



WELCOME

Building for Scale: How MongoDB Atlas Grows with You



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MongoDB

Agenda

- 🍃 Starting Fast and Simple
- 🍃 Adapting to New Requirements
- 🍃 Security and Automation
- 🍃 Next-Level Capabilities

Setting the Stage

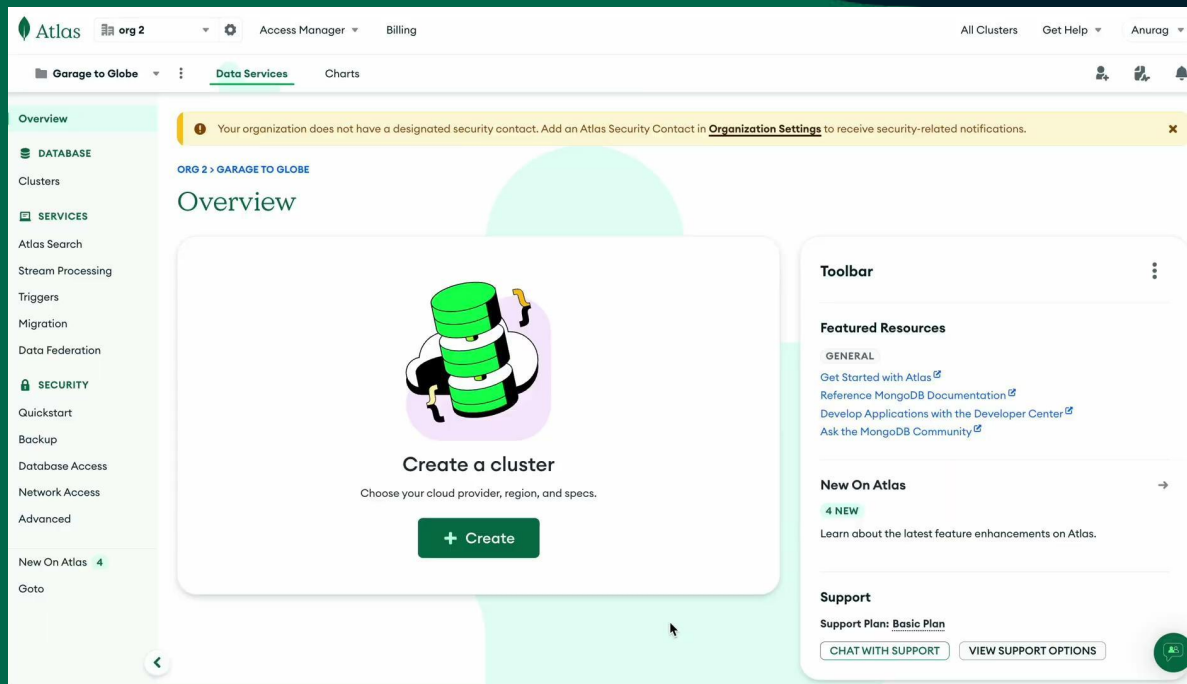


- You're an independent developer who had the idea of launching a marketplace with merchandise from a neighborhood coffee shop
- Because this is a hobby project, you want a database that is:
 - Free to use
 - Provisioned in seconds
 - Flexible schema
 - Scalable

MongoDB Atlas is all of the above and more!



