and server performance for cluster
 - Alerts:
 - Notifies when database or server usages reaches thresholds.

MongoDB compass

- The os native GUI for MongoDB.
- Visually explore your data
- \circ ~ View and optimize your query performance
- Available on Linux, Mac, or Windows.



Atlas Backups: Provider Driven and Continuous

- Built-in Replication
 - Their platform provides you with multiple servers for always-on availability, to make sure you're up, even when your primary master is down.
- Backups and Point-In-Time Recovery
 - MongoDB Atlas' system makes strong efforts to protect against data corruption, intentional or not.
- Fine-Grained Monitoring
 - You'll have a ton of info, organized in many ways, to help you recognize when it's time to take things to the next level (additional instances can be provisioned with the push of a button).

Atlas Backups: Provider Driven and Continuous

Query-able Continuous Snapshots

(Restricted to non-free tier)

- Optional automation
- Restore whole clusters
- Restore only a subset of data
- Cloud Provider Snapshots
 - Atlas uses the native backup system in which your cluster is hosted.

CONTEXT	DAYLEN'S ORG - 2018-11-21 > DEMO MONGODB	
Demo MongoDB 👻	Backup	
PROJECT	Overview	Restore History
🛕 Alerts 🛈	Name	
🕙 Backup 🕰 Users & Teams	A Demo	Sluster-shard-0
Stitch Apps		
Docs O Support		

13

MongoDB Disadvantages

- Data consumption is generally high due to de-normalization.
- Joins on data are not supported.
- There is no default transaction support; you need to handle this yourself.
- Map/Reduce is somewhat slow; other offerings are faster.

What MongoDB features does MongoDB Atlas not support?

- Security cannot be disabled
- Specialized replica set members: arbiters, hidden members, delayed secondaries
- Reconfiguration of replica set member priority
- Custom database roles

Example Use Case



Cost Example

For example, if you deploy on AWS a 3-node replica set of M40s and run it 24/7 for one month using the included 80GB of standard block storage, and you have exactly 80GB, your costs would be:

- Per server hourly cost1: ~\$0.34
- Total servers: 3
- Total hours: 720
- Backup data: 80GB @ \$2.50/GB/month
- Total monthly fees paid to MongoDB: \$946.79

Free	Basic
For learning, prototypes, and early development	Designed for every stage of your application
Shared RAM	Scalable RAM
512 MB storage	Scalable Storage
Get started free	From \$9/mo
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Usability

We found it incredibly easy to use.

Account set-up and initial walkthrough is best we have seen.



Demo Time!

What will we need:

- 1 Cluster (Premade, due to the 7 min. Creation time)
- 1 Database within that cluster
- 1 Stitch App

What we will be doing:

-Writing a Stitch app that retrieves the data.

-Accessed through an HTTP Endpoint.