Creating a Free Cluster



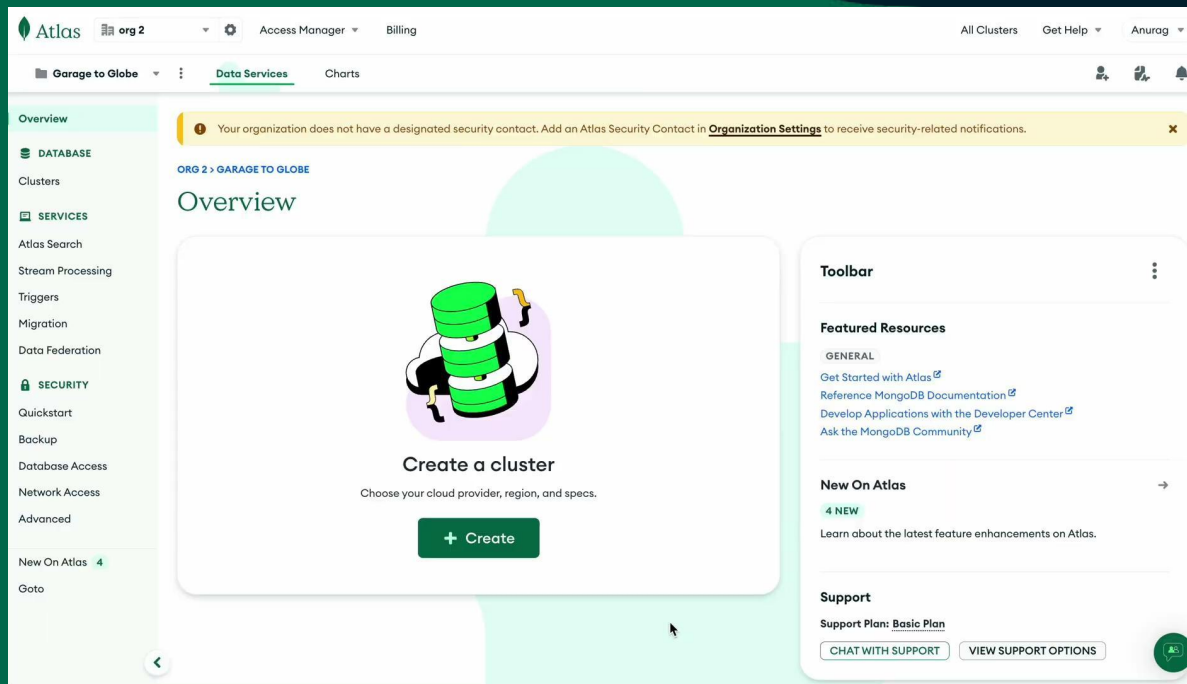
The screenshot shows the MongoDB Atlas user interface. At the top, the navigation bar includes the Atlas logo, organization name 'org 2', and links for 'Access Manager' and 'Billing'. On the right, there are links for 'All Clusters', 'Get Help', and the user's name 'Anurag'. Below this, a breadcrumb trail shows 'Garage to Globe' > 'Data Services' > 'Charts'. A yellow warning banner at the top states: 'Your organization does not have a designated security contact. Add an Atlas Security Contact in [Organization Settings](#) to receive security-related notifications.'

The main content area is titled 'Overview' and features a large card with the heading 'Create a cluster' and the subtext 'Choose your cloud provider, region, and specs.' Below this is a green '+ Create' button. To the left of the card is a sidebar menu with categories: 'DATABASE' (Clusters), 'SERVICES' (Atlas Search, Stream Processing, Triggers, Migration, Data Federation), 'SECURITY' (Quickstart, Backup, Database Access, Network Access, Advanced), and 'New On Atlas' (4 items, Goto).

On the right side of the main content area, there are three panels: 'Toolbar' (with a menu icon), 'Featured Resources' (under a 'GENERAL' tab, listing links like 'Get Started with Atlas', 'Reference MongoDB Documentation', 'Develop Applications with the Developer Center', and 'Ask the MongoDB Community'), 'New On Atlas' (labeled '4 NEW', with a link to 'Learn about the latest feature enhancements on Atlas.'), and 'Support' (showing 'Support Plan: Basic Plan' and buttons for 'CHAT WITH SUPPORT' and 'VIEW SUPPORT OPTIONS').

Use the MongoDB Atlas Free tier to develop the application

Creating a Free Cluster



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Use the MongoDB Atlas Free tier to develop the application

Coffee Merch Mart



 Merch Mart

Home Merchandise

Our Merchandise

Browse our carefully curated collection of coffee merchandise, designed for coffee enthusiasts.



Signature Blend Coffee Beans...
Our signature blend coffee beans, roasted to perfection. Notes of chocolate and...

\$14.99 [Add to Cart](#)



Coffee Shop T-Shirt
Soft cotton t-shirt with the Happy Coffee logo. Available in multiple sizes.

\$24.99 [Add to Cart](#)



Coffee Brewing Guide Book
A comprehensive guide to brewing the perfect cup of coffee at home.

\$9.99 [Add to Cart](#)

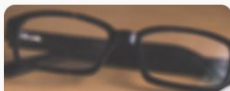


Coffee Bean Grinder
Manual ceramic burr grinder for the freshest coffee grounds.

\$39.99 [Add to Cart](#)



New





```
{  
  id: string;  
  name: string;  
  price: number;  
  description: string;  
  imageUrl: string;  
  tag: ProductTag;  
}
```



Scaling in the Early Stages

- Upgrade from a Free tier to a Flex tier with 3 clicks
- Pay as you go and resources scale as you need



Flex

From \$0.011/hour

Up to \$30/month

MINIMUM UPGRADE

For application development and testing, with on-demand burst capacity for unpredictable traffic.

STORAGE	RAM	vCPU
5 GB	Shared	Shared

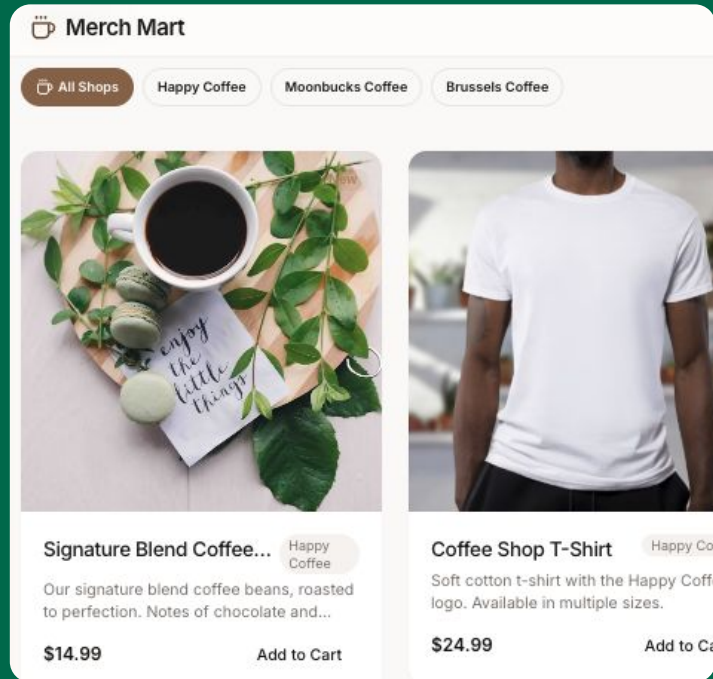
Features

- ✓ Basic backups ⓘ
- ✓ Upgradeable ⓘ
- ✓ Pay As You Go pricing
- ✓ On-demand burst capacity

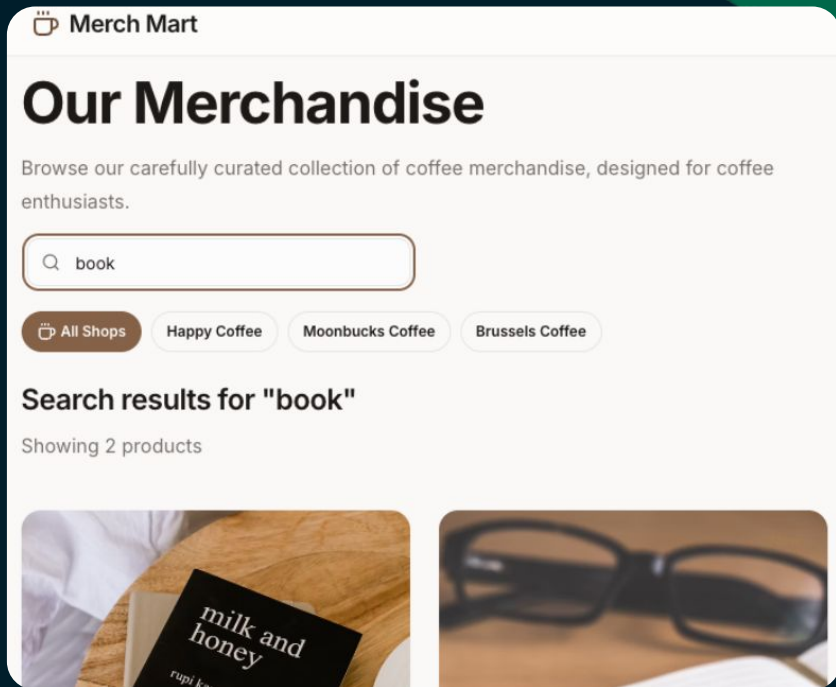
Onboarding New Coffee Shops

```
{  
  id: string;  
  name: string;  
  price: number;  
  description: string;  
  imageUrl: string;  
  tag: ProductTag;  
  shop: string;  
}
```

With MongoDB you can say
“Yes!” to new ideas



Extending your Store with Atlas Search



Avoid the 'synchronization tax'

Combine Apache Lucene with the security, performance, and reliability of MongoDB Atlas

Superior developer experience

Use a single, unified API across database and search operations. Create a search index with a few clicks or a single API call

Fully managed platform

Combine Apache Lucene with the security, performance, and reliability of MongoDB Atlas

Dedicated Clusters and Auto-Scaling

☐ M30 \$0.54/hour

RECOMMENDED

Dedicated Clusters for high-traffic applications and large datasets.

STORAGE	RAM	vCPU
40 GB	8 GB	2 vCPUs

Features

- ✓ Horizontal scaling via shards ⓘ
- ✓ Flexible backups ⓘ
- ✓ Zero-downtime cluster scaling ⓘ
- ✓ Performance diagnostic tools ⓘ
- ✓ Additional search indexes
- ✓ Uptime SLA ⓘ

☒ M10 \$0.08/hour

MINIMUM UPGRADE

Dedicated Clusters for **development** environments and low-traffic applications.

STORAGE	RAM	vCPU
10 GB	2 GB	2 vCPUs

Features

- ✓ Flexible backups ⓘ
- ✓ Zero-downtime cluster scaling ⓘ
- ✓ Performance diagnostic tools ⓘ
- ✓ Additional search indexes
- ✓ Uptime SLA ⓘ

☐ Flex From \$0.011/hour
Up to \$30/month

CURRENT

For application development and testing, with on-demand burst capacity for unpredictable traffic.

STORAGE	RAM	vCPU
5 GB	Shared	Shared

Features

- ✓ Basic backups ⓘ
- ✓ Upgradeable ⓘ
- ✓ Pay As You Go pricing
- ✓ On-demand burst capacity

Atlas has the right size for every demand

	Tier	RAM	Storage	vCPU	Price
	☒ M10	2 GB	10 GB	2 vCPUs	from \$0.08/hr
Storage	10 GB is included in the base price.				
	10 GB  128 GB				10 GB
Auto-scale	Compute Auto-Scale				
	☒ Cluster Tier Scaling ⓘ Learn more				
	☒ Allow cluster to be scaled down				
	Minimum cluster size M10 ▾		Maximum cluster size M30 ▾		
	Storage Auto-Scale				
	☒ Storage Scaling ⓘ				
IOPS	1000 IOPS				
Additional Info	1500 max connections Up to 5 Gigabit network performance				

Fine-Grained Security as You Scale

- Leverage Org and Project Roles to ensure the right employees have the right level of access to data
- Clearly separate responsibilities between different microservices
- Coordinate access on a per-collection level
- MongoDB can protect your data at-rest, in transit and even in use





Infrastructure as Code

- Control all Atlas Features using our Admin API, Terraform, Kubernetes Operator, CLI and CloudFormation
- Spin up clusters, control network topology and backup policies

```
#Create Atlas Private Endpoint Request
```

```
resource "mongodbatlas_privatelink_endpoint" "atlas_private_endpoint" {  
  project_id    = var.project_id  
  provider_name = "AWS"  
  region        = var.region  
}
```

```
# Create M10 Cluster
```

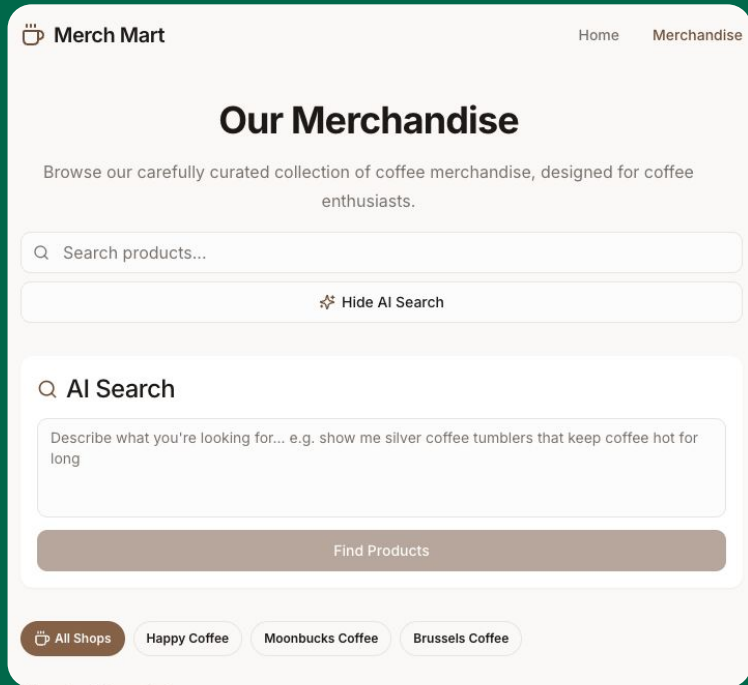
```
resource "mongodbatlas_cluster" "test_cluster" {  
  project_id    = var.project_id  
  name          = "test-m10-cluster"  
  cluster_type  = "REPLICASET"  
  provider_name = "AWS"  
  provider_region_name = "US_EAST_1"  
  provider_instance_size_name = "M10"  
  backing_provider_name = "AWS"  
  mongo_db_major_version = "7.0"  
  disk_size_gb = 10  
}
```

```
# Automatically destroy the cluster after the test
```

```
resource "null_resource" "teardown" {  
  depends_on = [null_resource.run_test]  
  provisioner "local-exec" {  
    command = "terraform destroy -auto-approve"  
  }  
  
  triggers = {  
    always_run = "${timestamp()}"  
  }  
}
```



Adding AI with Vector Search



The screenshot shows a web interface for 'Merch Mart'. At the top, there's a navigation bar with 'Home' and 'Merchandise' links. The main heading is 'Our Merchandise', followed by a subtext: 'Browse our carefully curated collection of coffee merchandise, designed for coffee enthusiasts.' Below this is a search bar with the placeholder 'Search products...'. A toggle switch labeled 'Hide AI Search' is positioned below the search bar. Further down, there's a section titled 'AI Search' with a text input field containing the example query: 'Describe what you're looking for... e.g. show me silver coffee tumblers that keep coffee hot for long'. A 'Find Products' button is located below the input field. At the bottom, there are four filter buttons: 'All Shops', 'Happy Coffee', 'Moonbucks Coffee', and 'Brussels Coffee'.

- Atlas Vector Search enables search based on customer intent rather than keywords
- No sync or ETL needed, unified query language and use the same drivers to interact with search and operational data
- Combine traditional queries, text-search and vector search in one pipeline
- With delegated search nodes your operational workloads stay unimpeded by AI features

Fail-Safe with Multi-Region Clusters

Electable nodes for high availability

Configure 3, 5, or 7 nodes across multiple regions to better withstand data center outages

★ Recommended region ⓘ

Provider	Region	Priority	Nodes	Action
⋮ AWS ▼	🇩🇪 Frankfurt (eu-central-1) ★ 🌿 ▼	HIGHEST	2	🗑️
⋮ GCP ▼	🇫🇷 Paris (europe-west9) ★ 🌿 ▼		2	🗑️
⋮ Azure ▼	🇮🇪 Ireland (northeurope) ★ ▼		1	🗑️
+ Add a provider/region				
Total: 5 Electable Nodes				

Going Global with Sharding

- Scale to any size by distributing load
- Shard along ranges or geographic regions - **Or both!**
- Scale shards and add search nodes independently

Advanced Settings

Shard your cluster (M30 and up)

[Sharding](#) supports high throughput and large datasets, and can be increased as data requirements grow. Sharded clusters cannot be converted to [replica sets](#).



2 Shards



Looking for more than 70 shards? [Contact MongoDB](#)



Config server type: Embedded. You can manage your configuration servers at [Atlas Managed Configuration Servers](#).

Build, Don't Babysit!



- MongoDB Atlas grows with your application, from free tier to sharded clusters, ensuring performance at every stage
- Easily add features like Search and Vector Search with a consistent developer experience
- Streamline database management with robust IAC (Infrastructure as Code) and IAM (Identity and Access Management) tools

Thank you!